National Innovations in Climate Resilient Agriculture

Action Plan, 2024-25

Technology Demonstration component of NICRA

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NICRA ACTION PLAN, 2024-25

1. A. Basic information

S.No.	*Item*	*Detail*
1.1	Zone	V
1.2	Name of KVK (district)	Ganjam-1, Ganjam
1.3	Name of Tehsil	Jagannath Prasad
1.4	Name of Village	Chopara, Lepa, Nada, Chikili
1.5	Climatic vulnerability	Drought, Moisture stress, Cyclone

B. Details of NICRA village

Item	**Existing NICRA village**	**Additional villages selected in the programme**		
		Village 1 and year of selection	**Village 2 and year of selection**	**Village 3 and year of selection**
Village name	Chopara /2011	Lepa /2017	Chikili /2017	Nada/2018
Name of mandal/Block	Jagannath Prasad	Jagannath Prasad	Jagannath Prasad	Jagannath Prasad
Total area (ha)	150	70	230	210
No. of house holds	315	125	370	435
Extent of rainfed areas(ha)	45	30	85	70

C. Details about the existing NICRA villages

S No	Details	Village 1	Village 2	Village 3	Village 4
1	Name of the village	Chopara	Lepa	Chikili	Nada
2	Involved in TDC since (year)	2011	2017	2017	2018
3	Cultivated area (ha)	150	70	230	210
4	Rainfed Area (ha)	45	42	85	70
5	Irrigated Area (ha)	105	28	145	140
6	No. of households in the village	315	125	370	435
7	Drought prone area	15	20	35	30
8	Flood prone area	12	06	22	18
9	Approximate households covered so far	210	70	170	160

10	Identified FSTs	Irrigated-Crop with/without animal	Rainfed- Crop with /with out animal	Rainfed- Crop with out Animal Irrigated- Crop + Animal	Rainfed- Crop with out animal Irrigated- Crop + Animal

Farming System Typologies

S No	**Farming System Typologies**	**Village 1-Lepa**			**Village 2-Chikili**			**Village 3-Nada**		
		Area (ha)	**No. of farmers (approx.)**	**% coverage (area in the village)**	**Area (ha)**	**No. of farmers (approx.)**	**% coverage (area in the village)**	**Area (ha)**	**No. of farmers (approx.)**	**% coverage (area in the village)**
1	Rainfed without animal	31	64	34	60	92	26	47	92	22
2	Rainfed with animal	11	35	26	25	42	11	23	66	11
3	Irrigated without animal	14	31	20	89	175	38	77	146	37
4	Irrigated with animal	07	12	10	22	38	10	34	75	16

5	Other predominant system	07	12	10	34	23	15	29	54	14

Predominant climatic and resource constraints of the major farming system typologies of NICRA villages

S No	Farming System Typologies	Village 1-Chopara		
		Climate constraints	**Resource /Crop/Animal constraints**	**Other constraints**
1	Rainfed upland without animal (Rice-Fallow)	Dry spell, Terminal moisture stress	Acidic soil, Low fertility	Wild animal
2	Rainfed upland without animal (Maize-Fallow)	Dry spell, Low water use efficiency	Acidic soil, Low fertility	Wild animal
3	Rainfed upland with animal (Rice-Fallow, Dairy)	Dry spell, Terminal moisture stress,	fodder shortage ,low milk yield	Wild animal
4	Ragi –Fallow without animal	Dry spell, Terminal moisture stress	Low yield, lodging	Wild animal
5	Rainfed medium land-without animal (Rice-Greengram)	Dry spell, Terminal moisture stress	Acidic soil, Low fertility	Wild animal
6	Rainfed medium land-with animal (Rice-Greengram, Dairy)	Dry spell, Terminal moisture stress	low milk yield	Wild animal
7	Irrigated medium land with animal (Rice-Tomato,Dairy)	Short term submergence	acid soil, Blast disease, Leaf folder weed infestation in Tomato, wilting, Low milk yield	Less market price of Tomato
8	Irrigated medium land without animal (Rice-Greengram)	Short term submergence Severe YMV due to high temp.	acid soil, Blast disease	Wild animal

Predominant climatic and resource constraints of the major farming system typologies of NICRA villages

S No	Farming System Typologies	Village 1-Chopara
		Climate Resilient interventions
1	Rainfed upland without animal (Rice-Fallow)	Short duration drought tolerant Rice var. Sahabhagidhan , Direct sowing of Rice,Raising of farm bund ht. to 10 inch, sowing of Pigeonpea in farm bund ,Lime application, Solar repellant
2	Rainfed upland without animal (Maize-Blackgram)	Lime application, Ridge & Furrow method of sowing, HYV Blackgram after Maize
3	Rainfed upland with animal (Rice-fallow , Dairy)	Crop management along with Fodder in waste upland, mineral mixture feeding with vaccination
4	Ragi –Fallow without animal	Stress tolerant var._arjuna, Direct sowing, Blast disease management Threshing by OUAT ragi thresher
5	Rainfed medium land-without animal (Rice-Greengram)	Drought tolerant Rice var. SwarnaShreya,Raising of farm bund ht. to 10 inch, Transplanting 2weeks advance,Green manuring, Critical irrigation from renovated Check dam, Farm pond, YMV tolerant Greengram var.- IPM 02-14
6	Rainfed medium land-with animal (Rice-Greengram, Dairy)	Crop management along with improved cattle shed, Vaccination & mineral mixture feeding
7	Irrigated medium land with animal (Rice-Tomato, dairy)	Flood tolerant Rice var.- Swarna sub-1, Green manuring, Wilt tolerant Tomato var.- Arka Rakshyak,poly mulching , Improved cattle shed, mineral mixture,value addition of Tomato
8	Irrigated medium land without animal (Rice-Greengram)	Flood tolerant Rice var.- Swarna sub-1, Green manuring eco friendly pest management, YMV tolerant Greengram var. IPM 02-14

S No	Farming System Typologies	Village 2-Lepa		
		Climate constraints	**Resource /Crop/Animal constraints**	**Other constraints**
1	Rainfed upland with out animal (Rice-Fallow)	Dry spell, Terminal moisture stress,	Acidic soil, Low fertility	Wild animal
2	Maize-Blackgram with out animal	Dry spell	Acidic soil, Low fertility	Wild animal
3	Ragi –Fallow without animal	Dry spell, Terminal moisture stress	Low yield, lodging	Wild animal
4	Rainfed medium land-without animal (Rice-Greengram)	Dry spell, Terminal moisture stress	Acidic soil, Low fertility	Wild animal
5	Rainfed medium land-with animal (Rice-Greengram, Dairy)	Dry spell, Terminal moisture stress	low milk yield	Wild animal
6	Rainfed medium land-with animal (Rice-Greengram, Poultry)	Dry spell, Terminal moisture stress	High mortality & low body wt. gain of chicks	Wild animal
7	Irrigated medium land with animal (Rice-Brinjal, Dairy)	Short term submergence	Acid soil, Blast disease, Leaf folder Shoot & Fruit borer infestation,wilting in Brinjal &low milk yield	Wild animal

8	Irrigated medium land without animal (Rice-Greengram)	Sub mergence, YMV in high temp.	acid soil, Blast disease	Wild animal
9	Integrated farming system	Less utilization of available resources	Less profit from single enterprises	Wild animal

S No	**Farming System Typologies**	**Village 2-Lepa**
		Climate Resilient interventions
1	Rainfed upland without animal (Rice-fallow)	Short duration drought tolerant Rice var. Sahabhagidhan , Direct sowing of Rice,Raising of farm bund ht. to 10 inch, sowing of Pigeonpea in farm bund ,Lime application, Solar repellant
2	Maize-Blackgram with out animal	Lime application, Ridge & Furrow method of sowing, HYV Blackgram after maize
3	Ragi –Fallow without animal	Stress tolerant var._arjuna, Direct sowing, Blast disease management Threshing by OUAT Ragi thresher
4	Rainfed medium land-without animal (Rice-Greengram)	Drought tolerant Rice var. SwarnaShreya,Raising of farm bund ht. to 10 inch, Transplanting 2weeks advance,Green manuring, Critical irrigation from Checkdam, Farm pond, YMV tolerant Greengram var.- IPM 02-14 , Solar repellant, Renovation of farm pond & checkdam
5	Rainfed medium land-with animal (Rice-Greengram, Dairy)	Crop management along with fodder, improved cattle shed, Vaccination & mineral mixture feeding

6	Rainfed medium land-with animal (Rice-Greengram, Poultry)	Crop management along with Poultry breed kadaknath & RIR
7	Irrigated medium land with animal (Rice-Brinjal, Dairy)	Flood tolerant Rice var.- Swarna sub-1, Green manuring, Wilt tolerant Brinjal var.- Swarna Shyamali,poly mulching , IPM, Improved cattle shed, mineral mixture feeding
8	Irrigated medium land without animal (Rice-Greengram)	Flood tolerant Rice var.- Swarna sub-1, Green manuring eco friendly pest management, YMV tolerant Greengram var. IPM 02-14
9	Integrated farming system	Crop+ Vermicompost, Honey bee, azolla, dairy, Poultry

S No	**Farming System Typologies**	**Village 3-Chikili**		
		Climate constraints	**Resource /Crop/Animal constraints**	**Other constraints**
1	Rainfed upland without animal (Rice-Fallow)	Dry spell, Terminal moisture stress	Acidic soil, Low fertility	Wild animal
2	Rainfed upland without animal (Maize-Fallow)	Dry spell, Low water use efficiency	Acidic soil, Low fertility	Wild animal
3	Rainfed upland with animal (Rice-Fallow, Dairy)	Dry spell, Terminal moisture stress,	fodder shortage ,low milk yield	Wild animal
4	Rainfed medium land-without animal (Rice-Greengram)	Dry spell, Terminal moisture stress	Acidic soil, Low fertility	Wild animal

5	Rainfed medium land with animal (Rice-Greengram,Poultry)	Dry spell, Terminal moisture stress	High mortality & low body wt gain of Chicks	Wild animal
6	Irrigated medium land with animal (Rice-tomato, Dairy)	Short term submergence	acid soil, Blast disease, Leaf folder weed infestation in Tomato, wilting, Low milk yield	Wild animal
7	Irrigated medium land without animal (Rice-Greengram)	Short term submergence Severe YMV due to high temp. in March	acid soil, Blast disease	Wild animal
8	Integrated farming system	Less utilization of available resources	Less profit from single enterprises	Wild animal

S No	**Farming System Typologies**	**Village -3-Chikili**
		Climate Resilient interventions
1	Rainfed upland without animal (Rice-Fallow)	Short duration drought tolerant Rice var. Sahabhagidhan , Direct sowing of Rice,Raising of farm bund ht. to 10 inch, sowing of Pigeonpea in farm bund ,Lime application, Solar repellant
2	Rainfed upland without animal (Maize-Fallow)	Lime application, Ridge & Furrow method of sowing, HYV Blackgram after maize,
3	Rainfed upland with animal (Rice-Fallow, Dairy)	Crop management along with Fodder in waste upland, mineral mixture feeding with vaccination
4	Rainfed medium land-without animal (Rice-Greengram)	Drought tolerant Rice var. SwarnaShreya,Raising of farm bund ht. to 10 inch, Transplanting 2weeks advance,Green manuring, Critical irrigation from renovated Check dam, Farm pond, YMV tolerant Greengram var.- IPM 02-14
5	Rainfed Medium with animal (Rice-Greengram,Poultry)	Crop management along with Poultry breed kadaknath & RIR

6	Irrigated medium land with animal (Rice-Tomato,dairy)	Flood tolerant Rice var.- Swarna sub-1, Green manuring, Wilt tolerant Tomato var.- Arka Rakshyak,poly mulching , Improved cattle shed, mineral mixture,value addition of Tomato
7	Irrigated medium land without animal (Rice-Greengram)	Flood tolerant Rice var.- Swarna sub-1, Green manuring eco friendly pest management, YMV tolerant Greengram var. IPM 02-14
8	Integrated farming system	Crop, Poultry, Honey bee, Azolla,dairy

S No	**Farming System Typologies**	**Village -4-Nada**		
		Climate constraints	Resource /Crop/Animal constraints	Other constraints
1	Rainfed upland without animal (Rice-Fallow)	Dry spell, Terminal moisture stress	Acidic soil, Low fertility	Wild animal
2	Rainfed upland with animal (Rice-Fallow, Dairy)	Dry spell, Terminal moisture stress,	fodder shortage ,low milk yield	Wild animal
3	Rainfed upland with animal (Rice-Fallow,Poultry)	Dry spell, Terminal moisture stress	High mortality & low body wt gain of Chicks	Wild animal
4	Rainfed medium land-without animal (Rice-Greengram)	Dry spell, Terminal moisture stress	Acidic soil, Low fertility	Wild animal
5	Irrigated medium land with animal (Rice-Brinjal,dairy)	Short term submergence	acid soil, Blast disease, Leaf folder Shoot & Fruit borer infestation in Brinjal, wilting, low milk yield	Wild animal

6	Irrigated medium land without animal (Rice-Greengram)	Short term submergence Severe YMV due to high temp. in March	acid soil, Blast disease	Wild animal
7	Integrated farming system	Less utilization of available resources	Less profit from single enterprises	Wild aniimal

S No	Farming System Typologies	**Village -4- Nada**
		Climate Resilient interventions
1	Rainfed upland without animal (Rice-Fallow)	Short duration drought tolerant Rice var. Sahabhagidhan , Direct sowing of Rice,Raising of farm bund ht. to 10 inch, sowing of Pigeonpea in farm bund ,Lime application, Solar repellant
2	Rainfed upland with animal (Rice-Fallow, Dairy)	Crop management along with Fodder in waste upland, mineral mixture feeding with vaccination
3	Rainfed upland with animal (Rice-Fallow,Poultry)	Crop management along with Poultry breed kadaknath & RIR
4	Rainfed medium land-without animal (Rice-Greengram)	Drought tolerant Rice var. SwarnaShreya,Raising of farm bund ht. to 10 inch, Transplanting 2weeks advance,Green manuring, Critical irrigation from renovated Check dam, Farm pond, YMV tolerant Greengram var.- IPM 02-14
5	Irrigated medium land with animal (Rice-Brinjal,Dairy)	Flood tolerant Rice var.- Swarna sub-1, Green manuring, Wilt tolerant Brinjal var.- Swarna Shyamali,poly mulching , IPM, Improved cattle shed, mineral mixture feeding

6	Irrigated medium land without animal (Rice-Greengram)	Flood tolerant Rice var.- Swarna sub-1, Green manuring eco friendly pest management, YMV tolerant Greengram var. IPM 02-14
7	Integrated farming system	Crop, Poultry, dairy, fodder, honey bee

Activities and Cost

NRM Interventions

Repair / Renovation of existing water harvesting structures, drainage channels etc.

S. No.	Village 1, 2, 3, etc.	Intervention	Dimensions	No. of units	No. of farm households proposed to be involved	Convergence value, if any (Rs)	Value of farmers share (Rs)	Cost to project (Rs)
1.	Lepa	Check dam repairing	50m * 20 m* 3m & 30m * 10m* 2m	01	34			30000
2	Chikili, Nada	Desilting of farm pond	80m * 35 m	02	16			30000

3	Chopara,Chikili, Nada, lepa	Renovation of well			12			36000
		Total		03	62			96000

In situ conservation – Resource Conservation Technologies (RCTs), etc.

S. No.	**Village**	**Intervention**	**Unit cost (Rs/ha) A***	**Coverage Proposed**		**Total amount (Rs) A x C**	**Remarks**
				Area (ha) B	**No. of farm households proposed to be involved C**		
1	Chopara, Chikili, nada, Lepa	Direct sowing of Rice	2000	10	30	20000	To cope up with dry spell
2	Chopara, Chikili, nada, Lepa	Ridge & furrow practices in Maize,Cowpea	3000	05	15	15000	Moisture conservation
3	Chopara, Chikili, nada, Lepa	Poly mulching in Tomato, Brinjal	200000	0.5	10	20000	Moisture conservation
4	Chopara, Chikili, nada, Lepa	Green manuring with Dhanicha	2000	15	40	30000	Moisture conservation & acidic soil reclamation

5	Chopara, Chikili, nada, Lepa	Raising of farm bund ht.		4	40		Increasing water use efficiency
		Total		**34.5**	**135**	**85000**	

Crop Interventions

Stress tolerant / improved varieties / Short duration / Legume crops, etc..

S. No.	**Village 1,2,3 etc.**	**Intervention**	**Description**		**Cost (Rs/ha) A***	**Coverage Proposed**		**Total amount (Rs) A x C**	**Remarks**
			Crop	**Variety (s)**		**Area (ha) B**	**No. of farm households to be involved C**		
1.	Chopara, Lepa, Chikili, Lepa	Drought tolerant/short duration var.	Rice	sahabhagidhan	3000	10	30	30000	
2.	Chopara, Lepa, Chikili, Lepa	Drought tolerant medium duration var.	Rice	Swarna Shreya	3000	20	60	60000	
3	Chopara, Lepa, Chikili, Lepa	Flood tolerant var.	Rice	Swarna sub-1	3000	10	30	30000	
4	Chopara, Lepa, Chikili, Lepa	YMV tolerant var.	Greengram	Virat	3000	20	60	60000	

5	Chopara, Lepa, Chikili, Lepa	Ridge & furrow system	Maize/Sweet corn	Kalingaraj/Sugar-75	6000	06	24	36000	
		Total				**66**	**204**	**216000**	

Improved agronomic practices and other crop interventions, etc.

. No.	**Village**	**Intervention**	**Description**		**Cost (Rs/ha) A***	**Coverage Proposed**		**Total amount (Rs.) A x C**	**Remarks**
			Crop	**Variety (s)**		**Area (ha) B**	**No. of farm households to be involved C**		
.	Chopara, Lepa, Chikili, Lepa	Bund planting of Pigeonpea	Pigeonpea	LRG-52	2000	02	20	4000	
.	Chopara, Lepa, Chikili, Lepa	Wilt tolerant	Tomato	Arka rakshyak	15000	01	10	15000	
	Chopara, Lepa, Chikili, Lepa	Wilt tolerant	Brinjal	Swarna Shyamali	15000	01	10	15000	
	Chopara, Lepa, Chikili, Lepa	IFS	Crop, vegetables		5000	04	08	20000	
		Total				**08**	**48**	**54000**	

Livestock and Fisheries Activities

S. No.	Details of feed intervention	Unit cost of intervention (Rs.)	No. of farm households to be involved	Total amount (Rs/ha)	Remarks
1	Mineral mixture	2000	10	20000	
2	Poultry breed	3000	10	30000	
T	Total		20	50000	

S. No.	Seed bank/Fodder Bank	Seed of crop and variety/ Fodder crop/ variety	Quantity of seed/ fodder produced/ storage (t)	Unit cost (Rs.)	No. of farmers involved	Amount (Rs.)	Remarks
1	Seed bank	Rice/sahabhagidhan	5		10	10000	
2	Fodder bank	Napier/Co-04	10		12	10000	
	Total		**15**		**22**	**20000**	

Non-recurring contingencies – Equipment

S. No.	Item	Unit cost (Rs)	No. of units	Total amount (Rs)
1.	Power tiller	180000	1	180000
2	Power sprayer	15000	2	30000
3	Reaper	160000	1	160000
4	Thresher cum winnower	30000	3	90000
	Total		**7**	**460000**

Capacity Building Programme

Theme	Title of training programme	Proposed month	No. of participants	Cost (Rs.)
IPM	Management of Pest & diseases in paddy	August	25	4000
IPM	IPM in Greengram	Jan.	25	4000

Theme	Title of training programme	Proposed month	No. of participants	Cost (Rs.)
Income generation	Goat rearing	Nov.	25	4000
Resource conservation	Vermicomposting, use of Bio-Fertilizer in diff. crop	Sept.	25	4000
Feed management	Application of Floating feed in Pisciculture	Oct.	25	4000
Quality planting material	Nursery raising , Grafting techniques of veg. & fruits	Oct.	25	4000
ICT in Agriculture	Role of ICT in changing climate scenario	Dec.	25	4000
	Total	**7**	**175**	**28000**

Other extension activities

Theme	Title of Programme	Proposed month	No. of participants	Cost (Rs.)
Field day	Rainfed up land farming system	Oct.	50	4000
Field day	Rainfed medium land farming system	Nov.	50	4000

Field day	Irrigated medium land farming system	Nov.	50	4000
Awareness on improved technology	Exposure visit	September	30	30000
	Total		**180**	**42000**

Publications and Media products proposed to be Developed

Publication	**Nature of Publication (Book/Bulletin/ Brochure etc.)**	**Proposed during the month**	**No. of Copies**	**Cost (Rs.)**
Bulletin	Bulletin on Impact of NICRA activities	November	500	10000
Short video	10 minutes	October		30000

Summary of cost Estimates for 2024-25		
Sl. No.	**Title**	**Amount (Rs.)**
1	NRM intervention	96000
2	In-situ moisture conservation	85000
3	Stress tolerant var.	216000
4	Improved Agronomic practices	54000
5	Live stock, Fishery	50000
6	Seed, fodder bank	20000
7	Training, exposure visit, field day	70000
8	Bulletin, short video	40000
9	Manpower (SRF)	390600
10	TA	60000
11	NRC	460000
	Total	**1541600**

Sd/-
Senior Scientist & Head
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