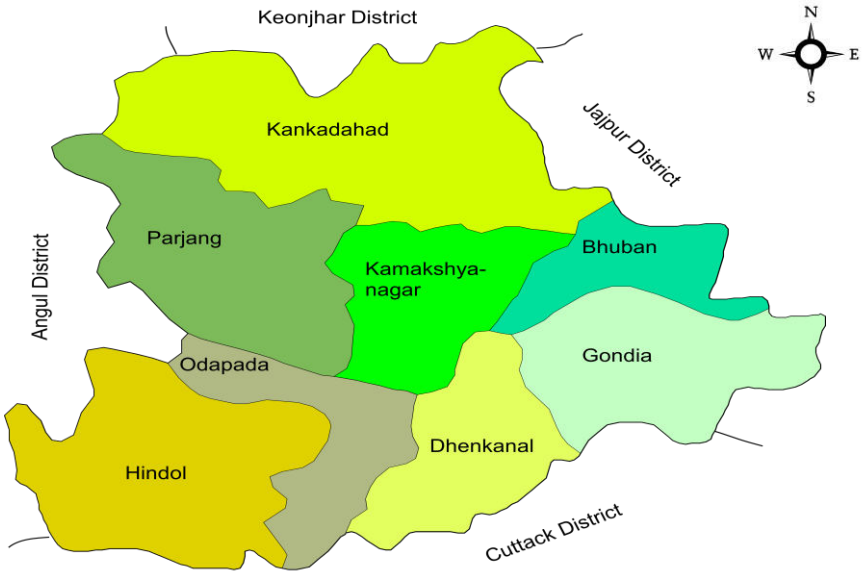
Krishi Vigyan Kendra, Dhenkanal

Dhenkanal district comes under mid central table land of the state. Major crops are paddy, pulses, oilseeds, vegetables, mango etc. There are 6 Agro-ecological situations with following features.



Basic information

Agro-climatic zone	Mid Central Table Land
Latitude	$20^0$3' to $21^0$16' N
Longitude	$84^0$6' to $86^0$6' E
No . of Blocks	08
No. of GPs	199
No. of Villages	1215
No. of Subdivision	02
Population	1192801
Literacy	79.41%
SC and ST Population	136501 & 197280
Soil type	Red lateritic, sandy loam, alluvial
Average annual rainfall (mm)	1428.8
Cropping intensity (%)	195
Geographical area(ha)	4,45,000
Cultivated area(ha)	1,86,000
Upland (ha)	92,000
Medium land(ha)	54,000
Low land (ha)	40,000
Irrigated potential (ha)	Kharif – 119382 Rabi – 71571
Single cropped area (ha)	97,154
Double cropped area (ha)	84,494
Triple cropped area (ha)	2,850
Farming situation	AES-6 (Clay and heavy clay soil)
Forest area (ha)	1,74,000
Land for non-agricultural use (ha)	42,000
Barren & uncultivable land (ha)	5,000
Cropping system	Paddy-Groundnut, Paddy-Sesamum, Paddy-Greengram/Blackgram, Groundnut-Groundnut, Paddy-Vegetable

Sl. No.	Name of AES	AES features	Blocks covered
1.	River Valley Alluvial Medium Rainfall	Climate – Hot, Moist, Sub humid, Broad soil group – Alluvial, Red, Lateritic, Mixed Red and Black soils	Sadar, Odapada, Gondia, Bhuban,Parjang, Kamakhyanagar
2.	Light Textured laterite Medium Rainfall	Climate – Hot, Moist, Sub humid, Broad soil group – Alluvial, Red, Lateritic, Mixed Red and Black soils	Sadar, Odapada, Gondia, Bhuban,Kankadahad, Kamakhyanagar
3.	Red loam soil -Medium Rainfall	Climate – Hot, Moist, Sub humid, Broad soil group – Alluvial, Red, Lateritic, Mixed Red and Black soils	Kamakhyanagar, Kankadahad
4.	Medium Textured Red loam soil low rainfall	Climate – Hot, Moist, Sub humid, Broad soil group – Alluvial, Red, Lateritic, Mixed Red and Black soils	Parjang
5.	Black soil low rainfall	Climate – Hot, Moist, Sub humid, Broad soil group – Alluvial, Red, Lateritic, Mixed Red and Black soils	Sadar
6.	Black soil medium rainfall	Climate – Hot, Moist, Sub humid, Broad soil group – Alluvial, Red, Lateritic, Mixed Red and Black soils	Parjang, Kankadahad

Major crops

Crop	Kharif		Rabi	
	Area (ha)	Yield (t/ha)	Area (ha)	Yield (t/ha)
Paddy	94940	2.126	2082	3.5
Maize	2445	2.0	260	2.3
Greengram	7645	0.5	19200	0.502
Blackgram	11850	0.55	17446	0.553
Arhar	3340	0.945		
Groundnut	3335	2.0	8847	2.367
Sesamum	16935	0.5	3145	0.511
Sweet Potato	2185	9.379	985	9.5
Chilli	4015	0.8	2060	1.0
Sugarcane	500	45.86		

Summary of Modules for Doubling of Farmers Income

Module	Farming Situation / AES	Village / Block	Name of existing farming system	Present Income 2015-16	Proposed Income 2018-19	Risk / un-sustainability	Remarks	
							Most Representative module for the district	Market Linkage
Module-1	Rainfed Upland , Medium Land and Low land/Light Textured laterite Medium Rainfall	Parbatia/ Sadar Gurujangulei/ Kankadahad	Rice – fallow, Groundnut-Fallow, Vegetable-Fallow, Paddy-Blackgram +Poultry+ Mushroom	Rs.95,071/-	Rs.1,75,356/-	Cyclone	Module-1	Local and Out side market, Govt. procurement (Mandi)
Module-2	Rainfed Medium Land and Low Land /Black soil Medium Rainfall	Kandarsingha/ Parjang	Paddy-Mustard + Fishery + Duckery	Rs.58444/-	Rs111707/-	Drought Situatio-		Local marketing & Trading
Module-3	Irrigated MediumLand/River valley alluvial medium Rainfall	Khatakhura/ Kamakhyanagar Bangursingh/ Odapada	Paddy-Vegetable + Goatery	Rs.1,12,560/-	Rs.2,09,046/-	Drought Situatio -		Local marketing &post harvest management ensures supply of Onion in off season.

MODULE – 1(Block: Sadar, Village: Parbatia)
AES : Light Textured laterite Medium Rainfall

Sl.No.	Farming Situation	Existing practices 2015-16	
		Component	Problems / practices
1	**Rainfed Upland** Groundnut-Fallow	Groundnut Yield- 10.7q/ha Net return Rs.20810	▪ Local variety ▪ weed infestation ▪ Imbalance fertilization ▪ Application ▪ Spodoptera infestation
2	Rainfed Medium land Okra – Fallow	Okra Yield 110.0q/ha Rs.20500	Low return from Okra var. Bijaya YVMV and Fruit & shoot borer incidence
3	Rainfed Medium land Paddy – fallow	Paddy var. Lalat 38.7q/ha Rs.17840 Fallow	Conventional method of transplanting Manual weeding Rabi fallow
4	Rainfed Lowland Paddy- Blackgram	Paddy yield (39q/ha) Net return – Rs.16630 Black gram yield(3.6q/ha) Net return-Rs.14441/ha	▪ Conventional method of trans planting ▪ Blast, Stem borer, Leaf Folder and BPH ▪ Injudicious use of fertilizer ▪ Weed infestation ▪ Local var. ▪ YMV incidence ▪ Broadcasting
5	Homestead Allied activities	Mushroom	▪ Low income (Rs.3350/-)due to improper substrate management
6	Homestead	Poultry	i) Less egg and meat production from local poultry bird (10 nos) 1 Kg body wt. per bird Rs 1500/-
	Total		**Rs.95071/-**

Intervention1st year (2016-17)

Sl.No.	Intervention	Yield & Net income/ ha
1	**1**.Varietal Substitution of local var with Devi. 2. RDF application	12.9q/ha Rs.26640(28%)
2	1.Substitution of YVMV resistant Hybrid variety Shakti	130q/ha Rs.25400(24%)
3	1.Line Transplanting of Paddy with Self Propelled 8-row Rice transplanter (DRR-44)	40.5 q/ha Rs20340 (14%)
4	1.Line transplanting 1.Cultivation of Black gram var. PU-35	40.7q/ha Rs 19870(15%) 4.4q/ha Rs. 19405(34%)
5	1.Management practices of paddy straw mushroom (80beds)	96 kg Rs.5480(63.5%)
6	1)Backyard poultry rearing of Pallishree (10 nos)	2 Kg body wt. per bird Rs 2500/-(67%)
		Rs.119635/- (26%)

Intervention 2nd year (2017-18)

Sl.No.	Intervention	Expected Yield & net Income/ ha
1	3.STBF Application 4. Weed management: imazethapyr10%SL@ 750ml/ha at 15 DAS	14.1q/ha Rs.27690(33%)
2	2. STBF application	138q/ha Rs.29360(43.2%)
3	2.Weed management : Bensulfuron methyl + Preetilachlor 10 Kg/ha within 3 DAT 1.Horsegram variety Urmi	42.1q/ha RS. 22040(23%) 2.8qtl/ha Rs.10441/ha
4	2.STBF 3. Weed Management:.Bensulfuron methyl + Preetilachlor 10 Kg/ha within 3 DAT 2. IPM: seed treatment with Imidacloprid 70 % WS @ 10 g./kg seed, Yellow sticky trap 25/ha, Spraying of thiomethoxam 25 % WG 0.2 g./lit	42.9 q/ha Rs.22750 (28%) 4.7q/ha Rs. 21610 (49%)
5	2.Paddy straw mushroom cultivation (120 beds) 3. Oyster mushroom cultivation(50 bags)	224 kg Rs.10470 (212%)
6	2) Rearing of Pallishree / Rainbow rooster bird (20 nos) with proper brooding management, vaccination-RD- at 7th day, 35 days (booster dose) 1 drop eye/ nostril , IBD at 18th day(drinking water). 7th week foul box vaccine 0.5 ml (wing stab)	38 Kg meat Rs 3600/- (140%)
		Rs.147961/- (56%)

Intervention 3rd year (2018-19)

Sl.No.	Intervention	Expected Yield & Income/ ha
1	5.IPM in ground nut : Seed treatment with carboxin 37.5 % + thiram 37.5 % 2@ 2.5 g./kg seed , spraying of Chlorothalonil 75 % WP @1.5 gram/lit , Thiophanate methyl 70 % W.P. @ 1.0 g./lit and Triazophos 40 % SP @ 2 ml /lit	15.6q/ha Rs.32190 (54%)
2	3.IPM: seed treatment with Imidacloprid 70 % WS @ 10 g./kg seed, Yellow sticky trap 25/ha, Spraying of thiomethoxam 25 % WG 0.2 g./lit and Bt @ 2 g/lit for management of white fly and fruit & shoot borer	152q/ha Rs.32195 (57%)
3	3.IPM : Seed treatment with carboxyl 37.5% + Thiram 37.5% @ 2.5g/Kg. of seed spraying of Tricyclazole 75 % WP 0.2 g/lit for Blast ,Indoxacarb 14.5 % S.C. @ 0.5 ml/lit for Stem Borer, Leaf folder and alternate drying and weting , making alley at 3 met. Interval thiomethoxam 25 % WG 0.2 g./lit for BPH and WBPH management. 2.STBF application	43.7q/ha Rs, 24530 (37%) 3.6qtl/ha Rs.13551/ha (21%)

Sl.No.	Intervention	Expected Yield & Income/ ha
4	4.IPM: spraying of Tricyclazole 75 % WP 0.2 g/lit ,Indoxacarb 14.5 % S.C. @ 0.5 ml/lit and thiomethoxam 25 % WG 0.2 g./lit 3.Line Sowing by Tractor operated 9-row multi crop Seed cum Fertilizer drill	44.8q/ha Rs.24400 (31%) 5.1q/ha Rs. 23240(61%)
5	4. Training for round the year mushroom production in low cost shade net str. 5. Increase of paddy straw mushroom beds to 200 nos along with oyster mushroom cultivation	320Kg Rs. 15950
6	3) Rearing of Pallishree bird (30 nos) with proper feeding (Feeding concentrate feed upto 2 months age)	43 Kg meat Rs 4300/- (186%)
		Rs.175356/- (84%)

Module -II (Block – Parjang, Village- Kandarsingha)

AES : Clayee Medium Rainfall

Sl.No.	Farming Situation	Existing practices 2015-16	
		Component	Problems / practices
1	Rainfed Medium Land	Rice (40q/ha) (Rs. 14290/ha) Mustard (4.5qtl/ha Rs4154/ha)	▪ Sheath blight in paddy ▪ Hand weeding • Local variety ▪ Imbalance use of fertilizer
2	▪ Rainfed low land	▪ Fish 17q/ha, Rs. 40000/ha Income	▪ Fish production – low income and profit ▪ High mortality of fish fry ▪ Bacterial and fungal disease
	Total Income	**Rs. 58444 / -**	

Intervention1st year (2016-17)

Sl.No.	Intervention	Yield & Net income/ ha
1	-	Rice (40q/ha) (Rs. 14290/ha) Mustard (4.5qtl/ha Rs.4154/ha)
2	1.Yearling culture IMC @5000/ha Catla:Rohu:Mirgal (3:4:3) 2.Duck (khaki campbel)	▪ Fish 20.5q/ha Rs. 50200/ha ▪ Duck Rs. 2000 / 10 nos
		Rs.70644/ (21%)

Intervention 2nd year (2017-18)

Sl.No.	Intervention	Expected Yield & net Income/ ha
1	1.Seed treatment with Thiophenate methyl@1.5g/kg seed and alternate spraying of (Trifloxystrobin+ Tebuconazole) @0.4g/ltr & Thifluzamide24SC @ 1ml/ltr water 1.Variety M-27	43.5q/ha Rs.19840/ha (5.6qtl/ha Rs7260/ha)
2	4.Cifax twice 5.Calcium supplmemnt to duck	• Fish 22 q/ha Rs.57200/ha • Duck Rs.3750 / 10 nos
		Rs.88050/ (51%)

Intervention 3rd year (2018-19)

Sl.No.	Intervention	Expected Yield & Income/ ha
1	2.Pre-emergence application of Bensulfuron methyl+pretilachlor@ 10kg/hafollowed by one hand weeding 2.STBF	44.8q/ha (Rs.23,437/ha) (6.1qtl/ha Rs8320/ha)
2	7.locally available feed at the ratio 60: 40 of sesamum oilcake and polished rice bran with vitamin 2g/kg feed 8.Giving mineral muixture @ 1% of Duck feed	• Fish 27q/ha, Rs.76200/ha • Duck Rs.3750 / 10 nos
		Rs.111707/ (91%)

Module –III (Block : Kamakhyanagar; Village : Khatakhura)
AES: River Valley Alluvial Medium Rainfal

Sl.No.	Farming Situation	Existing practices 2015-16	
		Component	Problems / practices
1	**Irrigated medium land** Rice –vegetable	Rice: 38q/ha Rs.20160	▪Conventional Method of transplanting ▪Injudicious use of fertilizer ▪Disease (Sheath blight) ▪Weed problem
2	**Irrigated medium land** Brinjal	180q/ha Rs.61200	▪Local variety seedling ▪F & S borer ▪Imbalance fertilizer application
3	**Irrigated medium land** Onion	Yield 110q/ha Rs.27500	▪Old variety ▪Imbalance use of fertilizer ▪Lack of Post harvest Management
4	Home stead (Goatery)	Rs 3700/- from a unit of 10 goats/yr	▪High mortality & morbidity rate ▪Anaemic condition ▪Less conception & kidding rate
	Total	**Rs.1,12,560/-**	

Intervention1st year (2016-17)

Sl.No.	Intervention	Yield & Net income/ ha
1	-	Rice: 38q/ha Rs.20160
2	-	180q/ha Rs.61200
3		Yield 110q/ha Rs.27500
4		Rs 3700/- from a unit of 10 goats/yr
		Rs.1,12,560/-

Intervention 2nd year (2017-18)

Sl.No.	Intervention	Expected Yield & net Income/ ha
1	1.Line Transplanting 2.Tricyclazole/ propiconazole	43.6q/ha Rs.27020 (34%)
2	1.SwarnaShyamali **2**.Spraying of Cartap hydrochloride @ 1.5 g/lit for brinjal fruit and shoot borer and thiomethoxam 25 % WG @ 0.2 ml/lit for white fly management	250q/ha Rs.92900 (58%)
3	1. Bhima Super 2. STBF	160q/ha Rs.40000 (45%)
4	1.Deworming 2. Vaccination 3.Mineral block supplementation	Rs.30,400/-
		Rs.1,90,320 (69%)*

Intervention 3rd year (2018-19)

Sl.No.	Intervention	Expected Yield & Income/ ha
1	3.Weed Management:.Bensulfuron methyl + Preetilachlor 10 Kg/ha within 3 DA**T**	44.9q/ha Rs.27796 (37%)
2	3.STBF application	285q/ha Rs.95000 (64%)
3	Training on Post harvest management of Onion	160q/ha Rs.43250 (57%)
4	3. Periparturient feed supplementatiobn	Rs.43000/- (51%)
		Rs.2,09,046 (86%)*