

# **ANNUAL REPORT**

## ***2010 - 2011***

### **1. GENERAL INFORMATION ABOUT THE KVK**

#### **1.1. Name and address of KVK with phone, fax and e-mail**

<b>Address</b>	<b>Telephone</b>		<b>E-mail</b>
	<b>Office</b>	<b>FAX</b>	
Krishi Vigyan Kendra, Chirang, P.O. : Kajalgaon, Dist.: Chirang, PIN-783 385	03664 – 243775	03664 – 243775	kvkbngn@gmail.com

#### **1.2 .Name and address of host organization with phone, fax and e-mail**

<b>Address</b>	<b>Telephone</b>		<b>E-mail</b>
	<b>Office</b>	<b>FAX</b>	
Assam Agricultural University, Jorhat-785 013, Assam	0376 – 2340001	0376 – 2340001	–

#### **1.3. Name of the Programme Coordinator with phone & mobile No**

<b>Name</b>	<b>Telephone/Contact</b>		
	<b>Residence</b>	<b>Mobile</b>	<b>E-mail</b>
Dr. S. K. Paul Krishi Vigyan Kendra, Chirang, P.O. : Kajalgaon, Dist.: Chirang, PIN-783 385	–	9435120552	kvkbngn@gmail.com

#### **1.4. Year of sanction :                      2004**

Although KVK, Chirang has been working in both Bongaigaon and Chirang districts of Assam, but statistics presented herewith is only of Bongaigaon district of Assam

### 1.5. Staff Position (as on 31<sup>st</sup> August 2010)

Sl. No.	Sanctioned post	Name of the Incumbent	Designation	Discipline	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Permanent/ Temporary	Category (SC/ST/OBC/ Others)
1	Programme Co-ordinator	Dr. S. K. Paul	Programme Co-ordinator	Plant Breeding	37,000-67,000	61,910	23.09.04	Permanent	OBC
2	Subject Matter Specialist	Dr. C. K. Sarma	Subject Matter Specialist	Agronomy	15,600-39,100	35,270	29.12.05	Permanent	G
3	Subject Matter Specialist	Dr. G. Moral	Subject Matter Specialist	Soil Science	15,600-39,100	35,270	25.11.08	Permanent	G
4	Subject Matter Specialist	Mr. S. Kalita	Subject Matter Specialist	Entomology	15,600-39,100	22,920	04.01.10	On probation	SC
5	Subject Matter Specialist	Mr. A. Borah	Subject Matter Specialist	Horticulture	15,600-39,100	22,920	27.11.09	On probation	G
6	Subject Matter Specialist	Dr. P. Devi	Subject Matter Specialist	Animal science	15,600-39,100	22,920	15.11.08	On probation	G
7	Subject Matter Specialist	Dr. H. K. Baruah	Subject Matter Specialist	Agril. Economics	15,600-39,100	21,600 (fixed )	07.11.08	On probation	G
8	Programme Assistant	–	–	–	–	–	–	–	–
9	Computer Programmer	Ms C. Nath	Programme Assistant	Computer Application	8000-35,000	15,350	12.11.08	On probation	OBC
10	Farm Manager	Ms. R. Brahma	Farm Manager	Agronomy	8000-35,000	15,350	12.01.09	On probation	ST
11	Accountant/superintendent	Mr. D. D. Mahanta	Accountant	–	8000-35,000	23,180	14.08.06	Retired (On extension)	G
12	Stenographer	Mr. M. Ghosh	Typist	–	5,200-20,200	10,300	22.02.06	Permanent	G
13	Driver	Mr. L. Brahma	–	–	–	5,000 (fixed )	–	–	ST
14	Driver	Mr. S. Boro	–	–	–	5,000 (fixed )	–	–	ST
15	Supporting staff	Mr. P. Ch. Roy	Supporting Staff	–	5,200-20,200	10,730	21.02.06	Permanent	MOBC
16	Supporting staff	Mr. L. Murmu	Supporting Staff	–	4560-15,000	7,430	20.02.06	Permanent	G

**1.6. Total land with KVK (in ha) : 12.0 ha**

Sl. No.	Item	Area (ha)
1	Under Buildings	Under construction
2	Under Demonstration Units	NA
3	Under Crops	2.0
4	Orchard/Agro-forestry	2.0
5	Others	NA

**1.7. Infrastructural Development:**

**A) Buildings**

Sl. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (m <sup>2</sup> )	Expenditure (Rs.)	Starting Date	Plinth area (m <sup>2</sup> )	Status of construction
1	Administrative Building	ICAR	NA	NA	NA	05.06.2008	400	> 75 % is completed
2	Farmers Hostel	NA	NA	NA	NA	Not yet started	200	NA
3	Staff Quarters (6)	NA	NA	NA	NA	Not yet started	100	NA
4	Demonstration Units (2)	ICAR	NA	NA	NA	Not yet started	-	NA
5	Fencing	ICAR	NA	NA	NA	Not yet started	-	NA
6	Rain Water harvesting system	-	-	-	-	-	-	-
7	Threshing floor	-	-	-	-	-	-	-
8	Farm godown	-	-	-	-	-	-	-

**B) Vehicles**

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Jeep	2005-06	4.90	49484 KM	Good
Tractor	2006-07	3.66	406 Hours	Good

**C) Equipments & AV aids**

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Copier Machine	2006-07	0.54	Good
Digital Camera	2007-08	0.20	Need replacement
Fax Machine	2007-08	0.09	Good
Voltage stabilizer	2007-08	0.04	Good
Copier Machine	2009-10	1.20	Good
Computer-2nos	2009-10	0.63	Good
Computer UPS	2009-10	0.12	Good
LCD projector	2009-10	0.98	Good
Laser printer	2009-10	0.06	Good
Fax Machine	2009-10	0.15	Good
Ticker board	2009-10	-	Good
Scanner	2009-10	0.07	Good

**1.8. A). Details SAC meeting\* conducted in the year:**

Sl. No.	Date	Name and Designation of Participants	Salient Recommendations	Action taken
1	23.11.2010	<ol style="list-style-type: none"> <li>1. Dr. K.M. Bujarbaruah, Honourable Vice Chancellor, Assam Agricultural University, Jorhat-13.</li> <li>2. Dr. B.C. Bhowmick, Director of Extension Education, Assam Agricultural University, Jorhat-13.</li> <li>3. Dr. N.N. Sarmah, Director of Research (Agri.), Assam Agricultural University, Jorhat-13.</li> <li>4. Dr. A. Chakravarty, Director of Research (Vety.), Assam Agricultural University, Khanapara-22.</li> <li>5. Dr. H.C. Bhattacharyya, Chief Scientist, RARS, Assam Agricultural University, Gossaigaon .</li> <li>6. Dr. S.K. Paul, Programme Coordinator, Krishi Vigyan Kendra, Chirang.</li> <li>7. Dr. P.K. Roy, District Veterinary Extension Officer, Chirang.</li> <li>8. Sri B. Kalita, Fishery Extension Officer, Bongaigaon.</li> <li>9. Mr. A Rahman, Executive Engineer, DRDA, Chirang.</li> <li>10. Mr. B.N. Patiri, Divisional Forest Officer, Chirang.</li> <li>11. Mr. S.K. Boro, AGM (DD), NABARD, Bongaigaon.</li> <li>12. Mr. R.K. Mahilary, Chief Manager Lead Bank, Bongaigaon.</li> <li>13. Mr. N. Singha, Divisional Officer, Soil Conservation Division, Chirang.</li> <li>14. Mr. K.R. Gogoi, District Agriculture Officer, Bongaigaon.</li> <li>15. Mr. H.K. Sarma, GM, DICC, Chirang.</li> <li>16. Dr. R.J. Deka, Officer In-Charge, SIRD, Kajlagaon.</li> <li>17. Mr. S. Roy, Farmers Representative, Chirang</li> <li>18. Mr. D.K. Basumatary, President, DUBAA, Chirang</li> <li>19. Mrs. R. Basumatary, Farm Women Representative, Chirang.</li> <li>20. Mrs. R. Islary, Farm Women Representative, Chirang.</li> <li>21. Mr. J. Sarma, Sericulture Demonstrator, Department of</li> </ol>	<ol style="list-style-type: none"> <li>1. Implementation of technology showcasing programme on seed production technology in rice.</li> <li>2. Identification and prioritization of food crops having good scope in the district.</li> <li>3. Identification of training needs.</li> <li>4. Technology transfer in respect of system of rice intensification technology</li> <li>5. Development of demonstration units</li> <li>6. Training on artificial insemination programme</li> <li>7. Training on fodder cultivation.</li> <li>8. Establishment if integrated farming system model at KVK</li> <li>9. Emphasis on crop diversification based on land capability.</li> <li>10. Development of farmers club</li> <li>11. Training on mulberry silk</li> </ol>	<ol style="list-style-type: none"> <li>1. Technology showcasing programme was successfully completed during the kharif season, 2010 and it has been going on in the summer season, 2010-11.</li> <li>2. Major food crops with higher scope in the district along with varieties are identified and are to be incorporated in crop planning.</li> <li>3. Training needs are being identified through participatory approaches as well as in consultation with extension personnels under various depts., NGOs etc.</li> <li>4. Training, advisories and demonstration under technology showcasing are being conducted for transferring SRI technology.</li> <li>5. Necessary step has been initiated and demonstration units will be set up immediately after completion of administrative building.</li> <li>6. Training on artificial insemination has been included in the action plan.</li> <li>7. Training on fodder cultivation demonstration programme have been included in the action plan.</li> <li>8. It is to be set up in future as informed by th</li> </ol>

	<p>Sericulture, Chirang.</p> <p>22. Mr. A. Mahanta, District Fishery Development Officer, Chirang.</p> <p>23. Dr. J.C. Sinha, Veterinary Extension Officer, Manikpur.</p> <p>24. Mr. I. Karmakar, Programme Executive, AIR, Kokrajhar</p> <p>25. Mr. M.M. Swargiary, District Agriculture Officer, Chirang</p> <p>26. Md. A.M. Ahmed, Press, Adinor Sangbad.</p> <p>27. Mr. B.M. Roy, Correspondent, Dainik Agradoot.</p> <p>28. Md. Sukur Ali, Progressive Farmer, Bijni, Chirang.</p> <p>29. Mr. J.K. Nath, Progressive Farmer, Boitamari, Bongaigaon.</p> <p>30. Mr. D. Choudhury, Progressive Farmer, Saunagaon, Bongaigaon.</p> <p>31. Mr. P.K. Das, Assistant Project Officer (I), DRDA, Bongaigaon.</p> <p>32. Dr. C.K. Sarma, SMS (Agronomy), KVK, Chirang</p> <p>33. Dr. G. Moral, SMS (Soil Science), KVK, Chirang</p> <p>34. Dr. H.K. Baruah, SMS (Agril. Econ.), KVK, Chirang</p> <p>35. Mr. A. Borah, SMS (Horticulture), KVK, Chirang</p> <p>36. Mr. S. Kalita, SMS (Entomology), KVK, Chirang</p> <p>37. Ms. R. Brahma, Farm Manager, KVK, Chirang.</p> <p>38. Ms. C. Nath, Programme Assistant, KVK, Chirang.</p> <p>39. Md. A.J. Sarkar, State Award Winning Farmer, Bongaigaon.</p> <p>40. Md. Mumtaz Ali, National Award Winning Farmer, Bongaigaon.</p>	<p>worm rearing.</p> <p>12. Training to gaon panchayat workers for better implementation of various rural development programmes</p> <p>13. Soil testing</p>	<p>Hon'ble Vice Chancellor of AAU, Jorhat</p> <p>9. Emphasis on crop diversification is being given through training and advisories. A concept note has also been prepared by KVK which is to be implemented by Forest dept. Chirang.</p> <p>10. Steps has been initiated in consultation with DDM, NABARD, Chirang for developing of farmers club</p> <p>11. Training on eri and muga rearing was conducted during 2010-11 and incorporated in the action plan, 2011-12.</p> <p>12. Programme Coordinator participated in the orientation programme of panchayat members of Bongaigaon district for better implementation of MGREGA. KVK scientists also participated in the training programmes on various permissible works under MGREGA, organized for V.C.D.C workers of BTAD area.</p> <p>13. Soil testing programme will be started as soon as soil testing lab. Is established.</p>
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*\* Attach a copy of SAC proceedings along with list of participants*

## 2. DETAILS OF DISTRICT (2008-09)

### 2.1 Major farming systems/enterprises (based on the analysis made by the KVK)

S. No.	Farming system/enterprise
1.	Agriculture (crops) – Horticulture (Fruits & vegetables)
2.	Agriculture (crops) – Animal Husbandry (Dairy, Poultry, Piggery, Goatery, Duckery etc.)
3.	Agriculture – Animal Husbandry - Horticulture
4.	Agriculture – Horticulture - Fisheries
5.	Agriculture – Fisheries

(Source: SREP, Bongaigaon)

### 2.2 Description of Agro-climatic Zone & major agro ecological situations (based on soil and topography)

#### Description of Agro-climatic Zone (based on soil and topography)

Sl. No	Agro-climatic Zone	Characteristics
1	Lower Brahmaputra Valley Zone	The soil of the zone is mostly acidic in nature and soil P <sup>H</sup> gradually increases towards the river Brahmaputra. The soil is medium to high in organic carbon and available N, low in available P <sub>2</sub> O <sub>5</sub> and medium in K <sub>2</sub> O status. Four orders of soils are found in the zone (i) Entisol, (ii) Inceptisol, (iii) Alfisol and (iv) Ultisol.

(Source: SREP, Bongaigaon)

#### Description of major agro ecological situations (based on soil and topography)

Sl. No.	Agro ecological situation	Characteristics
1	Foot hill old mountain valley alluvial plain	The northern part of the district comprising this situation contains old mountain valley alluvial soils (Alfisol & Ultisol). It is build up of alluvial materials washed down from the hill slops. The surface soil is light yellow to pale brown, compact, sticky and plastic. Generally, medium to heavy in soil texture. The elevation is higher towards foot hills which gradually slop towards south.
2	Flood prone recent riverine alluvial plain	Recent riverine alluvial (Entisol), sandy to sandy loam in soil texture. This situation is represented by an almost flat topography which often experiences flood hazard. Apart from some natural depressions, some riverine islands are also in existence.
3	Flood free riverine alluvial middle plain	Old riverine alluvial type (Inceptisol). The texture of the surface soils ranges from sandy loam to loam, silty clay loam, silty clay and clay. The topography is almost plain.
4	Char land	New alluvial plains, neutral in reaction, sandy-silty-clayey, sandy-silty and sandy in soil texture (Entisol). Chronically flood affected areas except the stable chars.
5	Hill and Hillock	Old alluvial type (Alfisol), sandy to sandy loam in texture and acidic in nature. The topography is undulating.

6	Beels	Entisols, usually peaty in nature and texturally these are silty and clay. Low lying waste land areas
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(Source: SREP, Bongaigaon)

### 2.3 Soil type/s:

Sl. No.	Soil type	Characteristics
1	Light gray	Sandy loam to silty loam in texture
2	Red soil (Mixed)	High in 'Fe' and 'Al' oxides. Fairly well drained soil
3	Sandy soil	Light textured soil
4	Sandy loam	Medium textured
5	Clay loam	Heavy textured. Poor external as well as internal drainage

(Source: SREP, Bongaigaon)

### 2.4. Area, Production and Productivity of major crops cultivated in the district (2008-09)

Sl. No.	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Rice (Sali)	60754	709610	11.60
2	Rice (Ahu)	34112	322700	9.46
3	Rice (Boro)	9983	190970	19.13
4	Rapeseed & Mustard	13182	66040	5.01
5	Sesamum	572	2590	4.52
6	Black gram	2667	12030	4.51
7	Lentil	2417	13340	5.52
8	Wheat	5942	74280	12.50
9	Jute	2994	273620	16.45
10	Potato	3418	220600	64.54
11	Chilly	600	1084	18.07
12	Kharif vegetables	1650	19189	116.30
13	Rabi vegetables	2407	39475	164.00
14	Ginger	61	373	61.20
15	Turmeric	295	6342	214.98
16	Coriander	221	136	6.15
17	Black pepper	145	261	18.00
18	Garlic	195	787	40.36

19	Onion	257	3084	120.00
20	Pine apple	257	5334	185.85
21	Jack fruit	147	1312	89.25
22	Litchi	254	1895	74.61
23	Mango	95	498	52.42
24	Orange	98	8237	83.99
25	Areca nut	1771	2904	152 nuts per tree
26	Coconut	549	3788	74 nuts per tree
27	Banana	682	16721	245.17
28	Assam lemon	252	911	36.15
29	Medicinal and aromatic plants	124	611	49.27
30	Guava	52	1019	195.96

### 2.5. Weather data

Month	Rainfall (mm)	Temperature ° C		Relative Humidity (%)
		Maximum	Minimum	
April, 2010	685.0	26.6	18.9	96.66
May, 2010	687.0	29.2	22.4	95.61
June, 2010	915.0	32.0	23.8	97.7
July, 2010	826.2	32.9	24.6	93.38
August, 2010	595.4	-	-	92.58
September, 2010	407.6	-	-	89.11
October, 2010	111.0	30.9	18.5	87.25
November, 2010	9.0	29.8	12.2	85.56
December, 2010	0.0	26.9	7.8	76.72
January, 2011	5.0	24.6	8.6	77.02
February, 2011	2.0	26.2	11.1	68.29
March, 2011	54.0	32.0	10.5	86.26

### 2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district

Category	Population	Production	Productivity
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<b>Cattle</b>				
<i>Crossbred</i>	8,876	10404kg ( meat)	6101046lit (milk)	687.36 lit/Animal
<i>Indigenous</i>	1,62,492	128448kg ( meat)	18239247 (milk)	112.24 lit/Animal
<b>Buffalo</b>				
	3,948	18957 kg ( meat)	3658769 (milk)	926.73 lit/Animal
<b>Sheep</b>				
<i>Indigenous</i>	36,814	17682 kg( meat)		
<b>Goats</b>				
	1,27,300	221743 kg( meat)	1096894(milk)	8.6 lit/Animal
<b>Pigs</b>				
<i>Crossbred</i>	11,375		-	
<i>Indigenous</i>	22,755		-	
<b>Poultry</b>				
Ducks	4,64,458	54,439 kg( meat)	63,76,833 eggs	
Turkey and others				

<b>Category</b>	<b>Area</b>	<b>Production</b>	<b>Productivity</b>
Fish	10,865.91ha	5,794.31 MT	2150 kg/ha (pond)

## 2.7 Details of Operational area / Villages (2010-11)

No	Taluk	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Sidli	Sidli	Pub Enkorbari	Major crops are rice, sesame, blackgram, rapeseed & mustard, areca nut, coconut, banana, pineapple, citrus, ginger, vegetables, bamboo etc.  Major enterprises are cropping, , dairy, goatery, piggery etc.	-Soil acidity -Yield gap in paddy, pulses, oilseeds, fruits and vegetables -Low rate of seed replacement and poor adoption of HYVs -Poor fertility management -Rainfed farming -Inadequate post harvest handling of fruits & vegetables	-Management of acid soil -Crop planning for rainfed area. -Commercial production of fruits and vegetables. -Increasing productivity of major field crops through improved crop management practices -Popularization of HYVs -Seed and planting material production -Adoption of INM and IPM technologies. -Live-stock management -Formation of SHGs and farmer's club -Post harvest processing, value addition and marketing

					<ul style="list-style-type: none"> <li>-Un-organized marketing system</li> <li>-Low productivity of animals</li> </ul>	
2	Bijni	Borobazar	Pub Khamarpara	<p>Major crops are rice, lentil, rapeseed &amp; mustard, areca nut, coconut, banana, vegetables, bamboo etc.</p> <p>Major enterprises are cropping, fishery, dairy, duckery, goatery, backyard poultry etc.</p>	<ul style="list-style-type: none"> <li>-Soil acidity</li> <li>-Yield gap in paddy, pulses, oilseeds, fruits and vegetables</li> <li>-Low rate of seed replacement and poor adoption of HYVs</li> <li>-Poor fertility management</li> <li>-Rainfed farming</li> <li>-Un-organized marketing system</li> <li>-Low productivity of animals</li> <li>--Low production of fish per unit of water bodies.</li> </ul>	<ul style="list-style-type: none"> <li>-Management of acid soil</li> <li>-Crop planning for rainfed area.</li> <li>-Commercial production of fruits and vegetables.</li> <li>-Increasing productivity of major field crops through improved crop management practices</li> <li>-Popularization of HYVs</li> <li>-Seed and planting material production</li> <li>-Adoption of INM and IPM technologies.</li> <li>-Live-stock management</li> <li>-Adoption of improved fish production technology.</li> <li>- Formation of SHGs and farmer's club</li> </ul>
3	Bijni	Manikpur	Alengmari	<p>Rice, rapeseed &amp; mustard, sesame, blackgram, lentil, kharif &amp; rabi vegetables, jute , ginger etc. are important crops.</p> <p>Major enterprises included cropping, dairy, poultry, fishery etc.</p>	<ul style="list-style-type: none"> <li>-Soil acidity</li> <li>-Low rate of seed replacement</li> <li>-Injudicious use of chemical fertilizers</li> <li>-Excessive use of chemical pesticides</li> <li>-Low production of fish per unit of water bodies.</li> <li>-Low productivity of animals</li> </ul>	<ul style="list-style-type: none"> <li>-Soil acidity management</li> <li>- Popularization of HYVs</li> <li>- Seed and planting material production</li> <li>--Commercial production of fruits and vegetables.</li> <li>-Adoption of INM and IPM technologies.</li> <li>-Live-stock management</li> <li>-Composite fish culture</li> <li>-Formation of farm science club</li> </ul>
4	Boitamari	Boitamari	Bashbari	Rice, rapeseed & mustard,	-Soil acidity	-Resource management in acid soil.

				vegetables, fruits etc.  Cropping, dairy , poultry etc. are the major enterprises.	-Yield gap in paddy, pulses, oilseeds, fruits and vegetables. -Low rate of seed replacement and poor adoption of HYVs -Poor fertility management -Rain fed farming -Un-organized marketing system. --Low productivity of animals	--Crop planning for rainfed area --Popularization of HYVs of rice -Seed and planting material production -Higher productivity of major field crops through improved crop management practices -Appropriate nutrient management through integrated nutrient management and balance fertilization. -Adoption of integrated pest management technique. -Live-stock management -- Dairy, duckery, poultry etc. - Formation of SHGs and farmer's club
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## 2.8 Priority/thrust areas

Priority thrust areas (prioritized in sync with thrust areas identified and given above)

Rank	Thrust area
1	Reduction of yield gap in major field crops such as rice, oilseeds and pulses through introduction of improved varieties and improved crop management practices
2	Production of seed and planting material
3	Commercial production of fruits and vegetables
4	Breed up gradation and scientific livestock management
5	Soil fertility management through Integrated approach of Plant Nutrient supply system and balance fertilization
6	Integrated Pest management
7	Post harvest processing and value addition

8	Scientific pisciculture
9	Empowerment of women and reorientation of SHGs towards commodity based production & marketing system

### 3. TECHNICAL ACHIEVEMENTS

#### 3.A. Details of target and achievements of mandatory activities by KVK during 2010-11

OFT (Technology Assessment and Refinement)				FLD (Oilseeds, Pulses, Cotton, Other Crops/Enterprises)			
1				2			
Number of OFTs		Number of Farmers		Number of FLDs		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Crop production – 2	2	6	6	Oilseeds – 2	1	10	9
Plant protection – 2	2	8	8	Pulses – 2	2	10	11
Horticulture – 1	1	3	3	Other than Oilseed & Pulse – 5	5	25	23
Animal Husbandry – 2	2	6	6				
Soil Science – 2	2	6	6	Technology Showcasing	2	–	609
Ag. Economics – 1	1	3	3				

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities			
3					4			
Number of Courses			Number of Participants		Number of activities		Number of participants	
Clientele	Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Farmers	33	33	825	901	Field day – 1	1	100	505
Rural youth	12	12	300	312	Method demonstration – 2	7	50	200
Extension Functionaries	9	9	225	243	Extension literature – 6	6		
					Advisory services – 40	120	85	185
					Diagnostic visit – 2	2	40	54
Seed Production (Qtl.)					Planting material (Nos.)			
5					6			
Target		Achievement			Target		Achievement	
Buck Wheat – 6.0		–			Banana – 1000 Nos.		10000 (in farmers field)	
Sesame – 6.0		1.5			Asparagus – 200 Nos.		100 Nos.	


**3.B. Abstract of interventions undertaken during 2010-11**

No	Thrust area	Crop/ Enterprise	Identified Problem	Interventions (if any)					
				Title of OFT	Title of FLD	Title of Training	Title of training for extension personnel	Extension activities	Supply of seeds, planting material
1	Reduction of yield gap in major field crops such as rice, oilseeds and pulses through introduction of improved varieties and improved crop management practices	Rice, oilseeds and pulses	Yield gap due poor adoption of HYVs and improved package of practices	- Performance of high yielding summer rice variety 'Dinanath' in the farmers field	- Performance of HYV of toria "TS-36" with improved crop management  - Improved crop management practices in black gram  - Performance of HYV of boro rice "Kanaklata" with improved crop management - Improved crop management practices in lentil (Var. B-77)	- Integrated crop and nutrient management in Sali rice - Integrated approaches of crop management in boro rice - Irrigation scheduling in major rabi field crops	-System of rice intensification	i) ) Publication of bulletins ii) Field day iii) Diagnostic & clinical services iv) Farmers-Scientist interaction v) Advisory services vi) ) Popular articles	Seeds, Fertilizers, Pesticides etc.
2	Crop planning	All crops	Poor resource utilization	-	-	-Cropping system approach for sustainable development	Contingency crop planning for flood affected area	i) Advisory services ii) Popular article	-
3	Production of	Rice	-Low rate of	-	-Technology showcasing	- Plant propagation		i) Publication	Seeds,

	seed and planting material		seed replacement and poor adoption of HYVs		programme for seed production of Sali rice var Ranjit. - Technology showcasing programme for seed production of summer rice var Kanaklata & Joymoti  -Seed production programme in the farmers field	techniques of commercially important horticultural crop - Seed production technique in Sali rice - Seed production technique in Boro rice -		of bulletins ii) Method demonstrations iii) Field day iv) Advisory services	Fertilizers, Pesticides etc.
4	Commercial production of fruits and vegetables	Banana, Citrus, Pineapple, Tomato, Brinjal, Chilli, Cole crops	Low adoption of scientific methods of cultivation	-High density cultivation of banana cv Malbhog  -Economic viability of denavelling and post shooting feeding of NPK and sulphur in banana  - Bulbous rhizome	-Improved production technology of water melon  -Tissue cultured banana	- Rejuvenation of old fruit orchard - Layout and management of orchard - Production technology of potato	- Off season vegetables production technology	i) Exposure visit ii) Publication of bulletins iii) Diagnostic & clinical services v) Farmers-Scientist interaction vi) Advisory services	Seeds, Planting material, Fertilizers, Pesticides etc.
5	Breed up gradation and scientific livestock management	Dairy, Piggery, Poultry, Goatery.	-Low productivity due poor adoption of scientific	- Scientific feeding in goat  - Rearing of upgraded goat	Scientific rearing of "Chara chambelli" duck	-Scientific pig management for employment generation - Scientific rearing of goat - Scientific rearing and	-Artificial insemination of first aid for livestock	i) Publication of bulletins ii) Diagnostic & clinical services	Upgraded breed, feed

			management practices			management practices in poultry for self employment		iv) Farmers-Scientist interaction v) Advisory services	
6	Soil fertility management through Integrated Plant Nutrient supply system and balance fertilization	Cropping	-Injudicious use of chemical fertilizer	-Integrated nutrient management in Sali rice  - Potassium management in lentil -Integrated nutrient management in toria		- Vermicomposting and its use in agriculture - INM in Sali rice - Production and use of vermicomposting in agriculture	- Soil sample collection and chemical analysis	i) Publication of bulletins on IPNS ii) Publication of popular articles	Seed, fertilizers, pesticides
7	Integrated Pest management	Rice, oilseeds, pulse and vegetables	-Injudicious use of chemical pesticides	-Rhizome rot management in ginger using Biofor PF - Management of bacterial wilt in tomato	-Performance of bio-agent " <i>Trichogramma japonicum</i> " in summer rice -Biological control of rice pests (Sali rice)	- Integrated pest and disease management in food crops (banana & coconut) - Integrated pest & disease management in summer vegetables - Integrated disease and pest management in Sali rice - Integrated disease and pest management in blackgram and green gram	- Integrated disease and pest management in potato - Storage insect pest of rice and their management	i) Awareness campaign on IPM ii) Publication of bulletin iii) Diagnostic & clinical services	seed, Fertilizers, Bio-Pesticides etc.



						- - Plant protection in toria cultivation	Integrated pest and disease management in potato		
8	Post harvest processing, value addition and marketing	Fruits and vegetables	Inadequate post harvest handling, value addition and lack of knowledge on agricultural marketing	-	-	- Preparation of jam from pineapple fruit	-	) Publication of bulletins ii) Method demonstrations iii) Awareness campaign	-
9	Empowerment of women and reorientation of SHGs towards commodity based production & marketing system		Lack of commodity based production and marketing system	-	-	- Formation and management of SHG for woman empowerment - Leadership development in villages for economic development - Entrepreneurial development in farmers in villages for economic development - Strengthening of SHG for economic development - Strengthening of SHG for economic development - Income generation activities for empowerment of rural woman - Entrepreneurial development of rural youth	-	i) Creating awareness on facilities available for marketing information system ii) Formation of CIGs and FOs for organized marketing	-

						in villages for economic development			
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### 3.1 Achievements on technologies assessed and refined

#### A.1 Abstract of the number of technologies assessed\* in respect of crops/enterprises

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Live stock	Fruits	Spices	Plantation crops	Tuber Crops	TOTAL
Varietal Evaluation	1	-	-	-	-	-	-	-	-	1
Seed / Plant production										
Weed Management										
Integrated Crop Management										
Integrated Nutrient Management	1	1	1	-	-	-	-	-	-	3
High density planting	-	-	-	-	-	-	-	-	-	1
Mushroom cultivation										
Drudgery reduction										
Farm machineries										
Value addition										
Integrated Pest Management										
Integrated Disease Management	-	-	-	1	-	-	1	-	-	2
Resource conservation technology	-	-	-	1	-	-	-	-	-	1
Small Scale income generating enterprises										
<b>TOTAL</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>8</b>

\* Any new technology, which may offer solution to a location specific problem but not tested earlier in a given micro situation.

**A.2. Abstract of the number of technologies refined\* in respect of crops/enterprises: NA**

**A.3. Abstract of the number of technologies assessed in respect of livestock /enterprises**

Thematic areas	Cattle	Poultry	Sheep	Goat	Piggery	Rabbitary	Duckery	TOTAL
Evaluation of Breeds	-	-	-	1	-	-	-	1
Nutrition Management	-	-	-	1	-	-	-	1
Disease of Management								
Value Addition								
Production and Management								
Feed and Fodder								

Small Scale income generating enterprises								
<b>TOTAL</b>	-	-	-	<b>2</b>	-	-	-	<b>2</b>

**A.4. Abstract on the number of technologies refined in respect of livestock / enterprises:**

**Nil**

**B. Details of each On Farm Trial to be furnished in the following format**

**Technology Assessment**

**Trial 1**

- Title : Integrated nutrient management in winter rice
- Problem diagnose/defined : Injudicious use of chemical fertilizer
- Details of technologies selected for assessment/refinement : Use of Azospirillum and PSB @ 4kg/ha each + FYM 1t/ha + Rock phosphate 10 kg P<sub>2</sub>O<sub>5</sub>/ha + MOP 40 Kg K<sub>2</sub>O/ha
- Source of technology : Dept. of Soil sc., AAU, Jorhat-13
- Production system : Crop production
- Thematic area : Nutrient management in rice
- Performance of the Technology with performance indicators : Assessment integrated nutrient management technology in winter showed 20% yield increase over the farmers practice
- Final recommendation for micro level situation : Application of FYM 1t/ha, Rock phosphate 10 kg P<sub>2</sub>O<sub>5</sub>/ha, MOP 40 Kg K<sub>2</sub>O/ha and Azospirillum and PSB @ 4kg/ha each may be considered as a package for INM system in rice based on soil test values
- Constraints identified and Feedback for research : Sometimes, bio fertilizer and rock phosphate are not available in the market which may affect timely application. Soil test based nutrient application need to be considered while making fertilizer application
- Process of farmers participation and their reaction : Farmers are selected in a participatory way who actively participated by rendering their service for various agricultural operations as suggested by the scientist in their OFT plots. They also interacted with the KVK scientist time to time and received technical guidance from the scientist. All the necessary agricultural inputs and technical guidance were provided by KVK, Chirang

### Results of On Farm Trials

Crop/enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Rice (Winter)	Rainfed	Injudicious use of chemical fertilizer	Integrated nutrient management in winter rice	3	Use of Azospirillum and PSB @ 4kg/ha each + FYM 1t/ha + Rock phosphate 10 kg P2O5/ha + MOP 40 Kg K2O/ha	Plant height Days to 50% flowering No of effective tillers/hill	104 cm 115days 12	Winter rice variety 'Ranjit' cultivated with integrated nutrient management practices resulted in 20 % higher yield than the farmers practice	INM system is applicable in the farmers field provided biofertilizers are available in the market and organic matter is available in sufficient quantity.

Technology Assessed	*Production per ha (t)	Net Return (Profit) in Rs. / ha	BC Ratio
11	12	13	14
Farmer's practice**	3600	19800	2.22
Technology assessed**	4500	28500	2.73
Technology refined**	NA	NA	NA

#### **Trial 2**

- Title : Potash management in Lentil
- Problem diagnose/defined : Low soil potassium status
- Details of technologies selected for assessment/refinement : i) Application of 15 kg N, 35 kg P and 0 kg K  
ii) Application of 15kg N, 35 kg P and 15 kg K
- Source of technology : RARS, AAU, Shillongoni, Nagaon

- Production system : Crop production
- Thematic area : Nutrient management
- Performance of the Technology with performance indicators : Application of potassium @ 15 kg/ha along with recommended dose of N & P in lentil resulted in 9.48 % higher yield than farmers practice i.e. application of 15 kg N, 35 kg P<sub>2</sub>O<sub>5</sub> and 0 kg K<sub>2</sub>O
- Final recommendation for micro level situation : As in most of the cases, soils are deficient in potassium, therefore application of potassium @ 15 kg/ha along with recommended dose of N & P may be recommended in lentil
- Constraints identified and Feedback for research : Soil test based fertilizer recommendation may be more effective
- Process of farmers participation and their reaction : Farmers are selected in consultation with the Government officials and they actively participated by rendering their service for various agricultural operations as suggested by the scientist in their OFT plots. They also interacted with the KVK scientist time to time and received technical guidance from the scientist. All the necessary agricultural inputs were provided by KVK, Chirang

#### Results of On Farm Trials

Crop/enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Lentil	Rainfed upland	Low soil potassium status and imbalance fertilization	Potash management in Lentil	3	Application of 15kg N, 35 kg P <sub>2</sub> O <sub>5</sub> and 15 kg K <sub>2</sub> O	Plant height Crop yield	28cm 739	Application of potassium @ 15 kg/ha along with recommended dose of N & P in lentil resulted in 9.48% higher yield than farmers practice i.e. application of 15 kg N, 35 kg P <sub>2</sub> O <sub>5</sub> and 0 kg K <sub>2</sub> O	Potassium application showed differences in respect of crop yield in lentil.

\* No. of farmers

Technology Assessed	*Production per ha	Net Return (Profit) in Rs. / ha	BC Ratio
11	12	13	14

Application of 15 kg N, 35 kg P <sub>2</sub> O <sub>5</sub> and 0 kg K <sub>2</sub> O	675	24,550	3.67
Application of 15kg N, 35 kg P <sub>2</sub> O <sub>5</sub> and 15 kg K <sub>2</sub> O	739	27,450	3.88

### **Trial 3**

- Title : Integrated nutrient management in toria
- Problem diagnose/defined : Injudicious use of chemical fertilizer
- Details of technologies selected for assessment/refinement : i) Farmers' practice- recommended dose of fertilizer i.e. 40:35:15 kg/ha of NPK  
ii) Application of 45:25:22.5 kg/ha of NPK + Azotobacter and PSB
- Source of technology : RARS, AAU, Shillongoni, Nagaon
- Production system : Crop production
- Thematic area : Nutrient management
- Performance of the Technology with performance indicators : Application of 45:25:22.5 kg/ha of NPK + Azotobacter and PSB recorded 11.9% higher yield of toria than the farmers' practice
- Final recommendation for micro level situation : Use of integrated sources of plant nutrients helps in maintaining better soil health essential for sustainable crop production. Therefore, although there is slight improvement in crop yield due to adoption of INM practice in toria, however, this practice may be adopted in the farmer's field @ 45:25:22.5 kg/ha of NPK + Azotobacter and PSB
- Constraints identified and Feedback for research : Non availability of quality bio-fertilizer in the farmer's field may be a constrain for its applicability
- Process of farmers participation and their reaction : Farmers are selected from those areas where farmers use only chemical fertilizers. The programme was carried out with the active participation of farmers by rendering their services for various agricultural operations as suggested by the scientist in their OFT plots. They also interacted with the KVK scientist time to time and received technical guidance from the scientist. All the necessary agricultural inputs were provided by KVK, Chirang.

### Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Toria	Rainfed	Injudicious use of chemical fertilizer	Integrated nutrient management in toria	3	Application of 45:25:22.5 kg/ha of NPK + Azotobacter and PSB	Grain yield	1050	Application of 45:25:22.5 kg/ha of NPK + Azotobacter and PSB recorded 11.9% higher yield of toria than the framers' practice.	It may be a good technology in toria provided there is availability of bio- fertilizer in time

\* No. of farmers

Technology Assessed	*Production per ha	Net Return (Profit) in Rs. / ha	BC Ratio
11	12	13	14
Farmers' practice- recommended dose of fertilizer i.e. 40:35:15 kg/ha of NPK	938	10229	2.2
Application of 45:25:22.5 kg/ha of NPK + Azotobacter and PSB	1050	12000	2.3

### Trial 4

- Title : Management of bacterial wilt in tomato
- Problem diagnose/defined : Poor control of bacterial wilt with available chemicals
- Details of technologies selected for assessment/refinement : i) Farmers' practice-  
ii) Seed, seedling and soil treatment with Biofor-PF2
- Source of technology : Dept. of Plant Pathology, AAU, Jorhat
- Production system : Crop production

- Thematic area : Plant protection
- Performance of the Technology with performance indicators : Use of Biofor Pf-2 resulted in 83% reduction in disease infestation along with 25.5% increase in yield
- Final recommendation for micro level situation : Based on the performance, Bio for Pf-2 may be used successfully for controlling bacterial wilt by treating the seed @ 1g/ 10 g of seed, root treatment with Biofor-PF-2 @ 1kg in 2 lit of water for 1000 seedlings and soil application @ 10 g mixed with 100 g dried cow dung/plant
- Constraints identified and Feedback for research : Non availability of Bio for Pf-2 in the rural areas is a major constraint. Compatibility of Bio for Pf-2 with other chemicals needs to be studied as sometimes situation necessitates application of chemicals.
- Process of farmers participation and their reaction : Farmers are selected from those areas where farmers use only chemical fertilizers. The programme was carried out with the active participation of farmers by rendering their services for various agricultural operations as suggested by the scientist in their OFT plots. They also interacted with the KVK scientist time to time and received technical guidance from the scientist. All the necessary agricultural inputs were provided by KVK ,Chirang

### Results of On Farm Trials

Crop/enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter		Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8		9	10
Tomato	Irrigated upland	Injudicious use of pesticides and Poor control of bacterial wilt with available chemicals	Management of bacterial wilt in tomato	5	Seed, seedling and soil treatment with Biofor Pf-2	Yield (gm/plant) Disease Infestation: 10DAT 20DAT 30DAT 40DAT 50DAT 60DAT	Control 1140 0% 7% 14.2% 17.6% 20.8% 21.0%	Treatment 1430 0% 0.9% 2% 3% 3.6% 3.6%	Use of Biofor Pf-2 resulted in 83% reduction in disease infestation along with 25.5% increase in yield	Biofor Pf proved to be the best alternative in controlling bacterial wilt in tomato provided it is easily available in the market

\* No. of farmers

Technology Assessed	*Production per ha	Net Return (Profit) in Rs. / ha	BC Ratio
I). Farmers' Practice- Without application of chemical	421.8 qt	169450/-	4.09



II). Seed, seedling and soil treatment with Biofor Pf-2	529.10qt	216100/-	4.46
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### **Trial 5**

- Title : Rearing of upgraded goat
- Problem diagnose/defined : Low productivity of animals
- Details of technologies selected for assessment/refinement : i). Farmer's practice- Local non-descript type  
ii) Upgraded goat " Beetal Cross Bred"
- Source of technology : Goat Research Station, AAU, Byrnihut, Assam
- Production system : Livestock production
- Thematic area : Meat and milk production
- Performance of the Technology with performance indicators : On going

#### **Results of On Farm Trials**

Crop/enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Livestock (on going)	-	Low productivity of animals	Rearing of upgraded goat	3	Upgraded goat " Beetal Cross Bred"	Body conformation	Good	On going	NA
						Month wise weight gain	2.5 Kg		
						Disease incidence and health care	Nil		
						No. of kid obtained	2		

\* No. of farmers

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14

NA	NA	NA	NA
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### **Trial 6**

- Title : Scientific feeding in goat
- Problem diagnose/defined : Poor performance under low nutrient feeding system
- Details of technologies selected for assessment/refinement : i) Farmers' practice- Semi intensive grazing system  
ii) Balanced feeding (200g concentrate feed/animal/day)
- Source of technology : Goat Research Station, AAU, Byrnhut, Assam
- Production system : Livestock production
- Thematic area : Meat and milk production
- Performance of the Technology with performance indicators : On going

#### **Results of On Farm Trials**

Crop/enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Livestock (on going)	-	Poor performance under low nutrient feeding system	Scientific feeding in goat	3	Balanced feeding (200g concentrate feed/animal/day)	Monthly weight gain	1.5 Kg	On going	NA
						Disease incidence and health care	Nil		
						No. of kid obtained	2		
						Age at first kidding	7 months		
						Milk yield	1 litre/day		

\* No. of farmers

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
NA	NA	NA	NA

### **Trial 7**

- Title : Economic viability of De-navelling and post shooting feeding of NPK and sulphur in banana
- Problem diagnose/defined : Poor bunch size and small fingers due to mobilization of nutrients into the unwanted rind of banana plant
- Details of technologies selected for assessment/refinement : i) Farmers' practice  
ii) Denavelling of banana with urea and sulphate of potash
- Source of technology : Indian Institute of Horticultural Research, Bengaluru
- Production system : Crop Production
- Thematic area : Crop management
- Performance of the Technology with performance indicators : On going

### **Trial 8**

- Title : Performance of high yielding summer rice variety 'Dinanath' in the farmers field
- Problem diagnose/defined : Low productivity of existing varieties
- Details of technologies selected for assessment/refinement : i) Farmers' practice- existing variety  
ii) HYV 'Dinanath'
- Source of technology : RARS, AAU, Shillongoni, Nagaon
- Production system : Crop Production
- Thematic area : Crop management
- Performance of the Technology with performance indicators : On going

### **Trial 9**

- Title : Rhizome rot management in ginger using Biofor-PF
- Problem diagnose/defined : Rhizome rot disease of ginger
- Details of technologies selected for assessment/refinement : i) Farmer's practice – use of FYM  
ii) Seed rhizome treatment + soil application of Biofor-Pf
- Source of technology : Dept. of Plant Pathology, AAU, Jorhat
- Production system : Crop production
- Thematic area : Plant protection
- Performance of the Technology with performance indicators : On going

### **Trial 10**

- Title : High density cultivation of “Malbhog” Banana
- Problem diagnose/defined : Poor resource utilization
- Details of technologies selected for assessment/refinement : i). Farmer's practice- Normal density  
ii) Plant population: 6250 plants per hectare; spacing: 1m X 1.2m X 2m
- Source of technology : Dept. of Horticulture, AAU, Jorhat
- Production system : Crop production
- Thematic area : High density cultivation
- Performance of the Technology with performance indicators : On going

***\*Field crops – kg/ha, \* for horticultural crops -= kg/t/ha, \* milk and meat – litres or kg/animal, \* for mushroom and vermi compost kg/unit area.***

***\*\* Give details of the technology assessed or refined and farmer's practice***

**B. Technology Refinement : NA**

**3.2 Achievements of Frontline Demonstrations**

**a. Follow-up for results of FLDs implemented during previous years**

List of technologies demonstrated during previous year and popularized during 2010-11 and recommended for large scale adoption in the district

Sl. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization Methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Rice	Crop management	- Performance of HYV of boro rice "Kanaklata" with improved crop management	-Organizing training programme -Interaction with farmers -Providing information about the source of seed - Farmer's field visit - Advisory services -Distribution of bulletins			
2	Rice	Crop management	Seed production in rice (Var. Ranjit)	-Organizing training programme -Interaction with farmers -Providing information about the source of seed - Farmer's field visit - Advisory services			
3	Toria	Crop management	Performance of HYV of toria "TS-36" with improved crop management	- Farmer's field visit - Advisory services -Organizing training programme -Interaction with farmer			
4	Lentil	Nutrient management	Improved crop management practices in lentil (Var. B-77)	- Farmer's field visit - Advisory services -Organizing training programme -Interaction with farmers -Distribution of bulletins			
5	Black gram	Crop management	Improved crop management practices in black gram	- Farmer's field visit - Advisory services			

				-Organizing training programme -Interaction with farmers			
6	Water melon	Crop management	Improved production technology of water melon	- Farmer's field visit - Advisory services -Organizing training programme -Interaction with farmers			

**b. Details of FLDs implemented during 2010-11 (Information is to be furnished in the following three tables for each category i.e. cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops.)**

**i) Oilseed Crop:**

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1	Toria	Crop management	Performance of HYV of toria "TS-36" with improved crop management	Rabi, 2010-11	5.0	5.0	4	5	9	NA

**Details of farming situation**

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Toria	Rabi, 2010-11	Rainfed	Sandy loam	-	46.9 Kg/ha	33.5 Kg/ha	Rice	1 <sup>st</sup> to 3 <sup>rd</sup> week, Nov,2010	2 <sup>nd</sup> to 4 <sup>th</sup> week, Feb, 2011	70.0	9

**Performance of FLD**

Sl. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Demo. Yield Qtl/ha			Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
						H	L	A			Demo	Local
1	2	3	4	5	6	7	8	9	10	11	12	13

1	Toria	Improved crop management practices in toria	TS-36	7	5.0	9.75	8.25	8.63	7.5	15.1	-	-
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NB: Attach few good action photographs with title at the back with pencil

**Economic Impact (continuation of previous table)**

0		Average Gross Return (Rs./ha)		Average Net Return (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
14	15	16	17	18	19	20
8750	7800	21575	18750	12825	10950	2.47

**ii) Pulse Crop:**

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1	Lentil	Crop management	- Improved crop management practices in lentil (Var. B-77)	Rabi, 2010-11	5.0	5.0	1	6	7	NA
2	Black gram	Crop management	- Improved crop management practices in black gram	Kharif, 2010	5.0	3.0	-	4	4	Heavy rainfall delays land preparation and sowing.

**Details of farming situation**

Crop	Season	Farming situation (RF/ Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Lentil	Rabi, 2010-11	Rainfed upland	Sandy loam	-	-	-	Rice	1 <sup>st</sup> week of Nov, 2009	1 <sup>st</sup> week to March, 2010	70.0	8
Blackgram	Kharif' 10	Rainfed upland	Sandy loam	-	38.3 Kg/ha	30.1 Kg/ha	Fallow, Summer vegetables	2nd week of September, 10	3rd week of December, 10	527.6	19

### Performance of FLD

Sl. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Demo. Yield Qtl/ha			Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
						H	L	A			Demo	Local
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Lentil	Improved crop management practices in lentil (Var. B-77)	B-77	7	5.0	9.81	8.25	9.0	7.5	20.0	-	-
2	Blackgram	Improved crop management practices in black gram	SBC 40, SBC 47	4	3.0	6.00	4.87	5.25	4.50	16.7	-	-

NB: Attach few good action photographs with title at the back with pencil

### Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
14	15	16	17	18	19	20
9300	7650	22500	18750	13200	11100	2.42
9071	7500	21000	18000	11929	10500	2.32

### iii) Cereal Crop

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1	Rice	Crop Management	Performance of HYV of boro rice "Kanaklata" with improved crop management	Summer 10-11	2.0	2.0	1	2	3	NA



2	Rice	Crop management	Technology showcasing for seed production of winter rice variety 'Ranjit'	Kharif 10	100.0	100.0	–	300	300	NA
3	Rice	Crop management	Technology showcasing for seed production of summer rice variety 'Joymoti' & 'Kanaklata'	Summer 10-11	100.0	100.0	–	300	300	NA
4	Rice	Crop protection	Biological control of rice pests in winter rice	Kharif 10	1.0	1.0	1	2	3	NA
5	Rice	Crop protection	-Performance of bio-agent " <i>Trichogramma japonicum</i> " in summer rice	Summer 10-11	1.0	1.0	2	1	3	NA

#### Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Rice	Summer 10-11	Irrigated	Sandy loam to loam	–	–	–	Winter rice	4 <sup>th</sup> week of January, 2011	On going	–	–
Rice	Kharif 10 (Tech showcasing)	Rainfed	Sandy loam to loam	–	–	–	Summer rice	2 <sup>nd</sup> week of June 2010	3 <sup>rd</sup> week of November, 2010	2864	68
Rice	Summer 10-11 (Tech showcasing)	Irrigated	Sandy loam to loam	–	–	–	Winter rice	2 <sup>nd</sup> week of January, 2011	On going	–	–
Rice	Kharif 10	Rainfed	Sandy loam to loam	–	–	–	Fallow	3 <sup>rd</sup> -4 <sup>th</sup> week of June, 2010	3 <sup>rd</sup> -4 <sup>th</sup> week of Nov, 2010	2864	68
Rice	Summer 10-11	Irrigated	Sandy loam to loam				Winter rice	4 <sup>th</sup> week of January, 2011	On going	–	–

### Performance of FLD

Sl. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Demo. Yield Qtl/ha			Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
						H	L	A			Demo	Local
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Rice	High yielding variety of Boro rice variety "Kanaklata"	Kanaklata	3	2.0	On going			-	-	-	-
2	Rice	Seed production technique in winter rice variety 'Ranjit'	Ranjit	300	100.0	66.0	45.0	51.0	36.0	41.7		
3	Rice	Seed production technique in summer rice variety 'Joymoti' & 'Kanaklata'	Joymoti & Kanaklata	300	100.0	On going			-	-	-	-
4	Rice	Bio-agent " <i>Trichogramma japonicum</i> " in winter rice	Ranjit	3	1.0	45.0	33.0	39.0	30.0	30%	-	-
5	Rice	Bio-agent " <i>Trichogramma japonicum</i> " in summer rice	Kanaklata	3	1.0	On going						

NB: Attach few good action photographs with title at the back with pencil

### Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return/ Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
14	15	16	17	18	19	20
20,500	18,500	NA	NA	NA	NA	NA
16,220	15,000	76500	36000	60280	21000	4.72
20,500	19,000	NA	NA	NA	NA	NA
16,500	14,500	39000	30000	22500	15500	2.36
20,500	18,500	NA	NA	NA	NA	NA



#### iv) Commercial Crop

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1	Water Melon	Crop management	Improved crop management practices of water melon	Rabi, 2010-11	0.67	0.67	3	7	10	NA
2	Banana	Crop management	Tissue cultured banana	Rabi, 2010-11	–	0.39	1	3	4	NA

#### Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Water Melon	Rabi, 2010-11	Irrigated	Sandy soil (Char areas)	–	–	–	–	1 <sup>st</sup> week of Dec, 2010	Last week of March, 11 1 <sup>st</sup> week of April	61.0	7
Banana	Rabi, 2010-11	Irrigated	Sandy loam	–	–	–	–	1 <sup>st</sup> week of Aug, 2010	On going	–	–

#### Performance of FLD

Sl. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Demo. Yield Qtl/ha			Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
						H	L	A			Demo	Local
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Water Melon	Improved crop management practices of water melon	Sugar Baby	10	0.67	–	–	720	600	20	–	–
2	Banana	Tissue cultured Banana	Malbhog	4	0.39	On going	NA	NA	Malbhog	4	–	–

NB: Attach few good action photographs with title at the back with pencil

### Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
14	15	16	17	18	19	20
37580.00	33980.00	288000.00	240000.00	250420.00	206020.00	7.67
NA	NA	NA	NA	NA	NA	NA

Analytical Review of component demonstrations (details of each component for rainfed / irrigated :

(Situations to be given separately for each season)

Crop	Season	Component	Farming situation	Average yield (q/ha)	Local check (q/ha)	Percentage increase in productivity over local check
Rice	Kharif	1. Seed/Variety (Ranjit)	Medium upland	48	31	54.8

### Technical Feedback on the demonstrated technologies

Sl. No	Feed Back
1	Suitable varieties and adoption of improved crop management practices are most important for achieving higher yield.
2	Timely control of insect pests and diseases can further increase crop yield
3	Toria crop performed good with improved crop management practices but sowing of the crop is often delayed owing to cultivation of long duration Sali rice varieties in rice-toria sequence. Therefore, emphasis needs to be put on development of management practices for late sown toria.
4	Bio-agent " <i>Trichogramma japonicum</i> " can be successfully used for controlling rice stem borer; however, tricho card should be made available at the farmer's level.
5	Seeding rate of lentil (30 kg /ha) need to be reviewed as it leads to higher plant population as well as crop competition.
6	Integrated nutrient management system may be considered in rice for demonstration.

7

For quality seed production programme, Breeder/ Foundation seeds should be made available in time.

### Farmers' reactions on specific technologies

Sl. No	Feed Back
1	Demonstration on seed production technology in rice helped the farmers in understanding of seed production procedure and would ensure supply of quality seed at the farmer's level.
2	As most of the farmers utilize intruded varieties of summer rice, therefore, HYVs of summer rice 'Kanaklata' & 'Jaymoti' may be considered as replacement of these intruded varieties because of their higher yield potential and availability of quality seeds in time.

### Extension and Training activities under FLD

Sl. No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	1	23.11.10	505	Field day programmes were organized as part of technology showcasing programmes under farmers' participatory programme.
2	Bulletin	3	–	–	Under FLD programme on Oilseed and pulse, 2010-11
3	Advisory services	15	–	25	Advisory services were provided in FLD programmes on oilseeds, pulses, cereals and commercial crops.
4	Diagnostic and clinical services	5	–	45	Diagnostic and clinical services were provided during the crop growth stages of rice when crop suffered from insect pests and disease infestation.

#### c. Details of FLD on Enterprises

(i) Farm Implements: NA

(ii) Livestock Enterprises: NA

(iii) Other Enterprises: NA

**Achievements on Training (Including the sponsored, vocational, FLD and trainings under Rainwater Harvesting Unit):**

**A. ON Campus:** NA

**B.OFF Campus**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>(A) Farmers &amp; Farm Women</b>										
<b>I Crop Production</b>										
Weed Management										
Resource Conservation Technologies										
Cropping Systems	1	24	0	24	3	0	3	27	0	27
Crop Diversification										
Integrated Farming	1	21	2	23	2	0	2	25	0	25
Water management	1	2		2	25	0	25	27	0	27
Seed production	5	134	2	136	8	0	8	142	2	144
Nursery management										
Integrated Crop Management	2	51	6	57	2	0	2	53	6	59
Fodder production										
Integrated nutrient management	1	25	0	25	0	0	0	25	0	25
Production of organic inputs										
Integrated agricultural development	5	254	0	254	0	0	0	254	0	254
<b>II Horticulture</b>										
<b>a) Vegetable Crops</b>										
Production of low volume and high value crops										
Off-season vegetables										
Nursery raising										
Exotic vegetables like Broccoli										
Export potential vegetables										
Grading and standardization										



Protective cultivation (Green Houses, Shade Net etc.)										
<b>b) Fruits</b>										
Training and Pruning										
Layout and Management of Orchards	1	24		24	1		1	25		25
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards	1	15		15	13		13	28		28
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques	1	9		9	19		19	28		28
<b>c) Ornamental Plants</b>										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
<b>d) Plantation crops</b>										
Production and Management technology										
Processing and value addition	1	29		29				29		29
<b>e) Tuber crops</b>										
Production and Management technology	1	4		4	22	1	23	26	1	27
Processing and value addition										
<b>f) Spices</b>										
Production and Management technology										
Processing and value addition										
<b>g) Medicinal and Aromatic Plants</b>										
Nursery management										
Production and management technology	1	19		19	7		7	26		26
Post harvest technology and value addition										
<b>III Soil Health and Fertility Management</b>										
Soil fertility management										
Soil and Water Conservation										
Integrated Nutrient Management	2	45	5	50				45	5	50

Production and use of organic inputs	1	26		26				26		26
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient Use Efficiency										
Soil and Water Testing										
<b>IV Livestock Production and Management</b>										
Dairy Management										
Poultry Management										
Piggery Management										
Rabbit Management										
Disease Management										
Feed management										
Production of quality animal products										
<b>V Home Science/Women empowerment</b>										
Household food security by kitchen gardening and nutrition gardening										
Design and development of low/minimum cost diet										
Designing and development for high nutrient efficiency diet										
Minimization of nutrient loss in processing										
Gender mainstreaming through SHGs										
Storage loss minimization techniques										
Value addition										
Income generation activities for empowerment of rural Women										
Location specific drudgery reduction technologies										
Rural Crafts										
Women and child care										
<b>VI Agril. Engineering</b>										
Installation and maintenance of micro irrigation systems										
Use of Plastics in farming practices										
Production of small tools and implements										
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										

Post Harvest Technology										
<b>VII Plant Protection</b>										
Integrated Pest Management	4	89	1	90	22	0	22	111	1	112
Integrated Disease Management	2	51	0	51	1	0	1	52	0	52
Bio-control of pests and diseases										
Production of bio control agents and bio pesticides										
<b>VIII Fisheries</b>										
Integrated fish farming										
Carp breeding and hatchery management										
Carp fry and fingerling rearing										
Composite fish culture										
Hatchery management and culture of freshwater prawn										
Breeding and culture of ornamental fishes										
Portable plastic carp hatchery										
Pen culture of fish and prawn										
Shrimp farming										
Edible oyster farming										
Pearl culture										
Fish processing and value addition										
<b>IX Production of Inputs at site</b>										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production	1	19	0	19	8	0	8	27	0	27
Organic manures production										
Production of fry and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										

<b>X Capacity Building and Group Dynamics</b>										
Leadership development										
Group dynamics										
Formation and Management of SHGs	2	0	21	21	0	38	38	0	59	59
Mobilization of social capital										
Entrepreneurial development of farmers/youths	2	49	3	52	0	0	0	49	3	52
Agril. Marketing	1	27	0	27	0	0	0	27	0	27
Maintenance of farm records and accounts	1	25	0	25	1	0	1	26	0	26
<b>XI Agro-forestry</b>										
Production technologies										
Nursery management										
Integrated Farming Systems										
<b>TOTAL</b>	<b>33</b>	<b>688</b>	<b>40</b>	<b>728</b>	<b>134</b>	<b>39</b>	<b>173</b>	<b>824</b>	<b>77</b>	<b>901</b>
<b>(B) RURAL YOUTH</b>										
Mushroom Production										
Bee-keeping										
Integrated farming										
Seed production										
Production of organic inputs										
Integrated Farming										
Planting material production										
Vermi-culture	3	78	0	78	1	0	1	79	0	79
Sericulture										
Protected cultivation of vegetable crops	1	25	0	25	0	0	0	25	0	25
Commercial fruit production	1	26	0	26	0	0	0	26	0	26
Repair and maintenance of farm machinery and implements										
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Value addition	1	0	25	25	0	0	0	0	25	25
Production of quality animal products										
Dairying										
Sheep and goat rearing	1	0	0	0	8	17	25	8	17	25

Quail farming										
Piggery	1	9	19	28	0	0	0	9	19	28
Rabbit farming										
Poultry production	1	0	0	0	26	0	26	26	0	26
Ornamental fisheries										
Para vets										
Para extension workers										
Composite fish culture										
Income generating activities	1	0	0	0	25	0	25	25	0	25
Leadership development	1	0	0	0	2	25	27	2	25	27
Information Networking										
Self Help Group formation	1	0	26	26	0	0	0	0	26	26
Fish harvest and processing technology										
Fry and fingerling rearing										
Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
<b>TOTAL</b>	<b>12</b>	<b>138</b>	<b>70</b>	<b>208</b>	<b>62</b>	<b>42</b>	<b>104</b>	<b>200</b>	<b>112</b>	<b>312</b>
<b>(C) Extension Personnel</b>										
Productivity enhancement in field crops	2	45	0	45	6	0	6	51	0	51
Integrated Pest Management	3	54	0	54	3	0	3	57	0	57
Integrated Nutrient management										
Rejuvenation of old orchards										
Protected cultivation technology	1	18	0	18	8	0	8	26	0	26
Formation and Management of SHGs										
Group Dynamics and farmers organization										
Information networking among farmers										
Capacity building for ICT application										
Care and maintenance of farm machinery and implements										
WTO and IPR issues										
Management in farm animals										

Livestock feed and fodder production										
Household food security										
Women and Child care										
Low cost and nutrient efficient diet designing										
Production and use of organic inputs										
Gender mainstreaming through SHGs										
Artificial insemination of first aid for livestock	1	18	0	18	15	0	15	33	0	33
Soil sample collection and chemical analysis	2	51	0	51	1	0	1	52	0	52
<b>TOTAL</b>	<b>9</b>	<b>186</b>	<b>0</b>	<b>186</b>	<b>33</b>	<b>0</b>	<b>33</b>	<b>219</b>	<b>0</b>	<b>219</b>
<b>Grand Total</b>	<b>54</b>	<b>1012</b>	<b>110</b>	<b>1122</b>	<b>229</b>	<b>81</b>	<b>310</b>	<b>1243</b>	<b>189</b>	<b>1432</b>

### C) Consolidated table (ON and OFF Campus)

Note: Details of above training programmes are given in Annexure

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>(A) Farmers &amp; Farm Women</b>										
<b>I Crop Production</b>										
Weed Management										
Resource Conservation Technologies										
Cropping Systems	1	24	0	24	3	0	3	27	0	27
Crop Diversification										
Integrated Farming	1	21	2	23	2	0	2	25	0	25
Water management	1	2		2	25	0	25	27	0	27
Seed production	5	134	2	136	8	0	8	142	2	144
Nursery management										
Integrated Crop Management	2	51	6	57	2	0	2	53	6	59
Fodder production										
Integrated nutrient management	1	25	0	25	0	0	0	25	0	25
Production of organic inputs										

Integrated agricultural development	5	254	0	254	0	0	0	254	0	254
<b>II Horticulture</b>										
<b>a) Vegetable Crops</b>										
Production of low volume and high value crops										
Off-season vegetables										
Nursery raising										
Exotic vegetables like Broccoli										
Export potential vegetables										
Grading and standardization										
Protective cultivation (Green Houses, Shade Net etc.)										
<b>b) Fruits</b>										
Training and Pruning										
Layout and Management of Orchards	1	24		24	1		1	25		25
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards	1	15		15	13		13	28		28
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques	1	9		9	19		19	28		28
<b>c) Ornamental Plants</b>										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
<b>d) Plantation crops</b>										
Production and Management technology										
Processing and value addition	1	29		29				29		29
<b>e) Tuber crops</b>										
Production and Management technology	1	4		4	22	1	23	26	1	27
Processing and value addition										
<b>f) Spices</b>										
Production and Management technology										

Processing and value addition										
<b>g) Medicinal and Aromatic Plants</b>										
Nursery management										
Production and management technology	1	19		19	7		7	26		26
Post harvest technology and value addition										
<b>III Soil Health and Fertility Management</b>										
Soil fertility management										
Soil and Water Conservation										
Integrated Nutrient Management	2	45	5	50				45	5	50
Production and use of organic inputs	1	26		26				26		26
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient Use Efficiency										
Soil and Water Testing										
<b>IV Livestock Production and Management</b>										
Dairy Management										
Poultry Management										
Piggery Management										
Rabbit Management										
Disease Management										
Feed management										
Production of quality animal products										
<b>V Home Science/Women empowerment</b>										
Household food security by kitchen gardening and nutrition gardening										
Design and development of low/minimum cost diet										
Designing and development for high nutrient efficiency diet										
Minimization of nutrient loss in processing										
Gender mainstreaming through SHGs										
Storage loss minimization techniques										
Value addition										
Income generation activities for empowerment of rural Women										



Location specific drudgery reduction technologies										
Rural Crafts										
Women and child care										
<b>VI Agril. Engineering</b>										
Installation and maintenance of micro irrigation systems										
Use of Plastics in farming practices										
Production of small tools and implements										
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										
Post Harvest Technology										
<b>VII Plant Protection</b>										
Integrated Pest Management	4	89	1	90	22	0	22	111	1	112
Integrated Disease Management	2	51	0	51	1	0	1	52	0	52
Bio-control of pests and diseases										
Production of bio control agents and bio pesticides										
<b>VIII Fisheries</b>										
Integrated fish farming										
Carp breeding and hatchery management										
Carp fry and fingerling rearing										
Composite fish culture										
Hatchery management and culture of freshwater prawn										
Breeding and culture of ornamental fishes										
Portable plastic carp hatchery										
Pen culture of fish and prawn										
Shrimp farming										
Edible oyster farming										
Pearl culture										
Fish processing and value addition										
<b>IX Production of Inputs at site</b>										
Seed Production										
Planting material production										
Bio-agents production										

Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production	1	19	0	19	8	0	8	27	0	27
Organic manures production										
Production of fry and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										
<b>X Capacity Building and Group Dynamics</b>										
Leadership development										
Group dynamics										
Formation and Management of SHGs	2	0	21	21	0	38	38	0	59	59
Mobilization of social capital										
Entrepreneurial development of farmers/youths	2	49	3	52	0	0	0	49	3	52
Agril. Marketing	1	27	0	27	0	0	0	27	0	27
Maintenance of farm records and accounts	1	25	0	25	1	0	1	26	0	26
<b>XI Agro-forestry</b>										
Production technologies										
Nursery management										
Integrated Farming Systems										
<b>TOTAL</b>	<b>33</b>	<b>688</b>	<b>40</b>	<b>728</b>	<b>134</b>	<b>39</b>	<b>173</b>	<b>824</b>	<b>77</b>	<b>901</b>
<b>(B) RURAL YOUTH</b>										
Mushroom Production										
Bee-keeping										
Integrated farming										
Seed production										
Production of organic inputs										
Integrated Farming										
Planting material production										
Vermi-culture	3	78	0	78	1	0	1	79	0	79
Sericulture										

Protected cultivation of vegetable crops	1	25	0	25	0	0	0	25	0	25
Commercial fruit production	1	26	0	26	0	0	0	26	0	26
Repair and maintenance of farm machinery and implements										
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Value addition	1	0	25	25	0	0	0	0	25	25
Production of quality animal products										
Dairying										
Sheep and goat rearing	1	0	0	0	8	17	25	8	17	25
Quail farming										
Piggery	1	9	19	28	0	0	0	9	19	28
Rabbit farming										
Poultry production	1	0	0	0	26	0	26	26	0	26
Ornamental fisheries										
Para vets										
Para extension workers										
Composite fish culture										
Income generating activities	1	0	0	0	25	0	25	25	0	25
Leadership development	1	0	0	0	2	25	27	2	25	27
Information Networking										
Self Help Group formation	1	0	26	26	0	0	0	0	26	26
Fish harvest and processing technology										
Fry and fingerling rearing										
Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
<b>TOTAL</b>	<b>12</b>	<b>138</b>	<b>70</b>	<b>208</b>	<b>62</b>	<b>42</b>	<b>104</b>	<b>200</b>	<b>112</b>	<b>312</b>
<b>(C) Extension Personnel</b>										
Productivity enhancement in field crops	2	45	0	45	6	0	6	51	0	51
Integrated Pest Management	3	54	0	54	3	0	3	57	0	57
Integrated Nutrient management										

Rejuvenation of old orchards											
Protected cultivation technology	1	18	0	18	8	0	8	26	0	26	
Formation and Management of SHGs											
Group Dynamics and farmers organization											
Information networking among farmers											
Capacity building for ICT application											
Care and maintenance of farm machinery and implements											
WTO and IPR issues											
Management in farm animals											
Livestock feed and fodder production											
Household food security											
Women and Child care											
Low cost and nutrient efficient diet designing											
Production and use of organic inputs											
Gender mainstreaming through SHGs											
Artificial insemination of first aid for livestock	1	18	0	18	15	0	15	33	0	33	
Soil sample collection and chemical analysis	2	51	0	51	1	0	1	52	0	52	
<b>TOTAL</b>	<b>9</b>	<b>186</b>	<b>0</b>	<b>186</b>	<b>33</b>	<b>0</b>	<b>33</b>	<b>219</b>	<b>0</b>	<b>219</b>	
<b>Grand Total</b>	<b>54</b>	<b>1012</b>	<b>110</b>	<b>1122</b>	<b>229</b>	<b>81</b>	<b>310</b>	<b>1243</b>	<b>189</b>	<b>1432</b>	

### 3.4. Extension Activities (including activities of FLD programmes)

Sl. No.	Nature of Extension Activity	Purpose/ topic and Date	No. of activities	Participants											
				Farmers (Others) (I)			SC/ST (Farmers) (II)			Extension Officials (III)			Grand Total (I+II+III)		
				Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Field Day	Field Day under Technology Showcasing programme	1	306	184	490	–	–	–	15	–	15	321	184	505
2	Workshop (2 Nos.)	Zonal Workshop, Kokrajhar Zone	3	–	–	–	–	–	–	57	3	60	57	3	60

	Workshop (2 Nos.)	Zonal Workshop, Goalpara Zone	3	-	-	-	-	-	-	26	0	26	26	0	26
3	Lectures delivered as resource persons	Apr'10-June'10 (15)	44	-	-	-	-	-	-	-	-	-	-	-	-
		July'10- Sept'10 (22)													
		Oct'10- Dec'10 (5)													
		Jan'11-March'11 (2)													
4	Newspaper /Radio/TV coverage	Apr'10-June'10 (2) Nov' 10 (6)	8	-	-	-	-	-	-	-	-	-	-	-	-
5	Popular articles	-	6	-	-	-	-	-	-	-	-	-	-	-	-
6	Extension Bulletin	-	6	-	-	-	-	-	-	-	-	-	-	-	-
7	Research paper	Aug, 10 (1),Dec'10 (1), Dec'10 (1)	3	-	-	-	-	-	-	-	-	-	-	-	-
8	Diagnostic visit	Aug' 10 (1) Sep' 10 (1)	2	54	0	54	-	-	-	-	-	-	54	0	54
9	Advisory Services	Apr'10-Mar'11	120	-	-	-	-	-	-	-	-	-	-	-	185
10	Scientific visit to farmers field	Apr'10-June'10 (32)	102	-	-	-	-	-	-	-	-	-	-	-	-
		July'10- Sept'10 (33)													
		Oct'10- Dec'10 (19)													
		Jan'11-March'11 (18)													
11	Farmers visit to KVK	Apr'10-June'10 (89)	310	-	-	-	-	-	-	-	-	-	-	-	-
		July'10-Sept'10 (56)													
		Oct'10-Dec'10 (97)													
		Jan'11-March'11 (68)													
12	Farmers scientist interaction	Jan'11	2	76	5	81	4	0	4	5	0	5	85	5	90
13	Audio visual created	Mar' 11	1	-	-	-	-	-	-	-	-	-	-	-	-

**3.5 Production and supply of Technological products**

: NA

**3.6. Literature Developed/Published (with full title, author & reference)**

**(A) KVK News Letter (Date of start, Periodicity, number of copies distributed etc.)** : NA

**(B) Literature developed/published**

Item	Title	Authors name	Number of copies
Research Papers	Effect of tillage, seed rate and weed control method on weed population, nutrient uptake and yield in maize ( <i>Zea mays</i> L.)	Dr. C. K. Sarma	1
	Weed growth, yield and nutrient uptake in maize( <i>Zea mays</i> L.) as influenced by tillage, seed rate and weed control method	Dr. C. K. Sarma	1
	Post training evaluation of training course on nursery management of horticultural crops	Mr. A. Borah, Dr. M. N. Roy & Dr. Y. Prasad	1
<b>Total</b>	-	-	<b>3</b>
Technical Report	FLD report on kharif Pulses,10-11	Dr. C.K. Sarma, Dr. S.K. Paul, S. Kalita	1
	FLD report on rabi oilseeds, 10-11	Dr. C.K. Sarma	1
	FLD report on rabi Pulses, 10-11	Dr. C.K. Sarma	1
	Report on FPARP,09-10	Dr. C.K. Sarma, Dr. S.K. Paul, Mr. S. Kalita, Mr. A. Borah	1
	ZREAC, 2009-10 Report	Dr. C.K. Sarma, Dr. S.K. Paul, Mr. S. Kalita, Mr. A. Borah	1
	A brief report on activities of KVK, Bongaigaon,	Dr. C.K. Sarma, Dr. S.K. Paul, Mr. S. Kalita, Mr. A. Borah	1
	Annual Report, 2009-10(Oct,09–Mar,10)	Dr. S.K. Paul, Dr. C. K. Sarma, Mr. S. Kalita, Mr. A. Borah, Dr. P. Devi, Dr. H. K. Baruah, Ms. C. Nath, Ms. R. Brahma	1
	Annual Action Plan, 2011-12	Dr. S.K. Paul, Dr. C. K. Sarma, Mr. S. Kalita, Mr. A. Borah, Dr. P. Devi, Dr. H. K. Baruah, Ms. C. Nath, R. Brahma	1
	Annual Action Plan, 2010-11(Oct to Mar)	Dr. S.K. Paul, Dr. C. K. Sarma, Mr. S. Kalita, Mr. A. Borah, Dr. P. Devi, Dr. H. K. Baruah, Ms. C. Nath, R. Brahma	1
	Contingency crop planning	Dr. C. K. Sarma, Dr. S.K. Paul, Mr. S. Kalita, Mr. A. Borah, Dr. P. Devi	1
	Weekly report under technology showcasing	Dr. S.K. Paul, Dr. C. K. Sarma, Mr. S. Kalita, Mr. A. Borah	20
	Performance Audit Report (from 2005-06 to 2009-10)	Dr. S.K. Paul, Dr. C. K. Sarma, and Mr. S. Kalita,	2
<b>Total</b>			<b>32</b>

Popular articles	KVK–A model institute for rural development (Yojana–Payovara, 2011)	Mr. A. Borah	1
	On Line Krishi (Yojana–Payovara, 2011)	Mr. A. Borah	1
	Technology assessment in agriculture ( The Assam Tribune, Jan, 11)	Dr. C.K. Sarma	1
	Good Agricultural Practices ( The Assam Tribune, January 2010)	Dr. C.K. Sarma	1
	Integrated pest management in rice(Namonir Asom)	Mr. S. Kalita	1
	Bt brinjal and some facts (Namonir Asom)		1
<b>Total</b>	–	–	<b>6</b>
Leaflets/folders	Disease management in potato	Mr. S. Kalita, Dr. C. K. Sarma & Dr. S.K. Paul,	100
	Insect pest management in potato	Mr. S. Kalita, Dr. C. K. Sarma & Dr. S.K. Paul,	100
	Precautions in use of chemical pesticide	Mr. S. Kalita, Dr. C. K. Sarma & Dr. S.K. Paul,	100
	Application of IT in agriculture	Ms. C. Nath, Dr. C. K. Sarma & Dr. S.K. Paul,	100
	Use of bio-fertilizer in pulse crops	Ms. R. Brahma, Dr. C. K. Sarma & Dr. S.K. Paul,	400
	Storage pest management in pulse crops	Mr. S. Kalita, Dr. C. K. Sarma & Dr. S.K. Paul,	400
<b>Total</b>	–	–	<b>1200</b>

**(C) Details of Electronic Media Produced : NA**

**3.7. Success stories /case studies, if any**

**Mr. Sarbadev Barman secures livelihood with diversified farming**

Mr. Sarbadev Barman is an enthusiastic youth and a small scale farmer, now in his late 30s, living in Pub Khamarpara village in Chirang district in Assam. He hails from a farm family and owns 3.0 ha land. Life took turns when Mr Barman lost his father and had to take his family responsibility. Like any other youths, his natural choice was to find a job; however, he could not succeed even after paying bribe to some middleman. But within a short period of time, he realized that it is merely wastage of time and energy and he concentrated in agriculture with his own land. He and his family started practising agriculture, horticulture, dairy, poultry and fishery with whatever knowledge he acquired from his parents. In fact, traditional system of agriculture could hardly fetch any major change in his yearly income and found it difficult to meet up family's daily requirement. In 2008, he got an exposure to the KVK activities while attending a field day programme, organized nearby under front line demonstration programme. Soon after, he visited KVK Chirang and showed his keenness towards diversified farming sector. KVK Chirang organised training programme on crop diversification and integrated crop management in his locality considering the need of food and nutritional security where he could enrich his knowledge level in respect of modern crop production technologies.

Mr. Barman along with many other farmers came forward to apply scientific knowledge in *kharif* rice as it is the most important crop of his area. In his maiden attempt, he visualized the effect of adopting scientific methods in rice production with 45% higher yield than the traditional practice and earned Rs.48,000.00 per hectare against Rs.33,000.00 under traditional system. Lentil is the second most important field crop of his farm because of land suitability and market demand. KVK Chirang started front line demonstration programme on rabi pulses in the farmer's field keeping the fact in mind that low yield in lentil is because of poor adoption of scientific agronomic practices. With the knowledge gathered through demonstration and training programme, Mr Barman adopted scientific management practices in lentil crop in 2.5 ha land and could harvest 120% higher than the earlier practice with increase in income up to Rs. 65,625.00 As livestock component was also an integral part of his farm, KVK imparted training on poultry and dairy management and arranged a demonstration on Chara Chambelli breed of duck which is known for its higher egg laying capacity.

This breed performed exceptionally well in his farm and gradually becomes popular in his locality and nearby villages. He earns Rs.5, 500.00 by selling eggs. In dairy sector also, with better health care and management, he get 640 lit of milk and earn Rs. 25,600.00 per year. Fishery is also an integral part of his farming system, although he was unable to realize the potentiality of this sector prior meeting KVK scientists. KVK Chirang organised interaction programmes which motivated Mr. Barman to go for scientific fish farming. As well as having a diverse farm, making the best use of his products within the farm is a key to his success. Now he is promoting fishery as additional income generating activities in his farm with an annual income of Rs.65,000.00.

Today diversification is reflected in his farm throughout the year. Adoption of scientific intervention has not only ensured food security for the family throughout the year but also made nutritious food available to them. His domestic need of cereals, pulse and vegetables is fulfilled through his own farm and additional income is obtained from selling surplus food. Other farmers in the village are very much impressed and motivated. Mr. Barman has showed how it is possible for a small farmer to efficiently use his limited resources through diversified farming and make a good profit

**3.9. Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs)**

Sl. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Rice	Use of perches in the paddy field so that predatory birds sit on it and can trap insect pests.	Control insect pests.
2	Rice	Broadcasting of outer rind of citrus fruit in the standing water of paddy field to control case	Control case worm



		worm.	
3	Paddy	Use of dead frog and crab in the paddy field to repel Gandhi bug.	Repel Gandhi bug
4	Paddy	Spraying of fresh cow dung solution in paddy crop to control bacterial leaf blight.	Control bacterial leaf blight.
5	Paddy	Application of kerosene oil in the standing water of paddy field to control case worm infestation.	Control case worm infestation.
6	Brinjal	Application of wood ashes over the leaves of some cucurbits and brinjal to reduce insect infestation.	Reduce insect infestation.
7	Bottle gourd	Splitting of base of bottle gourd plant and piercing with catfish spine to induce fruit setting.	Induce fruit setting.
8	Vegetable crops	Spraying of solution of one part of cattle urine and six part of water in vegetable crops to protect against insect pests.	Protect against insect pests.
9	Seed preservation	Use of neem leaves for controlling storage pests.	Controlling storage pests.
10	Rice	Beating the upper half of standing rice crop with thorny branches of trees	Controlling leaf folder
11.	Rice	Erection of "Tara paat" branches in the rice field	To control case worm attack
12.	Rice	Erection of "Germani bon" branches in the rice field	To control case worm attack
13.	Rice	Erection of damaged video film in the rice field at the time maturity	To repel birds feeding rice seed

### 3.10 Indicate the specific training need analysis tools/methodology followed for

- **Identification of courses for farmers / farm women**
  - Need based training courses are being identified after collecting necessary information from the farmer's field in a participatory way.
  - Some training courses are identified after interacting with the extension functionaries of various departments and members of NGOs as well as farmer's organizations.
  - Training courses are also decided considering farmer's demand on a particular subject matter.
- **Rural Youth**
  - Need based training courses are identified after interacting with youth organizations, SHGs NGOs, Govt. Depts. etc.
  - Some training courses are planned after knowing scope and prospects of income generating activities in the rural areas.
  - Through people's participation.
- **In-service personnel**
  - Interaction with the extension functionaries of agriculture and allied departments, NGOs, SHGs etc.

- Based on the discussion in ZREAC meeting and on latest technological development.

### 3.11 Field activities

- i. Number of villages adopted : 2
- ii. No. of farm families selected : 15
- iii. No. of survey/PRA conducted : 2

### 3.12. Activities of Soil and Water Testing Laboratory NA

### 4.0 IMPACT

- Impact of KVK activities (Not to be restricted for reporting period).

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Commercial cultivation of Banana, Var. Malbhog through 'corm' as planting material along with recommended doses of fertilizer, treatment of planting material and all plant protection measures	125	50	52,000.00/ha	87,500.00/ha
Scientific method of potato cultivation	50	40	48,000.00/ha	94,000.00/ha
Introduction of HYV of <i>Sali</i> rice var. Ranjit with modern cultivation technology viz. time of sowing & transplanting, seed treatment, fertility management, water management and plant protection measures	100	60	21,600.00/ha	34,200.00/ha
Introduction of HYV of Boro rice var. Joymoti and Kanaklata with modern cultivation technology viz. time of sowing & transplanting, seed treatment, fertility management, water management and plant protection measures	125	60	27,000.00/ha	38,125.00/ha
Seed production technique in <i>Sali</i> rice (Variety: Ranjit)	55	50	28,000.00/ha	76,000.00/ha
System of rice intensification (SRI) in summer rice	50	60	27,000.00/ha	40,000.00/ha
Improved production technology of lentil	50	20	11,000.00/ha	13,200.00/ha
Rearing of chara chamelli duck	25	25	-	-

NB : Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

#### 4.2. Cases of large scale adoption

(Please furnish detailed information for each case)

1. Summer rice has been cultivated in limited areas of the district that too, with some unknown, intruded varieties without following proper method of cultivation. KVK, Chirang has been consistently trying to popularize HYVs of summer rice 'Jaymoti' and 'Kanaklata' and their scientific production technology in the district for last five years through on farm testing, front line demonstration and training programme. Because of its continuous effort in this direction, there has been gradual increase in area (Approx. 120.0 ha) under these two HYVs of summer rice and also increase in crop yield (60.0 q/ha). Moreover, with the development of irrigation facility, many farmers have come forward to cultivate summer rice in some new areas also. Further, because of the continuous effort made by KVK, Chirang to popularize SRI technology in summer rice, about 60.0 ha in Kokila village and 12.0 ha in Kayethpara village under Bongaigaon district have been put under summer rice cultivation with system of rice intensification.
2. Quality seed plays an important role in increasing the crop yield; however, seed replacement rate in the district is very low which may be attributed to ignorance of farmers on seed production technology. KVK, Chirang has been working hard to popularize seed production technology in rice in the farmer's field through training programme, front line demonstration programme, advisory services etc. since inception. About 120.0 ha area was brought under seed production programme of kharif rice (var. Ranjit) and which produced approx. 3000.0 q quality certified seed during kharif, 2010. In the same locality, farmers started seed production programme with summer rice (var. Kanaklata & Joymoti) in 100.0 ha area during summer, 2010-11 also.
3. *Kharif* rice is the most important crop of the district which occupies more than 70% of the total rice growing areas. Adoption of improved production technology of Kharif rice in the farmers' field is not yet satisfactory and KVK, Chirang is trying hard to popularize improved technology through various activities like training, front line demonstration, on farm testing, advisory service etc. Because of the sincere effort, farmers have started adopting improved production technology of Sali rice especially in respect of quality seed, fertility management and pest management. At present HYV of *Kharif* rice is cultivated more than 40% of rice growing areas of the district. Considering the high yield potential of HYVs of Sali rice, it is expected that more farmers will come forward to adopt these varieties in near future.
4. Potato is an important vegetable crop of the district and necessary technologies required for obtaining higher yield has been initiated by the scientists of KVK, Chirang. Many farmers have adopted scientific cultivation practices of potato after receiving necessary helps and guidance from the scientists of KVK, Chirang and could harvest higher crop yield. KVK, Chirang has been

demonstrating irrigation management technology in potato since 2007-08 which has become a popular technology among the potato growing farmers of KVK operational areas.

#### 4.3 Details of impact analysis of KVK activities carried out during the reporting period

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Improved production technology of summer rice	55	50	28,000.00/ha	56,000.00/ha
Seed production technique in kharif rice (Variety: Ranjit)	300	50	28,000.00/ha	76,000.00/ha
System of rice intensification (SRI) in summer rice	50	60	27,000.00/ha	40,000.00/ha

### 5.0 LINKAGES

#### 5.1 Functional linkage with different organizations

Name of organization	Nature of linkage
1. State Department of Agriculture, Veterinary Science, Fishery, and Sericulture etc. of Bongaigaon and Chirang district.	<ul style="list-style-type: none"> <li>• Identification of training needs and target group for various extension activities.</li> <li>• Involvement in various state extension activities like Technology Mission, District Level Implementation and Monitoring etc.</li> <li>• Planning and implementation of ATMA.</li> <li>• Exchange of resource persons in various training programmes</li> </ul>
2. Civil Administration, DRDA, SIRD, Block Development Offices, Banks of Bongaigaon and Chirang district.	<ul style="list-style-type: none"> <li>• Participation in departmental programmes.</li> <li>• Formation and functioning of SHGs, NGOs etc.</li> <li>• Entrepreneurship development.</li> </ul>
3. Farmer's Organizations like Field Management Committee, All Bodoland Farmer's Association (DuBAA), NGOs (Disha, ANT, Luther World Service India etc.	<ul style="list-style-type: none"> <li>• Identification of need based training courses and beneficiaries for various extension activities.</li> <li>• Organizing training programmes.</li> <li>• Entrepreneurship development.</li> </ul>

NB The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

#### • List of special programmes undertaken by the KVK, which have been financed by State Govt./Other Agencies

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Training on Integrated Agricultural Development	June, 2010	Growth Centre, SIRD, Kajalgaon	60,000.00
Technology showcasing programme, 2010-11	May, 2010	AAU, Jorhat	15,00,000.00
Seed production programme in the farmers' field (Var. Ranjit)	May, 2010	AAU, Jorhat	34,000.00

Seed production programme in the farmers' field (Var. TS-36)	October, 2010	AAU, Jorhat	1,20,000.00
Seed production programme in the farmers' field (Var. Kanaklata)	December, 2010	AAU, Jorhat	

### 5.3 Details of linkage with ATMA

a) Is ATMA implemented in your district: Yes

S. No.	Programme	Nature of linkage	Remarks
1	Training	Participation as resource person	Involvement in the training programmes as resource person.

### 5.4 Give details of programmes implemented under National Horticultural Mission

S. No.	Programme	Nature of linkage	Constraints if any
1	Technology Mission	1. Providing technical guidance	Lack of cooperation while selecting beneficiaries and demonstration sites
		2. Monitoring of farmers field	
		3. Participated as resource person in the training programme	

5.5 Nature of linkage with National Fisheries Development Board: NA

### 6. PERFORMANCE OF INFRASTRUCTURE IN KVK

6.1 Performance of demonstration units (other than instructional farm): NA

6.2 Performance of instructional farm (Crops) including seed production

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.	Cost of inputs	Gross income	
<b>Cereals</b>									
Buck wheat	02.11.10	20.02.11	2.0	Local	Grain	Nil	5874.00	NA	Crop was damaged by animal as there was no permanent fencing
Oilseeds (Sesamum)	21.08.10	20.11.10	1.0	ST-1683	Seed & Grain	1.5 qt	5463.00	Yet to be sold	Crop was damaged by heavy rain
<b>Fruits</b>									
Pine apple	03.10.10	NA	0.13	Kew	Planting materials & fruit	NA	25697.00	NA	On-Going
Citrus	28.03.11	NA	0.13	Assam	Planting materials & fruit	NA	10038.00	NA	On-Going

				Lemon					
Banana	29.03.11	NA	0.13	Malbhog	Planting materials & fruit	NA	17690.00	NA	On-Going

- Performance of production Units (bio-agents / bio pesticides/ bio fertilizers etc.) : NA
- Performance of instructional farm (livestock and fisheries production) : NA

6.5 Rainwater Harvesting : NA  
6.5 Utilization of hostel facilities : NA

## 7. FINANCIAL PERFORMANCE

### 7.1 Details of KVK Bank accounts

Bank account	Name of the bank	Location	Account Number
With Host Institute	–	–	–
With KVK	State Bank of India	BRPL Complex, Dhaligaon	AAU Gen. Fund a/c No. 10266315899

### 7.2. Utilization of funds under FLD on Oilseed (Rs. In Lakhs)

Item	Released by ICAR		Expenditure		Unspent balance as on 1 <sup>st</sup> April 2011
	Kharif 2010	Rabi 2010–11	Kharif 2010	Rabi 2010–11	
Inputs					
Extension activities		25000	Nil	17709	7291
TA/DA/POL etc.					
<b>TOTAL</b>	–	25000	Nil	17709	7291

### 7.3 Utilization of funds under FLD on Pulses (Rs. In Lakhs)

Item	Released by ICAR		Expenditure		Unspent balance as on 1 <sup>st</sup> April 2011
	Kharif 2010	Rabi 2010–11	Kharif 2010	Rabi 2010–11	
Inputs					
Extension activities	23750	23750	14293	22784	10423
TA/DA/POL etc.					
<b>TOTAL</b>	23750	23750	14293	22784	10423

7.4 Utilization of funds under FLD on Cotton (Rs. In Lakhs): NA

7.5 Utilization of KVK funds during the year 2009 -10 and 2010-11(year-wise separately) (current year and previous year)

**APRIL, 2009 TO MARCH, 2010**

Sl. No.	Particulars	Sanctioned (in lakhs)	Released (in lakhs)	Expenditure (in lakhs)
<b>A. Recurring Contingencies</b>				
1	<b>Pay &amp; Allowances</b>	24.00	39.67	33.32
2	<b>Travelling allowances</b>	1.25		1.24
3	<b>Contingencies</b>	6.00		5.51
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)			
B	POL, repair of vehicles, tractor and equipments			
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)			
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)			
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)			
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)			
G	Training of extension functionaries			
H	Maintenance of buildings			
I	Establishment of Soil, Plant & Water Testing Laboratory			
J	Library			
<b>TOTAL (A)</b>		<b>31.25</b>	<b>39.67</b>	<b>40.07</b>
Non recurring				
1	<b>Works</b>			
2	<b>Equipments including SWTL &amp; Furniture</b>			
3	<b>Vehicle</b> (Four wheeler/Two wheeler, please specify)			
4	<b>Library</b> (Purchase of assets like books & journals)			
<b>TOTAL (B)</b>				
<b>C. REVOLVING FUND</b>				

GRAND TOTAL (A+B+C)

31.25

39.67

40.07

**APRIL, 2010 TO MARCH, 2011**

Sl. No.	Particulars	Sanctioned (in lakhs)	Released (in lakhs)	Expenditure (in lakhs)
<b>A. Recurring Contingencies</b>				
1	Pay & Allowances	37.00	39.47	38.74
2	Travelling allowances	1.50	1.49	1.49
3	Contingencies	7.50	6.49	6.04
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)			
B	POL, repair of vehicles, tractor and equipments			
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)			
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)			
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)			
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)			
G	Training of extension functionaries			
H	Maintenance of buildings			
I	Establishment of Soil, Plant & Water Testing Laboratory			
J	Library			
<b>TOTAL (A)</b>		<b>46.00</b>	<b>47.45</b>	<b>46.25</b>
<b>B. Non-Recurring Contingencies</b>				
1	Works	15.00	–	
2	Equipments including SWTL & Furniture			
3	Vehicle (Four wheeler/Two wheeler, please specify)			
4	Library (Purchase of assets like books & journals)	0.10	0.10	0.10
<b>TOTAL (B)</b>		<b>15.10</b>	<b>0.10</b>	<b>0.10</b>
<b>C. REVOLVING FUND</b>		0.10	0.10	–
<b>GRAND TOTAL (A+B+C)</b>		<b>61.20</b>	<b>47.65</b>	<b>46.35</b>



**7.5 Status of revolving fund (Rs. in lakhs) for the three years: NA**

**8.0 Please include information which has not been reflected above (write in detail).**

**8.1 Constraints**

**(a) Administrative**

- Frequent bandh called by various organizations often disturbs functioning of KVK
- Lack of permanent office building and other infrastructure facilities hinders smooth functioning of KVK activities

**(b) Financial**

- Procedure for release of fund for various activities is time consuming and delays smooth conduct of the programme
- Allocation of fund for trainee's meal and training material is not sufficient.

**(c) Technical**

- Other than mandated activities affect normal function.
- Shortage of Programme Assistant creates problems in proper implementation of the programmes
- Information in respect of recent technology or technology in the pipeline for various OFT and FLD programmes are lacking.

## ANNEXURE

### DISTRICT PROFILE - I

#### INCLUDE THE DETAILS OF BONGAIGAON DISTRICT

##### General census

The total population of the district is 6,04,660 as per 2001 Census, out of which 5,13,000 live in rural areas. The population density per sq. km. is 316 with sex ratio 1000: 945 (Male: Female).

##### General statistics

**Table 1: General information**

Block	General					Population (As per the 2001 Census)				
	Villages		No. of Revenue Villages	Area (ha)	No. of G.P.s	Male	Female	Total	S.C.	S.T.
	In-habitated	Un-inhabitated								
Dangtal	101	-	101	24121	16	48523	46911	95434	6616	8301
Boitamari	142	25	167	24080	13	112089	57670	54419	16993	2785
Srijangram	112	-	112	20317	13	104173	53527	50646	7666	1130
Tapattari	100	-	100	14329	11	98026	50726	47300	12030	914
Manikpur	85	-	85	28038	12	87012	82937	169949	18348	8811
Total	540	25	565	110885	65	449823	291771	417748	61653	21941

Source: 2001 census.

##### Demographic Profile of the District

Total population ( '000 )	604.66
Male population ( '000 )	311.46
Female population ( '000 )	293.20
Rural population ( '000 )	513.00
Urban population ( '000 )	91.00
Total household ( nos )	168556
Rural Household ( nos )	145300
Total Literacy (%)	59.33
Literate male (%)	67.67

Literate female (%)	50.44
SC population ( '000 )	0.66
ST population ( '000 )	0.13
BPL Household ( nos )	54045

Source: Agricultural Statistics 2004-05

### Agricultural and allied census

Agriculture is the back bone of Indian Economy and therefore, occupies a prominent place in the economy of Assam. According to census 2001, the state possesses substantial number of rural population (87.10%) with 3730773 nos. of cultivators (14%) and 1263532 nos. of agricultural labours (4.7%). The diverse topography and ago climatic conditions of the region has made it vary conducive for cultivation of wide varieties of agricultural and horticultural crops.

Bongaigaon is one of the major districts of Assam situated at the Northern part of Brahmaputra River under Lower Brahmaputra Valley Zone of Assam. Agriculture plays an important role in the economy of the district and about 70% of the rural population directly involve in agriculture as their livelihood. Rice is the major crop of the district which occupies 57% and 43% of cropped area during Kharif and Rabi seasons, respectively. The other important crops of the district are wheat, rape & mustard, jute, black gram, green gram, sesame, sugar cane, Rabi & kharif vegetables, ginger, turmeric, coconut, areca nut, pineapple, banana, citrus etc. The district has plentiful of natural resources, however, the process of harnessing and judicious utilization of these resources is not yet well defined. Therefore, there is need to design and formulate situation specific need based strategies by taking into account agronomic, climatic and socio-economic conditions as well as available resources worthiness of farmers.

**Table 2 : Land Holdings (Agriculture Census 2001)**

(Holdings in numbers and area in ha)

Block	Marginal Farmers		Small Farmers		Semi-med. Farmers		Landless farmers		Large farmers		Total	
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
Dangtal	5527	4922	1679	3233	-	-	1682	651	1023	3113		
Boitamari	8621	7674	2791	5380	-	-	2456	366	1410	3476		
Srijangram	7071	6295	2290	4413	-	-	1613	368	1088	2792		
Tapattari	5027	4477	1286	2474	-	-	2917	499	640	1696		
Manikpur	7064	4041	2700	5204	-	-	4041	809	1355	4611		

Table G. Landless – up to 0.4 Ha, 0.4 -1 Ha - marginal farmers, 1-2 Ha - small farmers, above 2 Ha - large farmers Source: Agril. Statistics 2004-05.

Land Use:

**Table 3. Information on land use pattern in the Bongaigaon District. (Area in Ha)**

Sl. No	Name of the block	Geographical area	Cultivable Area	Cultivated Area	Cultivable Waste	Cultivated Fallow
1	Manikpur	28038	18905	17273	713	919
2	Dangtol	24121	12433	11364	580	489
3	Boitamari	24080	15974	15497	627	350
4	Srijangram	20317	11386	12234	741	418
5	Tapattari	14329	7995	7312	629	397
	<b>Total</b>	<b>199045</b>	<b>68693</b>	<b>62780</b>	<b>3340</b>	<b>2573</b>

**Table 4. Information on Land use pattern in the Bongaigaon District (Area in Ha)**

Sl. No	Name of the block	Forest	Pasture	Land put to Non agri. use	Land under misc. plantation	Barren & unculturable land (waste land)
1	Manikpur	313	2750	3046	531	2493
2	Dangtol	2967	3358	3230	990	1143
3	Boitamari	379	3218	1269	876	2364
4	Srijangram	315	3015	1127	973	1501
5	Tapattari	227	2672	1499	811	1125
	<b>Total</b>	<b>4201</b>	<b>15013</b>	<b>10171</b>	<b>4181</b>	<b>8626</b>

**Table 5. Information on land use pattern in different soil types in Bongaigaon District (Area in Ha).**

Sl. No.	Name of Block	Light Grey area	%	Red soil (Mixed) area	%	Sandy soil area	%	Sandy loam area	%	Clay loam area	%
1	Manikpur	19626.6	70	8411.4	30	4766.46	17	17383.56	62	5887.98	21
2	Dangtol	15678.65	65	8442.35	35	2894.52	12	15919.86	66	5306.66	22
3	Boitamari	14688.8	61	9391.20	39	3852.8	16	15411.2	64	4816	20
4	Srijangram	14831.41	73	5485.59	27	3047.55	15	13409.22	66	3860.23	19
5	Tapattari	10316.88	72	4012.12	28	3099.09	21	9600.43	67	1719.18	12

### Soil types:

The soils of the district are mostly red, alluvial and mixed red. The soil texture is sandy loam to clay loam

Sl. No.	Soil type	Characteristics
1	Light gray	Sandy loam to silty loam in texture
2	Red soil (Mixed)	High in 'Fe' and 'Al' oxides. Fairly well drained soil
3	Sandy soil	Light textured soil
4	Sandy loam	Medium textured
5	Clay loam	Heavy textured. Poor external as well as internal drainage

### Water Resources & Management:

Bongaigaon district has a good number of rivers, flowing from the mountainous region of Bhutan to its south which offers a good source of flow and lift irrigation and the total irrigation potential created is estimated at 5336 ha. Beels, tanks and ponds are also being utilized for lift irrigation covering an area of about 2500ha. These resources are also utilized for production of fish. To support the phased development of the potential, certain basic infrastructural facilities identified are as follows

- A nodal agency to coordinate the various minor irrigation development project and to provide technical support
- Provision for maintenance of existing MI structure
- Adequate budgetary allocation

**Table 6. Information on water resources**

Categories of Water resources	Area (Ha)
1. Tanks & Ponds	994.64
2. Beel	1859.15
3. Swamp/Derelict	623.30
4. River	5336.20

## Major crops & varieties in the District

**Table 7. Information on major crops and varieties grown in the district**

Major Crops	Varieties
1. Rice (Sali)	Ranjit, Mahsuri, Swarna Mahsuri, IR-36, Baismuthi, local varieties
2. Rice (Ahu)	Local varieties, Luit, Lachit, IR-36, Mala, Komal
3. Rice (Boro)	BR-8, BR-9, Joymoti, MTU 1001, IR-36
4. Rapeseed & Mustard	M-27, TS-36, Local varieties
5. Sesamum	Local varieties, AST-1
6. Black gram	Local varieties, PU-19
7. Lentil	Local varieties, B-77
8. Wheat	Sonalika, Molla gom, local varieties
9. Jute	JRC 212, JRC 321, JRO524, JRO 632
10. Potato	Kufri Jyoti, Kufri Pokhraj, Desi alu,
11. Chilly	Local varieties, Pusa Jwala,
12. Kharif Vegetables	Hybrid , high yielding and local varieties
13. Rabi vegetables	Hybrid , high yielding and local varieties
14. Areca Nut	Local
15. Coconut	Assam tall, Bengal Hazari, Kamrupa
16. Banana	Malbhog, Dwarf Cavendish, Chenichampa, Bheem kal
17. Assam Lemon	Local improved varieties
18. Ginger	Local varieties, Moran, Nadia

**Input management:**

Management and timely supply of agricultural inputs such as seed, fertilizers, pesticides, farm machineries, implements, livestock feed etc is very much essential for agricultural development in the district. Several private agencies like input dealers and retailers as well as public sector organizations such as Assam Seed Corporation, Assam Agro Industries Development Corporation and concerned govt. departments have been rendering their services in managing various inputs. Information on input and service providers in the district Bongaigaon are given in Table19.

**Table 8. Information on input and service providers (no of outlet) in the agricultural sector**

Nos. of fertilizer, seed and pesticide outlet	146
Nos. of plantation / horticultural nurseries	5
Nos. of fish seed farms / hatcheries	6
Nos of artificial insemination centre	10

**Table 9. Information on Agricultural Input**

Total N/P/K consumption	56 kg/ha
Nos. of agricultural tractors	174
Nos. of agricultural pump sets	10377
Nos. of Agri-engines/ thresher/ cutters	Na

**Agro processing:**

Agro processing along with related post harvest technology play a key role in value addition, income and employment generation in rural areas. The market potentiality for processed fruits is growing with improvement in processing technology, leading to export of processed fruit. Fruit crops like pineapple, citrus banana etc. are mostly consumed in raw and only 1% of the produce are processed at present. Since the demand for ready to serve beverages and fruit juice concentrates are constantly rising, this sector has the potential to be one of the main industries of the district in the years to come.

**Table 10 . Information on Agro process facility**

Sl. No.	Location	Name of the centre	Commodity processed
1	Bongaigaon	District Community Canning and Training Centre, Bongaigaon (Govt.)	Fruits and Vegetables

2	Abhayapuri	Community Canning and Training Centre, Abhayapuri (Pvt.)	Fruits and Vegetables
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### Sericulture:

Sericulture has an old traditional existence in Bongaigaon District since time immemorial. It plays a significant role in the socio-economic development of the weaker section. Most of the Seri culturist of this district still prefers sericulture as their subsidiary income source of their off agricultural season. It is mentioned that the eri practice in the district is traditional among some cast and community, but the muga culture is becoming more popular from last few years. Climatic conditions are favourable for cultivation of crops like eri, muga and mulberry for silk worm rearing. Most of these activities, except growing of plantation and rearing are basically non farm activities. There is tremendous scope and prospect for expansion of sericulture in rural areas through increasing food plants especially for muga culture. There is also scope to spread the sericultural activities to the people of char areas especially in eri culture though proper organization.

**Table 11 . Existing activities of sericulture:**

Sl. No.	Activities	No of families involved ( 2007-08 )	Nos. of seri. village	Area under silk worm food plants ( 2007-08 )
1	Eri silk industry	1873	59	185.33 ha
2	Muga silk industry	1537		218.6 ha
3	Mulberry silk industry	159		2.5 ha

**Table 12 : Production in sericulture sector**

Sl. No.	Activities	Item	Production ( 2008-09 up to December, 08)
1	Eri silk industry	Eri Dfs	1,20,000 Dfs
		Eri cut cocoon	11500 kg
2	Muga silk industry	Raw silk	250 kg
		Reeling cocoon	12,50,000 nos.

### Govt. Farm/Institution under Department:

- Nayagaon V. G. R., Nayagaon
- Khagarpur collective mulberry garden, Khagarpur



- North Boitamari collective mulberry garden, Dewangaon

### **Animal Husbandry:**

It is need less to mention that livestock plays a pivotal role in the livelihood of the rural population. Agriculture and livestock rearing are culturally and traditionally bonded and act as back bone of the rural economy. Important livestock of the district are cattle, goat, pig, sheep, poultry, ducks etc. Rearing of improved breed of livestock is not a common practice and majority of livestock species are indigenous and non descriptive type. Therefore, it is noticed that the productivity level of the livestock population often goes to sub optimum level which contributes to far below per capita availability of livestock produces as compared to the ICMR recommendation. This might be due to low genetic potential, improper utilization of available resources, non adoption of scientific rearing of livestock and lack of awareness about scientific advancement. Dairy is an important allied activity in the district. The sector is characterized by a large population of non-descript animals. The per capita milk availability of milk is very low as compared to that at the state level. Total milk production in the district during 2007-08 was 24536 tonnes as against the demand of 49453 tonnes. Poultry is still taken up as a traditional backyard activity on as mall scale and commercialization is yet to take pace in the district. With the increasing demand for poultry meat and egg, there is a good scope for commercialization. Duckery is popular as an integrated component of other activities among the rural population. Since commercial farms are very few in the district, there is substantial scope for development of this sector through bank credit. Piggery and goatery are other popular activities under animal husbandry. Sheep rearing is a low profile activity and goatery is more popular among the rural masses. A picture of the livestock status in the district has been given in Table 29

**Table 13. Information on input and service providers (No of outlet) in the agricultural sector**

<b>Name of the block</b>	<b>Animal feed &amp; poultry feed</b>	<b>Veterinary medicines</b>
Manikpur	1	2
Dangtol	5	4
Boitamary	2	1
Tapattary	2	1
Srijangram	1	2
Total	11	10

### **Fisheries development:**

Bongaigaon district is endowed with fishery resources in the form of ponds, tanks, beel, swamp, low lying areas, derelict water bodies and a diverse network of river and rivulets. During 2007-08, fish production from the above resources was about 4951.2 MT as

against demand of 5986 MT for the entire district at the recommended rate of 11 kg per capita per annum assuming 98 % of the human population consumes fish. Information on water resources, production and requirements are given in Table 33

**Table 14. Water resources, production and requirement in Bongaigaon district**

Ponds and Tanks	8421 nos.	803.1 ha
Community Tanks	201 nos	102.58 ha
Hatchery	3 nos	-
Fish seed farm (Govt.)	1 no.	-
Water logged areas/ beels	84 nos.	1850.00 ha
Pvt. Water logged area	14 nos	33.20 ha
Fish production	4951.2 MT	-
Seed production	11.30 MT	-
Fish requirement	6318.66 MT	-
Fish seed requirement	72.45 lakhs	-
Nos of seed producer	4	-
Nos of fish seed grower	30	-

**Social forestry:**

Bongaigaon District is endowed with some of the magnificent flora and fauna of the state. Among them, Sal and Gamari plants are found predominantly in the moist deciduous forests along with Golden Langur, a highly endangered primate adorn these forests. The district has very low forest cover, only 0.008% as against states average of 30% of total geographical area. With curving out of Chirang District from Bongaigaon the forest area has thus reduced considerably.

**Status of JFMCs:**

To arrest further degradation, Joint Forest Management Committees have been constituted covering the fringe villages of Forest areas under Aie Valley Forest Development Agency, Bongaigaon, for which the National Afforestation & Eco Development Board, Ministry of Environment and Forests, New Delhi provided grants to 17 such JFMCs during X-Plan (2004-05 to 2006-07) under National Afforestation Programme to take up plantation in the degraded forest areas covering an area of 340 ha. Further, during XI-Plan another 51 JFMCs received grants-in-aid from the NAEB to take up 1020ha of plantation (including Chirang Dist).The above target achieved by the JFMCs. Altogether, 92 Nos of JFMCs have been constituted for protection and regeneration of degraded forest areas of the district.

There is a wide gap in the demand and supply of fuel wood, fodder, fibre, bamboo and fertilizers need of the farmer. This calls for an urgent remedial measure to void the gap. Social Forestry wing of Forest Department has been actively engaged to meet the requirement of the above needs of the farmers and presently implementing the following scheme/programme to achieve the goal.

### **Agro-climatic zones**

The district has a Plain Topography, however, it is also having some hillocks and hilly areas in some parts of the district. The climate of the district is sub-tropical in nature with warm and humid summer followed by dry and cool winter. The average annual rainfall is about mm per annum of which 75% is received during monsoon month (June to September). The monsoon months are wet and winter is dry. Both pre and post monsoon months have unpredicted and erratic rainfall. The mean maximum and minimum temperature varies from 33 to 38<sup>o</sup>C and 9 to 10<sup>o</sup>C, respectively. The average radiation is the highest during March – April, while overcast sky reduces the solar radiation to the least during July.

The four orders of soils are found in the district namely (i) Entisols (recent alluvium), (ii) Inceptisols (old alluvium), (iii) Alfisols (Mountain valley) and (iv) Ultisols (Laterised red). The soil of zone is mostly acidic nature and P<sup>H</sup> increases near the river Brahmaputra. The organic carbon and available Nitrogen of the soil mostly varies from medium to high, low in available P<sub>2</sub>O<sub>5</sub> and medium in K<sub>2</sub>O status.

### **Agro-ecosystems**

On the basis of information on physiography, soils, farming systems, crop and cropping systems and hydrological information, the district Bongaigaon has been classified in to 6(six) agro-ecological situations, which are as follows –

1. Foot hills old mountain valley
2. Flood free riverine old alluvial plain
3. Flood prone riverine alluvial plain
4. Hills and hillocks

5. Beels

6. Char land

**Major and micro-farming systems:**

**Table 15. EXISTING FARMING SYSTEMS IN THE IDENTIFIED AES**

Sl. No.	AES-I	AES -II	AES -III	AES -IV	AES -V
1	Agri-Horti	Agri-AH-Fishery	Agri-Horti	Agri-AH	Agri-Horti
2	Agri-Horti AH	Agri-AH	Agri-Seri	Horti-AH-Fishery	Agri-AH
3	Agri-Horti-Forestry	Agri-Fishery	Horti-AH		Agri-Horti-AH

**Major production systems like rice based (rice-rice, rice-green gram, etc.), cotton based, etc.**

**Rice Production System in the district**

Rice is the most important cereal crop of Bongaigaon district cultivated in medium land to low land either as rainfed crop or under irrigated condition. Rice crop is grown in three different seasons and based on the harvesting time, this crop is classified as summer rice (Boro), autumn rice (Ahu) or winter rice (Sali). Sali rice occupies major portion (60,754 ha) of the rice growing areas, followed by ahu (34,112 ha) and boro rice (9,983 ha). Sali rice is the most important rice crop of the district cultivated during kharif season under medium land to low land condition mostly as rainfed crop. Seeds are sown in the nursery bed during May-June and transplanting operation is carried out during June-July. Traditional low yielding rice varieties such as 'Phulpakhri', 'Moinagiri' etc., scented rice variety 'Kolajoha', local glutinous rice variety are mostly cultivated by the farmers, however, high yielding varieties like 'Ranjit', 'Pankaj', 'Mahsuri', 'Baismuthi' (local name), Ketekijoha, etc. are also prevalent in the farmer's field. Among the HYVs, 'Ranjit' is the most popular variety in the farmer's field owing to its higher yield potential.

**Some important features of rice production system**

- i. Seed replacement rate is very low and mostly traditional low yielding rice varieties are prevalent in the farmer's field.
- ii. Productivity level of both high yielding and traditional varieties is gradually declining owing to poor knowledge on seed production technology.

- iii. Sali rice is mostly grown as rainfed crop during kharif season owing to which sowing and/or transplanting operation is often delayed when there is no rain. Moreover, moisture stress condition at the later stages of crop growth is more common in Sali rice field resulting in chaffy grains and lower crop yield.
- iv. Sali crop is often affected by flood water in some chronically flood affected areas where farmers resort to cultivation of some traditional photo-sensitive varieties after recession of flood water. In some low lying areas, where flood water remains in the field till the transplanting time is over, farmers use to cultivate boro rice under irrigated condition.
- v. Transplanted ahu rice and boro rice cultivation under medium land to low land condition are being practiced under assured supply of irrigation water, however, some typical low lying beel areas are also available for boro rice cultivation under rainfed.
- vi. Imbalance use of fertilizers is a common practice in rice production system. Application of potassic fertilizer is often neglected because of ignorance of the farmers. In some boro rice growing areas, application of over doses of fertilizers is also seen. Integrated Nutrient Management technology is not yet popularized in the farmer's field.
- vii. Under irrigated condition, water is applied without considering time of water application, method and quantity of water needed. In some areas, application of excess amount of irrigation water than the recommended is also observed.
- viii. Generally, in transplanted rice, weed growth is not favoured due to puddle condition and continuous submergence, however, weed causes severe damage and yield reduction in direct seeded ahu rice grown under upland condition. Hand weeding and mechanical weed control methods are usually applied to control weeds and use of low land paddy weeder is most common in transplanted rice where line planting is practiced. In direct seeded ahu rice, hand weeding and use of an implement 'Bindha' are practiced in the farmer's field. Use of herbicide is limited to certain boro rice growing areas, although, farmer's do not have adequate knowledge on this aspect.
- ix. Rice crop is often infested by various insect pests such as stem borer, case worm, leaf folder, gall midge, brown plant hopper, mealy bug, gandhi bug etc. as well as diseases like blast, brown spot, sheath blight, sheath rot, stem rot, bacterial leaf blight, tungro etc. Mostly chemical method of pest control is applied by the farmers and injudicious use of chemicals is often noticed owing to inadequate knowledge of the farmers.

**Table 17 Area, Production and Productivity of Rice crop cultivated in Bongaigaon district**

Sl. No.	Crop	Area (ha)	Production (qtl)	Productivity (qtl /ha)
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1	Rice (Sali)	60,754	7,09,610	11.60
2	Rice (Ahu)	34,112	3,22,700	9.46
3	Rice Boro)	9,983	1,90,970	19.13

### **Pulse Production System**

Pulse is the integral component of our diet which is a rich source of protein, vitamins, minerals etc. Apart from the human diet, pulses form an important fraction of cattle feed and fodder as hay, green fodder and concentrates. Being leguminous, pulse crops play an important role in maintaining and restoring soil fertility.

Important pulse crops cultivated in Bongaigaon district are black gram, green gram and arahar during kharif season and lentil and pea during rabi season. These are mainly grown under rainfed condition and very limited area is brought under irrigation. Although, soil and climatic conditions are favourable for pulse production and despite of numerous efforts made to increase the production of pulses, productivity level still far below the national average and therefore, there has been no perceptible change in per capita availability and thus, the problem of imbalance diet due to short supply of pulses remains unsolved. Poor adoption of high yielding varieties and improved agronomic practices, lack of irrigation facility etc. are some important factors contributing towards lower yield.

#### **Some Important features of pulse Production system in Bongaigaon district:**

- i. Pulses are mainly grown as rainfed crops and therefore crops often suffer from moisture stress condition, especially during rabi season and crops become poor resource based rainfed crops.
- ii. Growing season of kharif pulses coincide with rainy season. Rain is often erratic, uncertain and unevenly distributed because of which there is water logging in the crop field during kharif season.
- iii. Rabi pulses are mainly cultivated in the medium land situation after harvesting of Sali rice. Cultivation of long duration rice varieties often delays timely sowing of pulse crops and crops suffer from moisture stress condition as well as low temperature.
- iv. Pulses are mostly grown in neglected conditions as provisions for efficient drainage, better tilth, nutrient management, water management, weed management etc. are not made properly.
- v. Suitable high yielding varieties of pulse crops are not yet popularized in the farmer's field and cultivation of locally available varieties having lower yield potential is in practice. Seed replacement rate is very low.

**Table 3.10 Area, Production and Productivity of major pulse crops cultivated in Bongaigaon district**

Sl. No.	Crop	Area (ha)	Production (qtl)	Productivity (qtl /ha)
1	Black gram	2,667	12,030	4.51
2	Lentil	2,417	13,340	5.52

### **Oilseed Production System**

Important oilseed crops grown in the district are sesame during kharif season and rapeseed & mustard, niger and linseed during rabi season. Rapeseed and mustard is the most important oilseed crop of Bongaigaon district grown during rabi season which occupies an area of 13,182 ha with a total production of 66,040 qtl. (Table 3.11). Productivity level of all the oilseed crops grown in the district is far below the national average which is mainly attributed to non adoption of high yielding varieties and improved agronomic practices, lack of irrigation facility etc. Some of the important features of oilseed production system are described below.

#### **Some Important features of oilseed Production system in Bongaigaon district:**

- i. About 90 per cent area under oilseed crops grown in the district remains rainfed and absence of rain at critical stages of crop growth causes significant reduction in production and oil content.
- ii. Growing season of kharif oilseed crop such as sesame (July to 1<sup>st</sup> fortnight of August) coincides with the rainy weather. So water logging immediately after sowing or at the initial stages of crop growth often causes mortality of seedlings and resulted in lower plant population.
- iii. Rapeseed & Mustard is mainly cultivated in rice-toria sequence in medium land situation in most part of the district. Growing of long duration Sali rice varieties delays sowing of toria. Late sown toria often suffers from moisture stress condition at the time of siliqua formation or siliqua development stage causing severe yield reduction and oil content. Aphid infestation is also seen to be higher in late sown crop due to favourable weather condition late in the season.
- iv. Majority of oilseed growers are small and marginal, adopt low standard of management technology viz. sub standard seed, imbalance use of fertilizers, injudicious use of agro chemicals for pest control etc.
- v. Suitable high yielding varieties are not available in the farmer's field due to inadequate arrangement for seed supply and cultivation of old varieties is in practice.
- vi. Farmer's are not aware of appropriate post harvest technology to prevent loss and deterioration of quality and often face storage, grading and marketing problems.

## Major agriculture and allied enterprises

### EXISTING FARMING SYSTEMS AND PREDOMINANT ENTERPRISES IN EACH AES

AES-I		AES-II		AES-III		AES-IV		AES-V	
EFS	DE	EFS	DE	EFS	DE	EFS	DE	EFS	DE
Agri-Horti	Agri	Agri-AH-Fish	Agri	Agri-Horti	Agri	Agri-AH	Agri	Agri-Horti	Agri
Agri-Horti-AH	Agri	Agri-AH	Agri	Agri-Seri	Agri	Horti-AH-Fish	Hort (Veg)	Agri-AH	AH
Agri-Horti-For	Agri	Agri-Fish	Fish	Horti-AH	AH			Agri-Horti-AH	Hort (Frt.)

- DE-Dominant enterprise

### Agro-ecosystem Analysis of the focus/target area - II

#### 1. Names of villages, focus area, target area etc.:

Sl. No.	Name of the village	Name of the block	Enterprises	Focus areas
1	Pub Enkorbari	Sidli	Crop production system	–Improvement of productivity of major field crops –Production of quality seed/planting materials –Crop planning for rainfed areas for higher production –Expansion of area under oilseeds and pulses –Maintenance of soil health through integrated nutrient management technology and balance fertilization –Adoption of eco friendly approach like integrated pest management, etc. –Crop diversification
			Horticulture production system	–Commercial production of major fruits, vegetables, spices etc –Resource management for sustainable production –Adoption of appropriate IPM technology in vegetable production
			Livestock production system	–Up gradation of breed –Improving feeding, housing, sanitation & health care for livestock –Fodder cultivation



			Fish production system	<ul style="list-style-type: none"> <li>–Composite fish culture</li> <li>–Seed production</li> </ul>
2	Alengmari	Manikpur	Crop production system	<ul style="list-style-type: none"> <li>–Improvement of productivity of major field crops</li> <li>–Production of quality seed/planting materials</li> <li>–Expansion of area under oilseeds and pulses</li> <li>–Maintenance of soil health through integrated nutrient management technology and balance fertilization</li> <li>–Adoption of eco friendly approach like integrated pest management, etc.</li> <li>–Crop diversification</li> </ul>
			Horticulture production system	<ul style="list-style-type: none"> <li>–Commercial production of rabi and kharif vegetables</li> <li>–Productivity improvement through irrigation management in rabi vegetables</li> <li>–Adoption of appropriate IPM technology in vegetable production</li> </ul>
			Livestock production system	<ul style="list-style-type: none"> <li>–Up gradation of breed</li> <li>–Improving feeding, housing, sanitation &amp; health care for livestock</li> <li>–Fodder cultivation</li> </ul>
			Fish production system	<ul style="list-style-type: none"> <li>–Composite fish culture</li> </ul>
3	Bashbari	Boitamari	Crop production system	<ul style="list-style-type: none"> <li>–Improvement of productivity of major field crops</li> <li>–Production of quality seed/planting materials</li> <li>–Crop planning for rainfed areas for higher production</li> <li>–Expansion of area under summer rice</li> <li>–Resource management for sustainable production</li> <li>–Maintenance of soil health through integrated nutrient management technology and balance fertilization</li> <li>–Adoption of eco friendly approach like integrated pest management, etc.</li> </ul>
			Horticulture production system	<ul style="list-style-type: none"> <li>–Reduction of yield gaps</li> <li>–Commercial production of major fruits, vegetables, spices etc</li> <li>–Commercial floriculture</li> <li>–Preservation of locally available fruits and vegetables</li> <li>–Adoption of appropriate IPM technology in vegetable production</li> </ul>
			Livestock production system	<ul style="list-style-type: none"> <li>–Up gradation of breed</li> <li>–Improving feeding, housing, sanitation &amp; health care for livestock</li> <li>–Fodder cultivation</li> </ul>

				–Dairy, duckery, goatery etc.
4	Pub Khamarpara	Borobazar	Crop production system	–Improvement of productivity of major field crops –Production of quality seed/planting materials –Crop planning for rainfed areas for higher production –Expansion of area under oilseeds and pulses –Resource management for sustainable production –Maintenance of soil health through integrated nutrient management technology and balance fertilization –Adoption of eco friendly approach like integrated pest management, etc.
			Horticulture production system	–Reduction of yield gaps –Commercial production of major vegetables, spices etc –Adoption of appropriate IPM technology in vegetable production –Crop diversification
			Fish production system	–Composite fish culture
			Livestock production system	–Up gradation of breed –Improving feeding, housing, sanitation & health care for livestock –Dairy, poultry etc.

**2. Survey methods used (survey by questionnaire, PRA, RRA, etc.): Surveyed by questionnaires and PRA**

**3. Various techniques used and brief documentation of process involved in applying the techniques used like release transact, resource map, etc. :**

For collecting village level information required for identification of resources, strength, weaknesses, opportunities, needs and associated problems for organizing various extension activities like On Farm Trials, Front Line Demonstrations, training needs and also for formulating extension strategies a series of survey were conducted in four representative villages and the information were collected by exercising participatory rural appraisal method such as resource mapping, social mapping, transact walk, matrix ranking, Venn diagram, trend analysis. The secondary data were collected from the allied departments. After collection of village level data, problems, needs and thrust areas were identified and accordingly, extension strategies were formulated.

#### 4. Analysis and conclusions

##### Analysis and conclusions of problems with regard to different enterprises in representative villages

Sl. No.	Type of enterprises	Specific problem with each enterprise	Proposed solution	Reasons for non adoption of proposed solution	Proposed strategies	Relevance to villages			
						Pub Enkorbari	Alengmari	Bashbari	Pub Khamarpara
1	Rice	<ul style="list-style-type: none"> <li>–Low yield of existing varieties</li> <li>–Poor crop yield due to low adoption of improved crop management practices</li> <li>–Poor knowledge on HYVs and adoption</li> <li>–Poor knowledge on insect pest and disease management</li> <li>–Poor fertility management</li> </ul>	<ul style="list-style-type: none"> <li>–Seed replacement</li> <li>–Improved crop production technique</li> <li>–Adoption of IPM practices</li> <li>–Adoption of INM technique</li> <li>–Increasing the area under HYVs of rice, oilseed and pulse crops</li> </ul>	<ul style="list-style-type: none"> <li>–Lack of awareness</li> <li>–Lack of knowledge</li> <li>–Lack of resources</li> </ul>	<ul style="list-style-type: none"> <li>–Awareness campaign</li> <li>–Training</li> <li>–Demonstration on specific technology and critical inputs</li> <li>–On farm testing</li> <li>–Seed village</li> <li>–Linkage with other departments</li> </ul>	Yes	Yes	Yes	Yes

2	Pulse	<ul style="list-style-type: none"> <li>–Yield gap due to poor adoption of improved crop management practices</li> <li>–Poor fertility management</li> <li>–Yield loss due to insect pest and disease infestation</li> <li>–Non availability of suitable varieties in the farmer’s field</li> </ul>	<ul style="list-style-type: none"> <li>–Adoption of IPM</li> <li>–Use of balanced fertilizer</li> <li>–Adoption of INM</li> <li>–Seed production of HYVs</li> <li>–Use of certified and quality seed</li> </ul>	<ul style="list-style-type: none"> <li>–Lack of awareness</li> <li>–Lack of skill and knowledge</li> <li>–Lack of resources</li> </ul>	<ul style="list-style-type: none"> <li>–Awareness campaign</li> <li>–Training</li> <li>–Demonstration on specific technology and critical inputs</li> <li>–On farm testing</li> </ul>	Yes	Yes	Yes	Yes
3	Oilseed	<ul style="list-style-type: none"> <li>–Low yield</li> <li>–Infestation of pest and diseases</li> <li>–Non availability of suitable varieties in the farmer’s field</li> <li>–Lack of knowledge on suitable varieties</li> <li>–Poor knowledge on INM</li> </ul>	<ul style="list-style-type: none"> <li>–Use of certified and quality seed</li> <li>–Adoption of IPM</li> <li>–Varietal selection</li> <li>–Adoption of INM</li> </ul>	<ul style="list-style-type: none"> <li>–Lack of skill and knowledge</li> <li>–Lack of resources</li> <li>–Lack of availability of seed in time</li> <li>–Lack of availability of quality seed</li> <li>–Lack of suitable variety</li> </ul>	<ul style="list-style-type: none"> <li>–Training</li> <li>–Demonstration</li> <li>–On Farm Trial</li> <li>–Awareness campaign</li> </ul>	Yes	Yes	Yes	Yes
4	Animal Husbandry	<ul style="list-style-type: none"> <li>–Non descriptive breed</li> <li>–Feeding</li> <li>–Sanitation</li> <li>–High mortality</li> <li>–Breeding</li> </ul>	<ul style="list-style-type: none"> <li>–Breed up gradation</li> <li>–Scientific and balanced feeding</li> <li>–Vaccination</li> <li>–Scientific sanitation</li> </ul>	<ul style="list-style-type: none"> <li>–Poor knowledge on breed up gradation and breed</li> <li>–Lack of knowledge in feeding</li> <li>–Lack of knowledge of diseases</li> <li>–Poor knowledge on sanitation</li> </ul>	<ul style="list-style-type: none"> <li>–Training</li> <li>–Demonstration</li> <li>–On Farm Trial</li> <li>–Awareness campaign</li> </ul>	Yes	Yes	Yes	Yes

5	Fruits	– Yield gap due to poor adoption of improved crop management practices –Poor resource utilization	–Adoption of improved crop management practices –High density cultivation	–Lack of awareness –Lack of knowledge –Lack of resources	–Training –Demonstration –On Farm Trial	Yes	Yes	Yes	Yes
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**5. List of location specific problems and brief description of frequency and extent/ intensity/severity of each problem**

Location	Problem identified	Extent/severity of each problem
Pub Enkorbari	Loss of organic matter from soil	High
	Soil acidity	Medium
	Yield gap in paddy, pulses, oilseeds, horticultural crop etc. due to technological gap.	High
	Low rate of seed replacement and poor adoption of HYVs	High
	Imbalance use of fertilizer	High
	Injudicious use of chemicals	Medium
	Low productivity in livestock	High
Alengmari	Heavy soil erosion due to rain drop impact and excess run off	Medium
	Soil acidity	Medium
	Yield gap in paddy, pulses, oilseeds, horticultural crop etc. due to technological gap.	Medium
	Low rate of seed replacement and poor adoption of HYVs	Medium
	Imbalance use of fertilizer	Medium
	Injudicious use of chemicals	Medium
	Slow rate of adoption and diffusion of upgraded breed in livestock	High
	Low productivity in livestock due to poor adoption of scientific management practices like	Medium
	Balance feeding, health care, sanitation etc.	Medium
Low productivity of fish per unit area of water body	High	

Bashbari	Loss of vegetative cover	Medium
	Loss of organic matter from soil	Medium
	Soil acidity	Medium
	Yield gap in paddy, pulses, oilseeds , horticultural crop etc. due to technological gap.	High
	Low rate of seed replacement and poor adoption of HYVs	Medium
	Imbalance use of fertilizer	High
	Injudicious use of chemicals	Medium
	Slow rate of adoption and diffusion of upgraded breed in livestock	High
	Low productivity in livestock due to poor adoption of scientific management practices like balance feeding, health care, sanitation etc.	High
	Unorganized market causing distress sale of vegetables	Medium
Pub Khamarpara	Loss of vegetative cover	Medium
	Loss of organic matter from soil	High
	Soil acidity	Medium
	Yield gap in paddy, pulses, oilseeds, horticultural crop etc. due to technological gap.	High
	Low rate of seed replacement and poor adoption of HYVs	High
	Imbalance use of fertilizer	High
	Injudicious use of chemicals	High
	Slow rate of adoption and diffusion of upgraded breed in livestock	Medium
	Low productivity in livestock due to poor adoption of scientific management practices like balance feeding, health care, sanitation etc.	High
	Low productivity of fish per unit area of water body	High
Unorganized market causing distress sale of vegetables	Medium	

## 6. Matrix ranking of problems

### i) Poor rate of seed replacement:

Crop Criteria	Rice	Oilseed	Pulse	Vegetables
Non availability of seed in time	000	000	0000	00
Poor knowledge on crop production technique	000	000	000	000
Non availability of certified seed	000	0000	0000	00
Availability of local seed	00000	000	00	00
Poor storage of seed	00	00	00000	000
<b>Rank</b>	<b>II</b>	<b>III</b>	<b>I</b>	<b>IV</b>

**ii) Poor adoption of HYVs**

Crop Criteria	Rice	Oilseed	Pulse	Vegetables
Non availability of HYVs	000	000	0000	00
Poor knowledge on HYVs	000	000	0000	000
Poor knowledge on seed production technique	0000	0000	0000	00000
Poor storage of seed	00	00	00000	000
<b>Rank</b>	<b>II</b>	<b>II</b>	<b>I</b>	<b>III</b>

**iii) Yield gap due to poor adoption of improved crop management practices**

Crop Criteria	Rice	Oilseed	Pulse	Vegetables
Poor adoption of HYVs	000	000	0000	00
Poor adoption of scientific cultural practices like land preparation, sowing, transplanting, weeding etc.	000	00	0000	00
Poor knowledge on INM	000	000	0000	000
Poor adoption of irrigation management practices	000	000	000	00
Poor knowledge on IPM	000	000	000	000
<b>Rank</b>	<b>II</b>	<b>III</b>	<b>I</b>	<b>IV</b>

**7. List of location specific thrust areas/ List of location specific technology needs for OFT and FLD**

Sl. No.	Location	Critical issues, problems and opportunities	Thrust areas	Programmes
1	Pub Enkorbari	<p>–Considerable yield gap in paddy, oilseeds &amp; pulses due to poor adoption of improved crop management practices. Yield gap can be reduced through adoption of improved crop management practices.</p> <p>–Low yield in livestock which can be improved through breed up gradation and balanced feeding</p>	<p>–Popularization and adoption of improved crop management practices</p> <p>–Breed upgradation and balanced feeding</p>	<p>–Front Line Demonstration, in oilseeds &amp; pulses</p> <p>–Training on scientific cultivation</p> <p>–On farm testing on breed upgradation and balance feeding</p>

2	Bashbari	<ul style="list-style-type: none"> <li>–Considerable yield gap in paddy which can be improved through adoption of HYVs and scientific method of cultivation.</li> <li>–Low rate of seed replacement</li> <li>–Low yield in livestock which can be improved through breed up gradation</li> <li>–Poor knowledge on scientific insect pest and disease management technology</li> </ul>	<ul style="list-style-type: none"> <li>–Popularization and adoption of improved crop management practices</li> <li>–Breed up gradation</li> <li>–Adoption of IPM technology</li> <li>–Seed production in the farmer’s field</li> </ul>	<ul style="list-style-type: none"> <li>–Front line demonstration on HYVs and improved crop management practices in paddy</li> <li>–Seed production of rice</li> <li>–Front line demonstration on duckery</li> <li>–Front line demonstration on IPM technology in rice.</li> <li>–Training on scientific cultivation</li> </ul>
3	Allengmari	<ul style="list-style-type: none"> <li>–Low yield of pulses &amp; oil seeds due to technological gap.</li> <li>–Low yield of the existing varieties &amp; Low rate of seed replacement in paddy, oilseeds and pulses</li> <li>–Higher yield and more income per unit area</li> </ul>	<ul style="list-style-type: none"> <li>–Seed production in the farmer’s field</li> <li>–Popularization and adoption of improved crop management practices</li> <li>–Proper utilization of resources in banana cultivation</li> </ul>	<ul style="list-style-type: none"> <li>–Seed production in the farmers field</li> <li>–On farm testing on high density cultivation</li> <li>–Training on scientific cultivation</li> </ul>
4	Pub Khamarpara	<ul style="list-style-type: none"> <li>–Low yield of the existing varieties &amp; Low rate of seed replacement in paddy and pulses</li> <li>–Considerable yield gap in paddy &amp; pulses due to poor adoption of improved crop management practices. Yield gap can be reduced through adoption of improved crop management practices.</li> <li>–Low yield in livestock which can be improved through breed up gradation</li> <li>–Poor fertility management in rice</li> </ul>	<ul style="list-style-type: none"> <li>–Popularization of HYVS and seed production</li> <li>–Popularization and adoption of improved crop management practices</li> <li>–Adoption of improved breed in livestock</li> <li>–Adoption of INM technology in rice</li> </ul>	<ul style="list-style-type: none"> <li>–Training on seed production and scientific method of cultivation</li> <li>–Front line demonstration on pulses</li> <li>–On farm testing on INM technology in rice</li> </ul>

**8. Matrix ranking of technologies :**

**Oilseed:**

Technologies *Criteria	High yielding varieties	Improved crop management practices like tillage, sowing, fertility management, weed management and water management	Integrated pest management
Availability of technology	0000	0000	00
Knowledge on technology	00	000	0
Cost of technology	000	00	0000
<b>Ranking</b>	<b>II</b>	<b>I</b>	<b>III</b>

\*High cost = Less score, More availability= High score, More Knowledge = High score



**Pulse:**

Technologies *Criteria	High yielding varieties	Integrated nutrient management practice	Integrated pest management
Availability of technology	00	0000	0
Knowledge on technology	00	000	0
Cost of technology	000	00	0000
<b>Ranking</b>	<b>II</b>	<b>I</b>	<b>III</b>

\*High cost = Less score, More availability= High score, More Knowledge = High score

**Rice:**

Technologies *Criteria	High yielding varieties	Improved crop management practices like tillage, sowing, fertility management, weed management and water management	Integrated pest management
Availability of technology	000	000	00
Knowledge on technology	00	00	0
Cost of technology	000	00	0000
<b>Ranking</b>	<b>I</b>	<b>II</b>	<b>II</b>

\*High cost = Less score, More availability= High score, More Knowledge = High score

**9. List of location specific training needs**

Sl. No.	Location	Training needs
1	Pub Enkorbari	<ul style="list-style-type: none"> <li>-Seed production technique in Sali rice</li> <li>-Integrated crop management in field crops</li> <li>-Crop diversification</li> <li>-Integrated pest management</li> <li>-Livestock management</li> </ul>
2	Bashbari	<ul style="list-style-type: none"> <li>-Seed production technique in Sali rice</li> <li>-Integrated crop management in field crops</li> <li>-Integrated pest management</li> <li>-Livestock management</li> </ul>
3	Allengmari	<ul style="list-style-type: none"> <li>-Seed production technique in Sali rice (Var. Ranjit) and toria (TS-36)</li> <li>-Commercial fruit production</li> <li>-Crop diversification</li> </ul>

		–Integrated pest management –Livestock management
4	Pub Khamarpara	–Seed production technique in Sali rice –Integrated crop management in field crops –Livestock management

### **Technology Inventory and Activity Chart - III**

#### **Include**

- 1. Names of research institutes, research stations, regional centres of NARS (SAU and ICAR) and other public and private bodies having relevance to location specific technology needs**
- 2. Inventory of latest technology available \***

<b>Sl. No.</b>	<b>Technology</b>	<b>Crop/enterprise</b>	<b>Year of release or recommendation of technology</b>	<b>Source of technology</b>	<b>Reference/citation</b>
1	Integrated nutrient management in rice(Use of Azospirillum and PSB @ 4kg/ha each + FYM 1t/ha + Rock phosphate 10 kg P <sub>2</sub> O <sub>5</sub> /ha + 40 Kg K <sub>2</sub> O/ha	Rice	Under pipeline	Dept. of Soil Sc., AAU, Jorhat-13	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR
2	HYV 'Dinanath'	Rice	Under pipeline	RARS, AAU, Shillongoni, Nagaon	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR
3	De-navelling of banana with urea and sulphate of potash	Banana	2007	Indian Institute of Horticultural Research, Bangalore	ICAR News, ICAR, Krishi Bhawan, New Delhi-1, India (Vol. 13 (2))
4	Seed rhizome treatment + soil application of Biofor-PF	Ginger	2004	Deptt. Of Plant Pathology, AAU, Jorhat	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR
5	Plant population: 6250 plants per hectare ; spacing: 1m X 1.2m X 2m	Banana	2004	Deptt. of Horticulture, AAU, Jorhat	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR

6	Seed treatment, root treatment and soil application of Biofor-PF against bacterial wilt	Tomato	Under pipeline	Deptt. of Plant Pathology, AAU, Jorhat	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR
7	Upgraded goat “ Beetal Cross Bred”	Goat	2005	Goat Research Station	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR
8	Balanced feeding (200g concentrate feed/animal/day)	Goat	2008	Goat Research Station	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR
9	Integrated nutrient management in Toria	Toria	Under pipeline	RARS, AAU, Shillongoni, Nagaon	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR
10	Potash management in lentil	Lentil	Under pipeline	RARS, AAU, Shillongoni, Nagaon	Agricultural Technology Inventory for North Eastern Region-published by AAU and ZCU, Zone-III,ICAR

### 3. Activity Chart

#### Details of training programmes:

Date	Clientele	Title of the training programme	Discipline	Thematic area	Duration in days	Venue (Off/On Campus)	Number of other participants			Number of SC/ST			Total number of participants		
							Male	Female	Total	Male	Female	Total	Male	Female	Total
15–16/5/10	RY	Scientific pig management for employment generation	Animal Science	Livestock management	2	Off	9	19	28	0	0	0	9	19	28
17/5/10	PF	Integrated pest and disease management in fruit crops (banana & coconut)	Plant Protection	Plant Protection	1	Off	26	0	26	1	0	1	27	0	27
18/5/10	PF	Formation and management of SHG for woman empowerment	Agril. Economics	Woman Empowerment	1	Off	0	0	0	0	33	33	0	33	33

19/5/10	EF	Soil sample collection and chemical analysis	Soil Science	Soil quality assessment	1	Off	26	0	26	0	0	0	26	0	26
20/5/10	PF	Plant propagation techniques of commercially important horticultural crop	Horticulture	Crop management	1	Off	9	0	9	19	0	19	28	0	28
21/5/10	RY	Scientific rearing of goat	Animal Science	Livestock management	1	Off	0	0	0	8	17	25	8	17	25
22/5/10	PF	Integrated pest & disease management in summer vegetables	Plant Protection	Plant Protection	1	Off	24	0	24	3	0	3	27	0	27
23/5/10	RW	Leadership development in villages for economic development	Agril. Economics	Leadership development	1	Off	0	0	0	2	25	27	2	25	27
24/5/10	EF	Soil sample collection and chemical analysis	Soil Science	Soil quality assessment	1	Off	25	0	25	1	0	1	26	0	26
25-26/5/10	PF	Integrated crop and nutrient management in Sali rice	Crop production	Crop management	2	Off	30	0	30	2	0	2	32	0	32
30/5/10	PF	Seed production technique in Sali rice	Crop production	Crop management	1	Off	28	2	30	0	0	0	28	2	30
30/5/10	EF	Off season vegetables production technology	Horticulture	Crop management	1	Off	18	0	18	8	0	8	26	0	26
23-24/6/10	RY	Scientific rearing and management practices in poultry for self employment	Animal Science	Livestock management	2	Off	0	0	0	26	0	26	26	0	26
25/6/10	PF	Integrated disease and pest management in Sali rice	Plant Protection	Plant Protection	1	Off	10	0	10	18	0	18	28	0	28
28/6/10	PF	Entrepreneurial	Agril.	Entrepreneu	1	Off	23	3	26	0	0	0	23	3	26

		development in farmers in villages for economic development	Economics	rship development												
29/6/10	PF	Seed production technique in Sali rice	Crop production	Crop management	1	Off	26	0	26	1	0	1	27	0	27	
30/6/10	PF	Rejuvenation of old fruit orchard	Horticulture	Crop management	1	Off	15	0	15	13	0	13	28	0	28	
19/7/10	PF	Integrated farming system	Crop production	Farming system approach	1	Off	21	2	23	2	0	2	25	0	25	
21/7/10	PF	Vermicomposting and its use in agriculture	Soil Science	Production of organic input	1	Off	19	0	19	8	0	8	27	0	27	
23/7/10	PF	Preparation of jam from pineapple fruit	Horticulture	Post harvest management and value addition	1	Off	0	29	29	0	0	0	0	29	29	
29/7/10	PF	Integrated disease and pest management in blackgram and green gram	Plant Protection	Plant Protection	1	Off	25	0	25	0	0	0	25	0	25	
30/7/10	RY	Vermicomposting and its use in agriculture	Soil Science	Production of organic input	1	Off	25	0	25	1	0	1	26	0	26	
25/8/10	RY	Vermicomposting and its use in agriculture	Soil Science	Production of organic input	1	Off	27	0	27	0	0	0	27	0	27	
26/8/10	PF	Layout and management of orchard	Horticulture	Crop management	1	Off	24	0	24	1	0	1	25	0	25	
27/8/10	EF	Contingency crop	Crop	Crop	1	Off	20	0	20	6	0	6	26	0	26	

		planning for flood affected area	production	planning												
27/8/10	PF	INM in Sali rice	Soil Science	Nutrient management	1	Off	20	5	25	0	0	0	20	5	25	
30/8/10	PF	Bamboo cultivation	Horticulture	Crop management	1	Off	25	0	25	0	0	0	25	0	25	
3/9/10	EF	Artificial insemination of first aid for livestock	Animal science	Breed up gradation	1	Off	18	0	18	15	0	15	33	0	33	
7/9/10	EF	Storage insect pest of rice and their management	Plant Protection	Plant Protection	1	Off	23	0	23	2	0	2	25	0	25	
23/9/10	EF	Integrated pest and disease management in potato	Plant Protection	Plant Protection	1	Off	22	0	22	9	0	9	31	0	31	
23/9/10	PF	Strengthening of SHG for economic development	Agril. Economics	Strengthenin g of SHG	1	Off		21	21		5	5		26	26	
24/9/10	PF	Production & management technology of medicinal and aromatic plants	Horticulture	Crop management	1	Off	19	0	19	7	0	7	26	0	26	
25/9/10	PF	Production and use of vermicomposting in agriculture	Soil Science	Production of organic input	1	Off	26	0	26	0	0	0	26	0	26	
26/10/10	PF	Production technology of potato	Horticulture	Crop management	1	Off	4	0	4	22	1	23	26	1	27	
27–28/10/10	PF	Integrated approaches of crop management in boro rice	Crop production	Crop management	2	Off	21	6	27	0	0	0	21	6	27	
29/10/10	RY	Strengthening of SHG for economic development	Agril. Economics	Strengthenin g of SHG	1	Off	0	26	26	0	0	0	0	26	26	
26–27/11/10	PF	Seed production technique in Boro rice	Crop production	Crop management	2	Off	30	0	30	0	0	0	30	0	30	

28/11/10	RW	Income generation activities for empowerment of rural woman	Agril. Economics	Woman Empowerment	1	Off	0	0	0	25	0	25	25	0	25
29/11/10	PF	Integrated disease and pest management in potato	Plant Protection	Plant Protection	1	Off	31	0	31	1	0	1	32	0	32
14/12/10	PF	Marketing of agricultural produce	Agril. Economics	Marketing	1	Off	27	0	27	0	0	0	27	0	27
15/12/10	PF	Plant protection in toria cultivation	Plant Protection	Plant Protection	1	Off	24	1	25	0	0	0	24	1	25
16–17/12/10	PF	Seed production technique in Boro rice	Crop production	Crop management	2	Off	23	0	23	7	0	7	30	0	30
19/12/10	PF	Irrigation scheduling in major rabi field crops	Crop production	Water management	1	Off	2	0	2	25	0	25	27	0	27
27/01/11	PF	Entrepreneurial development of rural youth in villages for economic development	Agril. Economics	Entrepreneurial development	1	Off	26	0	26	0	0	0	26	0	26
2-3/2/11	PF	Cropping system approach for sustainable development	Crop production	Crop diversification	2	Off	24	0	24	3	0	3	27	0	27
7/2/11	PF	INM in boro rice	Crop production	Nutrient management	1	Off	25	0	25	0	0	0	25	0	25
11/3/11	RY	Organic cultivation of summer vegetables	Horticulture	Organic farming	1	Off	25	0	25	0	0	0	25	0	25
15/3/11	RY/RW	Preparation of pickles from locally available fruits	Horticulture	Post harvest management and value addition	2	Off	0	25	25	0	0	0	0	25	25
17/3/11	RY	Improved production technology of banana	Horticulture	Crop management	1	Off	26	0	26	0	0	0	26	0	26
21–	PF	Seed production	Crop	Crop	2	Off	27	0	27	0	0	0	27	0	27

22/3/11		technique in boro rice	production	management											
23/3/11	RY	Vermicomposting	Soil Science	Production of organic input	1	Off	26	0	26	0	0	0	26	0	26
24/3/11	PF	Maintenance of farm records and accounts	Agril. Economics	Farm records and accounts	1	Off	25	0	25	1	0	1	26	0	26
14/3/11	EF	Enhancing productivity of various factors of production in field crops	Crop production	Crop management	1	Off	25	0	25	0	0	0	25	0	25
29/3/11	EF	Storage insect pests of rice and their management	Plant Protection	Plant Protection	1	Off	23	0	23	2	0	2	25	0	25

**Vocational training programmes for Rural Youth : Nil**

**Sponsored training Programme : Nil**

**Collaborative Training Programmes (only technical assistance)**

Sl. No.	Date	Title	Discipline	Duration (days)	Client (PF/Ry/EF)	No. of course	No. of Participants								
							Others			SC/ST			Total		
							Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2-4 June'10	Integrated agricultural development	Crop production	3	PF	1	50	0	50	0	0	0	50	0	50
2	22-24 June'10	Integrated agricultural development	Crop production	3	PF	1	51	0	51	0	0	0	51	0	51
3	30 June'10-2 July'10	Integrated agricultural development	Crop production	3	PF	1	50	0	50	0	0	0	50	0	50
4	11-13 Aug'10	Integrated agricultural development	Crop production	3	PF	1	52	0	52	0	0	0	52	0	52
5	8-9 Sept'10	Integrated agricultural development	Crop production	3	PF	1	51	0	51	0	0	0	51	0	51
<b>Total</b>				<b>15</b>	<b>-</b>	<b>5</b>	<b>254</b>	<b>0</b>	<b>254</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>0</b>	<b>254</b>



**Activity Chart:**

Crop	Problem	Cause	Solution	Activity	Reference of Technology
Rice	–Low yield of rice due to poor adoption of scientific method of cultivation	–Poor adoption of improved crop management practices	–Popularization of high yielding varieties.	<b>On Farm Testing on</b> –Rice variety “Dinanath”	–Sl. No. 7 of Agricultural Technology Inventory for NE Region Published by AAU and ZC Unit, Zone-III
		–Poor adoption of HYVs and low rate of seed replacement	–Seed production in the farmer’s field	–INM technology in winter rice	–Sl. No. 5 of Agricultural Technology Inventory for NE Region Published by AAU and ZC Unit, Zone-III
		–Injudicious use of chemical pesticide	–Adoption of improved crop management practices	<b>Front Line Demonstration on</b> –Performance rice (var. Kanaklata) in the farmer’s field with improved crop management practices –Technology showcasing on Seed production technique in winter rice variety “Ranjit” –Technology showcasing on Seed production technique in winter rice variety “Joymoti” & ‘Kanaklata” –Biological control of rice pest using <i>Trichogramma japonicum</i> in winter rice –Biological control of rice pest using <i>Trichogramma japonicum</i> in summer rice	–Package of practice, Rabi anf Kharif
–Imbalance fertilization	–Integrated Pest Management.	–Adoption of appropriate Integrated Nutrient Management	<b>Training on:</b> –Integrated crop and nutrient management in Sali rice –Seed production technique in Sali rice –Integrated disease and pest management in Sali rice –INM in Sali rice –Integrated approaches of crop management in boro rice – Seed production technique in Boro rice		

				<ul style="list-style-type: none"> <li>–INM in boro rice</li> <li>–Storage insect pest of rice and their management</li> </ul>	
Black gram	Low productivity	–Poor adoption of improved crop management practices	–Adoption of improved crop management practices	<p><b>Front Line Demonstration on</b></p> <ul style="list-style-type: none"> <li>–Improved crop management practices in blackgram</li> </ul> <p><b>Training</b></p> <ul style="list-style-type: none"> <li>–Integrated disease and pest management in blackgram and green gram</li> </ul>	–Package of practice, Kharif
Lentil	Low crop yield	–Poor adoption of scientific method of cultivation, imbalance fertilization	–Balance fertilization	<p><b>On Farm Testing</b></p> <ul style="list-style-type: none"> <li>–Potassium management in Lentil (Application of 15kg N, 35 kg P and 15 kg K)</li> </ul>	–Sl. No. 12 of Agricultural Technology Inventory for NE Region Published by AAU and ZC Unit, Zone-III
			–Adoption of scientific method of cultivation	<p><b>Front Line Demonstration on</b></p> <ul style="list-style-type: none"> <li>–Improved crop management practices in lentil</li> </ul>	–Package of practice, Rabi
Torla	Yield gap	Lack of suitable varieties & poor adoption of appropriate crop management practices in the farmers field.	Adoption of scientific nutrient management technology	<p><b>OFT on Integrated nutrient management in torla</b></p>	–Sl. No. 14 of Agricultural Technology Inventory for NE Region Published by AAU and ZC Unit, Zone-III
			Adoption of HYV and scientific management practices	<p><b>FLD on:</b></p> <ul style="list-style-type: none"> <li>–Improved crop management practices in torla (var. TS-36)</li> </ul> <p><b>Training on:</b></p> <ul style="list-style-type: none"> <li>–Plant protection in torla cultivation</li> <li>–Irrigation scheduling in major rabi field crops</li> <li>–Crop diversification</li> <li>–Enhancing productivity of production factors in field crops</li> </ul>	Package of practice, Rabi

Spices	Problem of rhizome rot in ginger	Inadequate disease management	–Application of bio-pesticide for controlling rhizome rot	<b>OFT on:</b> –Seed rhizome treatment + soil application of Biofor-PF	–Sl. No. 33 of Agricultural Technology Inventory for NE Region Published by AAU and ZC Unit, Zone-III
	Low productivity	Poor adoption of scientific technology	Adoption of scientific production technology	<b>Training on:</b> –Scientific production technology of black pepper	–
Fruits, Vegetables	Low yield and Poor resource utilization in fruit crops	Proper utilization of land in space direction	Adoption of scientific technology	<b>On Farm Testing</b> –High density cultivation of banana(–Plant population: 6250 plants per hectare ; spacing: 1m- 1.2m X 2m) –De-navelling of banana with urea and sulphate of potash –Management of bacterial wilt using Biofor-pf	- Sl. No. 27 of Agricultural Technology Inventory for NE Region Published by AAU and ZC Unit, Zone-III
	High pesticide residue in vegetables	Injudicious use of chemical pesticide	-Integrated Pest Management.  -Improved crop management	<b>FLD:</b> –Production technology of water melon –Demonstration on tissue cultured banana.	Package of practice, Horticulture
				<b>Training on:</b> –Integrated pest and disease management in food crops (banana & coconut) –Plant propagation techniques of commercially important horticultural crop –Integrated pest & disease management in summer vegetables –Rejuvenation of old fruit orchard –Preparation of jam from pineapple fruit –Layout and management of orchard –Production technology of potato –Integrated disease and pest	–

				management in potato –Off season vegetables production technology –Integrated pest and disease management in potato	
Dairy	Low productivity	Poor adoption of scientific management practices	–Scientific Dairy Farming	<b>Training on:</b> –Artificial insemination of first aid for livestock –Feeding and disease management in dairy crops	–
Piggery	Low productivity	Poor adoption of scientific management practices	–Scientific Pig rearing.	<b>Training on:</b> –Scientific pig management for employment generation	–
Poultry	Low productivity	Poor adoption of scientific management practices	–Scientific management of poultry	<b>FLD:</b> –Rearing of Chara Chambeli duck  <b>Training on:</b> –Scientific rearing and management practices in poultry for self employment	–
Goatery	Low productivity	Poor adoption of scientific management practices	-Breed upgradation.	<b>OFT on:</b> –Upgraded goat “ Beetal Cross Bred”  –Balanced feeding (200g concentrate feed/animal/day)	-Sl. No. 54 of Agricultural Technology Inventory for NE Region Published by AAU and ZC Unit, Zone-III
			-Feed management		
			-Scientific goatery.	<b>Training on:</b> –Scientific rearing of goat –Scientific rearing of goat	

**Details of each of the technology under Assessment, Refinement and demonstration Include**

**a. Detailed account on varietal/breed characters for each of the variety/breed selected for FLD and OFT**

Variety/Breed	Characteristics
Ranjit	Semi dwarf, 150-155 days duration
Dinanath	Semi dwarf, medium tall, 165-175 days
Jopymoti	Semi dwarf, medium tall, 165-175 days
Kanaklata	Semi dwarf/ medium tall, 165-175 days, suitable at irrigated condition
Beetal crossbred	Dual purpose breed, brown or black coat colour with or without white patches, ears are long and drooping
SBC-40	Recently developed blackgram variety from RARS, Shillongoni suitable for Kharif season
TS-36	Duration 90-95 days, oil content 44%, yield 10-12 q/ha
B-77	Duration 110-120 days, seeds medium sized, plant erect ,yield 8-12 q/ha
Sugar Baby	Fruit oblong, small to medium, duration 85 days, fruit weight 3-5 kg
Avinash-3	Latest development in the Avinash Hybrid series of tomato and moderately tolerant to wilt
Malbhog	Semi dwarf, flavoured, high market value of the produce

**C. Details of technologies that may include formulation, quantity, time, methods of application of nutrients, pesticides, fungicides etc., for technologies selected under FLD and OFTs**

Technology	Details of the technology	
Rice variety “Ranjit”	Plant height Duration Grain Character Sowing time Seed rate Spacing Harvesting time Fertilizer	Semi dwarf 150-155 days Medium slender June 40 kg /ha 20 x 20 cm November/December 40:20:20 kg (N:P <sub>2</sub> O <sub>5</sub> :K <sub>2</sub> O) per ha

Release of bio-agent <i>Trichogamma</i> @ 50,000/ha/week for 6 weeks in rice	Release days from starting  Method of application	: 6-8 releases of <i>T Japonicum</i> @ 50,000 per ha per week. The release of <i>Trichogamm</i> should be coincided with egg laying activities of the pest, as they are egg parasitoid. :30 days after transplanting. :Each <i>Trichocard</i> should be cut into 6 – 12 pieces and distributed over the entire field by fixing them to the plants by using a stapler or quick fix. Before and after application of the card the chemical pesticides should not be used.
Seed rhizome treatment + soil application of Biofor-PF in Ginger	Seed treatment  Soil application	:Seed treatment of rhizomes with + soil application of Biofor-PF. :Biofor-PF can be used as seed rhizome and soil application for management of rhizome rot of Ginger.
Plant population: 6520 plants per hectare ; spacing: 1m- 1.2m X 2m in Banana	Variety Planting time Plant population Spacing Manure & fertilizer  Pesticide and fungicide application	;Malbhog :March-May :6250 plant per ha :1m – 1.2 m x 2 m :Each split of 45 cm x 45 cm x 45cm is filled up with a mixture of 12 kg FYM and top soil. NPK are applied @ 110 gm, 33gm and 330 gm to each plant in two split dose :Carbofuran (Furadon 3g) @ 40gm per plant and Bavistin 2% (4 minutes) for management of nematodes.
Application of 15kg N, 35 kg P and 15 kg K in lentil	Variety Nutrient Method of application Sowing time Duration Land preparation Spacing	:B-77 :15:35:15 kg NPK per ha :Basal application during land preparation :Mid Oct - Mid November :110-120 days :3 – 4 ploughing followed laddering :30 cm x 10cm
Application of 45:22.5:22.5 kg (N:P:K) per ha and bio fertilizer Azotobacter and PSB in toria	Variety Nutrient Method of application Sowing time Duration Land preparation Spacing	:TS-36 : 45:22.5:22.5 kg (N:P:K) + Azotobacter + PSB :Basal application during land preparation :Mid Oct - Mid November :90-95 days :3 – 4 ploughing followed laddering :30 cm x 10cm

Upgraded goat “ Beetal Cross Bred”	A beetal crossbred buck (adult, breedable) will be provided. The farmer will provide two female doe (one at its first lactation and one matured female, not breed earlier), for breed upgradation and two female doe (one at its first lactation and one matured female, not breed earlier) as control. The buck and the first two female will be reared in intensive techniques with 200 gm of compounded concentrated feed and ad-libitum green fodder in a shed having raised floor. The control animal will be reared in traditional semi intensive system of rearing with little or no concentrated feed and traditional system of breeding.	
Balanced feeding (200g concentrate feed/animal/day)	A beetal adult buck and two female local non descript doe (one female goat at first lactation and one mature female goat not breed earlier), will be provided with 200 gm of concentrated feed (100 gm in forenoon and 100 gm afternoon) and ad-libitum green fodder in intensive system of feeding with health coverage. Another two female goat, (one female goat at first lactation and one mature female goat not breed earlier), will be kept as control, without any concentrated feed and in semi intensive system of rearing.	
High yielding variety of Boro rice “ Kanaklata”	Plant height Duration Grain Character Sowing time Seed rate Spacing Harvesting time Fertilizer	:Semi dwarf/medium tall :165-175 days :Medium slender :November :40 kg/ha :20 x 15 cm :May :60:30: 30 kg (N:P <sub>2</sub> O <sub>5</sub> :K <sub>2</sub> O) per ha
Integrated nutrient management in winter rice	Use of Azospirillum and PSB @ 4kg/ha each + FYM 1t/ha + Rock phosphate 10 kg P <sub>2</sub> O <sub>5</sub> /ha + MOP 40 Kg K <sub>2</sub> O/ha	
Economic viability of De-navelling and post shooting feeding of NPK and sulphur in banana	Denavelling of banana with urea and sulphate of potash	
Improved crop management practices in toria	Sowing of toria variety “TS-36” at recommended seed rate i.e. 10kg per ha, fertilizers @ 40:35:15 kg N, P and K per ha. Use of chemical pesticides for controlling aphid.	
Performance of high yielding summer rice variety ‘Dinanath’ in the farmers field	Plant height Duration Grain Character Sowing time	:Semi dwarf/medium tall :165-175 days :Medium bold :November

	Seed rate Spacing Harvesting time Fertilizer	:40 kg/ha :20 x 15 cm :May :60:30: 30 kg (N:P <sub>2</sub> O <sub>5</sub> :K <sub>2</sub> O) per ha
Management of bacterial wilt in tomato	Seed treatment (1 gm Biofor : 10 gm Seed) , seedling treatment (1 kg biofor: 2 lit. Water for 1000 seedlings) and soil treatment with Biofor-PF (1 kg Biofor Pf : 10 Kg cowdung)	
Improved crop management practices in lentil (Var. B-77)	Sowing of lentil variety “B-77” at recommended rate of seedling i.e. 30kg per ha, fertilizers @ 15:35:15 kg N, P and K per ha. Use of chemical pesticides for controlling aphid.	
Improved crop management practices in black gram	Sowing of black gram variety “SBC-40” at recommended seed rate i.e. 25kg per ha, fertilizers @ 15:35:15 kg N, P and K per ha. Use of chemical pesticides for controlling aphid as and when necessary.	
Seed production technique in rice variety “Ranjit”	Seed selection, seed treatment, recommended management practices for seed production.	
Seed production technique in rice variety “Kanaklata” & “Joymati”	Seed selection, seed treatment, recommended management practices for seed production.	
Cultivation technology of Water melon	Recommended package of practices with Var. Sugar Baby	
Rearing of Chara Chambeli duck	Improved breed of Chara Chambeli duck	

**C. Details of location/area specificity of recommended technology viz., for each of the variety/breed/technology selected for FLD and OFT**

Technology	Location specificity
Integrated nutrient management in winter rice	Ranjit is the most important HYV of winter rice of the district. Injudicious use of only chemical fertilizers is most common which may deteriorate the soil health. Integrated nutrient management system will look after this aspect and will lead to better soil health.
Release of bio-agent “Trichogamm@ 50,000/ha/week for 6 weeks in rice	Among the different species of rice pest, rice stem borer ( <i>Scirpophagea incertula</i> ) and leaf folder ( <i>Cnaphalocrosis medinelis</i> ) are very serious pest of rice which causes more than 20 per cent of yield loses in Bongaigaon district. Farmers are mostly overreliance on pesticide and due to over used or indiscriminate used of chemical pesticide causes health hazards to human being and their livestock, residual toxicity, environmental problems, pest outbreak and drastic effect on beneficial insects. Besides the chemical pesticides are very expensive. Most of the farmers spray pesticide more than they need to and these unnecessary applications can be very costly. Therefore, to combat the disadvantage of chemical pesticide, bio-control (using of Trichogamma) is one of the holistic system which is more economical, economically viable and socially acceptable for the farmers.



Seed rhizome treatment + soil application of Biofor-PF in Ginger	Ginger is the most successful spice crop in Assam. The biggest constraint for ginger production across the North Eastern Region is rhizome rot. <i>Phythium myriotylum</i> is the most dominant and aggressive species that is responsible for rhizome rot in Assam. For controlling of this disease the farmers are mainly dependent on fungicide which is costly and toxic to human being and their livestock. Therefore, to reduce the cost of chemical and ill effect of fungicide, bio-agent "Biofor-Pf" is tried.
Plant population: 6520 plants per hectare ; spacing: 1m- 1.2m X 2m in Banana	Banana is an important fruit crop of the district, however, in most of the banana growing areas, poor utilization of resources like land is often observed. Therefore, the OFT was conducted with some spatial adjustment so that, more plants were accommodated with proper utilization of resources.
Application of 15kg N, 35 kg P and 15 kg K in lentil	Lentil is an important pulse crop of the district. Considering the importance of potassium in plant growth and development and low soil potassium status, the On Farm Testing was conducted in some localities with the application of potassium along with the recommended doses of Nitrogen and Phosphorus.
Application of 45:22.5:22.5 kg (N:P:K) per ha and bio fertilizer Azotobacter and PSB in toria	Toria is the most important oilseed crop of the district and injudicious use of only chemical fertilizers is most common which may deteriorate the soil health. Integrated nutrient management system will look after this aspect and will lead to better soil health.
Upgraded goat " Beetal Cross Bred"	Most of the goat population of the area are of indigenous non descript animal, known for low body weight, low milk production and slow growth. Improved breed like beetal and their cross produces upto two crops per year and are known for rapid weight gain and high milk yield so beetal cross breed is used for upgradation of the local goat for improved milk and meat production
Balanced feeding (200g concentrate feed/animal/day)	Feeding is the most neglected aspect in goat production in the region which is a major cause for low productivity. Goat plays a major role in rural economy and provides the livelihood security specially for the landless and marginal farmers because of its ability to survive and produce under extreme climatic condition. Improved nutrition is essential for increased economic returns in terms of milk and meat production.
Improved crop management practices in toria	Scientific crop management practices are not yet in practice.
Improved crop management practices in lentil (Var. B-77)	Scientific crop management practices are not yet in practice.
Improved crop management practices in black gram	Scientific crop management practices are not yet in practice.
De-navelling of banana with urea and sulphate of potash	Scientific crop management practices for uniform finger development, which was not yet practiced in the locality.
Seed, seedling and soil treatment with Biofor-PF against bacterial wilt in tomato	Tomato is an important vegetable crop of the district. The biggest problem of tomato production is wilting of plant. For controlling of this disease the farmers are mainly dependent on chemical which is costly and health hazardous. Therefore, to reduce the cost of chemical and bad effect of chemicals, bio-agent, Biofor-Pf was tried.
Cultivation technology of water	Char areas are generally not suitable for cultivation of crops; however, in some pockets of the district, farmers are utilizing

melon	char areas for cultivation of water melon. Productivity of the crop is low owing to poor adoption of scientific method of cultivation. With the objective of improving the productivity, scientific method of cultivation of water melon was considered as intervention for demonstration.
High yielding variety of Boro rice "Kanaklata"	After harvesting of Sali rice, fields remain fallow up to next kharif season, although, there is natural source of water. Considering the importance of crop intensification in this locality, high yielding variety of Boro rice "Kanaklata" was introduced after harvesting of Sali rice.
Seed production technique in rice varieties "Ranjit", "Joymoti" & "Kanaklata"	The low seed rate replacement and repetitive cultivation of same seed often leads to low yield in the locality. Therefore, there is need to demonstrate seed production technology.
High yielding variety of Boro rice "Dinanath"	Boro rice area has been increasing gradually in the district with the increasing facility of irrigation; however, there has been decline in the productivity level due to cultivation of some unknown intruded varieties without seed replacement. Therefore, a newly released variety was tried to assess the yield performance in the farmers field.
Rearing of Chara Chambeli duck	Local breeds of duck are laying minimal numbers of eggs with least weight gain leading to low income to the rural people. So, we tried to introduce high yielding and fast growing breed of duck "Chara Chambelli" in the KVK operational area for higher income generation.

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