National Initiative on Climate Resilient Agriculture (NICRA) Project

Annual Report 2014 -15

Kurnool district of Andhra Pradesh is one of the drought prone districts of the state. Yagantipalle village which is located at a distance of 4 km from Banaganapalle Panchayat of Banaganapalle mandal with 70% of rainfed agriculture was selected for implementing NICRA project. Desi cotton and redgram were the main crops grown during kharif and Jowar, sunflower in rabi. Most of the crops get affected with late onset of monsoons followed by dry spells during critical crop growth periods, which in turn severely affecting yield. The short duration millets viz., Foxtail millet SIA 3085 variety with 70-75 days duration and tolerance to drought and downy mildew was introduced in place of jowar and desi cotton. Likewise inter copping systems with korra and red gram, red gram and castor were also introduced with variety replacement of red gram with Asha-87119 and introduction of castor hybrid PCH 111.

During Kharif Monsoon onset was late (Third week of July) and the crops experienced prolonged dry spells during grand growth period. Cotton could not be taken up due to late onset of monsoon. Jowar was sown but it was affected with terminal moisture stress. The demonstrations of short duration varieties of Seteria (KORRA) SIA 3085 and Suryanadi could escape drought due to its shorter duration. Varietal demonstrations of redgram with PRG 158 and Asha gave better yields due to its short duration than local variety LRG 30. As there was no rainfall, livestock suffered from lack of green grass and fodder. Haylage making demonstration helped the farmers to come out of the situation to some extent.

As water was scarce, drip installation saved from drought, under crop diversification(paddy to vegetables) which boosted the income of the farmers. Drip irrigation was fully capitalized by the farmers in the village and they could realize some reasonable yield by minimizing cost of cultivation and diversification to floriculture and vegetables. KVK also took up non -traditional vegetables like beet root and cabbage during Rabi.

KVK also introduced poultry farming at Backyards with Rajashri birds to help small families. These birds are gradually attracting farmers attention for its potential egg production, hence more and more farmers are approaching KVK for Rajashri birds as the birds are coping up well with the village climate.

With an objective to control the calf mortality, KVK also introduced calf registration programme which was well received by the farmers. The registered calves under this programme were provided medical and nutritional attention up to six months.

For conservation of soil and water, conservation furrows were taken up in rainfed crops like castor and red gram real time contingent management of pest and diseases in red gram and castor was taken up. Most of the soils are alkaline in nature making unfit for cultivation of common crops. Hence, reclamation of such soils was taken up as demonstration in 20 acres with gypsum treatment based on soil test.

Twelve bio gas units were established near the farmers houses for domestic gas, which was supported by NEDCAP, Kurnool. This technology slowly attracted the attention of other farm families.

Burrakunta after desilting

A view of grazing animals are drinking the water

Farm Pond filled with water during Agugust'14

Major Climatic Details of the Village

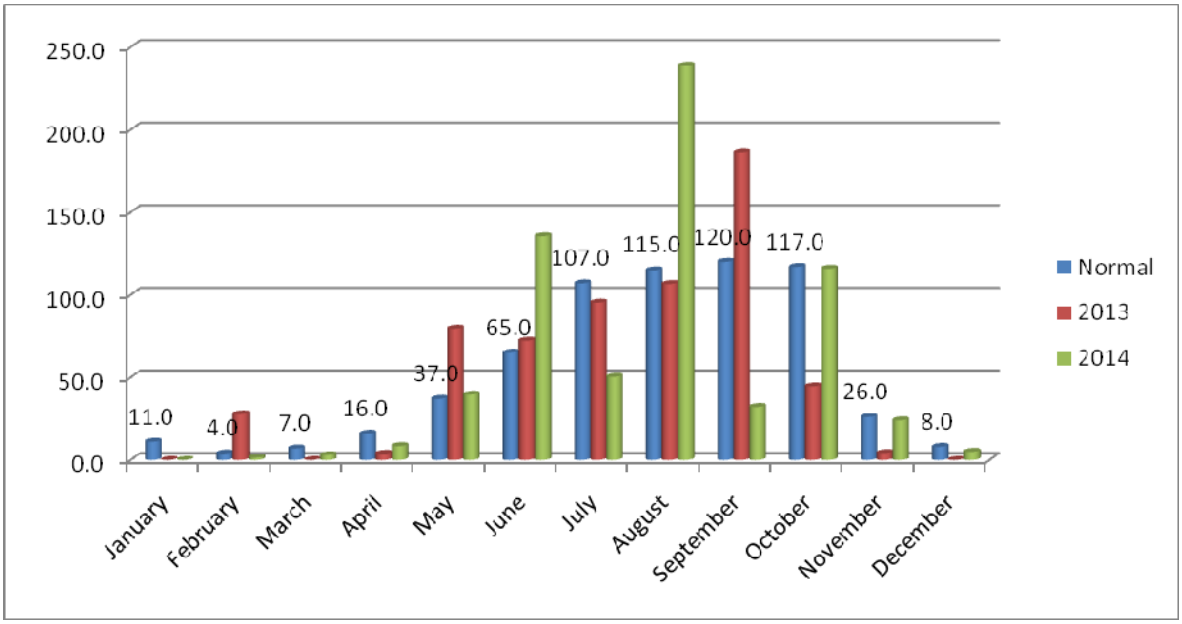
Table 1: Distribution of rainfall in comparison with normal

Month	Normal rainfall (mm) Based on min.10 years	Rainfall (mm)				Difference of rainfall in comparison with normal rainfall (mm)				% Deviation i.e., Actual – Normal × 100 / Normal			
		2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
Jan	**011.0**	**000.0**	**000.0**	**000.0**	000.0	-011.0	-011.0	-011.0	-011.0	-100	-100	-100	-100
Feb	04.0	016.6	000.0	027.7	001.4	+012.6	-004.0	+023.7	-002.6	315	-100	+592.5	-65
March	**007.0**	**000.0**	**001.0**	**000.0**	003.0	-007.0	-006.0	-007.0	-004.0	-100	-85.7	-100	-57.1
April	**016.0**	**045.8**	**036.2**	**003.8**	008.4	+029.8	+020.2	-012.2	-007.6	+186.2	+126.2	-76.25	-47.5
May	**037.0**	**026.6**	**007.0**	**079.6**	039.6	-010.4	-030.0	+042.6	+002.6	-28.1	-81.0	115.1	+7.0
June	**065.0**	**024.0**	**005.9**	**072.2**	135.4	-41.0	-059.1	+007.2	+070.6	-63.0	-90.9	11.1	+108.3
July	**107.0**	**098.6**	**097.2**	**095.3**	050.3	-008.4	-9.8	-011.7	-056.7	-7.8	-9.1	-10.9	-52.9
Aug	**115.0**	**180.4**	**136.0**	**106.6**	238.8	-65.4	+21.0	-8.4	+123.8	-56.8	+18.2	-7.3	=107.6
Sep	**120.0**	**066.6**	**039.4**	**186.0**	32.1	-53.4	-80.6	+66.0	-087.9	-44.5	-67.1	55.0	-73.2
Oct	**117.0**	**074.6**	**064.2**	**044.6**	115.9	-42.4	-52.8	-72.4	-001.1	-36.2	-45.1	-61.8	-0.9
Nov	**026.0**	**023.4**	**018.6**	**004.2**	24.0	-2.6	-7.6	-21.8	-2.0	-10	-29.2	-83.8	-7.6
Dec	**008.0**	**000.0**	**001.4**	**000.0**	5.0	-8.0	-6.6	-8.0	-3.0	-100	-100	-100	-37.5
Total	**633.0**	**556.6**	**406.9**	**620.0**	**653.9**	**-76.40**	**-226.10**	**-13.0**	**+20.9**	**-12.0**	**-35.7**	**-2.1**	**+3.30**
Total actual rainfall during cropping season (Sowing to harvest)	Normal rainfall (mm)Based on min.10 years 633.0	**467.6**	**362.7**	**508.9**	**601.5**	**-165.4**	**-270.3**	**-124.1**		**-26.1**	**-42.7**	**-19.6**	**-9.2**

Banaganapalle Rainfall Data Normals and Actuals

Table 2: Distribution of rainfall in NICRA Village during 2014:

Day	June	July	August	September	October	November	December
1	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
2	***068.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
3	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
4	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
5	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
6	***000.0***	***009.6***	***000.0***	***003.2***	***000.0***	***000.0***	***000.0***
7	***000.0***	***000.0***	***000.0***	***000.0***	***004.4***	***000.0***	***000.0***
8	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
9	***064.0***	***002.0***	***000.0***	***000.0***	***000.0***	***018.4***	***000.0***
10	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
11	***000.0***	***003.4***	***000.0***	***000.0***	***000.0***	***000.0***	***005.0***
12	***000.0***	***019.6***	*005.0*	***000.0***	***000.0***	***000.5***	***000.0***
13	***000.0***	***000.0***	***000.0***	***008.2***	***000.0***	***002.5***	***000.0***
14	***000.2***	***001.2***	***000.0***	***005.6***	***000.0***	***002.6***	***000.0***
15	***000.0***	***000.0***	***000.0***	***008.2***	***000.0***	***000.0***	***000.0***
16	***000.0***	***000.0***	***000.0***	***006.4***	***000.0***	***000.0***	***000.0***
17	***000.0***	***000.0***	*002.4*	***000.5***	***000.0***	***000.0***	***000.0***
18	***000.0***	***000.0***	*053.8*	***000.0***	***000.0***	***000.0***	***000.0***
19	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
20	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***	***000.0***
21	***000.0***	***000.0***	***017.5***	***000.0***	***000.0***	***000.0***	***000.0***
22	***000.0***	***000.0***	***000.0***	*000.0*	***000.0***	***000.0***	***000.0***
23	***000.0***	***000.0***	***000.0***	*000.0*	***000.0***	***000.0***	***000.0***
24	***000.0***	***000.0***	*130.5*	***000.0***	***000.0***	***000.0***	***000.0***
25	***000.0***	***000.0***	***000.0***	*000.0*	***097.0***	***000.0***	***000.0***
26	***000.0***	***000.0***	***013.0***	*000.0*	***004.0***	***000.0***	***000.0***
27	***003.2***	***007.6***	***000.0***	*000.0*	***010.5***	***000.0***	***000.0***
28	***000.0***	***006.8***	*012.8*	*000.0*	***000.0***	***000.0***	***000.0***
29	***000.0***	***000.0***	*003.8*	*000.0*	***000.0***	***000.0***	***000.0***
30	***000.0***	***000.1***	***000.0***	*000.0*	***000.0***	***000.0***	***000.0***
31	-	***000.0***	***000.0***	-	***000.0***	-	***000.0***
Total:	***135.4***	***50.3***	***238.8***	***32.1***	***115.9***	***24.0***	***5.0***



During the Kharif-12(Jan- December) a total quantity of 406.9 mm rainfall was received as against normal rainfall of 633.0 mm. Kharif sowings were taken up with the rain fall received during last week of July and crops faced severe moisture stress during grand growth period of September . Among the kharif crops Seteria and castor performed well with reasonable good yields.

During the Kharif-13 (Jan- December) a total quantity of 620 mm rainfall was received as against normal rainfall of 633.0 mm. Kharif sowings were taken up with the rain fall received during last week of July. Among the kharif crops Seteria, redgram and castor performed well with reasonable yields.

During the Kharif-14 (Jan- December) a total quantity of 653.9 mm rainfall was received as against normal rainfall of 633.0 mm. Kharif sowings were taken up with the rain fall received during last week of July. Among the kharif crops Seteria, redgram and castor performed well with reasonable yields.

Rabi sowings i.e Bengalgram were taken up with rain rainfall received during 2nd week of October. All rabi crops suffered acute moisture stress as there was dearth of stored soil moisture in the early stages of crop growth and subsequently prolonged drought conditions. Only during fag end of November scanty rain was received which could not boost crop growth in general ultimately these aberrant weather conditions reflected badly on the crop yields.

Thematic area: NATURAL RESOURCE MANAGEMENT

In-situ moisture conservation

1. Name of the technology	In-situ moisture conservation technologies in Castor
2. Objectives of the study	To stabilize/enhance the productivity of rain fed Castor
3. Thematic area	NRM
4. Problem diagnosis	Low and uncertainty of productivity due to recurrent intermittent drought/erratic rainfall
5. Micro farming situation	Rainfed/Redsoils/Black soils
6. Year of start	2011
7. Year of completion	-
8. Comparisons/treatments	
a) Farmers practice* (Describe the practice) b) Improved technology (mention test crop and varieties/variety used in demonstration)	a)Farmers practice (No conservation measures between two rows of Castor) a)Formation of Conservation furrows in between two rows of Castor hybrid PCH-111 at 30-35 DAS
9. Area covered for each Demonstration (ha)	0.4
10. No. of farmers covered	25
11. Amount spent for each demonstration/each farmer	400/-
12. Contribution of demonstration from a) Project b) Farmers	 360/- 40/-

Results: **Table: Year 2014-15**

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice(Without conservation furrows) PCH-111	986	-	20625	37468	16843	1:1.8	
Improved practice(formation of conservation furrows at 30-350DAS) PCH-111	1082	-	20975	41116	20141	1:1.96	

CASTOR: 38/Kg

Conservation of moisture:

S.No	Month	Depth of moisture availability with conservation furrows	Flat sowing
1	**August**	**1.2**	**2.12**
2	**September**	**0.5**	**0.7**
3	November, 14	1.46	2.34
4	December, 14	6.02	8.12
5	January, 15	10.72	12.5
6	February, 15	13.8	15.32
7	March, 15	16.64	20.72

The results showed that, the available soil moisture at 0-30 and 30-60cm depths were higher under in opening of furrows (30 DAS) treatments at different stages of crop growth till harvest . The available soil moisture at 0-30cm depth was found higher under opening of furrows (30 DAS) treatments

This area falls under scarce rainfall zone and frequent prolonged dry spells at critical crop growth stages resulting poor yields were observed. To up cope with this problem, in- situ moisture conservation measures by formation of conservation furrows between rows of castor during Kharif in an area of 10 ha was taken up . This technology conserved runoff rain water and helped to cope with terminal moisture stress in castor and sunflower.

- Creating awareness on in- situ moisture conservation measures i.e formation of conservation furrows between rows of castor in order to conserve runoff water and to avoid terminal moisture stress in castor.
- Organized demonstrations to create awareness on in- situ moisture conservation measures i.e formation of dead furrows between rows of Castor in order to conserve runoff water and to avoid terminal moisture stress.
- ***The increased yield mainly due to reduced runoff and retention of higher soil moisture. Due to this practice resulted in higher production of secondary spikes were also observed.(10.0%) yield increased)***

Reclamation of alkali soils:

1. Name of the technology	Reclamation of alkali soils
2. Objectives of the study	
3. Thematic area	NRM
4. Problem diagnosis	It was observed that nearly 37 % of cultivated soils of Yagantipalle village having pH is more than 8.5 which comes under high alkali category.
5. Micro farming situation	Rainfed &Irrigated
6. Year of start	June- 2011
7. Year of completion	December-2011
8. Comparisons/Treatments	
a) Farmers practice* (Describe the practice)	Without Gypsum application
b) Improved technology	Gypsum application
9. Area covered for each demonstration (ha)	0.4
10. No. of farmers covered	20
11. Amount spent for each demonstration/each farmer	4000/-
12. Contribution of demonstration from a) Project b) Farmers	 3000/- 1000/-
13. Results	Current year.

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice Jowar(Mahendra)	3070	3684	25875	42980	17105	1:1.6	
Jowar(Mahendra) with gypsum application	3920	4704	23425	54880	31455	1:2.3	

Jowar: 14/Kg

Ten Demonstrations were organized on reclamation of sodic soils with gypsum at Yagantipalle village of Banaganapalle mandal. The initial soil pH ranged from 9.02 to 9.16 and after reclamation the range was from 8.61 to 8.78. The crop was cultivated after reclamation.

The average yield of Jowar in demonstration plots was high (3070Kg/ha) as compared to controlled plots (3920 Kg/ha). The results indicated that 28 percent yield increase in demonstration plots was recorded over the controlled plots. An additional income of Rs 14350/ha was realized in demonstrations due to enhanced yields.

Natural resource management

Farm pond technology

1. Name of the technology	Farm ponds
2. Objectives of the study	Life saving irrigation of crop at crucial periods.
3. Thematic area	NRM
4. Problem diagnosis	
5. Micro farming situation	Rainfed
6. Year of start	June- 2011
7. Year of completion	
8. Comparisons/Treatments	
a) Farmers practice* (Describe the practice)	
b) Improved technology	
9. Area covered for each demonstration (ha)	0.4
10. No. of farmers covered	4
11. Amount spent for each demonstration/each farmer	4000/-
12. Contribution of demonstration from a) Project b) Farmers	 3000/- 1000/-
13. Results	1st year, 2nd Year Current year.

Farm ponds dug in 2011-12 were not utilized as sufficient water was not received for catchment of the farm pond in 2014-15

De-silting of existing percolation tank:

The project committee proposed to de-silt the existing percolation tank(Burrakunta) for deepening and use of tank silt for marginal soils to improve soil physical properties and fertility. Focus group interactions were held with the villagers to sensitize them on the importance of water harvesting and application of tank silt. The de-silting of Burrakunta (PT) was taken up during July 2012 and 1260 Cu.mt silt was excavated.The silt was applied to 6 ha covering 10 farmers and transportation cost was borne by the farmers.

Chemical properties and nutrient status of tank silt was analyzed before application into the fields and the average pH and EC of tank silt was 7.95 and 0.35 dSm^{-1} respectively which were under normal range. The organic carbon content of silt was high (0.89 %), available phosphorus (112 ppm), Potassium (883ppm), Calcium (52me.eq/100gsoil), magnesium (5.5me.eq/100gsoil), ferrous (33.5ppm), copper(3.62ppm) were found in high range. The farmers were ready to transpot the tank silt to their poor soils, since it was good nutrient status.

Out comes:

- Water table of around 250 bore wells surrounding the percolation tank raised by 12 ft from August to November.
- Deepening of percolation tank increased the additional water storage capacity (12.60 lakh litres)

Details (Average of Six bore wells taken for data)-Total number of borewells-40

Month	Water table in the bore well (ft)	Availability of water in Water storage structure (ft.)	Average area irrigated acre / Bore well	Rainfall (mm)
June	92.5	6 ft	-	135.4
July	90.3	5.3 ft	2.0	050.3
August	68.2	11 ft	3	238.8
September	64.8	8 ft	4	32.1
October	52.4	8.5 ft	3.5	115.9
November	63.2	4.5 ft	3	24.0
December	70.2	2.0 ft	2.5	5.0
January -15	96.4	1.5ft	1	0
February-15	126	1.25 ft	0.75	0.6
March-15	138	1.32 ft	1.0	18.5

2. Theme Area: CROP PRODUCTION

Demo I: Testing of drought tolerant varieties in Pigeon pea:

1. Name of the technology	Performance of Drought tolerant varities
2. Objectives of the study	To identify the varieties Suitable under Drought Situation.
3. Thematic area	Crop production
4. Problem diagnosis	Low yields due to frequent drought Conditions and terminal moisture stress during pre-flowering and Pod development stages respectively.
5. Micro farming situation	Rainfed red soils
6. Year of start	2011
7. Year of completion	
8. Comparisons/treatments (mention test crop and varieties/ variety used in demonstration)	1.Local:LRG-41 2.Improved variety :Asha-87119
9. Area covered for each demonstration (ha)	0.4
10. No. of farmers covered	23
11. Amount spent for each demonstration/each farmer	600/-
12. Contribution of demonstration from a) Project b) Farmers	540/- 60/-
13. Results (Yield, cost of cultivation, gross income, net income B:C ratio, soil moisture. Indicators /plant characters of flood/ drought tolerance in terms growth and yield components etc.,	Current year.

RESULTS: 2014-15

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice (LRG-41)	1142	-	27450	66236	38786	1:2.4	
Improved varietiey (Asha-87119)	1361	-	25202	78938	53736	1:3.1	

Price of Rs.58/- kg

Introduction of drought tolerant variety of Redgram i.e Asha-87119, which is tolerant to drought, suitable for medium to light soils with 150 days duration, where long duration (180 days) varieties were facing moisture stress at flowering and pod dev. Stage (Terminal moisture stress).

The data clearly indicated that Asha gave higher grain yield(1361 Kg/ha), which was 19.0 per cent more than that of obtained with farmers practice in red soils under rainfed situation.

The Economic Viability of improved technology over farmers practice was calculated depending on prevailing prices of input and output costs. The improved technologies resulted increased income with cost benefit ratio of 1:3.1/2.4 .

Demo 2: Testing of drought tolerant varieties in Bengalgram

1. Name of the technology	Performance of Drought tolerant varities
2. Objectives of the study	To identify the varieties Suitable under Drought Situation.
3. Thematic area	Crop production
4. Problem diagnosis	Frequent Drought Conditions During crop growth stages.
5. Micro farming situation	Rainfed medium black soils
6. Year of start	2011
7. Year of completion	Performance of Drought tolerant varieties
8. Comparisons/treatments	
a). Farmers practice* (Describe the practice) b). Improved technology (Mention test crop and varieties/variety used in demonstration)	1.Local: JG-11 2.Improved variety : Nadyala sanaga-1
9. Area covered for each demonstration (ha)	0.4
10. No. of farmers covered	20
11. Amount spent for each demonstration/each farmer.	1400/-
12. Contribution of demonstration from a) Project b) Farmers	 1260/- 140/-

2014-15

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice JG-11	1035	-	30150	39330	9180	1:1.3	
Improved varieties (NBeG-1)	1262	-	27954	47956	20002	1:1.7	

Bengal Gram: 38/Kg

Introduction of drought tolerant variety in Bengalgram:

Results of Bengalgram demonstrations indicated that among desi varieties NBeG-1 Perfomed well in medium to light soils. These varieties are fairly tolerant drought with well developed root system and also tolerant to wilt diseases.

The increased grain yield with Improved production technologies was mainly because of more no of pods/plant and higher 100 grain weight. Economics of demonstration and Farmers practice indicated that the cultivation of Nandyala sanaga-1 with improved technologies, additional returns of Rs 10822/- /ha were obtained with BC ratio of 1:1.7/1.3. ***The performance of nandyal senega was superior to the control for its rooting traits and heat tolerance.***

Demonstration on Intercropping

1. Name of the technology	Demonstration of Redgram and Seteria as a intercropping
2. Objectives of the study	To minimize the risk and bring stable income in rainfed situations
3. Thematic area	Crop production
4. Problem diagnosis	Low productivity and income , erratic rainfall Frequent Drought Conditions During crop growth stages and Crop failures due to prolonged dry spells.
5. Micro farming situation	Rainfed ,Redsoils
6. Year of start	2011
7. Year of completion	
8. Comparisons/treatments	
a). Farmers practice* (Describe the practice) b). Improved technology (Mention test crop and varieties/variety used in demonstration)	Seteria as a Sole crop Intercropping System(Seteria+Redgram5:1)
9. Area covered for each demonstration (ha)	0.4
10. No. of farmers covered	34
11. Amount spent for each demonstration/each farmer.	1500/-
13.Results (Yield, cost of cultivation, gross income, net income B:C ratio, other parameters like yield components, soil moisture depth etc.,	Current year.

Table: Influence of improved inter cropping systems on yields and income in rain fed situations

Results:2014-15

Crop/Cropping system	Seed yield (kg/ha)		Fodder (kg/ha)		Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	B:C ratio
	Crop 1 (Seteria)	Crop 2 (Redgram)	Crop 1	Crop 2			
Sole Seteria	2108	-	-	-	14065	40061	1:2.8
Sole pigeon pea	1086	-	-	-	25202	62988	1:2.5
Seteria +Pigeon pea	1956	488	-	-	17428	65468	1:3.7

Redgram Rs.58/Kg Seteria-19/kg

Inter Cropping systems for drought mitigation:

Adverse weather conditions like delay onset of rains and prolonged dry spells during the crop period is very common in rainfed situation. Such situation results in economic losses to the farmers due to the partial or total failure of the sole crops. In order to utilize the bi-model distribution of rainfall and also to insure against crop failure due to drought during crop growth period, millet based inter cropping systems were demonstrated.

Introduced Redgram + Seteria (1:5) inter cropping systems in the village, along with sole crop of Redgram/Seteria/Castor in order to increase cropping intensity and net returns of the farmers.

- Results of demonstration on intercropping of Redgram + Seteria in row ratio of 1:5 indicated that the gross income was higher (Rs.65468/-) than sole crop of seteria (Rs. 40061/-)
- The results on cropping system oriented demonstrations against drought mitigation clearly indicates that above inter cropping systems are economically advantageous than sole crops under rainfed situations. In the long run the fertility and microbial activity of the soil also increases with addition of biomass of redgram.

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Introduction of Seteria as a alternate crop to Desi Cotton:

1. Name of the technology	Performance of Seteria as alternate crop to desi cotton
2. Objectives of the study	To Maximize yield and higher returns under harsh weather conditions
3. Thematic area	Crop production
4. Problem diagnosis	Low productivity and income , erratic rainfall Frequent Drought Conditions During crop growth stages.
5. Micro farming situation	Rainfed
6. Year of start	2011
7. Year of completion	
8. Comparisons/treatments	
a). Farmers practice* (Describe the practice) b). Improved technology	Desi Cotton Seteria varSIA-3085 as a alternate crop
9. Area covered for each demonstration (ha)	0.4
10. No. of farmers covered	30
11. Amount spent for each demonstration/each farmer.	200
12. Contribution of demonstration from a) Project b) Farmers	 150 50/-
13.Results (Yield, cost of cultivation, gross income, net income B:C ratio, other parameters like yield components, soil moisture depth etc.,	Current year.

Results: Year2014

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice (Desi Cotton)	485	-	13150	18430	5280	1:1.4	
Improved varieties (SIA-3085)	2108	2704	14065	40052	25987	1:2.84	
Improved varieties (PCH-111)	1140	-	22521	43320	20799	1:1.92	

Cotton Rs 38/- Seteria Rs 19/-perkg Castor Rs 38/- kg

Introduction of alternate crops i.,e Seteria and Castor:

Farmers in the village normally grown desi cotton with the onset of monsoon in time. During last three year due to late receipt of rains, seteria, castor hybrid i.e. PCH-111 as alternate crops were introduced in place of desi cotton.

Results on performance of Seteria and castor as alternate crop to desi cotton revealed that highest gross income was obtained with Seteria and Castor .

Seteria:

In View of drought tolerance and minimum requirement of water seteria crop is preferred Sustainable yield and income was obtained under harsh weather conditions. Inview of its superior performance the crop area increased from 40 to 360 acres in the village during kharif 2014. Area expansion under this crop is expected during ensuing season also .*The adoption of seteria crop by the farmers was due to its suitability to delayed monsoon, its duration and additional benfit of fodder.The market price of seteria is alsocatching the attention of the farmers.*

With this high yielding variety Farmers were getting on an average of 21.08 q /ha of grain and more fodder yield.

Castor: This hybrid has spread very quickly not only to the interior pockets of the district but also to other castor growing districts and non-traditional areas because of its unique features like high yielding variety, comes up well even when drought situations prevail during crop growth period, wilt resistant, bold seed type etc. Farmers are reaping good returns with cultivation of PCH-111castor hybrid.

On an average the Castor hybrid PCH-111 gave 11.40 q/ha yield. The economic data of the demonstrations and competent crop i.e aroboreum cotton showed that average net returns Rs 20799/- with B:C ratio of 1: 1.92 as against Rs 5280/- with B C ratio of 1.4.

Drought management practices for standing crops:

Crop/cropping system	Time of drought	Management strategies
Redgram	Early season drought (15 days dry spell after sowing)	Formation of conservation furrows between two rows of Redgram as preventive measure
	Vegetative stage	Frequent inter cultivation to conserve soil moisture
	Reproductive phase	Top dressing of urea with the receipt of rains after dry spell (10 kg N per ha.) or 2% urea spray
	Terminal drought	Protective irrigation through farm ponds
Seteria	Vegetative stage	Frequent inter cultivation to conserve soil moisture
	Reproductive phase	Top dressing of urea with the receipt of rains after dry spell (10 kg N per ha.) or 2% urea spray
Sunflower	Early season drought (15 days dry spell after sowing)	Formation of conservation furrows between two rows at 30-35 DAS as a preventive measure
	Vegetative stage	Frequent inter cultivation to conserve soil moisture Spray of urea/DAP @2%.
	Reproductive phase	Boran application @0.2% Supplemental irrigation with harvested rain water in farm ponds
	Terminal drought	Supplemental irrigation with harvested rain water in farm ponds
	Reproductive phase	Spray of urea @2%
Crop/cropping system	**Time of drought**	**Management strategies**
Bengalgram	Reproductive phase	Top dressing of urea with the receipt of rains after dry spell (10 kg N per ha.) or 2% urea spray

Example 1: Organic farming: Redgram

1. Name of the technology	Production of Organic Redgram
2. Objectives of the study	
3. Thematic area	Crop production
4. Problem diagnosis	
5. Micro farming situation	Indiscriminate use of Pesticides & Use of more chemical Fertilizers
6. Year of start	2011
7. Year of completion	
8. Comparisons/treatments	
a). Farmers practice* (Describe the practice) b). Improved technology	In-organic Organic Production
9. Area covered for each demonstration (ha)	0.2
10. No. of farmers covered	6
11. Amount spent for each demonstration/each farmer.	2000/-
12. Contribution of demonstration from a) Project b) Farmers	 1800/- 200/-
13.Results (Yield, cost of cultivation, gross income, net income B:C ratio, other parameters like yield components, soil moisture depth etc.,	Current year.

2014-15

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice ASHA - 87119	1450	-	29875	84100	54225	1:2.8	
Improved varieties ASHA-87119	1275	-	24125	73950	49825	1:3.0	

Redgram-58/kg

This demonstration was taken up in 2.4 ha with 6 farmers. Critical inputs Neem oil, Beauveria and Trichoderma enriched vermicompost were given. The results indicated that in organic farming there is 7.7% reduction in yield (1275 kg/ha) over farmers practice (1450 kg/ha), however due to saving in cost of PP and premium price of produce, an additional returns of Rs. 5,750/- per ha were obtained in Organic farming of Redgram, with same level of crop protection.

FARM MACHINERY

CHCs are basically a unit comprising a set of farm machinery, implements and equipment meant for custom hiring by farmers. Though certain implements and equipment are crop specific,. Therefore, an ideal model envisaged in this project comprise farm machinery that are commonly used for tillage operations for all crops, multi crop equipment and a minimum of crop specific machinery.

Objectives:

- To make available various farm machinery / equipments to small and marginal farmers
- To improve mechanization in places with low farm power availability
- To provide hiring services for various agricultural machinery/implements applied for different operations.
- To expand mechanized activities during cropping seasons in large areas especially in small and marginal holdings.
- To provide hiring services for various high value crop specific machines applied for different operations.

FARM MACHINERY:

1. Name of the technology	Seeding methods in Redgram & Bengalgram
2. Objectives of the study	To reduce the cost of sowing of agricultural crops and increase precision and to cover more area in unit time
3. Thematic area	Crop production- Farm Machinery
4. Problem diagnosis	Traditional method of seeding with bullocks involves high cost, less coverage and less precision
5. Micro farming situation	Rainfed red soils/black soils
6. Year of start	
7. Year of completion	
8. Comparisons/treatments	Test crop: PRG-158 &LRG-41 & Nandyala sanaga-1
a). Farmers practice* (describe the practice) b) Improved technology	1. With bullock drawn Gorru 2. Seeding by seed drill with Tractor.
9. Area covered for each demonstration (ha)	1.0
10. No. of farmers covered	15
11. Amount spent for each demonstration/each farmer	1000/-
12. Contribution of demonstration from a) Project b) Farmers	 750/- 250/-
13. Results	Current year

Treatments	Seed / Grain yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Improved seed drill with tractor(Redgram)	1364	-	16663	54506	37843	1:3.27	
Farmers method of seeding(with bullock drawn)	1260	-	17800	50400	32600	1:2.83	

Price of seed/grain-58/Kg

PLANT PROTECTION

1. Name of the technology	Weather based IPM technology in Castor
2. Objectives of the study	To economize the cost of plant protection of chemicals in Castor by adopting IPM
3. Thematic area	
4. Problem diagnosis	The yield of Castor is reducing drastically due to heavy incidence of pests and diseases. The cost of plant protection is increasing alarmingly
5. Micro farming situation	Rainfed Red/ black soils
6. Year of start	2013
7. Year of completion	
8. Comparisons/treatments	Testcrop:CastorPCH-111,Chlorophyriphos+Carbendazim
a). Farmers practice* (Describe the practice) b) Improved technology (Mention test crop and varieties/variety used in demonstration)	1. Farmers method of plant protection (describe sequence of practice) 2. IPM technology n Castor: Chlorophyriphos@2.5ml and Carbendazim @ 1g/lt. (Explain briefly recommendation- dose, name of chemical, method and time of application along with other measures as per recommendation of SAU)
9. Area covered for each demonstration (ha)	0.4
10. No. of farmers covered	25
11. Amount spent for each demonstration/each farmer	1000/-
12. Contribution of demonstration from a) Project b) Farmers	 750/- 250/-
13. Results	
14. Any other information/details	

Table: Influence of IPM technologies on yield and income in Castor

2014-15

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice	1650	-	29625	62700	33075	1:2.12	
Improved varieties Castor(PCH-111)	1863	-	27675	70794	43119	1:2.56	

Castor: 38/

Based on the agro advisories given during the season, prophylactic spray of Carbendazim 0.1% was taken up against botrytis in castor followed by repetition of spray after rain, gave 12.9% more yield in demonstration compared to farmers practice.

PLANT PROTECTION

1.Name of the technology	Weather based IPM technology in Redgram
2.Objectives of the study	To economize the cost of plant protection of chemicals in Redgram by adopting IPM
3.Thematic area	
4. Problem diagnosis	The yield of Redgram is reducing drastically due to heavy incidence of pests and diseases. The cost of plant protection is increasing alarmingly
5.Micro farming situation	Rainfed Red/ black soils
6.Year of start	2013
7.Year of completion	
8.Comparisons/treatments	Test crop:Redgram Asha-87119,Chlorophyriphos+Dichlorovos
a). Farmers practice (Describe the practice) b). Improved technology (Mention test crop and varieties/variety used in demonstration)	Indiscriminate use of pesticides IPM technologyin Redgram:Chlorophyriphos@2.5ml and Dichlorovos @ 1ml/lt.
9.Area covered for each demonstration (ha)	0.4
10.No. of farmers covered	10
11.Amount spent for each demonstration/each farmer	1500/-
12.Contribution of demonstration from a) Project b) Farmers	 1350/- 150/-
13.Results	

2014

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice (ASHA-857119)	1450	-	29875	84100	54225	1:2.82	
Demonstration (ASHA-857119)	1572	-	28125	91350	63225	1:3.25	

Due to dry spell prevailed during September and October, incidence of Maruca was at rise during the season. With pro active management of maruca, the yields in demonstration were improved by 8.4% over farmer practice.

PLANT PROTECTION:

1. Name of the technology	Management of sucking pests in Bt cotton
2. Objectives of the study	To economize the cost of plant protection of chemicals in Bt cotton by adopting IPM for sucking pests
3. Thematic area	
4. Problem diagnosis	The yield of Bt Cotton is affected due to regular incidence of sucking pests like Jassids, Aphids and Whiteflies. The cost of plant protection is increasing year by year.
5. Micro farming situation	Rainfed Red/ black soils
6. Year of start	2013
7. Year of completion	
8. Comparisons/treatments	Testcrop: Bt Cotton
a). Farmers practice* (Describe the practice) b) Improved technology (Mention test crop and varieties/variety used in demonstration)	1. Farmers method of plant protection (Spraying Mono, Imida and Triazophos) 2. IPM technology : Stem application at 20, 40 and 60 DAS with Mono or Imidacloprid, Instlling Yellow Sticky Traps @ 25/ha, Need based spraying of Imidacloprid @ 0.25 ml/lt
3. Area covered for each demonstration (ha)	0.4
4. No. of farmers covered	25
5. Amount spent for each demonstration/each farmer	1500/-
6. Contribution of demonstration from a) Project b) Farmers	 1350/- 150/-
7. Results	Completed

2014-15

Treatments	Seed yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Farmers practice	2320	-	36500	88160	51660	1:2.42	
Demonstration	2450	-	35250	93100	57850	1:2.64	

Bt Cotton: 38/- per kg:

During the season the incidence of Aphids and Whiteflies were observed in bt cotton, due to dry spells prevailed. Stem application with Imidacloprid and Monocrotophos at 40 and 60 DAS, effectively managed Aphids. And spraying of Triazophos at 90 DAS checked the incidence of whiteflies effectively in the demonstration, which resulted in 5.6% increased yield.

Theme area: Livestock and fisheries

1. Mitigation of Mineral deficiency in milch animals:

2. Name of the technology	Mineral supplementation to milch animals
3. Objectives of the study	To improve the productivity of milk through mineral nutrition
4. Thematic area	Livestock and fisheries
5. Problem diagnosis	Low production of milk due to imbalanced nutritional methods
6. Micro farming situation	dairy animals
7. Year of start	2011
8. Year of completion	
9. Comparisons/treatments	
a). Farmers practice* (Describe the practice) b) Improved technology (Mention test crop and varieties/variety used in demonstration)	1. Farmers practice of feeding (FMF) (Describe the practice of feeding) 2. FMF+ Mineral mixture (80g/animal/day)
10. Area covered for each demonstration (ha)	
11. No. of farmers covered	25
12. Amount spent for each demonstration/each farmer	750
13. contribution of demonstration from a) Project	375

b) Farmers	375
13. Results (Fodder yield, cost of	The results indicated that by supplementing RSMM to the milch animals having post partum anoestrum condition, 11 (44%) animals exhibited heat during the period and also 19.48% increase in milk yield was observed over farmers practice.
14. Any other information/details	

Table: Influence of regional specific mineral mixture on productivity of live stock (2014-15)

Treatments	Average milk yield/animal (L/day)	Total milk yield per animal (L/60days)	No. of animals exhibited heat	Cost of feeding (Rs/animal)	Gross Returns (Rs/animal)	Net returns (Rs/animal)
Farmers practice	4.72	283.2	11	1675.00	9912.00	8237.00
FP+Mineral mixture	5.64	338.4	3	2624.00	11844.00	9220.00
% increase	19.48%					

** farmer's practice of feeding (FP): Feeding of concentrates @ 1kg/2kg milk production.*

Cost of concentrate feed: Rs.12/kg; Cost of milk: Rs.35per lt.

2. Reduction of calf mortality through calf registration programme

1. Name of the technology	Calf registration and healthy calf programme
2. Objectives of the study	To reduce the calf mortality To improve the growth rate in calves
3. Thematic area	Livestock and fisheries
4. Problem diagnosis	High calf mortality and low growth rate in calves
5. Micro farming situation	Dairy farming
6. Year of start	2012-13
7. Year of completion	-
8. Comparisons/treatments	
a). Farmers practice* *(Describe the practice) b) Improved technology (mention test crop and varieties/variety used in demonstration)	1 Farmers practice 2. Calf registration (Monthly de-worming + Vit.A and B-complex supplementation and feeding of calf starter for 5 months@500g/day)
9. Area covered for each demonstration (ha)	
10. No. of farmers covered	25
11. Amount spent for each demonstration/each farmer	Rs.1200/-
12. Contribution of demonstration from a) Project b) Farmers	 900 300
13. Results (Initial body weight and final body weight of small ruminants, cost of feeding, market value or amount realized due to selling (gross income) and net income etc.,)	The results indicated that 31.19% increase in body weight gain was noticed in the registered calves over un registered.
14.Any other information/details	

Table: Calf registration programme (2014-15)

Particulars	Farmers practice*	Treated	Remarks
	Buffalo calves	Buffalo calves	
Initial body weight (kg)	30.8	27.3	-
Final body weight (Kg)	66.7	74.4	-
Body weight gain (kg)	35.9	47.1	-
% increase	31.19%		-
Calf mortality	**12%**	**0**	**-**
Total Gross returns (Rs)	5385.00	7065.00	-
Total cost (Rs)	520.00	1000.00	-
Net returns (RS)	4865.00	6065.00	-

3. Demonstration on Silage making (Preservation of green fodder):

1. Name of the technology	Silage making
2. Objectives of the study	• To Preserve green fodder through silage making • To Supplement green fodder during fodder scarcity.
3. Thematic area	Livestock and fisheries
4. Problem diagnosis	Scarcity of green fodder in summer
5. Micro farming situation	rainfed
6. Year of start	2014
7. Year of completion	-
8. Comparisons/treatments	
a). Farmers practice* *(Describe the practice) b) Improved technology (mention test crop and varieties/variety used in demonstration)	Jowar straw+ Feed Silage +Jowar straw+Feed
9. Area covered for each demonstration (ha)	10 animals
10. No. of farmers covered	10
11. Amount spent for each demonstration/each farmer	Rs.2000.00
12. Contribution of demonstration from a) Project b) Farmers	 Rs.1500.00 Rs. 500.00
13. Results **(Brief results to be summarized)**	15.5% increase in milk yield compare to farmers practice
14.Any other information/details	

Results: Silage feeding (2014-15):

Particulars	Demonstration	Farmers practice
Milk Yield (for 90 days)	432.0	374.0
% increase in milk yield	15.5%	
Additional Income	2368.00	

The demonstration was conducted with 10 farmers at Yagantipalle village. Maize green fodder was preserved in silage bags of 500kg capacity. The silage was fed to milch animals @ 5kg per day along with farmers practice of Jowar straw and regular feed during fodder scarcity period. The results indicated that 15.5% increase in milk yield compare to farmers practice.

Silage bags were introduced for the first time in the village. The technology was well demonstrated by kvk to the dairy farmers. The technology was well received by the farmers as it was feasible and cost effective more over the silage was more palatable than the conventional fodder. The farmers opined that with the use of silage, cost of milk production can be reduced.

Horticulture

Introduction of drip irrigation in Horticulture crops:

Total cultivable area is 1600 acres, of which 70 % is rainfed and remaining area is under irrigation. Main source of irrigation is bore wells. It is one of the examples, where ground water is over exploited, hence declared as noted village under APWALTA act, for arresting further drilling of bore wells. In last ten years water table depleted rapidly from 60 feet to 150feet.In view of the above alarming situation, drip irrigation is one of the water saving technology with better WUE.

Total area under irrigation	**600 Acres**
Area under Horticulture crops	215 Acres
Number of bore wells	150
Area brought under drip irrigation	**125.21 Acres**
Area under pipeline	20 Acres
Target	40 Acres

Details of the area brought under Drip irrigation.

Based on problem identified through PRA conducted in the village, Demonstrations were proposed under NICRA for 2012-15 to extend drip irrigation for horticultural crops in an area of fifty acres and installation was completed in 30 acres. Among total expenses 90% was contributed from APMIP and remaining 10% was contributed by NICRA and farmer equally. A total of 125.21 acres covered during the period 2012-15.

Fifty one farmers cultivating different horticultural crops were selected and the drip system was installed.

Crop	Number of farmers	Area(Acre)
Papaya	02	16.0
Mango	24	72.36
Jasmine	7	10.4
Drum stick	02	5.0
Banana	01	1.0
Vegetable	15	20.45
Total	**51**	**125.21**

Micro irrigation:

1.Name of the technology	Drip irrigation in Mango
2.Objectives of the study	To improve the water use efficiency
3.Thematic area	Micro irrigation
4. Problem diagnosis	Low water use efficiency with surface methods of irrigation
5.Micro farming situation	Rainfed Red/ black soils
6.Year of start	2011-12
7.Year of completion	2014
8.Comparisons/treatments	
a). Farmers practice* (Describe the practice) b) Improved technology (Mention test crop and varieties/variety used in demonstration)	a) Flooding the trees basins with water through field channels b) Drip irrigation with double laterals CROP: Mango Variety: Baneshan
9.Area covered for each demonstration (ha)	1.0
10.No. of farmers covered	10
11.Amount spent for each demonstration/each farmer	5,000/-
12.Contribution of demonstration from a) Project b) Farmers	 5000/- 5000/-
13.Results	Completed

2014-15:

Treatments	Fruit yield (kg/ha)	Fodder Yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio	Remarks
Basin method in mango	8342	-	1,02,540-00	2,91,970-00	1,89,430-00	1:2.8	
Drip irrigation	12542	-	95250-00	4,38,970-00	3,43,720-00	1:4.6	

The data clearly indicated that with drip irrigation gave higher fruit yield (12542 Kg/ha), which was 50.0 per cent more than that of obtained with farmers practice of basin method of irrigation.

The Economic Viability of improved technology over farmers practice was calculated depending on prevailing prices of input and output costs. The improved technologies resulted increased income with cost benefit ratio of 1:4.6/2.8 .

4. INSTITUTIONAL INTERVENTIONS

Custom Hiring center:

Custom hiring center with seed drills, Rotavator, Drumseeders, Taiwan sprayer, sprinklers with Pumpset and sheep de- worming gun etc. was established and the same is running successfully.

1. Name of the technology	Custom hiring center
2. Objectives of the study	To establish community based custom hiring center to provide hiring services of agricultural operations in a village
3. Thematic area	Institutional innovations
4. Problem diagnosis	Low productivity of crops due to lack of timely Operations
5. Micro farming situation	Group based activity in a village
6. Year of establishment	2011
7. No. of families as members in community based custom hiring center	-
8. Contribution for the establishment of the center (Rs) (a) From the Project	6.25 lakhs
(b) Farming community	-
(c) Loan from the Bank	-
(d) Other sources	-
Total	6.25
9. Process of establishment	
10. Date of formation of Management committee	
11. Type s of equipments procured for running the center	Annexure
12. No. of persons engaged on hire basis in running and maintenance of equipments	-
13. No. of meetings held by the Management committee in a year with dates	
14. Recommendations of the committee for improved functioning	
15. Results/ performance	
16. Key leanings for sustainability of the center	

S.No.	Name of the implement	No of Units
1	GPS unit	1
2	Seed drills	3
3	Rotavator	1
4	Power weeder	1
5	7- Tyned gorru	1
6	Sprinkler set	2
7	Oil engine	1
8	Tiwan Spryers	3
9	De-worminggun	1
10	Soil augers	5

Custom Hiring Centre

Land preparation with Rotavator

Sowing with seed drill

Sowing with seed drill

Supplemental irrigation with Pipes

Oil Engine for lifting Irrigation water

Spraying with Tiwan Sprayer

Institutional Interventions:

S.No	Name of interventions undertaken	No.of units	Area covered	No.of farmers covered	Remarks
1	Custom hiring for timely Operations	1	62.4	83	
2	Seed bank	4	3.0	8	
3	Community fodder production	5	7.9	30	
	Total	**10**	**73.3**	**121**	

Table: Performance of custom hiring center

Year	Crops in demand for servicing custom hiring center	Area covered with hiring services (ha)	Amount realized due to services with custom hiring services (Rs)	Amount spent on contact service personnel For running the center	Amount incurred in maintenance of tools and center	Net amount realized due to custom hiring center	Any other information
2014	*Kharif*						
	Redgram						
	Castor						
	Rabi						
	Bengalgram						
	Jowar						
	Total	**62.4**	**8300-00**	**-**	**1500-00**	**8,300-00**	

- **Contribution from Farmers : Rs 1,98,302-00**
- **Amount utilized for Purchase of Implements : Rs 66,900-00**
- **Net amount realized : Rs1,31,402-00**

Seed production (Seed bank):

Quality seed of improved varieties is an important basic input for enhancing productivity of any crop species. The existing mechanisms are not adequate to meet the seed requirements of small-scale farmers and have serious limitations. Particularly to small holder farmers at affordable prices and at the right time to enhance crop productivity and household food security.

The baseline studies in the project area identified key problems related to seed supply system. Lack of timely availability of good quality seeds of high-yielding varieties is one of the major constraints contributing to stagnant yields of crops in the project area.

The project devised alternate seed systems, which ensure availability of quality seed of improved varieties at local level. The concept of village seed banks was promoted and successfully validated in the project village. It not only ensured timely availability of quality seed of farmer-preferred varieties at affordable prices at local level but also enhanced crop productivity and local seed enterprises leading to higher incomes to farmers.

During this kharif seed production in Paddy (BPT-5204) Redgram (Asha-87119) and Korra (SIA-3088) and Bengalgram (NBeG-1) was taken up to establish seed bank in the village.

Bio gas Units:

- Established 11 biogas plants

- Replacement of other rural energy sources: Biogas is fully capable of replacing other rural energy sources like wood, hard coal, kerosene, plant residues etc.
- Reduction in drudgery for rural women folk: Biogas unit will help the women folk for reducing drudgery in collecting firewood. This also helps in reducing physical problems like bronchial complications. Cooking is also easier with a gas stove and takes less time.

- Ecologically Safe: 1 biogas plant is computed to save 32 liters of kerosene and 4 tons of firewood every year.
- Environmental benefits on a global scale: Biogas plants significantly lower the greenhouse effects on the earth's atmosphere. The plants lower methane emissions by entrapping the harmful gas and using it as fuel.
- Economic benefit: Rs 500/- will be the cost of LPG cylinder for a family per month and this helps in saving an amount of Rs. 6000/- per annum

Capacity Building:

Organised 16 skill oriented training programmes covering 479 participants(327 male and 152 female) pertaining to implement On-farm technological demonstrations on participatory mode and technologies in respect of raising crops ,livestock, NRM activities etc., The details of training programmes organized by KVK for the farmers of NICRA village can be detailed as below.

Table: Details of capacity building activities organized for the farmers in NICRA village (2014-15)

Date	Title of the training programmes	Duration in days	No.of programmes organized	No. of participants			Remarks
				Male	Female	Total	
9.07.14& 12.08.14	Resource conservation technologies	1	2	46	15	**61**	
09.06.14 & 21.08.14	Crop diversification	1	2	31	12	**43**	
09.06.14 & 21.08.14	Fodder & feed management	1	2	30	9	**39**	
15.07.14	Nursery raising	1	1	22	12	**34**	
15.07.14	Nutrient management	1	1	20	-	**20**	
21.08.14	Pest& disease management	1	1	19	-	**19**	
9.06.14 & 16.09.14	Livestock management	1	2	85	37	**122**	
14/10/2014	Drudgery reduction with farm implements for women	1	1	-	33	**33**	
17.09.14 & 09.06.14	Crop management	1	2	64	6	**70**	
5/1/2015	Weed control	1	1	10	3	**13**	
22/2/2015	Home science	1	1		25	**25**	
	Total:	11	**16**	**327**	**152**	**479**	

6.1 Extension Activities:

KVK Kurnool extended their services in transferring technologies related to climate resilient agriculture. During 2014-15, KVK organized 114 programmes covering 18317, male farmers and 2019 female famers. The activities include group dynamics, method demonstration, seeding devices, awareness programmes on climate resilient agriculture. Agro advisory services through mobile alert systems, exposure visits and kisan melas etc., the details are annexed below.

ICAR Foundation Day:

Organised ICAR **Foundation Day** on 16th July at NICRA village i.e Yagantipalli. Nearly 120 farmers and farm women were participated in the occasion. Addressed the gathering about Contingent crop planning and agronomic measures in standing crops in view of prevailing drought situation in the village. Chief guest sri Nagaraju, AD , ground water dept., Dr. M.R sreenivasulu, Special officer,

SHE &CS and Programme co-ordinator distributed the certificates to the 100 smart farmers in the village.

Date	Title of the activity	No.of programmes organized	No. of participants			Remarks
			Male	Female	Total	
12/8/14&12/10/2014	Method demonstrations	2	76	17	**93**	
Every Tue & Friday	Agro advisory	96	17950	1937	**19887**	
18/8/14,22/10/14, 11/11/14,22/12/14	Awareness	4	106	24	**130**	
14/9/14,12/10/14	Exposure visits	2	15	4	**19**	
	Field days	1	8	3	**11**	
12/8,22/10,11/10/ 22/10/14,28/2/15, 9/3/15	Group discussions	5	101	29	**130**	
16/10/14,18/11/11 14,10/12/14 ,9/1/15	Diagnostic visits	4	61	5	**66**	
	Total	**114**	**18317**	**2019**	**20336**	

Success stories/ Up scalable Technologies under NICRA Project:

1. Redgram/seteria intercropping system for drought mitigation:

NICRA Village Yagantipalle, Banaganapalle Mandal, Kurnool District, Monsoon onset was late (Third week of July) and the crops experienced prolonged dry spells during grand growth period. Cotton could not be taken up due to late onset of monsoon. Jowar was sown but it was affected with terminal moisture stress. Most of the crops were affected with late on set of monsoon followed by dry spell during critical crop growth periods, which inturn severely effected the yield and income of the dryland farmers. Small millets are important cereal crops. In recent years, there has been increasing recognition of the importance of millets as a substitute for major cereal crops viz., rice,

wheat, maize and sorghum. The millets are the crops that have potentiality of contributing to increase food production both in developing and developed countries. Small millets are grown on marginal lands with poor management practices, and their growing is limited to dry lands. Pulses in general and redgram in particular provide more stability and ensure better monetary returns. However to provide stability in the returns, it is always advisible that an cereal or short duration pulse crop is introduced as a component crop with pigeonpea without any considerable reduction in the yield of main crop.

Intercropping is an age old practice being followed by subsistence farmers to achieve their domestic needs. The main advantage of the intercropping is that the component crops are able to use the growth resources differently and make better overall use of growth resources than grown separately . Pigeonpea is a late maturing, tall growing, wide

spaced crop with deep root system can accommodate rapidly growing, short duration and short statured crops like millets and would prove to be a viable intercropping system.

Adverse weather conditions like delay onset of rains and prolonged dry spells during the crop period is very common in rainfed situation. Such situation results in economic losses to the farmers due to the partial or total failure of the sole crops.

To develop climate resilient alternative crop management systems and to insure against crop failure due to drought during crop growth, KVK adopted , Redgram + Seteria based intercropping systems.

This practice has emerged as a significant drought coping strategy and resulted higher yields per unit area through better use of the bi-model distribution of rainfall.

Table No: Yield Performance :

Year	Component	Variety	No. of Farmers	Area (ha)	Yield q/ha		% increase
					Demo (Seteria+ Redgram)	LC (Seteria)	
2011-12	Intercropping(1:5)	PRG-158+ SIA-3085	25	10.0	16.50+ 2.45	17.85	-
2012-13	Intercropping(1:5)	PRG-158+ SIA-3085	25	10.0	13.86 + 3.45	15.62	-
2013-14	Intercropping(1:5)	PRG-158+ SIA-3085	25	10.0	20.84 +8.15	23.20	-
	Total/wt avg.		**75.0**	**30**	**17.06 +4.68**	**18.89**	**-**

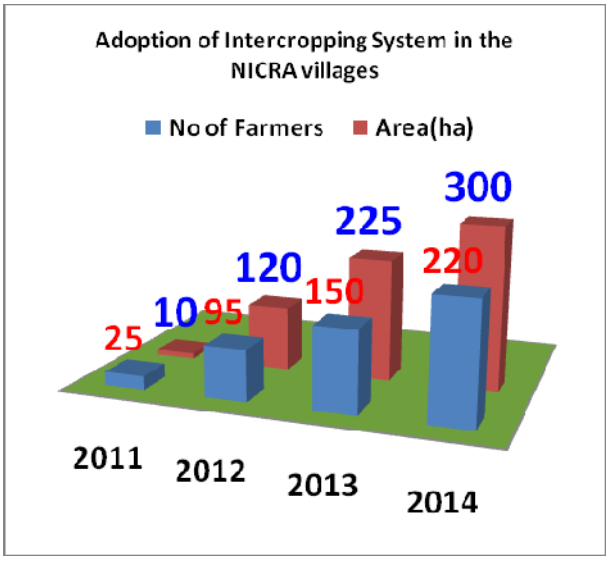
Table No. 33: Economic Performance:

Year	Avg. Cost of Cultivation (Rs./ha)		Avg. Gross Returns (Rs./ha)		Avg. Net Returns(Rs./ha)		BC Ratio	
	Demo	Check	Demo	Check	Demo	Check	Demo	Check
2011-12	15800	11750	29200	22312	13400	10562	1:1.9	1:1.9
2012-13	22856	15973	33900	23430	11044	7457	1:1.74	1:1.47
2013-14	18960	12955	58650	27532	39690	14577	1:3.09	1:2.13
Average	**19205**	**13559**	**40583**	**24424**	**21378**	**10865**	**1:2.24**	**1:1.83**

- Results of demonstration on intercropping of Redgram + Seteria in row ratio of 1:5 indicated that the gross income was higher (Rs.40583/-) than sole crop of seteria (Rs. 24424/-).
- The results on cropping system oriented demonstrations against drought mitigation clearly indicated that above inter cropping systems are economically advantageous than sole crops under rainfed situations.

Farmers' feedback:

- Redgram and seteria intercropping system found to be remunerative than sole crop of seteria/redgram even under drought conditions.
- Fodder needs of cattle and milch animals was met.
- While maintaining the yield levels of the sole crop, additional yields with the intercropping component have been realized.
- Since, a food legume is involved in the system, it will not only enhance the income of the farmer, but also provide with the much-needed protein to supplement the predominantly cereal diet of farmers, besides adding fertility to the Soil.



2. Seteria as Alternate Crop:

Yagantipalle Village in Kurnool district of Andhra Pradesh actually receives 20 to 30 percent deficit rainfall than normal annual rainfall of 630mm .Pigeon pea, cotton, sunflower and sorghum are the main crops of the village. Most of the crops get affected with late on-set of monsoon followed by dry spells during critical crop growth periods affecting the the crop yields and income of the rainfed farmers. To develop climate resilient alternate crops and to insure against crop failure due to drought during crop growth, KVK Kurnool (Y) introduced short duration Seteria (SIA-3085) and Suryanandi.

- Crop matures 76 to 82 Days
- Panicle purple in colour having bristles
- Stem base purple in colour
- Tolerant to downy mildew
- Tolerant to drought

Table : Yield Performance

Year	Component	Variety	No. of Farmers	Area (ha)	Yield q/ha		Per cent increase
					Demo	LC	
2010-11	Variety	SIA-3085	25	10.0	18.85	16.08	17.2
2011-12	Variety	SIA-3085	25	10.0	14.62	12.80	14.20
2012-13	Variety	SIA-3085	25	10.0	23.20	18.75	23.75
2013-14	Variety	Suryanandi	25	10.0	21.50	18.86	14.0
			100	**40.0**	**19.54**	**16.62**	**17.28**

Table No. 33: Economic Performance

Year	Avg. Cost of Cultivation (Rs./ha)		Avg. Gross Returns (Rs./ha)		Avg. Net Returns(Rs./ha)		BC Ratio	
	Demo	Check	Demo	Check	Demo	Check	Demo	Check
2010-11	11972	11500	23900	20387	11928	8887	1:2.0	1:1.77
2011-12	15973	15850	21936	19200	5963	3350	1:1.37	1:1.21
2012-13	12955	12750	27532	22250	14577	9500	1:2.13	1:1.74
2013-14	12060	12060	26875	23575	14815	11515	1:2.23	1:1.95
Average	**13240**	**13040**	**25060**	**21353**	**11820**	**8313**	**1:1.91**	**1:1.66**

With this high yielding variety they were getting on an average of 19.54 q /ha of grain and more fodder yield over local check. Moreover the improved varieties 10-15 days early comparative to local check. The yield level and income of farmers could be substantially increased by the adoption of recommended technology, enhancement in yield was around 17.82 %..

Feed back of Farmers: Kharif and rabi crops suffered due to acute moisture stress due to prolong dry spells and dearth of stored soil moisture in the early stages of crop growth and subsequently prolonged drought conditions. During these aberrant weather conditions seteria perfomed well and farmers got net returns of Rs.11,820-00/ha under rainfed situations. Farmers opined that seteria crop is best suited for rainfed situations and straw is also useful as fodder

Horizontal Spread of Technology: In View of drought tolerance, the seteria crop is preferred for introducing in the village so as reap Maximum yield and higher returns obtained under harsh weather conditions. In view of its superior performance the crop area increased from 40 to 400acres in the village during kharif 2014. Area expansion under this crop is expected during ensuing season also.

The adoption of seteria crop by the farmers was due to its suitability to delayed monsoon, its duration and additional benefit of fodder.

Calf registration and Healthy calf programme:

Introduction:

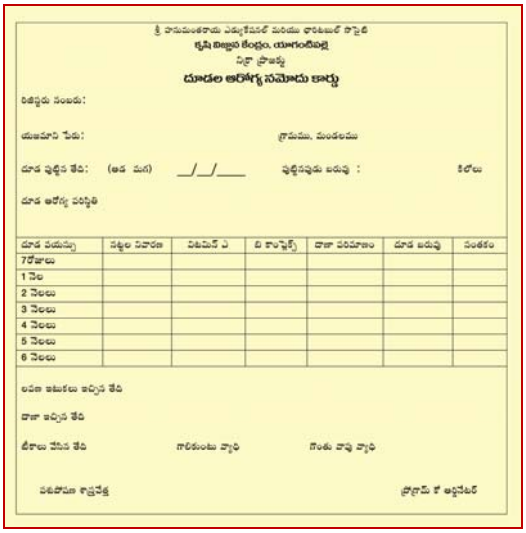
Dairy farming is the most sustainable livelihood to the farmers. Continuous growth in dairy sector in Kurnool district indicates the interest of the farmers towards this sector. Scientific rearing of dairy animals will keep the animals healthy as well as productive. Especially, calves are neglecting and are not offering proper medication and feeding. This resulting in poor growth rate and delayed maturity (4-5years). To educate the farmers towards scientific practices in calf rearing "Calf registration and healthy calf programme" was initiated during 2011-12 under NICRA project in Yagantipalle village.

Methodology:

Initially two villages viz. Yagantipalle and Meerapuram of Banaganapalle mandal were selected for the study. Training programme was organized to create awareness about the programme.

- The farmer has to register his calf immediately after birth
- Technical staff of KVK visits the calf and cut the umbilical card and the record the body weight. He will closely monitor calf in feeding of colostrums.
- A calf health card will be issued to the farmers filling the initial data about the calf.

Calf Health Card



- Calf health card contains details about medication, feeding and growth particulars of the registered calf.
- Every month a health camp will be conducted to treat the registered calves in both the villages.

- De-worming, Supplementation of Vit.A and B-Complex was done to the calves. Body weight was recorded in the health card.
- From the second month onwards, calf starter was provided to feed the calves along with milk as make balance diet.
- To mitigate the mineral deficiency, salt bricks were also given to the registered calves.
- In this programme, the registered calves were provided scientific feeding and medication up to six months age.

Schedule of medication:

Age of the calf	Medication
7th Day	Deworming
1 month	Dewoming + Vit. A
2 months	De worming + Vit.A FMD Vaccination
3 months	Deworming + Vit A + B Complex
4 months	Deworming + Vit A + B Complex
5 months	Deworming + Vit A + B Complex
6 months	Deworming + Vit A + B Complex FMD vaccination

Result:

The registered calves gain 82.24kg in 5 months of age where as control group gain 55.83kg only. AS the growth rate was more, the calves exhibited heat early at 2 years age. The programme created a great impact among the farmers about calf rearing.

Particulars	Registered calves	Control
Initial Body weight (mean) kg	31.37	32.15
Final Body weight (mean) kg	113.61	87.98
Body weight gain (in 150 days)	82.24	55.83
Mortality (%)	4%	12%

The programme was taken up from 2011-12 in Yagantipalle and Meerapuram villages. 250 calves were registered and scientific practices were adopted under NICRA project during the year 2011-14. Among them 40 cow heifers and 15 buffalo heifers exhibited heat and conceived.

Year	No of calves registered		No. animals exhibited heat	
	White	Black	White	Black
2011-12	60	40	-	-
2012-13	50	50	22	6
2013-14	25	25	9	3
2014-15	-	25	9	6

Outcome:

The farmers convinced about the programme and adopted to their calves in both the villages. It helped the farmers to create awareness on scientific rearing of calves.

Enrichment of maize stover trough Haylage

Introduction:

Maize is cultivating in more than 200 acres during both Kharif and Rabi seasons in Yagantipalle village. After harvesting of maize cobs, the leftover straw was burnt or incorporated into the soil. Some farmers use this fodder as it is for the milch animals. The more of stem portion in the maize stover was relished by the animals and gone waste. It was observed that 45% of maize stover was not utilized by the animals. To minimize the fodder wastage and also to enrich the nutrients, the demonstration was conducted for three years from 2011-14 under NICRA project.

Methodology:

- After harvesting of maize cobs, the left over stover was chopped into small pieces of 1-2cm size using chaff cutter.

- Chopped fodder was mixed with haylage solution (for 100kg fodder 20lt of water + 2kg Joggery+2kg urea+2kg salt) and kept it in air tight condition.
- After 2 weeks the fodder is opened and fed the animals @ 5kg per day.

Result:

By this method palatability of fodder can be improved and also the crude protein increased from 3.7% to 6%. The wastage of fodder was reduced from 45% to 11.3% and also 7.83% increase in milk yield was observed.

Year	No. of Farmers	Yield Body weight/Milk yield		Increase in yield (%)	Fodder wastage	
		Demo	Control		Demo	Local
2011-12	10	378.2	353.8	6.9	13%	54%
2012-13	20	338.4	309.5	9.3	12%	42%
2013-14	20	348.6	324.5	7.4	9%	39%
Average	**50**	**355.06**	**329.26**	**7.83**	**11.33**	**45.0**

Conclusions:

The coarse roughages like maize stover can be effectively utilized by this method and also the fodder scarcity can be overcome during the summer months. The burning of maize stover was reduced in Yagantipalle village by this intervention under NICRA project.

Gender Mainstreaming in Climate Change By Establishment of Bio-Gas Units - A Whole Village Approach :

Introduction:

Krishi Vigyan Kendra adopted Yagantipalle village and survey was conducted in the village and it was found that nearly 80% of households are using fire wood in open chullahs. Cooking on open firewood again depends on the dietary pattern of the villagers i.e, for preparation of Jowar rotis which requires high flame. More than 50% of the households are having LPG Connections and the cost of LPG is Rs.550/- per cylinder. The households are having two to three milch animals. The dung is not properly utilized and disposed in their backyards which creates environmental in sanitation.

Methodology:

Group discussion was conducted with the women folk of that village and they expressed that Fetching of fire wood for long hours in hillocks and jungles induces drudgery i.e, body pains, scratches and injuries on hands and legs, thrustyness, dust on hair and majoring is social security problem, fearness towards LPG when they go out for farming activity and unaware of proper utilization of dung.

Awareness was created among the women about importance of construction of Bio-gas units and its advantages vs health hazards and difficulties with open fire wood cooking. In the beginning six women came forward for construction. The advantages of Bio-Gas plants created awareness among farm women. 22 Bio-gas units were constructed during the period from 2012 to 2014 under NICRA Project.

Impact: After Construction and using of the units, the farm women are very happy and expressed that the bio-gas.,

- Reduced drudgery in searching of firewood and provides social security
- Improved their quality of life and helped them for using their leisure time , labour and freeing them for economic productivity.
- Reduced expenditure (i.e, Rs.9500/-/year) on other rural energy resources like Wood, Hard coal, kerosene, plant residues (Saves 32 lts of kerosene & 11/2 of tractor loads of firewood @ Rs 5000/-tractor).
- The dung is effectively utilizing for production of bio-gas and it produces quality compost of 10 tonnes/unit/year.
- The slurry from bio-gas units is using as organic manure in their farm in place of chemical fertilizers in turn reduces cost of cultivation.
- Reduces health risks i.e, respiratory diseases, eye ailments, burning accidents etc.for women and children associated with open fire.
- This Energy form is clean burning and completely natural so it has no adverse effects on the environment. It also reduces the amount of methane and carbon dioxide released into the environment.
- Reduced the risks and tensions associated with LPG when they leave home for farming activity.

- It also improves the sanitary condition of back yard and its surroundings by disposal of plant and animal wastes.

8. Visit of dignitaries –NICRA village (2014-15):

Date	Name and address of the visitor	Comments on performance
9.06.2014	**Krishna chaitanya**	Thirdparty evaluation
20.09.2014	**Pandey**	Vedio shooting for kharif crops
20.01.2015	**Pandey**	Vedio shooting forRabi crops

9. Budgetary details of the NICRA center (2014-15)

S. No	Budgetary Head	Amount Rs in lakhs			Remarks
		Sanction	Release	expenditure	
1	Recurring contingency	12.00	12,23,932-00	12,48,200-00	**1800-00**
2	TA	0.50			
	Total	**12.50**	**12,23,932-00**	**12,48,200-00**	**1800-00**

10. List of contributors for implementing the NICRA Programme:

S.No.	Name	Designation	Address	Phone and e-mail
1	Smt.G.Dhanalakshmi	Programme Coordinator	SHE & CS, Krishi vigyan Kendra , Yagantipalli, Kurnool A.P	9440607424
2	Sri M.Sudhakar	SMS(Agronomy)		9440739378
3	Sri K.V.Ramanaiah	SMS(Soil Science)		9440238071
4	Sri. D.Balaraju	SMS(Plant Protection)		9493836890
5	Sri.K.V.Rajeswara Reddy	SMS(Horticulture)		9848609233
6	Sri.A.Krishnamurthy	SMS(AH)		9493619020
7	Smt.K.Lakshmipriya	Pro.Asst(Hsc)		9441192765
8	R.Venkat Naik	S R F		9666747842
9	P.Vishnu Mohan Reddy	S R F		9963875833

List of Annexures to be enclosed in Annual report

ANNEXURE-I

Rainfall details in NICRA village -2014-15

Days	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
2	000.0	000.0	000.0	000.0	000.0	068.0 (1)	000.0	000.0	000.0	000.0	000.0	000.0
3	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
4	000.0	000.0	000.0	000.0	000.6	000.0	000.0	000.0	000.0	000.0	000.0	000.0
5	000.0	000.0	003.0(1)	000.0	004.4(1)	000.0	000.0	000.0	000.0	000.0	000.0	000.0
6	000.0	000.0	000.0	000.0	000.0	000.0	009.6(1)	000.0	003.2(1)	000.0	000.0	000.0
7	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	004.4(1)	000.0	000.0
8	000.0	000.0	000.0	000.0	001.4	000.0	000.0	000.0	000.0	000.0	000.0	000.0
9	000.0	000.0	000.0	008.4(1)	000.0	064.0(1)	002.0	000.0	000.0	000.0	018.4(1)	000.0
10	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
11	000.0	000.0	000.0	000.0	000.0	000.0	003.4(1)	000.0	000.0	000.0	000.0	005.0(1)
12	000.0	000.0	000.0	000.0	000.0	000.0	019.6(1)	005.0(1)	000.0	000.0	000.5	000.0
13	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	008.2(1)	000.0	002.5(1)	000.0
14	000.0	000.0	000.0	000.0	000.0	000.2	001.2	000.0	005.6(1)	000.0	002.6(1)	000.0
15	000.0	001.4	000.0	000.0	000.0	000.0	000.0	000.0	008.2(1)	000.0	000.0	000.0
16	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	006.4(1)	000.0	000.0	000.0
17	000.0	000.0	000.0	000.0	000.0	000.0	000.0	002.4	000.5	000.0	000.0	000.0
18	000.0	000.0	000.0	000.0	000.0	000.0	000.0	053.8(1)	000.0	000.0	000.0	000.0

19	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
20	000.0	000.0	000.0	000.0	002.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
21	000.0	000.0	000.0	000.0	000.0	000.0	000.0	017.5(1)	000.0	000.0	000.0	000.0
22	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
23	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
24	000.0	000.0	000.0	000.0	000.0	000.0	000.0	130.5(1)	000.0	000.0	000.0	000.0
25	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	097.0(1)	000.0	000.0
26	000.0	000.0	000.0	000.0	000.0	000.0	000.0	013.0(1)	000.0	004.0(1)	000.0	000.0
27	000.0	000.0	000.0	000.0	0031.2(1)	003.2(1)	007.6(1)	000.0	000.0	010.5(1)	000.0	000.0
28	000.0	000.0	000.0	000.0	000.0	000.0	006.8(1)	012.8(1)	000.0	000.0	000.0	000.0
29	000.0	-	000.0	000.0	000.0	000.0	000.0	003.8(1)	000.0	000.0	000.0	000.0
30	000.0	-	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0	000.0
31	000.0	-	000.0	-	000.0	-	000.0	000.0	-	000.0	-	000.0
Total	**000.0**	**001.4**	**003.0**	**008.4**	**039.6**	**135.4**	**050.3**	**238.8**	**032.1**	**115.9**	**024.0**	**005.0**
Rainy days	**0**	**0**	**1**	**1**	**2**	**3**	**5**	**7**	**5**	**4**	**3**	**1**

Annexure- II

Farmer wise yield data for different interventions implemented --- 2014-15

Title of the intervention : Seteria as alternate crop

1. Year of the study : 2014-15
2. No. of farmers covered : 30
3. Area covered in each demonstration (ha) : 0.4
4. Total area covered in the intervention (ha) : 12

S.No	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	Y.Nagi reddy	2440	**3rd week of July**	**1st week of October**
2	Y.Maheswara reddy	2480	17-7-2014	7-10-2014
3	B.Venkatsubba reddy	1920	19-7-2014	10-10-2014
4	B.Narayana reddy	2320	21-7-2014	12-10-2014
5	B.Venkateswara reddy	2440	16-7-2014	11-10-2014
6	Lakshmidevi	2280	15-7-2014	9-10-2014
7	D.Dasthagiramma	1760	13-7-2014	10-10-2014
8	B.Sreenivasa reddy	1880	21-7-2014	12-10-2014
9	B.Lakshmi reddy	2160	27-72014	15-10-2014
10	B.Sivanagi reddy	1960	19-7-2014	10-10-2014
11	B.Suryanarayana reddy	2480	16-7-2014	9-10-2014
12	B.Venkatesubba reddy	2120	19-7-2014	8-10-2014
13	B.Chandrasekar reddy	2280	22-7-2014	11-10-2014
14	B.Suvarna	1840	24-7-2014	14-10-2014
15	B.Chinnasubba reddy	1880	27-7-2014	13-10-2014
16	S.Bramhananda reddy	2120	19-7-2014	6-10-2014
17	G.Kakaiah	1760	22-7-2014	9-10-2014
18	G.Bramhaiah	2080	21-7-2014	12-10-2014
19	G.Sreenu	2080	22-7-2014	17-10-2014
20	G.Ramasubbamma	2240	16-7-2014	5-10-2014
21	S.Balavenkat reddy	2080	18-7-2014	10-10-2014
20	Y.Chinnapulla reddy	2320	23-7-2014	15-10-2014
23	G.Nagarjuna reddy	1960	14-7-2014	09-10-2014
24	S.prathap reddy	2200	13-7-2014	12-10-2014
25	S.B.V.B .Mallika	2040	15-7-2014	13-10-2014
26	B.Malleswara reddy	2080	18-7-2014	09-10-2014
27	D.Dasthgiri reddy	1880	13-7-2014	13-10-2014
28	B.Saisudha reddy	1920	09-7-2014	15-10-2014
29	B.obula reddy	2160	11-7-2014	13-10-2014
30	B.Nagi reddy	2080	17-7-2014	10-10-2014
Total		**2108**		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Castor as Alternate crop

2 .Year of the study : 2014-15

3. No. of farmers covered : 25

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha) : 10

S no	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	B.Subbamma	1160	2nd week of July	2nd week of January
2	B.Suryanarayan reddy	1120	11-7-2014	19-1-2015
3	B.Chandrsekar reddy	1040	14-7-2014	14-1-2015
4	D.C.Subbareddy	1200	10-7-2014	11-1-2015
5	P.Maheswarappa	1160	14-7-2014	09-1-2015
6	B.Ramakrishna reddy	1040	19-7-2014	25-1-2015
7	B.Venkatsubbareddy	1000	12-7-2014	17-1-2015
8	B.Lakshmidevi	1200	20-7-2014	16-1-2015
9	D.Lakshmidevi	1080	14-7-2014	18-1-2015
10	B.Ramlakshmamma	1240	12-7-2014	17-1-2015
11	B.Malleswara reddy	1120	10-7-2014	9-1-2015
12	B.Jagadeswar reddy	1280	16-7-2014	12-1-2015
13	B.Janrdhan reddy	1000	21-7-2014	10-1-2015
14	B.Rajagopal	1240	13-7-2014	17-1-2015
15	K.M.Swamy	1040	16-7-2014	19-1-2015
16	S.Venkat reddy	1160	15-7-2014	16-1-2015
17	B.Thimma reddy	1080	19-7-2014	11-1-2015
18	D.Husaini	1280	14-7-2014	11-1-2015
19	D.Alisab	1200	12-7-2014	20-1-2015
20	D.Dasthagiramma	1160	15-7-2014	09-1-2015
21	B.Venkateswara reddy	1120	09-7-2014	12-1-2015
22	B.Sreenivasa reddy	1120	16-7-2014	23-1-2015
23	B.Narayana reddy	1160	13-7-2014	20-1-2015
24	D.Suresh	1200	16-7-2014	16-1-2015
25	D.Narashimudu	1120	12-7-2014	10-1-2015
	AVG	**1141**		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Drought tolerant varities Redgram (Asha-87119)

2 .Year of the study : 2014-15

3. No. of farmers covered : 23

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha) : 9.2

S no	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	S.Siva reddy	1120	2nd week of july	2nd week of January
2	B.Prameswara reddy	1280	12-7-2014	10-2-2015
3	Y.Sreenivasa reddy	1400	15-7-2014	17-2-2015
4	B.Jagadeswara reddy	1160	20-7-2014	11-2-2015
5	S.Chandrasekar reddy	1680	13-7-2014	10-2-015
6	Y.Sreenivasa reddy	1440	17-7-2014	9-2-2015
7	B.Balavenkat reddy	1200	12-7-2014	12-2-2015
8	P.Krishna reddy	1240	10-7-2014	16-2-2015
9	P.Chandrasekar reddy	1480	21-7-2014	18-2-2015
10	S.Venkat reddy	1280	22-7-2014	20-2-2015
11	S.Sarswathi	1120	12-7-2014	18-2-2015
12	B.Prathap reddy	1680	16-7-2014	12-2-2015
13	B.Sivareddy	1360	12-7-2014	10-2-2015
14	Y.Chennaiah	1720	20-7-2014	9-2-2015
15	K.Nagamaddilety	1200	23-7-2014	12-2-2015
16	S.Sivaprasad reddy	1320	19-7-2014	10-2-2015
17	S.Maheswara reddy	1240	13-7-2014	11-2-2015
18	S.Vijayabaskar reddy	1360	23-7-2014	17-2-2015
19	B.Malleswara reddy	1160	21-7-2014	18-2-2015
20	B.V.Sudhakar reddy	1080	21-7-2014	16-2-2015
21	M.Lalithamma	1600	12-7-2014	12-2 -2015
22	V.Thirupal reddy	1560	12-7-2014	12-2-2015
23	B.Ramagopal reddy	1400	16-7-2014	16-2-2015
24	M.chalapathi	1375	23-7-2014	12-2-2015
25	G.Subbarayudu	1560	19-7-2014	10-2-2015
Avg		**1361**		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Drought tolerant variety Bengal gram (Nandyal sanaga-1)

2 .Year of the study : 2014-15

3. No. of farmers covered : 20

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha): 8

S no	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	B.Prathap reddy	1280	28-10-2014	27-1-2015
2	B.Lakshmidevamma	1160	29-10-2014	12-1-2015
3	S.Balasubba reddy	1240	30-10-2014	20-1-2015
4	S.Sreenivasa reddy	1040	31-10-2014	27-1-2015
5	S.Sreenivasa reddy	960	29-10-2014	29-1-2015
6	B.Siva reddy	1120	30-10-2014	20-1-2015
7	B.Prathap reddy	1040	26-10-2014	25-1-2015
8	K.Rammaddilety	1240	28-10-2014	24-1-2015
9	M.Krishnudu	1320	31-10-2014	20-1-2015
10	V.Thirupam reddy	1400	29-10-2014	28-1-2015
11	B.Narayan reddy	1520	02-11-2014	21-1-2015
12	B.Ramsubba reddy	1240	28-10-2014	19-1-2015
13	B.Siva reddy	1280	29-10-2014	15-1-2015
14	B.Sivasankar reddy	1200	30-10-2014	02-2-2015
15	S.Bhagyamma	1320	30-10-2014	28-1-2015
16	M.Thirupalaiah	1360	29-10-2014	26-1-2015
17	S.Rajeswaramma	1440	05-11-2014	25-1-2015
18	B.Ramachandra reddy	1560	28-10-2014	29-1-2015
19	K.Thimma reddy	1280	27-10-2014	25-1-2015
20	S.Maheswara reddy	1240	31-10-2014	22-1-2015
AVG		1262		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Intercropping systems (Red gram + Seteria, 1:5)

2 .Year of the study : 2014-15

3. No. of farmers covered : 34

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha) : 13.6

S no	Farmer	Seed yield (kg/ha)		Date of sowing	Date of harvesting
		Redgram	Korra		
1	G.Siva nagaraju	360	2200	16-7-2014	15-2-2015
2	S.Brabhananda reddy	400	1880	17-7-2014	12-2-2015
3	B.Venkatarami reddy	280	2040	13-7-2014	16-2-2015
4	B.Venkatasiva reddy	420	1960	15-7-2014	19-2-2015
5	K.ChinnaThimmaiah	440	2080	18-7-2014	16-2-2015
6	K.Maddilety	480	1800	23-7-2014	10-2-2015
7	M.Ramadasu	520	2350	23-7-2014	13-2-2015
8	P.Thimma reddy	360	2120	21-7-2014	15-2-2015
9	K.Konda reddy	560	1880	20-7-2014	19-2-2015
10	G.Nagasubba reddy	632	2100	13-7-2014	16-2-2015
11	G.Krishna reddy	480	1960	14-7-2014	20-2-2015
12	S.Jagadish reddy	596	1880	16-7-2014	17-2-2015
13	B.Siva satya narayan reddy	465	1960	23-7-2014	15-2-2015
14	S.Ramakrishna reddy	480	1760	20-7-2014	13-2-2015
15	S.Sivaprasad reddy	423	2320	15-7-2014	12-2-2015
16	B.Ramakrishna reddy	560	1950	21-7-2014	16-2-2015
17	Suvarna	480	1690	15-7-2014	10-2-2015
18	Madhavilatha	440	1840	21-7-2014	15-2-2015
19	B.Thimma reddy	432	2160	16-7-2014	17-2-2015
20	D.husaini	520	1750	19-7-2014	16-2-2015
21	D.Peddahusaini	562	1960	15-7-2014	12-2-2015
22	B.Baskar reddy	498	1860	16-7-2014	14-2-2015
23	B.Thulisemma	580	1750	23-7-2014	19-2-2015
24	B.Chandrasekar reddy	534	1760	17-7-2014	21-2-2015
25	B.Lakshmidevamma	560	2210	13-7-2014	13-2-2015
26	B.Venkateswara reddy	564	1960	15-7-2014	12-2-2015
27	B.Thimma reddy	440	1920	16-7-2014	16-2-2015
28	P.Bashaiah	462	2040	13-7-2014	10-2-2015
29	B.V.Suryanarayan reddy	520	1860	20-7-2014	10-2-2015
30	Y.Madhusudhan reddy	530	1850	14-7-2014	13-2-2015
31	B.Gopal reddy	586	2050	15-7-2014	15-2-2015
32	B.Saikumar reddy	440	1850	12-7-2014	19-2-2015
33	Y.Maddilety reddy	490	1950	16-7-2014	16-2-2015
34	B.Rami reddy	495	1800	13-7-2014	20-2-2015
Avg		**488**	**1956**		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Alkali Soil

2 .Year of the study : 2014-15

3. No. of farmers covered : 10

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha) : 4.0

S no	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	G.Nagarjuna reddy	3900	18-9-2014	25-1-2015
2	S.Gopal reddy	3915	20-9-2014	23-1-2015
3	B.Jagadeeswara reddy	3875	22-9-2014	27-1-2015
4	S.Venkatasubba reddy	3985	22-9-2014	26-1-2015
5	B.Thirupam Reddy	3950	20-9-2014	01-2-2015
6	S.Balasubba reddy	3902	24-9-2014	05-2-2015
7	G.Lakshmi Reddy	3910	25-9-2014	05-2-2015
8	M.Subbaiah	3950	19-9-2014	30-1-2015
9	S.Vijayabhaskar Reddy	3892	20-9-2014	30-1-2015
10	S.RmakrishnaReddy	3918	20-9-2014	29-1-2015
AVG		3920		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : IPM management in Castor

2 .Year of the study : 2014-15

3. No. of farmers covered : 25

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha) : 10

S no	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	K.Muniswamy	1950	2nd week of july	25-1-2015
2	S.Venkata Reddy	2350	13-7-2014	27-1-2015
3	B.Ramakrishna Reddy	2180	12-7-2014	21-1-2015
4	B.Jagadeswara Reddy	2150	15-7-2014	02-2-2015
5	D.Hussaini	2350	20-7-2014	23-1-2015
6	B.Venkateswara Reddy	2260	13-7-2014	29-1-2015
7	B.Narayana Reddy	2630	17-7-2014	30-1-2015
8	D.Narasimhudu	2290	12-7-2014	01-2-2015
9	K.Rami Reddy	2340	10-7-2014	24-1-2015
10	B.Subbamma	2180	21-7-2014	22-10-2015
11	B.Suryanarayana Reddy	1985	22-7-2014	27-2-2015
12	D.Subba Reddy	2450	12-7-2014	25-1-2015
13	B.Ramakrishna Reddy	2180	16-7-2014	05-2-2015
14	B.Venkata Subba Reddy	1950	12-7-2014	09-2-2015
15	G.Rajagopal	2050	20-7-2014	29-2-2015
16	P.Maheswarappa	2230	23-7-2014	27-1-2015
17	B.Ramalakshmamma	2350	19-7-2014	10-2-2015
18	S.Ramakrishnareddy	1920	13-7-2014	06-2-2015
19	K.Obulesu	2390	23-7-2014	25-1-2015
20	M.Lakshmidevi	2450	21-7-2014	26-1-2015
21	B.Thimma reddy	1950	21-7-2014	23-1-2015
22	K.M.Eswar	1950	12-7-2014	05-2-2015
23	D.Sarvesh	2350	12-7-2014	11-2-2015
24	B.Chandrasekhar Reddy	2180	16-7-2014	29-1-2015
25	B.Dashagiramma	2150	23-7-2014	27-1-2015
	AVG	**1863**		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Sucking pest management in Bt.Cotton

2 .Year of the study : 2014-15

3. No. of farmers covered : 33

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha): 13.2

S no	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	S.Prasad Reddy	2254	28-5-2014	27-1-2015
2	B.V. Sudhakar Reddy	2350	29-5-2014	12-2-2015
3	Y.Sreenivasa Reddy	2514	10-6-2014	20-1-2015
4	M.Krishnudu	2431	11-6-2014	27-1-2015
5	Uppari Lakshmaiah	2305	09-6-2014	29-1-2015
6	G.Subbarayudu	2385	05-6-2014	20-1-2015
7	K.Venkatasubbaiah	2450	06-6-2014	25-1-2015
8	P.Chinna Krishna Reddy	2620	18-62014	24-1-2015
9	B.Eswaraiah	2550	11-6-2014	20-1-2015
10	B.Prathap Reddy	2350	09--2014	28-1-2015
11	S.Sivarami Reddy	2465	10-7-2014	21-1-2015
12	B.Ramachandra Reddy	2850	28-6-2014	19-1-2015
13	K.Pullanna	2540	19-6-2014	15-1-2015
14	Y.Sudhakar Reddy	2345	10-6-2014	02-2-2015
15	S.Ramakrishna Reddy	2350	10-6-2014	28-1-2015
16	B.Sivasankar Reddy	2650	15-7-2014	26-1-2015
17	B.Gopal Reddy	2545	05-7-2014	25-1-2015
18	P.Krishna Reddy	2540	18-6-2014	29-1-2015
19	M.Thirupalaiah	2345	17-6-2014	25-1-2015
20	K.Maddileti	2385	11-6-2014	22-1-2015
21	K.Bala Maddileti	2445	28-5-2014	26-1-2015
22	D.P.Dasthagiri	2650	29-5-2014	25-1-2015
23	B.Maddileti Reddy	2520	10-6-2014	29-1-2015
24	Y.Raghurami reddy	2450	11-6-2014	25-1-2015
25	B.Manohar Reddy	2350	09-6-2014	22-1-2015
26	M.Channaiah	2445	05-6-2014	26-1-2015
27	V.Venkat Kondanna	2285	06-6-2014	25-1-2015
28	D.Babaiah	2460	18-62014	29-1-2015
29	K.Mdhavachari	2350	15-7-2014	25-1-2015
30	K.Janardhanachari	2450	05-7-2014	22-1-2015
31	K.Madhusudhanachari	2400	18-6-2014	26-1-2015
32	Y.Parthasarathi Reddy	2450	17-6-2014	25-1-2015
33	M.Kasaiah	2372	11-6-2014	29-1-2015
Avg		**2450**		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : IPM management in Red gram (Asha-87119)

2 .Year of the study : 2014-15

3. No. of farmers covered : 20

4 .Area covered in each demonstration (ha) : 0.4

5 .Total area covered in the intervention (ha) : 8.0

S no	Farmer	Seed yield (kg/ha)	Date of sowing	Date of harvesting
1	S.Siva Reddy	1462	2nd week of july	8-2-2015
2	D.Parameshwar Reddy	1360	12-7-2014	10-2-2015
3	Y.Sreenivasa Reddy	1650	15-7-2014	9-2-2015
4	B.Jagadeswara Reddy	1570	20-7-2014	28-2-2015
5	S.Chandrasekhar Reddy	1490	13-7-2014	13-2-2015
6	Y.Sreenivasa Reddy	1440	17-7-2014	16-2-2015
7	B.Balavenkat Reddy	1590	12-7-2014	5-2-2015
8	P.Krishna Reddy	1860	10-7-2014	18-2-2015
9	P.Chandraharsha Reddy	1650	21-7-2014	16-2-2015
10	B.Prathap Reddy	1520	22-7-2014	21-2-2015
11	B.Siva Reddy	1530	12-7-2014	26-2-2015
12	Y.Channaiah	1680	16-7-2014	6-2-2015
13	K.Nagamaddileti	1590	12-7-2014	10-2-2015
14	S.Sivaprasad Reddy	1720	20-7-2014	7-2-2015
15	S.Vijaya Bhaskar Reddy	1460	23-7-2014	19-2-2015
16	B.Malleswar Reddy	1750	19-7-2014	23-2-2015
17	B.V.Sudhakar Reddy	1460	13-7-2014	26-2-2015
18	M.Lalithamma	1580	23-7-2014	19-2-2015
19	V.Thirupal Reddy	1430	21-7-2014	15-2-2015
20	B.Ramagopal Reddy	1650	21-7-2014	22-2-2015
Avg		**1572**		

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Calf Regristation

3. No. of farmers covered : 25

4 .Area covered in each demonstration (ha) :

5 .Total area covered in the intervention (ha):

S no	Farmer	Calf Registration Programme	
		Initial B.wt(Buffalo)	Final B.wt(Buffalo)
1	V.Pullareddy	25.4	74.6
2	V.Ramadevi	25.8	76.9
3	D.Jamalbee	26.4	73.4
4	V.Thirupalreddy	26.2	75.2
5	S.Gopinath	28	73.8
6	Y.Thirupalreddy	25.2	72.2
7	P.Somasekar	24.6	73.4
8	M.Harinath	23.6	73.8
9	D.N.Maddilety	25.6	72.6
10	B.Jayaramudu	23.8	76.8
11	B.Rameswarareddy	24.6	74.2
12	K.Subbarayudu	24.2	76.8
13	V.Obulareddy	27.8	73.2
14	C.Raju	25.4	73.8
15	B.C.Subbareddy	26.4	77.8
16	D.Seetharamireddy	26.4	74.2
17	V.Pullareddy	27.1	75.4
18	V.Venkateswarareddy	25.6	73.4
19	Y.Maddiletyreddy	28.4	74.6
20	Basavarajappa	24.4	73.8
21	S.Jamalabee	25.2	74.2
22	G.LakshmiReddy	24.8	74.2
23	B.SivasankarReddy	23.6	74.8
24	S.SankarReddy	24.2	73.8
25	B.JagadeswaraReddy	25.4	73.4
Avg		**25.5**	**74.4**

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Mitigation of mineral deficiency in milch buffaloes

3. No. of farmers covered : 25

4 .Area covered in each demonstration (ha) :

5 .Total area covered in the intervention (ha):

S no	Farmer	Milk Production(Avg 90days)
1	P.Thimma reddy	346
2	K.Konda reddy	325
3	G.Nagasubba reddy	326
4	G.Krishna reddy	338
5	S.Jagadish reddy	346
6	B.Siva satya narayan reddy	336
7	S.Ramakrishna reddy	335
8	S.Sivaprasad reddy	345
9	B.Ramakrishna reddy	325
10	P.Thimma reddy	345
11	K.Konda reddy	335
12	G.Nagasubba reddy	346
13	G.Krishna reddy	342
14	Madhavilatha	336
15	B.Thimma reddy	350
16	D.husaini	325
17	D.Peddahusaini	338
18	B.Baskar reddy	345
19	B.Thulisemma	342
20	B.Chandrasekar reddy	326
21	B.Lakshmidevamma	346
22	B.Venkateswara reddy	340
23	S.Balavenkata Reddy	338
24	S.Pulla Reddy	336
25	B.Gopal Reddy	346
	AVG	**338.32**

Farmer wise yield data for different interventions implemented --- 2014-15

1 .Title of the intervention : Silage making

2 .Year of the study : 2014-15

3. No. of farmers covered : 10

4 .Area covered in each demonstration (ha) :

5 .Total area covered in the intervention (ha) :

S no	Farmer	Milk Production(Avg 90days)
1	Y.Madhu Sudhana Reddy	424
2	S.Vijayabhaskara Reddy	432
3	S.Venkatasubba Reddy	396
4	B.Manmada Reddy	442
5	Y.Lokanatha Reddy	437
6	B.Bhaskara Reddy	456
7	B.Rammohana Reddy	442
8	B.Ramachandra Reddy	435
9	A.Krishana Reddy	425
10	M.maddilety	431
	AVG	**4320**

Area wise Particulars of Drip Irrigation under NICRA 2012-15

S. No	Name of the farmer	Crop	Area (ac)
1	Yama Karunamma W/o Srinivas reddy	Drum stick	2.75
2	Yama Pulla reddy S/o Rami reddy	Drum stick	2.25
		2	**5**
1	S.Venkat reddy S/o Pedda Pulla reddy	Jasmine	0.7
2	S.Venkata Siva reddy S/o Pedda pulla reddy	Jasmine	1.2
3	Bandi Bali reddy S/o Maddileti reddy	Jasmine	1
4	M.Maddileti	Jasmine	2
5	K.Laxmi narayana	Jasmine	1.5
6	G.Narayana reddy	Jasmine	2.5
7	M.Subramanyam S/o M.Kasaiah	Jasmine	1.5
		7	**10.4**
1	Y.Varalakshmamma W/o pedda Pulla reddy	Mango	1.86
2	S.Venkat reddy S/o Yella reddy	Mango	1.8
3	P.Subba Nagaraju S/o Rajendra	Mango	1.5
4	Suryanarayana	Mango	4.5
5	Karim	Mango	3.5
6	K.Ravi Prakash reddy	Mango	5.2
7	S.Ravi sankar reddy	Mango	2.5
8	K.Gur reddy	Mango	10
9	S.vijaya baskar reddy	Mango	2.8
10	Y.malleswaramma	Mango	2.6
11	K.Ramachandra redddy	Mango	3.8
12	M.surya narayana	Mango	4
13	M.Nassirhusseain	Mango	1
14	S.Sivaprasadreddy	Mango	1
15	B.Baskar reddy	Mango	3
16	Y.Madhusudhanreddy	Mango	1
17	b.Manmadareddy	Mango	3
18	B.Gopalreddy	Mango	0.5
19	P.S.Nagaraja	Mango	2.19
20	M.Magbul basha	Mango	2.2

21	B.Rammohan reddy	Mango	3
22	Y.Viswanath reddy	Mango	1.4
23	K.V.Rajeswara Reddy	Mango	5
24	K.Rami Reddy	Mango	5
		24	**72.36**
1	S.Tirupam reddy S/o Timma reddy	Turmeric	1
		1	**1**
1	S.Ramasubba reddy S/o Pedda Subba reddy	Vegetable	1.2
2	B.Jagadeeshwar reddy s/o Boreddy	Vegetable	1
3	B.Srinivas reddy S/o Boreddy	Vegetable	1.2
4	B.Sudhakar reddy	Vegetable	1.3
5	V.Pulla reddy	vegetables	0.5
6	M.Subramanyam	Vegetable	0.8
7	S.Rameswar reddy	Vegetable	0.5
8	M.Krishnudu	Vegetable	1
9	M.Maddilety	Vegetable	0.5
10	B.V.Sudhakar reddy	vegetables	0.5
11	B.Sanjeeva reddy	Vegetable	0.5
12	B.Sivasatyam reddy	Vegetable	1.4
13	S.Siva Reddy	Vegetable	5.0
14	B.Rameswara Reddy	Vegetable	2.5
15	M.Subramanyam	Vegetable	2.5
		15	**20.4**
1	K.Rami reddy	Papaya	**7**
2	K.V.Rajeswra reddy	Papaya	**9**
		2	**16**
1	M.Subramanyam	Banana	**1**
		1	**1**
TOTAL			**125.21**

Annexure –III

Details of interventions implemented in NICRA village (2014-15)

Module/ Thematic Area	Title of intervention	No. of farmers covered	Area covered (ha)	Details of critical inputs	Cost of critical inputs supplied for each farmer/	Cost of critical inputs Supplied for each intervention.
I. NRM	Example: In-situ moisture conservation technologies in Castor	50	20		-	
	Compost bins	-	-	-	-	-
	Recharge pits	-	-	-	-	-
	Gypsum	10	4.0		4000/-	40,000/-
II. Crop Production						
Varieties:1 Asha-87119	Drought tolerant Varieties	23	9.5	Seed	540/-	12,420/-
NBeG-1		20	8.0		1260/-	25,200/-
Cropping systems Redgram+Seteria(5:1)	Intercropping Systems	34	13.6		1350/-	45,900/-
Redgram+Castor(1:1)		-	-		-	-
Crop Diversification Seteria(SIA-3085)	Alternate crops	30	12.0		300/-	9,000/-
Organic farming(Redgram)		6	2.4		*1800/-*	10,800/-
Crop protection (Castor+Redgram		50 (25+25)	20.0		*750/-*	37,500/-
Farm Machinery		-	-	-	-	-
Bt-Cotton		33	13.2	-	720/-	23,760/-
III. Live stock and Fisheries	Livestock activities	20		Rajashri birds and medicines	350/-	7,000/-
IV. Institutional Interventions	Biogas and capacity building	-	-	-	-	-

Action Plan 2015-16

NICRA Technology Demonstration Component (TDC):

1.0 Basic information

S.No.	*Item*	*Detail*
1.1	Zone	v
1.2	Name of KVK (district)	SHE&CS krishi vigyan kendra
1.3	Name of Tehsil	Banaganapalle
1.4	Name of Village	Yagantipalle
1.5	Climatic vulnerability	drought

i) Natural resource management

Intervention	**Climatic constraint (general description of stress, occurrence period, its duration, crop stage affected in the village etc)**	**Details of existing practice of farmer in the village**	**Details of climate resilient practice / technology to be demonstrated**	**Measurable indicator (s)**
Injection wells	Nearly 250 borewells are existing in NICRA villages and about 200 bore-wells are not functioning due to low water table during post monsoon period. Hence, injection wells taken up in existing Burrakunta to improve water table for better functioning of borewells in ayacuts .	No injection well in existing tank	Execution of injection wells in existing tank (Burrakunta)	1.Ground water table before and after 2. No. of borewells functioning during post monsoon period
Farm ponds	Scarce rainfall and prolonged dry spells resulting poor yields and returns. Having realized the importance of farm ponds in saving the crop from drought, the project team proposed to excavate the ponds on farmer's fields.	No farm ponds in village and farmers are not aware of importance of farm ponds.	Farm pond technology	1.Additional Yield (grain & fodder) due to supplementary irrigation 2.Additional returns 3. Area covered under farm pond
Ground water	Nearly 25 % of the	No recharge pits.	Execution	Water level in bore

recharge pits	borewells were dried up due to over exploiting of ground water without ground water recharge. A recharge pit allows the rainwater to replenish groundwater.		of recharge pits nearby bore well .	well during post monsoon period 2.Additional area comes under irrigation
Farm recycling bins	Seventy percent soils of Yagantipalle are having low in organic carbon content(<0.5%) due to high soil temperatures and application of inappropriate quantity of organic manures.	1.Most of the farmers are not recycling their farm waste and crop residues are being burnt at road sides after threshing. 2. And also not following proper method of Composting and preservation of FYM	1.Digging of Compost pits 2. Constructio n of Compost Bins with Kadapa slabs	1.Production of additional organic manures 2. Soil organic matter content(%)
Biogas plants	Environmental pollution .	Cooking on open fire is time consuming and creates health hazards for Farmwomen	Introductio n of Biogas units	-
Drip irrigation in flower crops	Low water use efficiency with surface methods of irrigation	Basin method of irrigation	Drip irrigation to increase water use efficiency	1.Yield 2... Gross Returns 3...Net returns 4.. BC ratio

ii) Crop production system

Intervention	Climatic constraint (general description of stress, occurrence period, its duration, crop stage affected in the village etc)	Details of existing practice of farmer in the village	Details of climate resilient practice / technology to be demonstrated	Measurable indicator (s)
Drought	Terminal moisture stress, Due to long duration of Varieties	Growing of long duration, Suceptible varieties for Drought and wilt	Growing of tolerant varieties to escape drought	1.Drought tolerance 2. Yield 3. Cost of cultivation 4. Gross Returns 5.Net returns 6. BC ratio
High temperature stress	Terminal moisture stress, Due to long duration of Varieties	Cultivation of Thermo sensitive Varieties	Introduction of Heat tolerant Varieties	1.Drought tolerance 2. Yield 3. Cost of cultivation 4. Gross Returns 5.Net returns 6. BC ratio
Short duration varieties (specify)	Terminal moisture stress, Due to long duration of Varieties	-	Introduction ultra short duration of seteria varieties	1.Drought tolerance 2. Yield 3. Cost of cultivation 4. Gross Returns 5.Net returns 6. BC ratio
Crop diversification (to other crops)	Late onset of monsoons and Terminal moisture stress	No crops	Introduction of Alternate crops	1.Drought tolerance 2. Yield 3. Cost of cultivation 4. Gross Returns 5.Net returns 6. BC ratio
Intercropping systems (specify)	Low productivity and income, erratic rainfall Frequent Drought Conditions during crop growth stages and Crop failures due to prolonged dry spells, ,	Cultivation of sole crops of Seteria, Redgran and cotton	Inter cropping of Seteria + redgram and cotton + greengram	1.. Yield 2.. Cost of cultivation 3.. Gross Returns 4..Net returns 5.. BC ratio 6. LER
Conservation furrows in red gram and castor	Low and uncertainty of productivity due to recurrent intermittent drought.	No, conservation furrows	Formation of conservation furrows in bet ween crop rows at 30-35 DAS	Soi moisture % at -0-30 cm and 60cm
Pusa hydrogel for moisture	Terminal moisture stress	-	Application of hydrogel @ 2.5	Soi moisture % at -0-30 cm and 60cm

conservation			kg/ha to conserve soil moisture	
Zero tillage maize/ sunflower	Low productivity due to shortage of water for two crops	Monocropping of paddy	Introduction of Zerotill maize/ sunflower with available resources	1.. Yield 2.. Cost of cultivation 3.. Gross Returns 4..Net returns 5.. BC ratio
Fertigation in vegetables and flowers	Low fertilizer use efficiency	Placement in trenches	Application of fertilizers through drip irrigation	1.. Yield 2.. Cost of cultivation 3.. Gross Returns 4..Net returns 5.. BC ratio
Organic mulch in mango	Heavy evaporation losses during summer at fruiting stage,resulting in low yields.	No mulching	Mulching the tree basins with crop residues to conserve soil moisture and to improve micro climate.	Yield Fruit weight Gross Returns 4..Net returns 5.. BC ratio
Critical inputs for Integrated crop management (specify crop) Organic red gram& Seteria	Low moisture holding capacity,nutrient availability in soils due to low OC. Presence of Pesticide residues in output.	Exclusive application of chemical fertilizers and pesticides	Application of organic manures and botanical/biopesticidies to improve moisture holding, nutrient availability and pest / disease management.	1. Pre and post crop OC in soil. 2. Cost of cultivation 3. Gross returns 4. Net returns **5.** BC ratio.
Soil amendiments (Reclamaton of problematic solis	37 % of cultivated soils of Ygantipalle village having pH is more than 8.5 which comes under high alkali category resulting low yields	No reclamation	Reclamation with gypsum	Soil PH before and after application of Gypsum 1.. Yield 2.. Cost of cultivation 3.. Gross Returns 4..Net returns 5.. BC ratio .
Soil test based nutrient application	Indiscriminate and imbalanced nutrient management	No soil testing and blanket application of Fertilizers	Soil test based nutrient management .	1.Yield 2.. Cost of cultivation 3..Net returns 4.. BC ratio
Income generation activities	Cost of production is high due to total dependance on	More use of chemical fertilizers and	Preparation and sale of farm level	1. Income generated in the season. 2. Production of various

Production of organic inputs for crop health management	market for inputs.	Pesticides purchased from market for crop growth and pest management.	preparations based on animal and plant resources available in the village.	organic inputs.
Facilitation of marketing of farm produce : Processing & marketing of organic Redgram & Seteria	Low incomes due to sale as raw produce.	Marketing through commission agents.	Processing and sale of produce as value added product.	1. Income generated through processing. 2. Processing charges. 3. Net additional income.
Sucking pest management in Bt cotton	Regular incidence of sucking pests in bt cotton especially during drought and dry periods.	Foliar sprays of chemical pesticides.	Stem application at 20, 40 and 60 DAS and need based sprayings.	1. Yield 2. Cost of cultivation 3. Gross Returns 4. Net returns 5.. BC ratio
Weather based pest & disease mgt in red gram	Incidence of pests and diseases in various stages of the crop growth.	Scheduled sprays of chemical pesticides	Weather based application of Chemical/bio/botanical pesticides.	1. Yield 2. Cost of cultivation 3. Gross Returns 4. Net returns 5. BC ratio

iii) Livestock and fisheries production systems

Intervention	**Climatic constraint (general description of stress, occurrence period, its duration, crop stage affected in the village etc)**	**Details of existing practice of farmer in the village**	**Details of climate resilient practice / technology to be demonstrated**	**Measurable indicator (s)**
Round the year fodder production	90% of dairy animals are under grazing in barren lands and to kept at the home during copping season from July to April.	Grazing	Perennial fodder cultivation	Fodder availability Milk yield
Lucerne cultivation	Low protein supplement to high yielding dairy animals and high cost of concentrates	Concentrate feeding	Cultivation and feeding of Lucerne during Rabi	Milk yield Cost of milk production Net income

Silage making	Green fodder scarcity during summer months from March to June	Feeding of paddy straw and jowar straw	Silage making with maize during January and feeding to animals during scarcity period	Milk yield
Urea Molasses Mineral Blocks	Low protein feeding to dairy animals due to which low milk yield	Grazing	Supplementation of UMMB	Milk Yield General Health
Mitigation of mineral deficiency in animals	Post partum anoestrum condition	No supplementation of essential minerals	Supplementation of Regional Specific Mineral mixture	Animals came to heat Milk yield
Feed from un conventional feed resources	High cost of concentrates and not utilizing agricultural by products	Burning and incorporating the high nutritive agricultural by products	Preparation of feed from agricultural by products	Milk yield Cost of milk production
Hydroponic fodder production	Scarcity of green fodder to milch animals to the land less farmers and constraints in natural resources	Grazing and dry fodder feeding	Hydroponic fodder production with less land, water and labour	Milk yieild Cost of milk production
Calf registration programme	Poor growth rate and high mortality in calves	No periodical medication and low protein feeding	Periodical medication and feeding of alf mortality	Growth rate Calf mortality
Loose housing system	Stress during hot weather due to improper housing	Houses with insufficient floor space	Loose housing with locally available material	General health condition Milk yield
Poultry breed improvement	Low egg and poor growth rate in desi birds	Local poultry	Rajari birds	Egg production Body weight gain

iv) Institutional interventions

Intervention	**Climatic constraint (general description of stress, occurrence period, its duration, crop stage affected in the village etc)**	**Details of existing practice of farmer in the village**	**Details of climate resilient practice / technology to be demonstrated**	**Measurable indicator (s)**
Establishment of fodder banks	Scarcity of green fodder to milch animals .	Grazing and dry fodder feeding	Establishment of fodder banks	
Establishment of Seed banks	Lack of timely availability of good quality seeds of high-yielding varieties is one of the major constraints contributing to stagnant yields of crops in the project area	Use of local varieties and Farmer to farmer suuply system	Seed banks with improved varieties in order to meet timely availability	-

Activities and Costs:

2.0 Non-recurring contingencies – Equipment:

Procurement of farm machinery/ implements for Custom Hiring Centre (CHC) :

S.No.	*Item*	*Unit cost* (Rs)*	*No. of units*	*Amount (Rs)*
1.	Rotovator	1,50,000	1	1,50,000-00
2	Two plough set	25,000	1	25,000-00
3	Taiwan sprayers	16,000	3	48,000-00
4	Seven tyned gorru	20,000	1	20,000-00
5	Sprinkler set with pipes	50,000	2	1,00,000-00
6	Oil engine	50,000	1	50,000-00
7	Feed maker with agri biproducts	2,00,000	1	2,00,000-00
8	Mobile chop cutter	1,00,000	1	1,00,000-00
				6,93,000-00

3.0 Contingencies

3.1 Module 1 – NRM interventions:

A) Repair / Renovation of existing water harvesting structures & drainage channels etc.

S.No.	*Intervention**	*Dimensions*	*No. of benefi-ciaries*	*Convergence value, if any (Rs)*	*Value of farmers share, if any(Rs)*	*Cost to project (Rs)*
1	Injection wells	4	2 villages			2,00,000-00
2	Farm ponds	17x17x3	4		60,000	5,40,000-00
3	Ground water recharge pits	2x2x2m	10		10,000	90,000-00
4	Farm recycling bins	20x6x3ft	15			1,05,000-00
5	Biogas plants		25	18,000	1500	1,25,000-00
	Drip irrigation in vegetables and flower crops		15	13,50,000	75,000	75,000-00
	Sub-total 3.1			**13,68,000-00**	**1,46,500-00**	**11,35,000-00**

B) *In situ* conservation – Resource Conservation Technologies (RCTs):

Item (specify)	*Unit cost Rs/acre*	*No. of demos*	*Coverage*		*Amount (Rs)*	*Remarks*
			Area (acres)	*No. of farmers*		
	A	**B**	**C**	**D**	**A x C**	
Conservation furrows in red gram and castor	300	100	100	40	30,000-00	
Pusa hydrogel for moisture conservation	2000	5	5	5	10,000-00	
Zero tillage maize/ sunflower	2000	5	5	5	10,000-00	
Fertigation in vegetables and flowers	2000	5	5	5	10,000-00	
Organic mulch in mango	5000	10	10	10	50,000-00	
Sub-total 3.1					**1,10,000-00**	

3.2 Module II – Crop production interventions:

A) Stress tolerant / improved varieties:

*Item**	*Description*		*Cost (Rs)/acre*	*No. of demos*	*Coverage*		*Amount (Rs)*
	Crop	*Variety (s)*			*Area (ac)*	*No. of farmers*	
			A	***B***	***C***	***D***	***A x C***
Drought	Red gram	Asha/PRG 176	1000	30	30	30	30,000-00
High temperature stress	Bengal gram	NBeG-1	2500	40	40	40	1,00,000-00
Short duration varieties (specify)	Seteria	SIA3085 Surya nandi SIA3221 SIA 3156	200	100	100		20,000-00
Crop diversification (to other crops)	Bajra Castor	HB3 PCH-111	1700 750	5 40	5 40	5 40	8500-00 30,000-00
Intercropping systems (specify)	Seteria + Red gram (5:1)	Suryanandi + Asha	1000	30	30	30	30,000-00
	Cotton + Green gram/ black gram	Bt cotton + LGG460	1000	5	5	5	5000-00
Sub Total 3.2 A							**2,23,500-00**

B) Improved agronomic practices and other crop interventions:

*Item**	*Cost (Rs)/ acre*	*No. of demos*	*Coverage*		*Amount (Rs)*
			Area (ac)	*No. of farmers*	
	A	*B*	*C*	*D*	*A x C*
Critical inputs for Integrated crop management (specify crop) Organic red gram& Seteria	*4500*	*10*	*10*	*10*	*45,000*
Other inputs (soil amendments, soil test based nutrient management, bio-fertilizers, other soil and plant health related etc)	*4000* *4000*	*20* *40*	*20* *40*	*20* *40*	*80,000* *1,60,000*
Income generation activities Production of organic inputs for crop health management	*7,500*	*2*	*2*	*2*	*15,0000*
Facilitation of marketing of farm produce Processing & marketing of organic redgram& seteria	*20,000*				*20,000*
Sucking pest management in Bt cotton	*900*	*50*	*50*	*50*	*45,000*
Weather based pest& disease mgt in red gram	*3000*	*50*	*560*	*50*	*1,50,000*
Sub-total 3.2 B					***5,15,000-00***

4.0 Module 3 – Livestock & Fisheries interventions

4.1 Year round fodder production strategies (annual/perennial fodder) in the village

Season	Name of fodder	Variety	Area (ha)	Unit cost of demo (Rs)*	No. of demos	Amount (Rs)*	*Remarks (no. of farmers covered)*
Kharif	Hybrid Napier	Co-4 / RBN - 13	2ha	10,000	5	50,000	5
Rabi	Lucerne	Hybrid	2ha	2500	10	25000	10
Sub-total 4.1						**75,000**	

4.2 Feed demonstrations for crop residue management / stress management: silage / feed blocks/ mineral mixture (MM) blocks / feed enrichment:

Details of feed demo*	Unit cost of demo (Rs)	No. of demos	Amount (Rs)	*Remarks (no. of farmers covered)*
a) Silage demos	2000	20	40,000-00	20
b) Urea molasis mineral blocks	500	40	20,000-00	40
c) Mineral mixture demos	500	50	25,000-00	50
d) Unconventional feed resources (eg., red gram stalks, cotton stalks etc) used in preparation of complete feed	1500	20	30,000-00	20
e) Hydroponics fodder production	10,000	5	50,000-00	5
f) Lucrne meal demonstration	1500	20	30,000-00	20
g) Feeding management & disease control programme in livestock (Total Mixed Ration, Mineral block, medicines & disinfectant solution) h) Calf registration	1200	50	60,000-00	50
i) Animal health camps	10000	2	20,000-00	Whole village
Sub-total of 4.2			**2,75,000-00**	

4.3 Improved housing /shelter for protection of livestock against extreme weather

Type of shelter improvement*	Unit cost of demo (Rs)	No. of demos	Amount (Rs)	*Remarks (no. of farmers covered)*
Loose house system	20,000	2	40,000-00	2
Sub-total of 4.3			**40,000-00**	

4.4 Livestock / Fisheries units

A	B	C	D	E	F	G
Enterprise/unit*	**Unit cost (Rs)**	**Convergence share in unit cost, if any** (Rs)**	**Project share in unit cost (Rs)**	**No. of units**	**Cost to Project (D x E) (Rs)**	**Remarks on beneficiary category (SC/ST/BC/ Women etc)**
Rajasri birds	650		350	100	35,000-00	women
Breeding rambs	10,000		5000	5	25,000-00	
Sub-total of 4.5					**60,000-00**	

5.0 Module 4 – Community interventions

5.1 Establishment of fodder banks

Name of the SHG	Fodder type	Quantity of storage (t)	Unit cost (Rs.)	No. of units	Amount (Rs.)	Remarks (No. of beneficiaries & Period of use)
	Hybrid napier			1 (ha)	50,000	20 (For six months)
Sub-total 5.1					**50,000-00**	

5.2 Establishment of Seed banks

Name of the SHG	Crop and variety	Quantity of storage (t)	Unit cost (Rs.)	No. of units	Amount (Rs.)	Remarks (No. of beneficiaries & Period of use)
	Seteria surya nandu	5.0 tonnes	1,75,000	1	1,75,000-00	6-8 months 10 members
	Red gram – Asha	2.0 tonnes	1,50,000	1	1,50,000-00	10 -15 farmers
Sub-total 5.2					**3,25,000-00**	

6.0. Capacity Building & Training Programmes:

6.1 Training Courses:

Theme	Title of training course	Proposed month	No. of participants	Cost to project (Rs.)
ICM	Production technologies for rainfed crops	June	50	10,000-00
	Contingent crop planning &management	July	50	10,000-00
	Production technology for Bengal gram	October	50	10,000-00
Resource conservation	Water and soil conservation technologies for rainfed areas	June	50	10,000-00
	Soil health management	July	50	10,000-00
	Eco friendly plant protection measures	July	50	10,000-00
	Micro irrigation systems	September	50	10,000-00
	Organic farming	July	50	10,000-00
Value addition	Value addition to millets	October	50	10,000-00
Environment	Capacity building of women on environmental issues and its relation to human health	November	50	10,000-00
Dairy	Mgt of milch animals during summer	May	50	10,000-00
Feed& fodder	Feed & fodder technologies for live stock	June	50	10,000-00
	Prevention of diseases in live stock	July	50	10,000-00
Sub-total 6.1			**650**	**1,30,000-00**

6.2 Field Days :

Theme	Title of training course	Proposed month	No. of participants	Cost to project (Rs.)
Alternate crops	Seteria short duration	October	100	15,000-00
Pulses	Bengal gram	December	100	15,000
	Red gram (organic)	December	100	15,000
Sub-total 6.2:				**45,000**

6.3 Exposure Visits

Place of visit	Purpose of visit	Proposed month	No. of participants	Cost to project (Rs.)
ARS Anantapur	Dry land technologies	June	25	20,000-00
ICRISAT	Incubation centre	jan	20	42,000-00
HRS Anantapur	Dry land Horti. pomagranate	Sep	25	20,000-00
Sub-total 6.3:				**82,000-00**

7.0 Up-scaling of Successful Interventions

Sl.No.	Name of technology	Unit cost/ha (Rs.)	No. of farmers covered	Cost to project (Rs.)	Remarks (justification)
1.					
2.	Setaria cultivation	500	100	50,000	
	Intercropping systems (Setaria+Red gram)	750	100	75,000	
Sub-total 7.0:					

8.0 Contractual Manpower (SRFs)

Category	Rate/month (Rs.)	No. of positions	No. of months	Amount (Rs.)
SRF	28,000/	2	12	6,72,000-00
Sub-total 8.0				**6,72,000-00**

9.0 Media Products to be developed (brochure/bulletin)

Item description	No. of copies	Amount (Rs.)
NICRA at a glance	500	25,000
Hydroponics cultivation	500	10,000
Inter Cropping systems system for rainfed areas	500	15,000
Sub-total 9.0		**50,000-00**

Summary of budget Estimates for 2015-16 (Tentative):

Sub total	*Item*	*Amount (Rs)*
2.0	Procurement of farm machinery/implements for CHC	6,93,000-00
3.1 A	Repair/ Renovation of existing water harvesting structures & drainage channels etc.	11,35,000-00
3.1 B	*In situ* conservation – Resource Conservation Technologies (RCTs)	50,000-00
3.2. A	Stress tolerant/ Improved varieties	2,23,500-00
3.2. B	Improved agronomic practices and other crop interventions	5,15,000-00
4.1	Year round fodder production strategies (annual/perennial fodder) in the village	75,000-00
4.2	Feed demonstrations for crop residue management / stress management: silage / feed blocks/ mineral mixture blocks / feed enrichment	2,75,000-00
4.3	Improved housing /shelter for protection against extreme weather	40,000-00
4.4	Livestock/fisheries units	60,000-00
5.1	Establishment of fodder banks (hay)	50,000-00
5.2	Establishment of seed banks	3,25,000-00
6.1	Training courses	1,30,000-00
6.2	Field days	45,000-00
6.3	Exposure visits	62,000-00
7.0	Up-scaling of successful interventions	1,25,000-00
8.0	Contractual manpower (SRFs)	6,72,000-00
9.0	Media products to be developed	50,000-00
10.0	Travelling allowance	75,000-00
11	Any other contingencies	75,000-00
	Grand total	**46,75,500-00**

Date: **Signature of PC, KVK/ In-charge NICRA**

Date: **Signature of Nodal Officer, NICRA-ZPD Zone**