1ANNUAL REPORT – April 2010-March 2011

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone		E mail
	Office	FAX	
Krishi Vigyan Kendra (NRCM), Village- Porba, P.O-Pfutsero, District - Phek, Nagaland-797107.	03865-281436	03865-281436	kvkphek@gmail.com www.kvkphek.org.in

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

Address	Telephone		E mail
	Office	FAX	
NRC on Mithun, Jharnapani, Medziphema, Nagaland.	03862-247341	03862-247341	nrcmithun@mailcity.com www.nrcmithun.res.in

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. R.K.Singh	Village- Porba, P.O-Pfutsero, District - Phek, Nagaland-797107	09436606353	rksingh3@gmail.com

1.4. Year of sanction: 2003

1.5. Staff Position (as on September 2010)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale (Rs.)	Date of joining	Permanent /Temporary	Category (SC/ST/ OBC/ Others)

1	Programme Coordinator	Dr. R.K.Singh	Programme Coordinator	Animal Science	37,400-67,000	07.12.08	Permanent	Others
2	Subject Matter Specialist	Mr.Rinku Bharali	SMS	Horticulture	15,600-39,100	17.08.06	Permanent	Others
3	Subject Matter Specialist	T.Esther Longkumer	SMS	Soil Science	15,600-39,100	01.08.06	Permanent	ST
4	Subject Matter Specialist	Hannah K. Asangla	SMS	Agronomy	15,600-39,100	01.08.06	Permanent	ST
5	Subject Matter Specialist	Er. Chitrasen Lairenjam	SMS	Agril Engg.	15,600-39,100	10.08.06	Permanent	OBC
6	Subject Matter Specialist	Dr. Debojyoti Borkotoky	SMS	Animal Science	15,600-39,100	01/11/2010	Permanent	OBC
7	Subject Matter Specialist	Mrs. Liza Barua Bharali	SMS	Plant Protection	15,600-39,100	23.11.09	Permanent	Others
8	Programme Assistant	Virginia Thabah	Programme Asst.	Home Science	9,300-34,000	21.08.06	Permanent	ST
9	Computer Programmer	Er. Nukusa T. Vadeo	Computer Programmer	Computer Engg.	9,300-34,000	01.08.06	Permanent	ST
10	Farm Manager	Keniseto Chucha	Farm Manager	Horticulture	9,300-34,000	10.11.09	Permanent	ST
11	Accountant / Superintendent	Vacant						
12	Stenographer	R. Imsenaro	Stenographer cum omputer operator		5,200-20,200	28.03.07	Permanent	ST
13	Driver	Bodan Ch. kachari	Driver cum mechanic		5,200-20,200	01.08.06	Permanent	ST
14	Driver	Vacant						
15	Supporting staff	Shetochonyi	Grade IV		5,200-20,200	29.03.07	Permanent	ST
16	Supporting staff	Vevo	Grade IV		5,200-20,200	29.03.07	Permanent	ST

1.6. Total land with KVK (in ha) :

S. No.	Item	Area (ha)
1	Under Buildings	Nil
2.	Under Demonstration Units	Nil
3.	Under Crops	0.2

4.	Orchard/Agro-forestry	1.8
5.	Others (specify)	15

1.7. Infrastructural Development:

A) Buildings: NIL

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	-	-	-	-	-	-	-
2.	Farmers Hostel	-	-	-	-	-	-	-
3.	Staff Quarters (6)	-	-	-	-	-	-	-
4.	Demonstration Units (2)	-						
5	Fencing	-	-	-	-	-	-	-
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
Bolero	2004	4,37,736.00/-	166762	running condition but needs to condemned
Power tiller	2004	1,21,868.00/	-	Good

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Computer and accessories	2006	2,30,984.00	Need renovation or replacement, hardware outdated.
Camera	2006	19,390.00	Good
LCD Projector	2010		Good
GPS	2010		Good

1.8. A). Details SAC meeting* conducted in the year 2010

Sl. No.	Date	Name and Designation of Participants	Salient Recommendations	Action taken
1.	20/8/2010	1. Dzuthoru Fishery Demonstrator 2. Sheniezo Porba village 3. Kedusayo F.I 4. Vechilo-ii Kanuo 5. Saniezo Menii SDAO 6. Viliehu Nguzhu 7. Rev.L.Ritse Pfutsoromi village 8. Dr. Mudozo Sahire D.V.O.Phek 9. Rev. Dr. Dingu Kenye 10. Senokha Losdal 11. Loreni Tsanglao Stringer 12. Kuzhovesa Soho Correspondent 13. Keniseto Chucha Farm Manager 14. Nukusa. T.Vadeo Prog asstt. (Computer) 15. Viginia Thabah Prog Asstt. (Home Science 16. Liza Baruah Bharali SMS (Plant Protection) 17. Vidya Singh Scientist 18. M.K.Mondal D.G.M .NABARD 19. Rev. Vezopa Tetseo Ex- Secretary 20. Niethuto VCC Kami village 21. Wenyi Kronu Chairman 22. .P.David Marhu Progressiv Farmer 23. Wetsho Mero Chief Coordinator Farmer's Club 24. K.Ritse Chairman APMC 25. Dr.Vesapra Tinyi Secy Noah Grandpa 26. Veniechi, Technical Expert 27. Medoseto Kiso Project Coordinator 28. Jonu Ritse Secy N.P.F Phek 29. V.Puro Progressive 30. Sabu Kapfo Gen. Secy N.P.F 31. Kewechelo Mero Member VMC 32. Mesewepre Kapfo Member VMC 33. Neiba Kronu Deputy Chairman, State Planning Board Naga 34. R.Imsennaro. Longchar. Jr. Steno . 35. Rinku Bharali SMS (Horti) 36. Bodon Ch.Kachari 37. Chitrasen Lairenjam SMS (Agril Engg.)	1. Popularization of QPM as animal feed in the district. 2. The farmers of the district largely raised the animal but quality feed is not available so steps should be taken to set up a feed mill. This will help in boosting the animal production 3. Cultivation of Wheat may also be taken, as at present it is not in practice so a trail may be conducted to asses its feasibility. 4. Water crisis during rabi is a measure concern so steps should be taken to demonstrate water harvesting technologies. The SHG's may play vital role in promotion of the technology so their help may be taken. 5. Formation of Kisan Club may help in accelerating technological dissemination on one hand and better bank farmer linkage on other hand so formation of new Kisan Clubs can be taken. 6. Training on packaging and value addition should be carried out in sufficient numbers. 7. Paddy cum fish culture may also prove very remunerative so it should be encouraged. 8. Introduction of new breeds/species of poultry, pigs or other animal/birds for increasing over all livestock productivity. 9. Trainings should be conducted on biofencing 10. Trainings should be conducted on fish disease. 11. Exposure visit to NRC-Pig and other similar institute may also be helpful so KVK should conduct some exposure visits.	1. Demonstrations conducted, articles in news paper published, trainings conducted 2. Demonstration has been conducted 3. Discussion is in progress with State AH & Vet. Dept. 4. Programme has been planned for 2010-11 rabi 5. A total of 2 low cost water harvesting structure has been installed at various villages. 6. 10 nos. of kisan club have been launched and various activities have been conducted 7. Different trainings cum demonstration on fruits and vegetable processing and preservation has been conducted. 8. Could not be done because of non availbility of SMS fisheries 9. Rabbit breed Soviet chincella and Newsland white have been demonstarted in different villages. Poultry breed vanaraja has been demonstrated. Turkey will be introduced 10.Programme is planned for 2010-11 11.Could not be done because of non availbility of SMS fisheries 12.Exposure visit to NRC pig have been conducted

**** Attach a copy of SAC proceedings along with list of participants***

Proceeding of 4th SAC meeting

The 4th SAC meeting of KVK, Phek was held on 20 August 2010 at conference hall of CBCC, T. Chikri, Pfutsero. The occasion was graced by the Mr. Neiba Kronu, Deputy Chairman, State Planning Board & Chairman, NOAH-GRANDPA. Mr.M.K.Mondal, DGM, NABARD Chaired the meeting. The meeting commenced at 10.30am by a welcome address by the Mr. Rinku Bharali and felicitation of Dy. Chairman, State Planning Board. All together 33 members participated in the meeting. All the members of SAC and the KVK introduced themselves. After introduction Dr. R.K.Singh, Programme coordinator, presented the achievements of KVK during 2009-10 and action plan for 2010-11. After the presentation, discussion session started. During the meeting following observations and suggestions have been made by the members of the SAC.

1. Duck has good potential, so Khaki Campbell breed should be tested.
2. SRI can be taken up for testing in collaboration with NABARD.
3. Lemon grass and citronella has good potential for oil and insecticidal properties. Large area can be taken along with Assam lemon in collaboration with NOAHGRANDPA .
4. Technology for Assam lemon should be provided for large scale cultivation by NOAHGRANDPA.
5. Soyabean should be popularized in collaboration with NOAHGRANDPA.
6. Orange orchards are declining. Training cum demonstration on rejuvenation of orchards should be done.
7. Training on fish rearing should be provided.
8. Paddy cum fish culture may also prove very remunerative so it should be encouraged.
9. As the people of Phek are very fond of non vegetarian food and it forms major part of their daily meal so introduction of new breeds/species of poultry, pigs or other animal/birds will help in increasing over all livestock productivity.

(10) Trainings should be conducted on bio-fencing and using cheery plant as biofence.

(11) Training on Shitake mushroom should be conducted.

(12) Wheat production should be taken up during rabi season.

(13) Dairy farming should be encouraged amongst the farmers and trainings should be provided.

(14) Quality analysis of Tree tomato should be done.

(15) Tapioca as a pig feed should be encouraged.

During the discussion honourable Deputy Chairman, State Planning Board and Chairman NOAH-GRANDPA Mr.Neiba Kronu also informed the house about efforts taken by State Government like, Fishery project, Mithun Farm at kami village. Deputy General Manager NABARD, Mr. M.K.Mondal also gave brief activities of NABARD. He also highlighted the different project under NABARD. Vedio show on Activities on KVK and Rabbitry was also shown to the members. Er. Chitrasen Lairenjam delivered a brief presentation on water harvesting. The meeting was concluded with vote of thanks by Mr. Rinku Bharali, SMS(Horticulture), KVK, Phek Nagaland.

2. DETAILS OF DISTRICT (20010-11)

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

S. No	Farming system/enterprise
1.	Jhum
2.	Pani kheti
3.	Zabo system
4.	Agrisilvipastoral system
5.	Alder based cropping system

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

S. No	Agro-climatic Zone	Characteristics
1.	Sub tropical Hill Zone (1000-1500m MSL)	High hills to medium hills with steep slope and undulating topography. Soils are rich in organic matter and ranges from sandy loam to clay loam
2.	Sub Alpine temperate zone (1500-3500m MSL)	High hills with steep terrains and deep gorges. Soils ranges are clay to clay loam
3.	Mild tropical Hill zone (200-800m MSL)	Mid hills to low hills with gentle slopes. Soils ranges from sandy loam to clay

Major agro ecological situations (based on soil and topography)

Sl. No	**Agro ecological situation**	**Characteristics**
1	AES-I (500-1000 meters msl)	Foot hills with gentle slope having terraces suitable for paddy cultivation. Soil is basically clay loam to clay
2.	AES-II (1000-1500 meters msl)	Moderate hills with gentle slope have been observed. Soil is loamy in nature.
3.	AES-III (above 1500 meters msl)	Topography is high hills with moderate to steep slopes. Soil is dominantly Sandy loam to clay loam

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1.	Black Soils	Dark grey to black colour with high clay content. Sandy loam to clay in texture.	36468ha
2.	Red Soils	Light textured with porous structure. Clay soil is predominant.	24312 ha
3.	Alluvial Soils	Light grey to dark colour. Sandy loam to clay loam.	18234ha
4.	Sandy Soils	Coarse texture, sandy loam in nature	6078ha

2.4. Area, Production and Productivity of major crops cultivated in the district (2009-10)

S. No.	**Crop**	**Area (ha)**	**Production (Qtl)**	**Productivity (Qtl /ha)**
1.	**Cereals**			
a	Jhum Paddy	2.10	37.5	17.85

b	WTRC Paddy	11.90	275.8	23.17
c.	Maize	8.00	142.4	0.178
d.	Small millets	2.40	23.0	9.58
2.	**Pulses**			
a.	Arhar	0.42	4.0	9.52
b.	Rajma Kholar	0.15	2.1	14.0
c.	Beans	0.26	3.6	13.84
d	Pea	1.00	16.3	16.3
3.	**Oilseed**			
a.	Groundnut	0.07	0.5	7.14
b.	Soyabean	2.06	28.8	13.98
c.	Rapeseed/Mustard	2.75	27.4	9.96
4.	**Fruits**			
a.	Pear	10.0	250.0	25.0
b.	Plum	10.0	250.0	25.0
c.	Peach	15.0	400.0	26.7
d.	Orange	300.0	20000.0	66.7
e.	Pomelo	10.0	200.0	20.0
f.	Papaya	25.0	3000.o	120.0
g.	Banana	200.0	50000.0	250.0
h.	Guava	20.0	1000.0	50.0
i.	Pineapple	250.0	35000.0	140.0
j.	Passion fruits	300.0	6000.0	20.0
5.	**Vegetables**			
a.	Potato	700.0	70000.0	100.o
b.	Sweet potato	10.0	400.0	40.0
c.	Cabbage	500.0	50000.0	100.0
d.	Cauliflower	5.0	150.0	30.0
e.	Brinjal	15.0	1100.0	73.3
f.	Tomato	50.0	3000.0	60.0
g.	Chochow	140.0	13000.0	92.9
h.	Tapioca	0.08	18.6.0	232.5
i.	Colocassia	0.55	52.5.0	95.45
j.	Tree tomato	15.0	1200.0	80.0
6.	**Spices**			
a.	Ginger	300.0	20000.0	66.7
b.	Garlic	25.0	300.0	12.0

c.	Chillies	300.0	20000.0	66.7
D	Cardamom	0.52	2.5.0	4.8

2.5. Weather data

Month	**Rainfall (mm)**	**Temperature ^{0} C**		**Relative Humidity (%)**
		Max	Min	
Aug 2010	292.7	21	9	
Sept 2010	199.83	26	14	
Oct 2010	143.1	25	12	
Nov 2010	7.7	27	6	
Dec 2010	3	22	1	
Jan 2011	17.7	14	-0.5	
Feb 2011	3.3	22	5	
March 2011	68	31	6	

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (2007-08)

Livestock (in number)	**Male ('000)**	**Female ('000)**	**Total ('000)**
Non descriptive Cattle (local low yielding)	3.886	15.984	**19.87**
Crossbred cattle	2.468	6.929	**9.387**
Non descriptive Buffaloes (local low yielding)			
Graded Buffaloes	1.590	2.145	**3.735**
Goat	2.796	3.724	**6.520**
Sheep	0.151	0.034	**0.370**
Pig	44.776	22.670	**67.446**
Dog	8.587	6.161	**14.748**
Rabbit	2.965	3.064	**6,029**
Mithun	2.977	1.495	**4.472**
Commercial dairy farms (Number)	-	-	-
Poultry	**No. of farms**	**Total No. of birds ('000)**	
Commercial	NA	-	
Backyard	Na	**371.418**	

.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	Pfutsero	Pfutsero	Porba Mesulumi Kikruma putsero	Paddy	Poor yield of local variety. Degrading soil fertility Stem borer infestation More time and labour consumption in weeding and thrashing of paddy Poor viability of seeds and loss due to improper storage Soil erosion, loss of fertility and degradation	Introduction of high yielding varieties of paddy suitable for panikheti. Introduction of biofertilizers e.g.Rhizobium, Azotobacter, Azospirillum, Blue green algae, Azolla for nutrient management Use of suitable plant protection measures Introduction of improved paddy weeders and thrashers. Introduction of improved storage structure for cereals. Proper design of terrace, water harvesting, diversion, developing irrigation and drainage system for proper management of watershed area.
				Maize	Poor yield and low quality of local variety Improper plant spacing with higher seed rate Drudgery in shelling of maize	Introduction of high yielding/hybride varieties Proper plant geometry and seed rate Use of maize shellers
				Potato	Low yield Non avialibility of quality planting material Cut worm, Red ants	Use of high yielding varieties and adoption of Integrated nutrient management to maintain the fertility status of soil. Introduction of TPS technology Use of suitable plant protection measures
				Banana	Cultivation of wild type low quality banana cultivars. Improper training of plants.	Introduction of high quality of banana cultivar such as Grand naine
				Passion fruit	Improper planting, training and pruning Insect pest and disease infestation. Post harvest losses of fruits and vegetables	Improved production technology of passion fruit. Use of suitable plant protection measures Development capabilities of rural youth and women in the field of fruits and vegetables processing and value addition.
				Pear, Peach & plum	Heavy weed infestation in the orchards Low yield and quality of pear peach and plum.	Control of weeds Use of high yielding varieties with improved production technology. Proper nursery raising techniques. Use of bio-control agents
				Cabbage	Improper nursery raising technique Insect and pest infestation. Mix cultivation resulting in hindrance for intercultural operations.	Developing proper intercropping pattern Soil and Seed treatment Proper storage of finished products
				Ginger	Rotting in field and as well as during storage	Introduction of quality poultry germplasm. Adequate and hygienic shelter/housing

				Poultry	Low production performance of existing birds No provision of night shelter and unhygienic dwellings Improper feeding High epidemics of RD	Supplementary feeding for better growth and performance Vaccination Introduction of quality pig germplasm. Developing breeding unit of high performing breeds Creating awareness regarding performance and management of better germplasm
				Piggery	Low production performance of local breeds Non-availability of piglets in the locality Tendency of the farmers to produce pork on zero to negligible inputs	Vaccination and health coverage measures. Feeding of Compounded mineral mixture instead of common salt only
				Mithun	High incidence of disease occurrence like FMD Compensation of mineral deficiency in high hill fodders by providing common salt only Parasitic infestation in young calves	Deworming on regular intervals Breed improvement through selection and cross breeding Vaccination Deworming on regular intervals
				Cattle	Poor milk production of local breed, Thotho Epidemics of FMD Parasitic infestation in young calves	Liming in fish pond Introduction of quality fish breed
				Fishery	Skin disease in local breed Poor production of local fish	
2	Pfutsero	Chizami	Tsupfumi	Paddy	Poor yield of local variety. Degrading soil fertility Stem borer infestation More time and labour consumption in weeding and thrashing of paddy Poor viability of seeds and loss due to improper storage Soil erosion, loss of fertility and degradation	Introduction of high yielding varieties of paddy suitable for panikheti. Introduction of biofertilizers e.g.Rhizobium, Azotobacter, Azospirillum, Blue green algae, Azolla for nutrient management Use of suitable plant protection measures Introduction of improved paddy weeders and thrashers. Introduction of improved storage structure for cereals. Proper design of terrace, water harvesting, diversion, developing irrigation and drainage system for proper management of watershed area.
				Maize	Poor yield and low quality of local variety Improper plant spacing with higher seed rate Drudgery in shelling of maize	Introduction of high yielding/hybride varieties Proper plant geometry and seed rate Use of maize shellers
				Potato	Low yield Non avialibility of quality planting material Cut worm, Red ants	Use of high yielding varieties and adoption of Integrated nutrient management to maintain the fertility status of soil. Introduction of TPS technology Use of suitable plant protection measures
				Banana	Cultivation of wild type low quality banana cultivars. Improper training of plants.	Introduction of high quality of banana cultivar such as Grand naine
				Passion fruit	Improper planting, training and pruning Insect pest and disease infestation.	Improved production technology of passion fruit. Use of suitable plant protection measures Development capabilities of rural youth and women in the

					Post harvest losses of fruits and vegetables	field of fruits and vegetables processing and value addition.
				Pear, Peach & plum	Heavy weed infestation in the orchards Low yield and quality of pear peach and plum.	Control of weeds Use of high yielding varieties with improved production technology. Proper nursery raising techniques. Use of bio-control agents
				Cabbage	Improper nursery raising technique Insect and pest infestation. Mix cultivation resulting in hindrance for intercultural operations.	Developing proper intercropping pattern
				Ginger	Rotting in field and as well as during storage	Soil and Seed treatment Proper storage of finished products Use of resistant varieties
				Large cardamom	High incidence of disease occurrence resulting in dyeing of plants High energy requirement in drying	Proper designing of driers
				Poultry	Low production performance of existing birds No provision of night shelter and unhygienic dwellings Improper feeding High epidemics of RD	Introduction of quality poultry germplasm. Adequate and hygienic shelter/housing Supplementary feeding for better growth and performance Vaccination
				Piggery	Low production performance of local breeds Non-availability of piglets in the locality Tendency of the farmers to produce pork on zero to negligible inputs	Introduction of quality pig germplasm. Developing breeding unit of high performing breeds Creating awareness regarding performance and management of better germplasm Breed improvement through selection and cross breeding Vaccination Deworming on regular intervals
				Cattle	Poor milk production of local breed, Thotho Epidemics of FMD Parasitic infestation in young calves	
3	Cheteba	Kikruma	K.Basa Thepuzu Theniju	Paddy	Poor yield of local variety. Degrading soil fertility Stem borer infestation More time and labour consumption in weeding and thrashing of paddy Poor viability of seeds and loss due to improper storage Soil erosion, loss of fertility and degradation	Introduction of high yielding varieties of paddy suitable for panikheti. Introduction of biofertilizers e.g.Rhizobium, Azotobacter, Azospirillum, Blue green algae, Azolla for nutrient management Use of suitable plant protection measures Introduction of improved paddy weeders and thrashers. Introduction of improved storage structure for cereals. Proper design of terrace, water harvesting, diversion, developing irrigation and drainage system for proper management of watershed area.
				Maize	Poor yield and low quality of local variety Improper plant spacing with higher seed rate Drudgery in shelling of maize	Introduction of high yielding/hybride varieties Proper plant geometry and seed rate Use of maize shellers

				Potato	Low yield	Use of high yielding varieties and adoption of Integrated nutrient management to maintain the fertility status of soil. Introduction of TPS technology
					Non avialibility of quality planting material Cut worm, Red ants	Use of suitable plant protection measures
				Banana	Cultivation of wild type low quality banana cultivars. Improper training of plants.	Introduction of high quality of banana cultivar such as Grand naine
				Passion fruit	Improper planting, training and pruning Insect pest and disease infestation. Post harvest losses of fruits and vegetables	Improved production technology of passion fruit. Use of suitable plant protection measures Development capabilities of rural youth and women in the field of fruits and vegetables processing and value addition.
				Mandarin	Improper spacing Insect pest and disease management	Proper plant geometry Integrated pest and disease management Control of weeds
				Pear, Peach & plum	Heavy weed infestation in the orchards Low yield and quality of pear peach and plum.	Use of high yielding varieties with improved production technology. Soil and Seed treatment
				Ginger	Rotting in field and as well as during storage	Proper storage of finished products
				Poultry	Low production performance of existing birds No provision of night shelter and unhygienic dwellings Improper feeding	Introduction of quality poultry germplasm. Adequate and hygienic shelter/housing Supplementary feeding for better growth and performance
					High epidemics of RD	Vaccination Introduction of quality pig germplasm.
				Piggery	Low production performance of local breeds Non-availability of piglets in the locality Tendency of the farmers to produce pork on zero to negligible inputs	Developing breeding unit of high performing breeds Creating awareness regarding performance and management of better germplasm Breed improvement through selection and cross breeding
				Cattle	Poor milk production of local breed, Thotho	Vaccination Deworming on regular intervals
					Epidemics of FMD Parasitic infestation in young calves	
	Phek	Phek	Lozapuhu	Paddy	Poor yield of local variety.	Introduction of high yielding varieties of paddy suitable for panikheti.
					Degrading soil fertility	Introduction of biofertilizers e.g.Rhizobium, Azotobacter, Azospirillum, Blue green algae, Azolla for nutrient management
					Stem borer infestation More time and labour consumption in weeding and thrashing of paddy	Use of suitable plant protection measures Introduction of improved paddy weeders and thrashers.
					Poor viability of seeds and loss due to improper storage Soil erosion, loss of fertility and degradation	Introduction of improved storage structure for cereals. Proper design of terrace, water harvesting, diversion,

						developing irrigation and drainage system for proper management of watershed area.
				Maize	Poor yield and low quality of local variety Improper plant spacing with higher seed rate Drudgery in shelling of maize	Introduction of high yielding/hybride varieties Proper plant geometry and seed rate Use of maize shellers
				Potato	Low yield Non avialibility of quality planting material Cut worm, Red ants	Use of high yielding varieties and adoption of Integrated nutrient management to maintain the fertility status of soil. Introduction of TPS technology Use of suitable plant protection measures
				Banana	Cultivation of wild type low quality banana cultivars. Improper training of plants.	Introduction of high quality of banana cultivar such as Grand naine
				Passion fruit	Improper planting, training and pruning Insect pest and disease infestation. Post harvest losses of fruits and vegetables	Improved production technology of passion fruit. Use of suitable plant protection measures Development capabilities of rural youth and women in the field of fruits and vegetables processing and value addition.
				Kiwi	Poor quality planting material. Lack of knowledge on production technology.	Selection of improved varieties. Improved production technology. Proper plant geometry Integrated pest and disease management
				Mandarin	Improper spacing Insect pest and disease management	Control of weeds Use of high yielding varieties with improved production technology.
				Pear, Peach & plum	Heavy weed infestation in the orchards Low yield and quality of pear peach and plum.	Soil and Seed treatment Proper storage of finished products
				Ginger	Rotting in field and as well as during storage	Introduction of quality poultry germplasm. Adequate and hygienic shelter/housing
				Poultry	Low production performance of existing birds No provision of night shelter and unhygienic dwellings Improper feeding High epidemics of RD	Supplementary feeding for better growth and performance Vaccination Introduction of quality pig germplasm. Developing breeding unit of high performing breeds Creating awareness regarding performance and management of better germplasm
				Piggery	Low production performance of local breeds Non-availability of piglets in the locality Tendency of the farmers to produce pork on zero to negligible inputs	Breed improvement through selection and cross breeding Vaccination Deworming on regular intervals
				Cattle	Poor milk production of local breed, Thotho Epidemics of FMD Parasitic infestation in young calves	

2.8 Priority/thrust areas

Crop/Enterprise	Thrust area
Poultry	Adequate Livestock and poultry health coverage measures
Soil fertility	Adoption of Integrated nutrient management to maintain the fertility status of soil.
Soil fertility	Introduction of biofertilizers e.g.Rhizobium, Azotobacter, Azospirillum, Blue green algae, Azolla for nutrient management
Tomato	Insect pest and disease management
Ginger	Insect pest and disease management Awareness on improved production technology on ginger
Potato	Introduction of TPS technology
Cole crops	Insect pest and disease management
Bee keeping	Improved rearing technology
cauliflower	Production technology for cole crops
Tomato	Production technology for off-season vegetable cultivation
Passion fruit	Improved production technology on passion fruit
Kiwi	Improved production technology on kiwi
banana	Introduction of high quality of banana cultivar such as Grand naine
Farm mechanization	Introduction of improved farm implement for hill agriculture
Large cardamom	Introduction of disease resistance varieties of large cardamom
Pear , peach , plum	Improved production technology on temperate fruits
Soil and water conservation management	Proper design of terrace, water harvesting and diversion, irrigation and drainage system for proper management of watershed area
Value addition	Development capabilities of rural youth and women in the field of fruits and vegetables processing and value addition.
Safe storage of cereals and pulses	Introduction of improved storage structure for cereals and pulses

* An example for guidance only

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target (Oct 2009- Sept 2010) and achievements Oct 2009-March2010of mandatory activities by KVK.

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
12	13	39	42	12	7	546	95

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
Practicing Farmers	55	43	1360	1038	262	95	2370	422
Rural youth	20	12	440	308				
Extend. Functionaries	6	2	101	29				

Seed Production (Qtl.)		Planting material (Nos.)	
5		6	
Target	Achievement	Target	Achievement
-	-	-	-

3.B. Abstract of interventions undertaken April 2010-March 2011

S. No	Thrust area	Crop/ Enterprise	Identified Problem	Interventions					
				Title of OFT if any	Title of FLD if any	Title of Training if any	Title of training for extension personnel if any	Extension activities	Supply of seeds, planting materials etc.
1	Popularization of variety	Garden pea	Poor yield of local variety high cost of staking		Popularisation of garden pea var. Arkel	Production technology on garden pea		Provided leaflets	Seeds
2.	Varietal evaluation	Banana	Poor quality fruit	Performance of Banana var.Giant Cavendish		Prduction technology on Banana (Giant Cavendish)		Provided leaflets	Suckers Insecticide (Furadon)
3.	Popularization of mushroom	Oyster mushroom	Lack of availability of wild mushroom, incidence of poisoning		Popularization of Oyster Mushroom production for income generation of SHGs	Mushroom production for income generation		Method demonstration, Field day Provide folders	Spawn, Polybags, rope,
4	Protected cultivation technology	Tomato var. Rohini	Low yield local wild type variety due to Severe blight disease during kharif		Offseason tomato production under polyshade cum rain shelter	Offseason vegetable production under protected condition	Offseason vegetable production under protected condition	Provide folders	Seedlings, Polythene sheet
5.	Varietal evaluation	Cauliflower	No cultivation	Performance of cauliflower var. Snowball, Madhuri, Sumedha		Production technology of cauliflower		Provide folders	Seedlings
6	Varietal evaluation & Line sowing	Carrot	Low yield due to poor cultivation practice, no commercial production	Performance of carrot var.Early Nantes in line sowing.		Production technology on carrot and radish		Provided leaflets	Seeds pesticides
7	Varietal evaluation	French bean	Poor quality of local variety	Performance of French bean var.Anupama		Production technology on French bean		Provided leaflets	Seeds

8.	Protected cultivation technology	Tomato	Not cultivated during rabi due to low temperature	Performance of tomato var. Rohini under polyhouse		Offseason vegetable production under protected condition		Provide folders	Seedlings
9.	Disesase management	Ginger	Rotting in ginger	Effect of Biofor PF-2 on Soft rot management of Ginger		Disease management in Ginger		Provide folders	Rhizomes, Biofor PF-2
10	Insect pest management	Cauliflower	High Aphid infestation in cauliflower	Evaluation of Organic formulation for management of Aphids in Cauliflower var.Snowball		Insect pest management in Cole crops		Provide folders	Seedlings and Organic formulations
11	Pest management	Paddy	Stem borer infestation		Popularization of Trichocards for stem borer management in paddy.	Insect pest management in Rice		Provide folders	Trichocards
12	Nutrient management	Paddy	Low fertility status of soil and non-use of Azolla biofertilizer	Inoculation of Azolla (*Azolla caroliniana*) in lowland paddy.	-	Azolla-an enriching N status of rice soil	-	Distributed folders to farmers.	Paddy seed, Azolla(*Azolla caroliniana*)
13	Nutrient management	Paddy	Low fertility status of soil and non-use of Azolla biofertilizer	-	Inoculation of Azolla (*Azolla caroliniana*) in lowland paddy.	Soil fertility management	-	Distributed folders to farmers.	Paddy seed, Azolla(Azolla caroliniana)
14	Nutrient management	Potato	Low fertility status of soil and non-use of biofertilizer	PSB inoculation in Potato var. Kufri megha	-	Soil fertility management(potato cultivation)	-	Distributed folders to farmers	Potato tubers var. Kufri megha, Azotobacter and Phosphotika biofertilizer

15	Nutrient management	Tomato	Low productivity due to high nutrient loss in degraded soils and non-use of compost	Effect of composting methods on nutrient availability of mithun dung on tomato	-	Composting methods to enhance the utilization of organic materials.	-	Folder on Effect of composting methods on nutrient availability of mithun dung on tomato	Tomato seed, compost (NADEP, vermicompost)
16	Nutrient management	Potato	Low fertility status of soil and non-use of biofertilizer	-	PSB inoculation n Potato var. Kufri megha	Soil fertility management(potato cultivation)	-	Distributed folders to farmers	Potato tubers var. Kufri megha, Azotobacter and Phosphotika biofertilizer
17	Nutrient management	Maize	Low productivity due to high nutrient loss in degraded soils and non-use of compost	Effect of biofertilizer in maize	-	Effect of biofertilizer in maize		Distributed folders to farmers	Maize seeds,biofertilizer
18	Drudgery reduction	Spade	Acute spade angle resulting in loss of energy and poor work efficiency	Used of modified ergonomic design of spade to reduce the drudgery		-	-	-	Different angle spades
19	Design and development of low cost diet	Diet	Poor nutrition	Design and development of low cost diet for hard working farm women in agriculture					Local ingredients
20	Processing	ginger	not process		processing of ginger products	preparation of ginger ale	-	-	ginger
21	Value addition	QPM	Poor nutrition		value addition of QPM	preparation of maize cake	-	-	QPM

22	Household food security by nutrition gardening	vegetables	poor nutrition and poor backyard vegetable cultivation		scientific technology in nutritional gardening	Kitchen garden	-	-	seedlings
23	Varietal evaluation	Wheat var. PBW-343	Not cultivated	Performance of Wheat var. PBW-343		-	-	-	seeds
24	Popularizati on of variety	Field pea var. Aparna	Low yield of local varity		Popularixation filed pea var.Aparna	-	-	-	Seeds
25	Popularization of variety	Soybean JS 335	Low yield of local varity		Popularixation soybean var.JS 335	-	-	-	Seeds
26	Popularization of variety	Groundnut JL-24	Not cultivated		Popularixation groundnut var.JL24	Production and management technology on groundnut	-	Folders	Seeds
27	Popularization of variety	Field pea var. Rachna	Low yield of local varity		Popularixation filed pea var.Rachna	-			Seeds
28	Water management	Drip irrigation	Low yield of rabi crops due to water stress during winter	Assesment of the drip irrigation system in rabi vegetables		Drip irrigation :A water saving technology		Training and field demonstrati on.	Drip irrigation kit
29	Post harvest management	Cardamom drier	No air circulation in the drier to blow off the moisture from the cardamom drier Low rate of drying	Refining the present Cardamom drier develop by the innovator farmer improved its efficiency		-		-	Exhaust fan

30	Water management	Water harvesting structure	Traditional method: pond are dry during winter season due to heavy seepage	Rain water harvesting with LDPE Poly sheet lining for seepage	-	Water harvesting pond with LDPE lining	-	Folders	LDPE sheet
31	Weed management and farm mechanization	paddy	Traditional method: weeding done manually, efficiency of weeding was less, consume long time for weeding, drudgery involved in weeding is high, do not maintain proper crop geometry	Performance of Paddy weeder (Cono weeder)	-	Improved farm implements	-	-	Cono weeder
32	Soil and water conservation	Cauliflower/ plastic mulching	More soil moisture depletion due to evaporation in dry non rainy season	Performance of Cauliflower under Polysheet mulch during winter	-	Soil and water conservation.	-	-	LDPE polysheet 80 micron
33	Proper Crop density	Ajustible row maker	Improper crop geometry causing low yield and hindrance agricultural operation	-	Maintenance of proper crop geometry using adjustable Row maker	Improved farm implements	-	Folders	Row marker LDPE sheet
34	Water management	Cauliflower / Drip irrigation	Water scarcity in winter season	-	Drip irrigation in Cauliflower	Drip irrigation – A water saving technology	-	-	Drip Kit(lateral pip, connector, emitter etc)
35	Water management	Tomato / Drip irrigation	Water scarcity in winter season	-	Drip irrigation in tomato	Drip irrigation – A water saving technology	-	-	Drip Kit(lateral pip, connector, emitter etc)
36	Turkey management	Turkey	Low production performance of local poultry birds	Performance of turkey bird under agroclimatic condition of Phek district					Turkey

37	Nutrition management	Khaboo(Ficus hookeri)	Low nutrient content of hill fodder	Khaboo (*Ficus hookeri*) bio-fencing development in natural habitation of mithun.					Khaboo plants
38	Livestock management	Khaki cambell	Low production performance of local poultry birds	Perormance of Khaki Cambell ducks under agroclimatic condition of phek district.		Scientific duck rearing		Folder	Duck
39	Mithun management	Mithun	Low nutrient content of hill fodder		Supplementation of mineral mixture in mithun				Mineral mixture
40	Rabbit management	Rabbit	Preweaning cold stress kit mortality during winter		Methods of brooding	Backyard rabbit farming		Folder	Rabbit

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	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Varietal Evaluation	1				3	1				5
Seed / Plant production										
Weed Management										
Integrated Crop Management										
Integrated Nutrient Management	2				1				2	5
Integrated Farming System										
Mushroom cultivation										
Drudgery reduction	1									1
Farm machineries					1					1
Value addition	1									1
Integrated Pest Management					1					**1**
Integrated Disease Management					1					**1**
Resource conservation technology					3					3
Small Scale income generating enterprises										
Postharvest technolgy										
TOTAL	5				11	1			2	**18**

* *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

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Varietal Evaluation										
Seed / Plant production										
Weed Management										
Integrated Crop Management										
Integrated Nutrient Management										
Integrated Farming System										
Mushroom cultivation										
Drudgery reduction										
Farm machineries										
Post Harvest Technology				1						1
Integrated Pest Management										
Integrated Disease Management										
Resource conservation technology										
Small Scale income generating enterprises										
TOTAL				1						**1**

***** *Technology that is refined in collaboration with ICAR/SAU Scientists for improving its effectiveness.*

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

Thematic areas	Cattle	Poultry	Sheep	Goat	Piggery	Rabbitary	Fisheries	Duck	TOTAL
Evaluation of Breeds		1						1	2
Nutrition Management	1								1
Disease of Management									
Value Addition									
Production and Management									
Feed and Fodder									
Small Scale income generating enterprises									
TOTAL	1	1						1	3

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

Thematic areas	Cattle	Poultry	Sheep	Goat	Piggery	Rabbitry	Fisheries	TOTAL
Evaluation of Breeds								
Nutrition Management								
Disease of Management								
Value Addition								
Production and Management								
Feed and Fodder								
Small Scale income generating enterprises								
TOTAL								

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

A. Technology Assessment

Trial 1

1)	Title	:	Effect of Biofor PF-2 on Soft rot management of Ginger
2)	Problem diagnose/defined	:	Rotting in ginger
3)	Details of technologies selected for assessment /refinement	:	Local var. of Ginger were treated with Biofor PF-2 containing *Pseudomonas fluorosence and trichoderma harzaniun* before planting. Rhizomes were planted at a spacing 30x45 cm (Plant to Plant & row to row) in the month of April 2010.
4)	Source of technology	:	A.A.U , Jorhat
5)	Production system	:	Rainfed,
6)	Thematic area	:	Disesase management
7)	Performance of the Technologies with performance indicators	:	Growth and yield of Biofor PF-2 treated plot perform well ompared to untreated plot. Yield was recorded to be 7.5t/ha compared to control (5.0t/ha)
8)	Final recommendation for micro level situation	:	Ginger rhizomes should be treated with Biofor PF-2 towards soft rot disease management and also for higher yield.
9)	Constraints identified and feedback for research	:	High rainfall during kahrif season
10)	Process of farmers participation and their reaction	:	Training was conducted in Gidemi village. The farmers of the village decided to plant the ginger by using Biofor PF-2. Performance of the treated plot is good in comparison to untreated plot. Yield was more and rotting percentage is less in ompared to untreated one.So, farmers were decided to cultivate ginger in large scale by using Biofor PF-2.

11. Result of Trial 1

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
Ginger	Rainfed	Soft rotting of ginger	Effect of Biofor PF-2 on Soft rot management of Ginger	2	Biofor PF-2	Plant height No. of shoots/plant No.of leaves/shoot Rotting (%) Yield(t/ha)	56.75 11.2 10.6 27.08 7.50	Ginger rhizomes treated with Biofor PF-2 reduced rotting percentage (27.08%) compared to Control (47.91%) . Yield was recorded higher (7.85t/ha) compared to control (6.0t/ha)	Farmer were satisfied with the performance of Biofor treated plot as it gave higher yield .
					Control	Plant height No. of shoots/plant No.of leaves/shoot Rotting (%) Yield(t/ha)	57.3 7.4 6.4 47.91 5.00		

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Biofor PF-2 in local ginger	7.50t/ha	1,75,000	2.40
Control	5.0t/ha	1,11,000	2.05

Trial 2

1)	Title	:	Evaluation of Organic formulation for management of Aphids in Cauliflower var.Snowball.
2)	Problem diagnose/defined	:	High Aphid infestation in cauliflower.
3)	Details of technologies selected for assessment /refinement	:	Organic formuations a) Tobacco leaf extract @ 100ml solution in 2 lts of water for 50 sq.m area. b) Garlic extract 20 times dilution c) Neem oil@5ml/Litre water 3 sprays of the formulation were given at 7 days interval in the treated plots and % infestation were recorded.
4)	Source of technology	:	CAU
5)	Production system	:	Irrigated
6)	Thematic area	:	Insect pest management
7)	Performance of the technology with performance indicators	:	Lowest Infestation (20%) was recorded in tobacco, followed by Garlic (40%) and Neem oil(45%) after 3rd spray. Yield recorded was highest in Tobacco treated (16.47t/ha), followed by Garlic extract (15.75t/ha) , Neem oil (12.12t/ha) and control(10.5t/ha)
8)	Final recommendation for micro level situation	:	Among all the three formulations, Tobacco leaf extract was found to be the best for Aphid management.
9)	Constraints identified and feedback for research	:	Insect like Cutworm, larva are also active pest during the season.
10)	Process of farmers participation and their reaction	:	Trainings were conducted on organic pest management in various villages. Trail was conducted in porba village at 2 farmers field. Farmers took active part during the trial as they prefer organic pesticides only.

11. Results of On Farm Trials 2

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
Cauliflower	Irrigated	High Aphid infestation of in cauliflower.	Evaluation of Organic formulation for management of Aphids in Cauliflower	2	1.Tobacco leaf extract	Plant ht(cm) No. of leaves Curd wt(gm) Yield/ha	25.4 11.6 422.8 16.47	Lowest Infestation (20%) was recorded in tobacco, followed by Garlic (40%) and Neem oil(45%) after 3rd spray. Yield recorded was highest in Tobacco treated (16.47t/ha), followed by Garlic extract (15.75t/ha) , Neem oil (12.12t/ha) and control(10.5t/ha)	Farmers took keen interest during the trial as they prefer organic pesticides only for insect pest management in their farm. They are willing to use various organic formulations against different insect pest.
					2. Garlic extract	Plant ht(cm) No. of leaves Curd wt(gm) Yield/ha	26.27 11.15 363.87 15.75		
					3. Neem oil	Plant ht(cm) No. of leaves Curd wt(gm) Yield/ha	25.9 11.4 249.37 12.12		
					Control	Plant ht(cm) No. of leaves Curd wt(gm) Yield/ha	24.4 10.2 174.81 10.50		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
1. Recommended practice			
Tobacco leaf extract	16.47t/ha	2,82,352.94	2.33
Garlic extract	15.75 t/ha	2.45.454.54	2.08
Neem oil	12.12 t/ha	1,49,090.90	1.69
2. Control	10.50 t/ha	1,05,000.00	1.50

****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***

Trial 3

1)	Title	:	Performance of Banana var. Giant Cavendish
2)	Problem diagnose/defined	:	Poor quality of fruit and low market demand
3)	Details of technologies selected for assessment /refinement	:	Banana var., Giant Cavendish was selected for planting in foot hills. Pit of 60cm^3 was dug. Suckers were planted at an spacing of 2.5x2.5m on the month of May 2009.Data are being recorded at monthly interval.
4)	Source of technology	:	ICAR
5)	Production system thematic area	:	Rainfed, hill slopes
6)	Thematic area	:	Varietal evaluation
7)	Performance of the Technology with performance indicators	:	The growth and development of the Giant Cavendish were found to poor to low temperature and severe dry spell during winter compared to the Local variety. Data recorded in Giant Cavendish after 22 months after planting showed that average plant height(m) to be 1.37m, Pseudostem girth(cm) is 34.97, No of leaves is 5.6 and No of suckers is 2.8 and no bunch emergence. Most of the plant dried up due to dry spell. Where as in local variety average plant height(m) recorded to be 2.95m, Pseudostem girth(cm) is 61.92, No of leaves is 6.8 and No of suckers is 4.5, Bunch wt. 13.94 Kg/plant and 50% bunch emergence upto april 2011.
8)	Final recommendation for micro level situation	:	Cavendish group of banana may not be able grow under Pfutsero condition due to long dry winter and low temperature.
9)	Constraints identified and feedback for research	:	Lack of availability of drought and low temperature resistant germplasm in the district. Severe drought during winter along with low temperature.
10)	Process of farmers participation and their reaction	:	Training was conducted in Gidemi village. The rural youth of the village decided to plant the suckers in their community area. 500 suckers of Giant Cavendish were planted in the month of May 2009. Grand Naine planted in 2007 did not perform well despite Pitcher drip irrigation was provided to the plants but scarcity of water was severe uring winter and most of the Grand Naine plant died due to water stress during winter.

11. Result of Trial 3

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
Banana	Rainfed	Poor quality of local variety	Varietal evaluation	3	Var.Giant cavendish	Plant Height(m)- No. of leaves- Pseudostem girth(cm)- No .of sucker-	1.37 5.6 34.97 2.8	The banana var. Giant Cavendish evaluated for its performance under Pfutsero condition. The data recorded revealed that almost all the plants dried up due to low temperature and dry spell in winter and showed very poor growth even after 18 months of planting. Whereas, growth and development of local variety was superior and 50 % plants have emerged bunch. The OFT conducted revealed that Cavendish group of banana may not be able to perform well under Pfutsero condition owing to low temperature and severe drought during winter.	Seeing the performance of Giant Cavendish variety. Farmers are interested to grow local variety in commercial scale.
					local	Plant Height(m)- No. of leaves- Pseudostem girth(cm) No of sucker- Days to 1st bunch emergence Peduncle length(cm) Bunch length(cm) No of hands Finger length(cm) Finger girth(cm) No of fingers/hand Finger wt(gm) Bunch wt.(kg/plant)	2.95 6.8 61.92 4.5 550 196.9 58.01 10.11 8.37 10.04 15.20 52.381 13.94		

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Local	15.50t/ha	Rs.78,225/ha	3. 5
Var. Giant Cavendish	-	-	-

Trial 4

1)	Title	:	Performance of cauliflower varieties under open and protected condition during rabi season
2)	Problem diagnose/defined	:	Not cultivated and lack of varieties suitable for low temperature.
3)	Details of technologies selected for assessment /refinement	:	1.Varieities: Snowball, Madhuri, Sumedha. 2. Production under Open and Polyhouse during winter. .
4)	Source of technology	:	ICAR
5)	Production system	:	Hills, Irrigated
6)	Thematic area	:	Varietal evaluation
7)	Performance of the technology with performance indicators	:	Three varieties of cauliflower were evaluated and the yield recorded were 18.25t/ha and days to harvesting-95DAT in Snowball, 13.60t/ha and days to harvesting-105DAT in Madhuri and 8.38t/ha and days to harvesting-90DAT in Sumedha under open condition. Cauliflower variety Snowball was evaluated under polyhouse and data recorded showed that average plant height (38.31cm), plant spread (37.43), No. of leaves(13.60), Curd diameter(10.22cm), Curd wt(325.98 g) and yield(13.04t/ha)
8)	Final recommendation for micro level situation	:	Cauliflower variety Snowball performs well both under open and polyhouse condition
9)	Constraints identified and feedback for research	:	Lack of avialabilty of quilaity seeds. Severe drought during winter and low temperature.
10)	Process of farmers participation and their reaction	:	Trainings were conducted for farmers. Trial was conducted in three villages. Farmers were satisfied with the performance of cauliflower varieties and are willing grow commercially as cultivation of cauliflower is not in practice in the region.

11. Results of On Farm Trials 4

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
Cauliflower	Irrigated	Not cultivated	Performance of cauliflower varieties under open and playhouse condition	6	Varieties: Snowball, Madhuri, Sumedha under open condition	**Var: Snowball** Plant height(cm) Plant Spread(cm) No.of leaves Curd diameter(cm) Curd weight(gm) Days to harvesting(DAT) Yield(t/ha)	 26.85 27.62 12.1 10.42 370.61 95 16.68	Result of the trial showed that the yield of cauliflower var. Snowball was 16.68t/ha, Madhuri was 13.60t/ha and Sumedha was 8.38t/ha under open condition. Under polyhouse snowball yielded 15.62t/ha. The assessment revealed that cauliflower can be successfully grown commercially under Pfutsero condition as the price/kg is high and can get higher income.	Farmers are interested to grow cauliflower commercially provided quality seeds are available.
						Var: Madhuri Plant height(cm) Plant Spread(cm) No.of leaves Curd diameter(cm) Curd weight(gm) Days to harvesting(DAT) Yield(t/ha)	 27.20 28.51 10.7 8.64 315.61 105 13.60		
						Var: Sumedha Plant height(cm) Plant Spread(cm) No.of leaves Curd diameter(cm) Curd weight(gm) Days to harvesting(DAT) Yield(t/ha)	 23.67 29.48 10.2 6.62 190.15 90 8.38		
					Snowball under Polyhouse condition	**Var: Snowball** Plant height(cm) Plant Spread(cm) No.of leaves Curd diameter(cm) Curd weight(gm) Days to harvesting(DAT) Yield(t/ha)	 41.73 40.94 14.93 10.22 390.62 70 15.62		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
1. Recommended practice			
Open condition	Snowball-16.68t/ha	2,75,400/ha	2. 22
	Madhuri-13.60t/ha	2,13,000/ha	2. 09
	Sumedha-8.38t/ha	57,000/ha	1. 30
1. Polyhouse condition	Snowball-15.62t/ha	2,08,720/ha	1. 80
Local Practice	-	-	-

****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***

Trial 5

1)	Title	:	Performance of carrot var. Early Nantes.
2)	Problem diagnose/defined	:	Poor yield of carrot due to improper cultivation practice. Not cultivated commercially.
3)	Details of technologies selected for assessment /refinement	:	1.Carrot var.Early Nantes was selected for the trial. 2. Seeds were mixed with sand for sowing. 3.10 kg FYM/m2 was applied during land preparation. 4. Seeds were sown in line with a spacing of 10x30cm plant to plant and row to row in an area of 32.25m2.
4)	Source of technology	:	ICAR
6)	Production system	:	Rainfed, hill slope
6)	Thematic area	:	Line sowing with recommended spacing, varietal evaluation
7)	Performance of the technology with performance indicators	:	The carrot variety performed well. Yield was recorded to be 12.43t/ha. Plant height was recorded to be 41.91cm, plant spread-18.71cm, root length-15.66cm, root diameter-2.98cm, root weight-57.5gm
8)	Final recommendation for micro level situation	:	Carrot var.Early Nantes yields more when seeds mixed with sand are sown in line and with all the recommended practice compared to local practice of broadcasting only seeds
9)	Constraints identified and feedback for research	:	High rainfall during maturity. Therefore, seeds should be sown 15 days early(15^{th} March). Poor availability of quality seeds.
10)	Process of farmers participation and their reaction	:	Three farmers were selected from porba and pfutseromi village for the trail. Training was conducted in pfutsero on improved production technology of carrot. Farmers took keen interest in carrot cultivation throughout the trial. Seeing the yield of crop under recommended practice, farmers are interested to cultivated carrot in large scale.

. **Results of On Farm Trials 5**

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
Carrot	Rainfed	Poor yield of carrot due to improper cultivation practice. Not cultivated commercially	Performance of carrot var. Early Nantes in line sowing.	3	1.Var.Early nantes 2.Seeds mixed with sand and Line sown	Plant height Plant spread Root length Root diameter Root weight Yield	41.91cm 18.71cm 15.66cm 2.98cm 57.5gm 12.43t/ha	Carrot var.Early Nantes yields more when seeds mixed with sand are sown in line and with all the recommended practice compared to local practice of broadcasting only seeds	Farmers took keen interest in carrot cultivation throughout the trial. Seeing the yield of crop under recommended practice, farmers are interested to cultivated carrot in large scale.
					Local Practice-sowing of seeds in broadcasting method	Plant height Plant spread Root length Root diameter Root weight Yield	44.52cm 16.58cm 8.6cm 1.72cm 28.06gm 5.8t/ha		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
1. Local practice	5.8t/ha	74,000.00	0.74
2. Recommended practice	12.43t/ha	248062.01	2.00

Trial 6

1)	Title	:	Performance of French bean var.Anupama
2)	Problem diagnose/defined	:	Poor quality of local variety.
3)	Details of technologies selected for assessment /refinement	:	HYV-Anupama with recommended spacing, Seed rate-2seeds/hole.
4)	Source of technology	:	ICAR
5)	Production system	:	Rainfed
6)	Thematic area	:	Varietal evaluation
7)	Performance of technology with performance indicators	:	The variety Anupama was susceptible to rotting compared to local variety. The pod yield was recorded low (44.44q/ha) due to high rainfall. The variety is preferred by the farmers in terms of marketability and palatability. The pod of the Anupama is soft and tender and whole pod can be taken as vegetable. The yield of local variety was recorded high (80q/ha) but pod is fibrous and only seed can be used as vegetable if harvested little late.
8)	Final recommendation for micro level situation	:	Improved variety such Anupama, Sel-9 are preferred by farmers due its tenderness and low fibre content. Therefore, it can be popularized and encouraged for large scale cultivation. The can be higher if cultivated early and harvested before high rainfall.
9)	Constraints identified and feedback for research	:	High rainfall leading to rotting of plants and poor yield. It can be overcome by early sowing of seeds.
10)	Process of farmers participation and their reaction	:	Three farmers were selected from porba and pfutseromi village for the trail. Farmers took keen interest in French bean cultivation throughout the trial. Though the yield of Anupama was low compared to local variety, farmers are interested to cultivated Anupama in the next season if seeds are available early.

11. Results of On Farm trial 6

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
French Bean	Rainfed	Poor quality of pods and high seed rate (4 seeds/hole)	Performance of French Bean var.Anupama	3	Variety Anupama	Plant height Plant spread No of pods /plant Pod length Pod breadth Yield	27.15cm 28.46cm 15.00 11.66cm 0.90cm 4.4t/ha	The variety Anupama was susceptible to rotting compared to local variety. The pod yield was recorded low (44.44q/ha) due to high rainfall compared to local(80q/ha). The pod of Anupama is soft and tender and whole pod can be taken as vegetable and preferred by the farmers.	Though the yield of Anupama was low compared to local variety, farmers are interested to cultivated Anupama in the next season if seeds are available early.
					Local	Plant height Plant spread No of pods /plant Pod length Pod breadth Yield	39.33cm 35.56cm 23.80 11.07cm 1.39.cm 8.0t/ha		

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Local practice	8.0t/ha	66,222.22	0. 85
Recommended practice	4.4t/ha	44,444.44	0. 50

Trial 7

2)	Title	:	Performance of Tomato var.Rohini under polyhouse during rabi season
2)	Problem diagnose/defined	:	No cultivation during winter due to low temperature and severe drought
3)	Details of technologies selected for assessment /refinement	:	Tomato var.Rohini under polyhouse.
4)	Source of technology	:	ICAR
5)	Production system	:	Rainfed
6)	Thematic area	:	Protected cultivation technology
8)	Performance of technology with performance indicators	:	Under progress
8)	Final recommendation for micro level situation	:	Under progress
9)	Constraints identified and feedback for research	:	
10)	Process of farmers participation and their reaction	:	The trial has been conducted in two polyhouses in two villages.

11. Results of On Farm trial 7

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	No cultivation during winter due to low temperature and severe drought	Performance of Tomato var.Rohini under polyhouse during rabi season	3	Variety Rohini	Plant height Plant spread No of fruits /plant No of branches/Plant Flower cluster/plant Yield	Under progress	-	-

**** No. of farmers***

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

Trial 8

1)	Title	:	Inoculation of Azolla (*Azolla caroliniana*) in lowland paddy.
2)	Problem diagnose/defined	:	Low fertility status of soil and non-use of Azolla biofertilizer
3)	Details of technologies selected for assessment /refinement	:	i. Paddy: RCM-6 ii. Azolla (*Azolla caroliniana*)
4)	Source of technology	:	AAU, Jorhat
5)	Production system thematic area	:	Rainfed cereal based system
6)	Thematic area	:	Nutrient management
7)	Performance of the Technology with performance indicators	:	Results showed that inoculation of Azolla increased the paddy yield over the control. Average yield (4537.2kg/ha), no. of tillers/plant-10.73, no. grains per earhead-228.46 over the control as average yield (3888kg/ha), no. of tillers/plant-8, no. grains per earhead-210.
8)	Final recommendation for micro level situation	:	RCM-6 variety can be cultivated in lower altitude of Phek district along with Azolla (*Azolla caroliniana*) may be grown as a dual crop along with paddy.
9)	Constraints identified and feedback for research	:	Non- availability of Azolla (*Azolla caroliniana*) and RCM-6 variety .
10)	Process of farmers participation and their reaction	:	Training was conducted and application of Azolla in paddy yield was shown to farmers. Farmers are encouraged to adopt this technology as it increased the ield over the control.

Results of On Farm Trials 8

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
Paddy	Rainfed	Low fertility status of soil and non-use of Azolla biofertilizer	Inoculation of Azolla (*Azolla caroliniana*) in lowland paddy.	3	1.Paddy: RCM-6 variety 2. Azolla (*Azolla caroliniana*)	Plant height: No. of tillers/plant: No. of grains/earhead: Days to maturity:	Plant height: 126.53cm No. of tillers/plant: 10.73 No. of grains/earhead: 228.46 Days to maturity: 128days	Growing of Azolla (*Azolla caroliniana*) as a dual crop with paddy resulted an increased in yield.	Farmers are interested to adopt this technology as it increased the paddy yield.
					2.Control	Plant height: No. of tillers/plant: No. of grains/earhead: Days to maturity:	Plant height: 1121.48 No. of tillers/plant: 8 No. of grains/earhead: 210 Days to maturity: 128 days		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
1 Paddy: RCM-6 variety 2. Azolla (*Azolla caroliniana*)	**4537.2**	74430	2.90
2. Control	3888	60700	2.66

****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***

Trial 9

1)	Title	:	PSB Inoculation in potato Var.Kufri megha
2	Problem diagnose/defined	:	Low fertility status of soil and non-use of biofertilizer
3)	Details of technologies selected for assessment /refinement	:	i. Potato Var. Kufri megha ii. Azotobacter and Phosphotika biofertilizer
4)	Source of technology	:	State Agriculture Department, Nagaland.
5)	Production system thematic area	:	Rainfed jhum based system.
7)	Thematic area	:	Nutrient management
8)	Performance of the Technology with performance indicators	:	Result showed that inoculation of Azotobacter and phosphotika increased the potato yield over the control. The biofertilizer treated yield was recorded as (22328.00kg/ha), tuber weight 937.41gm over the control as Yield (20652.80kg/ha), tuber weight 891 gm.
9)	Final recommendation for micro level situation	:	Potato var.Kufri megha may be grown and biofertillizer
10)	Constraints identified and feedback for research	:	Non- availability of biofertilizer in large scale and lack of availability of quality potato tuber in the district.
11)	Process of farmers participation and their reaction	:	Training was conducted on potato cultivation and demonstration on biofertilizer application was shown to farmers at Pfutseromi village. For this OFT programme. Two(2) farmers were selected. Farmers also applied biofertilizer by themselves and are encourage to adopt this technology application of biofertilizer increased the yield over the control.

Results of On Farm Trials 9

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
Potato	Rainfed	Low fertility status of soil and non-use of biofertilizer	PSB Inoculation in potato Var.Kufri megha	3	1. Potato Var. Kufri megha 2. Azotobacter and Phosphotika biofertilizer	Plant height, No. of branches/plant, No. of leaves/plant, No. of tubers /plant, Days to maturity	Plant height: 34.15cm No. of branches/plant: 18.5, No. of leaves/plant: 27.1 No. of tubers /plant: 8, Tuber weight/ plant: 937.41gm, Days to maturity:172days	Potato Var.Kufri megha along with the application of biofertilizer performed well.	Farmers are encourage to use biofertilizer in potato.
					2. Control	Plant height, No. of branches/plant, No. of leaves/plant, No. of tubers /plant, Days to maturity	Plant height: 33.44cm No. of branches/plant: 14.7, No. of leaves/plant: 25. No. of tubers /plant: 7, Tuber weight/ plant: 891gm, Days to maturity:172days		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
1. Potato Var. Kufri megha 2 Azotobacter and Phosphotika biofertilizer	22328.00	280204.00	1:2:30
Control	20652.80	252550.4	1:2.11

Trial 10

1)	Title	:	Effect of composting methods on nutrient availability of mithun dung on tomato
2)	Problem diagnose/defined	:	Low productivity due to high nutrient loss in degraded soils and non-use of compost
3)	Details of technologies selected for assessment /refinement	:	i. Tomato Var. Rohini ii. Vermi and NADEP compost.
4)	Source of technology	:	State Agriculture Department, Nagaland
5)	Production system thematic area	:	Rainfed Jhum based system
6)	Thematic area	:	Nutrient management.
7)	Performance of the Technology with performance indicators	:	Tomato Var. Rohini performed better with the application of compost. Average yield of vermicompost was recorded as (19703.38kg/ha), plant height (92.16cm), No. fruits / plant (29.4), Average yield of NADEP compost was recorded as (21016.94kg/ha), plant height (100.68cm), No. fruits / plant (30.53) and Control was recorded as average yield (19703.38kg/ha), plant height (84.06cm), No. fruits / plant (27.4)
8)	Final recommendation for micro level situation	:	Tomato var. Rohini yields more when compost is compared to control ie, without the application of compost
9)	Constraints identified and feedback for research	:	Lack of superior seeds
10)	Process of farmers participation and their reaction	:	Three farmers were selected from porba village for the trial. The participants were shown the right way of maintaining the spacing between rows and plants and to transplant the seedlings in line and demonstrated application of compost. Seeing the yield of crop under recommended practice, farmers are interested to cultivated tomato in large scale.

Results of On Farm Trials 10

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	Rainfed	Low productivity due to high nutrient loss in degraded soils and non-use of compost	Effect of composting methods on nutrient availability of mithun dung on tomato .	3	i. Tomato Var. Rohini ii. Vermi.	Plant height, No. of fruit/plant, Days to maturity	Plant height: 92.16cm No. fruits / plant (29.4) Days to maturity:75days	Tomato Var. Rohini performed well along with the application of compost	Farmers are interested to cultivated tomato in large scale. .
					i) NADEP compost	Plant height, No. of fruit/plant, Days to maturity	Plant height: 100.68cm No. fruits / plant (30.53) Days to maturity:75days		
					i) Control	Plant height, No. of fruit/plant, Days to maturity	Plant height: 84.06cm No. fruits / plant (27.4) Days to maturity:75days		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
i) Vermi.	19703.38	375705.83	1.91
ii) NADEP compost	21016.94	443078.73	2.11
iii) Control	18008.47	337570.44	1.88

****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***

Trial 1 11

1)	Title	:	Effect of biofertilizer in maize
2)	Problem diagnose/defined	:	Non availability of biofertilizer
3)	Details of technologies selected for assessment /refinement	:	i. Biofertilizer ii. Maize Var
4)	Source of technology	:	Biofertilizer laboratory, State Agriculture Deptt. Nagaland.
5)	Production system		Rainfed jhum based system.
6)	Thematic area	:	Nutrient management
7)	Technology with performance indicators	:	Under progress
8)	Final recommendation for micro level situation	:	Under progress
9)	Constraints identified and feedback for research	:	Under progress
10)	Process of farmers participation and their reaction	:	Trainings were imparted along with field demonstration

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Results of On Farm Trials 11

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
Maize	Rainfed	Low productivity due to high nutrient loss in degraded soils and non-use of biofertilizer	Effect of biofertilizer in maize	4	i. Maize var.dekalb All Rounder. ii. Biofertilizer	Plant height, No. of cob/plant, Days to maturity	Under progress.	Under progress.	Under progress.

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
i. Maize var.dekalb All Rounder. ii. Biofertilizer	Under progress.	Under progress.	Under progress.

****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.***

Trial 12

1)	Title	:	Used of modified design of spade to reduce the drudgery
2)	Problem diagnose/defined	:	Acute spade angle resulting in loss of energy and poor work efficiency
3)	Details of technologies Selected for assessment /refinement	:	Modified the angle of spade to 30^0, 60^0, and 90^0 with short and long handle and was used for ploughing in three different land conditions ie terrace, gentle slope and high slope terrain.
4)	Source of technology	:	--
5)	Production system	:	
6)	Thematic area	:	Drudgery reduction
7)	Performance of the Technology with performance indicators	:	Field capacity of farm women for different land condition and drudgery, reduction. Parameter is being recorded
8)	Final recommendation for micro level situation	:	60^0 spade long handle is suitable for ploughing in plain area with heart rate (HB) of 92 and body temperature of 98.5, ploughing capacity for an area of 0.009ha for 30min. 60^0 spade short handle is suitable for plouging in gentle slope with heart rate(HB) of 98 and body temperature of 98.5, ploughing capacity for an area of 0.008ha for 30min and gradient = 1:1 60 degree spade short handle is suitable for plouing in high slope, with heart rate (HB) of 92 and body temperature of 98, ploughing capacity for an area of 0.009ha for 30 min and gradient = 1:3.
9)	Constraints identified and feedback for research	:	Time consuming as parameter has to be recorded after 5min, 10min and 30 min for three different land condition with different angle of spade.
10)	Process of farmers participation and their reaction	:	Training on drudgery reduction was given to farmers

Results of On Farm Trials **12**

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

Spade	Hill area	Acute spade angle resulting in loss of energy and poor work efficiency	Used of modified ergonomic design of spade for drudgery reduction	3	30degree, 60degree, and 90degree long and short handle. Ploughing in three land condition viz terrace, gentle slope and high slope	Field capacity drudgery reduction	**30^0 spade short handle** Plain area HB = 109 ,Temp = 98.5, Area = 0.01ha/hr Gentle slope HB =102, Temp= 98.4, Area = 0.014ha/hr High slope HB =93, Temp = 98.3, Area = 0.016ha/hr **60^0 spade short handle** Plain area HB = 103,Temp = 98.5, Area = 0.008ha/hr Gentle slope HB=98, Temp = 98.6 Area = 0.016ha/hr High slope HB = 92, Temp= 98, Area = 0.018ha/hr **90^0 spade short handle** Plain area HB = 102, Temp = 98.6, Area = 0.008ha/hr Gentle slope HB =100, Temp = 98.3, Area = 0.014ha/hr High slope HB =93, Temp = 98.3, Area = 0.014ha/hr **30^0 spade Long handle** Plain area HB = 100 ,Temp = 98.9, Area = 0.016ha/hr Gentle slope HB =104, Temp = 98.5, Area = 0.01ha/hr High slope HB = 111, Temp = 98.1, Area = 0.012ha/hr **60^0 spade long handle** Plain area HB = 92,Temp = 98.5, Area = 0.018ha/hr Gentle slope HB=105, Temp = 98.4, Area = 0.01ha/hr High slope HB =116, Temp = 98.3, Area = 0.01ha/hr **90^0 spade long handle** Plain area HB = 95,Temp = 98.5, Area = 0.016ha/hr Gentle slope HB =107, Temp = 98.6, Area = 0.012ha/hr	60^0 spade long handle is suitable for ploughing in plain area with heart rate (HB) of 92 and body temperature of 98.5, ploughing capacity of an area of 0.009ha for 30min. 60^0 spade short handle is suitable for plouging in gentle slope with heart rate of 98 and body temperature of 98.5, ploughing capacity of an area of 0.008ha for 30min and gradient = 1:1 60^0 degree spade short handle is suitable for plouing in high slope, with heart rate (HB) of 92 and body temperature of 98, ploughing capacity of an area of 0.009ha for 30 min and gradient = 1:3	

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Temperature and heart beat was recorded after 5min, 10min and 30min. Anthropometric measurement of farm women was also recorded.	60^0 spade long handle can plough for 0.009ha/ 30min 60^0 spade short handle can plough for 0.008ha/ 30min in gentle slope 60^0 spade short handle can plough for 0.009ha/30min in high slope	-	-

Trail 13

1)	Title	:	Low cost diet for hard working farm women in agriculture
2)	Problem diagnose/defined	:	Poor nutrition
3)	Details of technologies selected for assessment /refinement	:	Local recipe
4)	Source of technology	:	ICAR
5)	Production system	:	
6)	Thematic area	:	Design and development of low cost diet
7)	Performance of the Technology with performance indicators	:	Efficient nutrient supplement
8)	Final recommendation for micro level situation	:	Under progress
9)	Constraints identified and feedback for research	:	Due to the lack of Clinical laboratories, medical examination and testing of blood sample could not be carried out
10)	Process of farmers participation and their reaction	:	Training cum demonstration on low cost diet was given and farm women are keen to know more about low cost diet.

Results of On Farm Trials 13

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
Diet	-	Poor nutrition	Design and development of low cost high quality diet for hard working farm women in agriculture	3	Preparation of a diet with local recipe	Diet survey, Anthropometric measurement and Clinical examination	under progress	under progress	under progress

**** No. of farmers***

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

Trail 14

1)	Title	:	Performance of wheat var. PBW-343
2)	Problem diagnose/defined	:	Not cultivated
4)	Details of technologies selected for assessment /refinement	:	Wheat var. PBW-343
4)	Source of technology	:	ICAR
5)	Production system	:	Rain fed
6)	Thematic area	:	Varietal evaluation
7)	Performance of the Technology with performance indicators	:	under progress
8)	Final recommendation for micro level situation	:	Under progress
9)	Constraints identified and feedback for research	:	
10)	Process of farmers participation and their reaction	:	

Results of On Farm Trials 14

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
Wheat	RF	Not cultivated	Performance of wheat var. PBW 343	2	Variety	Growth and yield	under progress		

**** No. of farmers***

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

Trial 15

1)	Title	:	Assessment of the drip irrigation system in rabi vegetables
2)	Problem diagnose/defined	:	Low yield of rabi crops due to water stress during winter
3)	Details of technologies selected for assessment /refinement	:	Low cost IDE drip irrigation kit. 1. Low cost IDE drip irrigation kit. 2. Traditional method of cultivation in open area 3. Cultivation with drip irrigation system.
4)	Source of technology	:	DRIP KIT – International development enterprise. (IDE)
5)	Production system	:	Irrigated system
6)	Thematic area	:	Efficient use of water, and production in rabi season
7)	Performance of the technology with performance indicators	:	Production, productivity and efficient use of water – Result show that average production with drip irrigation is 33.34 kg/20sq.m (166.7 q/ha) where as the production without irrigation is in rabi season is 21.23 kg/20 sq.m (106.17 q/ha). IDE Developed low cost Drip irrigation Kit with micro tube emitter was found non uniform discharge rate at different micro tube placed at different distance at lateral pipe. Discharge rate at first microtube of the first lateral was found to be 2.4 l/h where as microtube at last of the last lateral was found to be 1.2 l/h , which was operated at an operating head of 2.5 m
9)	Final recommendation for micro level situation	:	IDE Develop low cost Drip irrigation Kit with micro tube was found non uniform distribution discharge rate at different micro tube emitter. Therefore laying down the drip needs proper scientific advice and material selection. For water conservation drip irrigation is recommended in non rainy season
10)	Constraints identified and feedback for research	:	Undulation terrain and unavailable of bigger area.
11)	participation and their reaction	:	-

Results of On Farm Trials 15

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
Cauliflower/ drip irrigation kit	Rainfed Irrigated	Low yield of rabi crops due to water stress during winter. And efficient use of available water.	Assesment of drip irrigation	3	Drip irrigation under protected condition	Production Productivity	33.34 kg/20sq.m 166.7 q/ha	Result show that average production with drip irrigation is 33.34 kg/20sq.m (166.7 q/ha) where as the production without irrigation is in rabi season is 21.23 kg/20 sq.m (106.17 q/ha). IDE Developed low cost Drip irrigation Kit with micro tube emitter was found non uniform discharge rate at different micro tube placed at different distance at lateral pipe. Discharge rate at first microtube of the first lateral was found to be 2.4 l/h where as microtube at last of the last lateral was found to be 1.2 l/h , which was operated at an operating head of 2.5 m	People have the interest in the technology of irrigation.

				3	Traditional method	. Production Productivity Drip efficiency	21.23 kg/20 sq.m 106.17 q/ha		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Traditional method without irrigation	21.23 kg/20 sq.m (106.17 q/ha).	Rs.224	0.41
Cultivation with IDE developed Drip irrigation kit for production in Rabi season.	33.34 kg/20sq.m (166.7 q/ha)	Rs. 466 (excluding the cost of drip Kit of Rs. 500)	2.334

****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***

Trial 15

1)	Title		: Refining the present Cardamom drier developed by the innovator farmer to improved its efficiency
2)	Problem diagnose/defined	:	1. No air circulation in the drier to blow off the moisture from the cardamom drier . 2. Low rate of drying
.3)	Details of technologies selected for assessment /refinement	:	1. Farmers own developed drier 2. Modified/addition on the farmer drier
4)	Source of technology	:	Farmer own.
5)	Production system	:	Rainfed cereal based system
6)	Thematic area	:	Cardamom drying
7)	Performance of the technology with performance indicators	:	Existing cardemon drier is a double layer alluminium sheet box with layer of rack and an electric heater at the bottom. The drying capacity is 50 kg and takes 17 hours to dry upto 9 % moisture content(wb). After the introduction of exaust fan for air circulation the drying takes 11 hours.
8)	Final recommendation for micro level situation	:	Drier should be designed according to the recommendation given by research institute and air circulation is very much required for faster and quality drying.
9)	Constraints identified and feedback for research	:	Material has to procured from very Far place.
10)	Process of farmers participation and their reaction	:	Demonstration and training for post harvest technology.

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
Cardemom	Rainfed	1.No air circulation in the drier to blow off the moisture from the 2.Low rate of drying	Refining the present Cardamom drier developed by the innovator farmer to improved its efficiency	3	Farmers own developed drier	Drying rate Quality of the dried material	Drying time 17 hrs for 50 kg fresh cardamom, to bring upto 9 % M/c	Result show that introduction of air circulation system inside the drier fasten the rate of drying by 6 hrs for a capacity of 50 Kg. 17 hrs required for 50 kg fresh cardamom, to bring upto 9 % M/c in existing drier where as it taken 11 hrs in the refined drier.	Farmer wants to get further modification on air circular system.
					Modified /addition on the farmer drier	Drying rate Quality of the dried material	Drying time 11 hrs for 50 kg fresh cardamom, to bring upto 9 % M/c		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Farmers own developed drier. It is a double layer aluminum sheet box with a rows of tray for keeping the cardamom and heater is provided inside bottom of the drier.	50 kg/one drying	280 per 50 kg drying	0.67
Modified /addition on the farmer drier . Exaust fan will integrated with the existing drier for better air circulation to increase the drying rate	50 kg / one drying	427 per 50 kg of drying	1.56

****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.***

Trial 16

1)	Title	:	Rain water harvesting with LDPE Poly sheet lining for seepage control
2)	Problem diagnose/defined	:	Traditional method: Farm pond are dry during winter season due to heavy seepage
3)	Details of technologies selected for assessment /refinement	:	1. Traditional method 2. Water harvesting pond with LDPE lining
4)	Source of technology	:	ICAR
5)	Production system	:	
6)	Thematic area	:	Safe storage water and efficient use in winter season.
7)	Performance of the technology with performance indicators	:	Quantity of water store in winter season and durability of the LDPE lining. Economics of the Structure. Seeping of water
8)	Final recommendation for micro level situation	:	LDPE can be used in farmer level .
9)	Constraints identified and feedback for research	:	undulating topgraphy
10)	Process of farmers participation and their reaction	:	Farmer are given awareness on the importance of water and their scarcity. Training were conducted on rainwater harvesting pond with LDPE pond lining.

Results of On Farm Trials 16

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
Rain water harvesting structure	Rainfed	Traditional Method: Farm pond are dry during winter season due to heavy seepage lost.	Rain water harvesting with LDPE Poly sheet lining for seepage control	4	Traditional Pond	Volume of water present in raining season and winter season Economics of the Structure	Depth of water in winter = 0 cm(water are fully dried in mid of winter) losese =100 %	It is found that LPDE lined pond have no seepage lost. Little lost are found by evaporation. Traditional pond have high seepage lost and get dried up in winter.	Farmer are interested in water harvesting and cultivation in winter season
					LPDE lining Pond	Volume of water present in raining season and winter season Economics of the Structure	Water depth difference losese is 60 %		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Traditional Pond	0 liter retain at the end of the feb month		0
Rain water harvesting LPDE lining Pond	16000 liter retain at the end of the feb month Rs. 16000/pond(@Rs 1/- per liter)	11300	2.4

****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.***

Trial 17

1)	Title	:	Performance of Paddy weeder (Cono weeder)
2)	Problem diagnose/defined	:	Traditional method: weeding done manually, efficiency of weeding was less, consume long time for weeding, drudgery involved in weeding is high, do not maintain proper crop geometry
3)	Details of technologies selected for assessment /refinement	:	1. Traditional method of plucking the weeds in bending posture 2.Cono paddy weeder Weeding done by one person manually by pushing the implement forward between the rows of paddy crops and uproot and burry the weeds while in operation. It can operate in 25 cm row spacing and overall dimension 37X140cm Wight : 5-6 Kg Field capacity is 0.18ha/hr
4)	Source of technology	:	TNAU Coimbatore
5)	Production system		Rainfed cereal based system
6)	Thematic area	:	Efficient weeding in line transplanted paddy field and Drudgery reduction.
7)	Performance of the Technology with performance indicators	:	Result shows that field capacity and labour requirement of weeding done by Cono weeder is 0.0138 ha/hr and 10 man days/ha repectively where as manual weeding , field capacity is 0.0037 ha/hr and 35 man days/ha is required. It reveals that weeding done with Cono weeder is quicker by 200 hrs for one hectare (e.i 71.43% quicker than manual weeding) and drudgery reduction in terms of labour consumption is 25 man days (saving of 25 man day in one hectare)
	Final recommendation for micro level situation	:	Line sowing and farm mechanization with small tools and implement save the time, labour and investment in different farm operation which ultimately reduce the gross investment for agriculture production
8)	Constraints identified and feedback for research	:	Phek district is hilly and highly steep slope place therefore terraces are small in size
9)	Process of farmers participation and their reaction	:	Training were given on different improved farm implements for hill agriculture. Farmer were advice to transplant the paddy in line. Method for line transplanting was trained. KVK staffs were present while transplanting. KVK staff visit the farmer field from time to time to see for the development of the weeds.

Farm Trials 17

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
Paddy	Rainfed	Manual method consumes more time for weeding in paddy (low field capacity), no proper crop geometry, drudgery is high as weeding is done in bending posture.	Performance of paddy weeder (Cono weeder)	2	Manually weeding	Field capcity of weeding, Labour requirement	0.0037 ha/hr 35 man days/ha	Result shows that weeding with cono weeder is quicker by 200 hrs in one hectare (e.i 71.43% quicker than manual weeding) Drucgery reduction in terms of labour consumption is 25 man days (saving of 25 man day in one hectare)	Farmer have the interest in the tools. They are also interested in different types of farm implement for hilly region
					Cono weeder	Field capcity of weeding, Labour requirement	0.0138 ha/hr 10 man days/ha		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Manually weeding of paddy usually comsume more time and the whole operation in done in bending position, which make the person feel back ache and and cannot continue for longer time.	0.0037 ha/hr 35 man days/ha	-	-
Cono weeder is a simple implement which can operate in line transplanting paddy field. The implement is operated by one person by pushing the implement forward between the rows of the paddy crop. It plug and burry the weeds. One person can operate for longer and bigger area.	0.0138 ha/hr 10 man days/ha	2750	1.1

****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.***

Trial 18

1)	Title	:	Performance of Cauliflower under Polysheet mulch during winter
2)	Problem diagnose/defined	:	More soil moisture depletion due to evaporation in dry non rainy season.
3)	Details of technologies selected for assessment /refinement	:	Plastic mulching for water conservation in soil and weed control. Plastic mulching for water conservation and promotion of rabi crops.
4)	Source of technology	:	ICAR
5)	Production system	:	
6)	Thematic area	:	water conservation and weed control.
7)	Performance of the technology with performance indicators	:	Soil moisture, Yield and growth parameter. Plant height 13.5 cm, plant spread 16.5 cm and No. of leave was 9 at the age of 45 DAT. Incidence of severe cut worm infestation under the mulch crop leading to crop failure.
8)	Final recommendation for micro level situation	:	To refine the OFT with soil treatment. .
9)	Constraints identified and feedback for research	:	
10)	Process of farmers participation and their reaction	:	Awareness to different type and method of water conservation for agricultural practices

Results of On Farm Trials 18

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
Cauliflower/ plastic mulch	Rainfed	More soil moisture depletion due to evaporation in dry non rainy season.	Performance of Cauliflower under mulch during winter	3	Traditional system	Soil moisture, Yield and Gowth parameter	- - -	Incidence of severe cut worm infestation under the mulch crop leading to crop failure	
					Plastic mulching	Soil moisture, Yield and Gowth parameter	- - Plant height 13.5 cm, plant spread 16.5 cm and No. of leave was 9 at the age of 45 DAT		

**** No. of farmers***

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Traditional Pond	-	-	-
Performance of Cauliflower under mulch during winter	-	-	-

****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.***

Trial 19

1)	Title	:	Performance of turkey birds under agroclimatic condition of Phek district
2)	Problem diagnose/defined	:	Low production performance of local poultry birds
3)	Details of technologies selected for assessment /refinement	:	Introduction of turkey birds in farmers backyard
4)	Source of technology	:	Animal Husbandry practices
5)	Production system		Livestock & poultry Production system
6)	Thematic area	:	Efficient growth and production
7)	Technology with performance indicators	:	Efficient growth and production
8)	Final recommendation for micro level situation	:	under progress
9)	Constraints identified and feedback for research	:	-
10)	Process of farmers participation and their reaction	:	Trainings were imparted and birds have been distributed to farmers.

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Results of On Farm Trials 19

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
Turkey	Intensive system	Lack of meat production	Performance of turkey birds under agroclimatic condition of Phek district	10	Breed	Growth and Production	under progress		

**** No. of farmers***

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

Trial 20

1)	Title	:	Khaboo (*Ficus hookeri*) bio-fencing development in natural habitation of mithun.
2)	Problem diagnose/defined	:	Low nutrient content of high altitude fodder
3)	Details of technologies selected for assessment /refinement	:	Plantation of khaboo bio fencing
4)	Source of technology	:	NRC on Mithun
5)	Production system	:	Rainfed
6)	Thematic area	:	Animal nutrition
7)	Technology with performance indicators	:	
9)	Final recommendation for micro level situation	:	under progress
9)	Constraints identified and feedback for research	:	-
10)	Process of farmers participation and their reaction	:	-

Results of On Farm Trials 20

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
Khaboo	Rainfed	Low nutrient content of high altitude fodder	Khaboo (*Ficus hookeri*) bio-fencing development in natural habitation of mithun. bio fencing	-	-	under progress	-	-	

**** No. of farmers***

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

Trial 21

1)	Title	:	Perormance of Khaki Cambell ducks under agroclimatic condition of phek district.
2)	Problem diagnose/defined	:	Low production performance of local poultry birds
3)	Details of technologies selected for assessment /refinement	:	Introduction of Khaki Cambell ducks in farmers backyard
4)	Source of technology	:	Animal Husbandry practices
5)	Production system	:	Rainfed
6)	Thematic area	:	Efficient growth and production
7)	Technology with performance indicators	:	
10)	Final recommendation for micro level situation	:	under progress
9)	Constraints identified and feedback for research	:	-
10)	Process of farmers participation and their reaction	:	-

Results of On Farm Trials 21

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
Khaki Cambell	Intensive	Low production performance of local poultry birds	Perormance of Khaki Cambell ducks under agroclimatic condition of phek district.	10	under progress				

**** No. of farmers***

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

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 2009-10 and recommended for large scale adoption in the district

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods sugge sted to the Extension system	Horizontal spread of technology		
					No.of villages	No. of farmers	Area in ha
1.	Paddy	Nutrient management	Inoculation of Azolla (*Azolla caroliniana*) in lowland paddy.	Training cum demonstration	1	3	0.2
2	Garden pea	Popularization of variety	Var.Arkel	Training cum demonstration	1	6	1.0ha
3	Maize	Varietal evaluation	HQPM-1	Training cum demonstration	1	3	0.05
4	Piggery	Popularization of breed	Hampshire crossbred(50%)	Training cum demonstration	2	3	12
5	Poultry	Popularization of breed	Vanaraja dual purpose birds	Training cum demonstration	3	20	400
6	Rabbitry	Popularization of breed	New Zealand White	Training cum demonstration	2	60	120
7	Mushroom	Popularization of variety	Oyster mushroom	Training cum demonstration, Field day	3	3 SHG groups (60)	150units

**** Thematic areas as given in Table 3.1 (A1 and A2)***

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**.)

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	Paddy	Pest mangement	*Trichogramma Japonicum* egg parasitoids against rice stem borer	Kharif, 2010	2	6	20		20	-
2	Tomato	Protected cultivation technology	Var.Rohini under polyhouse	Kharif,2010	0.5	0.02	5		5	Construction of polyhouses could not done
3	Garden pea	Popularization of variety	Var.Arkel	Rabi,2010	1.0	2.0	40		40	-
4	Paddy	Nutrient management	Inoculation of Azolla (*Azolla caroliniana*) in lowland paddy.	Kharif and 2010	0.5	0.29	6	-	6	
5	Potato	Nutrient management	PSB inoculation in potato Var Kufri Megha	Rabi and 2011	-	0.5	6	-	6	
6	Field pea	Popularization of variety	Var. Aparna	Rabi and 2010	5.0	3.0 ha	3	-	3	
7	Soybean	Popularization of variety	Var.JS 335	Kharif	1.0	0.06 ha	3		3	
8	Groundnut	Popularization of variety	Var. JL 24	Kharif	5.0	0.07 ha	3		3	
9	Field pea	Popularization of variety	Var. Rachna	Rabi and 2010	5.0	2.8 ha	3		3	

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					
paddy	Kharif	RF	Clay loam	-	-	-	Paddy	15-03-10	2/11/2010	641.7	91
Tomato	Kharif	Irrigated (polyhouse)	Sandyloam	-	-	-	Cauliflower	1 June -22 june 2010 (transplanting)	5/8/2010	641.7	70
Garden Pea	Rabi	RF	Caly loam, Sandy loam	-	-	-	Paddy, vegetable crops	15 Nov to 10 Dec 2010	5/3/2011	38.5	8
paddy	Kharif	RF	Clay loam	187.5	16.15	180.50	Paddy	10-03-10	08-10-10	641.7	72 days
Potato	Zaid	RF	-	Under progress	Under progress	Under progress	-	31-01-11	Under progress	-	-
Field pea	Rabi	RF	Clay loam	178.5 kg/ha	11.15 kg/ha	172.50 kg/ha	Paddy	10-11-10	11-03-11	38.5	8
Soybean	Kharif	RF	Sandy loam	186.5 kg/ha	16.15 kg/ha	180.50 kg/ha	cabbage	23-06-10	20-09-10	-	-
Groundnut	Kharif	RF	Sandy loam	186.5 kg/ha	16.15 kg/ha	180.50 kg/ha	cabbage	20-05-11	20-09-11	-	-
Field pea	Rabi	RF	Clay loam	174.5 kg/ha	10.50 kg/ha	170.00 kg/ha	paddy	2-10-10	12-04-11	38.5	8

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	Paddy	Trichogramma japonicum	Local	20	6	36.0	28.0	32.0	25.00	28%	No of hill/m2-70.3 No of effective tiller/hill-7.33 No. of white earhead/hill-0.8 No of egg mass/m2-1.2	No of hill/m2-63.6 No of effective tiller/hill-5.26 No. of white earhead/hill-1.60 No of egg mass/m2-2.53
2	Tomato	Varriety and polyhouse	Rohini	5	0.028	227.70	132.50	171.70	30.00	466.66%	Plant height-1.11m No fo branches-11.06 Flower cluster/plant-6.53 Flower/cluster-5.06 Fruits/plant-23.53 Fruit wt(gm)-71.68 Yield(t/ha)-17.17	Plant height-0.69m No fo branches-8.4 Flower cluster/plant-5.8 Flower/cluster-4.8 Fruits/plant-10.4 Fruit wt(gm)-56.80 Yield(t/ha)-3.0
3	Garden pea	Variety	var.Arkel	40	1.5	95.23	62.50	79.90	64.00	24.84%	Date of flowering - 2nd wk of Jan Plant height-0.66m No of branches-12.60 No of pod/plant-16 Yield(t/ha)-7.99	Date of flowering – 3rd wk ofJan Plant height-1.30m No of branches-16.33 No of pod/plant-13.5 Yield(t/ha)-6.40
4	Paddy	Inoculation of Azolla (*Azolla caroliniana*) in lowland paddy.	Kerebe	6	0.29	25.0	24.04	24.62	21.58	13.76 %	Plant height: 111.93cm No.leaves: 20.26 No.tillers:8.13 Length of earhead: 24.19cm Grains/earhead:203.33	Plant height: 99.14cm No.leaves: 13.2 No.tillers:7.73 Length of earhead: 23.02cm Grains/earhead:142.46
5	Potato	Biofertilizer application in potato	Kufri Megha	4	0.5	-	-	-	-	-	Under progress	Under progress
6	Field pea	Performance of field pea	Var. Aparna	3	3.0 ha	18.00	17.50	17.00	12.40	41 %	Plant ht-23.41cm No. of leaves-10.56 Pod/plant- 19.60 Seed/pod – 3.86	Plant ht-36.45cm No. of leaves-20.52 Pod/plant- 14.60 Seed/pod – 4.80
7	Soybean	Performance of soybean	Var.JS 335	3	0.06 ha	19.50	18.50	19.25	18.00	6.9 %	Plant ht-18.13 cm No. of leaves-12.70 Pod/plant- 17.00	Plant ht-21.10 No. of leaves-13.80 Pod/plant- 14.70

8	Groundnut	Performance of groundnut	Var. JL 24	3	0.07 ha	9.56	8.91	9.23	6.95	32.88 %	Plant ht-26.30 cm No. of leaves-13.73 Branches – 7.20 Pod/plant- 20.26	Plant ht-24.40 cm No. of leaves-12.50 Branches – 6.40 Pod/plant- 15.40
9	Field pea	Performance of field pea	Var. Rachna	3	2.8 ha	18.20	17.30	17.80	12.50	42.5 %	Plant ht-46.30 No. of leaves-15.90 Pod/plant- 25.13 Seed/pod – 5.66	Plant ht-62.00cm No. of leaves-22.60 Pod/plant- 20.40 Seed/pod – 7.40

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
24540	23809.25	51,200	40,000	26,660.00	16,190.47	2.08
237000	164000	615000	90000	378000.00	-74000	2.59
94000	96000	164000	128000	70000.00	32000	1.74
23633.00	21133.00	61382.00	53958.00	37752.00	32824.92	2.59
-	-	-	-	-	-	Under progress
12100.00	9400.00	35000.00	24800.00	22900.00	15400.00	2.8
12500.00	10500.00	63820.00	36500.00	51320.00	26000.00	4. 5
13000.00	10000.00	56940.00	27800.00	43940.00	27800.00	3.6
10050.00	9000.00	39460.00	27760.00	29410.00	18760.00	3.9

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
Paddy	Kharif	Trichocards	RF	32	25. 0	28%
Tomato	Kharif	Var.Rohini, Polyhouse	Irrigated	171.70	30. 30	466. 66%
Garden pea	Rabi	Var.Arkel	Rainfed	79. 90	64. 00	24.84
Paddy	Kharif	Seed/Variety: Kerebe Bio-fertilizer (Azolla)	RF	24.52	21.58	13.76%
Potato	Under progress	Under progress	Under progress	Under progress	Under progress	Under progress
Field pea	Rabi	Seed	RF	17.50	12.40	41
Soybean	Kharif	Seed	RF	19.08	18.00	6
Groundnut	Kharif	Seed	RF	9.49	6.95	36
Field pea	Rabi	Seed	RF	19.73	12.50	42

Technical Feedback on the demonstrated technologies

S. No	Feed Back
1	Stem borer infestation was reduced by *Trichogramma japonicum* egg parasitoids in Paddy thereby increasing the yield of treated plot by 28% compared to non treated plot.
2	Farmers are ready to cultivate tomato and other vegetable under polyhouse during rainy season . Polyhouse cultivation has been adopted by most of the household in Porba and Thipuzu village.
3.	Arkel variety of Garden pea is preferred by the farmers and has been well adopted in different villages owing to its sweet taste and dwarf nature.
4	Dual inoculation of Azolla (*Azolla caroliniana*) in lowland paddy increased the yield as compared to control i.e., without inoculation of Azolla
5	under progress
6	Aparna variety of field pea performed well but the farmers prefer rachna variety as it is tolerant to powdery mildew
7	The performance of soybean var JS 335 performed well
8	The performance of groundnut var JL 24 performed well
9	Rachna variety of field pea performed well in terms of yield compared to Aparna variety and local

Farmers' reactions on specific technologies

S. No	Feed Back
1	Farmers are interested to apply trichocards in their field as stem borer is the major pest of the region. There is a great demand for trichocards by the farmers prior to transplanting of paddy.
2	Farmers are interested to grow tomato and other vegetable under polyhouse as it fetches high return during offseason.
3	Farmers are interested to take garden pea var.Arkel as it is dwarf and cost of staking is less compared to the local which is tall and needs high cost for staking. The yield is higher than the local in the same climatic condition.
4	Farmers are interested to grow paddy var.Kerebe along with the inoculation of Azolla (*Azolla caroliniana*) in lowland paddy as it increased the yield ove the control
5	under progress
6	Farmers are satisfied with the performance of field pea var.Aparna as it is dwarf in height so they need not stake the crop as compared to the local which is tall and needs staking. The yield is higher than the local in the same climatic condition
7	Farmers are interested to take up soybean var. JS 335 cultivation. As the yield is higher than the local in the same climatic condition.
8	Farmers are interested to grow groundnut var JL 24 provided the seeds are available in the market.
9	Farmers are very satisfied with the performance of field pea var.Rachna as it is dwarf in height so they need not stake the crop as compared to the local which is tall and needs staking. The yield is higher than Aparna variety of field pea and the local in the same climatic condition so the farmers prefer rachna variety more than the Aparna variety

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Farmers Training	1	19/7/2010	20	Training on IPM in paddy was conducted in porba village
2	Farmers training EF training	2 1	20/6/2010 27/6/2010 7/9/2010	46 11	Trainings were conducted in different village and also to extension functionaries of the line departments.
3	Farmers Training	3	3/12/2010 5/12/2010 6/12/2010	51	Farmers are interested to take garden pea var.Arkel as it is dwarf and cost of staking is less compared to the local which is tall and needs high cost for staking. The yield is higher than the local in the same climatic condition.
4	Farmers Training	1	26-03-10	25	-
5	Farmers Training	1	26-03-10	25	
6	under progress				
7	Farmers Training	1	21.9.2009	30	Farmers are interested to take garden pea var.Arkel as it is dwarf and cost of staking is less compared to the local which is tall and needs high cost for staking. The yield is higher than the local in the same climatic condition.
8	Farmers Training	1	- 26-03-10	- 25	QPM

c. Details of FLD on Enterprises

(i) Farm Implements

Name of the implement	crop	No. of farmers	Area (ha)	Performance parameters / indicators	* Data on parameter in relation to technology demonstrated		% change in the parameter	Remarks
					Demon.	Local check		
Adjustible row maker	Cauliflower	2	0.04	Field capacity, labour save	0.05 ha/hr, 2.45 manday/ ha	Do not practice line showing	-	
Pedal Paddy Thresher	Paddy	3	0.10	Field Capacity, labour save	75.5 kg/hr, 3.3 manday/ton	52.87 Kg/hr, 2.37 manday/ton	42% Kg/ha, 39.24 manday/ton	It reduce labour and also avaoid from cuts and wound to the farmer
Drip irrigation kit	Cauliflower	2	0.004	Water used efficiency, drudgery reduction, and yield	Under progress (crop harvesting not done yet)	-	-	-
Drip irrigation kit	Tomato	2	0.004	Water used efficiency, drudgery reduction, and yield	Under progress (crop harvesting not done yet)	-	-	-

**** Field efficiency, labour saving etc.***

(ii) Livestock Enterprises

Enterprise	Breed	No. of farmers	No. of animals, poultry birds etc.	Performance parameters / indicators	* Data on parameter in relation to technology demonstrated		% change in the parameter	Remarks
					Demon.	Local check		
Mithun	Nagaland	20	-	Growth and production	under progress	-	-	-
Rabbit	Soviet chincella	30	60	Growth and production	under progress	-	-	

Milk production, meat production, egg production, reduction in disease incidence etc.

(iii) Other Enterprises

Enterprise	Variety/ breed/Species/others	No. of farmers	No. of Units	Performance parameters / indicators	Data on parameter in relation to technology demonstrated		% change in the parameter	Remarks
					Demon.	Local check		
Mushroom	Oyster mushroom	40	100	Days taken for pin head formation Days from pin head to harvesting Yield/bag Total yield (kg/unit)	21 7.5 1.65	-	-	Demonstration on oyster mushroom was conducted for SHG group of Pfutsero town in collaboration with Centre for Integral Development (NGO). A field day was conducted for school drop outs of Pfutsero.
Apiary	Apis cerena indica	10	10	-	-	-	-	Under progress
Ginger Ale	Nadia	3	-	Organoleptical test for shelf life for a period of 12 months.	Score test of 1-6 was recorded. 1- Unacceptable, 2- Slightly acceptable, 3- Fair, 4- Good, 5- Very good, 6- Excellent	-	-	Training cum demonstration on processing of ginger was given to the youth of Porba village and farmers found it interested in processing of ginger products. Ginger ale can best be consumed within 12 months from the date of manufactured.
				Average score for the following test	Taste – 5.2 Flavour – 5.5 Sweetness – 5.6 Colour – 5.5 Texture – 5.4			
				Production	1400ml of ginger ale/ 1kg of ginger Total Expenditure per 1400ml of ginger ale = Rs 110 Sold @ Rs 95/700ml =			

					Rs190 190-110= Rs 80/			
Maize flour and maize cake	QPM	3	-	Preparation of QPM flour and QPM cake Nutrient supplement	Under Progress	-	-	-
Nutritional Garden	Early Nantes, Shalini, and local Beans	3	3 (0.0238ha)	Production and consumption of backyard vegetables for supplementation of nutrients. Total yield/ unit Nutrient composition per 100 gm of vegetables (carrot, cucumber and beans)	Under Progress	-	-	-

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

A) ON Campus

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
(A) Farmers & Farm Women										
I Crop Production										
Weed Management										
Resource Conservation Technologies										
Cropping Systems										
Crop Diversification										
Integrated Farming										
Water management										
Seed production										
Nursery management										
Integrated Crop Management										
Fodder production										
Production of organic inputs										
II Horticulture										
a) Vegetable Crops										
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) Fruits										
Training and Pruning										
Layout and Management of										

Orchards										
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards										
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
d) Plantation crops										
Production and Management technology										
Processing and value addition										
e) Tuber crops										
Production and Management technology										
Processing and value addition										
f) Spices										
Production and Management technology										
Processing and value addition										
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										
Post harvest technology and value addition										
III Soil Health and Fertility Management										
Soil fertility management										

Soil and Water Conservation										
Integrated Nutrient Management										
Production and use of organic inputs										
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient Use Efficiency										
Soil and Water Testing										
IV Livestock Production and Management										
Dairy Management										
Poultry Management										
Piggery Management										
Rabbit Management										
Disease Management										
Feed management										
Production of quality animal products										
V Home Science/Women empowerment										
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										
VI Agril. Engineering										
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										
VII Plant Protection										
Integrated Pest Management										
Integrated Disease Management										
Bio-control of pests and diseases										
Production of bio control agents and bio pesticides										
VIII Fisheries										
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										
IX Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production										
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										
X Capacity Building and Group Dynamics										
Leadership development										
Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										
Entrepreneurial development of farmers/youths										
WTO and IPR issues										
XI Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										

TOTAL										
(B) RURAL YOUTH										
Mushroom Production										
Bee-keeping										
Integrated farming										
Seed production										
Production of organic inputs										
Integrated Farming										
Planting material production										
Vermi-culture										
Sericulture										
Protected cultivation of vegetable crops										
Commercial fruit production										
Repair and maintenance of farm machinery and implements										
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Value addition										
Production of quality animal products										
Dairying										
Sheep and goat rearing										
Quail farming										
Piggery										
Rabbit farming										
Poultry production										
Ornamental fisheries										
Para vets										
Para extension workers										
Composite fish culture										
Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										

Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
TOTAL										
(C) Extension Personnel										
Productivity enhancement in field crops										
Integrated Pest Management										
Integrated Nutrient management										
Rejuvenation of old orchards										
Protected cultivation technology										
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										
TOTAL										

B) OFF Campus

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
(A) Farmers & Farm Women										
I Crop Production										
Weed Management										
Resource Conservation Technologies										
Cropping Systems	1				23	2	25	23	2	25
Crop Diversification										
Integrated Farming										
Water management										
Seed production										
Integrated Nutrient Management										
Nursery management										
Integrated Crop Management										
Fodder production										
Production of organic inputs										
Production and management technology	4				67	25	92	67	25	92
Tuber crops										
Production and Management technology	8				53	136	189	53	136	189
a) Vegetable Crops										
Production of low volume and high value crops	2				35	1	36	35	1	36
Off-season vegetables	2				23	23	46	23	23	46
Nursery raising										
Exotic vegetables like Broccoli										
Production and management technology of rapeseed and mustard	1				12	1	13	12	1	13

Export potential vegetables										
Grading and standardization										
Protective cultivation (Green Houses, Shade Net etc.)										
b) Fruits										
Training and Pruning										
Layout and Management of Orchards	1				15	0	15	15	0	15
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards										
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
d) Plantation crops										
Production and Management technology										
Processing and value addition										
e) Tuber crops										
Production and Management technology										
Processing and value addition										
f) Spices										
Production and	1				10	14	24	10	14	24

Management technology										
Processing and value addition										
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										
Post harvest technology and value addition										
III Soil Health and Fertility Management										
Soil fertility management	3				49	11	60	49	11	60
Soil and Water Conservation	2				24	26	50	24	26	50
Integrated Nutrient Management										
Production and use of organic inputs	2				36	23	59	36	23	59
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient Use Efficiency										
Soil and Water Testing										
IV Livestock Production and Management										
Dairy Management										
Poultry Management	2				38	12	50	38	12	50
Piggery Management										
Rabbit Management	4				57	36	93	57	36	93
Goatery management										
Cattle Disease Management	2				51	9	60	51	9	60
Feed management	1				0	23	23	0	23	23
Production of quality animal products										
Mithun rearing	1				28	2	30	28	2	30
V Home Science/Women										

empowerment										
Household food security by kitchen gardening and nutrition gardening	1				27	23	50	27	23	50
Design and development of low/minimum cost diet	2				0	44	44	0	44	44
Designing and development for high nutrient efficiency diet										
Minimization of nutrient loss in processing										
Gender mainstreaming through SHGs										
Storage loss minimization techniques										
Value addition	2				0	50	50	0	50	50
Income generation activities for empowerment of rural Women										
Location specific drudgery reduction technologies										
Rural Crafts	1				14	05	19	14	05	19
Women and child care	2				1	20	21	1	20	21
VI Agril. Engineering										
Installation and maintenance of micro irrigation systems	2				38	2	40	38	2	40
Use of Plastics in farming practices										
Production of small tools and implements	3				37	17	54	37	17	54
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										
Post Harvest Technology										
Soil and water	1				23	2	25	23	2	25

conservation										
VII Plant Protection										
Integrated Pest Management	3				48	18	66	48	18	66
Integrated Disease Management	2				48	21	69	48	21	69
Bio-control of pests and diseases	1				0	25	25	0	25	25
Production of bio control agents and bio pesticides										
VIII Fisheries										
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										
IX Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										

Vermi-compost production										
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										
X Capacity Building and Group Dynamics										
Leadership development										
Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										
Entrepreneurial development of farmers/youths										
WTO and IPR issues										
XI Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
TOTAL	**57**				**757**	**571**	**1328**	**757**	**571**	**1328**
(B) RURAL YOUTH										
Mushroom Production	4				20	58	78	20	58	78
Kitchen gardening	2				36	39	75	36	39	75
Bee-keeping	4				57	43	100	57	43	100
Integrated farming	2				22	34	56	22	34	56
Weed management										
Integrated Pest Management	1				9	16	25	9	16	25
Integrated Disease	2				6	32	38	6	32	38

management										
Seed production										
Production of organic inputs	1				0	24	24	0	24	24
Integrated Farming										
Planting material production										
Vermi-culture	2				10	30	40	10	30	40
Sericulture										
Protected cultivation of vegetable crops	2				2	28	30	2	28	30
Commercial fruit production										
Repair and maintenance of farm machinery and implements	1				11	9	20	11	9	20
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Value addition										
Production of quality animal products										
Dairying										
Sheep and goat rearing										
Quail farming										
Duckery	1				7	18	25	7	18	25
Piggery	2				6	49	55	6	49	55
Rabbit farming	3				42	40	82	42	40	82
Poultry production	1				0	25	25	0	25	25
Ornamental fisheries										
Para vets										
Para extension workers										
Composite fish culture										
Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										

Soil and water conservation	1				15	0	15	15	0	15
Post Harvest Technology										
Small scale processing	1				2	19	21	2	19	21
Tailoring and Stitching	1				0	22	22	0	22	22
Rural Crafts	3				10	63	73	10	63	73
TOTAL	**34**				**255**	**549**	**804**	**255**	**549**	**804**
(C) Extension Personnel										
Productivity enhancement in field crops	2				23	5	28	23	5	28
Integrated Pest Management	1				11	0	11	11	0	11
Integrated Nutrient management										
Rejuvenation of old orchards										
Protected cultivation technology	1				11	0	11	11	0	11
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										
Installation and maintenance of micro irrigation systems	1				12	1	13	12	1	13
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										
Total	**5**				**57**	**6**	**63**	**57**	**6**	**63**
GRANDTOTAL	**96**				**1069**	**1126**	**2195**	**1069**	**1126**	**2195**

C) Consolidated table (ON and OFF Campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
(A) Farmers & Farm Women										
I Crop Production										
Weed Management										
Resource Conservation Technologies										
Cropping Systems	1				23	2	25	23	2	25
Crop Diversification										
Integrated Farming										
Water management										
Seed production										
Integrated Nutrient Management										
Nursery management										
Integrated Crop Management										
Fodder production										
Production of organic inputs										
Production and management technology	4				67	25	92	67	25	92
Tuber crops										
Production and Management technology	8				53	136	189	53	136	189
a) Vegetable Crops										
Production of low volume and high value crops	2				35	1	36	35	1	36
Off-season vegetables	2				23	23	46	23	23	46
Nursery raising										
Exotic vegetables like Broccoli										
Production and management technology of rapeseed and mustard	1				12	1	13	12	1	13
Export potential										

vegetables										
Grading and standardization										
Protective cultivation (Green Houses, Shade Net etc.)										
b) Fruits										
Training and Pruning										
Layout and Management of Orchards	1				15	0	15	15	0	15
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards										
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
d) Plantation crops										
Production and Management technology										
Processing and value addition										
e) Tuber crops										
Production and Management technology										
Processing and value addition										
f) Spices										
Production and Management technology	1				10	14	24	10	14	24

Processing and value addition										
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										
Post harvest technology and value addition										
III Soil Health and Fertility Management										
Soil fertility management	3				49	11	60	49	11	60
Soil and Water Conservation	2				24	26	50	24	26	50
Integrated Nutrient Management										
Production and use of organic inputs	2				36	23	59	36	23	59
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient Use Efficiency										
Soil and Water Testing										
IV Livestock Production and Management										
Dairy Management										
Poultry Management	2				38	12	50	38	12	50
Piggery Management										
Rabbit Management	4				57	36	93	57	36	93
Goatery management										
Cattle Disease Management	2				51	9	60	51	9	60
Feed management	1				0	23	23	0	23	23
Production of quality animal products										
Mithun rearing	1				28	2	30	28	2	30
V Home Science/Women empowerment										

Household food security by kitchen gardening and nutrition gardening	1				27	23	50	27	23	50
Design and development of low/minimum cost diet	2				0	44	44	0	44	44
Designing and development for high nutrient efficiency diet										
Minimization of nutrient loss in processing										
Gender mainstreaming through SHGs										
Storage loss minimization techniques										
Value addition	2				0	50	50	0	50	50
Income generation activities for empowerment of rural Women										
Location specific drudgery reduction technologies										
Rural Crafts	1				14	05	19	14	05	19
Women and child care	2				1	20	21	1	20	21
VI Agril. Engineering										
Installation and maintenance of micro irrigation systems	2				38	2	40	38	2	40
Use of Plastics in farming practices										
Production of small tools and implements	3				37	17	54	37	17	54
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										
Post Harvest Technology										
Soil and water conservation	1				23	2	25	23	2	25

VII Plant Protection										
Integrated Pest Management	3				48	18	66	48	18	66
Integrated Disease Management	2				48	21	69	48	21	69
Bio-control of pests and diseases	1				0	25	25	0	25	25
Production of bio control agents and bio pesticides										
VIII Fisheries										
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										
IX Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost										

production										
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										
X Capacity Building and Group Dynamics										
Leadership development										
Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										
Entrepreneurial development of farmers/youths										
WTO and IPR issues										
XI Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
TOTAL	**57**				**757**	**571**	**1328**	**757**	**571**	**1328**
(B) RURAL YOUTH										
Mushroom Production	4				20	58	78	20	58	78
Kitchen gardening	2				36	39	75	36	39	75
Bee-keeping	4				57	43	100	57	43	100
Integrated farming	2				22	34	56	22	34	56
Weed management										
Integrated Pest Management	1				9	16	25	9	16	25
Integrated Disease management	2				6	32	38	6	32	38

Seed production										
Production of organic inputs	1				0	24	24	0	24	24
Integrated Farming										
Planting material production										
Vermi-culture	2				10	30	40	10	30	40
Sericulture										
Protected cultivation of vegetable crops	2				2	28	30	2	28	30
Commercial fruit production										
Repair and maintenance of farm machinery and implements	1				11	9	20	11	9	20
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Value addition										
Production of quality animal products										
Dairying										
Sheep and goat rearing										
Quail farming										
Duckery	1				7	18	25	7	18	25
Piggery	2				6	49	55	6	49	55
Rabbit farming	3				42	40	82	42	40	82
Poultry production	1				0	25	25	0	25	25
Ornamental fisheries										
Para vets										
Para extension workers										
Composite fish culture										
Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										
Soil and water	1				15	0	15	15	0	15

conservation										
Post Harvest Technology										
Small scale processing	1				2	19	21	2	19	21
Tailoring and Stitching	1				0	22	22	0	22	22
Rural Crafts	3				10	63	73	10	63	73
TOTAL	**34**				**255**	**549**	**804**	**255**	**549**	**804**
(C) Extension Personnel										
Productivity enhancement in field crops	2				23	5	28	23	5	28
Integrated Pest Management	1				11	0	11	11	0	11
Integrated Nutrient management										
Rejuvenation of old orchards										
Protected cultivation technology	1				11	0	11	11	0	11
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										
Installation and maintenance of micro irrigation systems	1				12	1	13	12	1	13
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										
Total	**5**				**57**	**6**	**63**	**57**	**6**	**63**
GRANDTOTAL	**96**				**1069**	**1126**	**2195**	**1069**	**1126**	**2195**

Note: Please furnish the details of above training programmes as <u>Annexure</u> in the proforma given below

SI No	Date	Clientele	Title of the training programme	Discipline	Thematic area	Duration in days	Venue (Off / On Campus)	Number of SC/ST			Total number of participangs		
								Male	Female	Total	Male	Female	Total
1.	5/4/2010	RY	Insect pest and Disease management in Tomato	Plant Protection	Insect pest and Disease management	1	Off Campus	2	18	20	2	18	20
2.	8/4/2010	RY	Insect pest and Disease management in Tomato	Plant Protection	Insect pest and Disease management	1	Off Campus	4	14	18	4	14	18
3.	4/6/2010	RY	Insect pest management in Cabbage	Plant Protection	Insect pest management	1	Off Campus	9	16	25	9	16	25
4.	20/6/2010	PF	Biocontrol of Pest and Diseases	Plant Protection	Insect pest and Disease management	1	Off Campus	0	25	25	0	25	25
5.	27/6/2010	PF	Insect pest and Disease management in Cabbage	Plant Protection	Insect pest and Disease management	1	Off Campus	22	2	24	22	2	24
6.	19/7/2010	PF	Insect pest management in Rice	Plant Protection	Insect pest management	1	Off Campus	13	7	20	13	7	20
7.	7/9/2010	EF	Insect pest management in Vegetables	Plant Protection	Insect pest management	1	Off Campus	11	0	11	11	0	11
8.	14/9/2010	RY	Bee rearing and their management	Plant Protection	Bee keeping	1	Off Campus	20	5	25	20	5	25
9.	14/9/2010	RY	Bee enemies and their management	Plant Protection	Bee keeping	1	Off Campus	20	5	25	20	5	25
10.	12/11/2010	PF	Major pest of Banana and their management	Plant Protection	Pest management	1	Off Campus	14	11	25	14	11	25
11.	15/11/2010	RY	Bee rearing and their management	Plant Protection	Bee keeping	1	Off Campus	9	16	25	9	16	25

12.	16/11/2010	RY	Bee rearing and their management	Plant Protection	Bee keeping	1	Off Campus	8	17	25	8	17	25
13.	7/12/2010	PF	Insect pest management in Pea	Plant Protection	Insect pest management	1	Off Campus	21	0	21	21	0	21
14.	25/2/2011	PF	Insect pest and Disease management in King Chilly	Plant Protection	Insect pest and Disease management	1	Off Campus	26	19	45	26	19	45
15.	7/4/2010	RY	Oyster Mushroom production for income generation	Horticulture	Popularization of variety	1	Off Campus	3	16	19	3	16	19
16.	8/4/2010	RY	Oyster Mushroom production for income generation	Horticulture	Popularization of variety	1	Off Campus	4	15	19	4	15	19
17.	24/5/2010	RY	Importance of Fruits and Vegetables	Horticulture	Nutrition gardening	1	Off Campus	27	23	50	27	23	50
18.	4/6/2010	RY	Kitchen garden and Importance of Fruits and Vegetables	Horticulture	Nutrition gardening	1	Off Campus	9	16	25	9	16	25
19.	20/6/2010	PF	Off season vegetable production under protected condition	Horticulture	Protected cultivation technolgy	1	Off Campus	0	20	20	0	20	20
20.	27/6/2010	PF	Off season vegetable production under polyhouse	Horticulture	Protected cultivation technolgy	1	Off Campus	23	3	26	23	3	26
21.	7/9/2010	EF	Off season vegetable production under polyhouse	Horticulture	Protected cultivation technolgy	1	Off Campus	11	0	11	11	0	11
22.	4/12/2010	PF	Pea cultivation: A system of double cropping	Horticulture	Popularization of variety	1	Off Campus	14	1	15	14	1	15
23.	4/12/2010	PF	Production Technology on Rapeseed and Mustard	Horticulture	Popularization of variety	1	Off Campus	12	1	13	12	1	13
24.	5/12/2010	RY	Pea cultivation: A system of double cropping	Horticulture	Popularization of variety	1	Off Campus	1	14	15	1	14	15
25.	5/12/2010	RY	Production Technology on Cauliflower	Horticulture	Varietal evaluation	1	Off Campus	1	14	15	1	14	15
26.	6/12/2010	PF	Production Technology on Pea(Garden & Field pea)	Horticulture	Popularization of variety	1	Off Campus	21	0	21	21	0	21
27.	25/2/2011	PF	Production Technology on King Chilly	Horticulture	Production Technology	1	Off Campus	10	14	24	10	14	24

28.	14/3/2011	RY	Training cum demonstrationon Oyster Mushroom production	Horticulture	Popularization of variety	1	Off Campus	13	12	25	13	12	25
29.	15/3/2011	RY	Training cum demonstrationon Oyster Mushroom production	Horticulture	Popularization of variety	1	Off Campus	0	15	15	0	15	15
30.	16/3/2011	PF	Training on layout and planning of Orchard production technology on Kiwi, Passion fruit & Orange	Horticulture	Production Technology	1	Off Campus	15	0	15	15	0	15
31.	26.4.10	PF	FMD in animal and its control	Animal Science	Disease management	1	Off Campus	18	7	25	18	7	25
32.	27-30.4.10	RY	Backyard rabbit farming	Animal Science	Popularization of breed	1	Off Campus	0	25	25	0	25	25
33.	1-2.5.10	RY	Backyard rabbit farming	Animal Science	Popularization of breed	2	Off Campus	22	8	30	22	8	30
34.	14.06.10	PF	Feeding management of pig	Animal Science	Feeding management	1	Off Campus	0	23	23	0	23	23
35.	18.06.10	PF	Backyard rabbit farming	Animal Science	Popularization of breed	1	Off Campus	3	15	18	3	15	18
36.	23.08.10	PF	Scientific mithun farming	Animal Science	Mithun rearing	1	Off Campus	28	2	30	28	2	30
37.	25.8.10	PF	FMD in mithun and its control	Animal Science	Disease management	1	Off Campus	33	2	35	33	2	35
38.	13-14.11.10	RY	Backyard rabbit farming	Animal Science	Popularization of breed	2	Off Campus	20	7	27	20	7	27
39.	18.11.10	PF	Backyard rabbit farming	Animal Science	Popularization of breed	1	Off Campus	19	6	25	19	6	25
40.	19.11.10	PF	Prevention and control of poultry disease	Animal Science	Disease management	1	Off Campus	19	6	25	19	6	25
41.	08.12.10	PF	Backyard rabbit farming	Animal Science	Popularization of breed	1	Off Campus	19	3	25	19	3	25
42.	09.12.10	PF	Prevention and control of poultry disease	Animal Science	Disease management	1	Off Campus	19	3	25	19	3	25
43.	10.12.10	RY	Breeding management of pig	Animal Science	Piggery management	1	Off Campus	0	30	30	0	30	30
44.	27.02.11	PF	Commercial rabbit farming	Animal Science	Popularization of breed	1	Off Campus	16	9	25	16	9	25
45.	28.02.11	Ry	Prevention and control of poultry diseases	Animal Science	Disease management	1	Off Campus	0	25	25	0	25	25

46.	01.3.11	RY	Scientific duck rearing	Animal Science	Popularization of breed	1	Off Campus	7	18	25	7	18	25
47.	02.3.11	RY	Feeding management of Pig	Animal Science	Feeding management	1	Off Campus	6	19	25	6	19	25
48.	03-04-10	PF	Production and use of organic inputs	Soil Science	Nutrient management	1 day	Off Campus	14	11	25	14	11	25
49.	13-04-10	PF	Soil and water conservation	Soil Science	Nutrient management	1 day	Off Campus	14	11	25	14	11	25
50.	20-04-10	PF	Demonstration cum training on composting methods	Soil Science	Nutrient management	1 day	Off Campus	10	0	10	10	0	10
51.	07-05-10	PF	Soil and water conservation	Soil Science	Nutrient management	1 day	Off Campus	10	15	25	10	15	25
52.	05-06-10	PF	Soil fertility management	Soil Science	Nutrient management	1 day	Off Campus	22	3	25	22	3	25
53.	20-10-10	RY	Vermiculture	Soil Science	Nutrient management	1 day	Off Campus	10	16	26	10	16	26
54.	11-12-10	PF	Soil fertility management	Soil Science	Nutrient management	1 day	Off Campus	17	8	25	17	8	25
55.	17-12-10	PF	Production and use of organic inputs	Soil Science	Nutrient management	1 day	Off Campus	22	12	34	22	12	34
56.	15-01-11	PF	Production and management technology on tuber crops(Potato)	Soil Science	Nutrient management	1 day	Off Campus	3	10	13	3	10	13
57.	29-01-11	PF	Production and management technology on tuber crops(Potato)	Soil Science	Nutrient management	1 day	Off Campus	2	13	15	2	13	15
58.	31-01-11	PF	Production and management technology on tuber crops(Potato)	Soil Science	Nutrient management	1 day	Off Campus	13	17	30	13	17	30
59.	08-02-11	PF	Production and management technology on tuber crops(Potato)	Soil Science	Nutrient management	1 day	Off Campus	15	16	31	15	16	31
60.	24-02-11	RY	Production of organic inputs	Soil Science	Nutrient management	1 day	Off Campus	0	24	24	0	24	24
61.	26-02-11	PF	Production and management technology on tuber crops(Potato)	Soil Science	Nutrient management	1day	Off Campus	0	15	15	0	15	15
62.	29-03-11	RY	Vermiculture	Soil Science	Nutrient management	1day	Off Campus	0	14	14	0	14	14
63.	02-04-10	PF	Cropping systems	Agronomy	Crop	1 day	off	23	2	25	23	2	25

					production								
64.	15-04-10	PF	production technology on paddy	Agronomy	Crop production	1 day	off	15	10	25	15	10	25
65.	16-04-10	PF	production technology on groundnut	Agronomy	Crop production	1 day	off	17	8	25	17	8	25
66.	23-04-10	PF	production technology on qpm	Agronomy	Crop production	1 day	off	16	6	22	16	6	22
67.	25-04-10	PF	production technology on potato	Agronomy	Crop production	1 day	off	0	27	27	0	27	27
68.	5-05-10	PF	production technology on potato	Agronomy	Crop production	1 day	off	7	18	25	7	18	25
69.	01-06-10	RY	intensive integrated farming system	Agronomy	Crop production	1 day	off	22	5	27	22	5	27
70.	08-06-10	PF	production technology on paddy	Agronomy	Crop production	1 day	off	19	1	20	19	1	20
71.	27-01-11	EF	production technology on potato	Agronomy	Crop production	1 day	off	13	3	16	13	3	16
72.	28-01-11	PF	production technology on potato	Agronomy	Crop production	1 day	off	13	20	33	13	20	33
73.	24-02-11	RY	integrated farming system	Agronomy	Crop production	1 day	off	0	29	29	0	29	29
74.	04-03-11	EF	productivity enhancement in field crops	Agronomy	Crop production	1 day	off	10	2	12	10	2	12
75.	1/4/2010	PF	Design and development of low cost diet	Home science	Design and development of low cost diet	1 day	off	0	25	25	0	25	25
76.	24/4/2010	PF	Rural Craft	Home Science	Rural craft	1 day	off	14	5	19	14	5	19
77.	18/5/2010	PF	Women and child care	Home Science	women and child care	1 day	off	1	9	10	1	9	10
78.	24/5/2010	PF	Kitchen garden	Home science	Household food security by nutritional garden	1 day	off	27	23	50	27	23	50
79.	18/8/2010	RY	Processing of fruits and vegetables	Home Science	Small scale processing	1 day	off	2	19	21	2	19	21
80.	23/9/10	RY	Rural craft	Home science	Rural craft	1 day	off	10	16	26	10	16	26
81.	24/9/2010	RY	Stitching and embroidery	Home science	Tailoring and stitching	1 day	off	0	22	22	0	22	22
82.	25/9/2010	RY	Rural craft	Home science	Rural craft	1 day	off	0	22	22	0	22	22
83.	22/11/2010	PF	Value addition	Home science	Value addition	1 day	off	0	25	25	0	25	25

84.	23/11/2010	PF	Small scale processing	Home science	Small scale processing	1 day	off	0	25	25	0	25	25
85.	29/3/2011	RY	Rural craft	Home science	Rural craft	1 day	off	0	25	25	0	25	25
86.	29/3/2011	PF	Design and development of low cost diet	Home science	Design and development of low cost diet	1 day	off	0	19	19	0	19	19
87.	30/3/2011	PF	Women and child care	Home science	Women and child care	1 day	off	0	11	11	0	11	11
88	04/05/2010	PF	Improved farm tools and implement for hill agriculture	Agril. Engg.	Agrilcultural Mechanisation	1	Off	13	9	27	13	9	27
89	19/07/2010	PF	Seepage control in Water Harvesting Pond by LDPE Polysheet lining	Agril. Engg	Soil and water conservation	1	Off Campus	23	2	25	23	2	25
90	05/08/2010	RY	Improved farm tools and implement for hill agriculture	Agril. Engg	Agrilcultural Mechanisation	1	Off Campus	11	9	20	11	9	20
91	09/08/2010	PF	Improved farm tools and implement for hill agriculture	Agril. Engg	Agrilcultural Mechanisation		Off Campus	8	8	16	8	8	16
92	06/09/2010		Seepage control in Water Harvesting Pond by EFLDPE Polysheet lining and micro irrigation	Agril. Engg	Soil water conservation		Off Campus	12	1	13	12	1	13
93	11/11/2010			Agril. Engg		1	Off Campus						
94	20/12/2010	PF	Efficient use of water using Drip irrigation in Rabi season	Agril. Engg		1	Off Campus	22	2	24	22	2	24
95	18/02/2011			Agril. Engg		1	Off Campus						
96	18/02/2011			Agril. Engg		1	Off Campus						

(D) Vocational training programmes for Rural Youth

Crop / Enterprise	Date	Training title*	Identified Thrust Area	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
					Male	Female	Total	Type of units	Number of units	Number of persons employed	
Wild Apple	24/1/2011 to 29/1/2011	Processing of wild apple	Processing	6 days	1	7	8	-	-	-	-

*training title should specify the major technology /skill transferred

(E) Sponsored Training Programmes

Sl.No	Date	Title	Discipline	Thematic area	Duration (days)	Client (PF/RY/EF)	No. of courses	No. of Participants									Sponsoring Agency	Amount of fund received (Rs.)
								Others			SC/ST			Total				
								Male	Female	Total	Male	Female	Total	Male	Female	Total		
1.	22/2/11-26/2/11	Agriculture and allied sectors	Agronomy	Production and management	5	RY	4				56	5	61	56	5	61	NABARD	15000.00
2.	18/2/11-21/2/11	Backyard rabbit farming	Animal Science	Popularazation fo breed	4	RY	4				0	30	30	0	30	30	NABARD	-
3.	22/2/11-25/2/11	Backyard rabbit farming	Animal Science	Popularazation fo breed	4	RY	4				0	30	30	0	30	30	NABARD	-
4.	26/2/11-1/2/11	Backyard rabbit farming	Animal Science	Popularazation fo breed	4	RY	4				0	30	30	0	30	30	NABARD	-
5.	2/3/11-5/3/11	Backyard rabbit farming	Animal Science	Popularazation fo breed	4	RY	4				0	30	30	0	30	30	NABARD	-
6.	4/2/11-13/2/11	Entrepreneurship Development programme on food processing	Horticulture	Food processing	10	RY	-									26	ASSOCHAM	-
7.	12 -13 th Dec 2010	Irrigation with rain water harvesting structure, treadle pump and micro irrigation system	Agril Engg	Resource conservation	2	RY	1				29	1	30	29	1	30	NABARD	6000.00

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	b. PSB inoculation in potato Var.Kufri Megha (OFT)/14-07-10 c. Effect on composting methods on nutrient availability of mithun dung on tomato (OFT)/16-08-10. d. Inoculation of Azolla caroliniana in lowland paddy Var.RCM-6/26-10-10 e. To study the growth and yield of potato- 14/7/10 f. Water harvesting pond 22/4/10 g. Oyster mushroom 30/4/10 h. Oyster mushroom 3/5/10	7				**5**	**51**	**56**				**5**	**51**	**56**
12	Method Demonstrations		10				10	0	10				4	8	12
	Animal vaccination camp		4				150	50	200				150	50	200
	Exhibition		2												500
	News letter		2												
13	Farmers Seminar														
	News letter		2												
14	Workshop	Linking of Small Time Entrepreneurs with Govt. Schemes on 4/3/11	1												100

16	Lectures delivered as resource persons	1.Food processing and preservation (NWDPRA) -24.2.11 2.Soil fertility Management (NABARD)-22.02.11 Vermicomposting (NABARD)-24.02.11 3.Food processing and preservation (NWDPRA) -24.2.11 4.Production and management technology on Potato cultivation (NABARD)-22.02.11 5. Production and management technology on True Potato Seed cultivation (NABARD)-25.02.11 6. Integrated farming system (NABARD)-26.02.11 7.Training on Layout and Planning of Orchard, Production technology on Kiwi, Passion fruit, Orange. 8.Production technology of large cardamom 9.Entrepreneurial Motivation Training , Kohima 10. Entrepreneurial Motivation Training , Mon	10				360	167	527				360	167	527
17	Newspaper coverage		7												
18	Radio talks		10												
20	Popular articles		5												

21	Extension Literature/Folder	1. Composting methods. 2. Soil and water conservation 3. Approaches to integrated crop management. 4. Production and management technology on Potato cultivation 5. Offseason vegetable production under polyhouse 6. Seepage control in water harvesting pond by using LDPE sheet. 7. Insect pest and disease management in tomato 8. Pig production and management	8													
23	Scientist visit to farmers field		30													78
24	Farmers visit to KVK		20													33
25	Diagnostic visits		30													45
26	Exposure visits		2													28
	PRA		6													118
31	Soil test campaigns															
32	Farm Science Club Conveners meet		1													30
	Grand Total		**157**				**525**	**268**	**793**							**1727**

3.5 Production and supply of Technological products

SEED MATERIALS

Major group/class	Crop	Variety	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
CEREALS					
OILSEEDS					
PULSES					
VEGETABLES	Carrot	Early nantes	100gm	250	3
	French bean	Anupama	2kg	540	3
	Tomato	Rohini	2500 seedlings	1000	8
	Gardenpea	Arkel	120kg	6864	40
FLOWER CROPS	Cauliflower	Snowball, Madhuri, Sumedha	3000 seedlings	1500	5
OTHERS (Specify)					
MUSHROOM	Oyster	Florida	(250gm)100Pkt	2000	40

SUMMARY

Sl. No.	Major group/class	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
1	CEREALS			
2	OILSEEDS			
3	PULSES			
4	VEGETABLES	1.221	7654	46
5	FLOWER CROPS			
6	OTHERS			
TOTAL		**1.221**	**7654**	**46**

PLANTING MATERIALS

Major group/class	Crop	Variety	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
FRUITS					
SPICES					
VEGETABLES	Tomato	Rohini	2500	1000	8
	Cauliflower	Snowball, Madhuri, Sumedha	3000	1500	5
FOREST SPECIES					
ORNAMENTAL CROPS					
PLANTATION CROPS					
Others (specify)					

SUMMARY

Sl. No.	Major group/class	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
1	FRUITS			
2	VEGETABLES			
3	SPICES			
4	FOREST SPECIES			
5	ORNAMENTAL CROPS			
6	PLANTATION CROPS			
7	OTHERS			
	TOTAL			

BIO PRODUCTS

Major group/class	Product Name	Species	Quantity		Value (Rs.)	Provided to No. of Farmers
			No	(kg)		
BIOAGENTS						
BIOFERTILIZERS						
1						
2						
3						
4						

BIO PESTICIDES						
1						
2						
3						
4						

SUMMARY

Sl. No.	Product Name	Species	Quantity		Value (Rs.)	Provided to No. of Farmers
			Nos	(kg)		
1	BIOAGENTS					
2	BIO FERTILIZERS					
3	BIO PESTICIDE					
	TOTAL					

LIVESTOCK

Sl. No.	Type	Breed	Quantity		Value (Rs.)	Provided to No. of Farmers
			(Nos	Kgs		
Cattle						
SHEEP AND GOAT						
POULTRY						
FISHERIES						
Others (Specify)						

*** An example for guidance only**

SUMMARY						
Sl. No.	Type	Breed	Quantity		Value (Rs.)	Provided to No. of Farmers
			Nos	Kgs		
1	CATTLE					
2	SHEEP & GOAT					
3	POULTRY					
4	FISHERIES					
5	OTHERS					
	TOTAL					

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

(A) Literature developed/published

Item	Title	Authors name	Number of copies
Technical reports	Control of new castle disease in village chickens-A success story	R.K Singh, P.R.Dutta, C. Rjkhowa and D.U.M Rao	1
News letter	Yirhi Dju Farming News-2nos		500
Folders	Offseason vegetable production under polyshade Seepage control in water harvesting pond by using LDPE sheet. Insect pest and disease management in tomato Pig production and management	R. Bharali& R. K.Singh Er. C. Lairenjam & R. K.Singh Liza Barua Bharali & R. K.Singh D. J. Borkotoky & R. K.Singh	500 500 500 500
Popular articles	Offseason vegetable production for higher income Green manuring :A componenet of organic farming Rainwater harvesting technique in hill areas	R. Bharali T.Esther longkumer C. Lairanjam	
TOTAL	**9**		**2500**

N.B. Please enclose a copy of each. In case of literature prepared in local language please indicate the title in English

(C)

Details of Electronic Media Produced

S. No.	Type of media (CD / VCD / DVD / Audio-Cassette)	Title of the programme	Number
1	**DVD**	**Zabo farming**	**1**

3.7. Success stories/Case studies, if any (two or three pages write-up on each case with suitable action photographs)
(Annexed)
1. Rabbitry
2. Poultry

3.8 Give details of innovative methodology/technology developed and used for Transfer of Technology during the year.

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)

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1			
2			

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

- Identification of courses for farmers/farm women: PRA, Base line survey
- Rural Youth : Group Discussion
- Inservice personnel

3.11 Field activities

i. Number of villages adopted : 4
ii. No. of farm families selected :-
iii. No. of survey/PRA conducted : 6

3.12. Activities of Soil and Water Testing Laboratory

Status of establishment of Lab :

1. Year of establishment :
2. List of equipments purchased with amount :

Sl. No	Name of the Equipment	Qty.	Cost
1			
2			
3			
Total			

3. Details of samples analyzed so far :

Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized
Soil Samples				
Water Samples				
Plant Samples				
Petiole Samples				
Total				

4.0 IMPACT

4.1. 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)

* Denotes average household income of the group

** Income including rabbitry

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)

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

5.0 LINKAGES

5.1 Functional linkage with different organizations

Name of organization	Nature of linkage
1.NABARD	Financial assistance
3.NGO	Technology transfer
4. SASRD	Technology transfer
5.ATMA	Technology transfer

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

5.2 List 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.)
Irrigation with rain water harevesting structure, treadle pump and microiggigation system	August 2009	NABARD	5,67,500.00
NICRA	2011	CRIDA, ICAR	30,35,000
Production techbnology on Potato	2011	NABARD	1,00,000

5.3 Details of linkage with ATMA

a) Is ATMA implemented in your district Yes/No- Yes

S. No.	Programme	Nature of linkage	Remarks

5.4 Give details of programmes implemented under National Horticultural Mission

S. No.	Programme	Nature of linkage	Constraints if any

5.5 Nature of linkage with National Fisheries Development Board

S. No.	Programme	Nature of linkage	Remarks

6. PERFORMANCE OF INFRASTRUCTURE IN KVK

6.1 Performance of demonstration units (other than instructional farm)

Sl. No.	Demo Unit	Year of estt.	Area	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	

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	
Cereals									
Rice									
Pulses									
Pigeonpea									
Oilseeds									
Fibers									
Spices & Plantation crops									
Floriculture									
Fruits									
Vegetables									
Others (specify)									

6.3 Performance of production Units (bio-agents / bio pesticides/ bio fertilizers etc.,)

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	

6.4 Performance of instructional farm (livestock and fisheries production)

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	

6.5 Rainwater Harvesting

Training programmes conducted by using Rainwater Harvesting DemonstrationUnit

Date	Title of the training course	Client (PF/RY/EF)	No. of Courses	No. of Participants including SC/ST		
				Male	Female	Total
17/07/2010	Seepage control in Water Harvesting Pond by LDPE Polysheet lining	PF	1	23	2	25
06/09/2010	Seepage control in Water Harvesting Pond by LDPE Polysheet lining	EF	1	12	1	13
12 -13 th Dec 2010	Irrigation with rain water harvesting structure, treadle pump and micro irrigation system	PF	1	29	1	30

6.5 Utilization of hostel facilities

Accommodation available (No. of beds) :

Months	Title of the training course/Purpose of stay	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
October 2006				
Total				
November 2006				
Total				
December 2006				
Total				
January 2007				
Total				
February 2007				
Total				
March 2007				

Total				
April 2007				
Total				
May 2007				
Total				
June 2007				
Total				
July 2007				
Total				
August 2007				
Total				
September 2007				
Total				
Grand total				

5 X 25= 125 (Duration of the training course X No. of traininees)

7. FINANCIAL PERFORMANCE

7.1 Details of KVK Bank accounts

Bank account	Name of the bank	Location	Account Number
With Host Institute	SBI	Medziphema	
With KVK	SBI	Pfutsero, Phek	11842622138

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

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2008
	Kharif 2007	Rabi 2007 –08	Kharif 2007	Rabi 2007-08	
Inputs				0.1264	
Extension activities					
TA/DA/POL etc.					
TOTAL				**0.1264**	

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

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2008
	Kharif 2007	Rabi 2007 -08	Kharif 2007	Rabi 2007-08	
Inputs				0. 21443	
Extension activities					
TA/DA/POL etc.					
TOTAL				**0. 21443**	

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

Item	Released by ICAR	Expenditure	Unspent balance as on 1st April 2008
	Kharif 2007	Kharif 2007	
Inputs			
Extension activities			
TA/DA/POL etc.			
TOTAL			

7.5 Utilization of KVK funds during the year 2010-11

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	**Pay & Allowances**			
2	**Traveling allowances**			
3	**Contingencies**			
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			
TOTAL (A)				
B. Non-Recurring Contingencies				
1	**Works**			
2	**Equipments including SWTL & Furniture**			
3	**Vehicle** (Four wheeler/Two wheeler, please specify)			
4	**Library** (Purchase of assets like books & journals)			
TOTAL (B)				
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)				

7.6 Status of revolving fund (Rs. in lakhs) for the three years

Year	Opening balance as on 1st April	Income during the year	Expenditure during the year	Net balance in hand as on 1st April of each year

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

8.1 Constraints

(a) Administrative: -
(b) Financial: Timely release of budget is essential to carry out works properly.
(c) Technical: Availability of agri-inputs is difficult.

Annexures

District Profile - I

The Phek District of Nagaland is classified as rural district and the majority of the people are living in villages. Previously Phek and Pfutsero have been recognized as town but recently the Government of Nagaland has, declared all the three other Sub-Divisions, namely Chizami, Chozuba and Meluri and the Mini Cement Plant of Weziho as full-fledged townships. District Phek lies in the South-East of Nagaland, between 94^0- 35'- 18" to 94^0- 38'-09" E (L) longitude and 25^0 -37'-37" to 25^0-39'-47" N (LT) latitude and bounded by Kohima District in the West, Zunheboto and Kiphire Districts in the North, Myanmar in the South East and Manipur State in the South. The district is inhabited by the Chakhesang and Pochury tribes of Mongoloid race. There are three main linguistic groups in the Phek such as Khezha, Chokri and Pochury. The accent difference varies from village to village even among these three groups.

The district is spread over in a geographical area of about 2026 sq. km, with altitude ranging from 520 to 2900m above sea level. It has a total population of 148246 (2001 census) with population density of 73 person/sq. km and literacy rate is 71.35%. The climate of Phek district is temperate to sub-tropical. At higher elevation where winter is cold and summer are warm with seasonal rainfall of about 200 cm. The district is rich in natural flora and fauna whereas hilly region comprises of evergreen vegetation and deciduous forest vegetation and deciduous forest in the lower region. The important rivers are Tizu, Lanye. There are three(3) SDO(c) post in the district, i.e. Meluri, Chuzoba, Chizami, Six(6) EAC station i.e. Sakraba, Sekruzu, Phonkongri, Khezakeno, Chetheba. The distance from the Phek district head quarter from the state capital Kohima is about 145 km.

Agriculture is the mainstay and basically rain fed. Shifting cultivation is also practiced here and it occupies 12160 ha area in the district. Total cropped area of the district is 27500 ha (inclusive of fruit crops) however the net area sown is 25521 ha with net irrigated area is 12700 ha. The Chakhesang farmers are excellent in terrace cultivation. A traditional farming system called 'Zabo' farming system is also pacticed in the Kikruma area of the district. Paddy, maize, beans, pea, cowpea, arhar and nagadal are the common agronomical crops whereas cabbage banana, orange, passion fruit, guava, garlic, potato, ginger and cardamom are the common horticultural crops. Besides this pig, goat, backyard poultry, mithun and cattle are important livestock of the district.

1. General census

General information about Phek district

S. No.	Particulars		Details
1	Population		148246
2	Sex ratio (Female per 1000 male)		923
3	Area of the district (sq km)		2026
4	Population density		71.30
5	Literacy		71.35
6	Land holding	Marginal %	8
		Small %	48
		Medium %	39
		Large %	5
7	Irrigated area (ha)		15450
8	Jhum area (ha)		2030
9	Forest area (ha)		105066
10	Others area (ha) i.e. Townships/Villages/Roads/ Wastelands		80054
11	Altitude (MSL)		1524
12	Rainfall (mm)		2230

Source : Statistical handbook, Nagaland

Demographic view of Phek

Sl. No	Name of the Block	Population (as per 2001 census. Total)	% of literacy	Male (No)	Female (No)
1	Phek	26392	71.35	13787	12605
2	Kikruma	31812	71.35	16497	15315
3	Pfutsero	41455	71.35	21322	20133
4	Meluri	20872	71.35	11028	9844
5	Sekrezu	27715	71.35	14448	13267
	Total	**148246**	71.35	**77082**	**71164**

2. Agricultural and allied census

No. of Agriculture worker

Sl. No.	Name of the Block	Worker Nos.				Categories No.			
		Agri		Non-agri					
		Male	Female	Male	Female	SC	ST	OBC	General
1	Phek	11775	11993	2012	612	Nil	ST	Nil	Nil
2	Kikruma	11045	14887	1560	428	Nil	ST	Nil	Nil
3	Pfutsero	18808	19493	2514	640	Nil	ST	Nil	Nil
4	Meluri	10369	94855	659	359	Nil	ST	Nil	Nil
5	Sekrezu	12556	12446	1892	821				
Total		**64551**	**68304**	**8637**	**2860**	**Nil**	**ST**	**Nil**	**Nil**

3. Agro-climatic zones

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

S. No	Agro-climatic Zone	Characteristics
1.	Sub tropical Hill Zone (1000-1500m MSL)	High hills to medium hills with steep slope and undulating topography. Soils are rich in organic matter and ranges from sandy loam to clay loam

2.	Sub Alpine temperate zone (1500-3500m MSL)	High hills with steep terrains and deep gorges. Soils ranges are clay to clay loam
3.	Mild tropical Hill zone (200-800m MSL)	Mid hills to low hills with gentle slopes. Soils ranges from sandy loam to clay

4. Agro-ecosystems

Major agro ecological situations (based on soil and topography)

Sl. No	**Agro ecological situation**	**Characteristics**
1	AES-I (500-1000 meters msl)	Foot hills with gentle slope having terraces suitable for paddy cultivation. Soil is basically clay loam to clay
2.	AES-II (1000-1500 meters msl)	Moderate hills with gentle slope have been observed. Soil is loamy in nature.
3.	AES-III (above 1500 meters msl)	Topography is high hills with moderate to steep slopes. Soil is dominantly Sandy loam to clay loam

5. Major and micro-farming systems

Farming systems in the district Phek, Nagaland

A Basis/Criteria for Identifying farming systems:

1. Soils
2. Rainfall
3. Physiography
4. Altitude
5. Irrigation pattern
6. Temperature

B Summary of farming systems

Agro-ecological situation (AES) have been identified based on the criteria defined above and identified AESs have been classified into the homogeneous farming situations for the district Phek, Nagaland. Identified farming situations grouped as Farming systems are being furnished in the following table.

ing System	Soils	Rainfall (cm/annum)	Altitude (M)	Principal Crops/breeds	Important features
system grated Farming m)	Clay loam to clay	150- 170	1500-1800	Forest cover, Paddy, Maize Beans, Pea, Cowpea,	Integration of different components, viz. Forestry,

				Arahar, Nagadal, Cabbage Banana, Pear, Peach, Plum, Garlic, Potato, Buffalo, Cattle and Fish	Cereals, Pulses, Vegetable, Livestock and Fisheries
ilvihortipastural ng system	Sandy loam, to Clay loam	180-200	1500-2000	Forest & Fodder trees like Ficus spp, Bauhinia spp., Legistroma etc., Fodder grasses like Broom grass, Napier etc.Maize Banana, Pear, Peach, Plum, Mandarin, Passion fruit Mithun, Cattle	Integration of forest, fodder crops, fruit trees and Livestock
based farming	Loam	160-180	1000-1600	Maize, Millets, Jobstears, Potato Chillies, Pumpkin Mandarin, Passion fruit Large cardamom Tea,	Replenishing the nitrogen requirement of the crops with Alder trees
+Horti)	Sandy loam to loam	160-180	1000-1600	Jhoom Paddy, Maize, Millets Banana, Papaya, Beans, Cowpea, Chow chow	Slash and burn the vegetation and now jhooming cycle has reduced to 3-6 yrs from 15-25yrs

				Pea, Garlic, Potato, Cabbage	
kheti System	Clay loam to clay	150-180	600-1400	Paddy, Pea, Summer vegetables, Fish	Paddy cum fish farming

C. Agricultural characteristics of each farming System

I. ZABO system (Integrated Farming system)

1. Boundaries of the FS: Zabo literally means "*impounding of water*" also known as "RUZA" is prevalent in Kikruma Development Block of the Phek district.The area surrounded by two rivers "Seidzu" and "Khuzha" is traditionally under this system. In this farming system combination of forest, livestock and fisheries are integrated with well founded conservation base.

2. Soils under the FS: Red and red laterite soil group is predominantly available, which texturally varies from clay to clay loam.

3. Climates under the FS: Rain fall is moderate to high with average rainfall of 150-170 cm per annum. Temperature is moderate with high humidity. Average temperature in winters is about 4-6 ^{0} C and in summers it ranges from 18 - 26^0 C.

4. Physiography under the FS: Moderate hills with gentle slope have been observed.

5. Irrigation facilities under the FS: Construction of water harvesting pond is an important feature of this farming system. The pond generally constructed in middle adjacent to the catchment area. Certain farmers also go for construction of water harvesting pond in lower area where it is being used for fish farming and irrigating to paddy fields. Indigenously bamboo was being used to carry the water from pond to the fields but nowadays pipes are also being commonly used.

6. Major crops and cropping intensity under the FS: Zabo is one of the indigenous farming systems which have combination of forest, agriculture, livestock and fisheries. Trees of forest species like Alder, Oak, *Ficus spp. Albizia spp. Bahunia spp. Pinus spp. Delbergia spp.* Bamboo spp. etc. are commonly taken on the top of the slope. Fruit plants like Banana, Pear, Peach, Plum, Passion fruit are also grown. Maize, Millets and Paddy are the common cereal crops which are being grown in this farming system. Maize is taken on the slope however paddy is taken on terraces and foot hills. Among the pulses Nagadal, Beans, Pea, Cowpea, are commonly grown. Vegetables like Potato, Cabbage, Sweet potato, Chillies etc. are also taken. Livestock is an important component of this system. Buffalo and cattle specifically Thotho are the main livestock, which are taken adjacent to the pond in a confined area. Local

and exotic carp spp. are raised in ponds and common carps and local fishes are taken in paddy fields.

In most of the area mono cropping is practiced but in certain area where the irrigation facilities are available, pulses like pea and vegetables such as potato, cabbage, mustard leaf, sweet potato, chillies etc. are being taken. The overall cropping intensity of the Zabo farming system is about 140%.

7. Major cropping systems under the FS: Mono cropping- Rice, Rice-Pea, Maize +Beans, Maize +Cabbage – Potato, Maize +Beans - Potato

8. Land use pattern under the FS: The land use pattern of the farming system is divided into Forest area, Orchards, Agri-Horti. crops, Livestock and Fishery.

9. Land holding pattern under the FS: Zobo system of farming is mainly practiced by the big and marginal farmers as it is cost intensive. This system is also practiced on community land where the small and marginal farmers are the main stake holder.

10. Populations and Socio-economic characteristics under FS: About 7 % of the total population of the district is engaged in Zabo farming system comprising big and marginal farmers.

11. Adoption pattern for each crop/ breed/other technology under the FS: Zabo is one of the indigenous farming system prevalent in Nagaland and the adoption pattern of the components such as forest, agricultural crops, livestock are traditional whereas improved technology for water harvesting and fish culture is being adopted. Now the resource rich farmers are also using high yielding and hybrid varieties seeds particularly in vegetables.

12. General production constraints for Zabo farming system..

Crops	**Constraints**
Paddy	• Poor nursery raising technique • High seed rate • Low yield of local varieties • Non availability of high yielding/hybrid varieties • Improper weed management • Insect, pest and diseases infestation • No use of organic/inorganic amendments against insect, pest and diseases.
Maize	• Low yield of local varieties • Non availability of high yielding/hybrid varieties • High seed rate • Cob borer infestation • Stem borer infestation • Nutrient deficiency
Arahar	• Low yield of local varieties • Non availability of high yielding varieties • Wilting of seedlings • Inadequate pest and disease management
Peas	• Low yield of local varieties • Non availability of high yielding varieties

	• Powdery mildew occurrence during winter
Sweet potato	• Low yield of local varieties • Non availability of high yielding varieties
Cabbage	• Insect, pest and diseases infestation like cabbage butterfly larvae, aphids, cut worm • No use of organic/inorganic amendments against insect, pest and diseases.
Potato	• Low yield of local varieties • Non availability of high yielding varieties • No seed treatment • Red ant infestation • Late blight disease infestation
Banana	• Poor quality of fruit of local varieties • Non availability of quality planting material of better marketable quality varieties • Pseudostem rot of banana • Sigatoka leaf spot • Pseudostem borer and weevil infestation • Nutrient deficiency
Passion fruit	• Improper training resulting in low yield • Collar rot disease • Infestation of woodiness virus • Bacterial leaf spot • Insect infestation like mite, fruit borer • Nutrient deficiency
Pear	• Non availability of quality planting material • Leaf spot • Poor marketing facility
Peach	• Non availability of quality planting material
Plum	• Non availability of quality planting material
Mithun	• Deforestation and shrinking of forest area • Parasitic infestation • Attack from wild animals • Occurrence of epidemics like FMD
Buffalo	• Poor genetic make up of milk production trait • Epidemics of infectious diseases like FMD • High rate of worm infestation in buffalo calves
Cattle	• Low milk yield in local breed “Thotho” • Poor body weight gain in local breed. • Non availability of better germplasm • Epidemics of infectious diseases like FMD
Fish	• Non availability of quality fingerlings • Occurrence of skin disease • Unawareness about Physico- Chemical parameters of soil and water of fishponds. • Improper Pre stocking measures

II. Agrisilvihortipastural farming system

1. Boundaries of the FS: Agrisilvihortipasture is a traditional farming system where various components of farming like crops and animal husbandry are blended with forest environment to get the maximum output. This farming system is prevalent in all the four sub division i.e. Pfutsero, Chozuba, Phek, and Melluri and is practiced on the hillocks. In this farming system integration of livestock and crops with natural forest cover is followed.

2. Soils under the FS: Sandy loam - loam textured soil is predominantly available.

3. Climates under the FS: Moderate to high with average rainfall of 170-200 cm per annum. Temperature is low with high humidity.

4. Physiography under the FS: This system is practiced on high hills with moderate to steep slopes

5. Irrigation facilities under the FS: No specific irrigation facilities are normally available in this system but the water from the streams is channelized and used for irrigation.

6. Major crops and cropping intensity under the FS: Agrisilvihortipasture is an indigenous system of farming practiced by the local people from time immemorial. In this system, crops and livestock component are taken along with natural forest cover. Maize is major cereal crop grown in the system, however Banana, Mandarin, Passion fruit, Pear, Peach, Plum are the main horticultural crops. In certain pockets cabbage and beans are also being taken as mixed crop with maize. Forest & Fodder trees like Ficus spp, Bauhinia spp., Legistroma etc. and Fodder grasses like Broom grass, Napier and Guinea grass. are also grown with Livestock component like Mithun and Cattle. Cropping intensity in this system is 100%.

7. Major cropping systems under the FS: Mono cropping and mixed cropping system is followed in Agrisilvihortipastural system.

8. Land use pattern under the FS: The land use pattern of the farming system is divided into Forest area which normally being used for grazing of Mithun and cattle. Orchards and Livestock.

9. Land holding pattern under the FS: Agrisilvihortipastural system of farming is mainly practiced by the big farmers. This system is also practiced on village community land.
10. Populations and Socio-economic characteristics under FS: About 15 % of the total population of the district is engaged in Agrisilvihortipastural system. Mainly the resource rich and marginal farmers adopt this system .
11. Adoption pattern for each crop/ breed/other technology under the FS: Agrisilvihortipastural is an indigenous farming system practiced by the local people in the district and the adoption pattern of the components such as forest, agricultural crops, livestock are traditional.
12. General production constraints for Agrisilvihortipastural system

Crops	**Constraints**
Maize	• Low yield of local varieties • Non availability of high yielding/hybrid varieties • High seed rate • Cob borer infestation

	• Nutrient deficiency
Beans	• Low yield of local varieties • Non availability of high yielding varieties
Cabbage	• Insect, pest and diseases infestation • Non availability of organic/biological control agent against insect, pest and diseases. • Poor marketing
Banana	• Poor quality of fruit of local varieties • Non availability of quality planting material of better marketable quality varieties • Pseudostem rot of banana • Sigatoka leaf spot • Pseudostem borer • Nutrient deficiency
Passion fruit	• Improper training resulting in low yield • Collar rot disease • Infestation of woodiness virus • Bacterial leaf spot • Insect infestation like mite, fruit borer • Nutrient deficiency
Mandarin	• Poor nursery raising technique • Poor weed management • Poor insect and disease management • Severe nutrient deficiency • Non availability of high quality planting material
Pear	• Non availability of quality planting material • Leaf spot • Poor marketing facility
Peach	• Non availability of quality planting material • Poor marketing facility
Plum	• Non availability of quality planting material • Poor marketing facility
Mithun	• Deforestation and shrinking of forest area • Parasitic infestation • Attack from wild animals • Occurrence of epidemics like FMD
Cattle	• Low milk yield in local breed “Thotho” • Poor body weight gain in local breed. • Non availability of better germplasm • Epidemics of infectious diseases like FMD

III. Alder based farming system

1. Boundaries of the FS: Alder based farming system is mainly practiced in Pfutsero and Chozuba sub division. In this system crops are grown along with alder trees which supply atmospheric nitrogen to the crop.

2. Soils under the FS: Loam soil is widely available under this system.

3. Climates under the FS: Moderate rainfall of 160-180 cm per annum. Temperature is low with high humidity.

4. Physiography under the FS: Moderate to steep terrain, mid hills to high hills.

5. Irrigation facilities under the FS: No specific irrigation facilities are normally available in this system but the water from the streams are channelized by bamboo and used for irrigation.

6. Major crops and cropping intensity under the FS:
   Maize, Millets, Potato, Sweet potato, Pumpkin, Large cardamom and Tea are grown along with alder trees. Cropping intensity in this system is 110%.

7. Major cropping systems under the FS: Mono cropping system, Mixed cropping system is followed in this system.

8. Land use pattern under the FS: The land use pattern of the farming system comprises of agricultural and horticultural crops integrated with alder trees.

9. Land holding pattern under the FS: Alder based farming system is mainly practiced by the big and marginal farmers. This system is also practiced on community land by the village people.

10. Populations and Socio-economic characteristics under FS: About 6 % of the total population of the district is engaged in Alder based farming system. Alder based farming system is mainly practiced by the big and marginal farmers.

11. Adoption pattern for each crop/ breed/other technology under the FS: Alder based farming system is a primitive farming system practiced by the local people in the district and the adoption pattern of the components are traditional.
12. General production constraints for Alder based farming system.

Crops	**Constraints**
Maize	• High seed rate • Non availability of high yielding/hybrid varieties • Cob borer infestation • Nutrient deficiency
Millets	• Low yield of local varieties • Non availability of high yielding/hybrid varieties • Nutrient deficiency
Potato	• Low yield of local varieties • Non availability of high yielding varieties • Red ant infestation
Sweet potato	• Low yield of local varieties • Non availability of high yielding varieties

Pumpkin	• Low yield of local varieties • Non availability of high yielding varieties • Insect, pest disease infestation
Large cardamom	• High insect , pest and diseases • Deficiency of nutrients
Tea	• Poor weed management in the garden • Heavy insect pest and disease occurrence • Poor nutritional management
Passion fruit	• Improper training system • Collar rot disease • Infestation of woodiness virus • Grease spot on leaf • Bacterial leaf spot • Insect infestation like mite and fruit borer • Nutrient deficiency

IV. Jhum system

1. Boundaries of the FS: Jhum or shifting cultivation which was considered as an promising system of cultivation in olden days, lately due to population pressure on land the jhuming cycle has reduced to 3-5 years from earlier jhuming cycle of 15-25 years. This farming system is prevalent in all the four sub division i.e. Pfutsero, Chozuba, Phek, and Melluri and is practiced on slopes of the hills. It is still the main cultivation practice of the local inhabitant occupying the major area under cultivation. In this system number of crops are grown on the same piece of land at the same time.

2. Soils under the FS: Sandy loam to loam are the predominant textural class of soil present in this system.

3. Climates under the FS: Moderate rainfall of 160-180 cm per annum. Temperature is moderate with high humidity.

4. Physiography under the FS: Jhum cultivation is practiced in low to high hills with moderate to steep terrain.

5. Irrigation facilities under the FS: This system is solely dependent upon rainfall.

6. Major crops and cropping intensity under the FS: Mixed cultivation of various cereal crops like Paddy, Maize, Millets etc., pulses like Beans, Cowpea, Pea, fruits and vegetables like Banana, Papaya, Cabbage, Potato Ginger, Garlic, Turmeric etc. are grown. Cropping intensity of this farming is 120%.

7. Major cropping systems under the FS: Mixed and relay cropping systems are followed in this farming system.

8. Land use pattern under the FS: The land use pattern of the farming system comprises of agricultural and horticultural crops.

9. Land holding pattern under the FS: Jhum cultivation is mainly practiced on community land by small and marginal farmers. However, certain resource rich farmers also go for jhuming.

10. Populations and Socio-economic characteristics under FS: About 35% of the total population of the district is engaged jhum cultivation. Jhum cultivation is mainly practiced on community land by small and marginal farmers

11. Adoption pattern for each crop/ breed/other technology under the FS: Jhum cultivation is a primitive farming system practiced by the local people in the district and state as a whole. The adoption pattern of the various components is traditional and primitive.

12. General production constraints for Jhum system

Crops	Constraints
Paddy	• Poor nursery raising technique • High seed rate • Low yield of local varieties • Non availability of high yielding/hybrid varieties • Insect, pest and diseases infestation • Non availability of organic/biological control agent against insect, pest and diseases.
Maize	• High seed rate • Low yield of local varieties • Non availability of high yielding/hybrid varieties • Cob borer infestation • Nutrient deficiency
Millets	• Low yield of local varieties • Non availability of high yielding/hybrid varieties • Nutrient deficiency • Crop damage by birds
Cabbage	• Insect, pest and diseases infestation • Non availability of organic/biological control agent against insect, pest and diseases. • Poor marketing
Potato	• Low yield of local varieties • Non availability of high yielding varieties • Red ant infestation
Beans	• Low yield of local varieties • Non availability of high yielding varieties
Cowpea	• Low yield of local varieties • Non availability of high yielding varieties
Peas	• Low yield of local varieties • Non availability of high yielding varieties • Powdery mildew occurrence during winter
Banana	• Poor quality of fruit of local varieties • Non availability of quality planting material of better marketable quality varieties • Pseudostem rot of banana • Sigatoka leaf spot • Pseudostem borer • Nutrient deficiency
Papaya	• Low yield of local varieties • Non availability of high yielding varieties • Nutrient deficiency • Incidence of viral diseases
Ginger	• Soft rot disease • Nutrient deficiency

V. Panikheti

1. Boundaries of the FS: Panikheti system is also known as wet land terrace cultivation is an indigenous system of cultivation in the district. This system of cultivation developed by Chakhesang tribe of Phek district, Nagaland and is being practiced in all the four sub division i.e. Pfutsero, Chozuba, Phek, and Melluri on mid and low hills. This is bacically rice based cropping system where paddy is grown on terraces. Bunds and terraces control soil erosion, loss of top soil and nutrients.

2. Soils under the FS: Clay loam to clay soil texture are the predominant textural class of soil present in this system.

3. Climates under the FS: High rainfall of 160-200 cm per annum. Temperature is moderate with high humidity.

4. Physiography under the FS: Foot hills and terraces with low to gentle slope.

5. Irrigation facilities under the FS: Paddy is basically high water requiring crop, though rain water is sufficiently available but where paddy cum fish culture is taken in this system, water is brought from high hills by diverting through main channels/sub channels ensuring 10-15cm water depth. Sometimes bamboo channels are also used to divert/carry water to terraces.

6. Major crops and cropping intensity under the FS: Paddy is the major crop but on bunds colocasia and yams are also cultivated. Fish culture in small water ponds dig out in the middle of terraces is used for rearing of common carps to fetch additional income and water management. This is most significant aspect of panikheti system.

7. Major cropping systems under the FS: Mono cropping is the significance of this system and only rice is taken.

8. Land use pattern under the FS: The land use pattern of the farming system comprises of paddy cultivation and fish farming.

9. Land holding pattern under the FS: Panikheti is mainly practiced by all group of farmers having small to large holdings.

10. Populations and Socio-economic characteristics under FS: About 30 % of the total population of the district is engaged in panikheti. This system is basically followed by farmers of all socioeconomic categories.

11. Adoption pattern for each crop/ breed/other technology under the FS: Panikheti is a traditional farming system developed by Chakhesang tribe in the district and now being practiced by all the tribes. The adoption pattern of the various components is traditional and primitive.

12. General production constraints for Panikheti

Crops	**Constraints**

Paddy	• Poor nursery raising technique • High seed rate • Low yield of local varieties • Non availability of high yielding/hybrid varieties • Insect, pest and diseases infestation • Non availability of organic/biological control agent against insect, pest and diseases.
Fish	• Non availability of quality fingerlings • Occurrence of skin disease

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

Major Production systems are as follows:

a. Maize-cabbage- garlic
b. Maize-cabbage-spring onion
c. Maize-garden pea -French bean
d. Jhoom Rice-Potato
e. Jhoom rice –garlic – French bean
f. Terrace rice – garden pea

7. Major agriculture and allied enterprises

Major agriculture and allied enterprises

a. Potato
b. Cardamom
c. Ginger
d. Passion fruit
e. Pear, peach and plum
f. Piggery
g. Poultry
h. Duckery
i. Cattle
j. Mithun

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

Include

1. Names of villages, focus area, target area etc.
2. Survey methods used (survey by questionnaire, PRA, RRA, etc.)
3. Various techniques used and brief documentation of process involved in applying the techniques used like release transect, resource map, etc.
4. Analysis and conclusions
5. List of location specific problems and brief description of frequency and extent/ intensity/severity of each problem
6. Matrix ranking of problems
7. List of location specific thrust areas
8. List of location specific technology needs for OFT and FLD
9. Matrix ranking of technologies
10. List of location specific training needs