

ICAR – Central Research Institute for Dryland Agriculture
Santoshnagar, Hyderabad – 500059
Technology Demonstration Component of NICRA

Annual Report of TDC for the year 2024-25

Village: Odiapali KVK and District : KVK : Bolangir, Odisha State: Odisha

Table-1: Information about the NICRA villages and the focus of activities in these villages

Details of Villages	Village 1
Name	Odiapali
Year adopted in NICRA	2021
*Demonstrations were taken up	Yes
*Scaling up of promising technologies	Yes

Table-2: Summary of Interventions taken up during 2024

#Villages	FST1	FST2	FST3	FST4
	No. of farmers involved in demonstrations	No. of farmers involved in demonstrations	No. of farmers involved in demonstrations	No. of farmers involved in demonstrations
Odiapali	12	10	12	18
Total	12	10	12	18

Table-3: Natural Resource Management Interventions taken up in farming system typology during the year 2024-25 (in all the villages)

Resilient Practice	No. of Demonstrations	Farmers Covered	Area Covered (ha)
Green manuring with Dhanicha	20	20	8
Direct seeded rice	5	5	2
Construction of farm pond with dyke plantation	2	2	0.2
Vermicomposting through poly tank	14	14	14 units
Sprinkler irrigation in greengram	5	5	2.5

Table-4: Crop Production Interventions taken up in farming system typology during the year 2024-25 (in all the villages)

Resilient Practice	No. of Demonstrations	Farmers Covered	Area Covered (ha)
Stress tolerant rice variety Swarna Shreya	23	23	10
Stress tolerant rice variety Mahendragiri and Chandragiri	46	46	20
Triple disease resistant Tomato var. Arka Rakshak	10	10	0.4
Heat Tolerant Cauliflower	10	10	0.25

Table-5: Livestock and Fisheries Interventions taken up in farming system typology during the year 2024-25 (in all the villages)

Resilient Practice	No. of Demonstrations	Farmers Covered	Animals Covered	Area Covered
15 days old Vezaguda chicks in backyard	10	10	200 chicks	-
Feeding bypass fat + mineral mixture in dairy cows	08	08	10 cows	-

Table-6: Impact of Climate Resilient Technologies (CRTs) in each Farming system typology (FST1*, rainfed systems without animal) during 2024 (report impact of interventions for 3 farmers in each typology) *Present for each village separately for all the typologies (village 1, 2)

Village s	Crop/ Perennia ls	Technology adopted/ demonstrate d	Area impacte d by climatic stress, crop and stage	NICR A Area (ha)	NICRA Producti vity (q/ha)	NICRA Net return (Rs./ha)	Non- NICR A Area (ha)	Non- NICR A Produc tivity (q/ha)	Non- NICRA Net return (Rs./ha)
Odiapa li									
Farmer 1	Crop based	Stress tolerant rice var. Swarna Shreya	Drought during tillering	1.0	35.4	74382	1.0	27.3	57456
	NRM based	Green manuring with Dhanicha	Moistur e stress	1.0	38.8	81480	1.0	28.4	59640
	Total			2.0		155862	2.0		117096
Farmer 2	Crop based	Mahendragi ri paddy variety	Drought stress	1.2	38.2	80241	1.2	29.3	61656
	NRM based	Bund plantation of pigeon pea	Termina l drought	0.5	14.6	82200	0.5	11.2	59800
	Total					162441			121456
Farmer 3	Crop based	Climate resilient green gram var. Sikha	Heat stress during flowerin g	0.8	9.4	42900	0.8	7.6	27900
	NRM based	Direct seeded rice	Moistur e stress	2.0	39.8	38330	2.0	34.5	27225
	Total					81230			55125

Table-7a: Impact of CRTs in each FST2* (Farming system typology – Rainfed with animals) during 2024 (report impact of interventions for 3 farmers in each typology) *Present for each village separately for all the typologies (village 1, 2)

Villages	Crop/Perennials	Technology adopted/demonstrated	Area impacted by climatic stress, crop and stage	NICRA Area (ha)	NICRA Productivity (q/ha)	NICRA Net return	Non-NICRA Area	Non-NICRA Productivity	Non-NICRA Net return
#Village 1 Odiapali									
Farmer1	Crop based	Drought tolerant Chandragiri	Drought stress in rice	1.0	38.8	81480	1.0	28.4	59640
	NRM based	Farm pond with dyke plantation	Moisture stress	0.2	-	-	0.2	-	-
	Animal based	Veazaguda Chicks 15 days olds	Heat stress	20 birds	0.615 kg wt gain	185/bird	20 birds	0.344 kg wt gain	103/bird
Farmer2	Crop based	Green gram with foliar spray 18:18:18	Heat stress	0.8	6.51	50403	0.8	3.60	27900
	NRM based	Green manuring with Dhanicha	Moisture stress	1.0	38.8	81480	1.0	28.4	59640
	Animal based	Bypass fat + mineral mixture in dairy	Nutritional stress	1 cow	8.1 litre/day	310/day	1 cow	7.0 litre/day	210/day
Farmer3	Crop based	Stress tolerant rice Swarna Shreya	Drought	1.0	35.4	74382	1.0	27.3	57456
	NRM based	Vermicomposting through polytank	Organic carbon depletion	14 units	8 q/unit	12375	14 units	5 q/unit	7000
	Animal based	Veazaguda Chicks 15 days olds	Heat & humidity	20 birds	0.72 kg wt gain	188/bird	20 birds	0.344 kg wt gain	121/bird

Table-7b: Impact of CRTs in each FST2 (Farming system typology-----) during 2024 (report impact of interventions for 3 farmers) **Present for each village separately for all the typologies (village 1, 2)

Animal	No.	Technology adopted	Production/year	Selling price	Gross returns	By products quantity	Unit price	Net returns
Poultry	10	Veazaguda chicks	0.615 kg wt gain	300/kg	185/bird	Litter	5/kg	82/bird
Cow	8	Bypass fat + mineral mixture	9.2 litre/day	45/litre	350/day	Dung	2/kg	165/day

Table-8a: Impact of CRTs in each FST3* (Farming system typology- Irrigated without animal) during 2024 (report impact of interventions for 3 farmers in each typology) *Present for each village separately for all the typologies (village 1, 2)

Villages	Crop/ Perennials	Technology adopted/ demonstrated	Area impacted by climatic stress, crop and stage	Irrigated					
				<i>Kharif and rabi (NICRA farmers)</i>			<i>Kharif and rabi (non-NICRA farmers)</i>		
				Area (ha)	Productivity (q/ha)	Net return (Rs./ha)	Area (ha)	Productivity (q/ha)	Net return (Rs./ha)
#Village 1 Odiapali									
Famer1	Crop based	Sprinkler irrigation in green gram	Moisture stress	0.8	4.8	41674	0.8	4.0	34728
	NRM based	Vermicomposting through polytank	Organic carbon depletion	14 units	8 q/unit	12375	14 units	5 q/unit	7000
	Total								
Farmer2	Crop based	Heat tolerant Cauliflower	Heat stress	0.2	84.13	276704	0.2	64.35	211712
	NRM based	Farm pond	Moisture stress	0.2	-	-	0.2	-	-
	Total								
Famer3	Crop based	Heat tolerant Pusa Cabbage	Heat stress	0.2	118	116000	0.2	91.5	92000
	NRM based	Farm pond	Moisture stress	0.2	-	-	0.2	-	-
	Total								

Table-9a: Impact of CRTs in each FST4* (Farming system typology- Irrigated with animal) during 2024 (report impact of interventions for 3 farmers in each typology) *Present for each village separately for all the typologies (village 1, 2)

Villages	Crop/ Perennials	Technology adopted/ demonstrated	Area impacted by climatic stress, crop and stage	Irrigated					
				<i>Kharif and rabi (NICRA farmers)</i>			<i>Kharif and rabi (non-NICRA farmers)</i>		
				Area (ha)	Productivity (q/ha)	Net return (Rs./ha)	Area (ha)	Productivity (q/ha)	Net return (Rs./ha)
Village1									
Famer1	Crop based	Arka Rakshak tomato	Moisture stress	0.4	109	300000	0.4	100	150000
	NRM based	Farm pond with dyke plantation	Moisture stress	0.2	-	-	0.2	-	-
	Animal based	Bypass fat + mineral mix	Nutritional stress	1 cow	8.1 litre/day	310/day	1 cow	7 litre/day	210/day
	Total								
Farmer2	Crop based	Sprinkler irrigation in green gram	Moisture stress	0.8	4.8	41674	0.8	4.0	34728
	NRM based	Vermicomposting	Organic carbon depletion	14 units	8 q/unit	12375	14 units	5 q/unit	7000
	Animal based	Vezaguda bird	Heat & humidity	20 birds	0.72 kg wt gain	188/bird	20 birds	0.344 kg wt gain	121/bird
	Total								
Farmer3	Crop based	Arka Rakshak tomato	Moisture stress	0.4	120	330000	0.4	100	225000
	NRM based	Green manuring	Drought	0.5	-	-	0.5	-	-
	Animal based	Vezaguda bird	Heat stress	20 birds	0.615 kg wt gain	185/bird	20 birds	0.344 kg wt gain	103/bird
	Total								

Table-9b: Impact of CRTs in each FST4 (Farming system typology- Irrigated with animal) during 2024 (report impact of interventions for 3 farmers) **Present for each village separately for all the typologies (village 1, 2)

Animal (NICRA Farmer)	No.	Technology adopted/ demonstrated	Production/ year*	Selling price (Rs/unit)	Gross returns (Rs. /animal)	By products quantity	Unit price (Rs.)	Net Returns (ha.)
Poultry	20	Vezaguda chicks	0.615 kg wt	300/kg	185/bird	Litter	5/kg	82/bird
Cow	8	Bypass fat + mineral mixture	9.2 litre/day	45/litre	350/day	Dung	2/kg	165/day

Table-10: Performance of Custom Hiring Center during the year 2024-25

Equipment in the custom hiring center as on 01.01.2022	Amount of rent obtained	Farmers covered	Area covered (ha)
Power weeder with ridger	12000	18	9
Mini rice mill	8000	15	-
Pumpset	6000	10	6
Battery sprayer	5000	12	5
Paddy reaper	15000	20	15

Table-11: Performance of Seed Systems

Crop & variety	Seed produced (tons)	Farmers involved	Revenue obtained by farmer (Rupees)
Nil	Nil	Nil	Nil

Table-12: Performance of fodder systems during the year 2024-25

Fodder crop & variety	Fodder produced (tons)	Farmers involved	Area involved (ha)	Revenue obtained by farmer (Rupees)
Nil	Nil	Nil	Nil	Nil

Table-13: Capacity Building (HRD) taken up during the year 2024-25

Title of the program	No. of training programmes	Number of beneficiaries			Date	
		Male	Female	Total	From	To
Green manuring in paddy	1	15	10	25	01.07.2024	01.07.2024
Mechanisation in Agriculture	1	14	11	25	18.07.2024	18.07.2024
Scientific production of Paddy straw mushroom	1	07	18	25	31.08.2024	31.08.2024
Use and operation of small implements	1	09	16	25	03.09.2024	03.09.2024
Housing and feeding management in small ruminants	1	20	05	25	24.09.2024	24.09.2024
Low cost feeding management in dairy cows	1	15	10	25	25.10.2024	25.10.2024
Preparation and use of Organic inputs	1	13	12	25	13.11.2024	13.11.2024

Table-14: Other extension activities being taken up during the year 2024-25

Name of the activity	Details about the activity	Number of programmes	Time of the programme conducted (From--- to ---)	No. of beneficiaries		Remarks
				Male	Female	
Field day on Direct seeded rice	Innovative sowing techniques, weed management and water saving practices	1	30.09.2024	31	09	
Sample collection for soil testing	Sample collection for soil testing in convergence with PM Shri Programme	1	14.11.2024	36	14	

Table-15: Summary of Upscaling of technologies takenup during the year 2024 and the amount mobilized through convergence from various departments

Village name	Technology scaling up/out	No. of farmers reached	Coverage (ha) / number	Convergence with the programme	Approx. amount mobilised
Odiapali	Stress tolerant rice	40	20 ha	Agriculture Dept.	₹2,50,000
Odiapali	Drip irrigation in tomato	10	0.4 ha	Horticulture Dept.	₹1,20,000

Tanble-16: Extreme events, high intensity rains and dry spells, heat wave, cold wave, hail storms, etc. observed during 2024-25

Nature of event	*Quantify the event	When it has occurred (Date)	Impact on crop, animal, horticulture, fisheries, etc.
Heat wave	More than 5 days	April-May 2024	Flower drop in pulses and vegetables
Moisture stress	10-day dry spell	Rabi 2024	Affected green gram sowing

Table-17: Distinguished visitors during the year 2024-25

Name of visitors	Date	Remarks
Dr. J.V.N.S Prasad, Principal Scientist, ICAR-CRIDA, Hyderabad.	29.11.2024	Advised to give emphasis on NRM activities in NICRA village

Table-18: Publications from the project

Description (nature of publication)	Citation of the publication
2 no. of conference proceeding Title: Impact of foliar application of NPK fertilizer on productivity and profitability of Green gram Title: Application of AI & ML for Rainfed agriculture: Building pathways of resilience and sustainable livelihood	-
One no. of video clip on different activity in NICRA village	-

Table-19: Adoption of successful interventions in the NICRA village & the adjoining villages

Successful interventions	Crop	Variety	Extent of adoption in the village in ha (2024)
Stress tolerant	Rice	Swarna Shreya	50

Foliar application of Water-soluble fertilizer	Green gram	Sikha	12
Heat tolerant	Tomato	Arka Rakshak	0.4

Table-20: Popularization of Climate Resilient Varieties

Crop*	Climate Resilient Varieties incorporated in the <i>Kharif</i> 2024 plan of the State Department	Approx. area brought under the variety by the state department during the <i>Kharif</i> 2024 (ha)	Climate Resilient Varieties incorporated in the <i>Rabi</i> 2024 plan of the State Department	Approx. area brought under the variety by the state department during the <i>Rabi</i> 2024 (ha)
Rice	Swarna Shreya	50	-	-
Green gram	-	-	Sikha	12

Table-21: Rainfall characteristics for the year 2024-25

Month		June	July	August	September	October	November	December	January	Annual
Rainfall received in (mm)		148	272	318	214	102	36	18	10	1118
No. of dry spells during <i>kharif</i> season 2024	>10days	0	0	0	1	0	0	0	0	1
	>15days	0	0	0	1	0	0	0	0	1
	>20days	0	0	0	0	0	0	0	0	0
No. of intensive rain spells (2024)	>60 mm per day	1	2	2	1	0	0	0	0	6
	Waterlogging/Flooding observed (number of days)	-	-	1	-	-	-	-	-	-
Any other extreme events (Heat wave, Cold wave, frost) observed during the season		-	-	-	-	Heat wave	-	Cold wave	-	Observed
Contingency measures		Agromet advisory	Foliar spray	Stress tolerant	Drip irrigation	Mulching	Sprinkler irrigation	Vegetable mulching	Irrigation scheduling	-

adopted during the season				rice					+drip	g	
------------------------------	--	--	--	------	--	--	--	--	-------	---	--

Table-22: Day-wise rainfall distribution in the village during *kharif* 2024; Rainfall recorded at mention the place (NICRA village/ KVK, block head quarters, etc.)

		Day														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Rainfall (mm)	June	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0
	July	0	0	1	0	12	0	7	10	0	0	0	0	17	18	29
	August	50	25	2	0	0	9	110	10	0	0	12	0	0	9	0
	September	0	10	9	24	0	2	0	4	37	51	5	0	7	4	0
	October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	February	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
	March	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0
	April	0	0	0	0	0	0	0	0	10	1	16	0	0	0	0
	May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Day															
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Rainfall (mm)	June	15	0	0	0	0	2	1	1	0	0	0	0	0	32	10	78
	July	5	0	5	0	7	94	3	31	45	8	35	18	7	2	40	3
	August	10	8	23	3	0	0	35.5	31	3	14	1	2	0	38.5	31	0
	September	4.3	7	3.7	14	0	0	0	0	11	17	3.4	0	0	0	0	213.4
	October	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0
	November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
	December	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0
	January	0	0	0	0	0	0	0	0	11	11	0	0	0	0	0	0
	February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
	March	0	0	0	0	32	0	0	0	0	0	25	0	0	0	0	0
	April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
	May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table-23: Impact of contingency measures taken up in the village (Relate the dry spells/floods/heat wave/cold wave/etc., with crops and their growth stages)

S. No	Dry spell (no. of days)	Duration (from -- to--)	Crop name	Crop stage affected	Intervention taken up*	Number of farmers involved	Impact on crop yields (q/ha)		
							Farmers' practice	Demo	Increase over farmers' practice
1	10 days	05 Oct - 15 Oct	Greengram	Flowering	Sprinkler irrigation + foliar spray 18:18:18	5	4.0	4.8	20.0
2	Heat wave	15 Apr - 30 May	Tomato	Flowering and fruiting	Drip irrigation with mulching	10	100	109	9.0
3	Moisture stress	01 Sept - 12 Sept	Rice (Swarna Shreya)	Tillering	Stress tolerant rice variety + green manuring	100	27.3	35.4	29.67
4	Moisture stress	20 Oct - 05 Nov	Greengram (Sikha)	Pod filling	Climate resilient variety + farm pond irrigation	25	7.6	9.4	23.68

Table-24: Details about agro advisories issued (Organization giving the forecast: Department of Meteorology, forecast is based on the district or the block: District, Organization giving the agromet advisory Department of Meteorology, HP); How the advisories are disseminated in the NICRA village: Through WhatsApp groups
Agromet advisory Bulletins issued

Month	June	July	August	September	October	November	December	January
Number of agromet bulletins issued	8	8	8	8	8	8	8	8
Other advisories issued	-	3	4	2	-	-	2	-

How the advisories are disseminated and their reach

Method	Number of farmers reached during the year
Whatsup group (messaging system)	30
Display on black boards, at panchayat, etc,	Display board
Any other method	Nil



Green manuring through Dhanicha



Direct seeded rice



Vermi composting through polytank



Field day of Mahendragiri



Field day of Swarna Shreya



Green gram with WSF application



Heat tolerant Poultry breed - Vezaguda



Feeding of mineral mixture and bypass fat



Soil sample collection



Farm pond under construction



Demonstration of Farm Pond



Demonstration of Farm Pond (SCSP)