

# **Doubling Farmer's Income by Technological Interventions**



# Krishi Vigyan Kendra, Ganjam-II



2017

(Odisha University of Agriculture & Technology)



# **Summary of the Five Modules**

District	Module	Name of	Block	GP	Village	Name of the	Present	Propose	Proposed	Risk /	Rer	narks	
		the Farming System				Existing Farming System	Income 2016-17	d income 2017-18	income 2018-19	uncertainty	Most Representat ive module for the district	(Linka)	ge)
Ganjam	I	Irrigated Ecosystem (AES-I)	Chhatrapur	Bipilingi	Rajanapall i	Rice-Fallow, Rice- Groundnut+ Dairy+Poultr y	221530	288950	356850	Wild Bore, Drought prone and erratic rainfall		Credit market linkage	and
	II	Rain fed Eco system (AES-III)	Rangeilunda	Dura	Putipadar	Rice-Fallow, Rice-Pulses +Dairy	67197	82300	106530	Cyclone, Drought, Soil salinity and erratic rainfall		Credit, Irrigation market linkage	and
	III	Rain fed Eco system (AES-VI)	Ganjam	Kainchapur	Jharapadar	Rice-Fallow, Cashew- Fallow Rice-pulses +Chilli +Dairy	172000	239900	298130	Wild Bore, Dear, Cyclone, Drought prone and erratic rainfall		Credit, Irrigation market linkage	and
	IV	Rain fed Eco system (AES-V)	Kukudakhand i	Ankuspur	Padripali	Rice/Off- season vegetable Rice-Pulses+ Dairy+ Goatery, +Pisciculture	201589	278451	339730	Wild Bore, Dear, Cyclone, Drought prone and erratic rainfall		Credit, Irrigation market linkage	and

	V	Rain fed	Hinjilikatu	Kharida	Giria	Rice/	211750	277920	364690	Wild	Bore,	Credit,
		Eco system				vegetable-				Dear,	Cyclone,	Irrigation and
		(AES-IV)				Fallow				Drough	t prone	market
						Rice-				and	erratic	linkage
						Pulses/Oil				rainfall		
						seeds+Dairy,						
						+Pisciculture						

#### Blocks Covered under Different Agro-ecological Situation

ACZ	AES	Blocks	Area	% of the Geographical	Soil Type	AES Feature
			(in ha.)	Area of ACZ		
East & South	Coastal	Chhatrapur	14425 ha	59.6	Soil type- Sandy loam to	Gross Cropped Area - 27318
Eastern Coastal	irrigated	(Module-I)			clay loam	Cropping intensity -189%
Plain Zone	Alluvium				Rainfall -1202 mm	Major crops - Rice, Green gram, Veg.,
						Groundnut , Sesamum
	Coastal	Rangeilunda	14729 ha	48.0	Soil type- Sandy loam to	Gross Cropped Area-25765ha
	Alluvial Saline	(Module-II)			clayee	Cropping intensity -175%
					Rainfall -1323 mm	Major crops - Rice, Black gram, Veg.
	Mixed Black &	Ganjam	12553 ha	53.7	Soil type- Mixed Black to	Cropping intensity -190%, Gross
	alluvium	(Module-III)			alluvium	Cropped Area-23886 ha Major crops -
					Rainfall -1284.26 mm	Rice, Green gram, Black gram, Veg.,
						Groundnut
	Rainfed Red	Kukudakhandi	15639 ha	62.6	Soil type- Sandy loam to	Gross Cropped Area 28345 ha
	and Laterite	(Module-IV)			clay loam	Cropping intensity-181%
					Rainfall -1350mm	Major crops - Rice, Green gram, Black
						gram, Veg., Groundnut, Mustard

Rainfed Laterite	Hinjilikatu <b>(Module-V)</b>	14428 ha		Soil type- Loamy sand to sandy loam Rainfall -1276.2 mm	Gross Cropped Area– 31135 ha, Cropping intensity -216% Major crops - Rice, Black gram, Horse
Rainfed Alluvium	Patrapur	18686 ha	51.2	Soil type- Sand to sandy clay loam Rainfall -1290.2 mm	gram Groundnut & Veg. Cropping intensity -178% Major crops - Rice, Green gram, Veg. Groundnut, Sesamum

#### **Basic Information of Ganjam District**

	Geographical	Area and Population details of Ganjam District							
Geographical Area :	871000 ha	Area under Forest :	315000 ha						
Agro climatic Zone		East & South Eastern Coastal Plain Zone							
Total cultivated area		393000 ha							
High land		184710 ha (47% of cultivated area)							
b)Medium land		110040 ha (28% of cultivated area)							
c)Low land		98250 ha (25% of cultivated area)							
Normal rainfall		1276.2 mm							
Average Fertilizer Consumption		56.41 kg/ha	56.41 kg/ha						
Cropping Intensity		181%							
Total Irrigated Area		268597 ha							
Population (2011 Census)		Total	3,529,031	in %					
		Male	1,779,218	50.42					
		Female	1,749,813	49.58					
		Scheduled Caste	688,235	19.50					
		Scheduled Tribe	118,928	3.37					
Population Density :	429 (Per sq.km)								
Literacy		Total Literate :	Total Literate :2,210,050						
Households		Total Households :	758,267						

Land Holdings Patternduring 2013-14(Holdings in numbers and area in ha)

Block	Marginal	Farmers	Small Farmers		Semi-meo	d. Farmers	Medium	farmers	Large f	armers	То	tal
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
Patrapur	13294	7059	2430	4313	885	2726	146	892	13	373	16768	15363
Chikiti	6753	3586	1235	2192	450	1386	74	452	6	172	8518	7788
Rangeilunda	7635	4054	1396	2478	509	1568	84	513	7	201	9631	8814
Kukudakhandi	8218	4363	1502	2666	547	1685	90	550	8	230	10365	9494
Sanakhemundi	13656	7251	2497	4432	910	2803	150	916	13	373	17226	15775
Digapahandi	14480	7688	2647	4698	964	2970	159	971	14	402	18264	16729
Chatrapur	9158	4863	1674	2971	610	1879	100	611	9	258	11551	10582
Ganjam	7686	4081	1405	2494	512	1577	84	513	7	201	9694	8866
Purusottamapur	11711	6218	2141	3800	780	2403	129	788	11	316	14772	13525
Hinjilicut	8516	4522	1557	2764	567	1747	93	568	8	230	10741	9831
Khalikote	10790	5729	1973	3502	719	2215	118	721	10	287	13610	12454
Total	111897	59414	20457	36310	7453	22959	1227	7495	106	3043	141140	129221

#### Module-I, AES Name: Coastal irrigated Alluvium, ACZ: East & South Eastern Coastal Plain Zone (Vill: Rajanapalli, Block: Chhatrapur)

Farming Situation		actices during 16-17	1 <sup>st</sup> year Intervention	s 2017-18	2 <sup>nd</sup> year Interventions	s 2018-19	3 <sup>rd</sup> year Intervention	s 2019-2020
	Component /Enterprises	-	Interventions	Net Income	Interventions	Expected Yield& Income /ha *	Interventions	Expected Yield& Income /ha
Up land	<b>Rice</b> (Khanda	Low	Crop diversification-	Rs. 16500/ha	Weed control by pre	Rs. 20100/ha	Line sowing of	Rs. 26450/ha
Rice-Fallow	giri)- <b>Fallow</b>	income	High yielding sweet		emergence application	(21.8%)	Maize	(31.5%)
Cropping	17 q/ha	from paddy	corn C.v-Madhuri	(117%)	of Atrazine @ 1-		Spacing 60x45cm	
System	(Rs. 7589)				1.5kg/ha 0-3 DAS			
Medium	Rice(Lalat)-	Low yield	Cultivation of hybrid	35 q/ha,	Line transplanting of	41 q/ha	Soil test based	51 q/ha
land	28 q/ha	due to old	rice Var-	(28.5%)	paddy	(17.1 %)	nutrient	(24.3 %)
	(Rs.14100)	var-	Rajalaxmi/Ajay		Weed management in		management in	
Rice-		Lalat,MTU-	■ RDF of NPK	Rs.20600/ha	paddy- Pre-emergence	Rs.24700/ha	hybrid rice	Rs.30300/ha
Groundnu		1001-	120:60:60 kg/ha	(46%)	weedicide:- Londax	(19.9%)	<ul> <li>Micronutrient</li> </ul>	(22.6%)
t/Chilli		Inadequate			power (Bensulfuron		application as per	
cropping		application			methyl+ pretilachlor)		soil test results	
system		of fertilizer			@ 10kg/ha 0-5 DAT		<ul> <li>Market linkage</li> </ul>	
					or post			
					emergenceByspyrabic			
					sodium 200 ml per ha			
					25 DAT/			
	Groundnut	Low	Var: Devi	14 q/ha	Seed treatment with	16 q/ha	Seed inoculation	18 q/ha
	11 q/ha	yielding	Application of lime	(27.2 %)	Vitavax power 1.5	(14.4%)	with Rhizobium	(12.5%)
	(Rs. 14300)	variety	@ 0.2 LR and		gm/kg of seed		culture 20 gm/kg of	
		Low	1 0.	Rs.18300/ha	orTrichodermaviride	Rs. 20900/ha	seed	Rs. 23600/ha
		income	in groundnut	(27.9%)	5gm/kg	(14.2%)	Soil test based	(12.9%)
		from G. nut			Application of RDF		fertiliser	
		Soil acidity					application	
	Chilli	Low yield	Var: Suryamukhi	29 qt/ha	RDF application	31 qt/ha	Spray Planofix @	35 qt/ha

	25 q/ha (Rs 10500)	<ul> <li>Leaf curl of Chilli</li> <li>Flower drops</li> </ul>	/Daya • Seed treatment with Imidacloprid 17.8SL@ 7 ml per kg of seed and foliar spray of Imidacloprid	(Rs 12500)	125:50:100 kg N: P2O5:K2O/ha Spraying of 0.125% Tricontanol and IAA 10ppm reduce flower drop and increasing	(Rs 14700)	10 ppm at flowering and three weeks later to increase yield or agripro-2 gm/litre	(Rs 18900)
			17.8SL@.5ml/liter of water twice starting from 45 DAT at 15 days interval		fruit set.		<ul> <li>Market linkage</li> </ul>	
	Rice(Pooja)-		<ul> <li>Cultivation of rice</li> </ul>	35 q/ha,	Line transplanting of	•-	Soil test based	45 q/ha
Rice-	30 q/ha	prone	Var- Swarna Sub-1	(16.7%)	paddy	(20 %)	nutrient	(7.15%)
Greengra		<ul> <li>Susceptible</li> <li>false</li> </ul>	Seed treatment with	Dc 20000/ba	<ul> <li>Weed management in paddy. Dro amorganica</li> </ul>	Dc 24700/ba	management in	De 20000/ba
m/Sesamu m		to false smut	Vitavax power RDF of NPK 80:40:40	Rs.20000/ha (42.8%)	paddy- Pre-emergence weedicide:- Londax	Rs.24700/ha (23.5%)	rice Micronutrient	Rs.29000/ha (17.44%)
		<ul> <li>Inadequate</li> </ul>	kg/ha	(42.070)	power (Bensulfuron	(23.3%)	application as per	(17.4470)
		application	Kg/Ha		methyl+ pretilachlor)		soil test results	
		of fertilizer			@ 10kg/ha 0-5 DAT		<ul> <li>Market linkage</li> </ul>	
					or post emergence			
					Byspyrabic sodium			
					200 ml per ha 25 DAT/			
	Green gram	Low yield	Greengram- IPM 02-	4.5 q/ha	STCR based fertilizer	5.4 q/ha	Seed inoculation	5.9 q/ha
	2.6 q/ha	■ YMV	3/ IPM 02-14	(73%)	application in G.gram	(20%)	with rhizobium @	(9.2%)
		incidence	Seed Treatment with		<ul> <li>Spraying</li> <li>Water</li> </ul>		20g /kg of seed +	
	(Rs.9950)		T. Viridae @5gm/kg	Rs.18900/ha		Rs.21800/ha	ammonium	Rs.23700/ha
			Spraying of neem		fertilizer(19;19:19::NP		molybdate @ 3	
			oil(1500 ppm) @		K) @ 10 gram/lt. at 30		g/10 kg of seed	
			2ml/lt. at 25 DAS/		& 45 DAS		<ul> <li>Installation of</li> </ul>	
			Thiamethoxam @ 150				yellow sticky traps	
			gram/ha. at 40 DAS				@ 50/ha.	

	Cultivation of local variety	<ul> <li>Low yield due to local variety</li> </ul>	<ul> <li>Introduction of sesame variety- Amrit</li> </ul>	4.6 q/ha (70%)	<ul> <li>Integrated nutrient management in Sesamum 25% RDF</li> </ul>	5.2q/ha (13%)	<ul> <li>Line sowing behind plough</li> <li>Integrated weed</li> </ul>	6.2q/ha (19.2%)
	Sesame 2.7q/ha (Rs 10260)	variety	<ul> <li>Seed treatment with T. Viridae/ Vitavax power</li> </ul>	(Rs17480)	through the vermicompost + 75% RDF of chemical fertilizers(60:30:30 kg/ha)	(Rs19800)	management in Sesamum	(Rs 23600)
Allied activities	Deshi cattle- 65 lit	<ul> <li>Deshi Breed</li> <li>Low yield</li> </ul>	<ul> <li>Breed improvement through AI</li> <li>Azolla cultivation for</li> </ul>	(30.7%)	feed (20%) increase milk yield up to 1-	240 lit/Month (182%)	Hybrid Napier Value addition of	270 lit/Month (12.5%)
Home stead	/month (Rs.1500)	of milk due to stray grazing Supply of local available feed	supplementary feed (20%) increase milk yield up to .5-1lit/ per day.	Rs. 2000/per month	<ol> <li>1.5lit/ per day.</li> <li>Supplementation of vitamin mineral mixture@30gm/meal</li> <li>Fodder Cultivation var. Hybrid nippier var. CO-4</li> </ol>	Rs. 4000 per month	milk • Market linkage	Rs.5000 per month
	Poultry birds- (Rs. 3800)	<ul> <li>Low income from poultry due to rearing of local bird</li> </ul>	<ul> <li>Backyard poultry 10 nos (Vanaraja)</li> <li>Vaccination of birds (Laasota + Gumber)</li> </ul>	Net Income- Rs. 6,250/ (64%)	<ul> <li>Backyard poultry 10 nos (Vanaraja) with proper vaccination (Lassota+ Gumber)</li> <li>Supplementary feeding with azolla</li> </ul>	Net Income- Rs. 7750/- (24%)	<ul> <li>Backyard poultry 10 nos (Palishree) with proper vaccination (Lassota+ Gumber)</li> <li>Supplementary feeding with azolla</li> <li>Calcium supplementation to birds</li> </ul>	Net Income- Rs.10,500/- (35.4%)
	Mushroom Net Income (Rs. 4000/yr)	Low income due to im- proper management	<ul> <li>Mushroom production of OSM- 11 (20 beds/month) and Blue Oyster mushroom cultivation2</li> </ul>	2.4 kg/day (Rs.9000/yr)	<ul> <li>Mushroom production of OSM-11 (20 beds/month)and Blue Oyster mushroom cultivation (20 beds/month)</li> </ul>	3.2 kg/day (Rs.10500/yr)	<ul> <li>Value addition of Mushroom</li> </ul>	4.5 Kg/day Rs. 13200/yr

			bags/day		<ul> <li>Management of competitor moulds</li> </ul>			
					and diseases in straw mushroom			
	Not	No income	Stocking of IMC	18 q/ha,	<ul> <li>Intercropping of java</li> </ul>	23 q/ha.	Supplementary	27 q/ha,
Fish	performing	from	(Catla, Rohu, Mrigal)		punti @ 2500 nos/ha	(27.70%)	farm made feeds	(21.40%)
	pisciculture	existing	and Exotic carp		in 3 species carp		with (Mustard Oil	
		ponds	(Common carp &	Net Income	culture (SD @ 7,500	Net Income	cake (35%),	Net Income-
			Grass carp)	Rs. 80000	nos /ha at a ratio of	Rs. 1,20,000	Sesamum Oil cake	Rs. 1,52,600
			fingerlings		30:40:30 of Catla,	(37.93%)	(35%), Mahua oil	(27.1%)
			@7,500nos/ha with		Rohu and Mrigal).		cake 20%, Maize	
			a ratio		Harvesting of Java		powder (10%) @ 2-	
			25:35:20:10:10		punti within 4-5		4% body wt.	
			Pond fertilization		months.			
			with RCD, urea &		Regular water quality			
			SSP.		monitoring			
Total	144999			221530		288950		356850
				(52.78%)		(99.2%)		(146.1%)

\* Increase in net income over base year 2016-17

## Module-II, AES Name: RainfedCoastal Alluvial Saline, ACZ: East & South Eastern Coastal Plain Zone (Vill: Putipadar, Block: Rangeilunda)

Farming		actices during	1 <sup>st</sup> year Intervention	s 2017-18	2 <sup>nd</sup> year Interventions 20	018-19	3 <sup>rd</sup> year Interventions 2019-2020		
Situation		16-17				<b>-</b>			
	Component		Interventions	Net Income	Interventions	Expected	Interventions	Expected	
	/Enterprise	Practices				Yield&		Yield& Income	
	S					Income /ha *		/ha	
Up land	Rice(Khand	High cost	Satyabhama/Sahbh	24 q/ha	RDF 60:30:30 kg NPK	28 q/ha	Line sowing behind	34 q/ha	
	agiri)-	due to	agi	(33.3%)	kg/ha	(16.6%)	the plough	(21.4%)	
	Fallow	manual	IWM in paddy-		Early sowing of paddy by		Early paddy-		
Rice -	i ano ii	weeding	Londax power	(Rs.12597)	last week of June	(Rs.16450)	15cmX10cm- 6.7	(Rs.22430)	
Fallow	18 q/ha	Low	(Bensulfuron		Seed treatment with		lakh plants/ha		
cropping	(P-Rs.	yielding	methyl+		Vitavax power 1.5 gm/kg		<ul> <li>Market linkage</li> </ul>		
system	8050)	variety	pretilachlor) @		of seed/				
	8050j		10kg/ha 0-5 DAT		Trichodermaviride 5gm/kg				
Medium	Rice(Pooja)	Low	Hy.Paddy-	36 q/ha,	Line transplanting of	42 q/ha	Soil test based	53 q/ha	
land	- Pulses	yieldingvar	Rajalaxmi/Ajay	(16.1%)	paddy	(16.6 %)	nutrient	(26.1 %)	
		ieties	RDF in Hy. Paddy		Weed management in		management in		
	P- 31 q/ha	Inadequate	(NPK- 120:60:60)	Rs.21300/h	paddy- Pre-emergence	Rs.26800/ha	hybrid rice	Rs.36000/ha	
Rice-	(Rs.14800)	application		а	weedicide:- Londax power	(25.8 %)	<ul> <li>Micronutrient</li> </ul>	(34.3%)	
pulse		of fertilizer		(43.9%)	(Bensulfuron methyl+		application as per		
cropping					pretilachlor) @ 10kg/ha		soil test results		
system					0-5 DAT or post		<ul> <li>Market linkage</li> </ul>		
					emergenceByspyrabic				
					sodium 200 ml per ha 25				
					DAT				

	Greengram - 2.8 q/ha (Rs.11600)	<ul> <li>YMV incidence</li> <li>Low yield</li> </ul>	<ul> <li>Greengram-TARM- 1, spraying of neem oil(1500 ppm) @ 2ml/lt. at 25 DAS,Thiamethoxam @ 150 gram/ha. at 40 DAS,</li> <li>Installation of yellow sticky traps @ 50/ha. for sucking pests</li> </ul>	Rs.20300/h a (75%)	<ul> <li>Variety- IPM 02-3/ IPM 02-14</li> <li>Seed treatment with Vitavex power 1.5 gm/kg of seed/Trichodermaviride 5gm/kg</li> <li>Seed inoculation with Rhizobium culture 20 gm/kg of seed and 50 gmPhospoculture per one kg of seed and 0.3 gm sodium molybdate</li> </ul>	<b>5.3 q/ha</b> ( <b>15.2%)</b> Rs.23800/ha (17.2%)	<ul> <li>Line sowing by seed cum fertiliser drill</li> <li>Spraying Water soluble fertilizer(19;19:19:: NPK) @ 10 gram/lt. at 30 &amp; 45 DAS</li> </ul>	<b>6.2 q/ha</b> ( <b>16.9%)</b> Rs.29600/ha (24.3%)
Allied	Local	Low yield	<ul> <li>Azolla cultivation</li> </ul>	270	Azolla supplementary feed	300	<ul> <li>Supplementation of</li> </ul>	320 lit/Month
activities	cattle- 240 lit	of milk due to stray	for supplementary feed (20%)	lit/month (12.5%)	(20%) increase milk yield up to 1-1.5lit/ per day.	lit/Month (11.11%)	vitamin mineral mixture@30gm/meal	
Home stead	/month (Rs.6000)	grazing Supply of local available feed	increase milk yield up to 1-1.5lit/ per day.	Rs. 6750- per month		Rs. 7,500 per month	<ul> <li>Management of Hybrid Napier</li> <li>Value addition of milk</li> </ul>	Rs.8,000 per month
	Poultry birds- (Rs. 3800)	<ul> <li>Low income from poultry</li> </ul>	, , ,	Net Income-(Rs. 6,250) (64%)	<ul> <li>Backyard poultry 10</li> </ul>	Net Income (Rs.7750) (24%)	<ul> <li>Backyard poultry 10 nos(palishree) with proper vaccination (Lassota+ Gumber)</li> <li>Supplementary feeding with azolla</li> <li>Calcium supplementation to birds</li> </ul>	Net Income- (Rs.10,500) (35.4%)
Total	44250			67197 (51.8%)		82300 (85.9%)		106530 (140.7%)

\* Increase in net income over base year 2016-17

## Module-III, AES Name: RainfedMixed Black & alluvium, ACZ: East & South Eastern Coastal Plain Zone (Vill: Jharapadar, Block: Ganjam)

Farming Situation		actices during 16-17	1 <sup>st</sup> year Intervention	s 2017-18	2 <sup>nd</sup> year Interventions	2018-19	3 <sup>rd</sup> year Interventions	2019-2020
	Componen t/Enterpris es		Interventions	Net Income	Interventions	Expected Yield& Income /ha *	Interventions	Expected Yield& Income /ha
Up land Rice /Cashew- Fallow	Rice(Khan dagiri)- Fallow 18 q/ha (Rs. 8050)	<ul> <li>Low yielding variety</li> <li>High cost due to manual weeding</li> </ul>	<ul> <li>Variety: Satyabhama /Sahbhagi</li> <li>IWM in paddy- Londax power (Bensulfuron methyl+ pretilachlor) @ 10kg/ha 0-5 DAT</li> </ul>	24 q/ha (33.3%) (Rs.12500)	<ul> <li>RDF 60:30:30 kg NPK kg/ha</li> <li>Early sowing of paddy by last week of June</li> <li>Seed treatment with Vitavax power 1.5 gm/kg of seed/Trichodermaviride</li> </ul>	28 q/ha (16.6%) (Rs.16450)	<ul> <li>Line sowing behind the plough</li> <li>Early paddy- 15cmX10cm- 6.7 lakh plants/ha</li> <li>Market linkage</li> </ul>	34 q/ha (21.4%) (Rs.22430)
	Cashew fruit orchard- Fallow 1.6 t/ha (Rs.12000)	training and pruning	<ul> <li>Training and pruning is done during August- September, the cut surfaces are smeared with Bordeaux paste</li> </ul>	<b>1.8 t/ha</b> ( <b>12.5%)</b> (Rs.14000)	5gm/kg ■ Application of RDF (500gmN:125gmP <sub>2</sub> O <sub>5</sub> :12 5gmK <sub>2</sub> Oper plant.	2.2 t raw nuts/ha (22.23%) (Rs.17000)	<ul> <li>Tea mosquito can be controlled by spraying quinalphos 0.5% thrice.first time at the time of flushing, second at early flowering, third at the time of fruit set.</li> <li>Application of RDF(500gmN: 125gmP<sub>2</sub>O<sub>5</sub>: )125gmK<sub>2</sub>O</li> </ul>	2.5t/ha (13.63%) (Rs.20000)

land Rice-pulse	(Rs.13100)	due to old var- Lalat,MTU		<b>36 q/ha,</b> (28.5%) Rs.20600/ha (66.1%)	<ul> <li>Line transplanting of paddy</li> <li>Weed management in paddy- Pre-emergence weedicide:- Londax power (Bensulfuron methyl+ pretilachlor) @ 10kg/ha 0-5 DAT or post emergenceByspyrabic sodium 200 ml per ha 25 DAT/</li> </ul>	<b>42 q/ha</b> (16.6 %) Rs.26400/ha (25.6%)	<ul> <li>Soil test based nutrient management in hybrid rice</li> <li>Micronutrient application as per soil test results</li> <li>Market linkage</li> </ul>	<b>52 q/ha</b> (23.8 %) Rs.31300/ha (17.2%)
	Chilli 25 q/ha (Rs 10500)	<ul> <li>Low yield</li> <li>Leaf curl of chilli</li> <li>Flower drops</li> </ul>	<ul> <li>Var: Suryamukhi /Daya</li> <li>Seed treatment with Imidacloprid 17.8SL@ 7 ml per kg of seed and foliar spray of Imidacloprid 17.8SL@.5ml/liter of water twice starting from 45 DAT at 15 days interval</li> </ul>	29 qt/ha (Rs 12500)	<ul> <li>RDF application 125:50:100 kg N: P2O5:K2O/ha</li> <li>Spraying of 0.125% Tricontanol and IAA 10ppm reduce flower drop and increasing fruit set.</li> </ul>	31 qt/ha (Rs 14700)	<ul> <li>Spray Planofix @ 10 ppm at flowering and three weeks later to increase yield or agripro-2 gm/litre</li> <li>Value addition and Market linkage</li> </ul>	35 qt/ha (Rs 18900)
	Green gram- 2.6 q/ha (Rs.9900)	<ul> <li>YMV incidence</li> <li>Low yield</li> </ul>	<ul> <li>Variety- IPM 02-3/ IPM 02-14</li> <li>Application STBF NPK(25-40-20) +S(40 kg/Ha)</li> </ul>	<b>4.2 q/ha</b> (61.5%) Rs.16900/ha (70.7%)	<ul> <li>Seed treatment with Vitavax power 1.5 gm/kg of seed/ Trichodermaviride 5gm/kg</li> <li>Seed inoculation with Rhizobium culture 20 gm/kg of seed</li> </ul>	<b>5.4 q/ha</b> (28.5%) Rs.21400/ha (26.6%)	<ul> <li>Line sowing by seed cum fertiliser drill</li> <li>Seed inoculation with Rhizobium culture 20 gm/kg of seed and 50 gmPhospoculture per one kg of seed and 0.3 gm sodium molybdate</li> </ul>	<b>6.1 q/ha</b> (26.6%) Rs.24200/ha (13%)

Allied	Cross	Low yield		270 lit/month		300	0	320 lit/Month
activities	breed	of milk	cultivationvar CO-4	(12.5%)	supplementation of	lit/Month	Hybrid Napier Value addition of	(6.66%)
llomo	cattle- 240 lit	due to		$D_{c}$ (750 per	vitamin mineral	(11.11%)	<ul> <li>Value addition of milk</li> </ul>	Dc 8 200 por
Home		stray		Rs. 6750- per month	mixture@30gm/meal	Bc 7 200 por	ITHIK	Rs.8,300 per month
stead	/month (Rs.4600)	grazing ■ Supply of		month		Rs. 7,200 per month		month
	(13.4000)	local				month		
		available						
		feed						
		<ul> <li>Lowincom</li> </ul>	Backyard poultry 10	Net Income-	Backyard poultry 10	Net Income-	Backyard poultry 10	Net Income-
	Poultry	e	nos(Vanaraja)	Rs. 6,250/	nos(Vanaraja) with	Rs.	nos(palishree) with	Rs.10,500/-
	birds-	from	<ul> <li>Vaccination of birds</li> </ul>	(64%)	proper vaccination	7750/-	proper vaccination	(35.4%)
	(Rs. 3800)	poultry	(Laasota+Gumber)		(Lassota+ Gumber)	(24%)	(Lassota+ Gumber)	( /
		due to			<ul> <li>Supplementary feeding</li> </ul>		<ul> <li>Supplementary</li> </ul>	
		rearing of			with azolla		feeding with azolla	
		local bird					Calcium	
							supplementation to	
							birds	
		Not	Mushroom	Net Income	<ul> <li>Mushroom production</li> </ul>	• •	<ul> <li>Mushroom</li> </ul>	3.2 kg/day
		cultivating	production of Paddy	(Rs. 4000/yr)	of OSM-11 (20	(Rs.9000/yr)	production of OSM-	(Rs.10500/yr)
		mushroom	straw mushroom (20		beds/month) and Blue		11 (20	
			beds) and Oyster		Oyster mushroom		beds/month)and	
			mushroom(20 bags)		cultivation2 bags/day		Blue Oyster	
							mushroom	
							cultivation(20	
							beds/month)	
							<ul> <li>Management of competitor moulds</li> </ul>	
							competitor moulds and diseases in straw	
							mushroom	

	IMC	Low yield	Stocking of IMC	17 q/ha,	Intercropping of java	22 q/ha.	Polyculture of fresh	26 q/ha,
Pond	spawn and	due to	(Catla, Rohu, Mrigal)	(41.6%)	punti @ 2500 nos/ha in	(29.4%)	water prawn	(18.1%)
based	fry in	improper	and Exotic carp (C.		3 species carp culture		alongwith carp	
Farming	ponds	Stocking	carp & Grass carp)	Net Income	(SD @ 7,500 nos /ha at	Net Income	culture (SD @ 7,500	Net Income-
system	(12 q/ha)	ratio and	fingerlings	Rs. 78500 (57	a ratio of 30:40:30 of	Rs. 120000	nos /ha at a ratio of	Rs. 1,52,000
		stocking	@7,500nos/ha with	%)	Catla, Rohu and Mrigal).	(52.8%)	40:40:20 of Catla,	(26.6%)
	Net	size of fish	a ratio		Harvesting of Java punti		Rohu and Mrigal).	
	Income	seed	25:35:20:10:10.		within 4-5 months.		Supplementary farm	
	(Rs.50000)				Pond fertilization with		made feeding with	
					RCD, urea & SSP.		(Mustard Oil cake	
					Regular water quality		(35%), Sesamum Oil	
					monitoring		cake (35%), Mahua	
							oil cake 20%, Maize	
							powder (10%) @ 2-	
							4% body wt.	
							<ul> <li>Market linkage</li> </ul>	
Total	111950			172000		239900		298130
				(53.6%)		(114.2%)		(166.3%)

\* Increase in net income over base year 2016-17

#### Module-IV, AES Name: Rainfed Red and Laterite, Vill: Padripalli, Block: Kukudakhandi)

•	Existing prac	tices during2015-	1 <sup>st</sup> year Interventi	ons 2016-17	2 <sup>nd</sup> year Interventions	2017-18	3 <sup>rd</sup> year Interventions	2018-19
Situation		16						_
	Component	Problem/Practic	Interventions	Net Income	Interventions	Expected	Interventions	Expected
	/Enterprise	es				Yield&		Yield&
						Income /ha *		Income /ha
Rain-fed	Rice(Khanda	High cost	IWM in paddy-	22 q/ha	Variety:	28 q/ha	Line sowing behind the	34 q/ha
Up Land	giri)-Fallow	due to	Londax power	(19.5%)	Satyabhama/Sahbhagi	(27.2%)	plough	(21.4%)
	18.4 q/ha	manual	(Bensulfuron		• RDF 60:30:30 kg NPK		Early paddy-	
		weeding	methyl+	(Rs.10597)	kg/ha	(Rs.16450)	15cmX10cm- 6.7 lakh	(Rs.22430)
	(P-Rs. 8221)	Low yielding	pretilachlor)		Early sowing of paddyby		plants/ha	
		due to	@ 10kg/ha 0-5		last week of June		<ul> <li>Market linkage</li> </ul>	
Rice/Off-		moisture	DAT		Seed treatment with		_	
season		trace			Vitavax power 1.5 gm/kg			
vegetable		condition			of seed/			
cropping	Off season				Trichodermaviride			
system	Vegetable-				5gm/kg			
-,	Fallow	Low keeping	Cultivation of	206 q/ha	<ul> <li>Management of early</li> </ul>	253.76q/ha.	Foliar application of	287q/ha
	(Cultivation	quality due	tomato variety	(47.1 %)	blight of tomato by	(23.1%)	CaCl2(0.6%)+borax(0.2	(13 %)
	of tomato	to thin skin	Utkalpragnya		spraying of (0.2%)		%)for enhancing plant	
	variety	(Utkalkumari		(Rs.52792/h		(Rs.65451/ha)		
	UtkalKumari	)	(100:50:150kg	a)	@(2gm/lit.)	,	of tomato	a)
	)	Low yield	/ha)	,	<ul> <li>Application of 6%Calcium</li> </ul>		Value addition	,
	(140 q/ha	,			Chloride at post-harvest		<ul> <li>Collective marketing</li> </ul>	
	Rs. 34865)				stage for enhancing		0	
					storage life of tomato			
Medium	Rice- Pulses	Imbalance	<ul> <li>Cultivation of</li> </ul>	36 q/ha,	<ul> <li>Line transplanting of</li> </ul>	42 q/ha	Soil test based nutrient	52 q/ha
Land		dose of	hybrid rice	(28.5%)	paddy	(16.6 %)	management in hybrid	(23.8 %)
	Paddy(Lalat)	fertilizer	Var-		Weed management in		rice	
Rice-pulse	28 q/ha	application	Rajalaxmi/Ajay	Rs.20600/ha	paddy-Pre-	Rs.26400/ha	<ul> <li>Micronutrient</li> </ul>	Rs.31300/ha
cropping	(Rs.13900)	<ul> <li>High cost</li> </ul>	RDF of NPK	(66.1%)	emergenceweedicide:-	(25.6%)	application as per soil	(17.2%)
system		due to	120:60:60		Londax power		test results	

		manual	kg/ha		(Bensulfuronmethyl+		Market linkage	
		weeding			pretilachlor) @ 10kg/ha			
		<ul> <li>Low yielding</li> </ul>			0-5 DATor post			
		variety			emergenceByspyrabic			
		variety			sodium 200 ml per ha 25			
					DAT/			
		Imbalance	Greengram	4.4 q/ha	<ul> <li>Variety- IPM 02-3/ IPM</li> </ul>	5.4 q/ha	Line sowing by seed	6.1 q/ha
		dose of	HYV-TARM-1	(76%)	02-14	(22.7%)	cum fertiliser drill	(12.9%)
		fertilizer	Application		Seed treatment with		Seed inoculation with	<b>v</b> ,
	G.gram- 2.5	application	STBF NPK(25-	Rs.18600/ha	Vitavax power 1.5 gm/kg	Rs.21400/ha	Rhizobium culture 20	Rs.24200/ha
	q/ha	in G. gram	40-20) +S(40	(89%)	of seed/	(15%)	gm/kg of seed and 50	(13%)
	(Rs.9800)	C	kg/Ha)		Trichodermaviride		gmPhospoculture per	
					5gm/kg		one kg of seed and 0.3	
					Seed inoculation with		gm sodium molybdate	
					Rhizobium culture 20			
					gm/kg of seed			
Allied	CrossBreed	Low yield of	<ul> <li>Azolla</li> </ul>	270	<ul> <li>Supplementation of</li> </ul>	300	Management of Napier	320
activities	Cattle-	milk due to	cultivation for	lit/month	vitamin mineral	lit/Month	Grass	lit/Month
	240 lit	stray grazing	supplementar	(12.5%)	mixture@30gm/meal	(11.1%)	Value addition of milk	(6.6%)
Home	/month	Supply of	y feed (20%)		Fodder Cultivation var.		<ul> <li>Market linkage</li> </ul>	
Stead		local feed	increase milk	Rs. 6750-	Hybrid nappier , var. CO-	Rs.7,500 per		Rs.8,000
	(Rs.6000)		yield up to 1-	per month	4	month		per month
			1.5lit/ per day.					
	Goatery	<ul> <li>High</li> </ul>	Rearing of	Body wt-	Fodder Cultivation var.	Body wt-13kg	<ul> <li>Supplementation of</li> </ul>	Body wt-
		Mortality	Ganjam Goat	10kg per	Hybrid nappier, var. CO-	per goat	vitamin mineral	16kg per
		and		goat	4/Stylo grass		mixture@30gm/meal	goat
		morbidity		Rs-3500/-	Animal Health camp-	Rs-4500/-	<ul> <li>Market Linkage</li> </ul>	Rs-5400/-
Pond				Per goat	Deworming&Vaccination	Per goat		Per goat
based		Lowincome	Backyard	Net Income-	Backyard poultry 10	Net Income-	Backyard poultry 10	Net Income-
Farming	Poultry	from	poultry 10	Rs. 6,250/	nos(Vanaraja) with	Rs.	nos(Palishree) with	Rs.10,500/-
system	birds-	poultry due	nos(Vanaraja)	(64%)	proper vaccination	7750/-	proper vaccination	(35.4%)
	(Rs. 3800)	to rearing of	Vaccination of		(Lassota+ Gumber)	(24%)	(Lassota+ Gumber)	
		local bird	birds		<ul> <li>Supplementary feeding</li> </ul>		Supplementary feeding	

			(Laasota+Gum		with azolla		with azolla	
			ber)				Calcium	
							supplementation to	
							birds	
		Not	<ul> <li>Mushroom</li> </ul>	Net Income	•	2.4 kg/day	<ul> <li>Mushroom production</li> </ul>	
		cultivating	production of	(Rs.	OSM-11 (20 beds/month)	(Rs.9000/yr)	•	(Rs.10500/y
		mushroom	Paddy straw	4000/yr)	and Blue Oyster		beds/month)and Blue	r)
			mushroom (20		mushroom cultivation2		Oyster mushroom	
			beds) and		bags/day		cultivation(20	
			Oyster (20				beds/month)	
			mushroom(20				<ul> <li>Management of</li> </ul>	
			bags)				competitor moulds and diseases in straw	
							diseases in straw mushroom	
	IMC spawn	Low yield	Stocking of	17 q/ha,	Intercropping of java	22 q/ha.	<ul> <li>Intercropping of java</li> </ul>	26q/ha,
	and fry in	due to	IMC (Catla,	(41.6%)	punti @ 2500 nos/ha in 3	(29.4%)	punti @ 2500 nos/ha in	••
	ponds	improper	Rohu, Mrigal)	(41.070)	species carp culture (SD	(23.470)	6 species carp culture	(10.170)
	(12 q/ha)	Stocking	and Exotic	Net Income	@ 7,500 nos /ha at a ratio	Net Income	(SD @ 7,500 nos /ha at	Net Income-
	(12 9/114)	ratio and	carp (C. carp &	Rs. 78500	of 30:40:30 of Catla, Rohu	Rs. 120000	a ratio of 30:40:30 of	
	Net Income	stocking size	Grass carp)	(57%)	and Mrigal). Harvesting of	(52.8%)	Catla, Rohu and Mrigal).	(26.6%)
	(Rs.50000)	of fish seed	fingerlings	<u> </u>	Java punti within 4-5	()	<ul> <li>Supplementary farm</li> </ul>	
	, ,		@7,500nos/ha		months.		made feeding with	
			with a ratio		Pond fertilization with		(Mustard Oil cake	
			25:35:20:10:1		RCD, urea & SSP.		(35%), Sesamum Oil	
			0.		Regular water quality		cake (35%), Mahua oil	
					monitoring		cake 20%, Maize	
							powder (10%) @ 2-4%	
							body wt.	
Total	126286			201589		278451		339330
				(59.6%)		(120.4%)		(168.6%)

\* Increase in net income over base year 2015-16

# Module-V, AES Name: Rainfed Laterite, Vill: Giria, Block: Hinjilikatu

Farming Situation		ractices during D15-16	1 <sup>st</sup> year Intervention	ns 2016-17	2 <sup>nd</sup> year Interventions	2017-18	3 <sup>rd</sup> year Interventior	is 2018-19
	Componen t/Enterpris es	Problem/	Interventions	Net Income	Interventions	Expected Yield& Income /ha *	Interventions	Expected Yield& Income /ha
·	Rice(Local) - Fallow 18 qt. (Rs. 8150)	<ul> <li>Low income from paddy</li> </ul>	<ul> <li>Crop diversification-High yielding sweet corn C.v-Madhuri</li> </ul>	Rs.18400/ha (125.7%)	<ul> <li>Weed control in Maize: Pre emergence application of Atrazine @ 1-1.5kg/ha 0-3 DAS</li> </ul>		<ul> <li>Line sowing of Maize</li> <li>Market Linkage</li> </ul>	Rs. 28200/ha (17.9%)
Rice/Off- season vegetable- Fallow cropping system	Vegetable (Bitter gourd)- Fallow 76.6q/ha (Rs. 31345)	<ul> <li>Immature flower &amp; fruit drop leads to low yield in bittergourd</li> </ul>	<ul> <li>Bitter gourd cultivation - Ethrel 200 ppm 4 times from 15 days after sowing</li> </ul>	<b>102 q/ha</b> ( <b>34.2%)</b> (Rs. 41700/ha) (33%)	<ul> <li>Crop diversification- Pointed gourd var. SwarnaAlaukik, planting ratio- 10:1(female: male)</li> <li>Recommended dose of fertilizer- 90:60:60 kg NPK/ha</li> </ul>	<b>128q/ha</b> (25.4%) Rs.52200/ha (25.1%)	<ul> <li>Application of STBF</li> <li>Management of Downey mildew disease in pointed gourd by Krilaxyl Gold (Metalaxyl 8% WP + Mancozeb 64% WP)</li> </ul>	<b>164q/ha(28.1</b> <b>2%)</b> (Rs67240/ha)
land Rice-	Rice(Pooja )- Pulses P- 31 q/ha (Rs.14800)	yieldingvari eties ■ Inadequate	<ul> <li>Hy.Paddy- Rajalaxmi/Ajay</li> <li>RDF in Hy. Paddy (NPK- 120:60:60)</li> </ul>	<b>37 q/ha,</b> ( <b>19.3%)</b> Rs.22200/ha (43.2%)	<ul> <li>Line transplanting of paddy</li> <li>Weed management in paddy- Pre-emergence weedicide:- Londax power (Bensulfuron methyl+ pretilachlor) @ 10kg/ha 0-5 DAT or post emergenceByspyrabic sodium 200 ml per ha 25 DAT</li> </ul>	(16.21 %)	<ul> <li>Soil test based nutrient management in hybrid rice</li> <li>Micronutrient application as per soil test results</li> <li>Market linkage</li> </ul>	<b>53 q/ha</b> (23.25 %) Rs.36000/ha (29.4%)
	Green gram-	<ul> <li>YMV incidence</li> </ul>	<ul> <li>Greengram-TARM-</li> <li>1, spraying of neem</li> </ul>	4.6 q/ha (64.2%)	<ul> <li>Variety- IPM 02-3/ IPM 02-14</li> </ul>	5.3 q/ha (15.2%)	<ul> <li>Line sowing by seed cum fertiliser drill</li> </ul>	6.2 q/ha (16.9%)

		Low yield	oil(1500 ppm) @		Seed treatment with		Spraying Water	
	2.8 q/ha		2ml/lt. at 25	Rs.20300/ha	Vitavex power 1.5	Rs.23800/ha	soluble	Rs.29600/ha
	(Rs.11600)		DAS, Thiamethoxam	(75%)	gm/kg of seed/	(17.2%)	fertilizer(19;19:19::N	(24.3%)
			@ 150 gram/ha. at		Trichodermaviride		PK) @ 10 gram/lt. at	
			40 DAS,		5gm/kg		30 & 45 DAS	
			Installation of		Seed inoculation with			
			yellow sticky traps		Rhizobium culture 20			
			@ 50/ha. for		gm/kg of seed and 50			
			sucking pests		gmPhospoculture per			
					one kg of seed and 0.3			
					gm sodium molybdate			
	Groundnu	Low	Var: Devi	14 q/ha	Seed treatment with	16 q/ha	Seed inoculation	18 q/ha
	t- Fallow	yielding	Application of lime	(27.2 %)	Vitavax power 1.5	(14.4%)	with Rhizobium	(12.5%)
		variety	@ 0.2 LR and		gm/kg of seed		culture 20 gm/kg of	
	11 q/ha	Low	Sulphur @ 40kg/ha	Rs.18300/ha	orTrichodermaviride	Rs. 20900/ha	seed	Rs. 23600/ha
	(Rs.	income	in groundnut	(27.9%)	5gm/kg	(14.2%)	Soil test based	(12.9%)
	14300)	from G. nut			Application of RDF		fertiliser application	
		Soil acidity						
Allied	Local	Low yield		272 lit/month			_	322 lit/Month
activities	cattle-	of milk due	for supplementary	(13.3%)	vitamin mineral	lit/Month	Napier Grass	(6.2%)
	240 lit	to stray	feed (20%)		mixture@30gm/meal	(11.3%)	Value addition of	
Home	/month	grazing	increase milk yield	•	Fodder Cultivation var.		milk	Rs.8050 per
stead	(Rs.6000)	Supply of	up to 1-1.5lit/ per	month	Hybrid nippier var. CO-4		<ul> <li>Market linkage</li> </ul>	month
		local	day.			month		
		available	Backyard poultry	Net Income-		Net Income-	Backyard poultry 10	Net Income-
		feed	10 nos(Vanaraja)	Rs. 6,250/	nos(Vanaraja) with	Rs.	nos(Palishree) with	Rs.10,500/-
		Low income		(64%)	proper vaccination	7750/-	proper vaccination	(35.4%)
Pond	- I.	from	birds		(Lassota+ Gumber)	(24%)	(Lassota+ Gumber)	
based	Poultry	poultry	(Laasota+Gumber)		<ul> <li>Supplementary feeding</li> </ul>		<ul> <li>Supplementary</li> </ul>	
Farming	birds-(Rs.				with azolla		feeding with azolla	
system	3800)						<ul> <li>Calcium</li> </ul>	
							supplementation to	
							birds	

		<ul> <li>Not</li> </ul>	<ul> <li>Mushroom</li> </ul>	Net Income	<ul> <li>Mushroom production</li> </ul>	2.4 kg/day	<ul> <li>Mushroom</li> </ul>	3.2 kg/day
		cultivating	production of	(Rs. 4000/yr)	of OSM-11 (20	(Rs.9000/yr)	production of OSM-	(Rs.10500/yr)
		mushroom	Paddy straw		beds/month) and Blue		11 (20	
			mushroom (20		Oyster mushroom		beds/month)and	
			beds) and Oyster		cultivation2 bags/day		Blue Oyster	
			mushroom(20				mushroom	
			bags)				cultivation(20	
							beds/month)	
							<ul> <li>Management of</li> </ul>	
							competitor moulds	
							and diseases in straw	
							mushroom	
	IMC	Low yield	Intercropping of	16 q/ha,	Intercropping of java	21 q/ha.	Intercropping of java	26 q/ha
	spawn and	due to	java punti @ 2500	(23%)	punti @ 2500 nos/ha in	(31.2%)	punti @ 2500 nos/ha	(23.8%)
	fry in	improper	nos/ha in 3 species		6 species carp culture		with IMC 30:40:30 of	
	ponds	Stocking	carp culture (SD @	Net Income	(SD @ 7,500 nos /ha at	Net Income	Catla, Rohu and	Net Income-
	(13 q/ha,	ratio and	7,500 fingerlings	Rs.	a ratio of 30:40:30 of	Rs. 105000	Mrigal).	Rs. 1,51,000
		stocking	/ha at a ratio of	73800(25%)	Catla, Rohu and Mrigal).	(43.8%)	<ul> <li>Application</li> <li>of</li> </ul>	(48%)
	Net	size of fish	30:40:30 of Catla,		<ul> <li>Supplementary farm</li> </ul>		growth promoter	
	Income	seed	Rohu and Mrigal).		made feeding (Mustard		along with fish feed	
	(Rs.59,000		Early harvesting of		Oil cake (35%),		Pond fertilization	
	)		Java punti within 4-		Sesamum Oil cake		with RCD, urea &	
			5 months.		(35%), Mahua oil cake		SSP.	
			Pond fertilization		20%, Maize powder		Regular water	
			with RCD, Urea &		(10%) @ 2-4% body wt.		quality monitoring	
			SSP.		Pond fertilization with			
			Regular water		RCD, urea & SSP.			
			quality monitoring		Regular water quality			
					monitoring			
Total	148995			211750		277920		364690
				(42.1%)		(86%)		(144%)

\* Increase in net income over base year 2015-16