

KVK, BHANJANAGAR, GANJAM-I, ODISHA
REVISED ACTION PLAN (2014-15)

Under

Technology Demonstration Component
of

National Initiative on Climate Resilient Agriculture

Name of the scheme	National Initiative on Climate Resilient Agriculture (NICRA)
Source of funding	Indian Council of Agricultural Research, New Delhi
Name of the coordinating institution	Central Research Institute for Dryland Agriculture, Santoshnagar, Hyderabad 500059
Name of the component of the scheme	Technology Demonstration component
Title of the project	Climate Resilient Agricultural Technology Package at village level
Name and address of the implementing Krishi Vigyan Kendra (KVK)	Krishi Vigyan Kendra, Ganjam Bhanjanagar At-Benakunda, PO-Dihapadhala, Teh. - Bhanjanagarvia-Tanarada Dist-Ganjam, Odisha Pin-761126
Area of operation (Name & address of selected the village)	Village-Chopara, GP-Jagannath Prasad PO-Jagannath Prasad, Teh./ Block-Jagannath Prasad, Dist- Ganjam(Odisha)
Zonal project directorate (concerned)	Zonal Project Directorate, Zone-VII JNKVV Campus, Jabalpur, PO-Adhartal Madhya Pradesh-482004
Project team of the KVK	Dr. Sutanu Kumar Satapathy, PC & PI Sri Prasanta Kumar Panda, SMS (P.P), CO PI Miss. Rajeswari Behera, SRF. Mr. Rudra Prasad Jena, SRF Other Team members SMS (Agril.Extension SMS (Animal Sc.) SMS (Home Sc.) Prog. Asst.(Fishery Science)
Duration of the project	2014-15 (April 2014 to March 2015)
Budget	Year 2014-15: Rs.12.49lakh (Rupees twelve lakh forty nine thousand) only

1.0 Agriculture profile of the selected village (if village is changed)

1.1 Distribution of households in the village

Particular	Landless	Marginal	Small	Medium	Large	Total
Number	12	213	38	52	-	315
Average landholding size (ha)	-	0.25	1.0	1.4	-	

Demographic details

Particular	Male	Female	Total/ overall
Total population	902	343	1245
Literacy (%)	569	169	738

1.2 (a) Rainfall

Particular	Average (mm)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
SW monsoon (June-Sep):	712.20	2 nd week of June	2 nd week of Sept
NE Monsoon(Oct-Dec):	255.90	2 nd week October	1 st week of Nov
Winter (Jan- March)	40.00	-	-
Summer (Apr-May)	12.00	-	-
Annual	1020.10	-	-

1.2 (b) Historical trends in rainfall

Historical trends in rainfall		Last Five Years				
		2009-10	2010-11	2011-12	2012-13	2013-14
No. of rainy days		54 (1073)	63 (1250)	47 (1014)	87(1307)	80(2183)
No. dry spells during kharif season	> 10 days	02	01	01	01	-
	> 15 days	NIL	NIL	-	-	-
	> 20 days	NIL	NIL	-	-	-
No. Intensive rain-spells	> 60 mm per day	03	03	02	02	08

1.3 Types of soil

SL No.	Major Soils	Area (ha)	Percent (%) of total
1	Heavy	39.50	20.84
2	Red Medium	103.00	54.35
3	Light	47.00	24.80

1.4 Agricultural land use pattern

	Agricultural land use	Area (ha)	Percent (%)
1	Total cultivated area	150	75.18%
2	Culturable wasteland	22	11.02%
3	Pasture land	5	2.5%
4	Others	22.5	11.2%
5	Rainfed area	199.5	
6	Net irrigated area	-	
7	Gross irrigated area	-	
8	Gross cultivated area	198	
9	Cropping intensity %	132	

1.5 Irrigation sources:

	Sources of Irrigation	Number	Area (ha)	% area
1	Tanks	5 (Seasonal)	1.2	
2	Open wells	16		
3	Bore wells	2		
4	Lift irrigation	-		
5	Other sources(River)	-		
	Total	23		
1	Pump-sets(Electric Motor)	2		
2	Sprinkler/ drip systems	-		
3	Defunct rain-water harvesting structures in the village	One		
4	Groundwater availability and use			
5	Depth of water table in bore wells (feet)	75		
6	Decrease of water table, if any over the past 10 years (feet)	-		
7	Quality of water:	Alkaline		
8	Area irrigated by one bore-well (ha)	-		
9	Area irrigated by one open-well (ha)	2.5		

1.6 Area of major field crops & horticulture etc.

a) Field Crops

	Major Field Crops cultivated	Area (ha)					
		<i>Kharif</i>		<i>Rabi</i>		Summer	Total
		Irrigated	Rainfed	Irrigated	Rainfed		
1	Paddy		126.0				126.0
2	Green gram				45.0		45.0
3	Groundnut		11.0				11.0
4	Black gram				9.0		9.0
5	Sesamum					6.0	6.0
6	Ragi		7.0				7.0

b) Horticulture crops

	Horticulture crops - Fruits	Total area	Irrigated	Rainfed
1	Cashew	18		18
2	Coconut	0.2		0.2
3	Mango	8.5		8.5
4	Papaya	2.4		2.4
	Vegetables	Total area	Irrigated	Rainfed
1	Tomato	4.0	4.0	
2	Chilli	1.0	1.0	-
3	Banana	0.2	0.2	-
4	Brinjal	2.0	2.0	-
5	Cabbage	0.2	0.2	-
6				
	Other crops (Medicinal, plantation, fodder crops)	Total area	Irrigated	Rainfed
	Grazing land	5.0		
	Sericulture etc			
	Others (Specify)			
	Teak	11.0		

	Gambhari	5.0		
	Acasia	5.0		
	Bamboo	1.0		

1.7-1.9: Livestock, Poultry & Inland Fisheries

1.7	Livestock	Number	Yield/ productivity	Price (Rs./ liter in case of milk; Rs./ kg live body weight in case of sheep & goat)
1	Cattle: Crossbred	134	3.5lit/day	Rs20/lt
2	Cattle: Indigenous	806	1.5litre/day	
3	Buffaloes	84		Rs15/lt
4	Goat	50		Rs.300/kg live body weight
5	Sheep			
1.8	Poultry			
1	Commercial			
2	Backyard	312		
1.9	Inland Fisheries	Area (ha)	Yield (t/ha)	
1	Fresh water	2	3.0	
2	Brackish water			
3	Others			

1.10 Production and Productivity of major crops (Average of last 3 years: 2011-12, 2012-13, 2013-14)

a) Field Crops

Crop	Average productivity (kg/ha)		
	Kharif	Rabi	Summer
1 Paddy	2720.0	-	-
2 Greengram		570	
3 Groundnut	1300.0	-	
4 Ragi	720.0		
5 Blackgram		480	

b) Horticulture crops

Major Horticultural crops	Average productivity (kg/ha)
Crop 1 Tomato	13,500
Crop 2 Brinjal	12,200
Crop 3 Chilli	6,300

1.11 Sowing pattern for major crops

Sowing window for 5 major crops (start and end of sowing period)					
Crop	Crop 1: Paddy	2: Greengram	3: Groundnut	4: Blackgram	5: Sesamum
Kharif- Rainfed					
Duration with dates (Sowing to Harvest)	June- November		June-October		
Rabi- Rainfed	-				
Duration	-	Dec-March		Dec-March	March-May

with dates (Sowing to Harvest)					
Rabi- Irrigated	-	-			
Duration with dates (Sowing to Harvest)			.		

1.12 Major constraints/scarcities

What is the major constraints the village is prone to? (Tick mark)	Regular			Sporadic (specify month of occurrence in brackets)			Which crops are affected most
	Severe	Moderate	Mild	Severe	Moderate	Mild	
Drought		✓	-				Paddy
Flood							
Heat wave			✓				Vegetable
Cold wave							
Pests and diseases (specify)			✓				Paddy, Groundnut, Greengram, Black gram, Brinjal, Tomato, Chilli
Sea inundation							

1.13 Other constraints/ scarcities

Water logging	
Change in rainfall timing affecting certain livelihood (in certain areas)	Delay in Monsoon affect sowing date of paddy.
Non-availability of quality seed in time (name the crop):	Paddy, Groundnut, vegetables
Non-availability of farm machinery/ implements (name the machine/ implement):	Power tiller, thresher, weeder, sprinkler and drip systems
Non-availability of fodder (specify the months of scarcity):	March-may
Non-availability of critical inputs for livestock & poultry, like vaccines, etc.	-
Major diseases in livestock & poultry (which animal is more affected):	Cattle-FMD
Which crops are more affected due to water scarcity/ low rainfall:	Paddy, Fish, Groundnut & Green gram
Lower price of farm produce (name of the crops):	Paddy
Marketing arrangement/ channels for livestock & their products:	No

1.14 Existing community participation

No. of active SHGs in the village:	13
No. of the other active community based organizations in the village and their activities:	02

No. of farmers going for insurance of their crops:	16
No. of farmers going for insurance of their animals (mention separately for small and large ruminants):	23

1.15 Coping strategies adopted by innovative farmers of the selected village/ nearby villages:

Adverse situation	Coping strategy
Early season drought (delayed onset)	Nil
Normal onset followed by 15-20 days dry spell	Cultivation of short duration Paddy var. Sahabhagi, Greengram Var-TARM-1, Application of micro nutrient, weedicide. Ragi var-Chilika, (KVK intervention)
Mid season drought (long dry spell, consecutive 2 weeks rainless	Nil
Terminal drought	Nil
Insufficient groundwater recharge due to low rainfall/ over-exploitation	Nil
Scarcity of feed and fodder and water for animals during drought	Fodder cultivation
Feeding/ reproductive management of livestock during heat/ cold wave	Supplementary Feed management
Feed and fodder and water for animals during heat/ cold wave	Better shelter management
Fisheries: Shallow water in ponds due to insufficient rains/inflows	Stocking of fish yearlings with supplementary feeding with mixture of GNOC & RB in the ratio 1:1 fortified with vit-min mixture(1%) @2-5% of body wt.
Crop management during short duration flood situation	Nil
Disease epidemics mitigation in livestock during cyclone/ flood	Nil

1.16 Schemes/ programmes in operation in the selected village, like.

- MNREGS Integrated watershed development programme
- Others – NGOs(Sangram Keshari Juba Chatra Sangha)
- Self Help Group(SHG)-10

2.0 Climate resilient technology package

2.1 Proposed interventions*

Module-1 Natural Resource Management

Interventions	No. of units/ farmers proposed	Area, ha	Cost per unit or per ha, Rs.	Total Expenditure, (Rs.in Lakhs)
Green manuring	15	5.0	1,500	0.075
Insitu moisture conservation	30	12.0	2,000	0.24
Renovation of defunct water harvesting structure	01	0.5	1,00,000	1.0
Percolation tank	05		30,000	1.50
Backyard vermicomposting	10		2,000	0.20
Soil sample analysis(Micronutrient, PH, EC, N, P, K)	20		1,500	0.30

Interventions	No. of units/ farmers proposed	Area, ha	Cost per unit or per ha, Rs.	Total Expenditure, (Rs.in Lakhs)
Soil reclamation	25	10.0	600	0.06
Renovation of defunct well	10		2,000	0.20
Total	116	27.5	1,39,600	3.575

Module-II Crop production and Horticulture

Interventions	No. of units/ farmers proposed	Area, ha	Cost per unit or per ha, Rs.	Total Expenditure, (Rs.in Lakhs)
Drought resistant /Short duration /high yielding var.: Crop-paddy:Sahabhagi dhan, Satya bhama,Swarna sub-1	42	12.0	5,000	0.60
Short duration varieties-green gram	25	10.0	4,000	0.40
Crop Diversification- Black gram	15	4.0	3,000	0.12
High yielding Veg. variety-Tomato	18	3.0	5,000	0.15
Mushroom cultivation	20		1,000	0.20
Use of Neem oil @ 5ml/lt at 30 DAT (ITK) in Paddy	18	5.0	1,400	0.07
Integrated Farming System	01	0.4	5,000	0.05
Total	144	34.4	34,400	1.49

Module-III Live stock production management

Interventions	No. of units/ farmers proposed	Area, ha	Cost per unit or per ha, Rs.	Total Expenditure, (Rs.in Lakhs)
Animal health camp	4 Nos	400 animals	8,000	0.32
Fish feed Management	2 Nos	1.0ha	18,000	0.18
Fodder production	10Nos	1.0ha	10,000	0.10
Rainbow Rooster Poultry birds	20Nos	400 Nos.	2,000	0.40
Demonstration on yearlings of IMC	02Nos	1.0ha	10,000	0.10
Total	36No		48,000	1.10

Module-IV Custom hiring centre

Sl. No.	Name of the Implement	Hours Run	Revenue to be Generated (Rs)	Farmers to be benefited (Nos)
1	Power Tiller	300hrs	15,000	56
2	Diesel Pump set	60hrs	1200	16
3	Power Sprayer	50hrs	1500	18
4	Mini Weeder	25hrs	500	12
6	Seed-cum-fertilizer Drill	30hrs	1200	14
7	Multi crop thresher	180hrs	9000	42

V. Proposed extension activities:

Extension activities	No.	Cost per unit or per ha, Rs.	Total Expenditure, (Rs.in Lakhs)
Training programme	08	3,000	0.24
Exposure visit	03	15,000	0.45
Farmer- Scientist interaction	02	10,000	0.20
Field day	05	3,000	0.15
Method demonstration	06	2,000	0.12
Misc. activities (Other extension activities, Display board, Report preparation and printing, Small repair, POL, Hiring of vehicle etc.)		65,000	0.65
Total	24	98,000	1.81

2.3 Functioning of the fodder bank (conservation and storage of fodder to be used during scarcity period)

2.4 Institutional arrangements to be encouraged/ made

- *Village Climate Risk Management Committee (VCRMC):*
- *Committee for managing the custom hiring center* (Farm service center)
- *Fodder management committee*

The relevant members of the VCRMC may also be the part of other committees.

Sustainability fund and institutional framework for promoting user fee and collection of depreciation cost etc should also be planned.

Note: Some details should be provided about the functioning of the proposed institutional structures.

2.5 Activity schedule (April 2014 to March 2015)

[illegible]

2.6 Budget requirements (Rs. in lakhs)

Sl. No.	Items of expenditure	2014-15
1.	Non- Recurring	
1.1		
2.	TA	
2.1	TA (other than local movements)	1.00 lakh
3.	Contingencies	
3.1	Contractual services: SRF (2)	3.84lakh
3.2	Operational expenses (agricultural inputs, labour, livestock, stationery, POL,, small repairs, miscellaneous expenditure to be incurred in the village like farm pond, percolation pond, seed bank, fodder bank, renovation of defunct water harvesting structure, capacity building and training and all other interventions)*	7.95lakh
	Total	12.79lakh

(Rupees twelve lakh seventy nine thousand) only

*Expenditure on major items under operational head may be depicted in separate rows

2.7 Project Team

KVK , GANJAM, ODISHA

Organization :- OUAT, BHUBANESWAR, ODISHA

Email :- ganjamkvk@yahoo.co.in

S.No	Name	Designation			Email	Mobil No.	Date of Joining
		PI	Co-PI	SRF			
1.	Dr. Sutanu ku. Satapathy	✓			ganjamkvk@yahoo.co.in	9437619310	29/08/2012
2.	Mr. Prasanta Ku. Panda		✓		ganjamkvk@yahoo.co.in	9439144376	07/12/2011
3.	Miss. Rajeswari Behera			✓	ganjamkvk@yahoo.co.in	9853858421	10/10/2012
4.	Mr. Rudra Prasad Jena			✓	ganjamkvk@yahoo.co.in	8763125977	17.10.2013
5.	Mr Santosh Kumar Samantaray (SMS Ag. Extn)				ganjamkvk@yahoo.co.in	9439917670	06/09/2012
6.	Dr. Smrutirekha Mallik(SMS Vetenary)				ganjamkvk@yahoo.co.in	9439690196	21/05/2012
7.	Dr. Gitanjali Subudhi(SMS Home Sc.)				ganjamkvk@yahoo.co.in	9437799801	27/10/2009
8.	Mr. Manas Ranjan Behera (PA Fishery Sc.)				ganjamkvk@yahoo.co.in	9438004335	22/06/2013

