

# KRISHI VIGYAN KENDRA CUTTACK

## PERFORMANCE-CUM-IMPACT 2010-15



Krishi Vigyan Kendra Cuttack, Santhapur  
ICAR-NATIONAL RICE RESEARCH INSTITUTE  
Cuttack-753006, Odisha



**LIFE IS A JOURNEY  
SUCCESS IS JUST MILESTONE IN THIS JOURNEY  
NOT THE DESTINATION**



# KRISHI VIGYAN KENDRA CUTTACK

## PERFORMANCE-CUM-IMPACT 2010-15



भाकृअनुप-राष्ट्रीय चावल अनुसंधान संस्थान  
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(Formerly Central Rice Research Institute)

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## MESSAGE

Agriculture and allied sector is facing a daunting task of reorganization and induction of rethinking among the farmers, farmwomen and rural youth for restoring the vitality of the sector. Though production of all the commodities have increased, the skill and technical up-gradation of the farmers have not percolated to the grass root level for its optimization. Krishi Vigyan Kendra concept bridges this gap between research and its application to keep the momentum high and generate maximum benefit with sustainable and eco-friendly approach. The effects of climate change further calls upon location specific farm innovations. The KVK serves as a reference point of the district for farm technology and capacity building of different stakeholders, thereby serving as the farm knowledge centre.



In Cuttack district, the Krishi Vigyan Kendra, located at Santhapur, is in the forefront of dissemination of agricultural and allied sector technology since its inception under able supervision of ICAR-National Rice Research Institute (formerly Central Rice Research Institute), Cuttack. The approaches of KVK through advisory services, on farm testing, frontline demonstrations, trainings and diagnosis based decision support for the farming community have been very useful. Testing new technology for location specific problems and demonstrating newer technologies to enhance production and productivity transcended the conventional approach and made a paradigm shift in the technology dissemination process in the district. In addition, identification and prioritization of problems of the district in different disciplines helps other line departments to act wisely for the end user benefits.

This publication of KVK Cuttack will be a reference document for the district level extension agencies. The line departments and other organizations may find useful inputs in developing the farm sector and avail the facilities and services of the KVK thereby giving wider dissemination of the need based technology. I am sure that this document will be beneficial for all the stakeholders of the district and also to similar organizations as a reference. Lastly, I congratulate the editors and KVK team for their effort in bringing out this publication.

**(T. Mohapatra)**  
Director  
ICAR-NRRI, Cuttack

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## PREFACE

Realizing the importance of farm innovations in the context of agro-ecological variations of climate change, rising uncertainty of agricultural production and food and nutritional security, Indian Council of Agricultural Research established KVKs in every district of India. It was aimed at keeping the subject matter specialists in core disciplines and thrust areas for the district. The knowledge generated by KVK from *On Farm Trials* (OFTs) and *Frontline Demonstrations* (FLDs) assessed would serve as model for the line departments and will act as a light house to improve the existing systems. KVK Cuttack, under supervision and administrative control of ICAR- National Rice Research Institute and ATARI Zone VII is committed to the overall development in agriculture and allied sector in the Cuttack district.

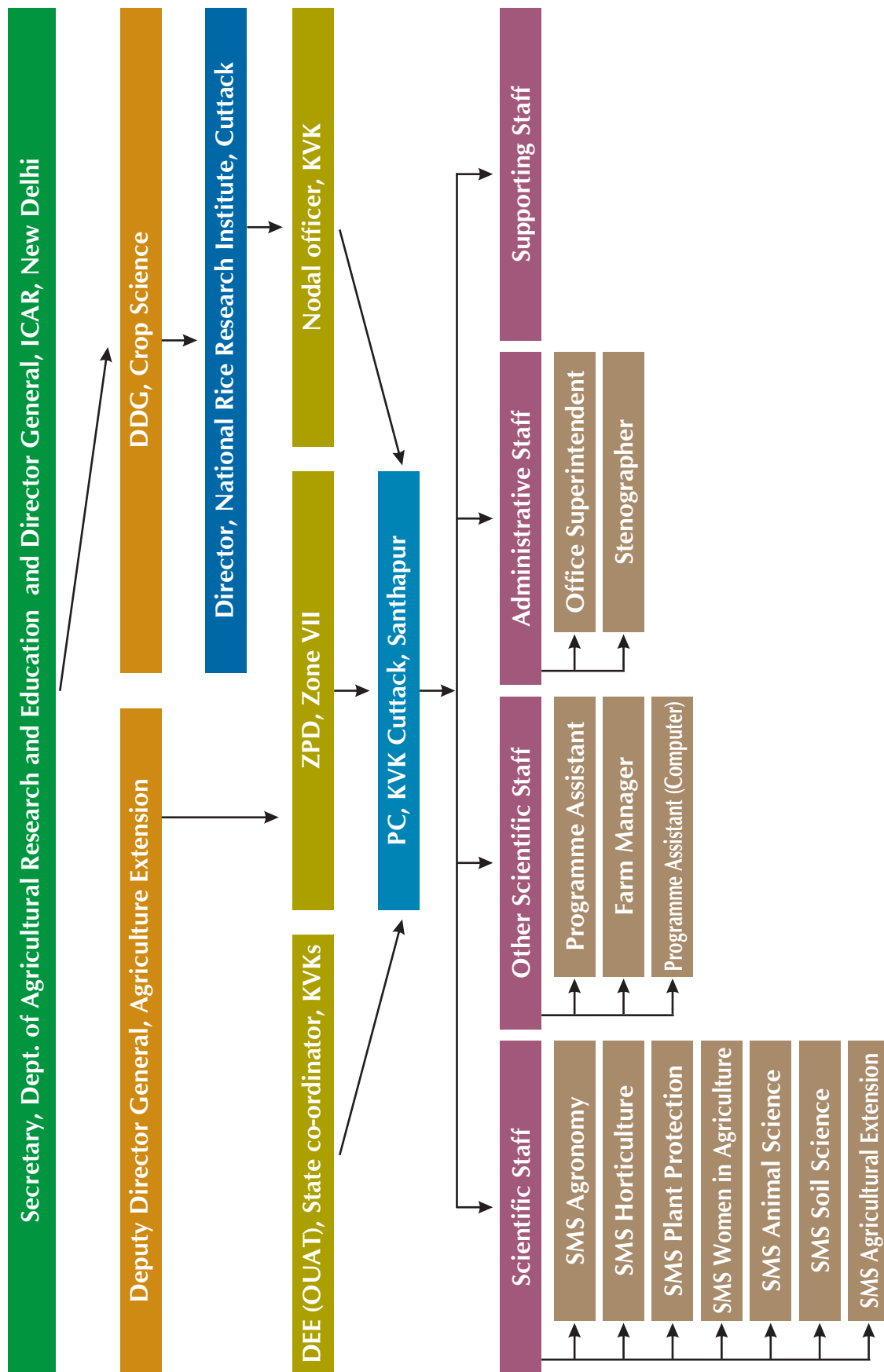
The cultivable farming systems in Cuttack district varies from rainfed uplands (Tangi Choudwar) to irrigated fertile lands (Niali, Mahanga, Banki) and flood prone areas (Banki). The preference to activities also vary from rice-intensive poultry and goat farming (Tangi Choudwar) to rice-dairying (Mahanga, Niali, Kantapada) and rice-vegetable cultivation (Athagarh, Barang), whereas most of the blocks have large variations with area and farming system specific activities. It was observed from surveys, field visits, group meetings and participatory rural appraisal that though Cuttack district is very close to knowledge centers like OUAT, NRRI, CPDO, CIFA etc, the knowledge has still not percolated to the farming community except some patches and there is urgent need of technology assessment and refinement to suit the local conditions. In that aspect, KVK is successful in many of its adopted village clusters, i.e. Sankilo (Nischintakoili), Ganeswarpur and Dahanigadia (Tangi Choudwar), Gaudgop (Mahanga), Biswanathpur (Salepur), Aurilo (Barang), Tentuliragadi (Tigiria), Jodum (Narasinghpur), Arada (Cuttack Sadar) and Mangarajpur (Badamba).

This publication presents a detailed account of work done by KVK Cuttack and the impact it created. In the beginning, the document focuses on KVK and profile of the district. The second part focuses on activities of KVK with elaboration about successful OFTs and FLDs, their impact on the district along with few success stories. Other important activities like the celebration of important days, soil awareness camp, seed treatment camp, animal health camp etc are then discussed. The dissemination of technologies through publications, radio and TV talks, mass media coverage etc and achievements are then reported.

The authors are immensely grateful to Dr T Mohapatra, Director, ICAR-NRRI for his creative thought and keen interest in bringing out the manuscript and giving suggestions as and when required. We are thankful to Dr Anupam Mishra, Director, ATARI Zone VII, Jabalpur for facilitating the programmes of last five years and giving us constant support in meeting KVK goals. We also thank the KVK team, line departments, farming community of Cuttack district and all persons associated with the work, whose involvement is reflected in this document. We hope this document will generate interest among the farming communities for technologies and help them to meet the challenges in production. We expect feedbacks on this document from all stakeholders for the benefit of KVK and overall the farming community of Cuttack district.

**RK Mohanta  
BN Sadangi  
DR Sarangi**

# ORGANOGRAM





## Executive Summary

Krishi Vigyan Kendras (Agriculture Science Centres) are the down-to-earth institutions committed to vocational training, transfer of latest technologies, on farm research and thus, serving as the light house for overall rural development in the district. The activities of the KVK include technology assessment, refinement and transfer, aiming to bridge the gap between the technology developed at the research institutions and its adoption at the field level by the farmers through demonstration of technology/ products etc. and training of farmers, rural youths and extension personnel.

KVK Cuttack is situated at village Santhapur at a distance of about 25 km from Cuttack and 2 km from NH16. KVK Cuttack is officially functioning from 14th Nov 1992 under the administrative control of ICAR-National Rice Research Institute, Cuttack and the Zonal Project Directorate (ATARI), Zone VII, Jabalpur. The KVK farm has mainly lateritic, upland soil with an area of 34.56 acres.

Cuttack district is richly endowed with livestock and horticultural activities along with traditional rice cultivation systems. Due to varied land and soil situations with irrigation facilities, it has several farming systems that pose challenges to develop technical and knowledge base those can fit into particular kind of situations.

Scientific Advisory Committee (SAC) meeting is the backbone of KVK functioning which occurs once or twice a year to plan and monitor the activities of KVK and give suggestions for obtaining the desired impact of KVK activity. The committee is constituted with Director, NRRRI as the Chairman, Dean, Extension Education (DEE), OUAT, ICAR representatives, Head of different State Govt. line departments, Lead District Manager, Programme Executives of All India Radio, Cuttack and Doordarshan, four farmers and farmwomen representatives as SAC members. The Programme coordinator, KVK is the convener secretary of SAC who also invites Heads of the Division of NRRRI, Cuttack and many progressive farmers of Cuttack District as special invitees. The PC, KVK presents the achievement of KVK Cuttack in the prescribed period and action plan for the current year. These achievements in relation to targets are discussed in the meeting and annual action plan is finalized. In course of presentation, the Chairman and other members provide their valuable suggestions on action plan formulation and finalization of KVK activities.

One of the prime goal of KVK is to impart training programmes to the farming community as per needs and requirements in agriculture and allied enterprises by applying the principles of 'Teaching by Doing' and 'Learning by Doing'. KVK Cuttack in imparted 225 training programmes covering all the 14 blocks of the district last five years, besides collaborative training programmes with different Govt. agencies and NGOs.

KVK Cuttack refined many technologies befitting agro-ecological situations of the district and also conducted frontline demonstrations for the benefit of the farmers. The technologies are selected after doing participatory rural appraisals (PRAs) in villages before adoption or doing any need based programmes.

KVK Cuttack is trying hard to develop and maintain the campus farms and demonstration units on scientific lines, but challenges of water, land leveling and infrastructure still pose hurdles in achieving the desired impact.

KVK Cuttack organizes non-formal educational programmes by way of field days, farm visits, farmers fair, radio talk, Kisan clubs etc. as the follow up information support to training courses.

In the modern era of communication revolution, KVK keeps in touch with technically advanced farmers through its website ([kvkcuttackzpdvii.in](http://kvkcuttackzpdvii.in)) and sending SMS alerts to farmers through kisan mobile advisory service (> 3000 farmers) for dissemination of information.

KVK Cuttack collaborates with research and academic organizations (Scientific guidance & consultancy regarding training, FLD and OFT programmes along with technological input), Govt. line departments (Collaboration in technical knowledge exchange and enrichment, implementation of different programmes etc.), credit and funding agencies (planning and consultations on funding of farmers), mass media (Dissemination of agricultural technologies, success stories and news events), non-government and voluntary organisations (in organizing training programme and demonstrations) to achieve its mandate.

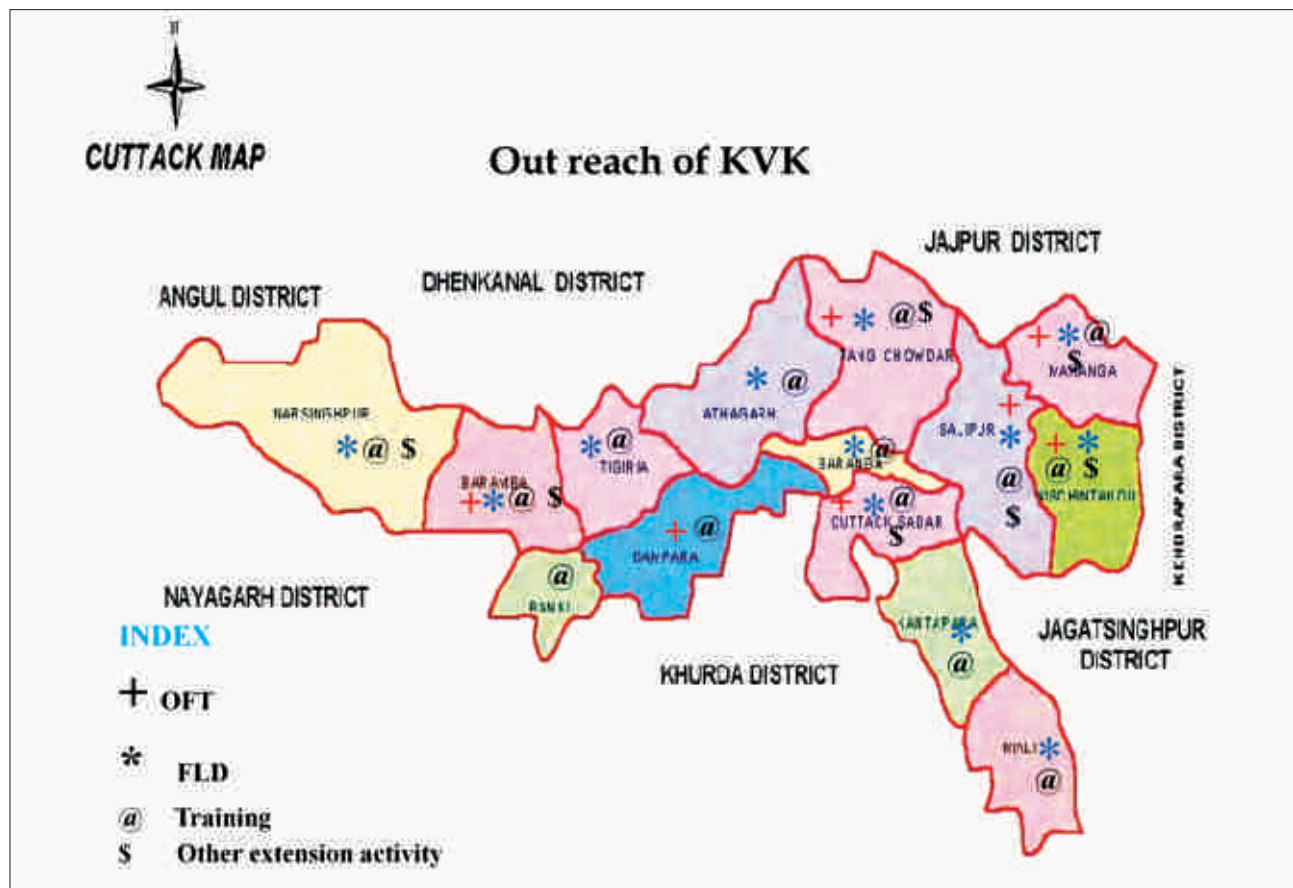
To keep update about certain important things KVK Cuttack celebrates important days related to agriculture and food security to develop awareness among the masses.

To work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.

Farmers and farmwomen have brought laurels to the district by receiving awards for their dedicated efforts from ICAR-NRRI, OUAT and Mahindra and Mahindra by adopting broccoli cultivation, success in vegetable cultivation, integrated farming system, homestead enterprises like mushroom, goatery, backyard poultry and vermicompost etc.

Though KVK Cuttack lacks proper infrastructure and other in campus facilities it is striving hard for the development of farming community. If the necessary facilities will be provided, the KVK team can perform much better for the masses.

The activities of KVK Cuttack performed at various blocks of Cuttack district is mentioned in the following picture. Shifting of adopted village from one block to another is being carried on after three years of intense work followed by visits as and when required.



Outreach of KVK Cuttack to different blocks through different activities

## Introduction

Krishi Vigyan Kendra Cuttack, Santhapur, under the administrative control of ICAR-National Rice Research Institute, Cuttack & the Agricultural Technology Application Research Institute (ATARI), Zone VII, Jabalpur was established at Santhapur Farm and is officially functioning from 14<sup>th</sup> November 1992. It is situated at 64 m above MSL at 20° 35' 50.2"N, 86° 01' 33.7"E. The KVK is situated at a distance of about 25 km from Cuttack and 2 km from the Chennai-Kolkata National Highway (NH16). The KVK farm has mainly lateritic, upland soil with an area of 34.56 acres (13.8 ha).

### **Krishi Vigyan Kendra (KVK): A Historical Perspective**

Realizing the importance of dissemination of technological information in the changing scenario of food and nutritional security, Indian Council of Agricultural Research (ICAR) made an institutional innovation in the form of KVK. It was also envisaged that technology assessed by the KVK will act as model for the line departments and also as a catalyst to improve the existing systems for better delivery mechanism. For proper functioning, great emphasis was given on the strengthening the physical and human infrastructure of KVKs.

**Krishi Vigyan Kendras** (Agriculture Science Centres), an innovative agricultural science based institutions, were established mainly to impart vocational training to the farmers and field level extension workers. The concept of vocational training in agriculture through KVK grew substantially due to greater demand for improved agricultural technology by the farmers. They not only required knowledge and understanding of the intricacy of technologies, but also needed progressively more and more skills in various complex agricultural operations for adoption on their farms. The effectiveness of the KVK was further enhanced by adding the activities related to

On-Farm Testing (OFT) and Front-Line Demonstration (FLD) on major agricultural technologies in order to make the training of farmers location specific, need based and resource-oriented.

The training programmes were designed to impart the latest knowledge to the farmers through work experience by applying the principles of 'Teaching by Doing' and 'Learning by Doing'. The prime goal of KVK is to impart training as per needs and requirements in agriculture and allied enterprises to all farmers, farmwomen and farm youths including school drop-outs in the rural area. No formal certificate or diploma is awarded, irrespective of duration of the courses to avoid the rush for jobs instead of self employment. While designing the courses, the concept of farming system as well as farming situation are taken into account to ensure that the enterprises in which they are trained are commercially and ecologically viable, sustainable and profitable. Such vocational trainings help them to sustain themselves through self-employment and to make them self-reliant economically and thus discourages them to migrate to the urban areas.

KVKs provide training not only in agriculture and



KVK Cuttack entrance

allied vocations, but also in other income-generating activities that may supplement the income of farm families. The methods employed in training could be formal and non-formal or a combination of both, depending upon the needs but emphasis remains to be on work-experience.

The KVKs, thus, are the down-to-earth institutions committed to vocational training, transfer of latest technologies, on farm research and thus, serving as the light house for overall rural development in the district. The activities of the KVK include technology assessment, refinement and transfer, aiming to bridge the gap between the technology developed at the research institutions and its adoption at the field level by the farmers through demonstration of technology/ products etc. and training of farmers, rural youths and extension personnel. The first KVK, on a pilot basis, was established in 1974 at Pondicherry. Realizing the importance of technology assessment, refinement and transfer, the Planning Commission has allocated Rs. 500 crores specifically for the establishment of new KVKs during X<sup>th</sup> plan period so as to have at least a KVK in each district. Presently 641 KVKs are serving our country. The concept of technology assessment and refinement is based on participatory mode ensuring greater scientists-farmer linkage and access to agricultural technologies generated by research systems to the farming community. For this, the roles of KVKs are of immense importance for overall agricultural and rural development through its various research and technology transfer mechanisms.



Main building of KVK Cuttack

### MANDATES OF KVK

- i) Assessment and refinement of technologies / products (**On-farm testing**) for identifying technologies in terms of location specific sustainable land use systems.
- ii) Conducting demonstrations on Front line technologies on various aspects of production and management of crops and allied disciplines (**Front line demonstrations**).
- iii) Organizing “**short and long-term vocational training course in agriculture and allied sectors for the farmers / farmwomen / rural youths**” with emphasis on “learning by doing”.
- iv) Organizing “**Training to update the extension personnel**” with emerging advances in agricultural research on regular basis.
- v) To work as “**district level resource and knowledge centre**” of agricultural technology and allied sectors for supporting initiatives of public, private and voluntary sector for improving the agricultural economy.

In order to achieve the above mandates, the following broad objectives would help the KVKs to develop their specific objectives:

- Planning and conducting survey of the operational area in order to prepare the resource inventory with special reference to identifying the training needs of the farming community.
- To test and verify the technologies in the socio-economic conditions of the farmers with a view to study the production constraints and to modify the technologies to make them appropriate.
- To impart trainings to the practising farmers/ farm women, rural youth and field level extension functionaries by following the methods of “*Teaching by doing*” and “*Learning by doing*”.



*KVK Cuttack demonstration plots*

- For back stopping with training and communication supports to the district level development departments viz; Agriculture/ Horticulture/ Fisheries/ Animal science and NGOs in their extension programmes.
- Developing and maintaining the campus farms and demonstration units on scientific lines as the facilities for providing work experience to the trainees as also disseminating the latest technical knowhow.
- Developing and organizing non-formal educational programmes by way of field days, farm visits, farmers fair, radio talk, Farm Science clubs etc. as the follow up information support to training courses.

- Organizing farm science clubs, both in rural schools and in villages in order to induce in younger generation a liking for and an interest for agricultural and allied sciences and scientific farming through supervised projects.
- To work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.

#### IMPORTANT COMPONENTS

**Scientific Advisory Committee (SAC) :** Consisting representation of stakeholders and meeting once or twice a year to review and priority setting

**Demonstration Units :** Location specific to educate farmers

**Crop Cafeteria :** Providing options to farmers to select from variety of crops

**Diagnostic and Advisory Services :** Diagnostic & advisory at KVK experts visit to farmers field

**Seed, planting material production :** as technology inputs

**Revolving fund :** Maintenance of account, use for farm related activities

**Technology backstopping :** Agricultural Universities/Research organizations

#### Krishi Vigyan Kendra Profile

<b>Location</b>	Village – Santhapur, Ucchapada
<b>Year of Establishment</b>	1992
<b>Host Organization</b>	ICAR-National Rice Research Institute, Cuttack
<b>Farm (ha)</b>	13.824 ha
<b>Soil type</b>	Red lateritic

**Vehicles**

Particular	Existing	Proposed	
		Replacement	New
Jeep (Bolero)	01	No	-
Motorcycle	02	No	-
Tractor	01	Yes	Yes

**Infrastructure**

Particular	Existing	Proposed
Administrative building	No	Yes
Farmers hostel	No	Yes
Staff 1 uarters	No	Yes

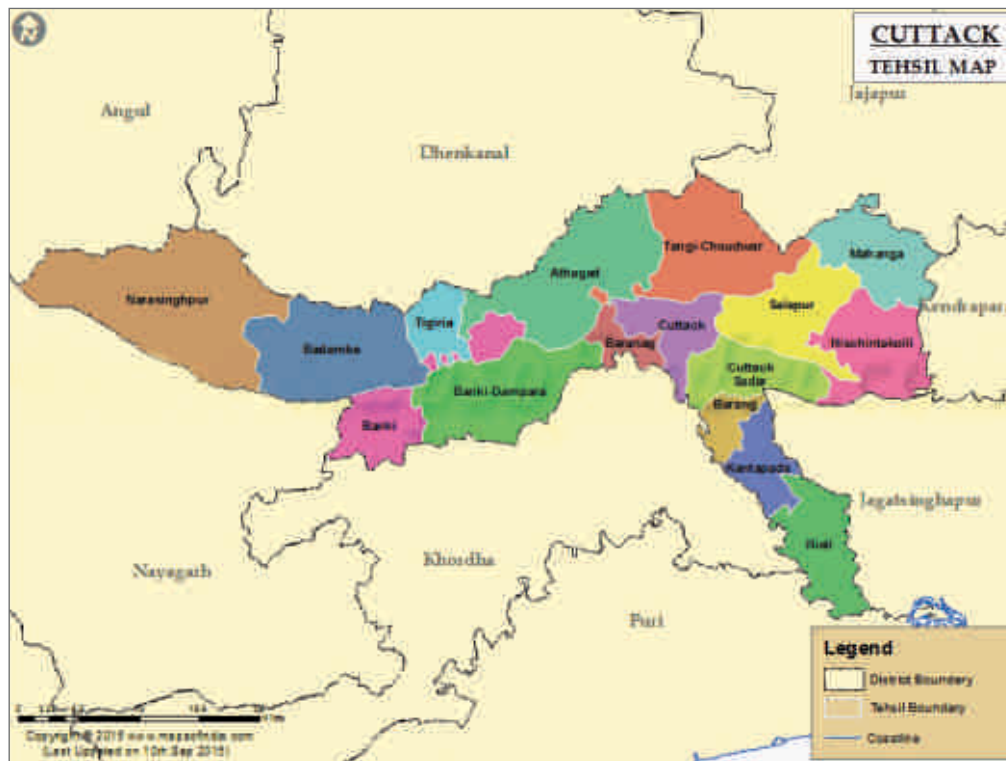
**Requirement of other Infrastructure**

Fencing cum boundary wall (Need based maximum 1000 RM)	Yes
Road formation (Approach road to building)	Yes
Bore well	Yes
Threshing and drying yard	Yes
Irrigation system	Yes
Vehicle and implements shed	Yes
Storage go down	Yes

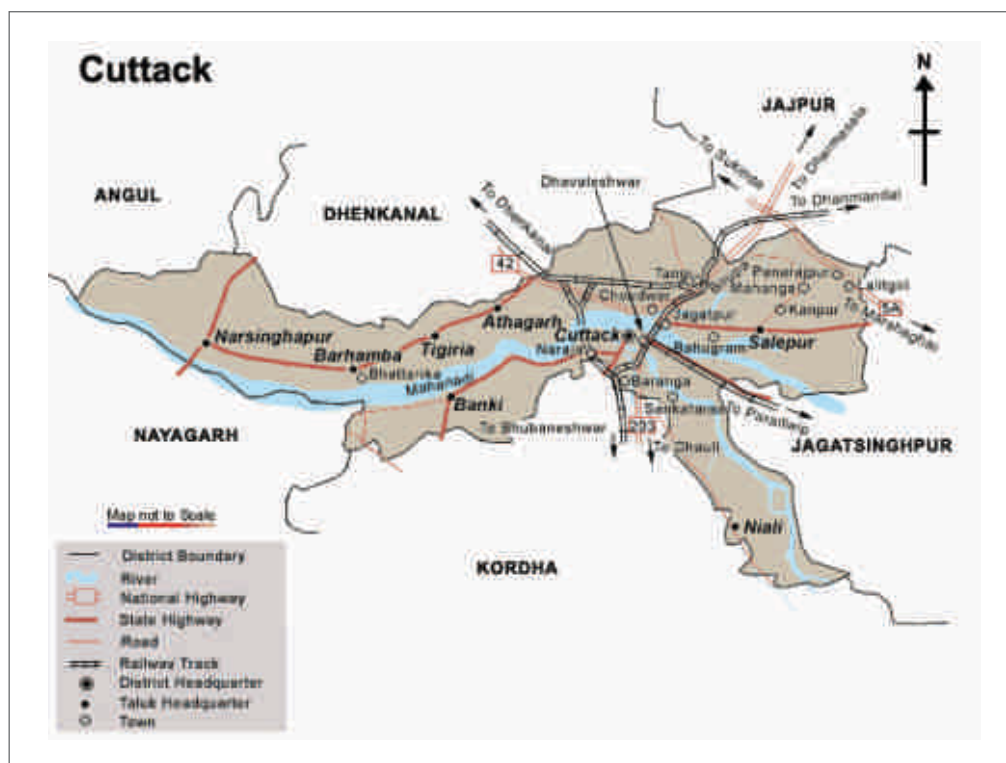
**BUDGET AND EXPENDITURE STATEMENT FOR 2010-15 (As on 31 March 2015)**

Head of Account	2010-11		2011-12		2012-13		2013-14		2014-15	
	B.E	Exp.	B.E	Exp.	B.E	Exp.	B.E	Exp.	B.E	Exp.
Pay & Allowance	3380000	3243661	5700000	4216828	5800000	4992910	5100000	5099287	6300000	6095989
Travel Allowance	96000	84304	100000	88107	175000	42309	200000	198015	130000	108892
Recurring Contingency	700000	699211	870000	842275	850000	849895	1000000	999535	1175000	1174941
Non-Recurring Contingency	7000	130000	124887	100000	98690	NIL	NIL	NIL	NIL	NIL
<b>Total</b>	<b>4306000</b>	<b>4152063</b>	<b>6770000</b>	<b>5245900</b>	<b>6825000</b>	<b>5885114</b>	<b>6300000</b>	<b>6296837</b>	<b>7605000</b>	<b>7379822</b>

# District Profile



Cuttack district map showing tehsils



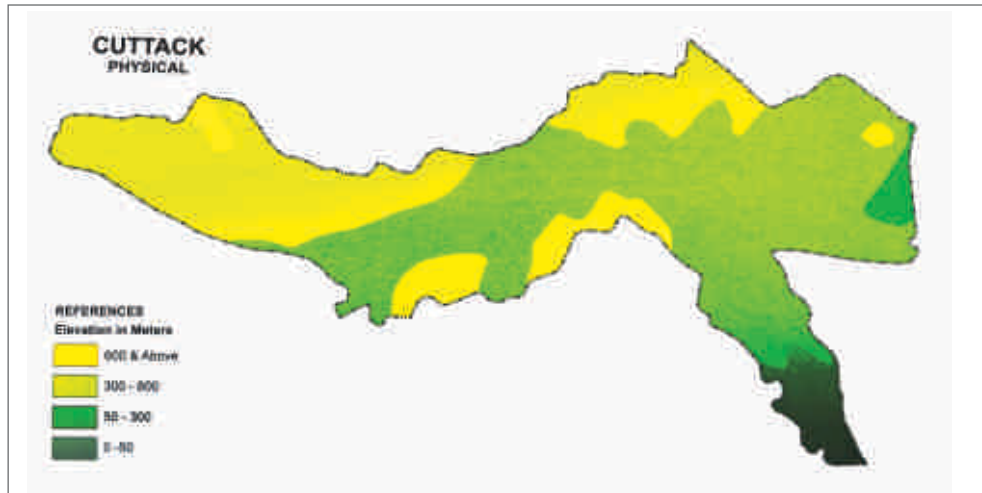
Cuttack district map showing communications routes



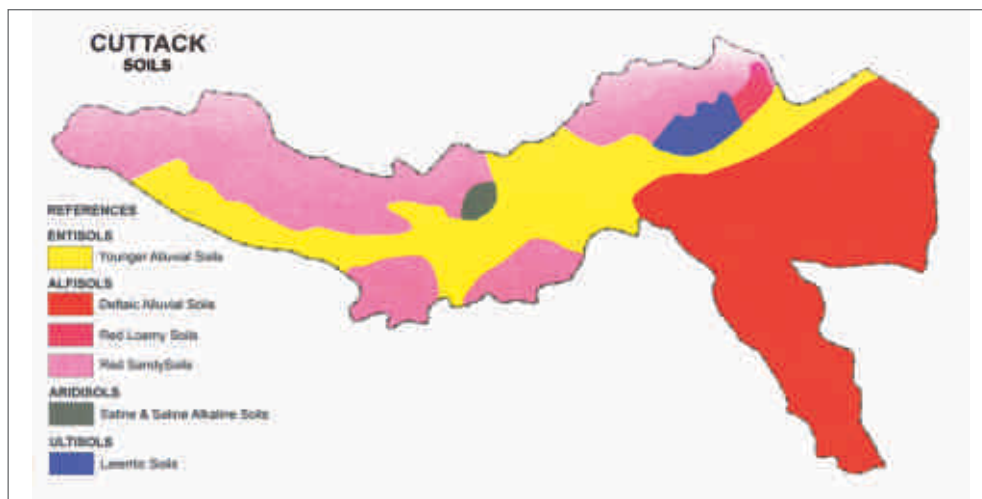
**District Profile**

Geographical Area	3, 67,097 ha (3932 sq. km.)
Net Cultivated Area	1,88,150 ha
High Land	46,884 (24.92%)
Medium Land	74,738 (39.72%)
Low Land	66,528 (35.36%)
Paddy Land	140,000 (74.41%)
High Land	9,217 (6.58%)
Medium Land	64,255 (45.91%)
Low Land	66,528 (47.52%)
Area Under Forest	79000 ha
Fallow Land	3295 ha
Waste Land	52729 ha
Irrigated Land ( <i>Kharif</i> )	1, 21,366 ha (64.50%)
Irrigated Land ( <i>Rabi</i> )	81,405 (43.27%)
Area under <i>Kharif</i> crops	1,04,410 ha
Area under <i>Rabi</i> crops	53,190 ha
Cropping Intensity	153%
Agro Climatic Zone	East and South Eastern Coastal Plain Zone
Annual Rainfall	1577 mm
Temperature (Maximum & Minimum)	39°C and 11.5°C
Soil Type of the District	Acidic, lateritic, alluvial, red and mixed red
Total Population	26,24,470
Male	13,52,760
Female	12,71,710
Urban Population	7,36,047
Rural Population	18, 88,423 (71.95%)
No. of Villages	1950 (1856 inhabited)
No. of G.P./Municipality/NACs	342 + 4
No. of CD Blocks	14
No. of Tahasils	15
No. of Sub-Divisions	3
Literacy Rate (%)	85.50
Male Literacy (%)	91.11
Female Literacy (%)	79.55
Sex Ratio (Per 1000)	940
Child Sex Ratio (0-6 Age)	914
Population Density (per km <sup>2</sup> )	667

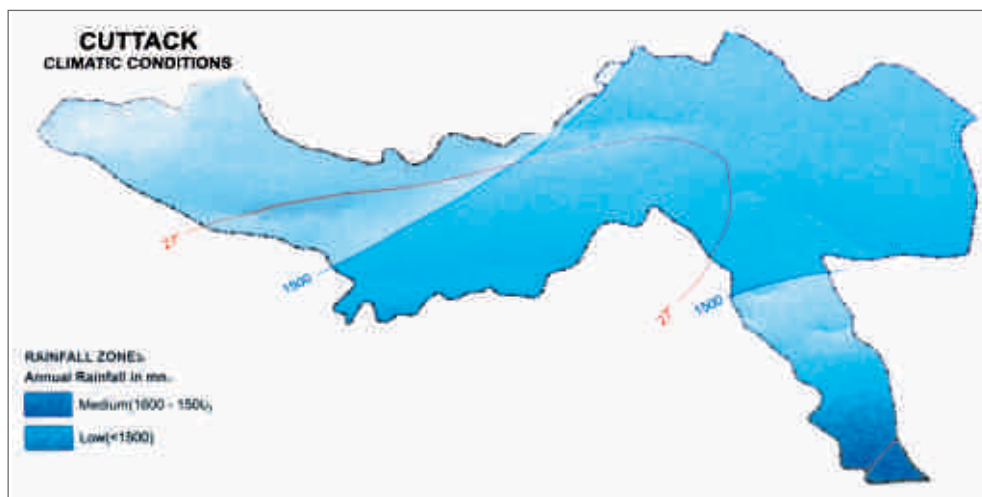
Source: Directorate of Economics and Statistics, Odisha



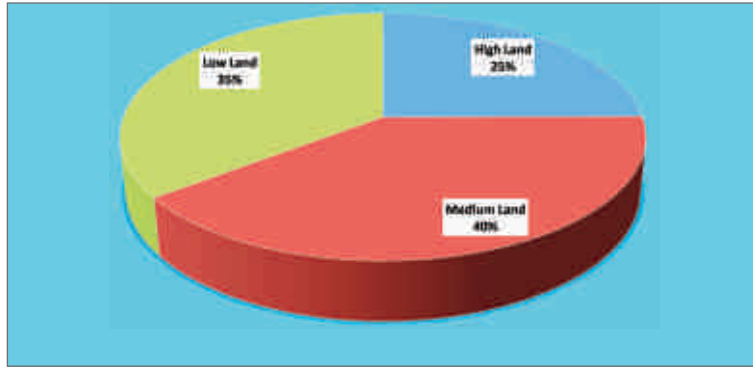
Physical map



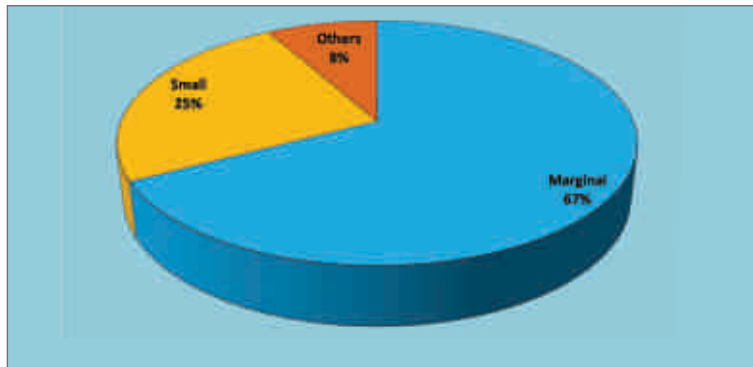
Soil types of Cuttack district



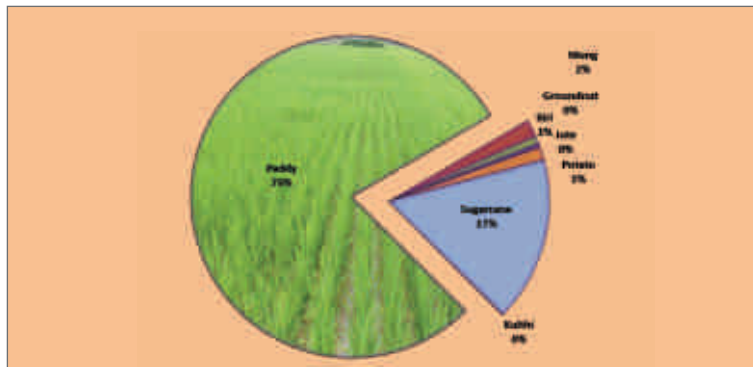
Climatic Conditions of Cuttack district



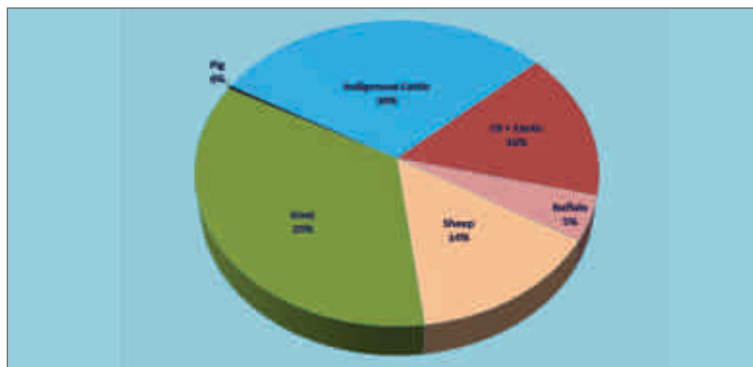
*Cultivated land types*



*Farmer types*



*Production of major crops*



*Livestock population of Cuttack district*

**Extension Personnel in the District**

Department	District Level	Block Level	Village Level	Total
Agriculture	15	22	70	107
Horticulture	12	16	34	62
Animal Husbandry	17	24	68	109
Fishery	07	14	28	49
<b>Total</b>	<b>51</b>	<b>76</b>	<b>200</b>	<b>327</b>

**District Agriculture Statistics**

Particulars of 2012	Cuttack	Odisha
Normal Rainfall (mm)	1424.3	1451.2
Actual Rainfall (mm)	1637.5	1382.5
Deviation in Rainfall (mm)	213.2	-68.7
No. of AAO Circles	29	
No. of VAW Circles	128	
No. of Agric. Input Sale Centres	29	
No. of Farm Families (2001 Census)	1,56,916	
Marginal	1,05,525	
Small	38,572	
Others	12,819	
No. of Cultivators	131,976	
No. of Agriculture Labourers	104,244	
No. of Commercial Bank Branches	178	
No of KGB Branches	44	
No. Of Cooperative Bank Branches	39	
No. of Fertilizer Wholesellers	40	
No. of Fertilizer Retailers	574	
No. of Water Harvesting Structures	198	
No. of Primary Cooperative Societies	209	
<b>Production of major crops 2012-13; Quintals</b>		
Paddy	5777607	143891295
Mung	128963	877807
Biri	57720	373836

Groundnut	20157	816534
Jute	6527	31121
Potato	96518	650153
Sugarcane	1211598	9523669
Kulthi	6879	174850
Net Sown Area (ha)	147000	4394000
Permanent Pastureland (ha)	12000	1063000
Fertilizer (2012-13) in '000 MT		
Nitrogen	12.86	315.04
Phosphorus	4.43	124.19
Potassium (K)	1.87	50.97
Total	19.15	490.20
Fertilizer Use (kg/ha)	63.71	58.74
Total Cropped Area	300.65	8344.85

Source: Directorate of Economics and Statistics, Odisha & DDA, Cuttack

### Agriculture Scenario in the District

#### Major Field crops

Year	Crop-1 Paddy			Crop-2 Blackgram			Crop-3 Greengram		
	A	P	Y	A	P	Y	A	P	Y
2002-03	154.42	178.33	1750	39.49	15.58	395	36.45	15.28	419
2003-04	141.91	160.88	1717	48.67	17.65	363	36.74	9.22	251
2004-05	147.65	278.45	1886	44.23	17.01	385	37.74	10.02	266
2005-06	152.22	305.27	2005	47.34	22.34	472	38.93	18.80	483
2006-07	137.78	208.24	2256	48.32	24.00	497	39.90	19.34	485
2007-08	151.71	254.43	2027	48.97	25.20	515	38.64	18.84	488
2008-09	133.07	189.22	1422	52.26	27.31	523	40.23	20.50	510
2009-10	141.16	294.54	2087	53.04	22.28	420	42.29	15.68	371
2010-11	141.95	295.04	2078	53.67	22.96	428	42.08	15.34	365
2011-12	142.05	296.38	2086	54.12	23.47	437	41.98	15.42	367
2012-13	143	300.1	2098	55.14	26.08	472	42.78	16.30	381
2013-14	146.5	308.7	2107	56.75	27.28	480	44.14	17.42	394

A = Area ('000 ha), P = Production ('000 tonnes), Y = Yield (kg/ha)

Source: Odisha Agriculture Statistics, Directorate of Agriculture and Food Production, Bhubaneswar, Odisha

### Horticultural and Commercial Crops-Vegetables

Year	Crop-1 Brinjal			Crop-2 Cauliflower			Crop-3 Tomato		
	A	P	Y	A	P	Y	A	P	Y
2002-03	12.5	375	30000	11.6	212.2	18300	7.1	140.5	19800
2003-04	12.7	412.7	32500	11.8	221.8	18800	7.3	157.6	21600
2004-05	12.8	427.5	33400	12.1	242	20000	7.3	159.1	21800
2005-06	12.8	432.6	33800	12.1	258.9	21400	8.2	180.4	22000
2006-07	13.4	460.9	34400	12.4	269.0	21700	7.6	168.7	22200
2007-08	13.4	473.02	35300	12.5	298.7	23900	7.7	174.02	22600
2008-09	13.8	488.5	35400	12.6	304.9	24200	7.8	177.06	22700
2009-10	13.9	497.6	35800	12.7	309.8	24400	7.9	180.1	22800
2010-11	14.2	519.7	36600	12.5	306.2	24500	8.1	186.3	23000
2011-12	14.2	531.08	37400	12.5	308.7	24700	8.2	191.8	23400
2012-13	14.6	560.6	38400	12.6	312.4	24800	8.2	191.8	23400
2013-14	14.9	587.0	39400	13.0	322.4	24800	8.0	193.6	24200

A = Area ('000 ha), P = Production ('000 tonnes), Y = Yield (kg/ha)

Source : Odisha Agriculture Statistics, Directorate of Agriculture and Food Production, Bhubaneswar, Odisha

### Horticultural and Commercial Crops-Vegetables

Year	Crop-1 Coconut			Crop-2 Mango			Crop-3 Cashewnut		
	A	P	Y	A	P	Y	A	P	Y
2002-03	4.18	213	5096	2.55	8.72	3.42	2.83	3000	1060
2003-04	4.46	201	4506	2.57	8.82	3.43	2.85	3010	1056
2004-05	4.84	230	4752	2.58	8.95	3.47	2.85	2830	992
2005-06	4.89	245	5010	2.60	9.05	3.48	2.85	2830	992
2006-07	4.91	250	5091	2.62	9.22	3.52	1.87	1900	1016
2007-08	5.00	264	5280	2.68	9.44	3.52	1.87	1800	962
2008-09	5.11	273	5342	2.72	9.62	3.54	1.87	1920	1026
2009-10	5.12	280	5468	2.73	9.66	3.54	1.83	1830	1000
2010-11	5.14	285	5544	2.75	9.75	3.55	1.83	1829	999
2011-12	5.14	285	5544	2.79	9.91	3.55	1.82	1830	1005
2012-13	5.29	286	5406	2.8	9.96	3.56	1.83	1830	1000
2013-14	5.32	292	5488	2.81	10.02	3.57	1.83	1828	998.90

A = Area ('000 ha), P = Production ('000 tonnes), Y = Yield (kg/ha)

Source : Odisha Agriculture Statistics, Directorate of Agriculture and Food Production, Bhubaneswar, Odisha

## Statistical Information on Animal Science (2012-13)

Particulars	Cuttack	Odisha
Hospitals & Dispensaries	26	540
Livestock Aid Centres	172	2939
Milk Production (000 MT)	149.79	1784.05
Egg Production (Millions)	52	2323
Indigenous Cattle	240098	10606715
CB + Exotic Cattle	125740	1703258
Buffalo	38510	1189731
Sheep	114967	1818205
Goat	281300	7127038
Pig	2404	611610
Total Livestock	803019	23056557
Poultry	1127593	20596006
Meat (except poultry) in MT	6275.73	76720.0
Fresh Water Fish	8205	261918.82
Brackish Water Fish	-	29913.42
Total Inland Fish	8205	291832.24
Marine Fish	-	118311.12
Total Fish	8205	410143.61

Source : Directorate of Economics and Statistics, Odisha

## MAJOR PROBLEMS OF THE DISTRICT

Before preparing a holistic plan for the district, the major problems, prospects and opportunities were listed and analyzed. The information for the purpose gathered by participatory rural appraisal (PRA), benchmark study, secondary data and referral publications of the district. The problems thus came out are listed separately in a subject wise manner:

### Crop Production

- Excess and imbalance use of chemical fertilizers.
- Inadequate application of organic matter/green manure.
- Poor water management leading to low productivity.
- Soil acidity reducing crop productivity.
- Low profit from agricultural crops due to rise in production cost.
- Considerable yield gap in crops like rice, black gram, green gram, groundnut and sugarcane.

### Socio-cultural Challenges

- Unorganized farming community.
- Lack of farm leadership.
- Occupational migration from agriculture to other sectors.
- No interest among young generation towards agriculture.

### Horticulture

- Significant yield gap in vegetables.
- Low profit in fruit/flower/vegetable due to unorganised market and lack of storage facility.
- Poor productivity in fruit crops like coconut and mango due to non scientific management and natural calamity.
- Lack of nutrient management skill and knowledge.
- Non availability of quality and assured seed and planting material.

### Livestock

- Low productivity of dairy animals due to poor management and knowledge gap among farmers about feeding, milking and disease management practices.
- Low profit in dairy products due to unorganised market.
- Low productivity of poultry birds.
- Low body weight gain in goats.
- Poor adoption of technology in dairying.
- Low productivity in fish due to local fish seeds in pisciculture.
- Limited composite pisciculture due to lack of awareness about scientific pisciculture.

### Women in Agriculture

- Social barrier restrictions on mobility.
- Poor participation in financial decision making.
- Drudgery in agricultural operations reducing efficiency and creating health hazards.
- Lack of knowledge regarding health and family management.
- Poor involvement in decision making process.
- Poor benefit sharing.

### Plant Protection

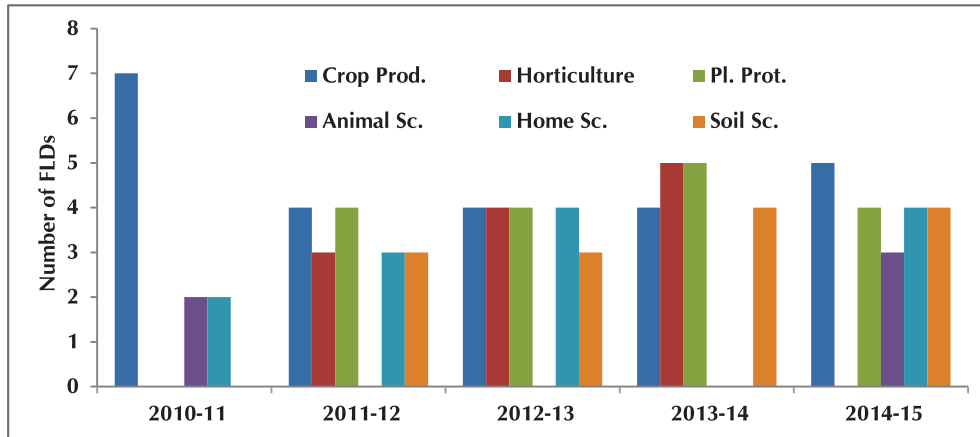
- No or very less knowledge to identify disease and insect.
- Lack of skill and knowledge regarding IPM practices.
- Unaware of non-pesticide methods of disease and insect control.
- No skill of using hazardous pesticides.
- Injudicious time, dose and type of chemical use.
- Low yield of rice, pulse and oilseeds due to lack of knowledge about scientific insect and disease management.

Source : SREP Report of Cuttack district, ATMA, Cuttack

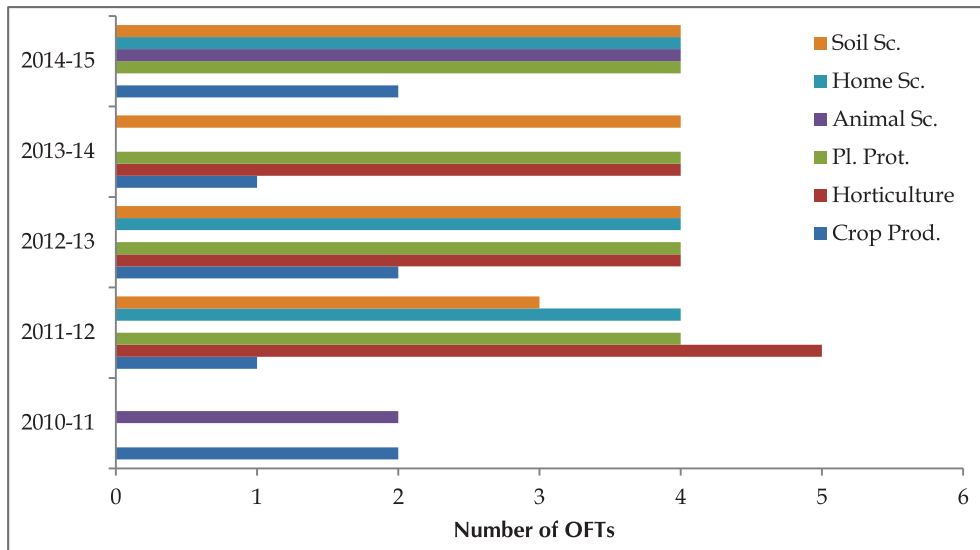


## KVK Activity : At A Glance

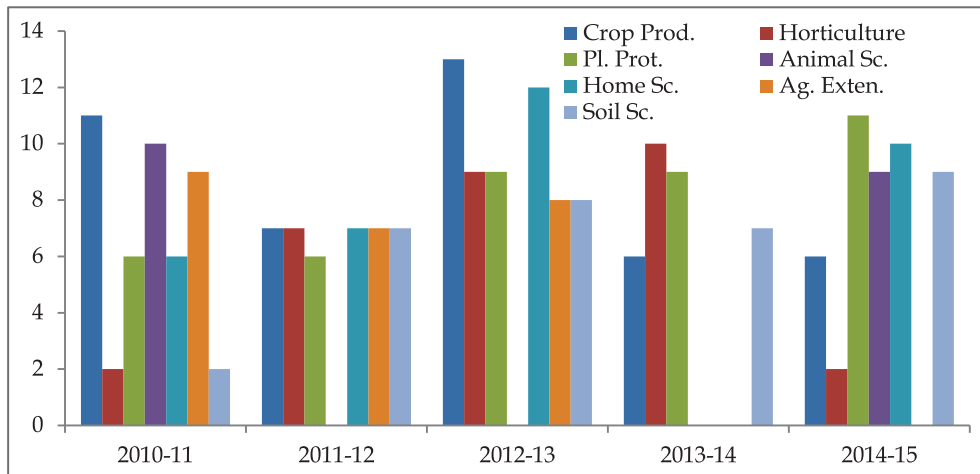
### Front-Line Demonstrations



### On Farm Trials



### Training Programmes in 2010-2015



Nature of Extension Activity	No. of Activities	Total Participants
Field days	12	785
Kisan Mela	09	5890
Kisan Ghosthies	10	1357
Exhibitions	21	214560
Film Shows	65	1630
Method Demonstrations	16	923
Workshops	3	268
Group Meetings	51	853
Lectures Delivered as Resource Persons	75	2657
Media Coverage	49	Mass
Soil Health Awareness Camps	6	533
Animal Health Camps	11	978
Farm Science Club Conveners Meets	2	73
Scientist visit to farmers' fields	225	2090
Farmers visit to KVK Campus	867	867
Diagnostic Visits	145	798
Exposure Visits	20	920
Celebration of Important Days	13	2532
TV Talks	14	Mass
Radio Talks	12	Mass
Popular Articles	9	Mass

### KVK Activities in Pictures



*A farmer-scientist interaction on importance of family farming on eve of World Food Day*



*Advisory service at KVK campus to solve farmers' problems*



*Animal health camp at KVK campus with CDVO, Cuttack*



*Assessing situation at flood affected area of Ganeswarpur, Tangi-Choudwar*



*Demonstration on elephant foot yam*



*Demonstration on fish feed preparation in collaboration with ICAR-CIFA, Bhubaneswar*



*Distribution of chicks to a lady farmer of ICAR-NRRI adopted village Guali*



*Demonstration of nitrogen management in rice using leaf colour chart at Uchhapada*



*A farmer showing his crop nearing harvest*



*Inauguration of Farmers' club at Haridapal*



*Installation of pheromone trap by farmers as pest control measure*



*Preparation and packing of biopesticides*

## Scientific Advisory Committee Meetings

Scientific Advisory Committee (SAC) plays an instrumental role in planning for obtaining the desired impact of KVK activities. The committee is constituted with Director, ICAR-NRRI as the Chairman, Dean, Extension Education, State coordinator KVKs, ICAR representatives (Central Horticulture Experimental Station & Central Avian Research Institute, regional centre), Head of different State Govt. line departments (Agriculture, Horticulture, Veterinary, Fisheries, Forestry, Irrigation, Soil Conservation, Social Welfare), Lead District Manager, Programme Executives of All India Radio, Cuttack and Doordarshan, four farmers and farmwomen representatives as SAC members. The Programme coordinator, KVK is the convener secretary of SAC who also invites Heads of the Division of NRRI, Cuttack and many progressive farmers of Cuttack District to attend the SAC meeting as special invitees and give their valuable suggestions for formulation of KVK action plan. From 2014-15, KVK Cuttack convened two meetings one before *khari* and other before *rabi* were done to facilitate betterment of KVK activities.

The PC, KVK and Sr. Scientist (Agronomy) presents the achievement of KVK Cuttack in the prescribed



*Brainstorming session in 12th SAC meeting*

period and also the annual achievements and action plan of agronomy. All subject matter specialists (SMSs) present their brief achievements and annual action plan for the current year. These achievements in relation to targets are discussed in the meeting and annual action plan is finalized. In course of presentation, the chairman and other members provide their valuable suggestions on action plan formulation and finalization of KVK activities.

### THE 16<sup>TH</sup> SAC MEETING

The 16<sup>th</sup> Scientific Advisory Committee meeting of KVK Cuttack was held on 15 November 2014 at 11.00 AM at its Santhapur campus under the Chairmanship of Dr T Mohapatra, Director, NRRI, Cuttack. The meeting was attended by the



*Hon'ble Director, NRRI giving constructive suggestions*

members, invited guests, PC and SMSs of KVK, Cuttack. The Members who participated were: Smt. Urbashi Behera, Addl. Director, Fisheries, Cuttack; Sri DP Nanda, Dy. Executive Engineer, Mahanadi South Division, Cuttack; Dr G Acharya, Sr. Scientist (Horticulture), Central Horticultural Experiment Station, Bhubaneswar; Sri Kulamani Barik, AAO, Tangi-Choudwar, Cuttack; Smt. Sriya Saswati, AHO, Tangi-Choudwar; Sri M Kar, Asst. Soil Conservation Officer; Sri Durga Majhi,



PC, KVK briefing the stakeholders about KVK activities

Programme Executive, AIR, Cuttack; Sri PK Behera, Asst. Forest Officer, Cuttack; Dr B Mallik, AVAS, Tangi-Choudwar; Sri SS Nayak and Sri S Bharati, Farmer Representative from Sankilo and Ganeshwarpur; Smt. KB Mohanty, Farmwoman Representative, Nuasahi. The invited guest on the occasion were Dr BN Sadangi, Head, Social Science Division and Nodal Officer, KVK; Dr ON Singh, Head, Crop Improvement Division; Dr AK Nayak, Head, Crop Production Division, ICAR-NRRI, Cuttack and Dr S Dash, SMS (Soil Science), KVK, Jajpur to provide valuable suggestions for developing KVK action plan. Dr SM Prasad, Sr. Scientist and OIC, KVK, Santhapur as the member-secretary.

Dr. SM Prasad, Programme Co-ordinator, KVK Cuttack welcomed the Chairman and the members. After the self introduction of all present, the Programme Coordinator presented the Action



Dr SK Mishra, CARI Regional centre, Bhubaneswar advocating his views in SAC meeting



Hon'ble Director, NRRI releasing an extension leaflet

Taken Report of last SAC meeting along with a brief presentation of report on achievements of KVK Cuttack. The activities namely trainings, OFTs, FLDs etc., taken up during *kharif* 2014 and proposed activities for *rabi* 2014-15 in the area of Agronomy, Women in Agriculture, Soil Science, Plant Protection and Animal Science were presented by the concerned SMSs. After each presentation discussion was held and suggestions for improvement were sought.

The Chairman made his critical observations after listening to each member present in the meeting. All the important suggestions that emerged during the proceeding have been recorded carefully and duly incorporated in the action plan. At the end of the meeting Smt. Sujata Sethy, SMS (Women in Agriculture) proposed vote of thanks.



Mr S. Nayak, a progressive farmer, expressing farmers concerns in SAC meeting

## KVK Website and Kisan Mobile Advisory Service



KVK Website

In the modern era of communication revolution website plays a major role in dissemination of information. The website of KVK Cuttack can be reached at [kvkcuttackzpdvii.in](http://kvkcuttackzpdvii.in). Mr DR Sarangi took the initiative and designed it with the active involvement of PC and SMSs. It provides information regarding district profile, statistical information, success stories of progressive and successful farmers, different technologies available to the farmers, activities of KVK Cuttack and events celebrated. Its success can be measured from the changes in made to the life of Mr Chandrasekhar Ray, who posted as security personnel in Kuwait looked for opportunities at home and saw the KVK website and contact information. Now he is a successful entrepreneur of mushroom with net profit of 70,000 rupees per month running from home at Agrahat village in Tangi Choudwar block. Mrs Sujata Sethy (SMS Women in Agriculture) is presently in charge of kisan mobile advisory (KMA) and website. As smartphone is getting popularity, website service is becoming very effective in bringing the knowledge revolution.

Mobile plays a prominent role in communication in present days. KMAS (Kisan Mobile Advisory Service) is an IT enabled service aiding instant messaging from KVK to individual farmers for extending Agricultural information through short message service (SMS) alerts. The service comprises sending SMS alerts to farmers (more than 3000 farmers of Cuttack district), dealers, and extension personnel. SMSs are issued on various agricultural developments like

weather forecast, disease forecast, market information, sowing, and attack of any pest or disease to crops or livestock etc. It is also used to send information on important trainings and other programmes to the members of the Farmers Clubs and SHG networks. KMA service by KVK Cuttack was started in April 2011. KMA is an important milestone in reaching out to thousands of farmers at a stroke of a mouse click and enables the farmer to have information access and derive the fruits of technological prowess and face the challenge of an upcoming free market.



A farmer reading kisan mobile advisory message

## Participatory Rural Appraisal

KVK works in the district by intensifying its activity in some adopted village clusters besides covering the entire district. Before adoption of any village of a particular agro-ecological situation, a detailed survey of the village is conducted with active participation from the villagers. For determining the strengths, weaknesses, opportunities and threat of the micro-ecology a detailed Participatory rural appraisal (PRA) is done in each village and all the information compiled were analyzed. The resource map, transact, seasonality, resource flow, functional linkage, crop calendar, economic and employment status are recorded primarily. The secondary information like demographic profile, sex ratio, literacy and other parameters are collected from concerned state line departments. The problems and challenges faced by farmers related to agriculture and allied sectors are noted and ranked according to their importance. The information are then compiled and analyzed before preparing an action plan. The action plan is then reviewed in forums like SAC meeting and review meetings before implementation. A glimpse of PRAs in different villages is given in pictures.



*A focussed group discussion with farmwomen*



*Prioritization of problems by group discussion*



*A village resource map drawing is in progress*



*A village resource map*



## Dignostic Visits

Diagnostic visit to farmer's field plays an important role in KVK activity for knowledge dissemination as along with participatory rural appraisal and focus group discussion, it helps in identifying the major



*Nodal officer and KVK team inspecting the diseased plant at Ganeswarpur (Tangi-Choudwar)*

problems of the district and the causes underlying these problems. Therefore, diagnostic visit helps to identify the specific problems or causes to problems which are prevalent in that particular area or farming system. We cover all 14 blocks of Cuttack district located at different farming systems and varying in soil type and altitude. For example the agronomical and pest problems of irrigated lands differ from rainfed ecosystems. In Animal Science, the Tangi-Choudwar area is a poultry and goatery specific region, whereas Niali, Mahanga



*Discussion about problems of livestock, Mangarajpur (Badamba)*

and Kantapada region focuses on dairying. So the disease and management problems differ for animals. Social habits and taboos also differ regionwise. Our diagnostic visits thus help us in preparation of action plan to solve the problems and improve productivity. Photographs of some of our visits are indicated in pictures here.



*Problem identification in beetelvine, Sahaniazpur (Niali)*



*Identification of insect pests in farmers' field, Sankilo (Nischintakoili)*



*Visit to bean fields Ucchapada (Tangi Choudwar)*



*Discussion about pest problems in farmer's field in Arada (Cuttack Sadar)*



*Dignostic visit to moong fields in Barang*



*Dignostic visit to horticulture nursery in Badamba*



*Dr BN Sadangi with KVK team interacting with farmers in Salepur*



*Visiting nutritional garden in Agrahat (Tangi Choudwar)*



*Interacting with farmers in brinjal fields of Ganeswarpur*

## On Farm Trials

On farm trials (OFTs) are back bone of KVK. Trials on different technologies suitable for farmers' field/field situations are selected from available technologies (traditional or contemporary) and tested in farmer's field to see their reproducibility and performance under farming situations. Many technologies successful under research experiments in controlled conditions may not be successful in field conditions as farmers' field situations vary according to farming system, altitude, rainfall and temperature distribution etc. These technologies either need simplification or

modification for making it suitable to the farm situation and also for better adoption by the farmers. The successful technologies assessed by OFTs are then propagated among the farmers as frontline demonstrations (FLDs) and/or communicated to different line departments for large scale demonstration.

KVK Cuttack has conducted various OFTs in farmers' fields in different blocks of the district according to farming situations and some of the successful OFTs in different fields are mentioned discipline-wise.

### OFTs in Agronomy

Rice	Assessment of Bensulfuron methyl + Pretilachlor (Londex power) in transplanted rice
Rice	Assessment of hybrid rice Ajay in SRI
Rice	Assessment of hybrid rice Rajalaxmi in SRI
Rice	Assessment of paddy variety Swarna <i>sub1</i> in flood prone area
Rice	Assessment of rice var. CR Dhan 303
Rice	Assessment of rice var. CR Dhan 304
Rice	Assessment of Swarna <i>sub1</i> in flood prone area
Sesame	Assessment of sesame var. Nirmala

### OFTs in Horticulture

Banana	Assessment of bunch feeding in banana to enhance its finger size
Brinjal	Assessment of integrated nutrient management in brinjal
Broccoli	Assessment of broccoli cultivation for higher return
Cauliflower	Assessment of boron application in cauliflower to enhance yield and quality
Cowpea	Assessment of Mo and sulphur on yield of cowpea cultivation
Lab lab bean	Assessment of lab lab bean var. CO -14 for higher yield in short duration time
Okra	Assessment of okra var. Arka Anamika towards YVMV disease resistance
Onion	Assessment of onion variety agri-found light red for higher production
Plug tray technology	Assessment of plug tray technology for vegetable nursery raising
Ridge gourd	Assessment of ridge gourd var. Swarna Upahar/Arka Sumeet for higher production
Tomato	Assessment of tomato var. Swarna Lalima towards wilt resistance cum higher yield

### OFTs in Plant Protection

Betelvine	Assessment of <i>Tricoderma</i> sp. against vine and root rot diseases in betelvine
Brinjal	Assessment of integrated pest management (IPM) module in brinjal
Brinjal	Assessment of plantomycin and carbendazim mixture against wilt in brinjal
Brinjal	Assessment of integrated management module against little leaf of brinjal
Cabbage	Assessment of integrated disease management (IDM) module in cabbage
Cucurbits	Assessment of ridomil MZ - 72 against downy mildew in cucumber
Cucurbits	Assessment of acephate and poison bait against fruit fly in cucurbits
Groundnut	Assessment of mancozeb against tikka disease in groundnut
Okra	Assessment of acetameprid against yellow vein mosaic in okra
Paddy	Assessment of auto confusion technique against yellow stem borer in paddy
Potato	Assessment of metalyxil + carbendazim against late blight of potato
Rice	Assessment of chlorthalonil against false smut in rice
Rice	Assessment of plantomycin, carbendazim and copper oxychloride mixture against rice disease complex
Rice	Assessment of IPM module against leaf folder in rice
Rice	Assessment of IDM module against sheath blight in rice var. Swarna
Rice	Assessment of IPM module against yellow stem borer in rice

### OFTs in Women in Agriculture

Groundnut decorticator	Assessment of groundnut decorticator for drudgery reduction in farmwomen
Marigold	Assessment of marigold cultivation by farmwomen for income generation
Nutritional garden	Assessment of improved agricultural practices in nutritional garden
Paddy straw	Assessment of paddy straw of ICAR-NRRI released rice varieties for mushroom cultivation
Rice	Assessment of value added products of ICAR-NRRI released rice varieties
Rice	Assessment of weeding efficiency by mandua weeder in <i>kharif</i> paddy
Vegetable	Assessment of biopesticide in vegetables

**OFTs in Soil Science**

Cabbage	Assessment of three foliar sprays of Zn-EDTA (100 ppm) at 10 days interval on yield and quality of cabbage
Cauliflower	Assessment of incubated bio-fertilizer in cauliflower
Green gram	Assessment of seed treatment with molybdenum @ 3 g/kg seed) and Rhizobium @ 250 g/acre seed on yield of green gram
Groundnut	Assessment of two foliar sprays (30 and 40 DAS) of boron @ 0.3 per cent (3 g/L water) on yield of groundnut
Groundnut	Assessment of Nabaratna as source of S in groundnut.
Rice	Assessment of real time nitrogen management by ICAR-NRRI developed leaf colour chart (LCC)
Rice	Assessment of Zn (@5 kg/ha) and borax (0.5%) foliar spray on yield of rice
Rice	Assessment of lime @ 0.1 LR to dhanicha followed by rice for improving soil productivity
Rice	Assessment of application of lime @ 0.25 LR to rice for improving soil productivity
Rice	Assessment of Azosprillum @ 5 kg/ha along with 75% N on yield of hybrid paddy
Rice	Assessment of brown manuring in upland rice yield
Rice	Assessment of Zn nutrition on yield of rice
Rice	Assessment of N splitting (4 splits) on yield of hybrid rice Ajay
Rice	Assessment of foliar application of boron on rice yield

**OFTs in Animal Science**

Dairy	Performance evaluation of mineral supplements on milk yield of cows
Dairy	Assessment on use of herbal products for control of mastitis
Fisheries	Assessment of income generation through composite pisciculture
Poultry	Assessment of the performance of improved duck breeds in backyard system
Poultry	Assessment of guinea fowl var. Pearl in semi-intensive system
Poultry	OFT on duck (White pekin)

### OFT-1 AGRONOMY

#### Assessment of HYV rice var. *Swarna sub1* in flood prone area

##### Background

Paddy is the main *kharif* crop of the Cuttack district. Even though with fertile land and modern agricultural practices the farmers are unable to harvest a good crop due to the abiotic stress like flood in many blocks of the district. The local Champeisali landrace has water logging tolerance, but a poor yielder.

##### Technical intervention

**Technology:** *Swarna sub1* variety released from NRRI, Cuttack for flood prone situation has submergence tolerance up to 10-12 days and yield potential upto 48-50 q/ha.

**Methodology:** The OFT was conducted in the village Bilimantrisahi of Banki block. The production technology was conveyed through



*Swarna sub1* plots with local landrace variety on right



Dr BN Sadangi, Nodal officer KVK visiting the OFT plots training. A community nursery was organised and farmers distributed seedlings among themselves during transplanting. The landrace Champeisali was grown along with the new variety. The transplanting was done in August and harvested in November. The crop faced submergence for 11 days during its growth phase. Parameters like increase in yield (%), B: C ratio were also recorded.

##### Feedback from farmers

The yield of *Swarna sub1* was 53% higher than the local landrace Champeisali. They were happy and keeping the produce for next year as seed. The cooking quality is also good.

##### Recommendations

The rice variety *Swarna sub1* gives higher yield than the local submergence tolerant landrace Champeisali. This success story was discussed with line department for wider dissemination and spreaded to many similar areas in the district.

### Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	10	10
Area (ha)	0.2	0.2
Yield (q/ha)	31.8	48.6
Increase in yield (%)	-	52.83
Net return (Rs.)	11800	28600
B: C ratio	0.59	1.43

## OFT-2 AGRONOMY

### Assessment of hybrid rice var. Ajay in SRI method of cultivation in *kharif* season

#### Background

Farmers of Badamba block grow rice crop as SRI method with Swarna and other local land races. The yield is lower due to many diseases and poor yielding capability.

#### Technical intervention

*Technology:* The high yielding hybrid rice variety Ajay gives very high yields up to 65-70 q/ha, matures 10 days earlier than Swarna and is resistant to several diseases.

*Methodology:* The OFT was conducted in Mangarajpur village of Badamba block. They were supplied with seed and fungicide Vitavax power, and encouraged to grow in SRI method along with Swarna in side plots. The farmers grew their nursery collectively and distributed seedlings during transplanting. They transplanted 1 acre (0.4 ha) of land with the 15 days old seedlings raised with two kg seeds. The crop was very good, data was recorded after harvest and compared with Swarna as local control in respect of increase in yield, net return, B: C ratio along with farmers' feedback.

#### Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	4	4
Area (ha)	0.4	0.4
Soil type	Loam	Loam
Farming situation	Rainfed lowland	Rainfed lowland
Yield (q/ha)	48.6	78.2
Increase in yield (%)	-	60.9
Cost of cultivation (Rs./ha)	30000	30000
Net return (Rs./ha)	33180	77660
B : C Ratio	1.11	2.39



OFT Plots showing crop nearing harvest

#### Feedback from the farmers

Yield of hybrid rice variety Ajay is very high as compared to Swarna and is not affected by any disease while Swarna was affected by sheath blight. The grain is better in appearance, but the cooking quality is inferior to Swarna. The variety can be grown for selling purposes, but availability of seed will be a major hurdle.

#### Recommendations

The yield of hybrid rice variety Ajay is much higher in SRI method even its average potential yield. It is also resistant to many diseases prevalent in rice growing areas. The matter was discussed with State Government officials as well as scientists of ICAR-NRRI, Cuttack and recommended for adoption.

### OFT-3 AGRONOMY

#### Assessment of herbicide 'Londex power' for control of weeds in transplanted rice

##### Background

The *kharif* paddy crop yields are affected due to heavy infestation of weeds. Hand weeding is commonly used for weed management, which in rainy season is very difficult and costly. Some times, weeding is done after critical period, thereby not so effective and affecting the yield.

##### Technical intervention

*Technology:* The herbicide Londex power (Mixture of Bensulfuron methyl + pretilachlor) is granular, easy to apply, controls all type of weeds. It is applied at 8-10 DAT @ 10 kg/ha in transplated rice.

*Methodology:* The OFT was conducted during Kharif in three villages viz. Rajahansa (Cuttack Sadar), Biswanathpur (Salepur) and Sankilo (Nischintakoili). To each farmer four kg Londex power was provided along with technical knowhow to apply in one acre (0.4 ha) land. The farmers had grown popular NRRI released variety Pooja both as farmers practice and for treatment plots. The herbicide was applied eight days after transplanting. The crops were good during their growth periods. The yield data were recorded after

final harvest and compared. During study other parameters like increase in yield, net return, B : C ratio and farmers' feedback were also recorded.

##### Feedback from the farmers

The londex power herbicide is granular and easy to apply in transplanted rice field. The yield increment is very meagre, i.e. only 2 q/ha (4.7%), but overall saving is Rs. 7000 per hectare due to savings in the labour cost.

##### Recommendations

The farmers accepted the technology very easily due to ease in application and high weed management efficacy for most varieties of weeds.



OFT plots after application of herbicide

### Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	10	10
Area (ha)	0.4	0.4
Soil type	Loam	Loam
Farming situation	Rainfed lowland	Rainfed lowland
Weed management technique	Hand weeding	Use of londex power
Yield (q/ha)	50.5	52.5
Increase in yield (%)	-	4.7%
Cost of cultivation (Rs./ha)	30000	26000
Net return (Rs./ha)	35650	38250
B : C Ratio	1.19	1.47



## OFT-1 HORTICULTURE

### Broccoli cultivation: an approach towards commercial horticulture

#### Background

Cauliflower occupies an area of 8000 ha mostly in upland and medium land conditions. Cauliflower seedling transplanting occurs mostly from September to November depending on its varietal type. Farmers are well versed with the production technologies of cole crops. However, the selling cost of cauliflower fluctuates as market glut arises due to curd production at the same time in every area. This results in very serious economic loss to farmers as distress sale of cauliflower occurs resulting into low profit.

#### Technological intervention

The technology chosen was introduction of broccoli cultivation for higher remuneration (OUAT, 2006). Broccoli var. Swati, Suhani; spacing: 60 cm × 60 cm; chemical fertilizer-100:60:80; Biofertilizers, Azospirillum-10 kg/ha,



*Broccoli plants after few days of planting*



*Successful farmers with their produce*

PSM-10 kg/ha, micronutrient spray-B-50 ppm; FYM-25 t/ha, Avg. yield-160 q/ha.

#### Treatments:

Farmers practice : Cultivation of Cauliflower var. Barkha

Recommended practice : Cultivation of Broccoli var. Swati

#### Recommendations

Although cauliflower cultivation gives around 75% higher yield than broccoli, but the latter has more market price than cauliflower due to its high quality attributes. Broccoli cultivation can give remuneration upto 3 lakhs/ha as total return with B: C ratio-5.3. So, farmers can adopt this as a substitution crop in case of cauliflower to get maximum economic return. Presently, broccoli is cultivated in five ha area by more than 60 farmers from four villages in Nischintakoili block in Cuttack district.

#### Results

Particulars	Farmers' Practice (Cauliflower)	Improved Practice (Broccoli)	Change (%)
Head weight (g)	800-1000	450	
Days for maturation	120	90-105	
Yield (q/ha)	350	200	75
Total return (Rs)	175000 (@500/q)	300000 (@1500/q)	
Cost of cultivation (Rs)	62000	57000	
B:C (Total return/Total cost)	2.8	5.3	

**OFT-2 HORTICULTURE**

**Boron application in cauliflower**

**Background**

Cauliflower is a lead crop of Cuttack district in winter season covering around 7000 ha cultivated area. The farmers generally use chemical fertilizers to supply major nutrients and no micronutrient supply in fertilizer scheduling. This leads to visible B deficiency symptoms like yellowing of curds and small size curds making cauliflower cultivation less profitable. Boron is a critical micronutrient responsible for curd growth and development in cauliflower. Deficiency of boron leads to discoloration which begins above the curd and gradually spreads to the surrounding area.



*Critical input provided to the crop*



*Effect of boron on cauliflower production*

**Technological intervention**

Boron application in cauliflower for quality curd (OUAT, 2006).

Farmers practice (T<sub>1</sub>): NPK (110:60:80) kg/ha, FYM-20 t/ha, no micronutrient

Recommended practice (T<sub>2</sub>) followed: NPK (110:60:80) kg/ha, FYM- 20 t/ha, borax 10 kg/ha as basal and spraying of borax 3 g/L water at 45 days of sowing.

**Recommendations**

Boron micronutrient application improves curd size and increases yield by 28% as compared to farmers practice. So, boron application should be recommended in cauliflower cultivation for higher production and getting quality curds. It has been spreaded to 40 ha area involving 130 farmers from eight villages of three blocks of Cuttack district.

**Results**

Particulars	Farmers' Practice (T1)	Recommended Practice (T2)	Change (%)
Head weight (g)	700	950	
Yield (q/ha)	258	320	28%
Total return in rupees (@500/q)	1,25,000	1,60,000	
Cost of cultivation (Rs)	61,000	62,000	
B:C (Return/ Cost)	2.1	2.6	

## OFT-3 HORTICULTURE

### Integrated nutrient management in brinjal

#### Background

Brinjal, a major vegetable crop of Cuttack district, occupies about 13000 ha area in both *kharif* and summer season. Farmers mostly apply imbalanced dose of fertilizers (20 kg DAP, 2 kg MOP, 5 kg urea per 160 m<sup>2</sup> (guntha)) without any micronutrients, resulting in poor flowering and fruiting, as flowers drop off periodically. Duration of fruiting was also for a short duration. The indiscriminate use of chemical fertilizers like nitrogenous and phosphatic fertilizers with no use of micronutrients and bio-fertilizers in brinjal fields results in non-optimal absorption and utilization of most of the nutrients required by plants.

#### Technological intervention

Integrated nutrient management (INM) in Brinjal (Indian Institute for Vegetable Research, Varanasi, 2008).



OFT plots showing the crop



Bumper crop after technical intervention

Treatments: Farmers practice (T<sub>1</sub>): use of chemical fertilizers: 160:200:140, FYM-20 t/ha

Recommended practice (T<sub>2</sub>): Chemical fertilizers: 100:60:80; Biofertilizers: Azospirillum-10 kg/ha, PSM-10 kg/ha; micronutrient spray: B, Zn-50 ppm each at 30, 50, 75 DAP; FYM: 25 t/ha.

#### Recommendations

Integrated nutrient management gives 31% higher yield than farmers' practice along with a 51% higher fruiting rate. The success of the technology is advocated to line department people for larger dissemination. This technology has currently spreaded to 30 ha area in three blocks (120 farmers).

### Results

Particulars	Farmers' Practice (T <sub>1</sub> )	Recommended Practice (T <sub>2</sub> )	Change (%)
fruiting (%)	54	82	51
Fruiting duration (days)	90	120	
Yield (q/ha)	350	460	31
Total return (@Rs. 800/q)	280000	368000	
Cost of cultivation (Rs.)	107000	125000	
B: C (benefit/cost)	2.6	2.9	

**OFT-4 HORTICULTURE**

**Sulphur and molybdenum management in cowpea**

**Background**

Cowpea, a protein supplement in human diet, is well known for its higher profitability in rainy season and occupies near about 4000 ha area for year round production in Cuttack district. Farmers face the problem like hollow pod, deform growth with less flush and flowers dropping down. Cowpea. Farmers usually apply all major nutrients available in the market and plant protection measures as and when required. As a leguminaceous crop, cowpea, requires micronutrient molybdenum (Mo) for its better nodulation activity, which in turn increases the rhizobium activity in soil. This crop is also well responsive towards sulphur (S) in the soil, which in



*Participatory field visit of specialist*

turn has positive correlation with protein content and overall quality of pods. But, farmers only use NPK without S and Mo nutrient which is the main cause for deterioration in yield and quality.

**Technological intervention**

The technology identified was application of sulphur and molybdenum in cowpea for higher yield (Indian Institute for Vegetable Research, 2010). Application of sulphur @25 kg/ha at basal/ first earthing up foliar spray of molybdenum-50 ppm 15 days after sowing.

**Treatments:**

Farmers practice : farmers use only NPK (40:100:50) kg/ha

Recommended practice : Use sulphur as sulphur bentonite-27 kg/ha, Mo as Agromin -3 g/L water along with farmer’s usual practice.

**Recommendations**

Application of sulphur and molybdenum in cowpea increased flowering flush and pod number with pods filled with more seeds. Total yield increased by 37% over farmers practice. Thus, recommendation can be made for use of sulphur and molybdenum nutrients in cowpea to get better yield along with quality pods. Seeing the benefits of this intervention about 60 farmers from the district are using this technology in five ha area.

**Results**

Particulars	Farmers’ Practice (Cauliflower)	Recommended Practice (Broccoli)	Change (%)
No of pods/plant	14	18	29
Pods weight (g)/ plant	12	16	33
No of branches/plant	6	8	
Yield (q/ha)	80	110	37
Total return (Rs.)	80000	120000	
Cost of cultivation (Rs.)	50000	52000	

## OFT-1 PLANT PROTECTION

### Assessment of Plantomycin, Carbendazim and Copper Oxycloride mixture against rice disease complex

#### Background

Blast, Sheath rot and Bacterial Leaf Blight (BLB) are common phenomena in rice grown in Cuttack district with varying intensity. Blast disease is more common in Swarna variety of rice, whereas infection of Sheath rot and BLB are observed in shallow low land rice variety. Infestation of pathogen leads to damage rice crop. Yield obtained from the infested plots/field are not suitable for seed and also gives a poor yield. Farmers grow paddy without any seed treatment and use chemical, fungicide indiscriminately after infestation.



Diagnostic visit

#### Technical intervention

Spraying of plantomycin, cabendazim and copper oxycloride mixture in proportion of 1:1:2.5 g/L of water for control of disease complex (Blast, Sheath rot and Bacterial Leaf Blight) in rice has been assessed in village Sankilo of Nischintakoili block of Cuttack, as recommended by Odisha University of Agriculture and Technology (OUAT), Bhubaneswar.

#### Results

Lower disease infections were observed by spraying of mixture of Plantomycin, Carbendazim and Copper oxycloride in proportion of 0.1:1:2.5



OFT Plots

g/L of water. Significantly higher yield (46.87 q/ha) were also recorded in recommended practices against the farmers' practices (40.62 q/ha).

## OFT-2 PLANT PROTECTION

### Assessment of mancozeb against *Tikka* diseases in groundnut

#### Background

Groundnut, an important *rabi* oilseed crop, is cultivated in about 8.84 thousand ha area in Cuttack district and with average yield 1750 kg/ha. Infestation of Tikka disease caused by the fungus *Cercospora personata* is one of the major limiting factors for high yield. Poor crop management practices and no seed treatment is the important cause for higher infestation of disease. Presence of alternative host plant, *Croton sparciflorus*, in groundnut field is also responsible for this problem. Farmers usually applied fungicides at



Critical input

advance stage of disease development.

### Technical intervention

In present OFT, the technique as suggested by OUAT, Bhubaneswar viz. two to three spraying of mancozeb @ 2 g/L of water at 10-12 days intervals starting from four to five weeks after planting was tested with five replications in village Guali-Tarito of Salepur block of Cuttack.



OFT Plots

### Results

Tikka disease was effectively controlled by the application of mancozeb with recommended schedule and dose. Higher yield of 23.43 q/ha with lower diseased plants (2.3 per m<sup>2</sup>) were recorded in OFT plots while it was 20 q/ha and 10.8 diseased plants per m<sup>2</sup> in control plots.

### OFT-3 PLANT PROTECTION

#### Assessment of acephate and poison bait against fruit fly in cucurbits

#### Background

Cucumber is one of the important vegetable crops in kharif. Fruit fly is one of the major insect pests that cause serious damage in the crop resulting in disrupted fruits and hence farmers get low price and yield. Farmers applied injudicious spray of insecticides after advanced stage of attack of fly.

#### Technical intervention

For management of this pest problem, assessed the OUAT technology viz. spraying with acephate 75 SP at 0.15% twice at veining and flowering stage and alternatively, providing baiting with ripe



Pheromone trap with fruit fly

banana chips fortified with carbofuran granules (5 to 10 granules/chips).

### Results

Damage of cucurbits fruit fly was effectively controlled by using this technology. Higher yield of 187.5 q/ha and B: C ratio of 2.80 was recorded in the crops with assessed technology against the farmer practices with yield of 125 q/ha and B: C ratio of 1.87.



Intervention plots

### OFT-4 PLANT PROTECTION

#### Assessment of streptocycline and carbendazim mixture against wilt in brinjal

#### Background

Brinjal is an important vegetable crop grown by the farmer of the Cuttack district. Wilts caused by both *Fusarium* and bacteria in brinjal cause serious damage to the crop. It is a soil born disease.

Continuous cropping of solanaceous crop in same field encourages the multiplication of the pathogen. This problem is encountered by most of the farmers. No prophylactic measures are adopted by the farmers for management of this disease, resulting in disease affection and low yield.

### Technological intervention

The technology as suggested by OUAT, Bhubaneswar, viz. Soil drenching of plantomycin and carbendazim has been assessed in present OFT with five replications. Lower plant mortality due to *Fusarium* and bacterial wilt were observed in assessed technology.

### Results

Higher yield (218 q/ha) and B: C ratio 1.91 has been recorded in assessed technology against the farmers' practice, 188 q/ha and 1.64 respectively.



*Spraying of fungicide*



*Dr BN Sadangi observing the demonstration plot*

## OFT-1 WOMEN IN AGRICULTURE

### Assessment of improved agricultural practices in nutritional garden

#### Background

Farmers of rural areas have been using backyard spaces for commercial monoculture and disposing the produce in the local market. However, while purchasing vegetables they have to purchase the cheap vegetables irrespective of their nutritive value. This deprives them of a combination of nutritious vegetables for their menu affecting their food and nutritional security. In India, the per capita availability of vegetable and fruit is around 135 g and 40 g against the minimum requirement of about 300 g and 100 g, respectively. To make the recommendation realistic, nutrition garden is the best option. However, nutrition garden is still not a very popular venture, due to lack of proper layout, inter-cultural operations and management practices followed. Thus, the OFT was designed to make nutritional garden a successful and viable venture.

#### Technical intervention

*Technology:* Well planned backyard nutrition garden for round the year cultivation of vegetables and fruits (Specific layout, improved varieties, inter-cultural operations like line sowing, weeding, manuring, disease and pest management etc.).

*Methodology:* The OFT was conducted with 15



*OFT Plots*



OFT Plots



OFT Plots

farmers/farmwomen for three years. Planned nutrition garden (0.1 ha per farmer) with different vegetables like okra, bitter guard, ridge guard, cowpea, cluster bean, cucumber, pumpkin, bottle guard, drumstick, brinjal, chilli, tomato, coriander, palak, amaranth and fruit crops like papaya, banana, guava etc were cultivated in the backyard. They were provided with initial critical inputs like improved seed and seedlings. During study other parameters like percentage increase in yield, B: C ratio and farmers’ feedback were also recorded.

**Feedback from farmers/farmwomen**

Planned nutritional garden provided diverse

vegetable and fruits to the family and engaged the farmwomen round the year. They are happy to enhance the nutritional affordability for the family and earn an additional income from sale of surplus produce.

**Recommendations**

Farmers and farmwomen are getting good return from the nutrition garden as food and income source. So, after consecutive three years trial, the technology has taken for FLD for larger coverage of farmers and farmwomen for adoption.

**Results**

Particulars	Farmers’ Practice	Improved Practice
No. of trial	15	15
Area (ha)	0.1	0.1
Soil type	Red lateritic	Red lateritic
Farming situation	Homestead upland	Homestead upland
Yield (q/ha)	153	187
Increase in yield (%)	-	22.22
Net return (Rs.)	83,000	1,22,000
B: C ratio	1.18	1.88



Technology	Name of the crop	Crop yield (q/ha)
	Amaranthus	160.5
Farmers' practice	Bottle gourd	174
	Brinjal	109.5
	Pumpkin (Guamala local)	168
	<b>Total</b>	<b>153</b>
	Amaranthus (Lal koshol)	168.5
	Bottle gourd ( <i>Lagenaria siceraria</i> )	236
	Brinjal (Utkal tarini)	240
Improved practice	Pumpkin (Baidyabati)	196
	Okra (var. Arka Anamika)	103.5
	Tomato (Bt 10)	178
	<b>Total</b>	<b>187</b>

## OFT-2 WOMEN IN AGRICULTURE

### Marigold cultivation by farmwomen for income generation

#### Background

Due to very small land holdings and very low productivity of the land, most tribal households are maintaining a diversified pattern of occupation. No single activity provides sufficient resources to entirely ensure their livelihood. The farmwomen work as agriculture labours and become idle in the off season.

#### Technical intervention

*Technology:* Marigold cultivation (var. Bengal yellow). Other management practices like fertilizer application, disease and pest control, harvesting and post harvest management were also trained to them.

*Methodology:* The OFT replicated with 15 farmers/farmwomen for three years. They were trained about the cultivation practices of marigold and provided with good quality marigold seedling. Different parameters like cost of cultivation, yield and B: C ratio were recorded.



*Distribution of seedlings*

#### Feedback from farmers/farmwomen

After rice cultivation the farmwomen engaged themselves in marigold cultivation. They provided care to the marigold plants and harvested a very good yield. Initially though marketing of flower was a problem, but with the intervention of KVK Cuttack a local florist started buying the flowers. Their income increased upto 32% and they got a sustainable income source for their family.



Marigold cultivation by farmwomen

**Recommendations**

Farmers and farmwomen are showing interest to take up marigold cultivation throughout the year in specific fields. They are also trained for marigold seedling nursery preparation. They can also take up the seedling nursery preparation as an intervention for their livelihood.

**Results**

Particulars	Farmers' Practice	Improved Practice
No. of trial	15	15
Area (ha)	0.5	0.5
Farming situation	Rain fed upland	Rain fed upland
Yield (q/ha )	105	142
Net return (Rs./ha)	22,440	33,000
Income increase (%)	-	32
B: C ratio	1.08	1.30

**OFT-3 WOMEN IN AGRICULTURE**

**Assessment of Mandua weeder in Kharif paddy by farmwomen**

**Background**

In conventional method of rice cultivation, weeds are removed manually from the field usually by farmwomen. This adds to the cost of cultivation. Again farmwomen face different health hazards like pain in knee, thighs, back, shoulder, feet, area under bangles, area between fingers of hands and legs, severe abrasion in skin etc. Now line transplanting is being popularised, which provides an opportunity for the farmers and farmwomen to go for mechanical weeding.

**Technical intervention**

*Technology* : Weeding by mandua weeder for



Training being imparted on mandua weeder

farmwomen. The first weeding is done after 10-12 days of transplantation. Subsequent weedings are done every 10 days, interval, even if the weeds seem to be small. If there is delay in the operation there would be problem in weeding out of the soil.



*Farmwomen performing weeding*

**Methodology :** The OFT was conducted in 2012-13 and 2014-15 replicated with 15 farmwomen each year. They were trained about the operation of mandua weeder in *kharif* paddy. The first weeding was done after 10-12 days of transplantation. Subsequent weedings were done every 10-15 days intervals. Different parameters

like weeding efficiency, average pulse rate, labour saving, yield, B: C ratio and health hazards faced by women were studied.

#### **Feedback from farmers/farmwomen**

Mandua weeder can be used for greater weeding efficiency and labour saving. Farmwomen smoothly used this equipment as it is light weight with more strength, easy to operate and cases of back ache and waist ache were reduced by reducing the drudgery.

#### **Recommendations**

The mandua weeder is suitable for all types of soils and can be manufactured locally. Under BGREI programme, farmers and farmwomen are made aware of different benefits of line transplanting and mechanical weeding. So, along with farmers, farmwomen are also being empowered with simple, drudgery reducing and women friendly technologies.

### **Results**

Particulars	Farmers' Practice	Improved Practice
No. of trial	15	15
Farming situation	Irrigated medium land	Irrigated medium land
Weeding efficiency (m <sup>2</sup> /h)	86	162
Average pulse rate (beats/min)	98.6	70.4
Labour saving (%)	-	48
Yield (q/ha)	36	39
Net return (Rs./ha)	20100	24700
B: C ratio	1.03	1.35

## OFT-1 SOIL SCIENCE

### Assessment of brown manuring in rice

#### Background

Farmers depend on farm manure and chemical fertilizers for rice cultivation, the imbalance supply of nutrients take place. There is also increasing advocacy for use of green manure and natural nutrients for preventing the harmful effects of chemical fertilizers. In practice, farmers either use very less organic manure or no manure in rice cultivation. The practice gradually reduces soil fertility and productivity. This method of cultivation reduces the soil pH leading to higher soil acidity.



2,4-D spray being done by a farmer

#### Technical intervention

**Technology:** In the practice rice and Sesbania is sown simultaneously. The seed rate of Sesbania in brown manuring is 15 kg/ha. In brown manuring rice and Sesbania spp. are both grown together and when these dhaincha plants overtake the rice plants in height at about 25 days of co-culture, a weedicide 2, 4-D is applied to kill these Sesbania plants. After 4-5 days of spraying Sesbania plants will appear brown and then start dying. This is called knocking down effect.

**Methodology:** Farmers and SMS of KVK analyzed

#### Results

Particulars	Farmers' Practice	Improved Practice
Grain yield (q/ha)	45.5	49.1
Organic carbon (%)	0.46	0.52
B: C ratio	1.54	1.66



Knocking down effect

the situation and farmers were helped to understand the new technology. In the OFT five farmers of the village were included. As critical input Sesbania seed and 2,4-D were supplied to the farmers. The observations recorded by participatory field visit.

#### Results

- Brown manuring increased the soil organic carbon content (11.53%), thereby supplying required nitrogen for the rice plants. Thus, a part of nitrogenous fertilizer (upto 25%) can be replaced by brown manuring.
- It also increases the rice yield (7.33%), thereby improving the economical benefit of the farmers.
- It also improves the soil health parameters like organic carbon content and earthworm population of the soil.
- It reduces weed population in the early stage due to its high growth rate and competition with weeds.

#### Recommendations

As there is a rising trend in chemical fertilizer cost, brown manuring can be used as an alternative approach for higher production and thereby more benefit for the farmers. The results thus obtained were shared with ATMA field functionary for wider dissemination.

## OFT-2 SOIL SCIENCE

### Assessment of lime @ 0.1LR to *Sesbania* followed by rice for improving soil productivity

#### Background

The productivity of rice in Cuttack district and net return from the crop is in a declined trend. The farmers use very less organic manure or no manure in rice cultivation. The B: C ratio is not encouraging due to stiff rise in agricultural inputs and labour. The extension agency is trying to adopt green manuring with *Sesbania* over last few decades, but not been absorbed for various reasons including problem in monsoon setting. There is also poor crop stand and germination failure due to soil acidity. Considering all the aspects the KVK proposed an OFT of *Sesbania* with lime in the SAC. The said technology developed at OUAT was put under testing in Tangi Choudwar block.

#### Technical intervention

The technology tested under OFT of KVK entitled



*Sesbania* at early stage



Farmer observing the growth

'Assessment of lime @ 0.1LR to *Sesbania* followed by rice for improving soil productivity' was developed by OUAT in 2009. The OFT was taken up in the year 2013 in *kharif*. The treatments thus designed for implementation was as below

T<sub>1</sub>: Only chemical fertilizer

T<sub>2</sub>: Lime + *Sesbania* + chemical fertilizer

The dose of lime was as calculated @0.1 LR. The source of liming material was paper mill sludge (PMS). *Sesbania* seed was used for green manuring. The trial was replicated in five farmers' field to avoid biasness and dependable result.

#### Results

The information and sampling was done in the trial site to establish scientific logic for the result obtained. The biometric, yield and soil sampling of the OFT site was done with the farmers in participatory mode. This was done to build farmers confidence on the obtained result.

## Results

Treatments	Yield (q/ha)	Increase in yield (%)	Organic carbon (%)	Change in yield (%)	Net income (Rs.)	BC ratio
T <sub>1</sub>	41.5		0.42		53,950	1.49
T <sub>2</sub>	45.3	9.15	0.51	21.42	58,890	1.63

**OFT-3 SOIL SCIENCE**

**Assessment of elemental sulphur (sulfex) as source of s in ground nut**

**Background**

Out of nine oilseed crops grown in Cuttack district, groundnut is the major oilseed crop. The nutrient management of groundnut is very vital in getting the desired yield potential. The fertilizer use in practice cause problem in secondary nutrient availability.

**Technical intervention**

Considering the above facts the OFT was proposed with a technology referred from the Agricultural Technology Module developed by ZPD-VII,



*Farmers being made understood the use of sulfex*



*The advantages of using sulfex is being seen*

Jabalpur in 2010. The on farm testing was taken up in the year 2013 in *rabi* season. The treatments thus designed for implementation was as below

T<sub>1</sub>: Use of Gypsum as a source of S

T<sub>2</sub>: Use of Sulfex as a source of S

**Results**

The data on the parameters revealed that there is significant increase in pod yield up to 16.75% as compared to the existing farmers practice. The most appreciable result obtained in the number of pods per plant. The number of pods was higher in tested technology and 19.23% more pod was recorded after the harvest of the crop. Lastly economic parameter was also superior over the existing farmers practice.

**Results**

Treatments	Pod yield (q/ha)	Increase in yield (%)	Pods / plant	Change in yield (%)	Net income (Rs.)	BC ratio
T <sub>1</sub>	18.5		26		77,700	1.62
T <sub>2</sub>	21.6	16.75	31	19.23	90,720	1.89

## OFT-1 ANIMAL SCIENCE

### Assessment of upgradation of local goat through superior buck (Beetal)

#### Background

Goat is one of the most remunerative options for income generation with a very small investment. The part of blocks Salepur, Tangi-Choudwar, Narsinghpur, Badamba and Tigiria where upland with bushy vegetation plenty provides opportunity for goaterly. The local goats are non-descript with poor growth rate and reproducing ability thereby the farmers were unable to good harvest of kids.

#### Technical intervention

*Technology:* The Beetal breed is a good meat type goat with high growth potential (OUAT).

*Methodology:* The OFT was conducted in the village Khandiaripur (Kantapada), Uchchpada (Tangi-Choudwar), Pitapada (Niali) and Madhykachha (Salepur). The basics and benefits of



*The goat used for upgradation*

#### Results

Particulars	Farmers' Practice	Improved Practice
Body wt (kg)	13.50	17.50
Net income (Rs./ha)	2250	3200
B: C ratio	2.2	4.12



*Farmwomen with F1 kids*

this technology were conveyed to the farmers through training. Farmers practice was also simultaneously noted. Parameters like increase in body weight (%), B: C ratio and farmers' feedback were also recorded.

#### Feedback from farmers

The first generation offspring (F<sub>1</sub>) were fast growing and achieved higher body weight at market age as compared to farmers practice. The meat is also with good flavor and taste with good acceptance by consumers.

#### Recommendations

Offsprings of Beetal buck cross performed very well which was realized by Hon'ble Deputy Director General (Extension), Dr Kakote in his visit to the adopted village. This success story was discussed with line department for wider dissemination and spreaded to many similar areas in the district.

## Frontline Demonstrations

Frontline demonstrations (FLDs) are proven technologies which are demonstrated in a large scale in the farmers' field and generally arise from successful OFTs. FLDs are thus farmer friendly technologies and demonstrated by KVK and line

departments in the concerned disciplines. KVK Cuttack has conducted various FLDs in farmers' fields in different blocks of the district according to farming situations and some of the successful FLDs in different fields are mentioned discipline-wise.

### FLDs on Agronomy

Rice - Upland rice	FLD on Rice - Sahabthagidhan
Rice - Upland rice	FLD on Rice - Annada
Rice - Upland rice	FLD on Rice - Anjali
Rice- Upland rice	FLD on Rice - Vandana
Rice- Medium land	FLD on Rice- Naveen
Rice- Shallow lowland	FLD on Rice – Pooja
Rice- Lowland	FLD on Rice – Gayatri
Rice- Lowland	FLD on Rice- Sarala
Rice - Shallow water submergence ecosystem	FLD on Rice - Reeta
Rice – Shallow water submergence ecosystem	FLD on Rice – Pooja
Rice - Intermediate submergence ecosystem	FLD on Rice - Varshadhan
Rice – Intermediate submergence ecosystem	FLD on Rice – Jayantidhan
Rice –Submergence ecosystem	FLD on Rice – Swarna sub1
Rice - Scented rice	FLD on Rice - Nua Kalajira
Rice – Scented rice	FLD on Rice – Purnabhog
Rice – Scented rice	FLD on Rice – Ketakijoha

### FLDs in Horticulture

Brinjal	FLD on INM in brinjal
Broccoli	FLD on broccoli cultivation
Mango	FLD on cultivation of mango var. Amarapalli in high density planting
Onion	FLD on onion var. Agrifound light red
Papaya	FLD on cultivation of high yielding papaya var. Surya
Pointed gourd	FLD on cultivation of high yielding pointed gourd var. Swarna Aloukik
Veg. Seedlings	FLD on raising of vegetable seedlings through plug tray method



**FLDs in Plant Protection**

Black gram	Demonstration of yellow vein mosaic management in black gram
Cabbage	Demonstration on disease management in cabbage
Green gram	FLD on yellow vein mosaic in green gram
Groundnut	Demonstration on disease management in groundnut
Groundnut	FLD on tikka disease management in groundnut
Onion	FLD on disease management in onion
Onion	FLD on pest management in onion
Rice	Demonstration on pest management of rice at nursery
Rice	Demonstration on management of disease complex in rice
Rice	Demonstration on management of false smut in rice
Rice	Demonstration on integrated pest management in rice
Rice	FLD on pest management in paddy nursery
Tomato	FLD on pest management in tomato

**FLDs in Women in Agriculture**

Groundnut	FLD on groundnut decorticator
Oyster mushroom	FLD on oyster mushroom for entrepreneurship development
Oyster mushroom	FLD on oyster mushroom
Paddy straw mushroom	FLD on paddy straw mushroom for <i>Volvariella</i> spp. entrepreneurship development
Vegetables	FLD on nutritional garden
Vegetables	FLD on wheel hoe finger weeder in vegetables
Vermicompost	FLD on vermicompost production

**FLDs on Soil Science**

Cabbage	Demonstration of foliar spray of zinc EDTA (0.5 g/L water) on quality and yield of cabbage
Cauliflower	Demonstration of incubated bio-fertilizers (PSB an <i>Azotobacter</i> @ 5 kg/ha) in cauliflower
Maize	Effect of paper mill sludge for higher production of maize
Rice	Demonstration on lime @ 0.1 LR to <i>Sesbania</i> followed by rice for improving soil productivity
Rice	Foliar application (2 times) of borax at PI and heading stage to reduce sterility
Rice	Effect of N splitting (4 splits) on yield of hybrid rice Ajay

Rice	Use of green manure Dhanicha @ 15 kg/ha. + <i>Azospirillum</i> seedling root deep @ 5 kg/ha + 60 kg N/ha.
Rice	Demonstration on brown manuring in direct seeded rice
Rice	Effect of brown manuring in upland rice
Rice	FLD on micronutrient (boron) in rice
Rice	FLD on management of iron toxicity problem
Rice	FLD on soil test based fertilizer application
Rice	Effect of Nimin coated urea on yield of rice
Rice	Effect of soil test based fertilizer application on yield of rice

### FLDs in Animal Science

Health	Demonstration of effect of deworming on livestock
Breed improvement	Demonstration on up-gradation of local genetic stock of goat
Feed management	Demonstration of <i>Azolla</i> culture for feed management in cattle
Poultry	Demonstration on backyard poultry rearing
Poultry	FLD on up gradation of local goat through superior buck (Beetal)

### FLDs on Oilseeds and Pulses

Oilseeds and Pulses	Variety
Black gram	PU 31
Black gram	PU 35
Black gram	PU 35
Black gram	PU 35
Black gram	Ujala
Green gram	OBGG 52
Green gram	PDM 139
Green gram	SML 668
Green gram	TARM - 1
Green gram	TARM-1
Groundnut	JAL 42
Groundnut	Smruti
Linseed	Shubhra
Mustard	Agrani



Visit to pulse plots in Mangarajpur by Dr YB Singh, IARI

## FLD-1 AGRONOMY

### Demonstration of high yielding upland rice variety Sahabhadhan

#### Background

Uplands are kept fallow or grown as rainfed crop with short duration traditional varieties which fetch very poor yields, particularly in tribal areas like Haridapal, Abhaypur, Khandbandha, Dahanigadia and Mundasahi villages of Safa Panchayat, Tangi-Choudwar block. Sometimes they cope with climatic vagaries like short and long term droughts. In that situation their land races completely fail or some varieties like Khandagiri and Udaygiri give very low yields.

#### Technical intervention

*Technology:* The high yielding upland rice variety Sahabhadhan maturing in 100-105 days gives yield up to 38-40 q/ha. It was released from NRRI, Cuttack for drought prone uplands tolerance to drought and some major rice diseases.

*Methodology:* The front line demonstration of the variety 'Sahabhadhan' was done directly not as OFT because it had been tested in multilocational trials at Hazaribagh district of Jharkhand in drought-prone upland situation. This variety was given to the tribal farmers of five villages Haridapal, Khandabandha, Dahanigadia,

Mundasahi and Abhaypur of Tangi Choudwar involving three farmers from each village in 2011. They were growing the upland rice variety 'Khandagiri'. The variety Sahabhadhan was advised to grow as direct sown, but the tribal farmers sown their nursery then transplanted the crop as their practice. The side plots were sown with variety Khandagiri which is also high yielding upland variety of similar duration. Both the rice varieties were good in their growth stages. But they faced a short term drought. After maturity the crop yields were recorded and data were compared in respect of per cent yield increment, net return and B: C ratio and farmers' feed back was also recored.

#### Feedback from the farmers

The yield of Sahabhadhan was very much higher than Khandagiri and other land races grown by tribal farmers. It is very much suitable for drought prone uplands and bestowed with cooking quality and other receipies like Pokhal, Mudhi and Chuda can also made. They are kept the seed for growing in next year.

#### Recommendations

The variety performed very well in drought prone rainfed uplands. The matter was discussed with State Govt. officials and the variety was selected for giving in BGREI programme in upland condition.

## Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	15	15
Area (ha)	0.2	0.2
Soil type	Red laterite	Red laterite
Farming situation	Rainfed upland	Rainfed upland
Yield (q/ha)	22.4	38.2
Cost of cultivation (Rs./ha)	22000	22000
Net return (Rs./ha)	2640	20020
Increase in yield (%)	-	70.5
B : C ratio	0.12	0.91

## FLD-2 AGRONOMY

### Demonstration of high yielding scented rice var. Ketakijoha

#### Background

In the rice growing tract of Cuttack district farmers grow different rice varieties according to the land situation in *kharif* season. In rainfed shallow lands generally Pooja variety is grown which gives very good yields, but the selling price of paddy is low. Hence, the farmers get very less return.

#### Technological interventions

**Technology:** The high yielding scented rice variety Ketakijoha released from NRRI, Cuttack which matures in 145-150 days with an average yield potential of 35-40 q/ha has been given to the farmers.

**Methodology:** The seeds of scented variety Ketakijoha were given to the 10 number of progressive farmers of Tentuliragidi village of Tigiria block of Cuttack district in the year 2013 in Kharif season. The rice variety Pooja was in cultivation with which the farmers were very much satisfied. Hence, in side plots they were advised to grow Pooja. Production technology of growing rice was conveyed to the farmers. In the vegetative stage the rice crop faced 'Phailin' a hail storm which affected the rice crop. The leaves withered, but there were no much damages. The farmers were advised to apply 16-20 kg MOP/ha. After maturity, yield data was recorded and data were

#### Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	10	10
Area (ha)	0.2	0.2
Soil type	Sandy loam	Sandy loam
Farming situation	Rainfed medium land	Rainfed medium land
Yield (q/ha)	46.5	38.5
Cost of cultivation (Rs./ha)	25000	25000
Net return (Rs./ha)	35450	48150
B : C Ratio	1.42	1.93



Quality seed being distributed

compared in respect of yield increment, net return and B: C ratio and farmers' feed back was also recorded.

#### Feedback from the farmers

The scented rice variety Ketakijoha is high yielder among the local scented varieties. The popular variety Pooja gave higher yields but fetched lower prices (Rs. 1300/q) while Ketakijoha fetched Rs. 1900/q. Overall net return (Rs. 48150/ha) was higher in case of Ketakijoha.

#### Recommendation

Ketakijoha variety is a high yielder than the local scented varieties which attracted more revenue. The selling price of variety Ketakijoha was Rs. 1900 per quintal, whereas popular Pooja was sold at Rs. 1300 per quintal. The farmers well accepted the variety which was kept for seed.

## FLD-1 HORTICULTURE

### Pusa rohini variety tomato lasts more and yields better

#### Background

Tomato is grown in around 8000 ha area in different parts of Cuttack district. Farmers sell their produce in nearby market and transport to city area for marketing of same. Most of fruits get damaged during transportation and losses occur in the form of bruised /damaged fruits which finally get discarded. After harvesting, tomato ripens rapidly and thereby reduces keeping quality in home itself. So, maximum farmers are interested to find out the solution for the tomato loss and to make it a profitable business.

*Problem Diagnosed:* Poor shelf life of tomato and unfit for long distance transportation.

#### Technological intervention

Technology characteristics: Cultivation of Tomato var. Pusa Rohini for better shelf life (Indian Agricultural Research Institute, 2006). Tomato var. Pusa Rohini having thick pericarp, determinate growth habit, avg yield-412 q/ha, suitable for long shelf life and better market appeal, suitable for spring-summer.

*Treatments:*

Farmers practice (T<sub>1</sub>): Use of tomato var. Nakahara



Tomato near harvesting time

local.

Recommended practice (T<sub>2</sub>) : Use of tomato var. Pusa Rohini.

#### Feedback from the farmers

This variety is suitable for long distance transportation as it remains firm for longer period of time in home condition.

#### Recommendations

It gives 57% more shelf life than local variety. It provides better consumer appeal due to its thick pericarp. So, it is recommended that cultivation of improved var. Pusa Rohini should be done to get longer shelf life in tomato and gain more profit. After advice it has spreaded to 18 ha are in four blocks.

## Results

Particulars	Farmers' Practice	Improved Practice
Shelf life after mature green stage (days)	7	11
Fruit loss due to thin pericarp (%)	30	2
Fruit weight (g)	45	70
Yield (q/ha)	300	400
Total return (Rs.)	135000	185000
Cost of Cultivation (Rs.)	68000	70000

## FLD-2 HORTICULTURE

### Cultivation of Agrifound Light Red onion variety

#### Background

In *rabi* season onion is cultivated in 3000 ha area in Cuttack district. Farmers grow their own cultivars. They use small bulblets of multiplier onion var. Nakhara local for traditional onion cultivation. Farmers usually get 2.4 quintal bulb yield per 160 m<sup>2</sup> area. Multiplier onion has low yield and it has low commercial marketing status. So, it gives less remuneration.

The yield and marketing of produce depends upon varietal potential and qualitative attributes of certain types. So, multiplier onion is suitable to local preference for home consumption rather commercial marketing and there is a requirement of big size onion of high yielding potential to be introduced for cultivation.

#### Technical intervention

Varietal substitution/evaluation. Cultivation of



Visitors observing the farmer's field



Effect of technological intervention

onion variety Agrifound light red along with farmers practice (National Horticultural Research and Development Foundation, 2001). It has good keeping quality; maturity 165 days; light red colour; bulbs globular; yield 32 t/ha.

#### Treatments:

Farmers practice (T<sub>1</sub>): Use of multiplier onion var. Nakhara local

Recommended practice (T<sub>2</sub>): Use of onion var. Agrifound light red

#### Feedback from the farmers

This variety is suitable for rice based cropping system and gives more yield than multiplier onion.

#### Recommendations

It gives 80% more yield than local variety. So, we recommend for cultivation of onion var. Agrifound light red in *rabi* to get more profit. In 2014, it has presence in 87 farmers from three blocks covering an area of 180 ha.

#### Results

Particulars	Farmers' Practice	Improved Practice
Bulb weight	80 g/clump	70 g/plant
Yield (q/ha)	150	270
Total return (Rs.)	150000	189000
Cost of cultivation (Rs.)	72000	80000
B:C (Total return/ Total cost)	2.0	2.4

## FLD-3 HORTICULTURE

### Cultivation of pointed gourd var. Swarna Aloukik

#### Background

In Cuttack district farmers usually go for pointed gourd cultivation both in ground and trellis trailed system. The pointed gourd cultivation occupies near about 2500 ha area in Cuttack district. Farmers collect their root cuttings/vine cuttings every year from locally available planting material. They face the problems like less duration of fruiting and overall yield during fruiting period is low. Fruits are green, thick skin and hard seeds appear with slight delayed maturity. So, consumer preferences become lower in over maturity. Hence, low fruiting potential with poor fruit texture, appearance make the pointed gourd less profitable. So, it is required to be substituted with a new high yielding cultivar having good consumer preference.

#### Technical intervention

Varietal evaluation

*Technology:* Cultivation of pointed gourd var. Swarna Aloukik for higher production (Indian Institute of Horticultural Research, 2008)

*Characteristics:* High yielding variety; fruits 5-8 cm long; yield 280 q/ha; Vine starts bearing three months after planting.

#### Results

Particulars	Farmers' Practice	Improved Practice
Fruit weight (g)	25	30
No. of pickings (weeks)	20 (twice/week)	12 (twice/week)
Yield (q/ha)	220	260
Total return (Rs.)	176000	208000
Cost of cultivation (Rs.)	85000	85000
B:C (Total return/Total cost)	2.0	2.3



*Farmer assessing the performance of variety*

#### Treatments:

Farmers practice: Use of pointed gourd var. Mahisa.

Recommended practice: Use of pointed gourd var. Swarna Aloukik

#### Feedback from the farmers

This variety is suitable for vertical staking and gives higher yield.

#### Recommendations

It gives 18% more yield than local cultivar. There is more no. of fruit pickings, fruits are tender, light green with smooth surface with high consumer preference. So, it is recommended for cultivation of improved var. Swarna aloukik for higher production. Presently this technology is being adopted by 67 farmers from four different blocks covering an area of 17 ha.

## FLD-4 HORTICULTURE

### Pro-tray technology: a successful method to raise vegetable seedling

#### Background

In Cuttack district, more than 20000 ha area is covered under Brinjal, Tomato, Cauliflower and Cabbage cultivation. Farmers usually depend on raised seedlings for vegetable cultivation. Generally, they go for open bed method and in some cases adopt low poly tunnel system for seedling raising. They view that, damping off disease is the major problem in the open method of nursery bed preparation and the climatic extremes like heavy rainfall, heavy fog and low/ high temperature also cause seedling mortality and poor growth of seedlings. The use of lanky and non uniform seedlings with bare root system for transplanting in field results in poor crop stand and low yield.

Open and unprotected method of seedling raising results in exposure to climatic extremes which cause unhealthy seedlings and mortality thereof. Uprooting while transplanting cause root damage, bareness in the root system which prevent early establishment in the field and subsequent development in crop stand. Non-uniform growth occurs due to competition for water, sun light and nutrients. So, open bed has certain disadvantages over seedling growth and development.

#### Technical intervention

Nursery raising

*Technology:* Use of plug tray technology for vegetable seedling raising (Indian Agricultural

#### Results

Particulars	Farmers' Practice	Improved Practice
Seedling mortality (%)	40	1
Vigour of seedling (length in cm)	7	10
Yield (q/ha)	250	300
Gross return (Rs.)	1,50,000	1,80,000
Total cost (Rs.)	59,049	57000
Net return (Rs.)	90,951	1,23,000
B: C ratio	2.5	3.2



Successful replication of technology

Research Institute, 2009)

*Characteristics:* Cell volume: 20 cc suitable for brinjal and tomato; 8 cc for cole crops. Potting mixtures- cocopeat: vermi compost (1:1); one seed in one cavity; spraying of mixed liquid fertilizers (NPK) are required.

*Treatments:*

Farmers practice : open bed method of nursery raising.

Recommended practice : plug tray method of nursery raising.

#### Recommendations

Plug tray method of nursery raising reduces seedling mortality to 2.5% from 40% under open bed raising and also increases 20% yield over farmers practice. So, it is recommended that pro-tray technology should be used for vegetable nursery raising for economic seedling production and yield maximization. In 2014, this technology made its mark in 14 ha area in three blocks and involving 30 farmers of Cuttack district.



## FLD-5 HORTICULTURE

### Bunch Feeding in Banana

#### Background

Among the desert and culinary type bananas v. Champa and bantal are the most popular varieties grown in Cuttack district. Majority of farmers apply one top dressing of urea and MOP to the crop. These treatments results in a bunch with differential finger size, i.e. upper fingers have more bulkiness than lower fingers. Banana is a heavy feeder which responses well to regular fertilizer and manure. In the absence of proper fertilization the finger size and bunch weight are affected greatly. This can be attributed to the limited availability of nutrients mostly N and K during bunch initiation and development phase.

#### Technological intervention

Bunch feeding in Banana to get higher yield (Indian Institute of Horticultural Research, Bangalore,



*Selection of beneficiary*



*Effect of bunch feeding in banana*

2008). Bunch feeding with following mixture: urea 7.5 g + potassium sulphate 7.5 g + cow dung 500 g + 100 ml water

#### Treatments:

Farmers practice : No bunch feeding; only 100 g urea and 50 g potash as top dressing.

Recommended practice : Use of bunch feeding: Urea 7.5 g + potassium sulphate 7.5 g + cow dung 500 g + 100 ml water along with normal practice.

#### Recommendations

Bunch feeding improves finger size, maintains uniformity in distal and proximal end finger size and also produces 20% more bunch weight than without bunch feeding plant. It has now spreaded to five ha area under two blocks and involving 22 farmers from five villages.

## Results

Particulars	Farmers' Practice	Improved Practice
Finger weight (g)	83	100
Bunch weight (kg)	10	12
Yield of bunches (no./ha)	2700	2700
Total return (Rs.)	(@Rs. 83/bunch) 224100	(@Rs. 111/bunch) 299700
Cost of cultivation (Rs.)	90000	100000
B:C (Total return/Total cost)	2.49	3.0

### FLD-1 PLANT PROTECTION

#### Demonstration on pest management of rice at nursery

##### Background

After transplanting of the seedling in main field, plant vigour was affected due to infestation of pest and diseases. Blast and yellow stem borer are regular phenomena in all rice growing area in Cuttack district. Late transplanting due to erratic monsoon increased the possibility of infestation of paddy yellow stem borer and gall midge.



*Data recording in participatory mode*

##### Technical intervention

NRRI technology i.e. application of cartap hydrochloride @ 5 g/m<sup>2</sup> in nursery 5-7 days before uprooting the seedling, demonstrated in farmers field. Ten demonstrations were conducted in village Loknathpur.



*Expert explaining the utility of the demonstration*

##### Results

Higher yield (44.37 q/ha) and lower dead hearts per cent (3.50) has been recorded in demonstrated plots, whereas yield was 42.75 q/ha and dead hearts per cent (5.66) are observed in farmers practices. Farmers realized that this technology is effective for management of early pest infestation in main field.

### FLD-2 PLANT PROTECTION

#### Demonstration on management of false smut in rice

##### Background

Rice var. Pooja variety is usually infected by Ustilaginoidae virens fungus causing false smut disease. This disease reduces yield by directly transforming the grains into a mass of fungal spores. Rice var. Ajay, Rajalaxmi, Sarala and Pooja affected with this disease.



*Control plot*

##### Technical intervention

For the management of this disease carbendazim @ 1000 ml per ha was applied just before panicle initiation in demonstration plots which reduced losses caused by the Ustilaginoidae virens fungus in rice.

##### Results

Lower disease infection has been recorded in demonstration plots (7.20 infected grains /plant) vs. 17.50 infected grains/plant under farmers



*Tested technology*

practices and 14.62 per cent more yield recorded over farmer practices (43.10 q/ha).

### FLD-3 PLANT PROTECTION

#### Demonstration on management of yellow vein mosaic diseases in green gram

##### Background

Yellow vein mosaic disease in greengram is major constraint for higher production. This disease is caused by virus and spread through vector. Farmers apply injudicious spraying of insecticide at advance stages of the disease.

##### Technical intervention

Front line demonstration for management of this disease in green gram was conducted in five farmer fields of village Sankilo. Vector of the disease was controlled by application of acephate @ 1.0 kg a. i./ha after 20 days after sowing.



*Problem identification*

##### Results

Higher yield and B: C ratio (6.25 q/ha, 2.85) were recorded in demonstrated plot against farmers practice (5.0 q/ha, 2.28).

### FLD-4 PLANT PROTECTION

#### Demonstration on pest management in tomato

##### Background

Tomato is an important crop in Cuttack District. It is prone to infections and infestations by various external agents. A demonstration was conducted in village Kulabadakiri with five replications during rabi 2012.



*Nursery management*

##### Results

Infestation of fruit borer and leaf miner in tomato were less in crop treated with Imidacloprid @ 100 ml a.i./ha at vegetative stage and Neem oil @ 1.5 lit/ha at reproductive stage of crop growth. Average production of tomato in demonstrated plots was 218.75 q/ha while it was 156.25 q/ha in control.



*Sharing the success of demonstration*

**FLD-1 WOMEN IN AGRICULTURE**

**Paddy straw mushroom production for entrepreneurship development**

**Background**

Paddy straw mushrooms are generally grown for household consumption in summer and rainy season. Mushroom cultivation can be easily done by farmwomen, rural youth or landless farmers as it requires homestead area, less attention and labour along with short duration for production which can fetch good return. The unemployed rural youth can also take it as an enterprise as it is very remunerative with less investment.

**Technical intervention**

*Technology:* Paddy straw mushroom (*Vovariella volvaceae*) cultivation with scientific cultivation practices and management.

*Methodology:* The FLD conducted for three consecutive years (2011-13) replicated with 15 farmers and farmwomen every year. They were trained and demonstrated about the cultivation practices of the mushroom and provided with mushroom spawn as critical input. Regular follow up was made from bed preparation till the harvest. Everyday farmers used to put about 20 mushroom beds for continuous production. On 15<sup>th</sup> day they got their 1<sup>st</sup> production and the production continued for the season. During the intervention various parameters such as yield, time profile, cost of cultivation, gross return and B: C ratio was studied.

**Results**

Particulars	Farmers' Practice	Improved Practice
No. of trial	15	15
Average time of harvesting (days)	16	15
Cost of cultivation (Rs. for 20 beds/day)	700	760
Average yield (kg/bed/day)	12	16
Gross income (Rs.) per day	1800	2400
Net return (Rs.) per day	1100	1640
B: C ratio	1.57	2.16



*Farmwomen cultivating mushroom*

**Feedback from farmers/farmwomen**

Farmers and farmwomen are producing daily and getting a net income of Rs. 1640 per day and Rs. 49200 per month. As with less investment they are getting a very good income in a short period, the entrepreneurs are increasing day by day.

**Recommendations**

Farmers and farmwomen are getting good return from this as food and income source. For wider dissemination of the technology, success stories of the mushroom farmers were broadcasted by ETV and also covered in different print media.



*A successful farmwoman with her mushroom*

## FLD-2 WOMEN IN AGRICULTURE

### Oyster mushroom cultivation for income generation

#### Background

Mushroom farmers of Cuttack district generally grow paddy straw mushrooms in summer and rainy season. But in winter season, they stop mushroom production as in case of paddy straw mushroom (30-35°C), mycelium growth rate is very slow and stunted or sometimes ceases. In this (winter) season, oyster mushroom can be successfully cultivated as the mycelium growth requires less temperature, i.e. 20-30°C. Though oyster mushroom is having a good nutritional and medicinal value farmers are not aware of its cultivation and management practices. Oyster mushroom requires homestead area, less attention and labour, short duration for production can also fetch good return. This mushroom can also be done by farmwomen and rural youth as it is a non-land based activity in which they can utilize the family resources. This mushroom is cultivated during the month of October to March. So, mushroom growers can have a year round farm production.

#### Technical intervention

*Technology:* Oyster mushroom (*Pleurotus sajorcaju*) cultivation with scientific cultivation practices and management

*Methodology:* The FLD conducted for three consecutive years (2011-13) replicated with 15 farmers/farmwomen each year. The farmers and



*Farmwoman with fruiting mushroom beds*

farmwomen were trained and demonstrated about the cultivation practices of the mushroom and they were provided with oyster mushroom spawn and polythene bags as critical input. Regular follow up was made till the harvest. During the intervention various parameters such as yield, time profile cost of cultivation, gross return and BC ratio was studied.

#### Feedback from farmers/farmwomen

With proper care and scientific methods the farmers are able to get a good return from cultivating the oyster mushroom.

#### Recommendations

This FLD is taken up for larger coverage of farmers/farmwomen for adoption as they are getting good return from it as a food and income source. Mushroom farmers using the lean period (winter season) for cultivation of the oyster mushroom.

### Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	15	15
Avg. time of harvesting (days)	25	22
Yield (kg/bed)	1.2	1.8
Net return (Rs. per bed)	54	102
B: C ratio	1.28	2.43

### FLD-3 WOMEN IN AGRICULTURE

#### Demonstration of groundnut decorticator by farmwomen

##### Background

Rural women play a vital role in farm and homestead activities. Time and labour intensive, monotonous, repetitive and drudgery prone farm activities are generally performed by women. Since all the operations are done manually, they cause considerable physical and mental fatigue and other health problems with very less output. Traditionally groundnut is decorticated by women manually which is tedious and time consuming. Decortication of groundnut pod causes finger injury and breaking percentage is also more.

##### Technical intervention

*Technology:* Standing type groundnut decorticator for farmwomen for decortivating groundnut. It is an oscillatory type device having cast iron shoes with projections for decortications of groundnut pods. It consists of frame, handle, oscillating arm and sieve with oblong hole. The equipment is operated in standing posture. Weight of the equipment is 15 kg.

*Methodology:* It is a manually operated equipment to separate kernels from groundnut pods by a farmwoman. The pods are fed in batches of two kg



*A farmwoman using the decorticator*

and crushed in between concave and oscillating arm having cast iron/nylon shoes to achieve shelling.

##### Feedback from farmers/farmwomen

This equipment can be used for greater efficiency and labour saving. Farmwomen smoothly operate this equipment in standing posture and cases of back ache and waist ache were reduced. Finger injury was nil.

##### Recommendations

This equipment can be very efficiently used for shelling/separating dry groundnut kernels from pods for use as seed purpose at the time of sowing when more labour is required. This has potential for commercialization and can be used on custom hiring basis by different groups.

##### Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	15	15
Labour saving (%)	-	56
Decortication rate/ capacity (kg pod/hr)	4	22
Average heart rate (beats/min)	104.83	95.07
Broken kernels (%)	2.65	2.30
Shelling efficiency (%)	16.9	93

## FLD-4 WOMEN IN AGRICULTURE

### Demonstration on vermicompost production for income generation

#### Background

Human livelihood opportunities are often closely linked to soil fertility conditions. People of tribal dominated area of Cuttack district usually depend on forest and agriculture for their livelihood. The farmwomen after paddy cultivation remain idle without any work. So, vermi-compost production for income generation is taken for demonstration for farmwomen of the locality.

#### Technical intervention

*Technology:* Vermicompost production. Feeding species of earthworms such as *Eisenia fetida* is very effective because of their tolerance to relatively higher temperatures prevalent locally.

*Methodology:* The FLD was replicated with 15 farmers and farmwomen, who were trained about the vermiculture and vermicompost production. For 100 kg of substrate 200 earthworms provided as critical input. The units were closely monitored by KVK through frequent field visits, telephonic discussions and consultations as and when required to solve the problems. Average time required for harvest, cost of production, compost yield, gross income, net return, B: C ratio etc. were studied.

#### Results

Particulars	Farmers' Practice	Improved Practice
No. of trial	15	15
Average time required for harvest (days)	90	75
Compost yield (kg/pit)	550	800
Net return (Rs.)	5362	7800
B: C ratio	1.04	1.84



Vermicompost production by farmwomen

#### Feedback from farmers/farmwomen

As it is having the simple production process and flexibility in terms of time needed to attend to the activity allowed the women to readily incorporate it in their routine of household chores. For the first year cost of production was little high, but in subsequent years production cost became low and increased the net return. Farmers, rural youths and women SHGs are taking it as entrepreneurial activity and earning a good amount by upgrading their livelihood.

#### Recommendations

The skills of women in managing this activity and to convert the dung, leaves and other bio-wastes found littered in rural and tribal areas, vermicompost making developed into an income-generating activity. In particular, it became an attractive opportunity for landless people in the tribal villages.

## FLD-1 SOILSCIENCE

### Effect of nitrogen splitting on yield of hybrid rice Ajaya

#### Background

Rice being the major crop of the district draws maximum attention of all stakeholders. The nutrient management of rice is very vital in getting the desired yield potential. The nutrient management needs much knowledge and skill for higher yield and benefit. Among the chemical fertilizers, the nitrogenous fertilizer is used injudiciously resulting in lower efficiency and yield loss. Foreseeing the problem to improve nitrogen use efficiency and increase production a front line demonstration on 'Effect of nitrogen splitting on yield of hybrid rice Ajaya' was designed.

#### Technical intervention

The technology tested under FLD was published by Zonal Project Director in Agricultural Technology Module in 2010. The FLD was taken in the year 2012 in *rabi* season. The FLD was in broad theme of soil fertility management. The treatments thus designed for implementation was as bellow



Demonstration field

#### Results

Treatments	Pod yield (q/ha)	Increase in yield (%)	Pods / plant	Change in yield (%)	Net income (Rs.)	BC ratio
T <sub>1</sub>	68.5		15		89,050	2.1
T <sub>2</sub>	72.0	5.1%	18	20	93,600	2.3



Hon'ble Director observing the demonstration plots

Farmers practice (T<sub>1</sub>): generally three split.

Recommended practice (T<sub>2</sub>): four split of N fertilizer; 40% at basal, 20% at tillering, 30% at PI and 10% at booting.

The biometric observations and yield data of the FLD site was done with the farmers in participatory mode. This was done to build farmers confidence on the obtained result and higher acceptance of tested technology.

#### Results

The data on the parameters revealed that there is increase in grain yield up to 5.1% as compared to the existing farmers practice. The most appreciable result obtained in the number of tiller per hill. The numbers of tillers were higher in tested technology and 20.0% more tiller number was recorded at maturity of the crop. Lastly economic parameter was also superior over the existing farmers practice.

#### Recommendations

As observed in this demonstration nitrogen splitting should be used by the farmers to achieve higher nitrogen use efficiency.



## FLD-2 SOIL SCIENCE

### Effect of nimin coated urea on rice yield

#### Background

Farmers generally depend on nitrogenous fertilizers more than any other nutrients for rice production in the district. The visual response of nitrogenous fertilizer can easily be noticed by the farmers. Frequent application of fertilizer results in detrimental effect on the production as well as production system. From an interactive study it was noticed that farmers apply nitrogen without any knowledge and only to make the crop greener. The higher dose and untimely scheduling results in low efficiency of nutrient, agro-ecological pollution and yield loss to the farmers. Analyzing the problem of the district a front line demonstration was designed to improve nitrogen use efficiency and increase production.

#### Technical intervention

The demonstrated technology of KVK was referred from Zonal Project Director in Agricultural Technology Module in 2010. The Front line



Farmers field having distinguishing effect on nimin

#### Results

Treatments	Pod yield (q/ha)	Increase in yield (%)	Pods / plant	Change in yield (%)	Net income (Rs.)	BC ratio
T <sub>1</sub>	44.0	-	10	-		-
T <sub>2</sub>	47.0	12.5	13	30		1.56



Success story on Nimin is being recorded for mass media coverage

demonstration was taken in the year 2011 in *kharif* season at Chadheipada of Tangi-Choudwar block involving ten numbers of farmers. The total area of demonstration was 2.5 ha. The FLD was under the broad theme of soil fertility management. The treatments thus designed for implementation was as bellow

T<sub>1</sub>- Farmers' practice

T<sub>2</sub>- N fertilizer with Nimin @100 g/50 kg

#### Results

The recommended practice yielded 12.5% more along with increase in grain numbers. The farmers gained confidence by observing its effect on rice.

#### Recommendations

The improved practice of using nimin coated urea gives multiple benefit of slow release of nitrogen for improving nitrogen efficiency. The farmers thus can use it for better nitrogen use and yield improvement.

**FLD-1 ANIMAL SCIENCE**

**Demonstration on backyard poultry rearing (var. Vanaraja)**

**Background**

In India, most of the farmers belong to resource poor category with very less or no land. Backyard poultry is one of the most remunerative options for income generation with a very small investment and also requires less available land. The local poultry breeds are low yielders and also produce very less eggs. Thus, they get very less income from these poultry.

**Technical intervention**

*Technology:* The Vanaraja poultry variety is a good meat type breed along with high egg laying potential (Project Directorate on Poultry, Hyderabad).

*Methodology:* The FLD was conducted in the village Budukunia and Haladia (Mahanga), Arada



*Successful farmer with own poultry*

(Cuttack Sadar), Karikal (Athagarh), Abhaypur, Haridapal, Ucchapada, Gurujang and Guali (Tangi Choudwar), Jodum (Narasinghpur) and Purbakachha (Salepur). The scientific management practices and benefits of this technology were conveyed to the farmers through training and group discussions. Farmers practice was also simultaneously noted. Parameters like body weight at three months age (%), egg laying at six months (eggs/month), B: C ratio and farmers' feedback were recorded.



*Vaccination of chicks*

**Results**

The birds are good foragers and can eat various unwanted weeds, leaves, insects, waste grains and vegetable leaves. Their meat is highly appreciated by consumers due to medium tenderness and juiciness.

**Results**

Particulars	Farmers' Practice	Improved Practice
Body weight at 3 months (kg)	0.6	1.9 (216%)
Body weight at 6 months (kg)	1.75	3.4 (94%)
No. of eggs per month	12	23 (91%)
Cost of cultivation (Rs./10 birds)	500	600
Gross return (Rs./10 birds)	2000	3000
Net return (Rs./10 birds)	1600	2400
Benefit-Cost ratio	3.2	4.00

**Feedback from farmers/farmwomen**

After visualizing its benefits, the poor tribal farmwomen of Abhaypur village of Tangi-Choudwar adopted it as their livelihood support. They collected Rs. 8,800 and requested KVK to bring chicks and brooding them. The KVK has supported them. Again they have collected Rs. 6200 for purchasing the chicks. Farmers from other parts of Cuttack district are also placing orders at CPDO in consultation with KVK Cuttack.

**Recommendation**

This poultry variety is a fast growing bird with good egg production capacity and can be kept under backyard conditions without any extra feed after brooding. This success story was discussed with farmers from different blocks and line departments for wider dissemination and now spreading to many areas in the district.

**FLD ON OIL SEEDS AND PULSES**

Some demonstrations on oil seeds and pulses are presented in pictures



*FLD oilseeds and pulses on groundnut var. Smruti*



*FLD oilseeds and pulses on Pigeon Pea*



*Assessment of sesame Var. Nirmala*



*FLD oilseeds and pulses on Pigeon Pea*

## Trainings

Training for farmers, farmwomen and rural youth for knowledge and skill development along with imparting the knowhow of technologies suitable for farming situations is one of the important mandates of KVKs. Along with the grass root beneficiaries; skill upgradation training is also given for different extension functionaries of state government. Training is the basic step for introducing any technology and its impact depends on the acceptance of technology by the farming community. In addition to its mandatory training activities, KVK Cuttack specialists are involved with different line departments and institutes like NABARD, ICAR-NRRI, state

departments of agriculture, horticulture and animal husbandry etc. The trainings conducted by KVK are mentioned in tabular form and photographs of the programmes are given in three heads, i.e. Collaborative trainings, trainings held out of campus in different villages and trainings conducted on KVK campus.

### Collaborative Trainings

KVK Cuttack collaborates with different ICAR institutions, State Government Agencies & NGOs for training of farmers, farmwomen and rural youths. Some of these activities are given in pictures.



Collaborative farmers training from ATMA Jharkhand



AGM NABARD addressing the farmwomen



Scientists from NRRI participating in farmers training



Training on sugarcane bud chipper with ATARI representation



ATMA sponsored capacity building programme



Training with CIPM officials on integrated pest management

### On Campus Trainings

KVK Cuttack conducts training of farmers, farmwomen and rural youths for dissemination of knowledge and skill development on its own training hall at Santhapur. Some of the activities are given in pictures.



In service training on soil science at KVK Santhapur



Training on integrated weed management in rice



Training on animal science for better management of livestock



Training on mushroom cultivation for employment generation



*Demonstration on grafting process is going on after on campus training*



*On campus training for rural youth on horticulture as an employment avenue*

### Off Campus Trainings

Besides on campus training, KVK Cuttack conducts training of farmers, farmwomen and rural youths for dissemination of knowledge and skill development at suitable places convenient to the farming community in their villages. Some of these activities are presented in pictures:



*Technology dissemination through video show at Chadheipada*



*Farmers' training on weed management at Anlo (Niali)*



*Sharing of technological information at Mangarajpur (Badamba)*



*Method demonstration to farmwomen at Andhoti (Barang)*



Training on dairy development at Mallipura (Mahanga)



Addressing farmers' problems at Sankilo (Nischintakoili)



Training on crop production in Balijhari (Narsinghpur)



Training on pro-tray technology at Nuabandha (Athagarh)



Training on seed treatment at Brahmansailo (Kantapada)



Training on role of SHGs on agriculture and economic gain at Arada (Cuttack Sadar)

## TRAININGS CONDUCTED BY KVK CUTTACK

### Trainings in Agronomy (41)

Sl.	Thematic Area	Title	Venue	Block
1	Crop Production	Scientific nursery management of paddy for healthy seedling	Naharpada, Nizgarh, Sankilo, Sahaniazpur, Guali, Gurujang	Cuttack Sadar, Narasinghpur, Nischintakoili, Niali, Tangi-Choudwar
2		Crop diversification	KVK campus, Mania, Anilo-2	Tangi-Choudwar, Niali
3		Improved production technology for pulses	Kharibil, Laxminarayanpur	Niali, Salepur
4		Improved production technology of green gram and black gram	Odisinga, Jodum, Nischintakoili, Loknathpur, Dandapur	Narasinghpur, Nischintakoili
5		Improved sugarcane production technology	Mangarajpur	Badamba
6		INM in field crops	Matanagar	Salepur
7		Integrated crop management in rice	Kherosh, Balijhari	Kantapada, Narasinghpur
8		Integrated farming system	Satyabhamapur	Salepur
9		Integrated weed management in <i>rabi</i> pulse crop	Chadheipada	Tangi-Choudwar
10		Integrated weed management in rice	Banipada, Rajhansahi, Niali, Govindapur, Singhamapur, Rajhansa, Regadapada, Ichhapur, Kharibil, Mangarajpur, Gobardhanpur	Cuttack Sadar, Niali, Tangi-Choudwar, Salepur, Athagarh, Badamba
11		IWM in midland rice	Banki, Dhari, Alara	Banki, Mahanga, Narasinghpur
12		Integrated weed management in <i>rabi</i> rice	Kharibil	Niali
13		SRI cultivation of rice	Arilo	Barang
14		Production technology of green gram and black gram	Laxminarayanpur, Kharibil	Salepur, Niali
15		Rice production technology	KVK campus (2)	Tangi-Choudwar



## Trainings in Plant Protection (37)

Sl.	Thematic Area	Title	Venue	Block
1	Plant Protection	Disease management in rice	Sankilo	Nischintakoili
2		Biological control of crop pest and diseases	Kalidahi, Sidho	Salepur
3		IDM in field crops	Dahanigadia	Tangi-Choudwar
4		Improved pest management technology	Laxminarayanpur	Salepur
5		Infection and disease management in tomato and brinjal	Tarapur, Botalama, Guali	Banki, Salepur
6		Insect and disease management of tomato and cole crop	Sankilo	Nischintakoili
7		Insect pest management in rice	Narasinghpur, Loknathpur	Narasinghpur, Nischintakoili
8		IPM in black gram and green gram	Tentuliragdi, Pankal	Tigiria, Badamba
9		IPM in brinjal and cowpea	Bishwanathpur	Salepur
10		IPM in field crops	Jharkata	Cuttack Sadar
11		IPM in horticultural crops	Lembua	Narasinghpur
12		IPM in rice	Maheshpur, Sankilo, Barada, Loknathpur, Paramhansa, Anlo, Botalama, Taran,	Barang, Nischintakoili, Cuttack Sadar, Niali, Banki
13		IPM in tomato and brinjal	Sankilo, KVK campus, Tarapur, Loknathpur	Tangi-Choudwar, Banki, Nischintakoili
14		IPM in vegetable	Gobardhanpur	Badamba
15		Management of insect-pest in rice	Dhanmandal	Kantapada
16		Paddy nursery pest management	Haridapal, Chadeipada	Tangi-Choudwar
17		Pest and disease management in brinjal	Sankilo	Nischintakoili
18		Pest and disease management in <i>rabi</i> pulse	Badamba	Badamba
19		Pest and disease management in tomato	Hanupur, Khentala	Nischintakoili
20		Pest management in cole crops	Berhampur	Tangi-Choudwar

## Trainings in Horticulture (35)

Sl.	Thematic Area	Title	Venue	Block
1	Horticulture-Fruits	Basin management in coconut garden	Bheda	Mahanga
2		Bunch feeding in banana	Sankilo	Nischintakoili
3		Improved methods for effective fruit setting in mango	Daipur	Athagarh
4		Method of planting and fertilizer management in mango	KVK Campus	Tangi-Choudwar
5		Off season vegetable cultivation	Nuabandha	Athagarh
6		Production technology of grafting, budding & layering for nursery management	KVK campus	Tangi-Choudwar
7		Establishment of new orchards	Dharua, Shamsunderpur	Tangi-Choudwar
8		Improved agro-technology for onion cultivation	Jasuapur, Narasinghpur	Salepur, Narasinghpur
9		Improved method for pointed gourd cultivation	Narasinghpur	Narasinghpur
10		Improved method of cowpea cultivation	Bishwanathpur	Salepur
11	Horticulture – Vegetable Crops	Improve method to increase fruit set in pointed gourd	Bishwanathpur	Salepur
12		Improved methods to increase fruit setting in chilli	Radhamadhavpur	Athagarh
13		Method of planting and fertilizer management in pointed gourd cultivation	Kerual	Tangi-Choudwar
14		Methods of sowing and fertilizer management in okra	Haridapal	Tangi-Choudwar
15	Nursery Management	Improved method of nursery rising	Regadapada	Athagarh
16		Improved method of vegetable nursery raising	Ganeshwarpur, Baula, Arilo, Jorapani, Bishwanathpur,	Tangi-Choudwar, Barang, Salepur,

Sl.	Thematic Area	Title	Venue	Block
16		Improved method of vegetable nursery raising	Chadheipada, Bhadreswar, Naraj, Mahang, Balichaturi, Bandal	Mahanga, Cuttack Sadar, Niali
17		Pro-tray technology for nursery raising	Bishwanathpur, Khalarada	Salepur, Barang
18	High Value Crops	Improve package practices of broccoli	Sankilo	Nischintakoili
19	Integrated Nutrient Management	INM in banana cultivation	Pallisahi, Sisua	Mahanga, Cuttack Sadar
20		INM in brinjal	Gurujanga	Tangi-Choudwar
21		INM in coconut garden	Mahajanpur	Nischintakoili
22		Use of bio-fertilizer in vegetable production	Nrutanga	Mahanga

### Trainings in Agricultural Extension (17)

Sl.	Thematic Area	Title	Venue	Block
1	Capacity Building and Group Dynamics	Farmers' club and its formation	Jasuapur	Salepur
2		Formation and management of Farmers' Club	Kusundaspur, Purbakachha, Aliara, Dherpur, Bainpur, Paschimakachha, Nischinta, Tarito – Guali, Ramnagar, Telengapenth	Mahanga, Salepur, Tangi-Choudwar, Cutack Sadar
3		Formation and management self help group	Dihigope	Mahanga
4		Leadership development	Kadalibadi, KVK campus, Champati, Gurujang	Athagarh, Tangi-Choudwar, Salepur Mahanga
5		Mechanical rice production	Gouad gope	Mahanga

## Trainings in Women in Agriculture (36)

Sl.	Thematic Area	Title	Venue	Block
1	Home Science/ Women Empowerment	Design and development of low cost nutritional diet	Dihigope	Mahanga
2		Entrepreneurship development of farm women and SHG groups	Andhoti	Barang
3		Formation and management of SHGs	Chhatabar	Tangi-Choudwar
4		Importance of health and hygiene and balance diet for farm families	Khandagaon, Raghunathpur	Nischintakoili Tangi-Choudwar
5		Management of nutritional garden	Gurujang, Agrahat, Paramhansa, Abhaypur	Tangi-Choudwar, Cuttack Sadar
6		Mushroom production for nutrition security	Chadheipada, Gurujang, Sankilo, Potapur, N. Koili, Nuasahi, Bainpur	Tangi-Choudwar, Nischintakoili, Salepur
7		Mushroom production technology for entrepreneurship development	Patapur, Banakaranji, Sankilo, Nuagaon, Ganeshwarpur, KVK campus	Salepur, Tangi-Choudwar, Nischintakoili, Narasinghpur
8		Preparation of agarbati and candle by farmwomen for income generation	Budhukunia	Mahanga
9		Production technology of oyster mushroom	Jodum	Narasinghpur
10		Safe storage of grains and seeds	Mangarajpur, Kanpur, Madhusudanpur	Badamba, Barang
11		Seed treatment and nursery raising in vegetables	Gunthapada, Budhukunia	Salepur, Mahanga
12		Use of mandua weeder in <i>kharif</i> paddy by farmwomen	Gopalpur	Badamba
13		Use of small tools and equipments for drudgery reduction	Bhali	Mahanga
14		Value addition and processing of fruits and vegetables	Arada, Purbakachha, Mangarajpur, Guali	Cuttack Sadar, Salepur, Badamba
15		Women friendly agricultural technologies	Jalakeli	Narasinghpur

## Trainings in Animal Science (23)

Sl.	Thematic Area	Title	Venue	Block
1	Livestock Production and Management	Care and management of backyard poultry	Budukunia, Goudapada, Nimapur	Mahanga, Tangi-Choudwar
2		Clean milk production	Agrahat, Gobardhanpur, Arada	Tangi-Choudwar, Badamba, Cuttack Sadar
3		Contagious disease prevention and management in dairy animals	Shamsunderpur, Budukunia	Narasinghpur, Mahanga
4		Dairy farming and management for higher income generation	Guali, Goudapada	Tangi-Choudwar, Mahanga
5		Integrated farming (Fish + duck + livestock)	Andhoti, Mangarajpur, Poparada, Mahanga, Narijanga	Barang, Badamba, Tangi-Choudwar
6		Other than poultry rearing in backyard system	Kherosh	Kantapada
7		Parasitic infestations and their management in livestock	KVK campus, Mallipura	Tangi-Choudwar, Mahanga
8		Pisciculture	Mirzapur	Salepur
9		Poultry farming and management	Nuabandha, Ganeshwarpur	Athagarh, Tangi-Choudwar
10		Preventive measure of dairy animals before rainy season	KVK campus	Tangi-Choudwar
11		Scientific method of sheep and goat rearing	Alora	Narasinghpur
12		Capacity building of para veterinarians on different animal husbandry activities	KVK Campus	Tangi-Choudwar

**Trainings on Soil Science (48)**

Sl.	Thematic Area	Title	Venue	Block
1	Soil Health and Fertility Management	Acid soil management for higher production	Ganeshwarpur, Mahanga, Nuabandha, KVK campus (2), Athagarh, Mangarajpur	Tangi-Choudwar, Mahanga, Athagarh, Badamba
2		Integrated nutrient management in rice	Khalarda, Gopinathpur, Chadheipada, Nuabandha, Gopalpur, Bandhupur, Fatepur, Biswanathpur	Barang, Nischintakoili, Tangi-Choudwar, Athagarh, Mahanga, Salepur
3		INM in <i>rabi</i> rice	Banki	Banki
4		Nitrogen management in field crops	Kulabarkhira, Sankilo	Nischintakoili
5		Nitrogen management in rice for higher efficiency	Ganeshwarpur (2) Gurujang	Tangi-Choudwar
6		Soil health management for sustainable production <i>(For grass root level extension functionaries)</i>	KVK campus	Tangi-Choudwar
7		Soil sampling methods	Govindapur, Ganeshwarpur, Kharibil, Gopalpur, KVK campus	Mahanga, Tangi-Choudwar, Niali, Mahanga
8		Soil sampling methods and result interpretation	Arilo, Sankilo, Kaitha, Andhoti, Gobardhanpur, Pankal, Pachhimkachha	Mahanga, Nischintakoili, Mahanga, Barang, Badamba, Salepur
9		Organic farming	Balichaturi, ATMA Hall, Garudagaon	Tangi-Choudwar, Cuttack Sadar
10		Role of micro-organism in agriculture production	Sankilo	Nischintakoili
11		Vermicomposting	Nischinta, ATMA hall (3), Athagarh, Guali, Tarito, Alipur, Bhadreswar, KVK Campus	Tangi-Choudwar, Cuttack Sadar, Athagarh, Salepur, Mahanga
12		Water management in rice in rainfed situation	Bilipada	Mahanga

## Functional Linkage with Organizations

Linkage among organizations is the main criteria for performance in any sector and impact generated in agriculture and allied sector relies heavily on cooperation between different agencies. KVK Cuttack is associated with various agencies ranging from research and academic institutions, state government departments, media, non-government organizations (NGOs), farmers' clubs etc. KVK is directly linked with ICAR-NRRI as its host organization which monitors its scientific and administrative activities. Zonal Project Directorate Zone VII, Jabalpur is the zonal coordinating unit and Dean Extension Education, Orissa University of Agriculture and Technology, Bhubaneswar is the state coordinator. Guidance and cooperation for preparation of Action Plan for KVK Specialists is finalized after Scientific Advisory Committee Meeting and review-cum-action plan workshop meetings and also zonal workshops.

KVK is associated with Agricultural Technology Management Agency (ATMA), Cuttack. It takes financial assistance for field activity and extension programmes, preparation of strategic research and extension plan and also the experts act as resource persons in capacity building programmes.



*ATMA sponsored training under progress*



*AGM NABARD at cauliflower seed production plots*

KVK also establishes linkage with Credit and Funding agencies like National Bank for Agriculture and Rural Development (NABARD) and Nationalized banks particularly the Lead Bank District Manager for district planning and consultations on funding of farmers under different schemes.

It collaborated with its ring partners, i.e. KVK Khurdha, KVK Jajpur and KVK Jagatsighpur in sharing scientific knowledge. The agricultural disciplines rely upon Orissa State Seed Corporation, Bhubaneswar and ICAR-NRRI for procurement of seed for FLD and OFT programmes.



*Demonstration of transplanting with KVK Jajpur*



*Crop cutting programme with State Agril. Dept.*

KVK works along with office of Deputy Director of Agriculture, Horticulture and Chief District Veterinary Officer, Government of Odisha for skill development of village level workers, Krishak sathi and grass root level extension staffs along with providing support for field activities, i.e. Joint diagnostic team to address farmers problem, participation in monthly meetings, training and farmers days and joint diagnostic survey and visits etc.



*Problem identification of beetelvine at Sahaniazpur*

KVK also works with Department of Forest and Fisheries for implementing different schemes. In Watershed development projects and Pani Panchayat programmes, KVK facilitated the capacity building programmes by acting as expert source. Besides these administrating agencies we are involved with different organizations discussed discipline wise below except ATMA which is discussed afterwards:

### **Agronomy**

Use of scientific agronomic practices play an important role in determining the yield attributes. The agronomy expert and KVK programme coordinator is involved in various capacity building programmes and scientific meetings of importance for development of agriculture in the districts. He actively popularises ICAR-NRRI rice varieties in the district. He is also actively involved with ICAR-Indian Agriculture Research Institute, New Delhi for OFT programme on biofertilizers. Under FLD on oilseeds and pulses linkage with different ICAR institutes is being established. He was also associated with Indian Institute of Water Management (Water Technology Centre for Eastern Region) and Departments of Major, Minor and Lift Irrigation for different activities.



*Field evaluation of ICAR-NRRI varieties*

### **Horticulture**

Horticulture has high promises towards the farming community. SMS (Horticulture) representing KVK established linkage with different organisations like Central Horticultural Experiment Station (Bhubaneswar), Department Horticulture, Government of Orissa (Cuttack), Indian Institute of Vegetable Research (Varanasi), Indian Institute of Horticultural Research (Bengaluru), National Research Centre on Onion (Nasik), Horticulture and Agroforestry Research Programme (Palandu, Ranchi) for technical inputs and/or technical support for field activities. KVK is





*ATMA sponsored demonstration on plug tray technology*  
 also associated with state departments in evaluation of horticulturists and implementing different schemes related to horticulture development and other extension programmes along with National Horticulture Mission Project formulation and strategic development of the district.

**Plant Protection**

Disease and pest control is an important component of agriculture. KVK through its SMS (Plant Protection) addresses the problems in coordination with State Line Departments and Center for Integrated Pest Management. Collaborative programmes on pest management are routinely undertaken along with diagnostic visits, field visits and capacity building of farming community and village level workers.



*Awareness programme with Center for Integrated Pest Management*

**Animal Science**

Specialist from KVK Cuttack collaborates and associates with different institutes for performing its activities. Technical inputs are obtained from different institutes like Central Institute of Freshwater Aquaculture (Expertise and fry, fingerlings, feed and medicines), Central Avian Research Institute, Regional Centre, Bhubaneswar (Expertise and ducklings), Central Poultry Development Organisation, Bhubaneswar (Chicks and technical knowhow), Directorate of Animal Husbandry & Veterinary Services (Conducting training and implementing different schemes related to animal husbandry), College of Veterinary Science, Bhubaneswar (Expertise), National Dairy Research Institute, Karnal (Expertise), Indian Veterinary Research Institute, Izatnagar (Scientific guidance), along with expertise in designing training, FLD and OFT programmes suitable for local conditions and solving the problems of farmers. KVK Cuttack also helps in creation of awareness about disease diagnosis through Animal Disease Research Institute and implementation of different programmes through Chief District Veterinary Officer, Block Veterinary Officers and Veterinary Assistant Surgeons etc. for development of livestock sector in the district. Initially, Tangi-Choudwar Block was linked after joining of SMS (Animal Science) in 2014-15 and will be spread to other blocks in 2015-16 and linkage will be further strengthened.



*In ASCAD training programme with Block Veterinary Officer, Tangi-Choudwar*

### Women in Agriculture

Farmwomen play an indispensable part in agriculture and allied sector activities. Besides the common stakeholders the KVK specialist (Women in Agriculture) coordinates and associates with Centre of Tropical Mushroom Research and Training, Bhubaneswar (OUAT) for training on production of spawn and mushroom. Besides that Community Food & Nutrition Extension Unit, Bhubaneswar, Central Tuber Crops Research Institute, Bhubaneswar and Central Institute for Women in Agriculture, Bhubaneswar for Scientific guidance & consultancy regarding training, FLD and OFT programmes and technical input.



Training on Value Addition

### Soil Science

Soil is one of the most living assets of the farmer. Judicious use of soil after testing its components is a real need of farmers. KVK expert on soil science



FAI-AAP- Soil health enhancement programme



IFFCO collaboration for soil testing

helps in implementing different schemes related to soil and water conservation assisting Departments of Soil and Water conservation. As KVK lacks a soil testing facilities, it collaborates with Soil Testing Laboratory, Jagatpur and Soil testing mobile van facilitation of IFFCO, Cuttack for soil testing facility and technical support to the adopted villages. KVK is also associated with Fertilizer Association of India (FAI) for assessment and demonstration activities.

### Mass Media

Mass media is an intrinsic component in dissemination of success stories, activities and scientific information of KVK to the grass root farmers, farmwomen and rural youth. All India Radio, Cuttack is actively engaged in dissemination of agricultural technologies through panel discussion and live in programmes with



A success story of farmer being recorded



Recording of a success story for mass dissemination

experts from KVK and also covers important functions organized for the farming community. Local television channels like Doordarshan, ETV,

Kanak TV and Zee Kalinga help to disseminate the success stories of agri-entrepreneurs and inputs on agricultural technologies from successful farmers. Success story on use of Nimin coated urea, management of yellow stem borer in rice, pro-tray technology, goatery and mushroom cultivation have been covered by TV channels. Celebration of important days and events are also being covered to generate awareness among the masses.

The print newsmedia e.g. 'Samaja', 'Dharitri', 'Prameya', 'Sambad', 'Naxtrajyoti', 'Pragativadi', 'Dinalipi' and 'Odisha Bhaskara' are disseminating activities of KVK, successful agricultural technologies, success stories and celebration of important days and events to the masses.

**Non government and voluntary organisations**

Non-government organisations (NGOs) also play a vital role in promoting agriculture through association with KVK and help in organizing training programme and demonstrations and Bringing Green Revolution to Eastern India (BGREI) Programme. They act as connecting link between KVK and farmers where KVK has not got its hold or not percolated. Some of them are Basumata NGO (Kantapada), CARR NGO (Badamba), Dibyajyoti NGO and Navjyoti NGO, Garudgaon (Mahanga), Digbalay NGO, Kamanga (Tangi), Nigam NGO, Paribar NGO, RUDRA NGO, Buhalo (Nischintakoili), Sambandh NGO (Banki) and Utkal Sevak Samaj (Cuttack Sadar).



କୋଭାସ, ୧୭/୧୦(କମିସ): କଳକପିଳ କେନ୍ଦ୍ରୀୟ ଧାନ ଜାତକ୍ଷଣ ଆନୁଷ୍ଠାନ ଅଧୀନର କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ଦ୍ୱାରା କୋଭାସ ଆଗ୍ରାହକରେ ବିଶ୍ୱ ଖାଦ୍ୟ ଦିବସ ପାଳିତ ହୋଇପାରିଛି । ସ୍ୱେଚ୍ଛାସେବୀ ଆନୁଷ୍ଠାନ ଅପୋଡ଼ି ସହଯୋଗରେ ଆୟୋଜିତ ଉଚ୍ଚ କାର୍ଯ୍ୟକ୍ରମରେ କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ନିର୍ଦ୍ଦେଶକ ଚୈତ୍ୟନିଧି ଚାନ୍ଦଲ ଚିନ୍ତାଚଳନ ମହାପାତ୍ର ମୁଖ୍ୟ ଅତିଥି ଭାବେ ଯୋଗଦେଇଥିଲେ । ଏହି ସଭାରେ ଚୈତ୍ୟନିଧି ବି.ଏଲ. ଶର୍ମା, ଏସ୍.ଏମ୍. ପ୍ରସାଦ, ଏ.କେ. ନାୟକ, ଏସ୍.ଜି. ଶର୍ମା, ଆର୍.କେ. ମହାନ୍ତି, ଡ.ଏଲ୍.ସିଏ ଏ ଡାକ୍ତା-କୋଭାସ ଦୁଇ ଜନସାଧନ ଅଧିକାରୀ ହେମନ୍ତ ପ୍ରାଣ ଯୋଗଦେଇ ୨୦୧୪ ବର୍ଷର ପରିଚାଳିତ କୃଷିର ଚର୍ଚ୍ଚା ଭାବେ ଯୋଗାଯୋଗିତରୁ ଏହାର ବିଭିନ୍ନ ବିଷୟରେ ଆଲୋଚନା କରାଯାଇଥିଲା । ତିନି ଦିନ ଧରି କାର୍ଯ୍ୟକ୍ରମ ଉଚ୍ଚ କାର୍ଯ୍ୟକ୍ରମରେ ସୁଲ ଚିନ୍ତାକ୍ରମରେ ପ୍ରତିଯୋଗିତା, ଦାକ୍ଷିଣାତ୍ୟ ମଧ୍ୟରେ ଜାରିମ୍ ଓ ସରକାରୀ, କୃଷି ଓ ପଶୁପାଳନ ପଦ୍ଧତି ବିଭିନ୍ନ ଆୟୋଜନ କରାଯାଇଥିଲା । ଏହି କାର୍ଯ୍ୟକ୍ରମରେ ସୁଲ ଛାତ୍ରଛାତ୍ରୀ ମାନଙ୍କ ମଧ୍ୟରୁ ପ୍ରେମକନ୍ୟା ଚାନ୍ଦଲ, ବିଚେନ୍ଦ୍ର ନାୟକ, ପରିଡ଼ା ପୁରୁଷା,

World food day celebration covered by print media



Training programme with farmers' club collaboration

## Agricultural Technology Management Agency (ATMA)

ATMA is a society of key stakeholders involved in agricultural activities for sustainable agriculture development in the district. It is a focal point for integrating Research and Extension activities and decentralizing day-to-day management of the public Agricultural Technology System (ATS). With the minimum budget, ATMA can introduce or demonstrate some of the programs as innovative model, which can be replicated by farmers' organizations. The ATMA at district level would be increasingly responsible for all technology dissemination activities at the district level. It would have linkage with all the line departments, research organization, non-governmental organizations and agencies associated with agricultural development in the district. ATMA (Agricultural Technology Management Agency) was started in 1998-99 with 100 % financial assistance by World Bank under National Agricultural Technology Project in seven states of India. The work of ATMA was evaluated by IIM, Lucknow in 2005 and got very positive remarks. The report indicated a major technological awareness change along with increase in total production and overall productivity. Though World Bank stopped its funding in 2005, seeing the impact and realising its importance in national growth, Govt. Of India funded ATMA under Ministry of Agriculture and Cooperation as State



*Programme on soil health management*

Extension Programme for Extension Reform in 251 districts in India with a support of 90% from centre and rest by State Govt. In 2010, it was expanded to all the districts of India and kept under National Mission on Agriculture and Technology.

The Deputy Director of Agriculture is designated as the Project Director, ATMA in Cuttack. ATMA Governing board has in its board the PC, KVK Cuttack as its member and three Specialists namely Dr SM Prasad, Mr DR Sarangi and Dr M Chourasia are the designated specialists. In Cuttack district, ATMA is supporting to KVK Cuttack financially for training programmes, OFTs, FLDs and exposure visit programmes for farmers and farmwomen of Cuttack district. In different district level training programmes sponsored by ATMA, the KVK specialists are providing technical support as resource persons. KVK Cuttack is actively involved



*Skill development training in Guali (Salepur)*



*Demonstration on IPM in Rice*



*Impact of demonstration on cauliflower*

with DDA Cuttack and ATMA for carrying out different extension activities thereby imparting knowledge and providing technical knowhow to the farmers, farmwomen and rural youths.

**Key areas of involvement**

- Periodic participatory rural appraisal (PRAs) to identify the problems and constraints faced by different socio-economic groups and farmers within the district.
- Contribute in preparation of an integrated, Strategic Research Extension Plan (SREP) for the district that would specify short and medium term adaptive research as well as technology validation and refinement and extension priorities for the district, these priorities should reflect the importance farmers constraints identified during the PRA.
- Identification of location specific needs of farming community for farming system based agricultural development



*Demonstration on brinjal*

- Help in coordination efforts being made by various line departments, NGOs, farmers organizations and allied institutions to strengthen research extension-farmers linkages in the district and to promote collaboration and coordination between various state funded technical departments;
- Assisting in taking steps to ensure that problems, constraints and needs to the farming system based agriculture development are identified and diagnosed periodically.



*ATMA sponsored demonstration*

- Assistance for ensuring adequate linkages and frequent interaction between scientists, extension functionaries and technicians & farmers, in order to prepare an integrated plan to effectuate their linkage, support each other, better understanding and appreciation of their problems, means adopted to sort out problems and plans etc., and to develop a mechanism of feed back.
- Assist in ensuring capacity building of the ultimate users- the farmers in terms of physical, financial and skill resources base by way of adequate financial support channelized through credit institutions, private investments and training for skill upgradation.

## Television and Radio Talks

- Dr J Nayak delivered a talk in the Nari Mahal programme over the Doordarshan on 'Importance of fruit juice and preparation of different squash from seasonal fruits' on 12 April 2009.
- On the activities of KVK, Santhapur, 3 programmes on the topics 'Pragati Pathe', 'Genetic upgradation of local goat in rural area', 'Economic upliftment of rural women through backyard poultry rearing' were telecasted on Doordarshan on 13, 20 and 22 December 2010.
- Dr PK Mallik participated in a phone-in-programme organized by Doordarshan, Bhubaneswar on 'Rearing of goats' on 24 December 2010.
- Mr DR Sarangi delivered a talk on the success story of 'Use of Nimin for higher efficiency of nitrogen in rice' at Ganeswarpur, which was broadcasted by Doordarshan on 21 September 2011.
- Mr TR Sahoo delivered a talk on Doordarshan on 'Tray dwara panipariba chara utpadana (Plug tray technology for vegetable nursery raising)' broadcasted on 22 September 2011.
- Dr M Chourasia delivered a talk on 'Management of rice yellow stem borer through auto confusion technique' was recorded by Doordarshan Odia on dated 12 October 2011



Successful adoption of pro-tray technology is being recorded by ETV



Sharing the success story of a mushroom entrepreneur

- Mr TR Sahoo delivered a radio talk on 'Tarabhujha chasa (Watermelon cultivation)' broadcasted by Prasar Bharati, Cuttack on January 2012.
- Mrs. S Sethy delivered a radio talk on 'Krusha karjyare mahila manankara shrama laghaba pain krushi jantrapati ra byabahar (Use of agricultural machinery for drudgery reduction in women)' broadcasted by Prasar Bharati, Cuttack 30 January and 02 May, 2012.
- Mr TR Sahoo delivered a talk on ETV on 'Baigyanika upayare baigana phasalare samanwita khadyasara parichalna (INM in brinjal)' broadcasted on 18 March 2012.
- Mr DR Sarangi delivered a radio talk on 'Mruttika parikhyanara upajogita (Importance of soil testing and sample collection)' broadcasted by Prasar Bharati, Cuttack on 26 April 2012.
- Mr TR Sahoo delivered a talk on ETV on 'Tray dwara panipariba chara utpadana (Plug tray technology for vegetable nursery raising)' broadcasted in September 2012.
- Mr TR Sahoo delivered a talk on ETV on 'Utkrusta manara phulakobi pain samanwita khadyasara parichalna (INM in cauliflower to obtain better quality curd)' broadcasted in November 2012.
- Mr TR Sahoo delivered a talk on ETV on 'Unnata upayare mula chasa (Improved package and practices of radish cultivation)' broadcasted in November 2012.

- Mr DR Sarangi delivered a radio talk on '*Panipariba chasa re jibanu sara ra byabahara o tara upakarita (Use and benefit of bio-fertilizer in vegetable cultivation)*' broadcasted by Prasar Bharati, Cuttack on 19 March 2013.
- Mr TR Sahoo delivered a talk on ETV on '*Unnata upayare kalara chasa (Improved package and practices of bitter gourd cultivation)*' broadcasted on January 2013.
- Mr TR Sahoo has delivered a radio talk on '*Adiniya pani pariba chasa (Off season vegetable cultivation)*' on 9 July 2014 at AIR, Cuttack.



Successful adoption of yellow stem borer protection in rice

- Dr RK Mohanta delivered a talk in a special Q/A programme on '*Barsadine gai gorunka jatna (Care and management of livestock in rainy season)*' in 'Pallimanca' broadcasted by Prasar Bharati on 25 July 2014.
- Dr RK Mohanta delivered a radio talk on '*Banya samayare gai gorunka jatna (Care and management of livestock during flood)*'

recorded Prasar Bharati, Cuttack on 25 July 2014.

- Mrs. S Sethy delivered a radio talk on '*Krushu karjyare mahila manankara shrama laghaba pain krushi jantrapati ra byabahar (Use of agricultural machinery for drudgery reduction in farmwomen)*' broadcasted by Prasar Bharati, Cuttack 8 September, 2014.
- Sri DR Sarangi delivered a radio talk on '*Panipariba chasare anusarara byabahara (Use of micro-nutrients in vegetable crops)*' recorded and broadcasted by AIR, Cuttack on 24 November 2014.
- Dr RK Mohanta delivered a talk on '*Adhika Khira Utpadana Pain Dudhiyali Gaiku Santulita Gokhadya (Balanced feeding for getting more milk from cows)*' which was broadcasted by AIR, Cuttack on 09 February 2015.
- Smt. S Sethy delivered a talk on '*Phala O Pani Pariba Mulyajukta drabya prastuti (Value added products from fruits and vegetables)*' which was broadcasted by AIR, Cuttack on 11 February 2015.



Success story of rice production technology recorded for mass dissemination

## Impact

KVK Cuttack is actively involved in testing of technology through OFTs, large scale demonstration of proven technologies, capacity building of farmers, farmwomen and rural youths along with that of extension functionaries at grass root level. Through these programmes and other extension activities KVK Cuttack has made its impact on the farming community. A few generalized impacts are given below and subject wise impact is given afterwards.

### Adoption of ICAR-NRRI Rice Varieties

Front line demonstration of high yielding varieties of rice released from NRRI, Cuttack, most of the old landraces have been replaced in the KVK adopted village clusters. The farmers are made aware to cultivate the rice varieties according to agro-ecological situation. Previously, many of the flood prone lands and/or lowlands were kept fallow or low yielding land races were grown. But now Varshadhan and Swarna *sub1* are cultivated in total low lands of Salepur and Mahanga, and Banki blocks with this variety. The hybrid rice varieties Ajay and Rajalaxmi have also good impact in KVK adopted villages. Besides these, a large number of NRRI varieties are successful in KVK adopted villages. After looking at the impact of these



Weeding with row adjustment



Seed production in village Baenpur (Mahanga)

varieties, many nearby villages also started cultivating these varieties.

### Seed Production of ICAR-NRRI Rice Varieties

Due to continuous efforts from KVK and ICAR-NRRI, farmers of Baenpur village of Mahanga, Sankilo of Nischintakoili and Nandol of Salepur block have started rice seed production of popular rice varieties (Sarala, Gayatri, Pooja and Varshadhan) of ICAR-NRRI.

### Improved Rice Production Technology

Assessment of HYV of rice along with neem coated urea for increasing nitrogen use efficiency and



Paddy var. Nuakalajeera in farmers fields





*A bumper crop of cauliflower in farmer's field*

management of yellow stem borer through auto confusion technique has shown good performance under medium land of Cuttack.

### **Backyard Poultry as Rural Employment**

The impact of FLD and training on backyard poultry is also noticeable. The SHG group of Jhadeshwarpur, Mahanga has taken it as livelihood support. Now they are procuring chicks of Vanaraja breed from Govt. agency, brooding and selling at 15 days to rural women. Farmwomen, Mrs. Tarangini Pradhan and Chinu Dehuri have been awarded by ICAR-NRRI. After training and demonstration in the tribal villages of Haridapal and Abhaypur, SHGs of women have taken it as their livelihood support. Vanaraja rearing has also spreaded to six nearby tribal villages.

### **Agripreneurship Development**

In the village Nuasahi of Tangi-Choudwar



*A farmwoman of Abhaypur showing Vanaraja eggs*

assessment of high yielding marigold variety (Bengal orange) was done by KVK through women SHG. In first they faced problem in marketing but with liasoning of KVK buyer came in contact. Women were happy with bumper harvest and income and this technology has spreaded in three villages among six SHGs. In mushroom cultivation, Shri Chandra Shekhar Ray from village Agrahtat in Tangi-Choudwar block has become a successful entrepreneur and is now a role model for mushroom cultivators. Goatery is also generating a number of entrepreneurs and most of them are in Tangi Choudwar block.



*A rice-cum-vegetable entrepreneur receiving award*

### **Broccoli Cultivation**

As cauliflower rate dwindles when the production is at peak, it was substituted with broccoli in Sankilo and Loknathpur village cluster. This has got very good response and farmers got good economic return. Shri Sudhansu Sekhar Nayak, a progressive farmer of this village has got the "MAHINDRA SAMRIDHI AWARD 2013", for eastern region for higher production of rice and adoption of improve production technologies, which is the matter of pride of this KVK for its sincere effort for the betterment of farming community.

### **Impact on Area of Crop Production**

In agriculture sector, crop production is the vital segment and the entire production depends upon use of plant production technology in the form that



*Broccoli : a suitable cole crop for substitution*

suits the locality. KVK Cuttack conducted different capacity building programmes for farmers, farmwomen and rural youths in the areas of 'Scientific nursery raising of paddy for healthy seedlings', 'Production technology of rice', 'Production technology of pulses', and 'Integrated weed management in upland, medium land and lowland rice' etc. in the adopted villages of Cuttack district. After the training programme, visits were made and it was assessed that the farmers are raising nursery using scientific methods. They are following seed treatment, proper place is selected along with use of balance dose of fertilizers, using proper seed rate, and line transplanting etc. In case of pulses, the high yielding varieties are in demand which was advised in training programme, but their availability was not timely. The weed management practices are being followed particularly herbicides like Butachlor and Pretilachlor.

The on farm trials of ICAR-NRRI released varieties have a great impact on farming communities. The variety *Swarna sub-1* has substituted local land races Champeisali in Banki area where flood comes every year. In BGREI programme, this variety has got a place for its distribution in flood prone areas. The hybrids Ajay and Rajalaxmi are also very popular among the farmers and are distributed in BGREI programme. The herbicide londex power being granular is easily applicable and controls all type of weeds in transplanted rice



*An ICAR-NRRI variety in farmers field*

when applied at 8-10 DAT. It is also available in the market and hence, accepted by the farmers.

The demonstrated rice varieties e.g. Pooja, Sarala and Gayatri have got prime place in rice fields. The upland varieties, Annada and Anjali have substituted local land races of short duration. The variety Sahabgaidhan has replaced the Khandagiri variety and covering the drought prone rainfed uplands in Tangi-Choudwar, Narasinghpur and Badamba blocks. It has also found place in BGREI programmes for rainfed uplands.

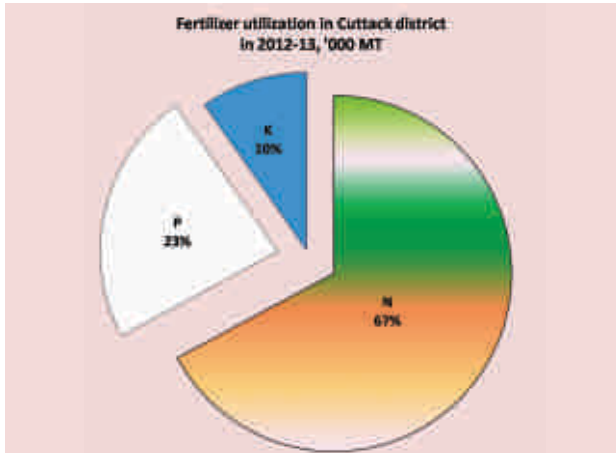
Crop production is being enhanced by the active collaboration between KVK and state line departments, ICAR institutes, NGOs and local leaders.

#### Impact on Area of Soil Science



Soil plays an important role on production of crops and maintaining their quality. Efficient and

judicious use of soils improves and maintains production whereas erratic use erodes soil fertility and soil nutrient composition alters. Therefore, United Nations Organization and Food and Agricultural Organizations have declared the year 2015 as 'International Year of Soils' with slogan 'Healthy Soils for a Healthy Life'. As per mandate, KVK Cuttack has organized different activities like training programmes for farmers/farmwomen/rural



*Fertilizer consumption in Cuttack district ('000 MT) in 2012-13*

youth, assessed new technologies and transferred need based technology in the reporting period.

Training programmes are designed to changes in knowledge, skill and attitude of the practicing farmer, farmwomen and rural youth of the district. There was 64% increase in knowledge level in use of chemical fertilizer in balanced form. Around 75% increase in awareness among farmers was noted about soil sampling technique and its benefit for increasing the production as well as reducing the cost of cultivation. Moreover, training on integrated nutrient management practices help to increase knowledge and skill on method of fertilizer application technique and their scheduling in crops, time and method of biofertilizer use in various crops, role of major nutrients and micronutrients and deficiency symptoms thereof. We observed there were 48% changes in their attitude towards balanced nitrogen and potash fertilizer use. The trainings on acid soil management for enhancing soil productivity increase the use of soil reclamation inputs. Many farmers, farmwomen and rural youths have started vermicomposting as their extra income generation source particularly in tribal villages like Haridapal and Abhaypur (Tangi Choudwar) with 13 vermicompost pits and in village Mangrajpur 15 vermicompost pits have been made. So, a total number of 48 training has brought significant changes in knowledge, skill

and attitude benefitting farmers of seven blocks in the Cuttack district.

On farm trial of new and locally suitable technologies and the successful horizontal transmission through front line demonstrations have achieved increased level of technology adoptions for the farming community. During assessment and transfer of technology to farmer's field we found that there was 61 % increase in adoption rate of new technology and 19% increase in yield, thereby resulted in higher economic gain. Effective demonstrations like INM in rice, boron application in groundnut, PSM application in maize, soil test based fertilizer application, use of nimin with nitrogenous fertilizer and brown manuring in rice have resulted in higher economic yield with a horizontal spread to three blocks benefitting 1500 farm families. Technological intervention through brown manuring has opened a new avenue for addition of organic biomass in soil in rice in direct seeded condition. Under the scenario of climatic aberration this technology is highly accepted by the rice farmers of the district. In addition to this, as advocated by our Hon'ble Prime Minister of India, there is a increase in demand for soil testing in the district to perform soil test based fertilizer application.

KVK has collaborated with line departments in sharing knowledge on latest technology, organizing training for them for technical backstopping and participating as a team member



*Farmers realizing importance of nitrogen management*

in planning and other problem diagnosing. Soil science specialist tried to make impact through by bringing changes in knowledge, skill, and attitude about different technologies. Farmers have now realized benefits made in terms of higher yield and savings from judicious nutrient use.

### Impact of Area on Plant Protection Technology

Pest and disease control have been a challenge to agricultural planners and scientists at a time when the application of agrochemicals is being protested by various sections of the society on the ground of environmental externality. Hence, judicious use of chemicals and promotion of biological substitute for the protection of plants is highly critical. Although, the crops and the situation-specific production technologies are developed and recommended for use by the farmers; the available agricultural technology does not serve its purpose till it reaches and adopted by its ultimate users, the farmers.

The KVK Cuttack selected the village Sankilo of Nischintakoili block as a focal village and conducted various activities like training programme, FLD and on farm testing. The KVK adopted Sankilo in year 2011. The population of the village is 1864 with 72 per cent literacy and having medium land with canal as a source of irrigation and rice and vegetable cultivation are predominant in this cluster. Before the intervention of KVK, the farmers grow the crop with traditional



*Promote Tricoderma spp. for management of diseases*

technique with sole rely on chemical pesticides for management of insect-pests and diseases. After adoption of village, KVK motivated the farmers for adoption of improved crop production techniques by conducting training programme on IPM technique, pest-defender identifications, uses of pheromone traps and bio-agents and good agronomical practices for keeping the pest population below the economical threshold level. Apart from these proven plant protection techniques like IPM in rice, IPM in brinjal and other vegetables and pulse has demonstrated in farmers fields. We also mobilized the other government agency like Central Integrated Pest Management Center, Bhubaneswar, for intensification of pest management concept in this cluster. Now these day this Sankilo cluster has



*Massive programme has been under taken for promotion of IPM in vegetable*



*Yellow Stem Borer infestation has been below ETL level by adoption of IPM technique*

become iconic in the districts where more than 95 percent farmers has adopted seed treatment technique, eighty percent farmers adopted the line transplanting technology and increase the demand of pheromone traps, Tricogramma cards and *Trichoderma* sp in this cluster are the indicator of success of programme.

### Impact on Area of Horticulture

Horticulture plays an important role in meeting the demand of vegetable and fruits in the district as it needs to fulfill the demand of Cuttack Bhubaneswar twin city and also industrial belts in the district in addition to the normal inhabitants. To achieve the above said purpose, KVK Cuttack organized different capacity building activities, assessment and transfer of need based technology to farmer's field during 2010-2015.

Training imparts a lot by bringing out significant changes in knowledge, skill and attitude of farming community. There is 66% increase in knowledge level in use of poly tunnel and shade net house in nursery raising and better understanding in open method and protected method of seedling production. Around 71% increase in awareness among farmers about soil solarization and *Trichoderma* use in disease control in seedling production. Moreover training on improved method of cultivation practices helped to increase knowledge and skill on method of planting technique and their fertilizer scheduling in fruit



*Adoption of protray technology by farmers*



*Vegetable cultivation in Sankilo*

crops, time and method of biofertilizer use in vegetable crops, role of major nutrients and micronutrients and the deficiency symptoms thereof. We observed 48% change in their attitude towards balanced nitrogen and potash fertilizer use. Training to rural youths also changed their attitude to take up the works like cutting, budding, grafting for commercial planting material production. Even the farmers could able to raise pointed gourd vine cuttings in small polythene to overcome root material crisis. Then trainings on post-harvest handling of vegetables for enhancing value of the produce brought 32% changes in awareness level in post-harvest handling of produce. So, training has brought significant changes in knowledge, skill and attitude benefitting 918 male and 211 female of five blocks in the Cuttack district

Trial of technology at farmer's field (OFT) and the successful transmission afterwards through front line demonstrations have increased the level of new technology adoption, more area under crop substitution, and improvement in economic condition. During assessment and transfer of technology to farmers' field we found that there was 72% increase in adoption rate of new technology and increase in yield by 28%, thereby resulted in higher economic condition. Effective demonstrations like INM in brinjal, Boron application in cauliflower, S and Mo application in cowpea and bunch feeding in Banana resulted in



*A progressive farmer showing his brinjal crop*

higher economic yield with a horizontal spread to four blocks benefitting 2000 farm families. Technological intervention like pro-tray method of nursery raising in protected structure had a great impact as it is now adopted by 120 farmers covering an area of 92 ha with healthy seedlings. While conducted FLD on crop substitution of high value crop like Broccoli for commercial Horticulture, it heavily impacted upon farmers through seeing is believing. Broccoli has been popularizing among farming community and it is estimated that there are now more than 30 ha area under four blocks for broccoli cultivation out of which the success in a cluster of villages near Sankilo in Nischintakoili block can be seen as a model. Other varieties popularized are: tomato var. pusa rohini, pointed gourd var. swarna aloukik and rabi onion var. Agrifound light red. Among these varieties rabi onion var. Agrifound light red



*Broccoli cultivation provided a boost to farmer economy*

has been accepted by farmers for paddy-onion based farming system in medium land situation.

KVK has extended support and collaboration with line departments in sharing knowledge on latest technology, organizing training for them for timely up-to-date and participating as a team member in planting material verification and other problem diagnosing team. Horticulture discipline under KVK tried to make impact through different production technologies by bringing changes in knowledge, skill, and attitude along with the adoption rate. Farmers are now realized benefits in terms of higher crop yield and higher economic return.

### **Impact on Area of Women in Agriculture**

Training programmes were conducted for farmers/farmwomen, school dropout girls, rural youth on various aspects of agriculture, horticulture, post harvest management and value addition, drudgery reducing tools and equipments, mushroom cultivation, women and child care, income generating activities, nutritional management, entrepreneurship development through Self Help Groups etc. Through pre and post evaluation it was observed that knowledge level increased up to 68% after the training programme. Eight numbers of entrepreneurs were developed in mushroom cultivation, value addition and vermicompost production after getting training. Skills of 56% participants were improved and through vocational training, 4



*Mushroom demonstration in progress*



*Cultivated mushroom weighed and packed for marketing*

trainees are working as resource persons in mushroom production and vermicompost production creating a different identity among villagers. 35 nos of SHG were strengthened in different capacity building programmes. The SHG members are preparing different products and selling in local markets and exhibitions etc. Ten successful SHGs were demonstrated their products in the exhibition conducted on the eve of Women in Agriculture Day 2014 at NRRI, Cuttack where the Minister of State Smt. Snehangini Chhuria was the Chief Guest.

On Farm Trials (OFTs) and Front line Demonstrations (FLDs) are conducted for identifying location specificity of the proven technologies in different aspects of agriculture, drudgery reduction, nutritional security, post harvest management, value addition, mushroom cultivation, and vermicompost production. Through scheduled questionnaire and personal interviews the data were recorded. It was found that 12 nos of technologies were assessed in the farmers field among them 11 nos of technologies are adopted by the farmers. 33 % of farmwomen are adopting the drudgery reducing equipments and improved technologies benefiting farmers are widely spread. Farmwomen are motivated through such programmes to come out of their houses and take part in the developmental process.

Paddy straw and oyster mushroom cultivation were successfully demonstrated to farmers and



*Nutritional garden: boost to nutritional security*

farmwomen. Scientific Mushroom cultivation was adopted by 48% of farmers, farmwomen and rural youth. Nutritional garden concept was adopted by 62% farmers and farmwomen. Income of the farmers and farmwomen was increased by 32% after adopting different improved technologies. Six successful farmwomen, farmers and ten successful women SHGs were awarded on the eve of NRRI Foundation Day, World Food Day, and Women in Agriculture Day etc. Farm women and rural youth through different SHGs are also interested to engage themselves in different income generating activities after getting exposure through exhibitions, field trips, exposure visits etc.

#### **Impact on Area of Animal Science**

In recent decades there is an increasing trend in the demand for products from poultry and livestock like meat, milk and egg etc. The increased purchasing ability and shift in mindset in consumption pattern particularly in industrial areas, Cuttack city and also the normal inhabitants has set the trend. To achieve the above said purpose, KVK Cuttack organized different capacity building programmes for farmers, farmwomen and rural youth, assessment and transfer of local and need based technology to farmers' field during 2010-2015. As the post was laying vacant for more than 50% of the said period and the expert joined in the last year the programmes and activities are continuously going on.



*Nodal officer Dr BN Sarangi taking a look at backyard poultry in KVK adopted villages*

Trainings were conducted after assessing the needs and gaps observed through identification of problems of the concerned areas. Training improved the knowledge, skill and attitude of farming community. As people are losing interest in farming due to lack of trust in technologies mostly due to gap in knowledge, ignorance about the exact management and technology and also lack of follow up. We tried to bridge the gaps in knowledge, improve adoption rate and refine the existing technologies or new ones to suit the local conditions. It was seen that farmers face different problems in different areas. Training on clean milk production technology resulted in 75% increase in knowledge level in dairying and better understanding in management of cows. Feeding is the most expensive and critical input mostly



*Vanaraja poultry in Model village Gurujang-Guali Cluster*

ignored due to lack of knowledge about its role in the animal, its health, production and reproduction. Awareness about proper feeding practice improved from 35% to 62% after training on the feeding management and use of local ingredients to produce local feed. Integrated farming, use of proper vaccination and deworming practices and also local need based technology adoption also given importance and received very positive feedback on their knowledge and skill development. Though the adoption rate has not improved significantly, the trend has begun to show up in most of the technologies suitable for local conditions. We observed 55% change in their attitude towards adoption of clean milking practice. Training to rural youths also changed their attitude to take up the works like poultry and goatery along with dairy in some areas. So, training has brought significant changes in knowledge, skill and attitude benefitting farmers and farmwomen of five blocks in the Cuttack district.



*A farmer of Ucchapada with his guinea fowl*

Trial of technology at farmer's field and the successful transmission afterwards through front line demonstrations have increased the level of new or improved technology adoption, more animals under breed substitution, and improvement in economic condition. Effective demonstrations like backyard poultry Vanaraja, duckery using Khaki Campbell duck, mineral mixture and salt supplementation at critical periods to pregnant cows, use of Azolla and hybrid



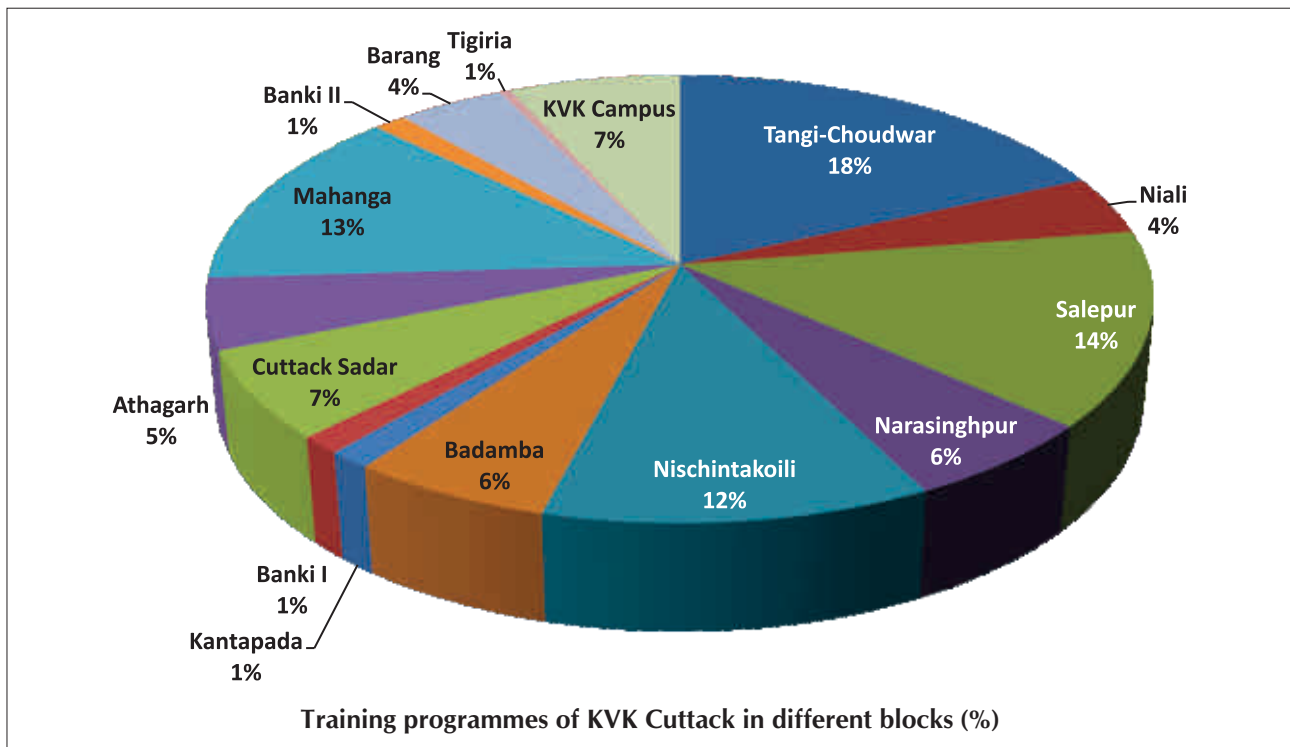


Director, NRRI, Cuttack appreciating the ducks

napier fodders resulted in higher economic gain with a horizontal spread to five blocks benefitting 1000 farm families. Technological intervention like “Mineral mixture and salt supplementation at critical periods to dairy cows”, though the full results are still awaited, had a great impact and being considered for mass awareness programme through seeing is believing approach. Duckery and backyard poultry are being popularized among the farming community which need further impetus for horizontal spreading. Goatery has massive potential

in Tangi-Choudwar, Narasinghpur and Badamba blocks and improved bucks or pure breed of Black Bengal need to be introduced along with proper feeding, breeding and management practices.

KVK is continuously trying to lend its knowledge and collaborate with different line departments, institutes dealing with livestock and poultry sector along with NGOs and Farmers Clubs in sharing knowledge on latest technology, organizing training for timely up-to-date and participating as a team member in livestock development activities. Animal Science discipline under KVK tried to make impact through use of participatory field trial, result demonstrations by bringing changes in knowledge, skill, and attitude along with the increased adoption rate. Farmers are slowly realizing the benefits in terms of higher milk, meat and egg production, improved health and higher economic gain. We are in the path of creating awareness among the farming community by creating literatures in local languages, strengthening the linkage and intensifying the programmes. This intensification is exhibited by the following diagram of trainings imparted by KVK in different blocks of Cuttack district.



**IMPACT OF KVK REPORTED IN MEDIA**

**Training Programmes**

- Training programme on 'Jaibik khata o chhattu chasa (biofertilizer and mushroom cultivation)' at Asureswara was covered by 'Samaja' newspaper on 23 August, 2010 and "Pragatibadi" on 25 August 2010.
- Training programme on 'Pala chhattu chasa (biofertilizer and mushroom cultivation)' organized in collaboration with 'Jibanadhara Women Cooperative Society' was covered by 'Sambad' newspaper on 29 August 2010.
- Training programme covering different aspects of livestock science and home science in Narasinghpur was covered by 'Samaja' newspaper on 30 September 2010.
- Training programme on 'Rice Production Technology' in Narasinghpur was covered by 'Sambad' newspaper on 19 June, 2012.
- Training activity on 'Rice production technology' dated 26 June 2012 at village Narsinghpur was covered by 'KAMYAB –TV'.
- Training activity on 'Improved Vegetable Production' at village Narasinghpur was covered by 'OTV'.
- A farmers training programme organized in the Nigamananda Ashram, Katarpada was covered

by 'Samaja' and 'Anupam Bharata' on 30 January 2014.

- Training programme on 'Integrated pest management in rice' conducted in village Sankilo was covered by 'Samvad'.
- Training programme on 'Improved methods for vegetable production' in Narasinghpur was covered by 'Samaja' newspaper on 28 June 2014.
- Two days training programme on 'Chhattu chasa (mushroom cultivation)' organized in the Nigamananda Ashram, Katarpada was covered by 'Janabani' and 'Pragativadi' (18.03.13), 'Samaja' (20 March 2013), 'Khabara' (22.03.13) newspapers.

**Celebration of important days**

- Activity related to 'Parthenium Awareness Week' was covered by 'Samaja' (01.09.2012) and 'Sambad' (03.09.2012).

**ଛତୁ ଚାଷ ସଂପର୍କିତ ପ୍ରଶିକ୍ଷଣ ଶିବିର**

*ପ୍ରଗତି କାନ୍ଦା କାନ୍ଦା*

**ଅନୁଲେଖକ, ଉଦ୍ୟୋଗ (ପିଏନ୍ଏସ୍):** ବନ୍ଦୁ ବେହେରା ଯୁକ୍ତ ଓ ନିର୍ଦ୍ଦେଶକାଳୀ କୁଳ ଅଧ୍ୟକ୍ଷଙ୍କୁ କବିରାମକୁ ପଞ୍ଚାୟତ ନିଗମାନଙ୍କ ଆଶ୍ରମ ପରିସରରେ ପୂଜ୍ୟ ଚିନ୍ତା ଦାସୀ ଛତୁ କାଷ ସଂପର୍କିତ ପ୍ରଶିକ୍ଷଣ ଶିବିର ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି । କେନ୍ଦ୍ରୀୟ ଧନ ଉଦ୍ଦେଶ୍ୟ କେନ୍ଦ୍ର କଟକ ଆନୁଲେଖ୍ୟରେ ଓ ଆପ୍ତ ସହାୟତାରେ ଏହି ପ୍ରଶିକ୍ଷଣ ଶିବିରରେ ପ୍ରଥମ ଦିନ ୫ ଟି ମହିଳା ସହ ସହାୟକ ଗୋଷ୍ଠୀ ଓ ପୁରୀୟ ଶିବିରରେ କଟକପଡ଼ା, ପିଠାପଡ଼ା, ସାହିଲୋ, ତେଜୁଲପୁର ଓ ମଲାପୁର ଅଞ୍ଚଳର

ବନ୍ଦୁ ବେହେରା ଯୁକ୍ତ ଓ ବାଷ୍ପାମାନଙ୍କୁ ଏହି ଶିବିର ପ୍ରଦାନ କରାଯାଇଥିଲା । ଏଥିରେ ପ୍ରଶିକ୍ଷକ ଭାବେ ସୁଜାତ ସେଠା, ବିଲ୍ଲୁପ ଚଞ୍ଚନ ଉତ୍ତରୀ, ପୁଷ୍ପାଳ ରାଜନ ସାହୁ, ମନିଷ କୌରାଣିଆ ପ୍ରମୁଖ ଯୋଗାଦାନ କରି ପ୍ରଶିକ୍ଷଣ ପ୍ରଦାନ କରିଥିଲେ । ଉକ୍ତ ଶିବିରକୁ ନିଗମର ସଂଯୋଜକ ସୁଧାଂଶୁ ଶେଖର ନାୟକ, ବାଷ୍ପାଳ ନୁଖକ ଭୃତ୍ସର ସଭାପତି ସତ୍ୟ କୁମାର ନାୟକ, କଟକପଡ଼ା ମହିଳା ମହାସଂଘର ସଭାପତି ସୁତାରାଣୀ ନାୟକ ପରିଚାଳନାରେ ସହଯୋଗ କରିଥିଲେ ।

**ଆଗ୍ରାହାଟରେ ବିଶ୍ୱ ଖାଦ୍ୟ ଦିବସ**

କୈମ୍ବର, ୧୭୧୦(ଆ.ପ୍ର): ଚାଙ୍ଗା-କୈମ୍ବର ରୁକ୍ଷ ଆଗ୍ରାହାଟ ଗ୍ରାମରେ କେନ୍ଦ୍ରୀୟ ଧନ ଉଦ୍ଦେଶ୍ୟ ପ୍ରତିଷ୍ଠାନ ଅଧୀନ କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ଉତ୍ତୁପୁରା ପକ୍ଷରୁ ବିଶ୍ୱ ଖାଦ୍ୟ ଦିବସ ପାଳିତ ହୋଇଯାଇଛି । ୩ ଦିନ ଧରି ଏହି କାର୍ଯ୍ୟକ୍ରମରେ ଆଗ୍ରାହାଟ ଗ୍ରାମପୁର ପିଲାନ ମଧ୍ୟରେ ପଞ୍ଚୋଦ୍ଧର କାର୍ଯ୍ୟକ୍ରମ, ଚାଙ୍ଗା ବାଘ ଓ ଉତ୍ତୁପୁରୁ ଚାଳିମ ଚମା ଉଦ୍ଦେଶ୍ୟରୁ କୃଷି, କୃଷି, ପଶୁପାଳନ ଉପର୍କିତ ପରାମର୍ଶ ଶିବିର ଆୟୋଜନ କରାଯାଇଥିଲା । ୨୦୧୪ରୁ ପାଳିକାଳିକ କୃଷି କର୍ମ ଭାବେ ଯୋଷଣା କରାଯାଇଥିବାରୁ ଏହାର ଚିହ୍ନିତ ଦିନ ରୂପରେ ଆୟୋଜନ କରାଯାଇଥିଲା । ବିଶ୍ୱ ଖାଦ୍ୟ ଦିବସର ମହତ୍ତ୍ୱ, କଟକ ବିକାଶରେ ପାରିବାରିକ କୃଷି ଓ ଏଥିପାଇଁ ଉଦ୍ଦିଷ୍ଟ କିଛି ନୂଆ ପଦକ୍ଷେପ, ପୁସ୍ତକାଳିକା, ପଶୁ ସମ୍ପଦ, ପୁସ୍ତକାଳିକା ଖାଦ୍ୟ ଦ୍ୱାରା ପାରିବାରିକ ଯୋଷଣା, ପାରିବାରିକ ସ୍ୱାସ୍ଥ୍ୟ ଓ ସୁସ୍ଥତା ଉପରେ ଗୁରୁତ୍ୱାହୀନତା କରାଯାଇଥିଲା । କେନ୍ଦ୍ରୀୟ ଧନ ଉଦ୍ଦେଶ୍ୟ ଆନୁଷ୍ଠାନର ନିର୍ଦ୍ଦେଶକ ଡ. ତ୍ରିଭୋବନ ମହାପାତ୍ର,



ଉପାଳିକା ବିଜ୍ଞାନ ବିଭାଗର ମୁଖ୍ୟ ଡ. ବିଶ୍ୱରାମ ଶର୍ମା, ଉପ ଅଧ୍ୟକ୍ଷ ବିଭାଗର ମୁଖ୍ୟ ଡ. ଅନୁରାଗ କୁମାର ନାୟକ, ଚାଙ୍ଗା କୈମ୍ବର କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର କଟକ ବିଜ୍ଞାନିକ ଏସର ସୁଜାତା ସେଠା, ବିଲ୍ଲୁପ ଚଞ୍ଚନ ଉତ୍ତରୀ, ଗୁ. ମନାଜ କୈରାଣିଆ, ଡା. ରମାନ କୁମାର ମାଧବର ଉଦ୍ଦେଶ୍ୟ କଟକ ଉପ କୃଷି ନିର୍ଦ୍ଦେଶକ, ବୃକ୍ଷ ଉତ୍ତୁପୁର ଅଧିକାରୀ, ସହଯୋଗୀ କୃଷି ଅଧିକାରୀ ପ୍ରମୁଖ ଉପସ୍ଥିତ ଥିଲେ । କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ରର କାର୍ଯ୍ୟକ୍ରମ ଏହାପରେ ଡ. ଶିବ ମହାପାତ୍ର ପ୍ରଥମ ସ୍ୱାସ୍ଥ୍ୟ ଉଦ୍ଦେଶ୍ୟ ପ୍ରଦାନ କରିଥିଲେ । ସ୍ୱାସ୍ଥ୍ୟକ୍ଷେତ୍ରର ସଂଗଠନ ଆପର୍ତ୍ତ ପକ୍ଷରୁ ଧନ୍ୟବାଦ ଅର୍ପଣ କରାଯାଇଥିଲା ।

- Report on celebration of 'World Food Day' at Rajhans, Cuttack was covered by 'Prameya' on 17 October 2012.
- Observation of 'World Food Day' at Agraahat, Cuttack was covered by 'Samaja', 'Sambad', 'Odisha Bhaskar', 'Dinalipi' on 17 October 2014; 'Prameya' and 'Naxtrajyoti' on 18 October 2014 along with 'Kanak TV' and 'Zee Kalinga'.
- Report on celebration of 'Women in Agriculture Day' at Gualidiha, Cuttack was highlighted in 'ICAR web site' on 4th December, 2012.
- Celebration of 'Women in Agriculture Day' at Sankilo, Cuttack was highlighted by 'Samaja' on 11 December 2013. Observation of 'Women in Agriculture Day' at CRRI, Cuttack was covered by 'Samaja' and 'Prameya' on 4 December 2014 along with 'Naxtra TV', 'All India Radio' and 'DD Odia'.
- Kishan Mela on 'Climate change and improvement in agricultural production' in Sagar, Narasinghpur was covered by 'Sambad' and 'Prameya' newspaper on 06 July 2013.
- Success story on 'Pro-tray technology for raising of vegetable seed' was covered in 'Samaja' on 1 December 2013.
- A training-cum-workshop programme on PPV and FRA organized at Cuttack was highlighted in 'ICAR website' 22 February 2014.

## କୃଷିଜୀବୀ ମହିଳାଙ୍କ ଉତ୍ପାଦିତ ସାମଗ୍ରୀର ବଜାର ସୃଷ୍ଟି ହେବ : ମନ୍ତ୍ରୀ ଛୁରିୟା

କଟକସହର, ୩୧ (ନି.ପ୍ର.)- କଟକ ସହର ଅନ୍ତର୍ଗତ ବିଦ୍ୟାଧରପୁର ଥାନା ଗବେଷଣା କେନ୍ଦ୍ର ପରିସରରେ ସିଆରଆରଆଇ ଅଧୀନସ୍ଥ କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ଆନୁରୋଧରେ କୃଷିଜୀବୀ ମହିଳା ଦିବସ ପାଳିତ ହେଉଅଛି । ଏହି ଉତ୍ସବରେ ପୁଣ୍ୟ ଅତିଥି ଭାବେ ରାଜ୍ୟ ମନ୍ତ୍ରୀ, ଶିଶୁବଳ୍ୟାଣ ଓ ମିଶନ ଶକ୍ତି ବିଭାଗ ମନ୍ତ୍ରୀ ସୁରୋଚିନୀ ଛୁରିଆ ପୁଣ୍ୟଅତିଥିଭାବରେ ସେନାବେଶ ହେଲେ । ଉତ୍ସବକୁ ଉଦ୍‌ଘାଟନ କରି ମହିଳା ମନଲୋଭ କରିଥିବା ଉପରେ ସେମାନେ ସବୁ କାର୍ଯ୍ୟରେ ଆଗେଇଯାଉ ବୋଲି ମନପୋଷଣ କରିଥିଲେ । ମହିଳାମାନେ ମନରୁ ବ୍ୟାଧିତା ଦୂର କରି ଉତ୍ପାଦିତ ବସ୍ତୁ ବାଜାରକୁ ଖାରିଜ ନକରି ଦେଖିବା ପାଇଁ ରାଜ୍ୟର ସାମୁହିକ ସ୍ତରରେ ଆଗେଇଯିବା ବଳରାଜ । ମହିଳାମାନେ ସୁବିଧାଯୁକ୍ତ ଭାବେ ପାଇଁ କୃଷି କ୍ଷେତ୍ରରେ କାର୍ଯ୍ୟ କରିବାକୁ ହେବ । କୃଷି କାମରେ ମହିଳାମାନେ ନିୟୋଜିତ ନହେଲେ କୃଷି ଆଗେଇଯାଉ ବୋଲି ଶ୍ରୀମତୀ ଛୁରିଆ ଉଦ୍‌ଘୋଷଣା କରୁଥିଲେ । କୃଷିଜୀବୀ ମହିଳାଙ୍କ ଅଭିଯୋଗର ଉତ୍ତର ଦେଇ ମନ୍ତ୍ରୀ କହିଲେ ସୁରା ସହାୟକ ଯୋଜନା ପୁଣ୍ୟ ଉପକ୍ରମ ସମାପ୍ତୀ କୃଷିକର ଉପଯୁକ୍ତ କରଣ କୃଷି ପାଇଁ ପୁଣ୍ୟମନ୍ତ୍ରୀଙ୍କ ସହ ଆଲୋଚନା କରିବେ । ଉକ୍ତ ଉତ୍ସବରେ ଆନନ୍ଦବୋଧଣା କେନ୍ଦ୍ରର



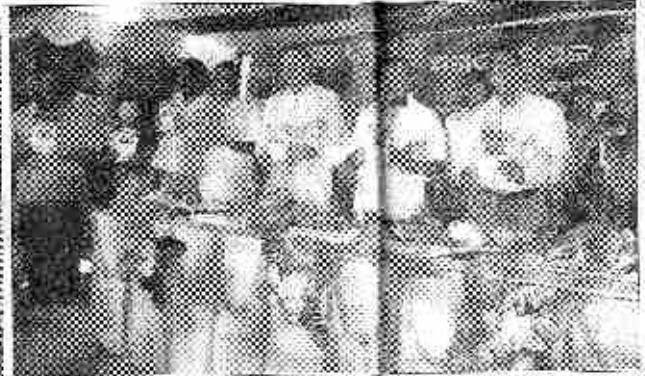
ଅତିଥି ପ୍ରଦୀପ ପ୍ରଜ୍ଵଳନ କରି ଉଦ୍‌ଘାଟନ କରୁଛନ୍ତି

ନିର୍ଦ୍ଦେଶକ ଡା. ଟି.ଲୋଚନ ମହାପାତ୍ର ଅଧିକାରୀ ଭାବେ କୃଷିଜୀବୀ ମହିଳାଙ୍କୁ ସାମାଜିକ ସମସ୍ୟା ଛୁଟିକର ସମ୍ମୁଖୀନ ହେବା ପାଇଁ ଉଦ୍‌ଘୋଷଣା କରିବା ସହ ନରୀ ସମାଜକୁ ଦେଖିବା ପ୍ରକାଶନରେ ଆଣିବା ପାଇଁ ଏହି ଦିବସ ପାଳନର ମୂଳ ଲକ୍ଷ୍ୟ ବୋଲି ସୂଚନା ଦେଇଥିଲେ ।

ମହିଳାମାନେ ଏକତା ଭାବେ ଯେଉଁ କାର୍ଯ୍ୟ କରିପାରିବେ, ମହିଳା ସମ୍ମୁଖୀନ ହୋଇପାରିବେ ବୋଲି ତାହା ମହାପାତ୍ର କହିଥିଲେ । ଡି.ଆଇ.ସି.ଏ.ର ନିର୍ଦ୍ଦେଶକାଳୟରେ ଶ୍ରେଣୀ ମହିଳାଙ୍କ ହସ୍ତ ଉପରେ ଶୁଭ୍ରାଭୋଷଣ କରିଥିଲେ । ପ୍ରାନ୍ତରେ

ଆନନ୍ଦବୋଧଣା କେନ୍ଦ୍ରର ସମାଜ ବିଜ୍ଞାନ ପୁଣ୍ୟ ଡା. ବିଶ୍ଵନାଥ ଚନ୍ଦ୍ରା ପୁଲର ନାଗରୀ ଦେଇଥିଲେ । କେନ୍ଦ୍ରରେ କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ରର ଅଧିକାରୀ ଡା. ଏସ୍.ଏମ୍.ପ୍ରସାଦ ଆନନ୍ଦରେ ଅଭିଭାଷଣ କରିଥିଲେ । କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ପ୍ରଶ୍ଵା ପୁରୀରା ସେଠା ଉତ୍ସବ ପରିଚାଳନା କରିଥିଲେ ।

# ନରସିଂହପୁରରେ କୃଷକ ସମ୍ମିଳନୀ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ଓ କୃଷି ବିକାଶ ନିମନ୍ତେ ସଚେତନତା



କୃଷକ ସମ୍ମିଳନୀର ଆରମ୍ଭ ହୋଇଥିଲା । କୃଷକମାନଙ୍କୁ ଜଳବାୟୁ ପରିବର୍ତ୍ତନର ବିଭିନ୍ନ ପ୍ରଭାବ ସମ୍ବନ୍ଧରେ ସଚେତନ କରିବା ଓ କୃଷି ବିକାଶ ନିମନ୍ତେ ସଚେତନତା ସୃଷ୍ଟି କରିବା ଉଦ୍ଦେଶ୍ୟରେ ଏହି ସମ୍ମିଳନୀ ଆୟତ୍ତ ହୋଇଥିଲା ।

ଏହି ସମ୍ମିଳନୀରେ କୃଷକମାନଙ୍କୁ ଜଳବାୟୁ ପରିବର୍ତ୍ତନର ବିଭିନ୍ନ ପ୍ରଭାବ ସମ୍ବନ୍ଧରେ ସଚେତନ କରିବା ଓ କୃଷି ବିକାଶ ନିମନ୍ତେ ସଚେତନତା ସୃଷ୍ଟି କରିବା ଉଦ୍ଦେଶ୍ୟରେ ଏହି ସମ୍ମିଳନୀ ଆୟତ୍ତ ହୋଇଥିଲା ।

କୃଷକମାନଙ୍କୁ ଜଳବାୟୁ ପରିବର୍ତ୍ତନର ବିଭିନ୍ନ ପ୍ରଭାବ ସମ୍ବନ୍ଧରେ ସଚେତନ କରିବା ଓ କୃଷି ବିକାଶ ନିମନ୍ତେ ସଚେତନତା ସୃଷ୍ଟି କରିବା ଉଦ୍ଦେଶ୍ୟରେ ଏହି ସମ୍ମିଳନୀ ଆୟତ୍ତ ହୋଇଥିଲା ।

କୃଷକମାନଙ୍କୁ ଜଳବାୟୁ ପରିବର୍ତ୍ତନର ବିଭିନ୍ନ ପ୍ରଭାବ ସମ୍ବନ୍ଧରେ ସଚେତନ କରିବା ଓ କୃଷି ବିକାଶ ନିମନ୍ତେ ସଚେତନତା ସୃଷ୍ଟି କରିବା ଉଦ୍ଦେଶ୍ୟରେ ଏହି ସମ୍ମିଳନୀ ଆୟତ୍ତ ହୋଇଥିଲା ।

- The start of 'Swacch Bharat Abhiyan' of KVK, Cuttack was covered by 'Sambad' (6.10.2014) and Prameya (7.10.2014).

**Success Stories**

- Success story of 'Broccoli cultivation' was published in daily news paper 'Dharitri' on 16 April 2014.
- Success story of 'Cultivation of broccoli by the farmers of village Sankilo' was published in daily news paper on 4th March 2013 in 'Samaja', 'Dharitri', 'Nutana Odisha', 'Oscar Utkal', 'Anupam Bharat' and on 7th in 'Samvad'.



Women in Agriculture Day 2014 is being covered by Mass Media

**Other activities**

- 'FLD on use of Nimin for higher efficiency of nitrogen in rice' at Ganeswarpur was covered by 'Doordarshan' on 21 September 2011.
- Survey on erratic monsoon in Niali block was covered by 'Sambad' on 09 September 2013.

# କାଉଁଜନଳ ବ୍ରୋକୋଲି



ଏହା ଖିରା ନିର୍ଦ୍ଧିତ ଲୋକମାନଙ୍କ ପାଇଁ ଅତ୍ୟନ୍ତ ଉପଯୋଗୀ ଯୋଗ୍ୟ ଖାଦ୍ୟ । ଏହି ଗୁଣର ଚାଷୀମାନେ ସାଧାରଣତଃ ଜାନବର ଯାଏଁ ଏହା ଖାଇବାର ପର୍ଯ୍ୟନ୍ତ ଚାଷ କରନ୍ତି । ଏହାକୁ ଉତ୍କଳୀୟ ଚାଷୀମାନେ ସାଧାରଣତଃ ଦୋରୀ ବା ବୁଢ଼ା, ଗୋଆଁ ଉପରେ ନିର୍ଦ୍ଧିତ କରି କାଉଁଜନଳ ଚାଷ କରନ୍ତି । ମୋଟ ଉପରେ ଦେଖିବାକୁ ଉଭୟ ଏହି ଗୁଣର ଚାଷ କରୁଥିବା ଚାଷୀମାନେ ଚାଷ କରୁଥିବା ପରିପାତ୍ର ଗୋରୁ ବା ବୁଢ଼ା, ଗୋଆଁ ଉପରେ ନିର୍ଦ୍ଧିତ କରି କାଉଁଜନଳ ଚାଷ କରନ୍ତି । ମୋଟ ଉପରେ ଦେଖିବାକୁ ଉଭୟ ଏହି ଗୁଣର ଚାଷ କରୁଥିବା ଚାଷୀମାନେ ଚାଷ କରୁଥିବା ପରିପାତ୍ର ଗୋରୁ ବା ବୁଢ଼ା, ଗୋଆଁ ଉପରେ ନିର୍ଦ୍ଧିତ କରି କାଉଁଜନଳ ଚାଷ କରନ୍ତି ।

କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ବିଶେଷଜ୍ଞମାନେ ସେଠାରେ କାଉଁଜନଳ, ମାଟିରୁ ବୃକ୍ଷରେ ଚାଷ କରାଯାଇ ଏହାକୁ ଚାଷ କରାଯାଇ ଚାଷ କରାଯାଇ । ଚାଷୀମାନେ ଚାଷ କରୁଥିବା ପରିପାତ୍ର ଗୋରୁ ବା ବୁଢ଼ା, ଗୋଆଁ ଉପରେ ନିର୍ଦ୍ଧିତ କରି କାଉଁଜନଳ ଚାଷ କରନ୍ତି ।



କାଉଁଜନଳ ବ୍ରୋକୋଲି ଚାଷ କରାଯାଇ ଏହାକୁ ଚାଷ କରାଯାଇ । ଚାଷୀମାନେ ଚାଷ କରୁଥିବା ପରିପାତ୍ର ଗୋରୁ ବା ବୁଢ଼ା, ଗୋଆଁ ଉପରେ ନିର୍ଦ୍ଧିତ କରି କାଉଁଜନଳ ଚାଷ କରନ୍ତି ।

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**Divisions**


- Crop Science

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**KVK, Cuttack, Odisha observed "Women in Agriculture Day"**

4th December, 2012, Gualidha, Cuttack

Krishi Vigyan Kendra, Santhapur, a unit of Central Rice Research Institute(CRRI), Cuttack observed the "Women in Agriculture Day" on 4th December, 2012 at Gualidha village of Tangi-Choudhary block of Cuttack district, Odisha on the theme "Empowering farm women in rice processing." The morning session started with a discussion on "Gender role, needs and priorities in rice processing." Sixty farmwomen from Gualidha, Gurujang and Chatabar village participated in this session.



Three hundred farmwomen from nearby villages, 25 women trainees from Jharkhand and women scientists from CRRI attended the afternoon session. Addressing the gathering, Dr. T. Mohapatra, Director, CRRI emphasized on the role of women in agricultural development. While expressing concerns for the health of farm women, he highlighted mechanization of post harvest operations such as winnowing, threshing, drying, parboiling etc. that will reduce drudgery and have less negative effects on health of farmwomen.



Smt. Nayana Mohanty, a woman leader in organization of self help group and cooperatives addressed the meeting as chief speaker. She narrated her experiences and motivated the farm women to form self help groups and join farms to tide over capital shortage and earn more.



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### Training-cum-Workshop on PPV&FRA Organized at CRRRI

22nd February 2014, Cuttack

The Krishi Vigyan Kendra, Cuttack organized training-cum-workshop on 'Protection of Plant Varieties and Farmers' Right Act-2001 (PPV&FRA) on 22nd February, 2014.

Dr. R.C. Choudhary, an internationally reputed rice scientist inaugurated the programme as Chief Guest and explained that how the int of the farmers as well as the country has been safeguarded by the Act.






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**KVK, Cuttack observed "World Food Day 2014"**

World Food Day was observed on 16<sup>th</sup> October, 2014 at Agrisat village of Tangi-Chandrabar block, Cuttack, Odisha by Krishi Vigyan Kendra, Santsipaga, Cuttack (a unit of ICAR-Central Rice Research Institute, Cuttack) on the theme: **"Family Farming"**. Three hundred farmers and farm women from the locality and 150 school children participated in the programme. Dr. Titilochan Mishra, Director, CRRRI and the Chief Guest inaugurated the main function and released a booklet on "Family Farming" for awareness of the farming community. He called upon the stakeholders to focus on family farming for all-round prosperity of the villages including nutritional security. Sri Sarat Chandra Sahoo, DDA, Cuttack, the chief speaker and Sri Hemant Kumar Swain, BDO, Tangi-Chandrabar block and Sri P.K. Das, Headmaster of the Agrisat High School, the guests of honour addressed the gathering. Dr. S.N. Saibing, Head, Social Science Division, Dr. A.K. Nayak, Head, Crop Production Division, Sri S.S.C. Pattnaik, Senior Scientist and Dr. R.C. Mishra, SRS, Animal Science spoke on various aspects of family farming. Selected farmers and farm women narrated their successful experiences in family farming. The concept and benefits of family farming and appropriate approaches to incorporate field crops, horticultural crops and livestock enterprises in the system in the context of household resources, opportunities and climate changes were presented in the function. Five families, for their intense involvement in family farming, and eight students, for their success in quiz competition were awarded prizes. Dr. S.N. Prasad, PG KVK, welcomed the dignitaries and Mrs. Sujata Sethy, SRS (Home Science) coordinated the programme. Sri Chandrasekhar Ray, a progressive farmer of Agrisat, proposed the role of BPSHA.




## କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ପକ୍ଷରୁ ସୁଜ୍ଞତା ଅଭିଯାନ

କଟକ, ୧୬/୧୦ (ରୁଖିରୋ) : କେନ୍ଦ୍ରର ଧାନ ଗାନ୍ଧେଶ୍ୱରୀ କେନ୍ଦ୍ର ଅଧୀନରେ ନବକ ବିଲ୍ଡିଂ ଫାଇନାଲ ସମ୍ପୂର୍ଣ୍ଣତାରେ ଥିବା କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ର ସୁଜ୍ଞତା ଭାରତ ଅଭିଯାନ ଆରମ୍ଭ କରିଛି । କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ରରେ ସେଝା ଗାନ୍ଧେଶ୍ୱରୀ ଗୋବିନ୍ଦପୁରରେ ଗୋବିନ୍ଦପୁରରେ କେନ୍ଦ୍ର ପକ୍ଷରୁ ଏହି ଅଭିଯାନ ଆରମ୍ଭ କରାଯାଇଛି । ଏହି ଅବସରରେ ଗୋବିନ୍ଦପୁର ଗାଁର ଚଳଦେବଜୀର ମନ୍ଦିର ଓ ଚିନ୍ତାକନ୍ଦ ପ୍ରାଙ୍ଗଣ ସତା କରାଯାଇଥିଲା ଏଥିପାଇଁ ଗାଁ ଲୋକା ଚଳ ମଧ୍ୟ ସମାପ୍ତକ୍ରମେ କରାଯାଇଥିଲା । ଏହି କାର୍ଯ୍ୟକ୍ରମରେ କେନ୍ଦ୍ରର ଧାନ ଗାନ୍ଧେଶ୍ୱରୀ କେନ୍ଦ୍ରର ବିଜ୍ଞାନିକ, କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ରର ଅଭିଯାନ, ଗାଁର ଚଳଦେବଜୀର ମନ୍ଦିର, ଚଳରୁଷ ଓ ଯୁକ୍ତ କର୍ମଚାରୀଙ୍କ ପରିଦେଶକୁ ସୁଜ୍ଞତାକୁ ଶପଥ ନେଇଥିଲେ । କୃଷି ବିଜ୍ଞାନ କେନ୍ଦ୍ରର ବିଲ୍ଡିଂ ଶ୍ରଦ୍ଧା, ଉତ୍କଳ ମନାଷା ନେତାବିଧି ଓ ରକ୍ତନ ଭୃଗୁର ମଣ୍ଡଳ ଏହି ସୁଜ୍ଞତା ଅଭିଯାନର ପରିଚାଳନା କରିଥିଲେ ।

## Success Stories

### Success from Agro-entrepreneurship : Story of a Mushroom Farmer

Due to more profit and easy marketability of mushroom, the younger generation accepted mushroom cultivation as an industry. Mr Chandrasekhar Ray, a farmer from Agrahat village in Tangi-Choudwar block accepted mushroom as a primary source of income and established it as an agro-industry. Mr Ray as a young man was serving in Gulf country, Kuwait. Away from family and friend kept him worried and searched for an alternative income source at native village. While searching, he visited KVK Cuttack website and thought of growing mushroom commercially as an income source.



*Visit to mushroom farm by KVK experts*

He returned from abroad and contacted KVK Cuttack for technological expertise and feasibility aspect. Starting from a small scale, he learnt from own experience and grew with expertise from KVK Cuttack and OUAT, Bhubaneswar to a professional



*Mushroom farming bringing cheer to the farm family*



*Director, NRRI appreciating the efforts of Mr Ray* mushroom farmer. At present, he is having a capacity of 1000 beds and presently getting a yield of 20 kg mushroom per day. As per his estimates he earns on an average of Rs. 3200 per day and Rs. 96,000 per month. He receives a net profit of Rs. 69,000 per month after deducting the cost of cultivation (Rs. 27,000). He saves more as his entire family is involved in this business, thereby saving the cost of labour. He arranges the input and looks after the farm, the ladies are involved in bed preparation, plucking and packaging of the harvest. His father markets the mushroom and his wife keeps the account.

Mr Ray sets a milestone of success in agro-enterprise for the rural youth who are involved in running after employment. This story of success will provide inspiration to youth for self employment with local resource utilization.



*Success story of Mr Ray being covered by E-TV*

## Steps towards Commercial Agriculture : Broccoli Cultivation

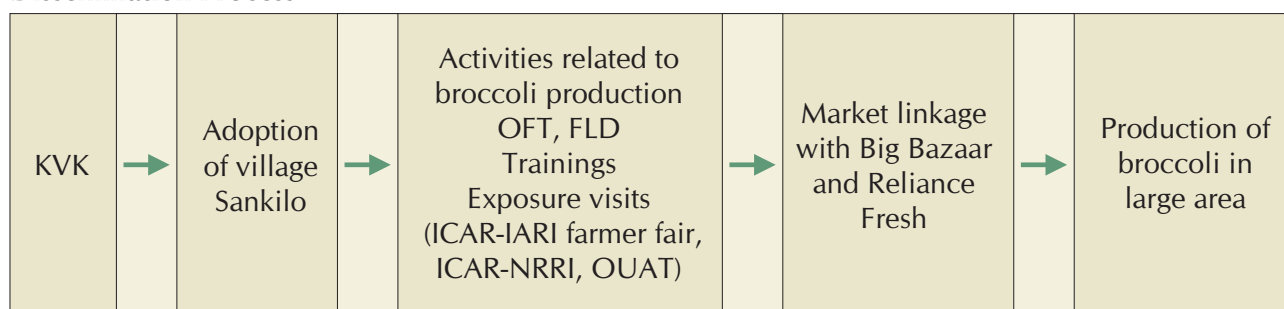
### Background Information

- Cauliflower covers seven thousand ha in winter season.
- Market glut reduces net return.
- There is a scope for high value crops in the Cuttack district under this situation.
- Marketing and other facilities are available for high value crops.

### Description of Technology

- Season: winter
- Seed rate: 400-500 gm/ha.
- Spacing: 45 X 45 cm or 45 X 30 cm.
- Fertilizer dose : NPK-80:100:100 kg/ha.
- Variety: Early-45 DAP, Mid group-60-100 DAP, Late group > 100 DAP
- Varieties: Palam Samridhi, Swati and Suhani

### Dissemination Process



### Institution Involved

Institute	Activity of Organization
KVK	Programme implementation
Farmers' Club	Motivate the farmers
ATMA – Cuttack	Funding for FLD
Big Bazaar and Reliance Fresh	Product purchase



A broccoli



A farmer showing cultivated broccoli



**Success points**

Farmers are getting higher price.  
 Cost of cultivation of broccoli is relatively low.

**Outcome**

Higher cost benefit ratio (Broccoli: Cauliflower; 5.3: 2.8)

**Impact**

Sixty farmers of village Sankilo and nearby started broccoli cultivation in 5 ha



Farmers with their produce

**Steps towards Commercial Agriculture : Broccoli Cultivation**

**Background**

- Rice is the main crop of the district covering 1, 40, 000 ha area out of total cultivated area 1, 88, 150 ha.
- Quality seed availability is problem.
- Paddy grain selling is less profitable.
- Demand of Pooja variety seed is high.

**Description of Technology**

- Seed treatment, line transplanting at 20 X 20 cm.
- Apply recommended fertilizer dose based on soil test.
- Roughing of off-type plant.
- Matures in 150-152 days
- Yield about 50-55 q./ha.

**Success Points**

- Quality seed availability increased.
- Higher return of produce.

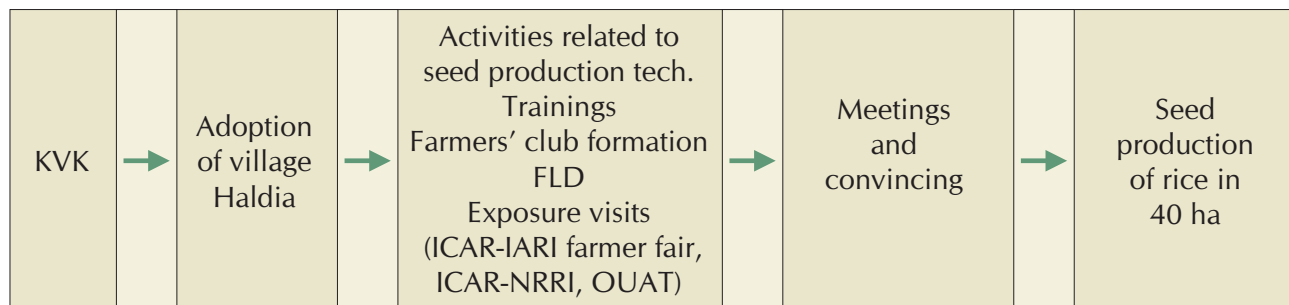
**Outcome**

- In 2012, 37 farmers of these clubs produced 600 q. seed of Pooja variety and sold 53 q @ Rs. 17.50/kg to ICAR-NRRI; rest sold to villages.
- In 2013, 38 farmers produced 680 q ; sold 380 q to BPD unit, ICAR-NRRI @ Rs. 20 /kg.
- In 2014, 45 farmers are involved and sown in 40 ha. (32 ha Pooja and 08 ha Gayatri)



A paddy field nearing harvest stage

**Dissemination Process**



**Institution Involved**

Institute	Activity of Organization
KVK	Programme implementation
Farmers' Club	Motivate the farmers
ICAR-NRRI	Technical backstopping
Seed Certification Agency	Seed certification
BPD unit ICAR-NRRI	Purchasing of seeds and market linkage

**Impact**

- Seed pool of ICAR-NRRI increased
- More numbers of farmer group contacted KVK and ICAR-NRRI for same activity.



*Dr T Mohapatra, Director, ICAR-NRRI appreciating the paddy crop*

**Brown Manuring enhanced Yield of Direct Seeded Rice**

**Background**

- Only use of chemical fertilizer reduces soil health and rice productivity gradually.
- High fertilizer cost, unavailability of quality organic manure.
- Green manuring with *Sesbania* is also not acceptable due to erratic monsoon.

**Description of Technology**

- Sowing rice seed with *Sesbania* @ 15 kg/ha.
- Growing *Sesbania* with rice up to 20-25 days after sowing.
- Knock down *Sesbania* by application of herbicide 2-4 D @ 1.0 kg a.i./ha.
- *Sesbania* turns brown after 4-5 days.

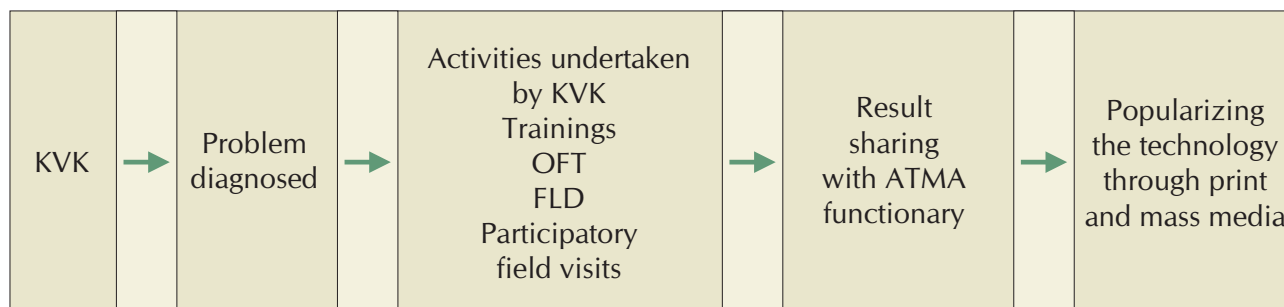


*Rice-Sesbania co-culture in farmer's field*

**Success points**

- Use of nitrogenous fertilizer reduced upto 25%.
- Earthworm activities increase.
- Weed population reduced

**Dissemination Process**



**Institution Involved**

Institute	Activity of Organization
KVK	Programme implementation
ICAR-NRRI	Technical backstopping
IFFCO / SPO	<i>Sesbania</i> seed source
Department of Agriculture	Knowledge sharing
ATMA-Cuttack	Technology spreading

**Impact**

- Farmers are enquiring about the technology.
- Villages like Ganeswarpur, Chadheipada, Jhadeshwar Kadei and Uchhapada of the block having same situation have adopted the technology.
- Area coverage – 35 ha in 81 farmers field.



After application of 2,4-D, the farmer understanding the effect

## Biological Control of Rice Pests and Diseases Gaining Momentum

### Background Information

- Rice is the main crop of the district covering 1, 40, 000 ha area.
- The warm and humid environment of district is conducive for insect and pathogen multiplication.
- Chemical insecticides are primarily used by farmers for management of insect pests.
- High cost, unavailability of labour and increasing concerns about environmental and health hazards associated with chemical insecticides.



Expert advising on nursery pest management

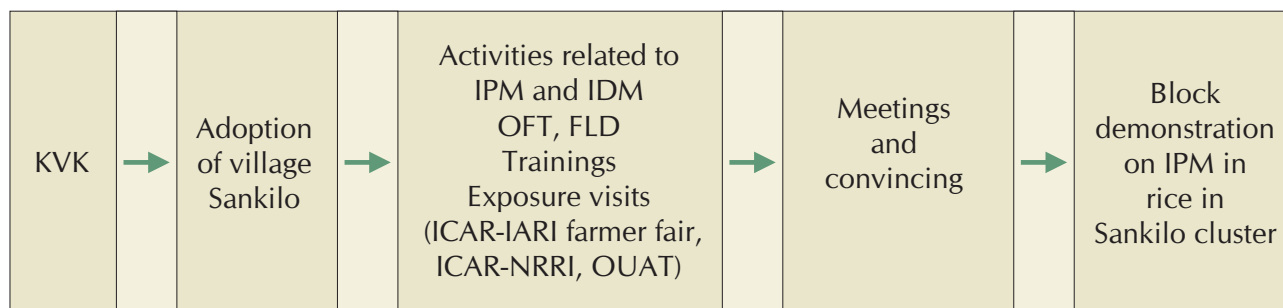


Pest monitoring by pheromone trap

### Description of Technology

- Summer ploughing.
- Seed treatment of rice with carbendazim @ 2 g/kg seed.
- Application of cartap hydrochloride @ 1.0 kg a.i./ha in nursery 5-7 days before uprooting seedling.
- Line transplanting of rice.
- Monitoring of yellow stem borer population @ 3 traps / week / acre with 5 mg lure.
- Needbased application of insecticides/fungicides.

### Dissemination Process



### Institution Involved

Institute	Activity of Organization
KVK	Programme implementation
Farmers' Club	Motivate the farmers
CIPM, Bhubaneswar	Knowledge sharing with farmers
ICAR-NRRI	Scientific support
Pest Control India	Quality input supplier

**Success Points**

- Pest and disease infestation reduced.
- Population of beneficial insects increased in demonstration plots.

**Outcome**

- Higher average yield of paddy (Demonstration - 48.75 q/ha, Check - 42.50 q/ha)
- IPM technique reduced plant protection cost upto 50%

**Impact**

- Positive attitude of farmers towards biological control.
- The adoption of summer ploughing is about 95%, seed treatment is about 100% and nursery seedling treatment is about 85%.
- Demand for *Tricoderma* sp, *Pseudomonas* sp and pheromone traps increased.
- Need for biological control in vegetable crops has cropped up.
- This technique has spreaded in 136 ha among 495 farmers.

**Success Story of A Woman Farmer (Mushroom)**

Name: **Smt Mamata Baral**

Address: At/Po: Nrutanga, Via: Kuanpal

Dist: Cuttack, Odisha

Area of Success: Mushroom cultivation

Specific Crop/Activity: Paddy straw and oyster mushroom production

Total Area/No./Unit of Activity: One unit of 100 mushroom beds.

Total Investment (Per ha/Unit): 5,000/-

Total Output/Grains: 14,000/-

Net Profit (Per ha/Unit): 9000/- per month

Membership: SHG group member

**Success Story :**

Smt Mamata Baral is a graduate, but after marriage she was at home performing the daily household activities. She was very interested to earn along with performing the daily household activities. She has undergone different training programmes and it was very much difficult to choose the right kind of vocation. She was also provided with training on mushroom production by KVK Cuttack. She was also given method demonstration on mushroom production. With other neighbouring women she formed a SHG to intensify her work.

By realising the growing demand of mushroom, she started paddy straw mushroom production and sold it in the local market and got a good return out of it. In winter season, she produced oyster



Receiving award for best farmer from Hon'ble Minister

mushroom to continue the production round the year. For doing this she had to struggle with different social and economic issues.

Villagers discouraged her in many different ways as she is a woman. But her strong determination and family support made her successful in this enterprise. Now she availed loan from bank and started the enterprise in a bigger way. She was recognised as best women mushroom farmer and awarded on Women in Agriculture Day-2014 and Foundation Day of ICAR- NRRI, Cuttack for her effort.

**Impact**

Her effort shows a new hope to other women of the locality. They are coming out and doing different income generating activities as well as mushroom cultivation ignoring villagers discouraging remarks.

### Success Story of A Woman Farmer (Vermicompost)

Name: **Smt Mami Dehuri**

W/o: Chandramani Dehuri

Address: Dahanigadia,

PO: Safa Via: Kotsahi, Cuttack,

Odisha, Pin:- 754022

Area of Success: Bio-fertilizer production

Specific Crop/Activity: Vermi-compost Production

Total Area/No./Unit of Activity: 4 units

Total Investment (Per ha/Unit): 8000/- (2000/- per Unit) (Initial non recurring Investment)

Total Output/Gains: 12000/-

Net Profit (Per ha/Unit): 4000/- (for the 1st year and from 2nd year onwards the net profit increased to 14000/- from selling of vermicompost and earthworms)

Membership: SHG member

#### Success Story

The farmwomen of Khandabandha village were very much dependent on forest for their livelihood as it was a tribal dominated area. But the local people started protecting the forest by themselves, so they started changing their income source. The farm women after the paddy cultivation were without any work. So they were worried and it was difficult for meeting different daily needs. After identifying the problem KVK Cuttack conducted different capacity building programmes for income generation activities on vermicompost production, mushroom cultivation etc. for the farmwomen of



*Vermicompost pits*



*Weighing and packing of vermicompost*

the locality. Demonstrations and follow up actions were also conducted time to time for vermicompost production and mushroom cultivation. They started mushroom cultivation and vermicompost production. But they didn't get proper price in mushroom as market demand was poor in that tribal village.

Vermicompost produced initially was used in their own field. But afterwards its demand increased among farming community. Some of the farm women started producing vermicompost around the year and started selling to the other farmers. Among the farmwomen Smt. Mami Dehuri of Khandabandha village producing vermicompost round the year and selling the vermicompost and the worms to other farmers. Farmers from other locality also coming to purchase the compost as well as the worms. She is also participating in different agricultural exhibitions to sell her produce. She was also awarded as best farmwomen of Cuttack district by NRRI, Cuttack. Now she is planning to increase the numbers of pit for more production to meet the demand.

#### Impact

By realizing the profitability of the vermicompost the tribal women now very much interested to continue the activity.

## Success Story of A Woman Farmer (Poultry)

Name: **Smt. Chinu Dehuri**

W/o : Paramananda Dehuri

Address: At. Abhayapur

PO : Safa, Via: Kotsahi, Cuttack,

Odisha, Pin: 754022

Area of Success: Coloured poultry bird

Specific Crop/Activity: Coloured poultry bird rearing

Total Area/No./Unit of Activity: 160 coloured poultry birds

Total Investment (Per ha/Unit): Rs 2560/-

Total Output/Grains: 32000/- in 6 months

Net Profit (Per ha/Unit): 25000/-

Membership: SHG group member

### Success Story

In 2010-11, backyard poultry (Vanaraja) rearing was initiated in the predominantly tribal area of Cuttack district, which was largely dependent on agriculture. The technology was disseminated by KVK Cuttack through intensive training programmes and demonstration to existing SHGs (Self Help Groups) of Abhaypur village of Safa panchayat. As FLD each farmwoman was provided with 10 numbers of day old chicks and they were trained for brooding and vaccination. After 3-4



*Farmwomen sharing the economics of backyard poultry*



*Dr BN Sadangi and visitors appreciating the success*

months the poultry birds started laying eggs and they sold the cock for meat purpose.

They got good return within six months and it was very encouraging for the farmwomen. After that they collected their own money and started rearing the poultry birds. Among them Smt. Chinu Dehuri, continued rearing of coloured poultry birds (Vanaraja) for her own home consumption as well as sells in the local market and also in own village. The income from this activity is dependent upon various factors, such as the size of birds reared, number of birds used by the family for self consumption and the number of eggs used for self-consumption. A major part of the income comes from selling the birds. Now rearing backyard poultry bird (Vanaraja) is a major option of livelihood for Smt. Chinu Dehuri after paddy and vegetables. She was awarded as the best farm women of Cuttack district in 2012 by ICAR-NRRI, Cuttack.

### Impact

Now the other women of the SHG who discontinued rearing of Vanaraja also coming forward. Other farmwomen of the village and nearby villages also started rearing the coloured poultry birds.

## Celebration of Important Days

KVK Cuttack celebrates important days like World Food Day and Women in Agriculture Day to create awareness regarding the themes proposed and issues regarding women empowerment, food security, health and hygiene etc. It also helps in sensitizing the farmers, farmwomen and rural youth about different avenues and technologies available to them for their economic gain.

### WORLD FOOD DAY

World Food Day is celebrated every year around the world on 16 October in honour of the date of the founding of the Food and Agriculture Organization (FAO) of the United Nations in 1945. The day is celebrated widely by organisations concerned with food security. World Food Day (WFD) was started with a resolution by FAO's Member Countries at the Organization's 20th General Conference in November 1945. It has since been observed every year in more than 150 countries, raising awareness of the issues behind



*Hon'ble guests releasing an awareness document*

poverty and hunger. Since 1981, World Food Day has adopted a different theme each year in order to highlight areas needed for action and provide a common focus. Most of the themes revolve around agriculture because only investment in agriculture – together with support for education and health – will turn this situation around.

### Summary of World Food Day celebrations observed by KVK Cuttack

Year	Theme	Dignitaries	Venue	Participants
2010	United Against Hunger	Dr TK Adya Mr PK Dash	Bainchua (Mahanga)	200
2011	Food Prices - From Crisis to Stability	Dr Anand Prakash Dr BN Sadangi	Rudrapur (Tangi-Choudwar)	300
2012	Agricultural Cooperatives – Key to Feeding the World	Dr T Mohapatra Dr BN Sadangi Dr SK Sahu Dr SG Sharma	Rajhansha (Cuttack Sadar)	350
2013	Sustainable Food Systems for Food Security and Nutrition	Cancelled due to Phailin	Biswanathpur (Salepur)	-
2014	Family Farming: Feeding the World, Caring for the Earth	Dr T Mohapatra Dr BN Sadangi Dr AK Nayak Mr HK Swain	Agrahat (Tangi-Choudwar)	400





*World food day celebration in process*

As a leading institution in agriculture in the district KVK observes this day with the farming community of the district to create awareness regarding the themes and importance of this day. The summary of different year's programmes is as below:

**2011-12**

Krishi Vigyan Kendra Cuttack celebrated World Food Day in its adopted village Rudrapur (Tangi-Choudwar). More than 100 school children and 200 farmers participated in this programme and the children took part in quiz contest organized for creating awareness regarding agriculture and the theme of WFD: *"Food prices - from crisis to stability"*. Farmers, farm women and school children of villages Chadheipada, Ganeshwarpur, Rudrapur and Jaripada participated in the programme. Dr Anand Prakash, the Director (I/C),



*Director, ICAR-NRRI, Dr T Mohapatra addressing the august audience*

ICAR-NRRI, presented awards to two progressive farmers and certificates to school children who participated in a quiz competition. Heads of Divisions from NRRI including Dr BN Sadangi, Head Social Science Division and Nodal Officer, KVK graced the occasion and played instrumental role in sensitizing the farmers, farmwomen and school children.

**2012-13**

The World Food Day 2012-13 was observed at Rajhansha village of Cuttack Sadar block. Dr T Mohapatra, Director, ICAR-NRRI chaired this programme based on the theme *"Agricultural cooperatives – key to feeding the world"*. Head of the Divisions of NRRI, Scientists, State Government officials, AGM, NABARD, KVK scientists and about 250 farmers and school children participated in this programme. The Director emphasized the role of agricultural cooperatives for increasing the food production and making agriculture more profitable in rural areas. The village high school students took part in a quiz competition organized for creating awareness regarding agriculture and food Security. The prizes were distributed by the chief guest. On this occasion, an information leaflet related to food security was also released and distributed among the farmers and farm women. There was a brain storming session on *"Safe storage practices of food grain"* among the farmers and farmwomen of the village. The session was chaired by Dr BN Sadangi,



*Quiz competition in progress to create awareness about food security*

Head, Social Science Division and Nodal Officer, KVK Cuttack along with active involvement of scientists of NRRI and KVK subject matter specialists.

### 2014-15

World Food Day was observed on 16<sup>th</sup> October, 2014 at Agrahat village of Tangi-Choudwar block, Cuttack, Odisha by Krishi Vigyan Kendra Cuttack, Santhapur on the theme: “Family Farming”. Three hundred farmers and farmwomen from the locality and 150 school children participated in the programme. Dr T Mohapatra, Director, ICAR-NRRI and chief guest inaugurated the main function and released a leaflet on “Family Farming” for awareness of the farming community. He called upon the stakeholders to focus on family farming for all-round prosperity of the villages including nutritional security. Shri SC Sahoo, Deputy Director Agriculture (DDA), Cuttack, the chief speaker and Shri HK Swain, Block Development Officer, Tangi-Choudwar block, the guest of honour addressed the gathering. Dr BN Sadangi, Head, Social Science Division, Dr AK Nayak, Head, Crop Production Division, Shri SSC Pattanaik, Sr. Scientist and Dr RK Mohanta, SMS (Animal Science) spoke on various aspects of family farming. Selected farmers and farmwomen narrated their successful experiences in family farming. The concept and benefits of family farming and appropriate approaches to incorporate field crops, horticultural crops and livestock



Family farming experience shared by a farmwoman



Director, NRRI, awarding prize to a quiz winner

enterprises in this system in the context of household resources, opportunities and climatic changes were presented in the function. Five families, for their intense involvement in family farming, and eight students, for their success in quiz competition were awarded prizes. Dr SM Prasad, PC, KVK, welcomed the dignitaries and Mrs. Sujata Sethy, SMS (Home Science) coordinated the programme. Shri Chandrasekhar Ray, a progressive farmer of Agrahat, proposed the vote of thanks.

A workshop-cum-training programme on the above theme was also organized on the eve of World Food Day (15<sup>th</sup> October) wherein 100 farmers and farmwomen from five villages took part and shared their valuable experiences. The Nodal Officer, Dr BN Sadangi, PC and all subject matter specialists of KVK Cuttack initiated the discussion on various issues and prepared a document for developing an action plan.

### WOMEN IN AGRICULTURE DAY

Farmwomen play an integral role in the agricultural activities like watering, weeding, crop cutting, storage, marketing of crops, fruits and vegetables and most of the day-to-day activities of livestock. They always try to ensure food security and good health of the family. They constitute more than 50% of workforce in agrarian sector. Their contribution in improvement of national economy cannot be underestimated. Therefore, KVK Cuttack organizes “Women in Agriculture

Day” to make the farmwomen aware about their health, food security along with knowledge about different technologies for drudgery reduction and awareness about opportunities available to them. A brief summary table for recent five years is given below:

#### 2010-11

The KVK, Santhapur, Cuttack celebrated the “Women in Agriculture Day,” at village Mania of Tangi Choudwar block on 4 Dec 2010 on the theme “Technologies for farmwomen in homestead enterprises.” Dr SG Sharma, chief guest of this programme explained the benefits of using different available technologies for homestead enterprises and using them to augment income for livelihood. Two hundred farmwomen participated in the programme.

#### 2011-12

“Women in Agriculture Day” was organized at village Budukunia in Mahanga block of Cuttack district in Odisha on 4 December, 2011 to create awareness about the theme “Opportunities for farmwomen through group approach”.



Director, ICAR-NRRI addressing farmwomen

Farmwomen interacted with the Director (I/C), ICAR-NRRI and chief guest of the programme Dr Anand Prakash, Nodal officer, KVK and Head, Social Science Division, Dr BN Sadangi and other scientists from NRRI and KVK, Santhapur. In this programme, 150 farmwomen, school dropout girls, rural youths and farmers from Budukunia and nearby villages participated. On this occasion a quiz programme was also conducted for farmwomen and prizes were distributed by the Chief Guest.

### Summary of Women in Agriculture Day celebrations observed by KVK Cuttack

Year	Theme	Dignitaries	Venue	Participants
2010	Technologies for Farm Women in Homestead Enterprises	Dr SG Sharma Dr BN Sadangi	Mania, Tangi-Choudwar	100
2011	Opportunities for Farm women through Group Approach	Dr. Anand Prakash Dr BN Sadangi	Budukunia, Mahanga	100
2012	Empowering of Farm women through Processing of Rice	Dr. T Mohapatra Smt. Nayana Mohanty Dr BN Sadangi	Guali, Tangi-Choudwar	150
2013	Value Addition of Local Agricultural Produces	Dr. T Mohapatra Dr BN Sadangi Smt. Harapriya Sahoo	Sankilo, Nischintakoili	200
2014	Harnessing the Potential of Women in Agriculture through Group Approach	Smt. Snehangini Chhuria Dr Neelam Grewal Dr T Mohapatra Dr BN Sadangi	NRRI, Cuttack	100



Brainstorming session

### 2012-13

In rice processing, farmwomen play an important role in India. Keeping this in view, KVK Cuttack organized Women in Agriculture Day at village Gualidiha in Tangi-Choudwar block on 4 December, 2012 on the theme *“Empowering farmwomen in rice processing”*. In this programme, 300 farmwomen from Gualidiha, Gurujang and Chatabar village and 25 women trainees from Jharkhand participated and interacted with Dr T Mohapatra, the Director, NRRI and the Chief Guest, and other scientists from NRRI and KVK Cuttack. Addressing the gathering, Dr Mohapatra emphasized on the role of women in agricultural development. While expressing concerns for the health of farmwomen, he highlighted mechanization of post harvest operations such as winnowing, threshing, drying, parboiling etc. that will reduce drudgery and have less negative effects on health of farmwomen. Smt. Nayana Mohanty, a woman leader in organization of self help group and cooperatives, the Chief Speaker, also interacted with the farmwomen and explained how empowering of women can be made through use of certain rice processing technologies. She narrated her experiences and motivated the farmwomen to form self help groups and join hands to tide over capital shortage and earn more income. Scientists-experts from NRRI and KVK subject matter specialists also spoke to the farm women on various aspects of rice production/

management technologies. A number of post harvest equipments, viz. pedal operated paddy thresher, hand operated winnorr, solar dryer, improved sickle and parboiling unit were demonstrated with the expert advice of Dr PN Mishra. Prizes were awarded to the women who successfully participated in the brainstorming session by the Chief Guest and Chief Speaker. In this programme, a leaflet in Odia language entitled *“Dhana amala o prakriya karana re byabahruta bibhinna jantrapati”* was released and circulated among the farmwomen. In the morning session there was discussion on *“Gender role, needs and priorities in rice processing”*. Sixty farmwomen from Gualidiha, Gurujang and Chatabar village participated in this session.

### 2013-14

In Cuttack district vegetable production has gained its momentum and obtains peak production at certain time in many regions thereby generating very minor revenue to the producer. Nischintakoili block is one of such region where villages around Sankilo suffer from problems of low price in the high production times. Taking the above facts into consideration, KVK Cuttack observed the ‘Women in Agriculture Day’ on 6 December 2013 at Sankilo, Cuttack on the theme *‘Value addition of local agricultural produces’*. Before the meeting, an awareness-cum-training programme on the theme was organized with the participation of 97



Director, ICAR-NRRI awarding a farmwoman for her expertise on value addition in rice 2013



*Display of value added products in exhibition*

farmwomen from six neighboring villages. Demonstration, question-answer session and quiz competition were held on the theme. An impressive and thought-provoking exhibition on traditional value-added products prepared by 32 farmwomen using rice, black gram and green gram attracted the attention of everyone and drew a large audience. Dr T Mohapatra, Director, NRRI and the Chief Guest of the programme, along with scientists, farmwomen and farmers visited the trials and demonstration plots spread over 30 ha area conducted by KVK, NRRI. He was amazed to see the experience of farmwomen with the NRRI varieties and rice farming. Later, Dr Mohapatra encouraged them to add more emphasis on value added products from local produces for more revenue generation and also awarded prizes to the successful farmwomen, the winners of quiz competition, value addition and project

participation. Smt. Harapriya Sahoo, an expert in value addition from the State Department of Agriculture addressed the gathering on various opportunities for capacity building and product development. Scientists from NRRI and KVK subject matter specialists spoke on the various aspects of value addition.

**2014-15**

Krishi Vigyan Kendra Cuttack, a unit of ICAR-NRRI), Cuttack observed the “Women in Agriculture Day” on 3rd December, 2014 at NRRI, Cuttack on the theme “*Harnessing the potential of women in agriculture through group approach*”. Smt. Snehangini Chhuria, Honourable Minister of State (Independent), Handloom, Textile and Handicrafts, SC/ST Development and Women and Child Development (Mission Shakti), Govt. of Odisha, inaugurated the programme and released an extension leaflet in Odia entitled “*Baigyanika upayare sasya sanrakhyna*” to create awareness among the farming community about scientific and hygienic storage of food grains and prevent losses during storage. In her address, the Chief Guest, emphasized on the role of SHGs in promoting women empowerment in social, economic and psychological spheres. She stressed upon bringing out women policies for their social security and role of women in taking the family and society together. She assured that Govt. would take all possible measures to provide marketing avenues for the products of women SHGs.



*Women leader sharing her experience*



*Hon'ble minister and dignitaries dedicating a technical bulletin for farmers*

Dr Neelam Grewal, Director, CIWA, the Guest of Honour explained the opportunities available to the women SHGs. As women play a vital role in agriculture production, she suggested that bank loan, marketing, transport facilities and training should be provided to the groups. Dr T. Mohapatra, Director, NRRI and Chairman of the function, advised the farmwomen to acquire scientific knowledge available with different sources and keep contact with different development agencies for their sustainable development. He asserted that women have strong desire to work, but their unity is the need of hour. The exhibition of different products/value added products prepared by women SHGs namely rice, vegetable, straw art, vermicompost, mushroom, candle and terrakota provided a lot of interest to the dignitaries and farmwomen.

An interactive session was held on the theme wherein the farmwomen shared their experience, needs, problems, traditional skills and successes. Women scientists of the institute and experts from different line departments participated in this discussion and provided valuable inputs for success of the women in their enterprises. Eleven SHGs consisting of 120 farmwomen participated in the programme and successful women SHGs were awarded prizes and certificates. Dr BN Sadangi, Head, Social Science Division, NRRI, welcomed the dignitaries and farmwomen and Dr SM Prasad, Programme Coordinator, KVK Cuttack,



*Dr T Mohapatra, Director, NRRI stressing the need for women empowerment*



*Hon'ble Minister interacting with farmwomen from SHGs 2014*

offered the vote of thanks. Mrs. S Sethy, SMS (Home Science) coordinated the programme with the active involvement of Subject Matter Specialists, Shri DR Sarangi, Dr M Chourasia and Dr RK Mohanta.

### **OTHER IMPORTANT EVENTS CELEBRATED**

Apart from mandatory activities of KVK, KVK Cuttack is actively involved in some other important programmes for the betterment of the farming community of the district, i.e. Protection of Plant Varieties and Farmers' Right Act-2001 and Parthenium awareness week.

### **TRAINING-CUM-WORKSHOP ON "PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHT ACT-2001"**

"Protection of Plant varieties and Farmers' Right Act-2001" is enacted to protect farmers' interest and encourage indigenous germplasm conservation *in situ*. KVK Cuttack is actively involved in this noble campaign by organising an annual training-cum-workshop programme starting from 2013-14 with active participation farmers and subject matter experts to bring greater awareness among farming community on the benefits of the act and facilitating registration of their varieties.

#### **2013-14**

Krishi Vigyan Kendra Cuttack organized the programme at NRRI, Cuttack with active participation of 87 farmers and 13 subject matter



*Dr RC Choudhary enlightening the audience about PPV & FR Act*

experts on 22nd February, 2014. Dr RC Choudhary, an internationally reputed rice scientist, the Chief Guest, explained how the interest of the farmers as well as that of the country has been safeguarded by the Act. Dr Ravi Prakash, Registrar, PPV and FR Authority and the Guest of Honour, highlighted the achievements under this Act and threw light on the registration process. He also assured the farmers to provide all possible help in registration through which they can own a variety. Dr T Mohapatra, Director, NRRI, Cuttack and Chairman of the programme called upon the scientists and farmers to realize the vast potential of nation's land races and advised them to maintain those along with their popular varieties, which would provide valuable traits to meet the challenges due to climate change. The technical



*Dignitaries taking an in depth look at the landraces*

sessions dealt with registration process, DUS testing, special tests and special traits etc. in an interactive mode. An exhibition displaying landraces of rice, pulses, oil seeds, vegetables and fruits of the participating farmers inspired the visitors and strengthened the objectives of the Act.

**2014-15**

KVK Cuttack organized the training-cum-workshop on "Protection of Plant Varieties and Farmers' Right Act, 2001" with active participation of 100 farmers, farm women, scientists of NRRI and subject matter experts of KVK on 27th March, 2015. The Chief Guest, Dr SR Das, Honorary Professor, Plant Breeding and Genetics, OUAT, Bhubaneswar, an eminent rice breeder, elaborated the importance of preserving the land races of plant



*Chief guest addressing the august gathering*

varieties especially rice. He also emphasized that in-situ preservation of plant varieties is better than ex-situ preservation. The guest of honour, Dr SR Dhua, Consultant PPV & FR Authority, Govt. of Odisha, discussed about the necessity of plant variety registration and the registration process. Dr T Mohapatra, Director, NRRI, Cuttack and Chairman of the programme called upon the farmers/farmwomen to realize the vast potential of nation's land races as Odisha has a very rich rice heritage and explained how maintaining these landraces along with their popular varieties can provide valuable germplasm to meet the challenges at present and in times to come. Dr BC

Patra, Principal Scientist, NRRI, elaborated on the history of PPV & FR Act, steps in registration and benefits for the farmers. An exhibition of seeds of indigenous varieties of rice, pulses, oil seeds, vegetables and fruits of the participating farmers/farm women was also centre of attraction of this programme. Dr BN Sadangi, Head, Social Science Division welcomed the participants and Dr SM Prasad, Programme Coordinator, KVK, Cuttack proposed vote of thanks.

### **PARTHENIUM AWARENESS WEEK**

In Cuttack district, the menace of Parthenium weed (Locally known as Gajar Ghasa) is increasing day by day. It has been seen here in waste lands, fallow lands, road and rail side, the premises of offices around the houses in rural as well as urban areas, river and canal banks. Keeping in view the harmful effects of this weed, KVK Cuttack organized Parthenium Awareness Week from 16–22 August, 2012. During the week six programmes were done at different areas for different groups starting from interactive lectures, group meetings, field visits, Krishak Goshti, group discussion, video show, distribution of pamphlet, road march and showing of uprooting techniques involving the farmers, farmwomen, women SHGs, rural youths, school, teachers, students and NGO people. In different programmes awareness was created about the



*Dr SM Prasad disseminating information regarding Parthenium*

hazardous effect of this weed on soil, environment, crops, human and cattle health and diseases caused by it. The integrated management practices for its control and its use by making compost were also conveyed during different activities.

### **“SWACHHA BHARAT ABHIYAN” PROGRAMME**

“Swachh Bharat Mission” a programme launched by Hon’ble Prime Minister, was started on 2<sup>nd</sup> October, 2014 with administration of oath to all the staff of KVK Cuttack, Santhapur, by Mr DR Sarangi. Cleanliness drive was launched in KVK campus and periphery as well as in adopted village, Ganeshwarpur. There was a discussion on the importance of cleanliness and hygiene in daily life by the SMSs namely Dr M Chourasia and Dr RK Mohanta with school children, farmers and farmwomen after administration of oath. They pledged to administer oath to their family members along with strictly observing cleanliness in their daily life and showed keen interest to spread this to their whole village from their own home.

Three cleanliness awareness programmes were conducted for school children of Mangarajpur U.P. School, Badamba, Jodum Nodal U.P. School, Narsinghpur and Haridapal U.P. School, Safa, Tangi-Choudwar involving more than 600 school children and 16 teachers.



*“Swacchata Oath” being administered to staff and farmers of Ganeshwarpur*



## Other Extension Activities

### KRISHAK MELA

In view of hardship faced by the farmers due to climatic aberrations, a “*Krishak Mela-cum-Agrani Krishak Sammelan*” was jointly organized by KVK-Cuttack, NICRA, ICAR-NRRI and ATMA-Cuttack on 5 July 2013 in Sagar village of Narasinghpur block. It had an objective to create awareness among the farming community on rice production technology in rainfed drought prone upland condition under changing climatic situation and strengthening their livelihood through farming systems approach. **Shri Debi Prasad Mishra**, Hon’ble Minister of Agriculture, Animal Husbandry, Fisheries, Housing and Urban Development, Government of Odisha graced the programme as Chief Guest and highlighted the performance of ICAR-NRRI rice varieties for rainfed upland ecology. He advised the farmers to consult the KVK and NRRI scientists for rice seed production and experts of line departments for integrated farming.

**Shri Bhartruhari Mahatab**, Hon’ble Member of Parliament, Cuttack and the Guest of Honour spoke on the various advantages of quality seeds. There were three scientific sessions: (i) “Rice production strategy in relation to climate change



*Dr AK Nayak speaking about climate change*



*Hon'ble Minister releasing technical bulletin in the Kisan Mela*

and drought”, (ii) “Production technology of quality rice seed” and (iii) “Scientists/Experts-Farmers Interaction”. One thousand progressive farmers, farmwomen and rural youth took part in the technical sessions and about two thousand farmers visited the exhibition stalls of KVK, NICRA, NRRI, ATMA, HARIALI and different line departments. Demonstration of “Power operated drum seeder and manual drum seeder” of ICAR-NRRI was also conducted on this occasion.

Two technical bulletins in odia entitled “*Parabartita Jalabayure barsarita dhipa jamire marudi prapidita anchala pain dhana chasa*” and “*Unnata manara dhana bihana utpadana padhati*” were released and seeds of drought tolerant variety Sahabgaidhan were distributed among the farmers by the Chief Guest on this occasion to help them increase productivity. Dr. Anand Prakash, Director (I/C), ICAR-NRRI presided over the function and the Chairman, ATMA, Narasinghpur proposed vote of thanks. Dr JR Mishra coordinated the programme with the active involvement of PC, Dr SM Prasad and Subject Matter Specialists, Mr DR Sarangi, TR Sahoo and Dr M Chourasia.

## TECHNOLOGY WEEK

Shri Chandra Sekhar Behera, Hon'ble MLA, Tangi-Salipur inaugurated the Technology Week from 18 to 23 Jan 2010 at the KVK Cuttack, Santhapur. He asked the farmers to adopt the farmer friendly technologies available at the KVK and stay in constant touch with KVK for their own knowledge enrichment and economic benefit. More than 1,000 farmers, farmwomen and rural youth of different KVK adopted villages participated in this programme. The farmers' were trained on "Farm Equipments and Implements," "Agricultural Inputs," "Pheromone Traps," "Biofertilizers," "Poultry Keeping," "Animal Husbandry," and "Crop Production Technologies" etc.



*Interactive session with farmers*

## SOIL TESTING CAMPAIGN

Soil is a very important natural resource in agriculture. The modern and scientific crop production is beyond imagination without knowing the soil we cultivate. In this view United Nations and Food and Agricultural Organization have decided to celebrate 2015 as "International Year of Soil". Judicious use of fertilizer is must to preserve the soil as a living entity. Though Cuttack district is very close to capital city of Odisha, the farmers of the district are little aware about the importance of soil test and how to manage soil health. To promote soil test based fertilizer use and to create awareness among the farmers KVK Cuttack organized six days soil testing campaign in



*Soil sampling demonstration*

collaboration with IFFCO. IFFCO provides the facility of mobile soil testing van. KVK in its adopted villages like Sankilo (Nischintakoili), Ganeswarpur, Chadheipada (Tangi Choudwar) and at KVK campus organized soil testing campaign. A total of 521 soil samples were analyzed and soil test card were distributed among the farmers. Prior to the organization of camps the farmers were trained in scientific soil sampling practices by Mr DR Sarangi, SMS (Soil Science). After the programme it was observed that farmers used chemical fertilizers on soil test based result and getting optimum yield with judicious fertilizer use.



*A farmer receiving soil test report*

## SEED TREATMENT CAMPAIGN

Seed treatment with Thiram or Bavistin or carbendazim @2 g per kg seed prevents expression of contaminated seed borne diseases. Seed



*Farmers receiving input on seed treatment*

treatment kills many harmful microorganisms present in seed and prevents the occurrence of disease in the seedling or plants. Under the able guidance of Dr M Chourasia, SMS (Plant Protection) and in collaboration with ATMA, Cuttack, State Government Officials and NGOs like Nigam, seven seed treatment camps were carried in different villages of Tangi Choudwar and Nischintakoili Blocks out to create awareness about the importance of seed treatment and the methodology involved.

### **ANIMAL HEALTH CAMPS**

Animal Health Camps are organized to spread the message of kindness towards animals and to protect them from negligence in treatment in remote corners where proper veterinary treatment is not available either due to negligence by the livestock keepers or the remoteness of the places.



*Animal health camp at Nischinta*



*Health Camp at Gurujang*

Three Animal Health Camps were organized in village Kadei, Nischinta and Ganeswarpur covering 530 livestock in November 2010 by Dr PK Mallik, (Animal Science) with active participation from state animal husbandry dept. Recently, two Animal Health Camps were organized by Dr RK Mohanta, SMS (Animal Science) in collaboration with Dr Amitav Panda, BVO, Tangi-Choudwar and Dr Bijay Kumar Behera, AVAS, Choudwar at village Gurujang and Guali (Tangi-Choudwar) on 21 February 2015 and 20 March 2015 in which 414 animals were diagnosed and treated. Ectoparasite and deworming medicines were also used for treatment of 68 animals. Further, treatment was provided to sick animals for various ailments including reproductive disorders viz. anoestrous, diarrhoea, infertility, repeat breeding etc. Farmers were also provided with mineral mixture supplements for their livestock and birds. They were also trained about disease management practices and vaccination schedule for keeping their livestock healthy.

### **ANIMAL DEWORMING CAMPS**

Animal deworming plays a pivotal role in keeping its health normal and productivity optimal. Two livestock deworming camps were conducted in March 2015 at village Uchchpada (Tangi-Choudwar) and Mangarajpur (Badamba) where more than 519 animals were treated or dewormed. Along with SMS (Animal Science), Block



*Deworming camp at Ucchpada under progress*

Veterinary Officer and AVAS participated in these camps. Farmers were also provided with mineral mixture supplements for their livestock and birds. They were also trained about disease management practices and vaccination schedule for keeping their livestock healthy.

### **PROGRAMME ON FRUIT RIPENING CHAMBER**

One collaborative training programme on “Scientific cultivation of fruit crops and its scientific ripening technology” was organized by Samagra Agribusiness Pvt. Ltd., Hyderabad at Hotel Grand Residency, Cuttack from 5-6 March 21, 2015 in which Sri Bani Singh, Deputy Director, National Horticulture Board, Bhubaneswar and Sri C S Rao, Member, National Horticulture Board, Ministry of Agriculture, Government of India have participated. Forty three farmers and rural youth



*Sri Bani Singh, Dy Director, National Horticulture Board addressing the gathering*

from different blocks of Cuttack district participated in this programme. The progressive farmers were made aware about fruit ripening process and benefits of fruit ripening chamber.

### **BGREI PROGRAMME**

Bringing Green Revolution to Eastern India (BGREI) programme was started in Eastern India to implement the impact of green revolution to the eastern India where till now the impact has not reached the optimal level. It is also termed as the second Green Revolution, wherein Rastriya Krishi Vikas Yojana covered 52 blocks of Odisha where 1000 ha from each block was expected to cultivate rice. From Cuttack district, Badamba, Salepur and Kantapada block were included in the programme in 2011 and 8 more blocks, i.e. Narasinghpur, Banki, Athagarh, Niali, Barang, Cuittack Sadar, Mahanga and Tangi Choudwar blocks were added in 2012. The important components included soil testing, scientific field preparation, scientific nursery raising, seed treatment, line sowing and use of deweeding machine awareness creation among the farming community. KVK Cuttack played an important role in capacity building of farmers and extension personnel along with monitoring its activity in collaboration with NRRI, Cuttack, State Department of Agriculture and NGOs. Dr SM Prasad, Mr DR Sarangi and Dr M Chourasia acted on behalf of KVK in training for skill upgradation, consultation service wherever



*BGREI team supervising demonstration plots*



*Crop cutting programme under process*

any problem arose and monitoring of the progress of farmers to obtain a better yield. Implementation of BGREI programme resulted in more effective tillers per plant along with less disease and pesticide attack and less weed menace. This further resulted in rice yield of 63-82 quintals per hectare and farmers were encouraged to adopt the practice without any government help.

**EXPOSURE VISIT**

Lead farmers of Cuttack district were exposed to different modern technologies by visiting the Pusa Krishi Vigyan Mela and interacting with national level scientists regarding their block level problems and procure technological inputs from



*Progressive farmers from Cuttack district at Pusa Krishi Vigyan Mela 2014*

the National Fair. The KVK Cuttack, Santhapur sponsored the visit of 20 progressive farmers' from adopted villages of Nischintakoili, Tangi Choudwar, Mahanga, Salepur, Badamba, Narasinghpur, Niali and Baranga to the Pusa Krishi Vigyan Mela at the Indian Agricultural Research Institute, ICAR, Pusa, New Delhi during the reporting period. Dr PK Mallick, Mr TR Sahoo, Mr DR Sarangi and Dr SM Prasad accompanied and guided them during their exposure in the year 2010, 2011, 2012, 2014 and 2015, respectively. The farmers were exposed to various technologies at the Mela. They also visited the National Science Museum in the NASC Complex, New Delhi.



*Progressive farmers from Cuttack district at Pusa Krishi Vigyan Mela 2012*



*Progressive farmers from Cuttack district at Pusa Krishi Vigyan Mela 2015*

## Instructional Farm

The instructional farm of Krishi Vigyan Kendra Cuttack is situated at village Santhapur of Tangi-Choudwar block. The soil of the farm is red and laterite in nature with slightly acidic in reaction. The undulated topography and lack of irrigation facility creates challenge to make it a model farm. With high degree of risk KVK Cuttack staffs give their best to make the place cultivable. From stony and bushy unapproachable land now a cultivable land has arisen. Short duration rice crops like Sahabhazi Dhan, Jaldidhan, Vandana and Satabdi varieties are shown and harvested with little



*Line sowing at KVK farm*

success. Lack of levelled land for rice cultivation makes it difficult for irrigation, low and erratic rainfall adds to this plight. In 2011-12 Kharif, groundnut cultivation gave very promising response. Higher quantum of success is achieved in the farm with horticultural crops and maize. The major horticultural crops prevalent in the district are now put under Crop Cafeteria for the farmer's exposure. A low cost vermi-compost unit is also constructed for method demonstration purpose. A low cost poly house and shed net house was constructed by locally available material for seedling production and farmers visit. The produce of the farm is sold by a local committee and deposited in NRRI account as sale proceeds. The farm area is suitable for study of various stress tolerance research as this area is under severe abiotic and biotic stress and the scientists of NRRI explore it in *kharif*.



*Director, ICAR-NRRI inspecting the farm*



*Paddy after harvest in KVK farm*



*Low cost polyhouse for seedling production*



Farmers being shown the trial fields



Maize plucking at KVK farm



Director, ICAR-NRRI advising the KVK team



Pro-tray technology demonstration



Cowpea var. Arka Garima at Santhapur



Groundnut cultivation at Santhapur



*A field day is going on at KVK campus*



*Annual plants at full bloom at Santhapur*



*Director, NRRI monitoring the KVK farm activities*



*Hybrid napier cultivation for feeding of dairy animals*



*Marigold at KVK campus, Santhapur*



*Amaranthus cultivated under crop cafeteria*



## Awards & Recognition

### FARMERS / FARMWOMEN

Shri Sudhansu Sekhar Nayak, progressive farmer from KVK adopted village Sankilo, Nischintakoili secured “Mahindra Samriddhi Award 2013” for East Zone of the country on 24 February 2014. He has been awarded cash prize of Rs. 51,000/- and trophy with a certificate for adopting and disseminating ICAR-NRRI technologies under the guidance and supervision of KVK, Cuttack. He was also awarded as “Best Farmer” by Hon’ble Governor, Orissa on occasion of Foundation Day celebration of OUAT, Bhubaneswar on 24 August, 2013.



*Shri SS Nayak from KVK adopted village Sankilo receiving the Mahindra Samriddhi Award 2013*

Shri Krishna Mohan Das, progressive farmer from village Khandayat patakira, Nischintakoili was felicitated for earning 2.5 lakhs from 2 acres of land by intensive agriculture following rice-pulse-vegetable-dairy.

Sri Rama Chandra Swain, Progressive farmer, Mahanga awarded as “Best Farmer” by Hon’ble Governor, Orissa on occasion of Golden Jubilee Foundation Day celebration of OUAT, Bhubaneswar during 24-25 August, 2011.



*Shri Chaitanya Muduli receiving Best farmer award*



*KVK Cuttack honouring a progressive farmer*



*SHG group from Sankilo receiving award from Director, NRRI*



A lady farmer being appreciated for her role in farming



A self help group is awarded for the efforts by Dr N Grewal, Director, CIWA



Mrs Chinu Dehuri receiving the Best Farmer Award



Sri Santosh Kumar Bharti showing his Best farmer certificate at KVK stall



Mr Sanjeev Beura being recognised for family farming



Mr Chandrasekhar Ray is awarded Best Farmer award by Hon'ble Minister

**STAFF**

Dr PK Mallick received the Best Worker of ICAR-NRRI Award in the Technical Officer (T6, T7 & T8) category for 2010.

Dr JR Mishra has received the Best Worker of ICAR-NRRI Award in the Technical Officer (T6, T7 & T8) category for 2012.

Dr M Chourasia has received the Best Worker of ICAR-NRRI Award in the Technical Officer (T6, T7 & T8) category for 2013-2014.



*Dr M Chourasia receiving the Best Worker Award*

Mrs S. Sethy received the Best Worker Award in the Technical Officer (T6, T7 & T8) category for the year 2014-15.

Mrs. S Sethy acts an external examiner for different courses for College of Home Science under OUAT, Odisha. She is a reviewer for "Journal of Agricultural Extension and Rural Development".

Mr TR Sahoo was awarded one year Post Graduate Diploma in Agricultural Extension Management by National Institute of Agricultural Extension Management, Hyderabad in 2009-10.

Dr RK Mohanta was conferred the ANA Mrs. Saroj Jakhmola Award for Best PhD Thesis in Animal Nutrition (2013-14) during IX Biennial Conference of Animal Nutrition Association at Khanapara, Guwahati from 22-24 January, 2015.



*Dr RK Mohanta receiving the ANA-Mrs. Saroj Jakhmola Award*

Dr RK Mohanta inducted into the editorial board of "Indian Journal of Animal Nutrition", published by Animal Nutrition Society of India based at National Dairy Research Institute, Karnal, Haryana. He is acting as a reviewer for "Environmental Pollution", "Animal Production Science", "Proceeding of National Academy of Sciences Section B Biological Sciences", "Animal Nutrition and Feed Technology" and "Indian Journal of Animal Nutrition" journals. He is elected into the national level executive body of "Animal Nutrition Association" based at Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh for the period 2014-16.



*Mrs S. Sethy receiving the Best Worker Award*

List of award winning farmers

Name of the Farmer	Address	Awarding Agency
Sudhanshu Sekhar Nayak	Sankilo, Nischintakoili	ICAR-NRRI, Cuttack OUAT, Bhubaneswar Mahindra & Mahindra
Sanjay Kumar Nayak	Sankilo, Nischintakoili	ICAR-NRRI, Cuttack
Biranchi Narayan Nayak	Sankilo, Nischintakoili	ICAR-NRRI, Cuttack
Govinda Swain	Sankilo, Nischintakoili	ICAR-NRRI, Cuttack
Sanatan Rout	Brado, Nischintakoili	ICAR-NRRI, Cuttack
Bhakta Ranjan Praharaj	Jhadeswarpur, Mahanga	ICAR-NRRI, Cuttack
Smt. Tarangini Pradhan	Mahanga	ICAR-NRRI, Cuttack
Ramachandra Swain	Baenpur, Mahanga	ICAR-NRRI, Cuttack OUAT, Bhubaneswar
Dibakar Jena	Arada, Cuttack Sadar	ICAR-NRRI, Cuttack OUAT, Bhubaneswar
Krushna Mohan Das	Khandayat Pattikira, Nischintakoili	OUAT, Bhubaneswar
Santosh Bharati	Ganeswarpur, Tangi-Choudwar	OUAT, Bhubaneswar
Jagannath Mohanta	Khandabandha, Tangi-Choudwar	OUAT, Bhubaneswar
Smt. Mami Dehuri	Khandabandha, Tangi-Choudwar	ICAR-NRRI, Cuttack
Suresh Ch. Sahoo	Teutuliragadi, Tigiria	ICAR-NRRI, Cuttack
Kailash Das	Khaipada, Tangi-Choudwar	ICAR-NRRI, Cuttack
Bibekananda Das	Jhadeswarpur, Mahanga	ICAR-NRRI, Cuttack
Gangadhar Swain	Similipur, Banki	ICAR-NRRI, Cuttack
Smt. Chinu Dehuri	Abhayapur, Tangi-Choudwar	ICAR-NRRI, Cuttack
Sunil Ku. Mishra	Purbakachha, Salepur	ICAR-NRRI, Cuttack
Purna Ch. Mohapatra	Haldia, Mahanga	ICAR-NRRI, Cuttack
Jayanta Ku. Rout	Bhatapada, Salepur	ICAR-NRRI, Cuttack
Nagesh Ku. Dhal	Alara, Narsinghpur	ICAR-NRRI, Cuttack
Alekh Prasad Sahoo	Loknathpur, Nischintakoili	ICAR-NRRI, Cuttack
Prasant Ku. Mallick		ICAR-NRRI, Cuttack
Chaitanya Muduli	Mangarajpur, Badamba	ICAR-NRRI, Cuttack
Chandra Sekhar Mallick	Patrakana, Niali	ICAR-NRRI, Cuttack
Chittaranjan Samal	Patrakana, Niali	ICAR-NRRI, Cuttack
Raghunath Behera	Khadibil, Niali	ICAR-NRRI, Cuttack
Rabindra Ku. Mohapatra	Badamba, Badamba	ICAR-NRRI, Cuttack
Satyananda Beura	Nuabandha, Athagarh	ICAR-NRRI, Cuttack

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- Sahoo TR, Sadangi BN, Sarangi DR, Prasad SM, Chourasia M and Sethy S. 2014. Pro trays- a successful approach for raising vegetable seedlings. *In: Souvenir of Eastern Zone Regional Agriculture Fair on "Rice Based Farming System for Food and Nutritional Security" held at CRRI, Cuttack from 26-28 February, 2014, pp-41-45.*
- Sahoo TR, Sarangi DR, Prasad SM and Chourasia M. 2012. Integrated nutrient management in brinjal brought new hopes for Odisha farmers. *In: Souvenir of Eastern Zone Regional Agriculture Fair Souvenir on "Technologies and Programmes for Second Green Revolution in Eastern India" held at CRRI, Cuttack from 21-23 February 2012, pp 41.*
- Sarangi DR, Sadangi BN, Sahoo T, Prasad SM, Chourasia M and Sethy S. 2014. Brown manuring in direct seeded rice: A case study. *In: Souvenir of Eastern Zone Regional Agriculture Fair on "Rice Based Farming System for Food and Nutritional Security" held at CRRI, Cuttack from 26-28 February, 2014, pp-79.*
- Vanitha K and Sethy S. 2010. Conservation of land races: Need of hour for sustainable agriculture. *In: National Seminar on "Plant Resource Assessment and Conservation Under Changing Environment" from 20-30 December, 2010, p- 57-58.*

#### EXTENSION BULLETIN

- Chourasia M, Behera KS, Das KM, Prasad SM, Sahoo TR, Sarangi, DR and Sethy S. 2015. *Management of Rice Pest and Diseases.* CRRI, Cuttack, pp-76.

#### POPULAR ARTICLES

- Sarangi DR and Sadangi BN. 2015. Brown

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**TECHNICAL BULLETINS / LEAFLETS (ODIA)**

Mohanta RK, Sethy S, Prasad SM, Sarangi DR and Chourasia M. 2014. *Paribarika Krushi (Family Farming)*. Leaflet (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

Sahoo TR, Sarangi DR, Prasad SM and Chourasia M. 2014. *Baigyanika upayare baigana phasalare samanwita khadyasara parichalna* (INM in brinjal). Technical Bulletin (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

Sahoo TR, Sarangi DR, Prasad SM and Chourasia M. 2014. *Nutana upayare panipariba chara utpadana* (New method of vegetable seedling production). Technical Bulletin (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

Sahoo TR, Sarangi DR, Prasad SM and Chourasia M. 2014. *Utkrusta manara phulakobi pain bibhinna padakhhepa* (Steps to produce quality cauliflower). Technical Bulletin (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

Sarangi DR, Sahoo T, Prasad SM and Chourasia M. 2014. *Mrutika pariksha kari matira urbarata*

*rakhya karantu* (Preserve your soil fertility by testing the soil). Technical Bulletin (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

Sethy S, Mishra JR, Sarangi DR, Chourasia M and Sahoo TR. 2012. *Dhana amala o prakriya karana re byabahruta bibhinna jantrapati* (Tools and equipments used for harvesting and processing of paddy). Technical Bulletins/ leaflet (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

Sethy S, Mishra JR, Sarangi DR, Chourasia M and Sahoo TR. 2012. *Khadya o poshona nirapatta nimante kichhi janiba katha* (Tips for food and nutritional security). Technical Bulletins/ leaflet (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

Sethy S, Sarangi DR, Chourasia M, Mohanta RK and Prasad SM. 2014. *Baigyanika Upayare Sasya Sanrakhana* (Scientific methods of grain storage). Technical Bulletin (in Odia), Krishi Vigyan Kendra Cuttack, Santhapur, Odisha.

**OTHER PUBLICATIONS**

Chourasia M, Prasad SM, Sahoo TR and Sarangi DR. 2013. *Directory of Farm Service Providers*, Krishi Vigyan Kendra Cuttack, Odisha.





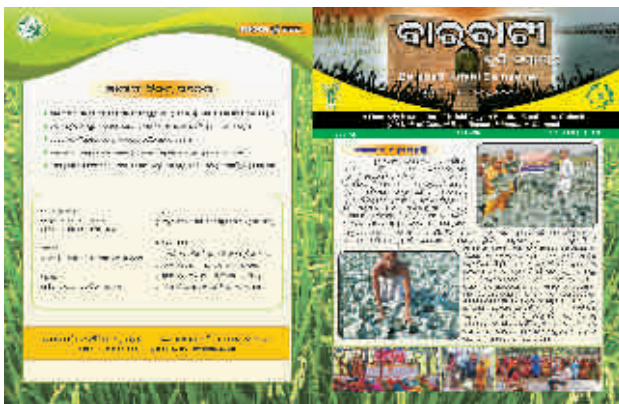
**NEWSLETTER (QUARTERLY)**

To create awareness about different scientific developments and successful activities of KVK, a quarterly newsletter entitled “*Barabati Krishi Samachar*” is being published with contributions from KVK Subject Matter Specialists and Programme Coordinator. It encompasses activities of KVK, successful technological interventions, success stories, successful farmer profile and technological advisory. After inception in October 2010, it is continuously disseminating knowledge among masses, i.e., farmers, farmwomen and rural youth of Cuttack district. One thousand copies of

each issue of the newsletter are being distributed. It is being appreciated by common public and is in genuine demand for its content from every corner of the district. Efforts are being made to make it freely available in social media and internet.

**Editors of KVK Newsletter**

- Dr JR Mishra (December 2010 to January-March 2012)
- Mr DR Sarangi (April-June 2012 to January-March 2014)
- Dr RK Mohanta (April-June 2014 till date)





## Participation in Workshop/ Training/ Short Course/ Winter School/ Summer School/ Conference

Attended and presented a paper entitled " <i>Performance evaluation of Deshi ducks of Orissa, Deshi x Khaki Campbell cross and Khaki Campbell in extensive system of rearing</i> " at National Seminar on emerging opportunities in alternate poultry farming system held at Madras Veterinary College, Chennai during 22-23 April 2010.	Dr PK Mallick
Attended training-cum-workshop on " <i>Harnessing Pulse Production in Eastern India</i> " organized at ICAR-IIPR, Kanpur during 3-5 May 2010	Dr SM Prasad
Attended State level workshop cum training programme of Programme Coordinators at DEE, OUAT Bhubaneswar during 7-10 June 2010.	Dr SM Prasad
Attended awareness-cum-training programme on " <i>Protection of Plant Varieties and Farmers Right Act, 2001</i> " at ICAR-NRRI, Cuttack on 11 October 2010	Dr SM Prasad
Attended national symposium on " <i>Sustainable Rice Production System under changed Climate</i> " and presented poster paper entitled " <i>Integrated Weed Management in Rainfed Upland Rice</i> " at ICAR-NRRI, Cuttack during 27-29 November 2010	Dr SM Prasad
Attended the fifth National Conference of KVKs at MPUAT, Udaipur, from 22 to 24 December 2010	Dr SM Prasad
Attended training programme on " <i>Scope of Spice Production in Odisha</i> " in ICAR-CIWA, Bhubaneswar from 17 to 19 March 2011	Mr TR Sahoo
Attended the 18th Zonal workshop of KVKs of Zone VII at RVSKVV, Gwalior from 6 to 8 May 2011	Dr SM Prasad
Attended a FLD workshop on Oilseed and Pulses of Zone VII at OUAT, Bhubaneswar on 29 May 2011	Dr SM Prasad
Attended a training programme on " <i>Women Friendly Tools and Equipments for Drudgery Reduction</i> " by AICRP on Ergonomics and Safety in Agriculture at College of Agricultural Engineering and Technology, OUAT, Bhubaneswar from 9 to 10 June 2011	Mrs. S Sethy
Attended a training course on " <i>Mushroom Production Technology</i> " at ICAR-NRC for Mushroom, Solan, Himachal Pradesh from 21 to 27 July 2011	Mrs. S Sethy
Attended training programme on " <i>Improved Vegetable Production</i> " at OUAT, Bhubaneswar from 12 to 13 August 2011	Mr TR Sahoo
Participated in a training programme on " <i>Integrated Farming System</i> " at OUAT, Bhubaneswar from 27 to 28 October 2011	Mr TR Sahoo

Attended the Sixth National Conference of KVKs at JNKVV, Jabalpur, from 3 to 5 December 2011	Dr SM Prasad
Attended Pre-Zonal Workshop on 17 April 2012 organized by OUAT, Bhubaneswar.	Dr M Chourasia
Attended a Farmer-Scientist Interaction cum Workshop for " <i>Development of Jute Cultivation</i> " in Cuttack District on dated 20 April 2012 organized by Jute Promotion Board	Dr M Chourasia
Attended the Zonal Workshop of KVKs of Zone-VII in Jabalpur, M.P. from 3 to 5 May 2012 and presented Annual Progress Report 2011-12 and Annual Action Plan 2012-13	Dr SM Prasad
Attended a workshop on " <i>National Rural Livelihood Mission</i> " organised by DRDA, Cuttack on 24 May 2012	Mrs. S Sethy
Attended state level interaction meeting of BGREI at Bhubaneswar on 28 May 2012	Dr SM Prasad
Participated in a training programme on " <i>Integrated Farming System</i> " at OUAT, Bhubaneswar on 12 June 2012	Mr TR Sahoo
Participated in a training programme on " <i>Polygreen House in Horticulture</i> " at OUAT, Bhubaneswar on 13 June 2012	Mr TR Sahoo
Attended training-cum-workshop on " <i>Rice Programmes of KVKs</i> " at ICAR-NRRI, Cuttack on 7 July 2012	Dr JR Mishra, Mrs. S Sethy, Mr DR Sarangi, Mr TR Sahoo, Dr M Chourasia
Attended training-cum-workshop programme for KVK from 11 to 12 July 2012 organized by ZPD, Zone-VII at ICAR-NRRI, Cuttack	Mr DR Sarangi, Mr TR Sahoo, Dr M Chourasia
Attended training-cum-planning workshop on " <i>Seed production of Rice</i> " on 07 August 2012 at Goudgope village, organized by National Initiative on Climate Resilient Agriculture	Dr M Chourasia
Attended a summer school on " <i>Gender Mainstreaming for Resilient Agriculture</i> " at ICAR-CIWA, Bhubaneswar from 12 July to 7 August, 2012	Mrs. S Sethy
Attended a winter school on " <i>New Frontier of IPM in Rice and Rice Based Cropping System</i> " at ICAR- Indian Institute of Rice Research, Hyderabad from 13 September to 3 October, 2012	Dr M Chourasia
Attended national workshop on " <i>Recent Trends in Impact Assessment and Best Practices</i> " at ICAR-CIFA, Bhubaneswar during 12-13 December 2012	Dr SM Prasad
Attended a workshop on " <i>Livelihood Support to Farmers</i> " on 22 December 2012, organized by OCTMP, Bhubaneswar	Dr M Chourasia
Participated in AZRA International Conference held at ICAR-NRRI, Cuttack from 16 to 18 February 2013	Dr M Chourasia

Participated in “Stakeholders Meeting for Institute Model Village” on Rice for KVK – Scientist, held at ICAR-NRRI, Cuttack on 23 February 2013	Dr SM Prasad, Mrs. S Sethy, Mr TR Sahoo
Attended District level <i>kharif</i> strategy meeting at Collectorate, Cuttack on 2 May 2013	Dr SM Prasad
Attended training-cum-review workshop programme and presented report and action plan of horticulture at OUAT from 3 to 4 May 2013	Mr TR Sahoo
Participated in training-cum-workshop on Rice for KVK – Scientist, held at ICAR-NRRI, Cuttack from 14 to 15 May 2013	Mr DR Sarangi, Mr TR Sahoo, Dr M Chourasia
Attended Farmers-Scientist Interaction programme and delivered talk on ‘Integrated Pest Management in SRI’ at ATMA conference Hall Cuttack on 29 May 2013	Dr M Chourasia
Attended the Officer’s Conference on Pre- <i>kharif</i> planning at ATMA Conference Hall, Cuttack on 4 June 2013	Dr SM Prasad
Attended Pre-Zonal Workshop of KVKs of Odisha at Directorate of Extension Education, OUAT, BBSR on 7 June 2013	Dr SM Prasad Dr M Chourasia
Participated in a Zonal Workshop held at Satna, M.P. on 23 June 2013	Mr DR Sarangi Dr M Chourasia
Attended the review meeting of KVKs of Odisha under Chairmanship of Hon’ble Minister of Agriculture, Govt. of Odisha at OUAT, Bhubaneswar on 24 July 2013	Dr SM Prasad Dr M Chourasia
Delivered a lecture on “Rice-Horticulture Cropping Sequence and Production Technology of Horticultural Crops” in a training programme on “Improved Rice Production Technology” organized by NRRI from 1-5 September 2013	Mr TR Sahoo
Participated in the OCTMP – KVK activity inception programme held at ICAR-CIFA, Bhubaneswar on dated 4 September 2013	Mr TR Sahoo Dr M Chourasia
Attended a summer school on ‘New Horizons in Biotic Stress Management in Rice under Changing Climate Scenario’ at ICAR-NRRI, Cuttack from 10 to 30 September 2013	Dr M Chourasia
Attended the <i>rabi</i> strategy meeting of Cuttack district at Collectorate on 11 September 2013	Mr DR Sarangi
Attended 5 days training programme on ‘Training of Trainers on Entrepreneurship Development’ at NIMSME, Yosufguda, Hyderabad from 16 to 20 September 2013	Mr TR Sahoo
Attended the Seminar-cum-Workshop on <i>rabi</i> cropping programme at ATMA on 25 September 2013 delivered a talk on ‘Improved Pulse Production Technologies for Higher Productivity’	Dr SM Prasad
Attended a training programme on ‘Statistical Analysis using SAS Software’ from 3 to 5 October 2013 at ICAR-NRRI, Cuttack	Mr DR Sarangi

Attended the 8th National Conference of KVK at UAS, Bangalore from 23 to 25 October 2013	Dr SM Prasad
Attended a workshop on <i>"Post-Phailin management"</i> at Directorate of Extension Education, Bhubaneswar for KVKs of coastal Odisha on 10 November 2013	Mr DR Sarangi
Delivered a lecture on <i>"Rice-Horticulture Cropping Sequence"</i> in a training programme on <i>"Improved Rice Production Technology"</i> organized by ICAR-NRRI from 12-16 November 2013	Mr TR Sahoo
Attended the meeting on <i>'Contingent Plan for Cyclone-Flood Affected District in Odisha'</i> at OUAT, Bhubaneswar on 20 November 2013	Dr SM Prasad
Attended the training programme on <i>'Protection of Plant Varieties and Farmers' Right Act, 2001'</i> at Jabalpur on 30 November 2013	Dr M Chourasia
Delivered a lecture on <i>"Rice-Horticulture Cropping Sequence"</i> in a training programme on <i>"Package and Practices of Improved Rice Production Technology"</i> organized by ICAR-NRRI from 17-21 December 2013	Mr TR Sahoo
Attended a training programme for SMS-Plant protection held at OUAT, Bhubaneswar on from 23 to 24 December 2013	Dr M Chourasia
Participated in a training programme on <i>"Plastic Culture in Horticulture"</i> at OUAT, Bhubaneswar from 27 to 28 December 2013	Mr TR Sahoo
Attended the RPSC meeting at All India Radio, Cuttack on 22 November 2013.	Dr SM Prasad
Attended the ATMA Governing body meeting at Cuttack Collectorate on 30 January 2014.	Dr SM Prasad
Attended a meeting for discussion of NHB Schemes convened by the Office of the National Horticultural Board, Bhubaneswar on 15 February 2014.	Mr TR Sahoo
Attended Pusa Krishi Vigyan Mela with 6 progressive farmers of Cuttack at ICAR-IARI, New Delhi from 26-28 February 2014.	Mr DR Sarangi Mr TR Sahoo
Attended workshop on <i>"Backyard Poultry Production as a Tool to Augment Livelihood of Rural and Tribal Farmers of Odisha"</i> organized by Regional Centre, ICAR-CARI, Bhubaneswar during 3-4 March, 2014.	Dr SM Prasad
Delivered a lecture on <i>"Rice-Horticulture Cropping System"</i> in a training programme on <i>"Improved Package of Practices for Increasing Rice Productivity"</i> organized by NRRI from 3-7 March 2014.	Mr TR Sahoo
Delivered a lecture on <i>"Nursery Preparation and Management in Rice Cultivation"</i> in a training programme on <i>"Improved Package of Practices of Increasing Rice Productivity"</i> organized by ICAR-NRRI from 3-7 March 2014.	Dr SM Prasad
Delivered a lecture on <i>"Rice-Horticulture Cropping System"</i> in a training programme on <i>"Improved Package of Practices for Increasing Rice Productivity"</i> organized by ICAR-NRRI from 10-14 March 2014.	Mr TR Sahoo

Delivered a lecture on <i>“Nursery Preparation and Management in Rice Cultivation”</i> in a training programme on <i>“Improved Package of Practices for Increasing Rice Productivity”</i> organized by ICAR-NRRI from 10-14 March 2014.	Dr SM Prasad
Delivered a talk on <i>“Improved winter vegetable cultivation for income enhancement”</i> in a training programme on <i>“Efficient Management of Water Resources for Sustainable Livelihood in Flood Prone Areas”</i> organized by ICAR-NRRI from 19-21 March 2014.	Mr TR Sahoo
Attended an orientation training programme for SMS of KVK'S of Odisha at Directorate of Extension Education, OUAT, Bhubaneswar, from 20-22 March 2014.	Mr DR Sarangi
Attended the Officers Conference at the office of the DDA, Agriculture, Cuttack on <i>“National Mission on Sustainable Agriculture”</i> on 4 April 2014.	Dr SM Prasad
Attended the Action Plan Workshop of KVKs of Odisha organized at ICAR-CIFA, Bhubaneswar during 25-26 April 2014.	Dr SM Prasad Dr M Chourasia
Participated in video conferencing programme on <i>“National Mission for Sustainable Agriculture”</i> on 07 May 2014 at Collectorate, Cuttack.	Dr SM Prasad
Associated with Quality Planting Material Verification team to verify the quality planting material production in different nurseries in Athagarh Sub-Division on 9 May 2014.	Mr TR Sahoo
Attended review-cum-action plan workshop on <i>“Rice Production Technology for KVK scientists”</i> at ICAR-NRRI, Cuttack from 15 to 17 May 2014.	Mrs. S Sethy Mr TR Sahoo
Attended a short course on <i>“Participatory Research for Mainstreaming Gender Concerns in Agriculture”</i> from 22 to 31 May 2014 at Central Institute for Women in Agriculture (CIWA), Bhubaneswar.	Mr TR Sahoo
Attended Farmer's-Scientist interaction programme at ATMA conference hall Cuttack on 23 May, 2014 in which 62 progressive farmers, Krishak Sathies and VAWs participated.	Dr M Chourasia
Attended the Review Meeting on Finalization of Agro climate wise common Action Plan (OFTs) of Odisha jointly organized by Zonal Project Directorate, Zone-VII, Jabalpur and Directorate of Extension, Education, OUAT, BBSR on 27-28 May, 2014.	Dr SM Prasad
Participated in <i>“Stakeholders Meet for Model Village”</i> of ICAR-NRRI on 9 June 2014.	Dr SM Prasad Mrs. S Sethy Mr DR Sarangi Mr TR Sahoo Dr M Chourasia Dr RK Mohanta
Delivered a lecture on <i>“Package and Practices of Brinjal”</i> in a training programme on <i>“Horticulture for Sustainable Livelihood”</i> organized by ICAR-NRRI from 17 and 21 June 2014.	Mr TR Sahoo

Attended a workshop on “Evidence Based Research and Role of Science Communication in Social Media” organized by MSSRF and LANSA at ICAR-CIWA, Bhubaneswar on 23 June 2014.	Dr RK Mohanta
Associated with DDH, Cuttack and other members of the team for verification of organic farming project at Banki block on 22 July 2014.	Mr DR Sarangi
Attended pre-review meeting of KVKs at ZPD Unit, Jabalpur on 4 August 2014.	Dr SM Prasad
Attended Pre-Zonal Workshop of KVKs at OUAT, Bhubaneswar on 12 August 2014.	Dr M Chourasia
Attended the KVK Interface Workshop on “Interventions in Tribal areas and efficiency enhancement” at NASC Complex, New Delhi on 19-20 August 2014.	Dr SM Prasad
Attended RPSC meeting of AIR, Cuttack at ICAR-NRRI, Cuttack on 20 August 2014.	Smt. S Sethy
Delivered a lecture on e-pest surveillance-kharif-2014 in a district level training programme at block office, Salepur for krishak sathies and officials on 22 August 2014	Dr M Chourasia
Participated in XXI Zonal workshop of KVKs, Zone-VII at IGKV, Raipur from 5-7 September 2014 and installed an exhibition stall with farmers varieties of paddy, pulses, oilseeds, vegetables and root crop for registration under PPV & FRA	Dr SM Prasad Dr M Chourasia
Attended District Level Monitoring Team meeting of BGREI at ATMA conference hall, Cuttack on 20 September 2014.	Dr SM Prasad Dr M Chourasia
Attended an interaction meet on Emerging insect pest and diseases of horticultural based cropping system in Eastern India, organized by ICAR-IIHR-CHES, Bhubaneswar and AZRA on 17 November 2014.	Dr M Chourasia
Attended the Technology Platform Meeting for Farming System for Nutrition Research Study in Koraput under LANSA organized by the M.S. Swaminathan Research Foundation at Hotel Swosti Premium, Bhubaneswar on 17 November 2014.	Dr RK Mohanta
Participated as resource persons on Farmer Field School on Post harvest care of vegetables at village Biswanathpur, Tangi-Choudwar organized by ATMA, Cuttack on 19 November 2014.	Smt. S Sethy Dr M Chourasia
Attended the Rural Programme Subject Committee meeting of AIR, Cuttack on 26 November 2014 in the Bishinahakani Coconut Farm, Tangi, Cuttack.	Dr SM Prasad
Participated in a field day on paddy at village Safa of Tangi-Choudwar Block organized by Dept of Agriculture, Cuttack on 28 November 2014.	Dr M Chourasia
Attended the Scientific Advisory Committee Meeting of KVK Jajpur, Badachana, on 10 December 2014.	Mr DR Sarangi



Attended the crop cutting-cum-field day programme, organized by Dept of Agriculture, Cuttack, under BGREI programme in Tangi-Choudwar, and Salepur blocks on 1 and 9 December 2014.	Dr M Chourasia
Attended the field visit, crop cutting and Dhan Diwas programme, organized by Dept of Agriculture, Cuttack, under BGREI programme in Cuttack Sadar, Niali and Kantapada on 6, 10 and 12 December 2014	Dr SM Prasad
Attended IX Biennial Animal Nutrition Association Conference and acted as a rapporteur in a Technical session at College of Veterinary Science, Guwahati, Assam on 22-24 January 2015	Dr RK Mohanta
Participated in XII Agricultural Science Congress-2015 at ICAR-NDRI, Karnal during 3-6 February, 2015 on " <i>Sustainable Livelihood Security for smallholder farmers</i> "	Smt. S Sethy
Attended and delivered a talk on " <i>Production technology of potato</i> " in a farmers training programme organized by Project Director, Watershed, Cuttack at village Mangarajpur, Tangi-Choudwar on 04 February 2015 in which 36 farmers participated	Dr SM Prasad
Participated in HRD programme for scientists of Home Science, Animal Science and Fisheries in KVKs of Odisha from 6-8 February 2015 at OUAT, Bhubaneswar	Dr RK Mohanta
Attended Regional Agricultural Fair, 2015 at CPRS, Patna during 19-21 February 2015 and delivered a talk on " <i>Rice varieties suitable for different ecologies of Eastern India and their production technologies</i> "	Dr SM Prasad
Associated with FET programme for 6 ARS trainees at village Andhoti (Baranga) and a " <i>Gram Alochana Chakra</i> " was conducted on 26 February 2015 in which the Director, ICAR-NRRI, Cuttack chaired the programme	Smt. S Sethy Dr RK Mohanta
Attended RPSC meeting of AIR, Cuttack on 27 February 2015	Dr SM Prasad
Attended e-pest surveillance training at Salepur block office organized by DAO, Salepur for 50 farmers on 27 February 2015	Dr M Chourasia
Attended a 3 day training programme organized as a resource person at Block Office, Tangi-Choudwar for 20 selected farmers/farm women and delivered lectures on " <i>Role of Goat Nutrition in Profitable Goat Farming</i> " on 27 and 28 February 2015	Dr RK Mohanta
Proceeded to ICAR-IARI, New Delhi with eleven progressive farmers from different blocks of Cuttack district for exposure visit to Pusa Krishi Vigyan Mela, 11-13 March 2015	Dr SM Prasad
Attended a training programme as a resource person for Orissa Community Tank Management Project at Tentuliragdi, Tigriria for 50 farm women and delivered lecture on " <i>Mushroom Production Technology</i> " on 19 March 2015	Smt. S Sethy
Attended the ICAR sponsored training programme at OUAT, Bhubaneswar during 24- 26 March, 2015	Dr M Chourasia

## Participation in Exhibitions and Farmers Fair

KVK Cuttack has participated in various farmers fair and exhibitions to create awareness about newer technologies for upliftment of farming community summarized below.



*Dr CD Mayee, Chairman, ASRB visiting the KVK stall*



*Recording of a progressive farmers story*



*Dr. EA Siddiq (Former DDG Crop Science) visiting the exhibition stall*



*Demonstration of agricultural implements*



*Vice-chancellor, OUAT interacting with KVK experts*



*Visitors interacting with KVK experts*



*Dr MS Swaminathan at KVK Cuttack exhibition*



*Hon'ble minister Sri Debi Prasad Mishra interacting with KVK staff*



*Hon'ble minister Mrs Snehangini Chhuria appreciating value added products*



*Director, NRI visiting the KVK Cuttack exhibition*



*Dean, Extension Education, OUAT interacting at KVK Cuttack stall*



*Demonstration on mechanised farming*

**Participation in Exhibitions and Farmers Fair**

Particulars	Venue	Duration
Farmer Fair	OUAT, Bhubaneswar	18-19 February 2012
East Zone Regional Agriculture Fair	NRRI,Cuttack	21-23 February 2012
NRRI Foundation day	NRRI, Cuttack	23 April 2012
OUAT Foundation day	OUAT, Bhubaneswar	23-24 August 2011
Golden Jubilee Celebration of KVK, Puri	KVK Puri, Sakshigopal	24 June 2012
Farmers Interface	NRRI, Cuttack	31 July 2012
Pusa Krishi Vigyan Mela	IARI, New Delhi	1-3 March 2012
Pusa Krishi Vigyan Mela	IARI, New Delhi	27 February to 1 March 2013
Golden Jubilee Ceremony of OUAT	OUAT, Bhubaneswar	23-24 August 2012
International Conference on Rice	NRRI, Cuttack	3-5 January 2013
Foundation Day of NRRI	NRRI, Cuttack	23 April 2013
Kisan Mela	Sagar, Narsinghpur	5 July 2013
Women in Agriculture Day	Sankilo, Cuttack	5 December 2013
Technology Week	CIWA, Bhubaneswar	27 January 2014
Krishi Vasant	Nagpur, Maharastra	09-13 February 2014
PPV & FRA Workshop	NRRI, Cuttack	22 February 2014
Regional Agricultural Fair	NRRI, Cuttack	26-28 February 2014
XXI Zonal Workshop of KVKs, Zone-VII	IGKV, Raipur	5-7 September 2014
3rd "Interface Meet of the ICAR Institutes-SAU-State Departments	NRRI, Cuttack	21-22 October 2014
Jalakeli Mahotsava	Jalakeli, Narasinghpur	27 December 2014
Women in Agriculture Day	NRRI, Cuttack	3 December 2014
PPV & FRA Workshop	NRRI, Cuttack	27 March 2015

## Distinguished Visitors

- Shri Chandra Sarathi Behera, Member of Legislative Assembly, Tangi-Salipur, Odisha attended the Technology Week celebration at KVK on 18 January 2010.
- Dr RK Raj, Professor and Project Leader, Dean of Extension Education, OUAT, Bhubaneswar visited KVK on 30 June 2010.
- Shri Raghunath Mohanty, OAS, Project Director, District Rural Development Agency visited KVK campus on 18 July 2010.
- Shri AP Nanda, AGM, NABARD visited KVK and also farmers plots of Haridapal village of Tangi-Choudwar block for monitoring vegetable seed production activity on 22 February 2011.
- Dr RM Prasad, Associate Director, Extension Education, Kerala Agricultural University, Kerala visited farmers field of Abhaypur and KVK campus on 22 July 2011
- Dr SRK Singh, Senior Scientist (Agricultural Extension), ZPD, ZONE VII visited KVK and adopted village Ganeswarapur on 16 February 2012.
- Shri CS Mathad, Editor, Agricultural Extension



*Prof. Ian Graham, Yorkshire, UK visited KVK Cuttack*

Review, ICAR, New Delhi visited KVK on 21 February 2012

- Dr. Saidou Halima El Hadji Djibo, Director, Centre Regional de la Recherche Agronomique de Niamey, Niger visited KVK Cuttack, Santhapur and adopted village Biswanathpur (Salepur) on 22 August 2013.
- Prof. Ian Graham, Yorkshire, UK visited KVK, Cuttack on 12 November 2013 with scientists of NRRI to evaluate the experiments and discussed various extension possibility of tested varieties with Subject Matter Specialists of KVK.



*Dr RM Prasad visiting farmers field of Abhaypur*



*Dr Diwedi visiting farmers fields in Ganeswarapur*

## Personnel

### Staff Position as on 31-03-2015

Designation	Sanctioned	Filled	Vacant
Programme Coordinator	1	1	-
Subject Matter Specialist	6	5	1
Programme Assistant	3	-	3
Administrative Staff	2	1	1
Driver	2	2	-
Supporting Staff	2	1	1
<b>Total</b>	<b>16</b>	<b>10</b>	<b>06</b>

### Staff in the Reporting Period (2010-2015)

Dr Shiv Mangal Prasad	Senior Scientist and Programme Coordinator, from 6 November 2008
Dr (Mrs.) K Vanitha	Scientist (Plant Protection); from 28 Aug 2009 to 6 Aug 2012
Dr Jyoti Ranjan Mishra	T9, SMS (Agricultural Extension); upto 13 August 2013
Dr Prasant Kumar Mallick	T7-8, SMS (Animal Science); upto 16 May 2011
Mrs. Sujata Sethy	T7-8, SMS (Home Science); from 2 Aug 2010
Mr Dillip Ranjan Sarangi	T6, SMS (Soil Science); from 21 Dec 2010
Mr Tusar Ranjan Sahoo	T6, SMS (Horticulture); from 1 Jan 2011
Dr Manish Chourasia	T6, SMS (Plant Protection); from 1 Feb 2011
Dr Ranjan Kumar Mohanta	T6, SMS (Animal Science); from 21 May 2014
Sri Bibhuti Bhushan Polai	Stenographer Gr.III; from 11 May 2011
Sri Makar Dhar Behera	Tractor Driver (T3); from 7 May 1994
Sri Arabinda Bishoi	Driver (T1); from 1 July 2011
Sri Rama Pradhan	Skilled Supporting Staff ; from 20 July 1994

## Acronyms

<b>a.i.</b>	: Active Ingredient
<b>AAO</b>	: Assistant Agriculture Officer
<b>AHO</b>	: Assistant Horticulture Officer
<b>AIR</b>	: All India Radio
<b>ATMA</b>	: Agricultural Technology Management Agency
<b>B: C ratio</b>	: Benefit to cost ratio
<b>BDO</b>	: Block Development Officer
<b>BGREI</b>	: Bringing Green Revolution to Eastern India
<b>BLB</b>	: Bacterial Leaf Blight
<b>BVO</b>	: Block Veterinary Officer
<b>CIWA</b>	: Central Institute for Women in Agriculture, Bhubaneswar
<b>DAO</b>	: District Agricultural Officer
<b>DAP</b>	: Di-ammonium phosphate
<b>DAS</b>	: Days after Sowing
<b>DDA</b>	: Deputy Director of Agriculture
<b>DEE</b>	: Dean of Extension Education
<b>FLD</b>	: Frontline Demonstration
<b>FYM</b>	: Farm yard Manure
<b>g</b>	: Gram
<b>h</b>	: Hour
<b>ha</b>	: Hectare
<b>HI</b>	: Harvest Index
<b>HYV</b>	: High-yielding variety
<b>IARI</b>	: Indian Agricultural Research Institute, New Delhi
<b>ICAR</b>	: Indian Council of Agricultural Research
<b>IDM</b>	: Integrated Disease Management
<b>IFFCO</b>	: Indian Farmers Fertiliser Cooperative Limited
<b>IIHR</b>	: Indian Institute of Horticultural Research, Bengaluru
<b>NHRDF</b>	: National Horticultural Research and Development Foundation
<b>IIVR</b>	: Indian Institute of Vegetable Research, Varanasi
<b>IIWM</b>	: Indian Institute of Water Management
<b>INM</b>	: Integrated Nutrient Management

<b>IPM</b>	: Integrated Pest Management
<b>IPR</b>	: Intellectual Property Rights
<b>IRRI</b>	: International Rice Research Institute
<b>IWM</b>	: Integrated weed management
<b>kg</b>	: Kilogram
<b>km</b>	: kilometers
<b>KMA</b>	: Kishan mobile advisory
<b>KVK</b>	: Krishi Vigyan Kendra
<b>LCC</b>	: Leaf Colour Chart
<b>LF</b>	: Leaf Folder
<b>MOP</b>	: Muriate of Potash
<b>MSL</b>	: Mean sea level
<b>NABARD</b>	: National Bank for Agriculture and Rural Development
<b>NFSM</b>	: National Food Security Mission
<b>NGO</b>	: Non-governmental Organization
<b>NICRA</b>	: National Innovations in Climate Resilient Agriculture
<b>NPK</b>	: Nitrogen, Phosphorous, Potassium
<b>NRC</b>	: National Research Centre
<b>NRRI</b>	: National Rice Research Institute (Central Rice Research Institute), Cuttack
<b>OFT</b>	: On-farm Trials
<b>OUAT</b>	: Orissa University of Agriculture and Technology, Bhubaneswar
<b>PC</b>	: Programme Coordinator
<b>PI</b>	: Panicle Initiation
<b>PPV and FRA</b>	: Protection of Plant varieties and Farmers' Right Act
<b>PRA</b>	: Participatory Rural Appraisal
<b>q</b>	: Quintal
<b>SAC</b>	: Scientific Advisory Committee
<b>SAU</b>	: State Agricultural University
<b>SHG</b>	: Self Help Groups
<b>SMS</b>	: Subject Matter Specialist
<b>SRI</b>	: System of Rice Intensification
<b>WTCER</b>	: Water Technology Centre for Eastern Region
<b>WUE</b>	: Water-use Efficiency
<b>YSB</b>	: Yellow Stem Borer
<b>ZPD</b>	: Zonal Project Directorate



## Activities in Pictures



*Participants of PPV & FRA 2015*



*Bumper crop of rice var. Naveen grown by women Self Help Group*



*A farmer showing his brinjal crop*



*Identification of insect pests*



*Expert from Mission Shakti explaining about food security*



*Video show at KVK campus*



*Dr SRK Singh visiting KVK farm*



*Assistance in FET Programme by KVK Cuttack*





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