

## PROFILE, KRISHI VIGYAN KENDRA PURI

1. **Name of the KVK:** Krishi Vigyan Kendra, Puri

2. **Full postal and telecommunication address:** Krishi Vigyan Kendra, Puri

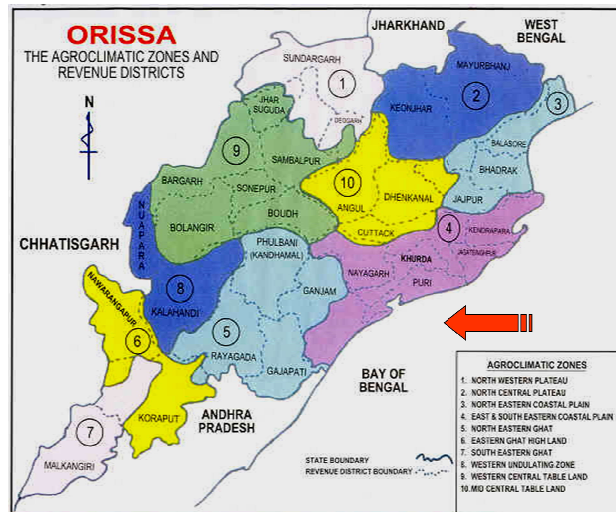
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3. **Date of establishment of KVK:** 6<sup>th</sup> July 2006

### 4. The socio-economic and technological profile of agriculture in area of Responsibility of the KVK

Puri district is a coastal district on the eastern part of Odisha, India. This district needs no introduction, being the abode of Lord Vishnu, most popularly known as Lord Jagannath Dham. This district derives its name from the heritage city of Puri, one of the four major pilgrimage centres of India. It covers an area of 3479 sq. km having 155 km as its coast line along with the bay of Bengal.

The District may be divided into two dissimilar natural divisions - the Littoral tract and the Level alluvial tract. It is located at 19° 28' N Latitude 26° 35' N, 84° 29' E. Longitude 86° 25' E. The district is surrounded by Jagatsinghpur in north, west by Khordha, east by bay of Bengal and south by Ganjam. There is good network connectivity with length of 8979 kilometres road and railway network of 42 kilometres.



#### (a) Demographic status of Puri District

The district consists of eleven blocks namely Satyabadi, Pipili, Kanasa, Krushnaprasad, Delanga, Brahmagiri, Nimapada, Purisadar, Gop, Kakatpur and Astaranga with 268 Gram Panchayats and 1722 villages. The population of the District is 1697983 (as per 2011 Census) and the density of population is 488 people per sq. km. Around 84 per cent of the people reside in the rural areas where as urban population is around 15 per cent of the total population. More than 85 per cent people are literate.

As per 2011 census, 6,21,676 people of the district are classified under main and marginal workers. The percentage of main workers to the total population of the district is 26.52

and the percentage of cultivators to the main workers is 38.3. The agricultural labourers constitute 36.38 per cent of the total main workers.

**(b) Land Holding Pattern of Puri District**

According to 2011 census, there are 148935 operational holdings with 185280 Ha under their possession. Marginal and small operational holdings constitute 65.42 and 27.18 per cent of the total land holdings in the district. The large farmers constitute 1.39 per cent of the total and possess 10.52 per cent of the total cultivable land.

**Class-wise number and area of land holdings in Puri district**

Class	Total No.	Total area in Ha
Marginal Farmers	97439	70624
Small farmers	40487	61223
Semi-med farmers	6598	22352
Medium farmers	3318	11525
Large farmers	2073	19588
Total	148935	185280

( 1-2ha- small farmers, 2-4 ha- semi-med farmers, 4-10 ha-medium farmers, more than 10 ha large farmers )

(Source: District Agril. Office, Puri)

**(c) Agro-Climatic Characteristics of Puri District**

Puri falls under East and South Eastern Coastal Plain Zone of Odisha. Broad soil groups of the district are saline, lateritic, alluvial, red and mixed red and black. Based on variation in topography, soil type, availability of irrigation and cropping patterns, the agro-climatic zone is further subdivided in to 6 numbers of agro-ecological situations.

District	ACZ	AES	Blocks
Puri	EAST AND SOUTH EASTERN COASTAL PLAIN ZONE	1. Costal irrigated alluvium	
		2. Rainfed alluvium	
		3. Costal alluvial saline	
		4. Costal waterlogged	
		5. Rainfed Lateritic	

The climate of the district is mostly hot and humid. Mean annual rainfall is 1577mm and mean summer maximum temperature is 39.0 ° Celsius. The mean humidity is recorded as 80 per cent. Out of total geographical area of 348102 Ha, the cultivated area is around 53 percent. The area under forest is 3.93 per cent of the geographical area which includes mostly reserve forests.

**BASIC AGRICULTURAL INFORMATION**

Total Geographical area(ha)	348102	%
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Total Cultivated Area (ha)	188745	
High	19100	10.12
Medium	57654	30.54
Low	111991	59.33
Total Paddy Area (ha)	142000	75.23
High	0	
Medium	57419	40.44
Low	84581	59.56
Total Non paddy area(ha)	19100	10.12
Cultivable waste(ha)	3299	
Forest land(ha)	14225	
Land put to non agricultural use(ha)	115010	
Water logging area(ha)	16335	8.65
Saline area(ha)	10900	5.77
Fallow Land (ha)	410	
Soil type	Red, laterite, brown forest, alluvial and saline	
Farming situation	Rainfed and irrigated	
Cropping system	Rice-Rice, <del>Rice- Pulse</del> , Rice- Oilseed, Rice-Vegetables, Fallow-Rice	
Major Crop/ enterprise	Rice,Blackgram ,Greengram,Groundnut, Betel vine, Coconut ,Vegetables, Fish, Mushroom, Dairy, Poultry	
Irrigation potential	116.08(61.5%)	
Kharif ('000ha)	76.715(40.64%)	
Rabi ('000ha)		

Agriculture has been the major source of livelihood for the population of the district and rice cultivation has been the principal farming activity. Alternative land use and livelihood options such as horticulture, aquaculture and livestock were minor components limited to meeting the subsistence needs of the population. Rice is the major crop occupying 51% of the cropped area. The next important cereals are maize and ragi occupying 2.6 and 2.1 of the cropped area, respectively. Pulses are grown on 23% and oil seeds on 9.5% of the cropped area. The major pulse crops are mung, biri, arhar and kulthi occupying 88% of the total pulse area. Fibre crops are grown on 1% of the cropped area, the major being cotton accounting for 60% of the total fibre area. Vegetables are grown on 7.7% and condiments on 1.7% of the cropped area. The major condiments are chilli. Sugarcane occupies less than 0.5% of the cropped area.

### Area, Production and Productivity of Major crops

Sl. N	Name of the crop	Area (ha)			Production (MT)			Productivity (q/ha)	
		Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi
1	Paddy	144841	50355	195196	272590.76	175940.37	448531.13	18.82	34.94
2	Pulses	-	62330	62330	-	15582.5	15582.5	-	2.50
3	Oilseeds	-	15999	15999	-	30046.12	30046.12	-	18.78
4	Vegetables	14432	13364	27796	131922.91	113981.56	245904.47	91.41	85.29
5	Spices	1396	1452	2848	707.77	650.50	1358.27	5.07	4.48
6	Sugarcane	573	590	1163	-	21953.90	21953.90	-	372.10
7	Millets	175	189	364	96.25	103.95	200.20	5.5	5.5
8	Fibres	32	-	32	18.56	-	18.56	5.80	-

In addition to agriculture, many people in the sea coast area are depending on the pisciculture to derive their daily sustenance.

### Aquatic resources of Puri district (Production- 20583.5 MT )

Freshwater resources		
Freshwater pond and tanks	No.	Area (ha)
Gram panchayat ponds	2624	934.04
Revenue/Govt. ponds	479	147.15
Private tanks	8891	1979.86
Total	11994	3061.35
Brackish water resources		
Brackish water pond and tanks	Area available (ha)	Area utilized (ha)
Revenue/Govt. ponds	11916.7	3233.84
Private tanks	3264.3	1558.69
Total	15181.0	4693.53

### Animal Resources (19<sup>th</sup> Livestock census)



<b>Milk production/annum</b>	101TMT
<b>Milk Production by CB population</b>	59%
<b>Meat (Poultry)</b>	5TMT
<b>Egg production</b>	30 Millions
<b>Meat (Sheep/Goat)</b>	3TMT

The tropical humid climate of Puri is mostly suitable for growth of mushroom. Infact it is not wrong to say that Puri is the mushroom capital of Odisha. Out of total mushroom production of 12,444 tons/year in state of Odisha, major share goes to Puri district, which is about 62% of the total production and Paddy straw mushroom contributes around 67% of the total production. Prevailing moderate temperature with high humidity is especially suitable for Paddy straw mushroom cultivation. Puri district has 38 mushroom spawn laboratories supplying quality spawn of not only paddy straw but also of oyster to the growers of Puri and the adjoining districts.

Since its inception in the year 2006, KVK, Puri is making constant efforts to increase the productivity and profitability in agriculture and allied sector by bridging the gap between technology generation and adoption. Apart from broad areas of issues & opportunities pertaining to farm sector of the district, specific consideration of the micro situation in the adopted villages have become the basis for formulation of the KVK action plan. Through different participatory tools the problems and needs of the farming community has been identified and after problem prioritization the specific intervention points are formulated.

#### **THRUST AREA IDENTIFIED BY KVK**

- Varietal substitution of field and vegetable crops
- Promoting INM,IPM,IWM in cereals, pulses ,oilseeds and vegetables
- To emphasize on management of problematic soil
- To advocate intensive and integrated pisciculture practices, fish seed production, ornamental fish culture
- To emphasize on minor carps and catfish farming
- To popularize IDM in betelvine
- To promote farm mechanisation and agro processing
- To promote Pond based IFS
- To advocate profitable dairy and goatary
- To propagate mushroom cultivation, bee keeping and floriculture
- To emphasize on entrepreneurship development
- To focus on value addition of fruits, vegetables and low cost marine fish
- To address household food security

#### **Adopted Villages of KVK**

<b>Name of village</b>	<b>Distance from KVK</b>	<b>No. of farm</b>	<b>G.P.</b>	<b>Block</b>	<b>Period of adoption</b>

	(Km)	families			
Basudeipur	15	130	Biswanatha pur	Satyabadi	2010-11
Otrakera	10	35	Sandra	Satyabadi	2012-13-14
Nuasahi	25	58	Uchhupur	Nimapada	2012-13-14
Barakera	42	86	Barakera	Delanga	2013-14-15
Subarnapur	44	98	Ganeswarpur	Gop	2013-14-15
Jasuapur	11	135	Jasuapur	Pipili	2013-14-15
Otekera	10	89	Sandra	Satyabadi	2014-15-16-17
Gopalpur	20	28	Sahanpur	Nimapara	2016-17-18-19
Othaka	65	95	Othaka	Kakatpur	2016-17-18-19
Adhangapada	30	50	Jagannathpur	Pipili	2016-17-18-19
Anandpur (Panashapada)	45	48	Panashapada	Krushnaprasad	2016-17-18-19
Kunjara	35	56	Gobindpur	Pipili	2018-19
Singhbrahmapur	37	67	Singhbrahmapur	Delanga	2018-19
Bagalpur	11	87		Satyabadi	2020-21
Aruali	55			Gop	2020-21
Naruda	44			Nimapada	2020-21
Bankatala	28			Kanasa	2020-21

#### 5. List of output and outcome against each of the mandated activities :

##### Ag r o n o m y

**OFT 1: *Assessment of submergence tolerant rice variety in Kharif*** in rice-pulse cropping system was conducted during the year 2018-19 in the village Jaypur, Singhberhampur and Resinga of Satyabadi, Delanga and Nimapada block respectively. By adopting the technology the average rice yield of Swarna sub 1 was obtained 41.2 q/ha and it benefitted the farmers in terms of resistance to submerged water situation, increase in average yield as compared to farmer's variety resulting in high profitability. The technology is now spread to 180 villages and about 2500 farmers are now practicing it.



**OFT 2: Assessment of deep water rice varieties in Kharif in rice-pulse cropping system** was conducted during the year 2020-21 in the village nuagaon of satyabadi block. By adopting the technology the average rice yield of CR-507 was obtained 42.8q/ha and it benefitted the farmers in terms of resistance to water logged situation, low cost of cultivation, increase in average yield as compared to farmer's variety resulting in high profitability. The technology is now spread to 10 villages and about 110 farmers are now practicing it.



**FLD 1: Demonstration of herbicides for weed management in transplanted rice** during was conducted during the year 2020-21 in the village singhberhampur of Delanga Block. By adopting the technology the average yield was increased from 34.3 q/ha to 42 q /ha and it benefitted the farmers in terms of increase in yield and profit. The technology is now spread to 140 villages and about 2100 farmers are now practicing it.





FLD 2: ***Demonstration of salt tolerant paddy variety Luna Suvarna*** was conducted during the year 2019-20 in the village Panaspada of Krushnaprasad Block. By adopting the technology the average yield was increased from 32 q/ha to 37 q /ha and it benefitted the farmers in terms of increase in yield and profit. The technology is now spread to 25 villages and about 130 farmers are now practicing it.



FLD 3: ***Demonstration on Chemical weed management in Groundnut in Rabi*** was conducted during the year 2019-20 in the village Lokapala of Kanas Block. By adopting the technology the average yield was increased from 16.3 q/ha to 18.6 q /ha and it benefitted the farmers in terms of increase in yield and profit. The technology is now spread to 10 villages and about 60 farmers are now practicing it.



## Plant Protection

**Assessment 1** - An OFT on “*Assessment of Integrated leaf miner management in Tomato*” was conducted during the year 2018-19 in the village Sultanpur of Pipili block. This OFT continued for 3 years covering adopted villages of Delanga and Kanas block. By adopting the technology the average yield was increased from 305 q/ha to 369 q/ha and it benefitted the farmers in terms of increase in yield and high net return. The technology is now spread to 23 villages and about 250 farmers are now practicing it.



**Assessment 2-** An OFT on “*Assessment of Sigatoka disease management in Banana*” was conducted during the year 2018-19 in the village Haripur of Nimapada block. By adopting the technology i.e. ( Alternate spraying of Bordeaux mixture 1% and (Tebuconazole 50WG + Trifloxystrobin 25WG) @ 200gm/ha at 15 days interval with additional dose of 25% potash) the average yield was increased from 258 q/ha to 315 q/ha and it benefitted the farmers in terms of increase in yield and high net return. The technology is now spread to 15 villages and about 135 farmers are now practicing it.





**Demonstration 1 -*Demonstration on Integrated management of Thrips and Mites in Chilli*** was conducted during the year 2017-18 in the village Oruali. This FLD programme continued for three years extending to villages like Bankatala, Gadabadaput of Kanas block and Singhberhampur of Delanga block. By adopting the technology the average yield was increased from 186 q/ha to 230 q /ha and it benefitted the farmers in terms of increase in yield and profit. There was a 65 percent reduction of number of thrips per plant by use of blue sticky trap. The technology is now spread to 48 villages and about 560 farmers are now practicing it.



**Demonstration 2 -*Demonstration on Integrated management of YMV in Greengram*** was conducted during the year 2018-19 in the village Adhangapada. By adopting the technology i.e.(Seed treatment with Imidacloprid 600 FS @ 5 ml / kg seed + Yellow sticky trap @ 50 nos/ha + Neem oil (300ppm) @5ml/lit spray on appearance of white fly on YST + Spraying of Diafenthiuron 50 WP @ 312.5 g a.i./ha), the average yield was increased from 5.8 q/ha to 7.6 q /ha and it benefitted the farmers in terms of increase in yield and profit. The number of adult white fly per leaf was reduced from 11.3 to 3.8. The technology is now spread to 67 villages and about 1800 farmers are now practicing it.



**Demonstration 3 -*Demonstration of“ Stem Borer management in Summer Rice”*** was conducted during the year 2019-20 in the village Bankatala and Jaguleipadar of Kanas block. By adopting the technology i.e.( nursery treatment with cartap hydrochloride 4G@ 0.8 kg a.i. per hectare + alternate spraying of neem oil 3000ppm and Indoxacarb 18.5SL@1ml/litre at 55DAT

+ twice release of *T. chilonis* @ 50,000/ha 7days after spraying), the average yield was increased from 44 q/ha to 57 q /ha and it benefitted the farmers in terms of increase in yield and net return. The number of white ear head per sq.m was reduced from 4.86 to 0.76. The technology is now spread to 25 villages and about 110 farmers are now practicing it.



### **Agril. Engineering**

**Assessment 1- *Assessment of 6-row riding type Rice Transplanter*** for mechanized line transplanting of Rice was conducted during the year 2020-21 in the village Oruali and Inchola of Gop block. By adopting the technology the average yield was increased from 47.7 q/ha (manual line transplanting) to 48.2 q/ha and saving in cost of operation was Rs.6140/- per hectare, which benefitted the farmers. The technology is now spread to 7 to 8 villages and about 82 farmers are now adopting the technology.



**Assessment 2 -*Assessment of Tractor drawn Whole straw Paddy Thresher*** for bundle straw production required for mushroom cultivation was conducted first during the year 2019-20 in the village Sanabhimdaspur and Bagalpur of Satyabadi block. By adopting the technology the average cost of threshing was reduced from Rs.214/- (Pedal thresher) to Rs.124/- per quintal of Paddy, which benefitted the mushroom farmers. The technology is now spread to 20 to 24 villages and about 12 to 13 farmers are now determined to purchase the machinery and custom hire it.





**Assessment 3- Assessment of 4-row walk behind type Rice Transplanter for mechanized line transplanting in Rabi season** was conducted during the year 2019-20 in the village Kotabada and Resinga of Satyabadi and Nimapada block respectively. By adopting the technology the the average yield was increased from 46.2 q/ha (manual line transplanting) to 46.3 q/ha and saving in cost of operation was Rs.4582/- per hectare, which benefitted the farmers. The technology is now spread to 14to 16 villages and is very popular among small farmers as it is of low weight.



**Demonstration 1 – Demonstration of Tractor drawn Zero till Seed cum fertilizer drill** for sowing Greengram was started during the year 2018-19 in the village Bharatipur, Oterkera& Naruda and continued for consecutive 3 years. By adopting the technology the average yield was increased from 5.4 q/ha to 6.1 q/ha and it benefitted the farmers in terms of increase in yield and net return. The technology is now spread to 162 villages and about 8200 farmers are now practicing it.



**Demonstration 2 – Demonstration of Power weeder in Banana Orchard** was started during the year 2019-20 in the village Dalabhanapur and haripur of Nimapada Block. Later it was



demonstrated in village Naruda and Taraboisan. This weeder also demonstrated in trainings and farmers' fair organized by KVK. By adopting the technology the weeding cost in banana per hectare was reduced from Rs.10,500 to Rs.4,500/- and it benefitted the farmers in terms of increase in net return. The technology is now spread to 252 villages and about 250 vegetable farmers are now practicing it.



**Demonstration 3 – *Demonstration of Mulching in Pointedgourd*** was started during the year 2019-20 in the village Dalabhanapur and Kantunia of Nimapada Block. Later it was demonstrated in village Gualigarada of Satyabadi Block. By adopting the technology the average yield was increased from 98.4q/ha to 121q/ha. The weeding cost per hectare was reduced from Rs.11,250 to Rs.6,750/- and it benefitted the farmers in terms of increase in both yield and net return. This technology is now spread to 15 villages and about 45 to 50 farmers are now practicing it.



**Demonstration 7 – *Demonstration of Tractor drawn Groundnut Thresher*** was started during the year 2019-20 in the village Lokapal and Bankatala of Kanas Block. By adopting the technology the threshing capacity was increased from 0.04q/h to 5.5q/hr. The cost of operation per quintal was reduced from Rs.502/- to Rs.191/- and it benefitted the farmers in terms of saving in cost and time. This technology is now spread to 7 to 8 villages and about 150 to 200 farmers are now practicing it.





## **Horticulture**

**Demonstration 1** – Demonstration on artificial pollination in pointed gourd for higher yield was conducted during the year 2018-19 & 2019-20 in the village Bagalpur, Kantunia Resinga and Kunjara. By adopting the technology the average Pointed gourd yield was increased from 112.20 q/ha to 149.28q/ha and it benefitted the farmers in terms of no. of fruit per plants and increase in yield and profit. The technology is now spread to 12 villages and about 47 farmers are now practicing it.



**Demonstration 2** – Demonstration on portray raising of seedlings to avoid late planting of water melon after late harvest of paddy was conducted during the year 2018-19 & 2019-20 in the village Aruali and Chadeigaon. By adopting the technology the average Pointed gourd yield was increased from 112.20 q/ha to 149.28q/ha and it benefitted the farmers in terms of no. of fruit per plants and increase in yield and profit. The technology is now spread to 12 villages and about 47 farmers are now practicing it.



## **Fishery Science**



**Assessment 1 - An Assessment of growth performance of Amur carp** , *Cyprinus carpio haematopterus* in carp polyculture was conducted during the year 2019-20 in the village Singhberhampur and Subarnapur. By adopting the technology the average fish yield was increased from 29.6 q/ha to 34.2q/ha and it benefitted the farmers in terms of fish yield, financial improvement and high profitability. The technology is now spread to 29 villages and about 145 farmers are now practicing it.



**Demonstration 2 – Demonstration on application of Floating fish feed @ 1% body weight** daily in composite carp culture was conducted during the year 2018-19 in the village Chandanpur and Sanabhimdasapur. By adopting the technology the average fish yield was increased from 29.25 q/ha to 32.3 q/ha and it benefitted the farmers in terms of decrease in FCR, increase in yield and profit. The technology is now spread to 26 villages and about 260 farmers are now practicing it.



**Demonstration 2 – Demonstration on Periphytic substrate to maximize production** performance in carp polyculturesystem(placing of periphytic substrates such as bamboo splits/coconut leaves in 20% of pond water area) was conducted during the year 2018-19 in the village Subarnapur. By adopting the technology the average fish yield was increased from 29 q/ha to 34.2 q/ha and it benefitted the farmers in terms of increase in yield and profit. The technology is now spread to 16 villages and about 120 farmers are now practicing it.



## Home Science

**Assessment 1-** *An assessment of different media for nursery raising of quality vegetable seedling* production was conducted during the year 2019-20 & 20-21 in the villages Dalabhanapur and Naruda. By adopting the technology the maximum growth parameters such as shoot length, root length, and no. of leaves (89.3 mm, 37.9 mm and 4) were observed at 30 days aged seedlings with Arka Fermented coir pith media. The minimum growth parameters (82.9 mm, 34 mm and 3 respectively) were observed with farmer practice for the same day of aged seedlings. The maximum germination was found to be 99 per cent with coir pith and the minimum was 87 per cent in farmer's practice. The farm women got more profit by selling healthy seedlings. The technology is now spread to 6 villages including 14 WSHGs.



**Assessment 2-** *Assessment of packaging practices of Paddy straw mushroom* was conducted during the year 2019-20 & 20-21 in the villages Bagalpur, Sanabhimdaspur & Talajanga. By adopting this technology the mushrooms packed in paper bags at room temperature were found to be the best in colour, texture and odour in KMS 0.1% treatment and the mushrooms can be kept fresh in paper bags upto 48 hours (2 days) at room temperature. The Paper bags were prepared by KVK Puri in guidance of CTMRT was inaugurated by Hon'ble Agriculture Minister in the 9<sup>th</sup> conference of Mushroom Federation. It was adopted by mushroom farmers and WSHGs are interested to prepare this for income generation.



**Demonstration 1 –** *Demonstration on artificial brooding management in chicks* was conducted during the year 2019-20 & 20-21 in the village Samankula, Singhberhampur, Adangapada and Gadatorha. By adopting the technology the Avg. Body Wt/21 days was increased from 135g to 160g with less mortality and it benefitted the farmers in terms of increase in yield and profit. The technology is now spread to 8 villages and about 7 WSHGs are now practicing it.





**Demonstration 2- *Demonstration on Nutrition Sensitive Organic Kitchen garden*** for better Health & additional income of farm family was conducted during the year 2018-19, 2019-20 and 2020-21 in the village Singhberhampur, Dalabhanapur, Naruda and Basudeipur. By adopting the technology backyard organic nutritional garden at household ensure the daily supply of fresh vegetables in the diets & average per capita availability of vegetables increased 59.25% with an additional income of Rs.1141/unit. The technology is now spread to 82 villages and about 325 farmwomen are now practicing it.



**Demonstration 3 - *Demonstration on Apiary in coconut orchard*** was conducted during the year 2018-19, and 2019-20 in the village Adangapada, Harekrushnapur & Dalabhanapur. By adopting the technology the farmers get additional income from Coconut orchard. The technology is now spread to 47 villages and about 56 farmers are now practicing it. This enterprise was promoted by selecting 40 youths under ARYA Project from 2018-19 and 22 units already established.



**Demonstration 4 – *Demonstration on backyard poultry breed Kadaknath*** was conducted during the year 2019-20 & 20-21 in the village Arala, Randio, Chandrabherhampur, Dubduba and Kantunia. By adopting the technology the Avg. Body Wt/6 Months was increased from 0.95kg to 1.55 kg and it benefitted the farmers in terms of increase in yield and profit. The technology is now spread to 23 villages and about 87 farmers are now practicing it. Kadknath breed was also distributed as start up input to Youths under ARYA project and 25 Units are established.

