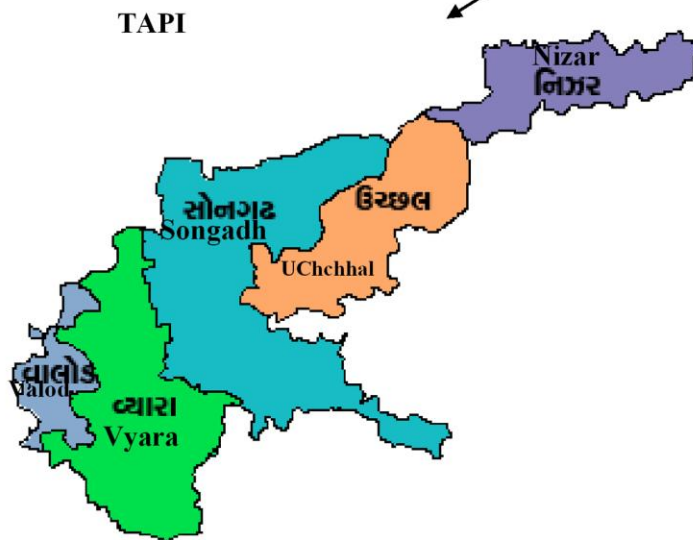
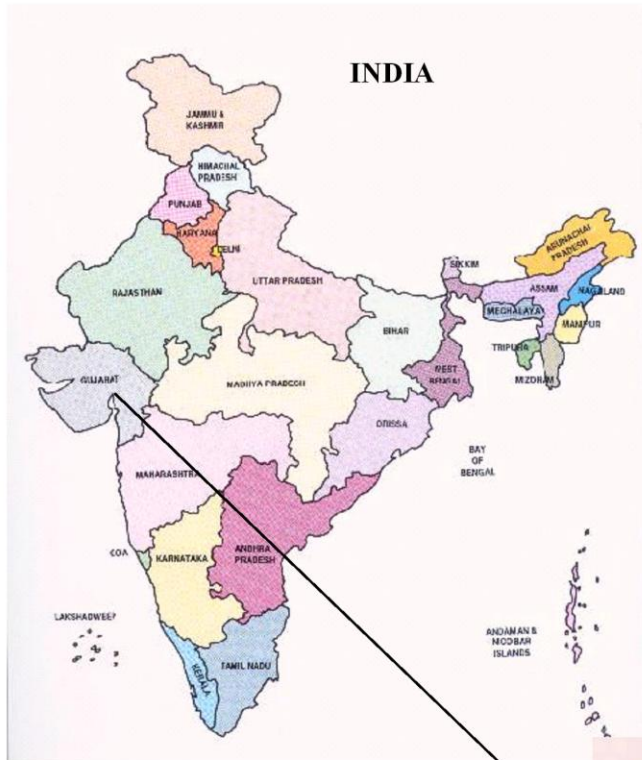


Annual Progress Report

1st April, 2009
to
31st March, 2010



KRISHI VIGYAN KENDRA
REGIONAL RICE RESEARCH STATION
NAVSARI AGRICULTURAL UNIVERSITY
VYARA, DIST. TAPI



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ANNUAL PROGRESS REPORT – 2009-10
(01.04.2009 TO 31.03.2010)

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 Navsari Agricultural University Regional Rice Research Station Vyara, Dist. Tapi, Gujarat-394 650	(02626) 221869	(02626) 220212	kvkvyara@yahoo.co.in

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

Address	Telephone		E mail
	Office	FAX	
Director of Extension Education Navsari Agricultural University Navsari	(02637) 282026	(02637) 282706	deenaunvs@yahoo.co.in

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. Nikulsinh M. Chauhan	-	9427868668	nikulsinh_m@yahoo.in

1.4. Year of sanction: 2004 (As ZARS KVK – 2000)

1.5. Staff Position (as on 1st April 2010)

Sr. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Permanent /Temporary	Category (SC/ST/OBC/Others)
1	Programme Coordinator	Dr. N. M. Chauhan	PC	Extension Education	15600-39100 G.P. - 8000	30320	16/02/2009	Temporary	General
2	Subject Matter Specialist	Dr. A. P. Patel	SMS	Agronomy	15600-39100 G.P. - 6000	21600	10/07/2009	Temporary	ST
3	Subject Matter Specialist	Mr. B. M. Tandel	SMS	Horticulture	15600-39100 G.P. - 6000	23610	03/07/2006	Temporary	OBC
4	Subject Matter Specialist	Dr. J. H. Rathod	SMS	Plant Protection	15600-39100 G.P. - 6000	24810	31/07/2009	Temporary	General
5	Subject Matter Specialist	Mr. C. D. Pandya	SMS	Extension Education	15600-39100 G.P. - 6000	24750	29/07/2009	Temporary	General
6	Subject Matter Specialist	Arti N. Soni	SMS	Home Science	15600-39100 G.P. - 6000	22250	04/04/2008	Temporary	General
7	Subject Matter Specialist	Dr. J. M. Patel	SMS	Veterinary Science	15600-39100 G.P. - 6000	21600	21/01/2008	Temporary	General
8	Programme Assistant	--	Prog. Assi.	--	Vacant	--	--	--	--
9	Computer Programmer	Nisheeta R. Patel	Comp. Prog.	--	Fixed	6000	21/08/2008	Temporary	SC
10	Farm Manager	Mr. V. N. Parmar	Farm Manager	--	Fixed	6000	23/08/2007	Temporary	General
11	Accountant / Superintendent	--	Acct. / Super.	--	Vacant	--	--	--	--
12	Stenographer	Mr. K. R. Parmar	Steno.	--	Fixed	4500	18/08/2008	Temporary	General
13	Driver	Mr. C. I. Patel	Driver	--	Fixed	4500	23/08/2007	Temporary	OBC
14	Driver	--	Driver	--	Vacant	--	--	--	--
15	Supporting staff	--	Supp. Staff	--	Vacant	--	--	--	--
16	Supporting staff	--	Supp. Staff	--	Vacant	--	--	--	--

1.6. Total land with KVK (in ha) :

S. No.	Item	Area (ha)
1.	Under Buildings	--
2.	Under Demonstration Units	--
3.	Under Crops	2.5
4.	Orchard/Agro-forestry	--
5.	Others (specify)	--

1.7. Infrastructural Development:

A) Buildings

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	ICAR	--	--	--	--under process--		
2	Farmers Hostel	--	--	--	--	--	--	--
3	Staff Quarters (6)	ICAR	--	--	--	--under process--		
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
Jeep (Bolero)	2004	4,30,500=00	177160	Working
Tractor	2001	3,31225=00	4172 hrs	Working

C) Equipments & AV aids

Sr.No.	Name of Equipments/ Instruments/ Farm Machineries	No.	Date of Purchase	Price	Present Status
1	2	3	4	5	6
(1)	Furniture (Godrej)				
1	Table T-9	4	30/3/2001	26636	Working
2	Table T-104	1	30/3/2001	8515	Working
3	Chair CH-18C	20	30/3/2001	43300	Working
4	Chair PCH-700 B	1	30/3/2001	8168	Working
5	Chair CH-7 B	4	30/3/2001	5692	Working

Sr.No.	Name of Equipments/ Instruments/ Farm Machineries	No.	Date of Purchase	Price	Present Status
6	Store Well – Glass Door	1	30/3/2001	9259	Working
7	Slotted Angel Racks	4	30/3/2001	4900	Working
(2)	Mahindra Tractor model 575 DI 45 HP & Accessories	1	30/3/2001	3,31,225	Working
(3)	Photo Copier NP 7160 Canon NPG-1	1	31/3/2001	117274	Not working
(4)	Furniture (Godrej)				
1	Table –T- 402	5	27/12/2002	24600	Working
2	Comp. Table C-6	1	27/12/2002	5255	Working
3	Store Well – Glass Door	1	27/12/2002	9330	Working
4	Store Well Plane	2	27/12/2002	16000	Working
5	Chair CHR-7B	15	27/12/2002	22350	Working
6	Chair PCH-5000 2 T	2	27/12/2002	7230	Working
7	Filing Cabinet	1	27/12/2002	7900	Working
(5)	Computer & Peripherals	1	28/12/2002	51850	Working
(6)	3 KVA on line UPS	1	28/12/2002	38000	Not working
(7)	HP Laser Jet 1200 Printer	1	28/12/2002	20600	Not working
(8)	MSXP standard edition with Indian Longwise Proofing tools	1	30/12/2002	6450	Not Working
(9) 1	CD writer	1	28/12/2002	3025	Working
2	HP Scan jet 2300c Scanner	1	28/12/2002	3700	Not Working
(10) 1	Ceramic steel white writing board 4'x6'	1	21/2/2003	9000	Working
2	Ceramic chalk writing board 4'x 6'	1	21/2/2003	9000	Working
(11) 1	Over Head Projector	1	22/3/2003	27690	Working
2	Plastic screen with tripod stand	1	22/3/2003	4500	Working
(12) 1	LG 29 CA Color TV 29"	1	21/3/2003	26990	Working
2	Thomson 5 in 1 VCD player	1	21/3/2003	6990	Working
(13)	P.A. System				
1	Amplifier SSA 250	1	22/3/2003	9400	Working
2	Eco Mixture DMX 40	1	22/3/2003	3249	Working
3	Full Range Speaker SRX 250 D	4	22/3/2003	24472	Working
4	Microphone		22/3/2003		Working
	ALD 101 x LR	1	22/3/2003	1140	Working
	ATP 20 M	1	22/3/2003	489	Working
	WM 201	1	22/3/2003	1615	Working
5	Unit Horn Combination UHC 30 x T	1	22/3/2003	1188	Working
6	Micro Phone Stand		22/3/2003		Working
	DGN	1	22/3/2003	456	Working
	DGT	1	22/3/2003	285	Working
	ATS:5	1	22/3/2003	100	Working
(14)	A.V. Trolley	1	22/3/2003	4132	Working
(15)	Laminated Chart with wooden Frame size 20" x 30"	33	22/3/2003	24420	Working
(16)	Sony Digital Handy cam	1	22/3/2003	32750	Working
1	Power adapter	1	22/3/2003		Working

Sr.No.	Name of Equipments/ Instruments/ Farm Machineries	No.	Date of Purchase	Price	Present Status
2	Battery	1	22/3/2003		Working
3	Remote Control	1	22/3/2003		Working
4	AV Connecting Cable	1	22/3/2003		Working
5	Belt shoulder strap	1	22/3/2003		Working
6	Handy Cam Recording Caset	1	22/3/2003		Working
(17)	Automatic slide Projector	1	22/3/2003	13695	Working
(18)	Portable Generator EXK 2000 AC	1	24/3/2003	38200	Working
(19)	Education Exhibition Panel System	1	25/3/2003	13500	Working
1	News Paper Stand	1	25/3/2003	3500	Working
2	Displayer/Book/ Magazine Stand	1	25/3/2003	3500	Working
3	Notice Writing Board with Acrylic Shutter	1	25/3/2003	4450	Working
(20)	Stainless steal Vessels	23	28/3/2003	19450	Working
(21)	Modem	1	31/3/2003	2020	Working
(22)	Laminated Charts with Plywood Framing size 24"x30"	5	12/3/2004	3000	Working
(23)	Colour Enlargement charts	33	29/3/2004	24420	Working
(24)	Jeep Mahindra & Mahindra Bolero D.I.	1	2/12/2004	430500	Working
(25)	Bolero Acessories		2/12/2004	21650	Working
(27)	Whirlpool freez	1	27/3/2006	15800	Working
(28) 1	Electronic Automatic Kel Pus Microprocessor based eight place macro block digestion system model KES-08L	1	27/3/2006	88120	Working
2	Electronic Kel plus micro processor based Automatic Distillation system model distil EM	1	27/3/2006	142300	Working
(29)	Double still with thermo sensor hr (All glass) cat No 2348	1	27/3/2006	33924	Working
(30)	Nova Rotary shaking machine				
1	(a)Capacity 16 flasks of 250 ml	1	28/3/2006	24500	Working
2	(b)Capacity 25 flasks of 250 ml	1	28/3/2006	29750	Working
3	Nova Hot plate Rectangular model NV-8535 stainless steel				
	(a) Size 12" x 20"	1	28/3/2006	8500	Working
	(b) Size 18" x 24"	1	28/3/2006	11250	Working
4	Nova willy mill stain lese steel camber Size 100 x 50 mm	1	28/3/2006	31900	Working
(31)1	Laboratory Table	4	27/3/2006	34400	Working
2	Racks	6	27/3/2006	9000	Working
3	Stools	12	27/3/2006	5400	Working
4	Steel cupboard storewell	4	27/3/2006	19200	Working
5	Steel cupboard storewel	4	27/3/2006	14000	Working
6	Steel racks	4	27/3/2006	8600	

Sr.No.	Name of Equipments/ Instruments/ Farm Machineries	No.	Date of Purchase	Price	Present Status
7	Partition racks	3	27/3/2006	22500	Working
8	Office chair	4	27/3/2006	4000	Working
(32)	Systronics make				
1	Micro controller based Digital spectrophotometer model -106	1	27/3/2006	26800	Working
2	Systronics make micro controller based flame photometer compressor model-128	1	27/3/2006	35200	Working
3	Systronics make micro controller based PH meter	1	27/3/2006	10900	Working
4	Systronics make micro processor based conductivity meter	1	27/3/2006	12800	Working
(33)	Hot air oven	1	27/3/2006	21200	Working
(34) 1	Chemical Balance	1	27/3/2006	75000	Working
2	CENTRO FIX WATERBATH	1	27/3/2006	10800	Working
3	CENTRO FIX – Muffle furnace	1	27/3/2006	29500	Working
4	Automatic autoclave	1	27/3/2006	21000	Working
(35)	City weigh balance model ST-10 Cap- 10 kg	1	27/3/2006	10640	Working
(36) 1	LG AC-15 ton	1	31/3/2006	23740	Working
2	Micro kjeldahl Assembly	1	31/3/2006	10700	Working
(37)	Burner maker type with stop coke	8	31/3/2006	2000	Working
(38)	Voltas make water cooler	1	31/3/2006	26500	Working
(39) 1	Soft Pin up Board	25	29/11/2007	96250	Working
2	Single Pole Stand	26	29/11/2007	35360	Working
(40)	Microscope for Computer	1	17/3/2008	294028	Working
(41) 1	SDZ – TR – PL – HL Microscope controlled Transformer	1	15/3/2008	209444	Working
2	OP – 150 R Fibre Optic Illumivater	1	15/3/2008		Working
3	GMTV – 33 H High Resolution Coloured CCTV system	1	15/3/2008		Working
(42)	Colony Counter – MSW – 408	1	15/3/2008	5668	Working
(43)	Oven Universal – MSW – 213	1	15/3/2008	65788	Working
(44)	Insect Rating Case	5	17/3/2008	14000	Working
(45)	LG A/C machine 2.0 Ton Split AC with Remote	2	17/3/2008	58680	Working
(46)	LG Refrigeration–280 Lit. Model - 295TMG4	1	25/3/2008	18000	Working
(47)	Phillips Grinder – 1618	2	25/3/2008	6000	Working
(48)	Sony Cyber Shot – DSC – W 90	1	25/3/2008	14800	Working
(49) 1	Pressure Cooker – 8 lit.	1	24/3/2008	4500	Working
2	S/A/S Tope – 17”	1	24/3/2008		Working
3	S/A/S Tope – 21”	1	24/3/2008		Working

Sr.No.	Name of Equipments/ Instruments/ Farm Machineries	No.	Date of Purchase	Price	Present Status
4	S. S. Cover	2	24/3/2008		Working
(50) 1	Insect Display show cases	4	24/3/2008	17420	Working
2	Insect Show cases cabinet	1	24/3/2008		Working
(51) 1	Compaq Computer – 3250 IL	1	25/3/2008	28950	Working
2	MS XP Professional Vista License Copy	1	25/3/2008	6000	Working
(52)	Top Loading Balance – BH 200 H	1	19/3/2008	28120	Working
(53)	Digital Conductivity TDS Meter Model - 307	1	24/3/2008	11648	Working
(54)	Digital PH meter Model - 802	1	24/3/2008	7006	Working
(55)	Distillation Apparatus (J – sil)	1	24/3/2008	15912	Working
(56)	H/P Laser Jet Printer - 1022	1	25/3/2008	10990	Working
(57)	Steel Rack KV-110 78"x36"x15"	5	25/3/2008	9844	Working
(58) 1	Steel Cupboard – 78"x36"x19"	2	23/3/2008	11100	Working
2	Computer Table	1	23/3/2008	3300	Working
3	Computer Chair	2	23/3/2008	5200	Working
(59)	Shaking Incubator – 24 BL	1	25/3/2008	95387	Working
(60)	CentriFuge – R – 24	1	25/3/2008	32025	Working
	Voltage stabilizer 3.0 KVA	1	25/3/2008	6630	
(61)	Double Pan Balance Analytical Weight Box	1 1	24/3/2008	3640	Working
(62)	Gas Cylinder, Regulator, Gas Stove	1	13/3/2008	1930	Working
(63)	B.O.D. Incubator - 270	1	22/3/2008	90534	Working
(64)	KLENZFLO Horizontal laminar clean air work station – 1500c	1	28/3/2008	138320	Working
(65)	Crompton Greaves Fans	4	28/3/2008	6800	Working
(66)	Humidifier (S.S. Body)	1	30/3/2008	11034	Working
(67)	ASPEE Tractamount Bloover fro Intranational	1	30/3/2008	99960	Working
(68)	Panasonic Multifunctional Device Copy/Print/Scan/Fax	1	28/03/2010	14900	Working
(69)	Eco Display Unit Size : 6' x 2'	1	28/03/2010	9625	Working
(70)	DIM System size : 36" x 24"	2	28/03/2010	19250	Working
(71)	Podium	1	28/03/2010	4200	Working
(72)	Podium	1	28/03/2010	4200	Working

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

Sl. No.	Date	Name and Designation of Participants	Salient Recommendations	Action taken
1.	06/07/09	<ol style="list-style-type: none"> 1. Dr. H. C. Pathak, I/C. Vice Chancellor and Director of Research, NAU, Navsari 2. Dr. M. K. Mandape, Zonal Project Director, ZC Unit-6, Jodhpur, Rajasthan 3. Dr. R. B. Patel, Director of Extension Education, NAU, Navsari 4. Shri D. Z. Patel, Joint Director of Agriculture and Deputy Director of Agril. & Horticulture, Surat 5. Shri S. M. Modi, Project Administrator, Integrated Tribal Development Project, Songadh Dist. Tapi 6. Shri R. K. Gavli, Representative of District Agriculture officer, District Panchayat, Vyara 7. Shri P. R. Chaudhari, Deputy Director of Agriculture (Training), FTC, Vyara & A.D.A. (TV), Surat 8. Shri K. K. Bhatt, Representative of Director, District Rural Development Agency, Vyara 9. Shri K. B. Tandel, Assistant Director (Fisheries), Near CRPF Campus, Ukai, Dist. Tapi 10. Shri D. G. Gamit, Divisional Forest Officer, Vyara, Dist. Tapi 11. Shri I. L. Mahyavanshi, Range Forest Officer, Vyara Range, Dist. Tapi 12. Shri K. D. Verma, Representative of Lead Bank Officer, Regional Office, B.O.B., Surat 13. Shri H. N. Mevada, General Manager, District Industrial Centre, Dist. Tapi 14. Dr. H. B. Kharecha, Lokseva Trust, At. Moti Bhamti, Ta. Vansada, Dist. Navsari 15. Shri Dilipbhai Gamit, Farmer Representative, At. 	<ol style="list-style-type: none"> 1. The number of On Farm Testing should be increased.... 2. Impact assessment of mandatory activities of KVK should be made. 3. Prepare and publish FAQs data base for different crops and value added products. 4. Prepare an action plan to popularize the organic farming in the area and organize demonstration on organic farming incorporating all elements of NCF. 5. The number of Vocational trainings pertaining to income generation by farm women should be increased. 6. Efforts should be made to make a seed village by KVK, Vyara. 7. Arrange exposure tour for progressive farmers. 8. The KVK Scientists should be given more exposures for HRD. 9. Efforts should be made to enhance value added products from turmeric and ginger. 10. Find out specific thrust areas and resource inventory of newly formed Tapi district and 	<p>Increased – 4 no.</p> <p>Completed for 3 years Ext. work.</p> <p>Prepared for paddy & Okra</p> <p>Conducted trainings & FLDs on organic farming</p> <p>Already increased</p> <p>2 seed village (Paddy & Tur)</p> <p>-</p> <p>Followed</p> <p>Started value addition</p> <p>followed</p>

	<p>& Po. Gadat, Ta. Vyara, Dist. Tapi</p> <p>16. Smt. Premlataben A. Gavit, Farm Women Representative, At. & Po. Bhitkhurd-1, Ta. Uchhal, Dist. Tapi</p> <p>17. Smt. Induben R. Gamit, Farm Women Representative, At. Po. Kapura, Ta. Vyara, Dist. Tapi</p> <p>18. Dr. H. D. Mehta, Associate Research Scientist, Regional Rice Research Station, NAU, Vyara</p> <p>19. Dr. N. M. Chauhan, Programme Coordinator, KVK, NAU, Vyara</p> <p>20. Shri R. S. Bhamre, Dist. deputy Manager, NABARD, Surat</p> <p>21. Shri N. G. Gamit, Seed Officer, G.S.S.C., Vyara</p> <p>22. Shri T. M. Gamit, Assi. Director of Agri.(Ext.), Songadh, Dist. Tapi</p> <p>23. Shri Bhupendra R. Desai, Progressive Farmer, Valod, Dist. Tapi</p> <p>24. Shri B. J. Saraliya, GNFC Ltd., Vyara</p> <p>25. Shri R. M. Patel, GSFC Ltd., Vyara</p> <p>26. Dr. A. P. Patel, I/c. Programme Coordinator, K.V.K., Navsari</p> <p>27. Shri I. R. Rathva, Extension Officer of Agriculture, Vyara</p> <p>28. Father Fransis Desoza, Mandal, Po. Kikakani, Ta. Songadh</p> <p>29. Shri Rajubhai Jantraniya, Progressive Farmer, Vyara</p> <p>30. Shri B. G. Aahir, Khedut Agro, Buhari, Ta. Valod</p> <p>31. Shri D. G. Gamit, Assistant Conservator of Forest, Vyara</p>	<p>incorporate all of the elements in Action Plan in the form of all four mandates of the KVK.</p>	
--	--	--	--

*** Attach a copy of SAC proceedings along with list of participants :- Annexure - I**

2. DETAILS OF DISTRICT

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

S. No	Farming system/enterprise
1.	Agriculture and Animal Husbandry as well as and Agro forestry
2.	Agriculture and horticulture
3.	Agro-forestry

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

1. Agro-climatic zones

S. No	Agro-climatic Zone	Characteristics
1.	South Gujarat Heavy Rainfall Zone-I	<ul style="list-style-type: none">• It consists of three talukas of Tapi district i.e. Songadh, Vyara and Valod taluka• It has an intensive rainfall over 1500 to 2200 mm per annum• Rain mostly received during month of July-August• The zone has cleyey soil with normal pH and Ec, medium organic carbon and phosphorous and high potash
2.	South Gujarat Rainfall Zone-II	<ul style="list-style-type: none">• It consists of two talukas i.e. Uchchhal and Nizar.• Rainfall of the area varying between 1000 to 1500 mm per annum• This zone has black soil of medium to heavy texture• 75 per cent of the area is rainfed.

2. Agro-ecosystems

Sr. No	Agro ecological situation	Characteristics
1.	Situation I	<ul style="list-style-type: none">• The total geographical area is about 5.57 lack ha., which is 58 per cent of the zone, of which 53 Per cent is under forest• Cultivated area is 15.29 per cent as it is a heavy rainfall situation• 5 per cent area is under doubled crop• Major field crops grown are paddy, minor millets, pulses, sorghum and oilseeds like ground nut and soybean.
2.	Situation III	<ul style="list-style-type: none">• The total geographical area is about 2.22 lack ha., which is 25.21 per cent of the zone, of which 59.3 Per cent is under cultivation• Cultivated area is 1.64 lakh ha.• 14.5 per cent area is under doubled crop. Soil of this situation is deep and fine textured.

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1.	Hilly Area – Light soil	Lateritic and eroded shallow soil with high infiltration rate	130023
2.	Plain area- Heavy Black soil	Heavy Black to medium black with medium to poor drainage. In some area it is water logged and salt affected	208779

2.4. Area, Production and Productivity of major crops cultivated in the district

S. No	Crop	Area (ha)	Production(M.T.)	Yield (kg/ha)
1	RICE IRRI.	106	217	2046
2	RICE UN IRRIGATED	151	164	1084
3	TOTAL KH. RICE	257	381	1482
4	KH. BAJARA	0	0	0
5	KH. JOWER	202	304	1501
6	KH. MAIZE	16	22	1439
7	KH. RAGI	0	0	0
8	OTH. KH. CEREALS	0	0	0
9	TOTAL KH. CEREALS	475	707	1488
10	KH. MUNG	17	7	433
11	KH. MATH	0	0	0
12	KH. UDAD	24	13	555
13	KH. TUR	146	83	568
14	OTH. KH. PULSES	29	15	500
15	TOTAL KH. PULSES	191	105	550
16	TOTAL KH. FOOD GRAIN	666	812	1219
17	IRRIGATED WHEAT	49	122	2503
18	UN IRRIGATED WHEAT	0	0	0
19	TOTAL WHEAT	49	122	2503
20	RABI JOWAR	41	38	927
21	TOTAL JOWAR	243	342	1407
22	OTH. RABI CEREALS	1	1	1100
23	TOTAL RABI CEREAL	91	161	1769
24	GRAM	17	24	1399
25	OTH. RABI PULSES	9	7	750
26	TOTAL RABI PULSES	26	31	1192
27	TOTAL RABI FOODGRAIN	117	192	1641
28	SUMMER BAJARA	0	0	0
29	TOTAL BAJARA	0	0	0
30	SUMMER RICE	7	15	2248
31	TOTAL RICE	264	396	1500
32	TOTAL CEREALS	573	883	1541
33	TOTAL PULSES	217	136	627
34	TOTAL FOOD GRAIN	790	1019	1290
35	KH.GROUNDNUT	29	49	1681
36	SUM. GROUNDNUT	59	127	2169
37	TOTAL GROUNDNUT	88	176	2000
38	SESAMUM	0	0	0
39	CASTOR	2	4	1963

40	RAPE & MUSTARD	0	0	0
41	TOTAL OIL SEED	90	180	2000
42	TOBACCO	0	0	0
43	SUGARCANE	195	1420	7275
44	IRRI. COTTON (LINT)	19	69	603
45	UN IRRI. COTTON (LINT)	31	38	214
46	TOTAL COTTON (LINT)	50	107	364
47	CUMIN	0	0	0
48	FENNEL	0	0	0
49	ISABGUL	0	0	0
50	ONION	6	155	27210
51	GARLIC	0	0	0
52	POTATO	0	0	0
53	CHILLI ES	1	1	980
54	GUAR SEED	0	0	0

* sources. District Agricultural Officer, Tapi District

2.5. Weather data

Month	Rainfall (mm)	Temperature ° C		Relative Humidity (%)
		Maximum	Minimum	
April-09	--	35.6	20.3	73
May-09	--	37.1	21.3	73
June-09	9.0	35.7	20.5	76
July-09	680.0	33.5	19.4	96
August-09	379.0	32.1	19.2	93
September-09	206.0	31.6	20.3	86
October-09	75.0	31.8	20.2	82
November-09	37.0	30.7	20.0	82
December-09	--	30.9	19.4	74
January-10	--	31.0	18.8	69
February-10	--	31.1	18.8	65
March-10	--	34.0	20.1	58

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

Category	Population	Production ('000 tones)	Productivity (kg/day)
Cattle			
<i>Crossbred</i>	68,650	74.87	6.58
<i>Indigenous</i>	2,18,400	99.00	2.99
Buffalo	2,35,000	271.03	3.64
Sheep	3,500	5 M.tone(wool)	1.33 wool/sheep
Goats	1,04,100	7.95	0.253
Pigs	24,000	585.9 meat	-
Rabbits	1000	-	-
Poultry			
<i>Desi</i>	5,55,700	244.31 lakh eggs	0.3198 (no.)
<i>Improved</i>	2,22,200	530.99 lakh eggs	0.8085 (no.)
Donkey	1143	-	-

* Source: 24th survey report on estimates & major livestock products for the years 2006-07 Guj. State, Directorate of Animal Husbandry, Gandhinagar

2.6 Details of Operational area / Villages (2009-10)

Sr.No.	Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1.	Vyara	Mirpur	Mirpur	Paddy, Groundnut, Gram, Vegetable, Sorghum	<ul style="list-style-type: none"> ▪ Productivity of major crops is very low ▪ Majority of the area is un-irrigated ▪ No scope for other crops due to erratic heavy rainfall ▪ Lack of technology knowledge in farmers ▪ Poor food grain storage practices ▪ Inadequate intake of fruits & vegetables ▪ Poor economic condition ▪ Poor livestock management & disease management 	<ul style="list-style-type: none"> ▪ Crop production technology ▪ IPM in field crops and vegetables ▪ Storage of fruit grains ▪ Health & nutrition for vulnerable groups ▪ Introduction of soybean crop to replace drilled paddy ▪ Livestock management ▪ Kitchen gardening ▪ Income generating activities ▪ Crop diversification
2.	Vyara	Vanskui	Vanskui	Paddy, Sugarcane, Groundnut, Vegetables	<ul style="list-style-type: none"> ▪ Lack of technological knowledge among farmers ▪ Poor drainage of soil ▪ Adoption level of farmers is very low ▪ Lack of Knowledge about scientific method of fruit & vegetable preservation ▪ Low milk production ▪ Lack of knowledge about inter cropping ▪ High mortality rate in calf 	<ul style="list-style-type: none"> ▪ IPM in field crops ▪ Land configuration ▪ High value horticulture crop cultivation ▪ Short duration vegetable crops ▪ Milch animal management ▪ Calf rearing ▪ Fruits & vegetable preservation ▪ Practices of inter crops in sugarcane

Sr.No.	Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
3.	Songadh	Ghodchit	Ghodchit	Paddy, Pigeon pea, Soybean, Sorghum, Sugarcane, Gram, Groundnut	<ul style="list-style-type: none"> ▪ Low awareness about Agriculture and Animal Husbandry ▪ Fear in adoption of new technology ▪ Lack of guidance about new agricultural technology ▪ Poor animal management ▪ Equipments (Oil-engine) for irrigation is very less ▪ Poor food grain storage practices ▪ Lack of awareness about Health & Nutrition 	<ul style="list-style-type: none"> ▪ Organic farming ▪ Introduction of soybean crop to replace drilled paddy ▪ Dry land horticulture ▪ Advanced irrigation methods ▪ Vermi – composting ▪ Balanced diet for animal ▪ Care of milch animal ▪ Kitchen gardening ▪ Replacing the paddy with vegetable in well drained soil ▪ Increase area under vegetable ▪ Food grain storage ▪ Health & Nutrition for pregnant & lactating mother & children ▪ Increase area under drip irrigation
4.	Songadh	Nishana (Amji)	Nishana (Amji)	Paddy, Pigeon pea, Sorghum, Groundnut, Watermelon and Brinjal	<ul style="list-style-type: none"> ▪ Low irrigation facility ▪ Erratic heavy rainfall ▪ Majority of area has light soil with undulated land ▪ Low technological level among farmers ▪ Poor economic status ▪ Poor food grain storage ▪ Lack of awareness about health & nutrition 	<ul style="list-style-type: none"> ▪ Increase area under drip irrigation ▪ Low-cost green house ▪ Storage of food grains ▪ High-value horticultural crop ▪ Increase area under pulses and oil seed crops in un-irrigated area ▪ Crop production technology ▪ Health and nutrition for vulnerable groups ▪ Kitchen gardening

Sr.No.	Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
						<ul style="list-style-type: none"> ▪ Income generation activities
5.	Uchchhal	Bhadbhunja	Bhadbhunja	Paddy, Gram, Pigeon pea, Sorghum, Vegetable, Udad, Maize	<ul style="list-style-type: none"> ▪ Lack of knowledge about scientific package of practices of different crops ▪ Lack of awareness about insects and pests & diseases ▪ Lack of knowledge about soil analysis ▪ Lack of knowledge about balanced nutritional diet ▪ Lack of knowledge about fruits & vegetable preservation ▪ Inadequate intake of fruits & vegetables ▪ Disease management 	<ul style="list-style-type: none"> ▪ Introduction of soybean crop to replace drilled paddy ▪ Crop production technology ▪ Awareness about insects, pests and diseases ▪ Short duration vegetable cultivation if Arid horticulture development ▪ Gobar gas plant ▪ Vermi composting ▪ Compost making ▪ Kitchen gardening ▪ Bucket drip ▪ Increase area under oil seed and pulse crops ▪ Fruit & vegetable preservation ▪ Balanced diet from locally available food material ▪ Give demonstration of silage and urea treatment ▪ Training on vaccination and de-worming
6.	Uchchhal	Selud	Selud	Paddy, Pigeon pea, Sorghum, Gram, Maize, Groundnut	<ul style="list-style-type: none"> ▪ No facilities for irrigation after October ▪ Soil of this area is very light ▪ Uneven distribution of rainfall ▪ Socio-economic condition is very poor 	<ul style="list-style-type: none"> ▪ Increase area under Soybean ▪ Low cost production technology and drip irrigation ▪ Income generation activities and kitchen gardening ▪ Livestock management

Sr.No.	Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
					<ul style="list-style-type: none"> ▪ No knowledge of scientific agricultural production technology and animal husbandry ▪ Youth club is not active ▪ Poor livestock management ▪ Lack in dietary pattern of pregnant & nursing mother and children ▪ Lack of awareness about health & nutrition ▪ High mortality in calf 	<ul style="list-style-type: none"> ▪ Disease management ▪ Initiating youth club activities ▪ Women and child care ▪ Low cost green house ▪ Calf rearing
7.	Valod	Kanjod	Kanjod	Paddy, Sugarcane, Groundnut, Okra	<ul style="list-style-type: none"> ▪ Low production in field crops ▪ Lack of knowledge about scientific production technology ▪ High doses of insecticides ▪ Youth club is not active ▪ Poor facilities of rural bank ▪ Low productivity of okra ▪ Lack of knowledge about off season cultivation of vegetable. 	<ul style="list-style-type: none"> ▪ Crop production technology ▪ Increase area under vegetable crops ▪ Increase area under oil seed crops ▪ Drip irrigation ▪ Initiating youth club activities ▪ Value addition ▪ INM in vegetable ▪ Off season cultivation
8.	Valod	Degama	Degama	Sugarcane, Paddy, Groundnut, Vegetable	<ul style="list-style-type: none"> ▪ Lack of technological knowledge about crop production technology ▪ Lack of knowledge about fruits & vegetable preservation ▪ Level of adoption in field crops & vegetables are very low ▪ SHGs is not active 	<ul style="list-style-type: none"> ▪ Crop production technology ▪ Value addition ▪ Income generating activities ▪ Activation of SHGs ▪ IPM in field crops & vegetables ▪ INM in vegetables & sugarcane

Sr.No.	Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
					<ul style="list-style-type: none"> ▪ No cooperative society ▪ Lack of knowledge about insect & pest ▪ Lack of knowledge about Sugarcane & vegetable 	
9.	Nizar	Sarvala	Sarvala	Cotton, Gram, Wheat, Sorghum, Soyabean, Papaya, Banana	<ul style="list-style-type: none"> ▪ High cost of cultivation ▪ Information centre is far away from the village ▪ Poor marketing ▪ Lack of technological knowledge about crop production technology ▪ Lack of knowledge regarding IPM ▪ Highly dependent on Private Traders for agricultural information ▪ Weed management in black soil is a big problem ▪ High production cost due-to lift irrigation 	<ul style="list-style-type: none"> ▪ Crop production technology ▪ IPM in cotton ▪ Increase area under papaya crop ▪ Popularize maize crop ▪ Introduction of chemical weed control ▪ Value addition in soyabean and papaya
10.	Nizar	Mubarakpur	Mubarakpur	Cotton, Papaya, Banana, Wheat, Gram, Soybean, Castor, Sorghum	<ul style="list-style-type: none"> ▪ High cost of cultivation in field crops ▪ Poor marketing ▪ Lack of availability of inputs ▪ Poor grain storage practices ▪ Lack of knowledge about insect & pest in Cotton ▪ Poor Livestock management 	<ul style="list-style-type: none"> ▪ Crop production technology ▪ IPM in Cotton ▪ Value addition ▪ Marketing management ▪ Food grain storage ▪ Livestock management

2.7 Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy, Sorghum, Groundnut, Vegetables, Sugarcane, Oilseed crops & pulses	Crop production management (ICM)
Drumstick, Custard apple	Dry land horticulture
Vegetables, Soybean, Groundnut, Gram	Organic farming
Paddy, Sugarcane, Cotton, Groundnut	Integrated pest management
Paddy, Sorghum, Sugarcane, Cotton, Groundnut, Vegetables	Integrated nutrient management
Green house technology, Drip irrigation, High value crops	High tech horticulture
Soybean, Sorghum, Pigeon pea	Soil and Water conservation
Sugarcane, Paddy, Vegetables, Maize	Water management
Low cost green house	Low cost green house
Formation of Self Help Groups	Women empowerment
Sewing & Preservation	Self employment to farm women and rural youth
Fruits, Vegetables, Cereals & pulses	Value addition
Dairy management	Management of milch animals
Health & Nutrition	Health & nutrition for vulnerable groups.
Soybean & Vegetables	Introduction of Soybean & Vegetables instead of drilled paddy (Crop diversification)
Okra, Tomato, Watermelon	Off-season cultivation

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2009-10

OFT (Technology Assessment and Refinement)				FLD (Oilseeds, Pulses, Cotton, Other Crops/Enterprises)			
1				2			
Number of OFTs		Number of Farmers		Number of FLDs (ha)		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
4	4	34	34	40	40	40 ha	127

3.B. Abstract of interventions undertaken

Sr. 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	Crop production management	Paddy Ground nut Sugarcane Cotton Soybean Gram Pigeon pea	Use of local variety High seed rate, Imbalance use of fertilizers No use of bio fertilizer	--	Varietal demonstration Nutrient management Use of biofertilizers	Scientific Cultivation of major crops	Scientific cultivation of sugarcane and oilseed crops	Field days, khedut shibirs, News paper coverage, film show Radio talk Exhibitions etc.	Seeds of improved varieties paddy, ground nut, soybean Gram Pigeon pea etc
2	Dry Land Horticulture	Drum stick Custard apple Ber, guava Vegetables	Due to rain fed area, and inadequate irrigation facility cultivated area under fruits and vegetable is very less and per capita consumption is	--	Low cost green house Vadi yojna	Arid horticulture development in rain fed area	--	Field days, khedut shibirs, News paper coverage, film show Exhibitions etc.	Seeds of different vegetables and planting material of mango, drum stick and custard apple

Sr. 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.
			also less						
3	Organic farming	Vegetables, Groundnut, Gram, Soybean	High use of chemicals	--	--	Training on vermicompost	--	khedut shibirs, News paper coverage, film show Exhibitions etc Vermi-compost demonstrations	--
4	Integrated Pest Management	Brinjal, Okra, Cotton, Mango cucurbits	Farmers are unable to manage disease and insect pest eventhough frequent application of insecticides at higher doses	--	IPM of Brinjal fruit and shoot borer IPM of okra fruit and shoot borer IPM in cotton Integrated management of fruit flies in mango and cucurbits	IPM in vegetables IPM in cotton Management of fruit flies	IPM in Vegetables	Field days, khedut shibirs, News paper coverage, film show Exhibitions etc.	Pheromone traps, neem products, Microbial products Methyl eugenol traps
5	Integrated Nutrient Management	Brinjal, Okra, Cotton	Imbalance use of fertilizers farmers are unable to harvest good crop	--	INM in Brinjal INM in Okra Nutrient management in Cotton	INM in vegetables & Cotton	INM in vegetables & Cotton	Field days, khedut shibirs, News paper coverage, film show , etc.	Bio compost & Chemical, Fertilizers, Potassium Nitrate
6	High tech Horticulture	Green house technology, Drip irrigation,	Due to lack of technological knowledge farmers are	--	--	Green house technology	--	khedut shibirs, News paper coverage, film show	--

Sr. 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.
		High value crops	unable to get good returns						
7	Soil & water conservation and water management	Pigeon pea, Ground nut, Gram	Heavy rainfall and water logging cause high mortality of plants	Land configuration in pigeon pea	Growing ground nut and gram on raised bed	Land configuration in field crops	--	Field days, khedut shibirs, News paper coverage, film show Exhibitions etc.	Seeds, ground nut, Gram , pigeon pea and bio-fertilizer, saplings
8	Low Cost Green House	Major crops	Poor economic condition of farmers	--	--	Low cost green house	--	khedut shibirs, News paper coverage, film show Exhibitions etc	--
9	Women empowerment	Formation of Self Help Groups	Poor socio-economic condition of farm women	--	Kitchen Gardening	Health & Nutrition Fruits & Vegetable preservation, SHG formation, Income generation activities	--	khedut shibirs, News paper coverage, film show, Mahila Shibir, Pashupalan shibir	--
10	Self employment to Rural youth and farm women	Mushroom Value addition & Sewing	Poor economic condition of farmers	--	--	Vocational training on sewing work, Value addition	--	News paper coverage, film show, Method of demonstration	Cloth sewing material

Sr. 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.
11	Value addition	Fruits, Vegetables, Cereals & Pulses	Low price of the products	--	--	Training of Value Addition	--	Khedut shibir, News Paper Coverage, Method Demonstration	--
12.	Management of Milch animals	management of dairy animal	Poor management of dairy animals	--	--	Daily requirement of Nutrition in milch animal. Scientifically calf rearing	--	khedut shibirs, News paper coverage, film show Demonstration units on campus	--
13.	Health & Nutrition for Vulnerable groups	- Pregnant and Lactating women, Infant and children	Malnutrition	--	Kitchen Gardening	Health & Nutrition, Kitchen Gardening, Nutritional deficiencies& its management, Balance Diet from locally available food material	--	Mahila Shibir, News Paper coverage, Field Day, SHG Meeting, Film Show	Seeds & Seedling of vegetables
14.	Crop Diversification	Soybean and Vegetables	Low yield of drilled paddy	--	--	Scientific cultivation of Soybean & Vegetables	--	Khedut Shibir, News paper Coverage, Field Day, Film Show, Popular	--

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

A. Technology Assessment

Trial 1

- 1. Title** : Refinement of Sowing time in okra
- 2. Problem diagnose/defined** : Low yield, growing during off season (rabi)
- 3. Details of technologies selected for assessment /refinement** : T1. Date of sowing 15th November (Farmers practices)
T2. Date of sowing 15th October
T3. Date of sowing 30th October
- 4. Source of technology** : Main Vegetable Research Station, Anand
- 5. Production system thematic area** : Paddy – Okra base cropping system, Time of Sowing
- 6. Thematic area** : Integrated crop management
- 7. Performance of the Technology with performance indicators** : -
- 8. Final recommendation for micro level situation** : Farmers of Tapi district should grow okra in month of 15th October. It is the best time for higher yield
- 9. Constraints identified and feedback for research** : Research on fertilizer management & spacing in hybrid okra.
- 10. Process of farmers participation and their reaction** : Farmers appreciate the technology & ready to adopt.

:

11). Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Data on the parameter					Results of assess- ment	Feedback from the farmer
						No. of branches/ main stem	No. nodules / main stem	No. of fruit / plant	Yield / plant (gm)	Yield / kg/ha		
1	2	3	4	5	6	7					8	9
Okra	Irrigated	Low yield growing during rabi season	Refinement of sowing time in okra	6	T1. Date of sowing at 15 th Nov. (Farmers practices)	0.23	8.03	8.5	84.5	9388	15 th Oct. sowing of okra gave higher yield	Selection of early maturing variety for 15 th October okra sowing which got better income
					T2. Date of sowing at 15 th Oct.	2.06	18.0	22.2	221.7	24632		
					T3. Date of sowing at 30 th Oct.	0.9	12.87	14.6	145.9	16210		

* No. of farmers

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
10	11	12	13
1. Date of sowing at 15 th October	24.632	247750	5.1
2. Date of sowing at 15 th November (Farmers practices)	9.388	60418	2.06

*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 2

- 1. Title** : Varietal evaluation of Groundnut
- 2. Problem diagnose/defined** : Low productivity of nondescript and old groundnut varieties grown in summer season of Tapi district.
- 3. Details of technologies selected for assessment /refinement** : T1. J-11 (Farmers practices)
T2. GG-20
T3. GG-2
T4. GG-6
T5. TG-37A
- 4. Season** : Rabi-Summer – 2009-10
- 5. Source of technology** : NRCG, Junagadh
- 6. Production system thematic area** : Paddy groundnut base cropping system
- 7. Thematic area** : Integrated crop management
- 8. Performance of the Technology with performance indicators** : Result indicated that variety GG-6 recorded higher yield (2359 kg / ha), No. of pod per plant (22.82 g/plant), wt. of dry pod per plant (20.72 g/plant) followed by TG-37 A, GG-2, J-11 and GG-20 respectively.
- 9. Final recommendation for micro level situation** : Groundnut variety GG-6 may be grown in place of variety TG-37A, GG-2, G-20, J-11 in summer season of Tapi district.
- 10. Constraints identified and feedback for research** : Developed suitable variety of late rabi season for this region.
Developed dual purpose (fodder+kernal) variety.
- 11. Process of farmers participation and their reaction** : Farmers are ready to adopt this variety

11). Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Data on the parameter				Results of assessment	Feedback from the farmer
						No. of branches/ plants	No. of pods / plants	wt. of dry pods/plant (g/plant)	Dry pod yield kg/ha		
1	2	3	4	5	6	7				8	9
Ground- nut	Irrigated	Low productivity of old groundnut varieties	Varietal evaluation	3	T1. J-11	5.35	16.50	13.76	1240	Among five variety Cv.GG-6 gave higher yield followed by TG 37A than other Groundnut variety	Groundnut cv. GG-6 have more number of pod than older one & also get higher yield than other variety.
					T2. GG-2	4	14.40	13.84	1724		
					T3. GG-20	6.20	6.24	8.0	961		
					T4. GG-6	5.48	22.82	20.72	2359		
					T5. TG -37A	4.76	9.47	10.71	21429		

* No. of farmers

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
10	11	12	13
J-11	1240	21080	1.45
GG-2	1729	34480	2.40
GG-20	961	17298	1.19
GG-6	2359	51898	3.58
TG-37A	2142	44982	3.10

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

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

B. Technology Refinement

Trial 1

- 1. Title** : Land configuration in Pigeon pea
- 2. Problem diagnose/defined** : Low yield, High rainfall, Poor plant population
- 3. Details of technologies selected for assessment /refinement** : T1 Flat bed sowing (Farmers practices)
T2 Sowing on raised bed / broad bed furrow
T3 Ridge and furrow
- 4. Season** : Kharif - 2009
- 5. Source of technology** : Research scientist, Pulse crop, NAU, Navsari
- 6. Production system thematic area** : Drill Paddy + pigeon pea cropping system
- 7. Thematic area** : Land configuration (ICM)
- 8. Performance of the Technology with performance indicators** : The refined technology ridges and furrow sowing of pigeon pea had more no. of branches per plant (14.70/plant) and no. of pods per plant (586.26/plant) at harvest and higher yield (1415 kg/ha) as compared to other treatment of land configuration.
- 9. Final recommendation for micro level situation** : Ridges and furrow system found better for higher pigeon pea yield.
- 10. Constraints identified and feedback for research** : Developed resistant variety for Tur against pod fly.
- 11. Process of farmers participation and their reaction** : Appreciate the technology and ready to adopt ridge and furrow system

11). Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology refined	Parameters	Data on the parameter				Results of refinem- ent	Feedback from the farmer
							No. of branches/ plants	No. of pods / plants	Seed wt./plant (dry) gm	seed yield / ha (kg/ha)		
1	2	3	4	5	6	7	8				9	10
Pigeon pea	Irrigated	Low yield, high rain fall, poor plant population	Land configuration in pigeon pea	5	T1. Flat bed sowing - Farmer practices	--	9.8	511.37	28.10	1024	Ridges & furrow method of sowing gave good yield	It is difficult to prepare raised bed so adoption of ridges & furrow is better
					T2. Raised bed	--	13.40	534.67	29.70	1120		
					T3. Ridges & furrow	--	14.70	586.26	36.80	1415		

* No. of farmers

Technology Refined	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
12	13	14	15
Flat bed sowing	1024	25600	3.14
Raised Bed	1120	28000	3.44
Ridge & furrow	1415	35375	4.34

B. Technology Refinement

Trial 1

- | | | |
|---|---|---|
| 1. Title | : | Low milk production of Cow. (New) |
| 2. Problem diagnose/defined | : | 1. Low Milk Production
2. Lack of knowledge about urea treatment.
3. Poor management.
4. Poor knowledge of health & hygiene.
5. Lack of knowledge about feeding management. |
| 3. Details of technologies selected for assessment /refinement | : | 1. Farmers practice (Paddy straw without urea treatment)
2. Paddy straw with urea treatment
3. Paddy straw with urea treatment + Mineral mixture |
| 4. Season | : | 2009-10 |
| 5. Source of technology | : | -- |
| 6. Production system thematic area | : | Management of Milch Animal |
| 7. Thematic area | : | Milk Production |
| 8. Performance of the Technology with performance indicators | : | |
| 9. Final recommendation for micro level situation | : | |
| 10. Constraints identified and feedback for research | : | Under Process |
| 11. Process of farmers participation and their reaction | : | |

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

Sr. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Soybean	INM	Balance use of fertilizer, manure & Bio fertilizer.	FLDs	4	28	10
2	Pigeon pea	New variety Land Configuration	Performance of improved variety.	FLDs	3	24	5
3	Caster	New Variety	Performance of improved variety & new crop introduced.	FLDs	10	14	5
4	Cotton	KNO3	INM	FLDs	2	10	10 acre (4 ha)
Paddy New Variety Drilled							
5	Paddy(GR-9)	New Variety	New Variety	Other FLDs	5	20	5
6	Paddy(GR-7)	New Variety	New Variety	Other FLDs	4	20	5
7	Paddy (G.M.)	G.M. before planting	G.M. + Before Planting	Other FLDs	4	14	5
8	Paddy – SRI	SRI	SRI	Oher FLDs	3	14	4
9	Sorghum	New Variety	Introduce New variety	Other FLDs	5	22	5
10	Gram	Land Configuration	- Use of Bio-fertilizer - Land configuration	FLDs	3	24	5
11	Groundnut	ICM New Variety	- Land Configuration - Seed Treatment - Use of Bio-fertilizer	FLDs	4	27	10
12	Brinjal	IPM	Management of Brinjal fruit &	FLDs	3	12	3

			Shoot borer				
13	Okra	IPM	Management of Okra fruit & Shoot borer				
14	Cucurbits	IPM	Management of fruits fly	FLDs	2	10	2
15	Mango	IPM	Management of fruits fly	FLDs	4	10	5

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

b. **Details of FLDs implemented during 2009-10 (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	
Oilseed										
1	Groundnut	ICM	New Variety	Rabi-09 Summer-10	10	10	27	--	27	--
2	Soybean	INM	INM Balance use of fertilizer manure & bio-fertilizer	Kharif-09	10	10	28	--	28	--
3	Castor	New Variety	New Variety	Kharif-09	5	5	14	--	14	--
Cereal crops										
1	Paddy Drilled	New Variety	New Variety	Kharif-09	5	5				--
2	GR-7	New Variety	New Variety	Kharif-09	5	5	20	--	20	--
3	Paddy + G.M.	G.M.	G.M. before T. Planting	Kharif-09	5	5	13	1	14	--
4	Paddy	SRI	SRI	Kharif-09	--	--	13	1	14	--
5	Sorghum	New Variety	New Variety	Kharif-09	--	5	22	--	22	--
Pulses										
1	Pigeon Pea	New Variety	Performance of New Variety	Kharif-09	5	5	24	--	24	--
2	Gram	Land Configuration	Use of Bio fertilizer Land Use Configuration	Rabi-09-10	5	5	24	--	24	--

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	
Cotton										
1	Cotton	KNO3	INM	Kharif-09	--	10 acre	--	10	10	--
Horticultural Crops										
1	Okra	IPM	Management of Okra fruit & shoot borer	Rabi-09	3	3	12	--	12	--
2	Brinjal	IPM	Management of Brinjal fruit & shoot borer	Rabi-09	3	3	12	--	12	--
3	Cucurbits	IPM	Integrated pest management.	Summer-09	5	5	20	--	20	--
4	Cucurbits	IPM	Management of Fruit fly	Summer-10	2	2	10	--	10	--
5	Mango	IPM	Integrated pest management.	Summer-09	5	5	10	--	10	--
6	Mango	IPM	Management of Fruit fly	Summer-10	5	5	10	--	10	--

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					
Oilseed											
Groundnut	Rabi-Summer-09-10	Irrigated	Light Soil Medium Black		M	H	Paddy	8 th Jan. to 28 th Jan., 2010	5 th May to 27 th May, 2010	1386 mm	--
Soybean	Kharif-09	Rainfed	Light Soil High Shallow	L	M	H	Fallow	25 th June to 3 rd July, 2009	2 nd Oct. to 25 th Oct., 2009	1386 mm	--
Castor	Kharif-09	Irrigated	Medium Black	L	M	H	Fallow	6 th Sep. to 30 th Sep., 2009	13 th March to 4 th Apr. 2010	1386 mm	--

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					
Cereal Crops											
Paddy Drilled	Kharif-09	Rainfed	Light Soil Shallow	L	M	H	Fallow	25 th June to 3 rd July, 2009	15 th Oct. to 21 st Oct., 2009	1386 mm	--
GR-7	Kharif-09	Irrigated	Medium Black	L	M	H	Fallow	15 th June to 21 st June, 2009	4 th Nov. to 16 th Nov., 2009	1386 mm	--
Paddy + G.M.	Kharif-09	Irrigated	Medium Black	L	M	H	Okra Sugarcane Green Gram	6 th June to 21 st June, 2009	10 th Nov. to 28 th Nov., 2009	1386 mm	--
Paddy – SRI	Kharif-09	Irrigated	Medium Black	L	M	H		6 th June to 21 st June, 2009	10 th Nov. to 28 th Nov., 2009	1386 mm	--
Sorghum	Kharif-09	Rainfed	Light Soil Medium Black	L	M	H	Fallow	3 rd July to 18 th July, 2009	17 th March to 2 nd Apr., 2010	1386 mm	--
Pulses											
Pigeon Pea	Kharif-09	Irrigated	High soil Medium Black	L	M	H	Fallow	24 th June to 3 rd July, 2009	2 nd Feb. to 25 th Feb., 2010	1386 mm	--
Gram	Rabi-09	Irrigated	Light Soil Medium Black	L	H	H	Paddy	5 th Nov. to 21 st Nov., 2009	17 th March to 2 nd Apr., 2010	1386 mm	--
Cotton											
Cotton	Kharif-09	Irrigated	Black Cotton	M	M	H	Fallow	28 th May to 7 th June, 2009	25 th Nov. to 3 rd Dec., 2009	1386 mm	--
Horticultural Crops											
Okra	Rabi-09	Irrigated	Light, Light shallow & medium black soil	L	M	H	Paddy	5 th Nov. to 15 th Nov., 2009	10 th March to 30 th March 2010	--	--

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					
Brinjal	Rabi-09	Irrigated	Light shallow & medium black	L	M	H	Paddy	2 th Nov. to 10 th Nov., 2009	13 th May to 25 th May 2010	--	--
Cucurbits	Summer-09	Irrigated	Light soil Medium black	L	M	H	Paddy	1 st jan. to 16 th January, 2009	16 th April to 29 th April, 2009	--	--
Cucurbits	Summer-10	Irrigated	Light shallow & medium black	L	M	H	Paddy	5 th Jan. to 20 th Jan., 2010	20 th Apr. to 30 th Apr., 2010	--	--
Mango	Summer-09	Irrigated	Light soil Medium black	L	M	H	--	12 th April 2009	--	--	--
Mango	Summer-10	Irrigated	Light shallow & medium black	L	M	H	--	15 th Apr. 2010	--	--	--

Performance of FLD

Sr. 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
Oilseed crops												
1	Groundnut	New Variety	GG-6	27	10	32.5	24.50	28.5	23.25	22.58	28.5	23.25
2	Soybean	Balance use of	GS-2	28	10	22	16.5	19.25	15.25	26.23	19.25	15.25

Sr. 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
		fertilizer, Manure & Bio-fertilizer										
3	Caster	New Variety	GCH-5	14	5	23.4	14.80	19.10	14.30	33.57	19.10	14.30
Cereal Crops												
1	Paddy Drilled GR-9	New Variety	GR-5	20	5	12.80	9.45	11.13	9.30	19.67	11.13	9.30
2	Paddy GR-7	New Variety	GR-7	20	5	56	47	51.5	41.50	24.09	51.5	41.50
3	Paddy G.M.	G.M. before Transplanting	GM+Jaya	14	5	64	53.5	58.75	47.25	24.34	58.75	47.25
4	Sorghum	New Variety	GJ-42	22	5	22.5	16.75	19.63	16.25	20.8	19.63	16.25
5	Paddy - SRI	SRI T.P. Method	NAUR-1	14	--	67.75	54.75	61.25	47.25	29.63	61.25	47.25
Pulses												
1	Pigeon Pea	Performance of New Variety	Vaishali	24	5	23	12.46	17.73	12.70	39.60	17.73	12.70
2	Gram	Use of Bio-fertilizer Land Config.	GG-2	24	5	21	13	17.00	11.50	47.82	17.00	11.50
3	Gram	IPM	GG-2	24	5	21	13	17.00	11.50	47.83	--	--
Cotton												
1	Cotton	INM	Bt	10	10 acre	29.80	19.70	24.75	19.50	27.0 (26.92)	24.75	19.50
Horticultural Crops												
1	Okra	INM	Hybrid	8	2.0	162.4	104.03	156.11	104.03	50.06	156.11	104.03
2	Okra	IPM	Hybrid	12	3	163.6	151.90	157.75	104.80	50.50	157.75	104.80
3	Brinjal	INM	Surtiraviya	8	2.0	204.8	156.80	193.31	156.80	23.28	193.31	156.80
4	Brinjal	IPM	Surtiraviya	12	3	204.8	150.80	178.80	130.80	36.0	178.80	130.80

Sr. 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
5	Cucurbits	IPM	Hybrid	10	2	118.0	75.0	98.5	80.2	23.0	98.5	80.2
6	Mango	IPM	Kesar	10	5	--	--	--	--	--	--	--

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	
Oilseed Crops							
14500	14300	49875	40688	35375	26388	2.44	1.85
8235	8070	43312.50	34312.5	350775	26242.5	4.25	3.25
8840	8675	38200	28600	29360	19925	3.32	2.30
Cereal Crops							
4830	4470	11130	9300	6300	4830	1.30	1.08
12300	13375	54075	43575	41775	30200	3.40	2.25
12300	13375	63156	50794	50856	37419	4.13	2.79
6275	6020	22084	18281	15809	13261	2.52	2.20
11500	13375	56656	43575	45156	30200	3.93	2.25
Pulses							
8150	7315	66487.5	47625	583375	40310	7.15	5.51
8900	8460	59500	40256	50600	31790	5.69	3.76
9100	8460	59500	40250	50400	31790	5.54	3.76
Cotton							
18250	20970	62370	54600	44120	33630	2.42	1.60
Horticulture Crops							
56940	60150	195137	130037	138197	69887	2.42	1.16

57080	60150	195230	132500	138150	72350	2.42	1.20
40784	42460	144980	117600	104196	75140	2.55	1.7
40900	41460	145800	118900	104900	77440	2.56	1.86
28400	28520	78410	59230	50010	30710	1.76	1.07
--	--	--	--	--	--	--	--

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
Cucurbits	Summer-09	Methyle Eugenol Trap	Irrigated	101.9	83.1	22
Paddy- GR-9	Kharif-09	Seed / Variety	Rainfed	11.13	41.50	19.67
Paddy- GR-7	Kharif-09	Seed / Variety	Irrigated	51.5	14.30	24.09
Castor	Kharif-09	Seed / Variety	Irrigated	19.10	14.30	33.57
Pigeon Pea	Kharif-09	Seed	Irrigated	17.73	12.40	39.60
Soybean	Kharif-09	Fertilizer Management	Rainfed	19.25	15.25	26.23
Cotton	Kharif-09	INM	Irrigated	24.75	19.50	27.00
Gram	Rabi-09-10	Bio-fertilizer	Irrigated	17	11.50	47.82
Groundnut	Rabi-09-10	Bio-fertilizer	Irrigated	28.5	23.25	22.58
Paddy - Jaya	Kharif-09	Combination of Components Green Manuring + Seed	Irrigated	58.75	47.25	24.34
Paddy	Kharif-09	Seed & SRI	Irrigated	61.25	47.25	29.63
Sorghum	Kharif-09	Seed / Variety	Rainfed	19.63	16.25	20.80
Gram	Rabi-09	IPM	Irrigated	17	11.50	47.82
Brinjal	Rabi-09	IPM	Irrigated	178.8	130.80	36.00
Okra	Rabi-09	IPM	Irrigated	157.75	104.80	50.50
Cucurbits	Summer-10	IPM	Irrigated	98.5	80.20	23.00
Mango	Summer-10	IPM	Irrigated	--	--	--

Technical Feedback on the demonstrated technologies

Sr. No	Feed Back
1	Suitable variety in soybean for this region
2	Required to developed farm machinery and threshing equipments for groundnut
3	Farmers require small grain and high yielding variety of Gram & Paddy
4	Unavailability of raised bed former
5	Require to develop high yielding hybrid rice suitable for this region
6	Weed management in Drill Paddy, cotton and other crops
7	Wilt and fruit & shoot borer management technology require in Brinjal
8	YVM and fruit& shoot borer management technology require in Okra
9	To study on fertigation in papaya and watermelon
10	Required to study on date of sowing (Late Kharif season) in Hybrid watermelon
11	Land configuration (spacing) in oil seeds and pulse crops.

Farmers' reactions on specific technologies

Sr. No	Feed Back
1	Raised bed methods in Pigeon pea gave really good results. Appreciate the variety of Pigeon pea like Vaishali. This variety gives good results under bio-fertilizer treated plot.
2	Appreciated the Soybean crop as it performing well and gives more returns than drill paddy.
3	Green manuring in paddy t.p. gave good results it maintain soil health & gave more yield than traditional method.
4	New variety of Paddy, gram and groundnut gave good results than old.
5	Large scale adoption of IPM technology should be made and more concentration should be given to collection and destruction of fallen fruits in brinjal, okra, cotton and cucurbits crops.
6	The technology of INM increases yield and soil health and quality of fruits in brinjal and okra.
7	Land configuration in gram and pigeon pea gives good results than local method.

c. Details of FLD – Home Science:

Result of Front Line Demonstration on Kitchen Gardening (Discipline: Home Science):

No. of Farm women: 50

Area: 1 Guntha/demo.

Season:- Kharif: 2009

Name of Enterprise	No. of Demo	Crop yield (Kg)													Total Production	Average rate (Rs/kg)	Gross return (Rs.)	
		Okra	Brinjal	Tomato	Chilli	Cow pea	Indian bean	Cluster bean	Bitter gourd	Ridge gourd	Bottle gourd	Tur	Palakh	Fenu greek			Before FLD	After FLD
Kitchen Garden	50	16.68	24.40	18.59	9.72	8.34	3.49	3.95	4.19	5.85	11.59	9.96	1.75	2.05	120.56	18	546=00	2170=00, along with domestic consumption

Critical inputs supplied:- Seeds : Okra, Cowpea, Cluster bean, Indian bean, Tur, Fenugreek, Palakh - 25 gm each

Seedling : Brinjal, Chilli, Tomato – 25 no. each

Bitter gourd, Ridge gourd, Bottle gourd – 5 no. each

Technical Feed back :

S. No	Feed Back
1	Before Demonstration, farm women were growing only two or three vegetable crops in their backyard but after demonstration they are growing different vegetable crops through kitchen gardening in scientific way.
2	In kitchen gardening, farm women are not applying any agrochemicals so they produce organic vegetables.
3	Farm women are attracted towards hybrid vegetables.

Farm women Reaction:

S. No	Feed Back
1	Kitchen gardening gives continuous supply of fresh vegetables at lower cost which gives daily nutritious diet.
2	Income is generated by selling extra vegetables grown in kitchen garden.
3	We are utilized maximum backyard space and waste water.

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

A) ON Campus

Discipline	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Agronomy	13	-	-	-	276	73	349	276	73	349
Horticulture	10	-	-	-	309	140	449	309	140	449
Plant Protection	6	25	-	25	173	46	219	198	46	244
Home Science	9	-	-	-	5	285	290	5	285	290
Animal Science	4	-	-	-	68	56	124	68	56	124
Extension Education	1	-	-	-	63	-	63	63	-	63
TOTAL	43	25	-	25	894	600	1494	919	600	1519

B) OFF Campus

Discipline	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Agronomy	14	42	-	42	336	198	534	378	198	576
Horticulture	11	-	-	-	326	320	646	326	320	646
Plant Protection	19	580	-	580	110	-	110	690	-	690
Home Science	8	-	-	-	-	240	240	-	240	240
Animal Science	16	-	-	-	280	256	536	280	256	536
Extension Educatioin	3	-	-	-	18	89	107	18	89	107
TOTAL	71	622	-	622	1070	1103	2173	1692	1103	2795

C) Consolidated table (ON and OFF Campus)

Discipline	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Agronomy	27	42	-	42	612	271	883	654	271	925
Horticulture	21	-	-	-	635	460	1095	635	460	1095
Plant Protection	25	605	-	605	283	46	329	888	46	934
Home Science	17	-	-	-	5	525	530	5	525	530
Animal Science	20	-	-	-	348	312	660	348	312	660
Extension Education	4	-	-	-	81	89	170	81	89	170
TOTAL	114	647	-	647	1964	1703	3667	2611	1703	4314

Note: Details of above training programmes given in the proforma as Annexure-IV

(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	
Home Science	22/12/09 to 23/12/09	Preparation of Masalas	Income generation	2 Days	-	33	33	-- Work in progress --			

(E) In-service Training Programmes

Sl. No	Title of Training	Discipline	Date	No. of Participants									Type of Participants
				Others			SC/ST			Total			
				M	F	T	M	F	T	M	F	T	
1	Paddy Cultivation through SRI	Agronomy	18/04/09	38	-	38	-	-	-	38	-	38	VLWs& EO
2	Integrated Pest and disease	Plant Protection	28-29/07/09	10	-	10	18	-	18	28	-	28	VLWs& EO
3	Book Keeping system in SHGs	Home Science	30-31/07/09	-	2	2	-	27	27	-	29	-	Anganwadi Workers

4	Integrated Nutrient Management	Horticulture	24-25/09/09	20	-	20	-	-	-	20	-	20	VLWs
5	Role of Journalism in agriculture	Extension	09/11/09	9	-	9	11	-	11	20	-	20	Press Reporter of Tapi district
6	Changing Scenario of Agriculture	Extension	25-26/11/09	-	-	-	32	-	32	32	-	32	Agril Teachers & Kamathis of Tapi Districts

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)		
				M	F	T	M	F	T	M	F	T	M	F	T
1	Field Day	For FLD	10	95	-	95	258	250	508	9	1	10	362	251	613
2	Khedut Shibir	Cereals, Pulses, Vege., other crops	9	-	-	-	1026	1722	2748	6	1	7	1032	1723	2755
3	Mahila Shibir	Health & Nutrition, SHG, Women empowerment	4	-	-	-	81	402	483	6	3	9	87	405	492
4	Farmers Day	Paddy crop symposium	1	-	-	-	300	703	1003	16	1	17	316	704	1020
5	Krishi Mela	Krishi Mahotsav'09	6	18182	3852	22034	19605	48316	67921	28	2	30	37815	52170	89985
6	Agril. Exhibition	Krishi Mela, Khedut din, Krishi Mahotsav	5	101	21	122	3533	2583	6116	6	1	7	3640	2605	6245
7	Crop Symposium	Paddy crop	4	-	-	-	2749	2130	4879	15	1	16	2764	2131	4895
8	Celebration of Women in Agril. Day	Agriculture, Nutrition & Health 04/12/09	1	-	-	-	-	210	210	3	1	4	3	211	214

9	International Women Day	08/03/10	1	-	-	-	-	54	54	-	2	2	-	56	56
10	Formation of SHG	For women empowerment	4	-	-	-	-	64	64	-	1	1	-	65	65
11	SHG Meeting	For activation of new & existing SHGs	10	-	-	-	-	270	270	-	1	1	-	271	271
12	Farmers Meeting	-	3	-	-	-	63	112	175	3	-	3	66	112	178
13	Mahila Meeting	-	2	-	-	-	-	36	36	-	2	2	-	38	38
14	Ex-Trainee S sammelan	For impact assessment	4	-	-	-	91	50	141	6	1	7	97	51	148
15	Guest Lecture	FTC & ATMA	69	-	-	-	13713	11071	24784	6	-	6	13719	11071	24790
16	Film Show	SHG, Pashupalan, Agriculture	12	51	-	51	200	268	468	5	1	6	256	269	525
17	Diagnostic Visit	-	1	-	-	-	1	-	1	1	-	1	2	-	2
18	Field Visit	-	17	12	-	12	73	35	108	6	1	7	91	36	127
19	FLD Meeting	-	13	-	-	-	1228	2043	3271	5	1	6	1233	2044	3277
20	Scientist visit to Farmers' Filed	-	65	11	-	11	67	13	80	6	1	7	84	14	98
21	Farmers Visit to KVK	-	372	-	-	-	261	111	372	6	1	7	267	112	379
22	Exposure Tour	Visit at Krishi Mela, NAU, JAU, AAU	18	60	-	60	323	466	789	4	-	4	387	466	853
23	Telephone Helpline	-	596	17	-	17	408	171	579	6	1	7	431	172	603
24	Guidance through letter	-	1	-	-	-	1	-	1	1	-	1	2	-	2
25	Animal Camp	865 Animals	5	-	-	-	-	-	-	2	-	2	-	-	-
26	Pashupalan Shibir	-	1	-	-	-	-	90	90	2	-	2	2	90	92
27	Method Demonstration	Seed treatment, Use of pheromone	15	-	45	45	128	152	280	5	1	6	133	198	331

		trap, Fruits & vegetable preservation													
28	Popular Articles	-	50	-	-	-	-	-	-	6	1	7	6	1	7
29	TV Talk	Green house, Paddy cultivation	3	-	-	-	-	-	-	3	-	3	3	-	3
30	Radio Talk	Activities for tribal women	1	-	-	-	-	-	-	-	1	1	-	1	1
31	Newspaper Coverage	-	39	-	-	-	-	-	-	6	1	7	6	1	7
32	Folder Prepared	-	24	-	-	-	-	-	-	6	1	7	6	1	7
33	Extension literature distributed	-	2110	-	-	-	-	-	-	-	-	-	-	-	-
34	Bulletin	-	1	-	-	-	-	-	-	2	-	2	2	-	2
35	Formation of FIG	-	1	-	-	-	43	-	43	2	-	2	45	-	45
36	Celebration of Tech. Week	14.09.09 to 20.09.09 Khedut shibir, Mahila shibir, Ani.Hus. Shibir, Field day, Farmers day, Cotton Day, Agril. Exhibition	11	349	-	349	739	803	1542	51	2	53	1139	805	1944
37	Research Paper published	-	25	-	-	-	-	-	-	6	1	7	6	1	7
38	PRA Survey	New adopted villages	10 villages	32	12	44	419	150	569	6	1	7	457	163	620
39	Soil & Water Sample analyzed	-	297	-	-	-	-	-	-	-	-	-	-	-	-
40	Sample diagnosed in PHC	-	59	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total				18910	3930	22840	45310	72275	117585	241	33	274	64459	76238	140697

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	Paddy	Jaya	7800	1,48,200	275

SUMMARY

Sr. No.	Major group/class	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
1	CEREALS	7800	1,48,200	275
	TOTAL	7800	1,48,200	275

PLANTING MATERIALS

Major group/class	Crop	Variety	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
FRUITS	Mango	Kesar	800	36000	56
	Mango	Dasherri	200	9000	13
SPICES	Onion	White Onion	75425	10304	22
	Chilli	G-4	19800	2970	8
VEGETABLES	Brinjal	Surti Ravaiya	377720	56763	64
	Cauliflower	Mahalaxmi	28750	5363	16
	Cabbage	Early Kuwari	2450	368	5
	Tomato	S-22	7770	1183	9
	Drumstick	BKM-1	213	2130	62
	Bitter Gourd	Hybrid	70	140	35
	Bottle Gourd	Hybrid	70	140	35
	Ridge Gourd	Hybrid	70	140	35

SUMMARY

Sl. No.	Major group/class	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
1	FRUITS	1000	45000	69
2	VEGETABLES	417113	66227	261
3	SPICES	95225	13274	30
	TOTAL	513338	124501	360

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

(A) KVK News Letter :- --Nil--

(B) Literature developed/published

Item	Title	Authors name	Number of copies
Research papers	Judgment of the farmers regarding use of Internet technology in changing Agricultural scenario in India	Dr. N. M. Chauhan	Not applicable
	Decision making pattern of Tribal farm women in changing Agri-rural environment	Dr. N. M. Chauhan	Not applicable
	Contribution of the Tribal farm women in crop husbandry in changing scenario of Agri-rural environment	Dr. N. M. Chauhan	Not applicable
	Technique to measure Computer Nervousness amongst the students of Agriculture college	Dr. N. M. Chauhan	Not applicable
	Farmers prospects about Community Internet center(CIC) at village level	Dr. N. M. Chauhan	Not applicable
	Krishi Mahotsav-2007 a new TOT tools in Gujarat at village level (Published in 3 journals)	Dr. N. M. Chauhan	Not applicable
	Opinions and expectations of the farmers towards ICT in Agriculture at village level	Dr. N. M. Chauhan	Not applicable
	Velda village : A success story	Dr. J. J. Pastagia & Dr. N. M. Chauhan	Not applicable
	Modus operandi to measure computer nervousness amongst the students of agriculture college	Dr. N. M. Chauhan & Dr. N. B. Chuahan	Not applicable
	Decision making in tribal farm women with participatory approach	Dr. N. M. Chauhan & Dr. N. B. Chuahan	Not applicable
	Crop husbandry with participation of the tribal farm women	Dr. N. M. Chauhan & Dr. N. B. Chuahan	Not applicable
	Participation of the tribal farm women in Animal husbandry	Dr. N. M. Chauhan & Dr. N. B. Chuahan	Not applicable
	Computer jumpiness among Agricultural student	Dr. N. M. Chauhan &	Not applicable

		Dr. N. B. Chuahan	
	Information needs of the Rice growers with participatory extension management.	Dr. N. M. Chauhan & Dr. N. B. Chuahan	Not applicable
	Prospects of the farmers towards ICT in agriculture at village level	Dr. N. M. Chauhan & Dr. N. B. Chuahan	Not applicable
	Expectations and Opinions of the farmers towards ICT in agriculture at village level	Dr. N. M. Chauhan	Not applicable
	Information needs of the rice growers for sustainable agriculture development	Dr. N. M. Chauhan	Not applicable
	Information seeking behavior of the rice growers.	Dr. N. M. Chauhan	Not applicable
	Socio-economic change in rural tribal women through self help groups.	Arti N. Soni	Not applicable
	Effect of Nutrient Management on productivity of Soils and Vegetables under Tribal Area of Tapi : Demonstration study.	Shri B. M. Tandel, Dr. H. M. Virdia, Shri C. D. Pandya, & Shri M. M. Gajjar	Not applicable
	Replacement of Drilled Paddy Through High Recurring Soybean Crops in Tribal Belt of South Gujarat.	Shri B. M. Tandel, Dr. A. P. Patel, Shri C. D. Pandya, Dr. H. M. Virdia & Dr. N. M. Chuahan	Not applicable
	Replacement of The Pigeon pea variety through demonstration conducted by KVK in Tribal Area of Tapi District.	Dr. A. P. Patel, Shri B. M. Tandel, Shri C. D. Pandya, Dr. H. M. Virdia & Dr. N. M. Chuahan	Not applicable
	Role of Tribal Farmwomen in home, crop and livestock management in Navsari district of Gujarat state.	Dr. N. M. Chuahan, Dr. N. B. Chuahan & Dr. R. B. Patel	Not applicable
	Front Line Demonstration, A Fortunate Thing to control Fruit fly in Cucurbitaceous Vegetables in Tribes.	Dr. J. J. Pastagia & Dr. N. M. Chuahan	Not applicable
	KVK reaching the unreached in Tribal areas – A success story.	Dr. B. M. Tandel & Dr. N. M. Chuahan	Not applicable
	Increasing Area and productivity of Paddy in Tribal Belt of South Gujarat – As initiative of KVK Valsad.	Dr. N. M. Chuahan & Dr. R. F. Thakor	Not applicable
	Role of KVK in cultivating Land configuration, in Tribal Belt of Tapi District.	Dr. A. P. Patel, Shri B. M. Tandel & Dr. N. M. Chuahan	Not applicable
	Agro-Technology Information through Telephone Help	Shri C. D. Pandya, Dr. C. K.	Not applicable

	line service.	Timbadia and Dr. H. D. Mehta	
	Socio-economic Impact of Watershed Development Programme in Vyara taluka of Surat District.	Dr. C. D. Pandya, Dr. R. D. Pandya, Shri. B. M. Tandel	Not applicable
Total	29		
Technical reports	MPR, QPR, SAC report, FLD report, AAP, APR, MER, AGRESKO, ZREAC report	PC & All SMS	-
Popular articles	List of articles given in Annexure – II	PC & All SMS	
Leaflets/folders	APNAVVA JEVO PAK “SOYBEAN”	Dr. A. P. Patel & Dr. N. M. Chauhan	1500
	SWA-SAHAY JUTH NI RACHANA ANE TENU MAHAVA	Arti N. Soni & Dr. N. M. Chauhan	2000
	AADHUNIK KHETI ANE ATYADHUNIK BAHENO	Dr. N. M. Chauhan	1500
	DANGAR MA SANKLIT JIVAT NIYANTRAN	Dr. J. H. Rathod & Dr. N. M. Chauhan	1500
	KHETI NE UDHYOG SAMAKAX BANAVVA MATE DASH MUDDA NI SONERI SALAH	Dr. N. M. Chauhan	1500
	SAGARBHA STRI ANE MATA MATE POSHAK AAHAR	Arti N. Soni & Dr. N. M. Chauhan	1500
	SHAKBHAJINU AAHAR MA MAHATVA	Arti N. Soni & Dr. N. M. Chauhan	1000
	EK ROKADIYO PAK : BHINDA NI KHETI	Shri B. M. Tandel & Dr. N. M. Chauhan	2000
	BALAK NI SARSAMBHAL	Arti N. Soni & Dr. N. M. Chauhan	1000
	DANGARNI KHETI PADHDHATI	Dr. A. P. Patel & Dr. N. M. Chauhan	2000
	DANGARNI SRI PADHDHATI THI ROPANI	Dr. A. P. Patel & Dr. N. M. Chauhan	2000
	CHIRANJIV KHETI	Dr. N. M. Chauhan	2000
	BAKARA PALAN	Dr. J. M. Patel & Dr. N. M. Chauhan	1000
	MAKAI (Sweet Corn) NI VAIGYANIK KHETI PADHDHATI	Dr. A. P. Patel & Dr. N. M. Chauhan	1000
	GHR AANGANE SHAKBHAJI	Shri B. M. Tandel & Dr. N. M. Chauhan	2000
	SHAKBHAJIMA UTPADAN VADHARVA MATE DHYAN MA LEVANI ADHYATAN TECHNOLOGY	Shri B. M. Tandel & Dr. N. M. Chauhan	1000

	OFF SEASON MA SHAKBHAJINI KHETI	Shri B. M. Tandel & Dr. N. M. Chauhan	1000
	RINGAN NI VAIGYANIK KHETI	Shri B. M. Tandel & Dr. N. M. Chauhan	1000
	SUKI KHETI PADHDHATI ANGENA AGATYANA MUDDA	Dr. A. P. Patel & Dr. N. M. Chauhan	1000
	KATHOL PAKO MA SANKALIT ROG JIVAT NIYANTRAN	Dr. J. H. Rathod, Dr. N. M. Chauhan & Shri R. S. Patel	1000
	JANTUNASHAK DAVANO SALAMAT UPYOG	Dr. J. H. Rathod, Dr. N. M. Chauhan & Shri R. S. Patel	2000
	ASARKARAK KRUSHI VISTARAN MATE PAYANA VISTARAN KARYAKARONI PAVITRA FARAJO	Shri C. D. Pandya & Dr. N. M. Chauhan	1000
	STRIO MA LOHTATVANI UNAP (ANEMIA) VISHE JANO	Arti N. Soni & Dr. N. M. Chauhan	2000
	FAL ANE SHAKBHAJI PARIRAXAN	Arti N. Soni & Dr. N. M. Chauhan	1000
Total	24		34500
Book Published	DAXIN GUJARATNA SHAKBHAJI PAKONI PAK VYAVASTHA		
	SRI - ROPAN DANGARNI EK KRANTIKARI PADHDHATI		
	PARYAVARAN PRIYA KHETI MATE SANKALIT ROG-JIVAT NIYANTRAN		
	KHETI MA JAMIN ANE PAK SANRAXAN NU MAHATVA		
	Krishi Vigyan Kendra (Tapi) Working as “A Real Information Hub” For Farming Community		

3.7. Success Stories :

3.7.1 KVK for Reaching the Unreached- A Success study.

(Accepted in Indian Farming)

The village Chakra is a tribal dominated village with 99% per cent tribal population, situated in Umarpada block of Surat district. It is located 18 km away from block place, 180 km from district place and 75 km from Krishi Vigyan Kendra, NAU, Vyara. The total population of the village is around 1300 with 650 male and 450 female. The total geographical area of the village is about 100 ha. Out of which net cultivated area is about 80 ha (80%). The irrigated area of village is 40 ha (50%) which is mostly irrigated by tube wells. **Rajubhai Vasava** is a **sarpanch** of village. **Kamleshbhai Patel** is a **Talati** while **Thakarbhai** is serving as **VLW**.

The main crops of the village are drilled Paddy, Cotton, Groundnut, Tur and Vegetables in *kharif* while Wheat, Chickpea and Maize in *rabi*. One co-operative society is working in village which helps the farmers for marketing of their agricultural products.

In the year 2007, KVK, Vyara has adopted the village Chakra for its intensive activities of Transfer of Technologies related to agriculture for increasing agricultural production there by raise the standard of living of farmers. The entry point visit was made by team of Subject Matter Specialist of KVK, Vyara. To find out the technological adoption gap as well as to identify the thrust areas for the village, a PRA was made.

During PRA, interacting with farmers, it was found that there is an ample scope for short duration orchard / horticultural crop which will give higher net return with limited irrigation facility.

Considering the situation, dialogues with farmers, the Subject Matter Specialist (Horticulture) has suggested cultivation of hybrid Papaya to the farmers. A group of interested farmers were invited to KVK, Vyara and they were given On Campus training in which detailed emphasis was given to cultivation of Papaya, economic use of irrigation water, post harvest technology, value addition, marketing and ways to produce quality products through video show & power point presentations. The farmers were also motivated to visit the papaya orchards and interact with papaya growers of South Gujarat area.

Among trained farmers, **Mr. Alpeshbhai Kashinathbhai Patel**, a resident of Chakra is a school drop out after ninth standard and presently involved in farming took keen interest in Papaya cultivation. He has two brothers and both of them are working in private company. His father, Kashinathbhai is also a farmer and engaged in farming for last 25 years. He is migrated Chakra from Maharashtra. He has 13 acres of cultivated land. Previously, due to lack of irrigation facility they had to depend on rainfall and were able to cultivate sorghum and maize in *kharif* and wheat and gram in *rabi* on conserved soil moisture. From all the available resources, he was able to earn **net return of only Rs. 25000**.

With availability of irrigation water through tube well, for 4 acres of land led him cultivation of irrigated wheat and gram in initial years, then he started cultivation of chilli and brinjal as that has been grown successfully by farmers of neighboring state, Maharashtra. By cultivating chilli and brinjal he was able to earn **40-45 thousands** from 4 acres of land.

As a school drop out Mr. Alpeshbhai had no option other than farming for his livelihood. He has taken interest in his farming. He was eager to know incredible newer developments in agriculture. He has great impatience and curiosity to know recent innovations in agriculture. But as he is residing at remote place, he was unable to get latest information regarding development in agriculture. He was in search of an organization which can cater his need for newer technologies in the field of agriculture.

Fortunately, **KVK** has adopted **Chakara as a satellite village** and during training, he came in contact with KVK scientist and he has been innovated to cultivate hybrid papaya. He made repeated interaction with KVK scientist. The Subject Matter Specialist (Horticulture) **Mr. B. M. Tandel** suggested him to go for drip irrigation for an economic use of available irrigation water. As an innovated farmer, he immediately accepted the idea given by KVK scientist and installed drip irrigation system in nine acres of land. He has taken advantage of subsidy on drip system by Government of Gujarat.

As he decided to go for cultivation of hybrid papaya, he has been provided with detailed information on land preparation, purchase of papaya seedlings to the marketing by SMS (Horticulture).

He planted papaya in month of April. As he has limited water, he managed to irrigate newly planted papaya by digging a small pond near bore well lined with

plastic. He stored the water pumped through 1 HP electric motor during whole day in the pond. The collected water then was utilized through drip system and was able to survive young plantlets in summer. During cultivation of papaya, he was in constant touch with KVK scientist for any doubts. The KVK scientists had made frequent visits to his field and guided him accordingly for plant protection, fertilizer application and other operations.

Due to adoption of scientific approach in papaya cultivation he obtained a bumper yield of papaya. He received total income of **Rs. 2.5 Lakhs** from 2 acres of land. The total cost of cultivation was **Rs. 50000 /-**.The net profits was **Rs. 2.00 lakhs**. This led him higher income and also raised his standard of living with better social status. Previously he had to borrow money from others for his social expenses. At present he is in a position to lend money to others. Cultivation of good quality papaya attracted the merchants towards Chakra village and made an annual contract for papaya purchasing. The traders themselves harvested papaya and sent to the Delhi and Northern part of the country. The farmers of near by area also visited his farm frequently for papaya cultivation and guidance.

Now, Mr. Alpeshbhai is become an **innovator** for other farmers for papaya cultivation in the region. Under his guidance total **23 farmers** having irrigation facility started papaya cultivation in same village. He has also adopted intercropping of papaya in mango orchards.

The world is shifting very rapidly and agriculture is not an exception of it. Technologies of today become outdated tomorrow. People are enthusiastic and become more anxious to know what is happening around him in the field of agriculture for acclimatization with changing scenario of agriculture at global level and to compete with open global market. People want exact, quick, authentic and cheap information regarding their agriculture day to day. To disseminate agricultural technology quickly at grass root the KVK is the best institute. It is mainly engaged with **Technology Generation, Technology assessment, Technology evaluation and Technology dissemination** in the field of agricultural extension. No institution is competing with KVK if it is functioning as per the mandate given to them by ICAR. The next phase of green revolution can only be possible by effective Transfer of agricultural Technologies from source to sink, lab to land and from research system to the farming system. In that line we can say confidently that this KVK is functioning successfully for the effective TOT at village level. For that the dynamic and visionary

leadership of the university, enthusiastic and highly qualified staff of the KVK and better response of the farming community itself is responsible. If this situation will sustain alive, KVK will be a **MODEL FOR ZONE IN TOT SYSTEM**.

Implications:-

This success story will be a guideline for other extension workers to perform better in their field. It leads toward effectively, efficiently, as well as result and impact oriented work in the field of Agricultural extension. This is a mile stone work for the effective TOT in the Tribal dominated interior region of the south Gujarat. It will be eye opening for disseminating any recently released innovative agricultural technology successfully among illiterate and poor participants. At the outset of the concluding we can say KVK Vyara is becoming really an **information hub** for farming communities. Our efforts are to make this KVK Farmers friendly, farmers centric, farmers leading and the overall agricultural development on sustainable basis. Precision farming and Eco friendly development of the region is our prime Motto. The **Research-Extension-Farmer-Market** Linkage Extension approach is a current need of the time to get better agricultural output. The **next phase of Green Revolution** can only be possible through integration of all above said approaches.

A popular demand from different villages to arrange the programme at their villages by KVK is the testimony of the important role of the KVK in their development in general and agriculture particular quiet well. We all have to run on **information super highway**. May I request you to make a **KVK e-linked?**

3.7.2 VELDA-IPM VILLAGE, A SUCCESS STORY

(Printed in Kisan World)

The village Velda is situated in Nizar block of Tapi district. It is located 5 km from block place, 105 km from district place and Krishi Vigyan Kendra headquarter, Vyara. The total population of village is around 8008 with 4019 male and 3989 female. Considering caste wise distribution, maximum population is of schedule caste (4528) followed by schedule tribe (3645), OBC (902) and general / others (2206), clearly indicating dominance of SC and ST. The total area of village is 2396 ha. out of which net cultivable area is 1730 ha. (72%). Nearly 50 per cent cultivated land having irrigation facility which is mostly irrigated through tube well and water lifted from the river Tapi. **Limjibhai Padvi** is a surpanch, **Kashinathbhai Patel** is a

Talati while **Chhotalal Gorakh** is working as VLW in the village. The Nizer block of Tapi district is far away from district place as well as from NAU research station, therefore it is the most neglected block and up till now no any extension agency is available to cater the need of farmers regarding agricultural technology.

The main crops of the village are Cotton, Chilli, Tur in *Kharif* and Wheat, Chickpea, Sugarcane and gram in *Rabi*. One agricultural co-operative and milk co-operative are functioning in the village, helping the farmers for marketing of their products.

Cotton is an important cash crop and plays an important role in **Indian economy**. In Gujarat cotton is grown in about 16 lakh ha area. Cotton is highly susceptible to several pests. About 166 different species of pests and diseases are reported to attack cotton at various stages of its growth. Amongst these, the cotton bollworm *Helicoverpa armigera*, the white fly *Bemisia tabaci*, Jassids, *Amrasca biguttula biguttula* and the pink bollworm *Pectinophora gossypiella* have been causing economic damage to cotton crop all over the country. With introduction of Bt cotton, the incidence of sucking pests viz., Jassids, Thrips, whiteflies, mealy bugs, mites etc. has increased tremendously. Increased use of pesticides resulted in several sour effects like development of resistance in insect pests to insecticides, pest resurgence, pesticides residues, health hazards, destruction of natural fauna, ecological disturbances and environmental pollution, besides increased cost of production.

In the year 2007, **KVK, Vyara** has adopted village **Velda** as a **Satellite village** for its intensive activities of Transfer of Technologies related to agriculture for increasing agricultural production there by raising standard of living of the farmers.

The entry point visit to the village was made by the team of Subject Matter Specialists. To find out the technological adoption gaps and to identify the thrust areas for the agricultural development, a PRA was made. During PRA, interacting with the farmers it was found that the farmers were unable to manage the insect pests and diseases even though applying higher doses of insecticides in mixtures. One of the major thrust area identified as reduce the load of pesticide in cotton ecosystem through Integrated Pest Management. The farmers were spending huge amount for the pest management. Even with the adoption of Bt-cotton, farmers were frustrated with cotton cultivation as they were unable to manage the pests. As no extension agency was targeting these farmers, they had to rely on private pesticides

dealers. The over loaded use of pesticides has resulted in degradation of soil, water and environment. It also affected the quality of Cotton.

Considering the situation and dialogues with farmers, Subject Matter Specialist (Plant-Protection) suggested implementation of Integrated Pest Management in Cotton and the training as well as demonstrations on IPM were the need of village for profitable cultivation of cotton. The interested farmers were given on campus as well as off campus training with special emphasis on identification of insect pests and diseases of cotton, components of IPM, bio-control, use of pesticides on threshold level, use of neem based pesticides, economic use of irrigation water, ways to produce quality products, etc. through video show and power point presentations. The farmers were also motivated to visit and interact with the farmers who have adopted this technology.

Fortunately, with financial assistance under Cotton Technology Mission from Main Cotton Research Station, NAU, Surat, KVK Vyara was able to give demonstrations in 100 ha. [50 ha. in the year 2007-08 and 50 ha. in the year 2008-09] benefiting 83 farmers. The detailed components of IPM were demonstrated, constant follow up visits, Ex trainee visits, sammelans, field days, farmers days and other extension activities have been concentrated. Initially, farmers were hesitating in adopting need based application of single pesticides and other IPM component but with constant encouragement, KVK scientists are successful in building up confidence in them. The major achievement of the demonstrations is that farmers were successful in keeping off the mealy bug incidence from their field with the advanced guidance provided by KVK scientists. The farmers from neighboring villages were also attracted and associated with the KVK for adopting their village under IPM scheme. ***The Velda village is now became a model for IPM in the Block.*** The surrounding villages Viz., Sarwala, Adada, Khorda, Vanka, Chichoda, Devala, Pisavar, Vyaval, Piplod, Nizer and many more villages are in a cylinder for adopting IPM in cotton. The total IPM aids costing **Rs.-68000**, were supplied to them on free of cost. The constant follow up and monitoring of the IPM practices made them habitant with IPM practices and whole villagers are flattering conversant regarding ***sour results of the agro chemicals in relation to soil, water, environment and health point of view.***

Initially, total 12 innovated farmers were trained for the same. Among them , the trained farmers viz :- **Mr. Prahladbhai Jaganbhai, Patel, Pareshbhai,**

Ishvarbhai, Sureshbhai, Kashinathbhai, Bhupendrabhai and Vinodbhai Patel residing at Velda village are working as a resource person for whole village as well as surrounding villages. This year IPM kits along with Maize (Sweet corn) seed, Castor seed and Biocontrol aids will be given to 10 selected villages and constant follow up will be maintained by KVK scientists and at grand growth period of the crop a big farmers day will be arranged **including dignitaries of the NAU: Hon. Vice Chancellor, Director of Extension Education, State department of the agriculture and all GOs, /NGOs of the region. Simultaneously the farmer shibir on IPM will be conducted for mass multiplication of the IPM messages.**

Table-1 : Comparison of economics of IPM demonstration plot and control plot in cotton crop.

Particulars	IPM Demonstration Plot	Control Plot (Non IPM Plot)
Number of spray	5	9
Cost of Plant Protection (Rs/ha)	4500	7500
Average Yield (Qt/ha)	31.36	21.08
Income from maize crop (Grown as inter crop), (Rs/ha)	2000.00	00
Gross income (Rs/ha)	89808.00	58800.00
Net profit (Rs/ha)	85308.00	51300.00

Table-2: Adoption of IPM Technology

N=100

Characteristics	Number	Percentage
Overall knowledge level		
Low	10	10.00
Medium	75	75.00
High	15	15.00
Total	100	100.00
Head wise knowledge Level		
Cultural practices		
Low	15	15.00
Medium	60	60.00
High	25	25.00
Total	100	100.00
Mechanical practices		
Low	17	17.00
Medium	68	68.00
High	15	15.00

Total	100	100.00
Biological practices		
Low	20	20.00
Medium	55	55.00
High	25	25.00
Total	100	100.00

Conclusion:

IPM is a full fledged technology which not only reduces the cost of plant protection, but also promises higher yield. IPM also helps in reducing the pesticide use and thus, prevents/delays development of pesticide resistance, reduces residues in soil, water, food and definite role in the prevention of environment imbalance. Majority of the respondents gained medium level of the overall knowledge and adopted cultural, mechanical and biological practices for pest control. The adoption of IPM in cotton, the total income of the farmers has been increased by **66%** and the cost of cultivation decreased to the tune of **40 %**(**Table-1**). The knowledge level of the farmers regarding IPM in cotton has increased (**Table-2**). This may be due to the proper guidance given by KVK scientists, Demonstrations and constant follow up by KVK missionary.

Implication: The study has acknowledged the knowledge level of the cotton growers towards IPM technology. This study can be guideline for other extension worker to implement this way of extension technology for their clients on IPM .On this foundation the extension personnel may locate clients for training and also those who can be used as counselors to other farmers. The study is also useful for effective propagation of the IPM technology in other regions for eco friendly and sustainable agricultural development.

3.7.3 Replacement of the Pigeon pea variety through FLD, a success story (Accepted in NAU Spectrum)

Introduction:

Agriculture is the strength of the country and seed is the back bone of crop production. Among all the agricultural inputs, only seed had inbuilt potential, where as other inputs like nutrients, irrigation and plant protection chemicals, contribute to the production potential of the seed. If potential of the seed is poor, optimum yield is not possible in spite of judicious use of inputs. Research findings reveal that 10-12

percent increase in yield is attributed to good quality seed. Pigeon pea (Tur) is the main pulse crop in south Gujarat. Tribal belt is preferring tur as a main leguminous food in their daily diet.

Profile of the village:

The village Gatadi is situated in Songadh block of Tapi district. It is located 24 km from block place, 17 km from district place cum Krishi Vigyan Kendra, Vyara. The total population of village is around 650 with 335 male and 315 female. Considering caste wise distribution, cent per cent population is of Schedule Tribe (650), clearly indicating dominance of ST.

The total area of village is 230.95 ha, out of which net cultivable area is 194.30 ha,(84%). Nearly 40 per cent cultivated land having irrigation facility which is mostly irrigated through tube well, well, water lifted from the river and check dams. **Amrutbhai Gamit** is a surpanch, **Aknathbhai Chaudhary** is a Talati, while **Ganpatbhai** is working as VLW in the village. The Gatadi village of Tapi district is tribal dominated and it is the most neglected village and up till now no any extension agency is available to cater the need of farmers regarding agricultural technology.

The main crops of the village are paddy, sorghum and tur in *Kharif* and Sugarcane, vegetables and gram in *Rabi*. A small pocket of the village is covered under groundnut in summer. Only milk co-operative is functioning in the village, helping the farmers for marketing of their livestock products.

Tur is an important pulse crop and plays an important role in **improvement of the soil through improving soil microbial activities**. In Gujarat tur is grown about 2651 ha with production 2942 in year 2007-08 kharif. Among this Surat district covers 326 ha under tur crop.

In the year 2007, **KVK, Vyara** has adopted village **Gatadi** as a **Satellite village** for its intensive activities of Transfer of Technologies related to agriculture for increasing agricultural production there by raising standard of living of the farmers.

The entry point visit to the village was made by the team of Subject Matter Specialists. To find out the technological adoption gaps and to identify the thrust areas for the agricultural development, a PRA was made. During PRA, interacting with the farmers it was found that the farmers were unable to harvest the tur crop due to unavailability as well as no knowledge regarding improved varieties of the Tur. Sowing of local varieties with high seed rate on flat bed without knowing scientific cultivation practices of tur. One of the major thrust areas identified as to

introduce the high yielding early variety of the tur in the village. Even though using higher seed rate, farmers were frustrated with tur cultivation as they were unable to get better yield from the Tur. As no extension agency was targeting these farmers, they had to rely on private traders for seed. The traditional cultivation of crops makes agriculture costly but they did not get the remunerative yield from the pigeon pea crop.

Considering the situation and dialogues with farmers, Subject Matter Specialists (Agronomy, Horticulture) suggested implementation of land configuration and INM in tur with introduction of the high yielding variety. The training as well as demonstrations on high yielding early variety of the tur Vaishali was the need of village for profitable cultivation of Tur. The interested farmers were given on campus as well as off campus training with special emphasis on identification of insect- pests and diseases of tur, components of INM, economic use of irrigation water, ways to produce quality products, etc. through video show and power point presentations. The farmers were also aggravated to visit and interact with the farmers who have adopted this technology.

Fortunately, with financial assistance of the ICAR under National Pulse Development Scheme, KVK Vyara was able to give demonstrations of Vaishali variety FLD in 10 ha. [5 ha. in the year 2007-08 and 5 ha. in the year 2008-09] benefiting **19 farmers** of the Gadat, Gatadi and champawadi villages of Songadh block during 2007-08 and **26 farmers** of the Gadat, Gatadi, Bhitkhurd and Bhitbudrak villages in year 2008-09. New Pigeon pea variety “**Vaishali**” along with INM & land configuration was demonstrated, constant follow up visits, ex trainee visits, khedut and mahila Sammelans, field days, farmer’s days and other extension activities have been concentrated. Initially, farmers were vacillating in adopting newly released variety of the pigeon pea and land configuration but with constant encouragement, KVK scientists are successful in building up confidence in them. The major achievement of the demonstrations is that farmers were booming in getting higher production of the tur. The advanced guidance provided by KVK scientists. The farmers from neighboring villages were also attracted and associated with the KVK for adopting their *village under FLD scheme*. Based on two main pillars of the extension education” **Seeing is Believing**” and “**Learning by Doing**” , the idea was spread and the adoption was increased to the remarkable level.

The farmers of such villages had sold the green pods of the pigeon pea as well as also harvested seed from the demonstrated variety. The farmers were able to get a net profit of **Rs.50, 000/ha**. The increase in yield was to the tune of **33-68%**; the field days were organized at demonstrated plots and got wide publicity of the new variety. The farmers from the neighboring villages were also attracted towards new variety of the tur and demanded for seed of the Vaishali variety. The spread of the said variety was in surrounding villages and the FLD villages were became **seed centres** for the same. Next year the same FLD was taken in surrounding villages and the whole cluster had been shifted from conventional variety to the Vaishali variety. The replacement of the seed was-15%. The crop was ready earlier up to the tune of 2-3 months as compared with conventional varieties. Farmers were able to take a next crop after tur on same piece of the land. As, it was matured earlier than traditional varieties by 45-60 days. The feed back from the farmers were collected and the results had been analyzed and presented in the following Tables.

The Gatadi village is now became a model for Vaishali variety in the Block. The surrounding villages of Songadh, Vyara and Uchchhal taluka had also adopted vaishali to the tune of 22% and many more villages are in a cylinder for adopting Vaishali variety of the tur. The total seed of the said variety was supplied to them on free of cost. The constant follow up and monitoring of the package of practices made them habitant with scientific cultivation of the tur. The whole villagers are flattering conversant regarding ***better results of the new variety in relation to yield, income, soil, water, environment and health point of view.***

Initially, total 6 innovated farmers were trained for the same. Among them , the trained farmers viz :- **Mr. Maganbhai Gamit, Girishbhai Gamit, Rakeshbhai Gamit, Vineshbhai Chaudhari, Thakorbbhai Gamit and Panjibhai Gamit** residing at Gatadi village are working as a resource persons for whole village as well as surrounding villages. Last year the seed produced by those villagers were sold to other farmers of the region and they were able to get higher price of the seed as compared with market saling. The same variety will be given to 10 selected villages and constant follow up will be maintained by KVK scientists and at grand growth period of the crop a big farmers day will be arranged **including dignitaries of the NAU: Hon. Vice Chancellor, Director of Extension Education, State department of the agriculture and all GOs, /NGOs of the region. Simultaneously the big farmer's day on Tur will be conducted for mass multiplication of the**

advantages of the Vaishali variety and our sincere efforts will be towards whole block conversion in to seed block for Vaishali variety within 2-3 years.

Table-1: Training programmes organized on tur production.

Subject	Title of the trainings	Duration (Days)	No. of participants		
			Male	Female	Total
Crop production	Oil seeds & pulse production technology	2	49	36	85
	Importance of bio fertilizer in oilseeds & pulses crop.	1	18	-	18
	Land preparation for major crops of the area.	1	34	50	84
	Improved production technology for pigeon pea cultivation	2	22	0	22
	FLD training on Tur	1			
	Integrated weed management in Tur	1	34	0	34
	Important post sowing/ plant agro technologies for more return in kharif crop.	1	21	17	38
	Package of practices of major kharif crop	2	28	23	52
	Importance of land preparation for kharif crop	1	0	19	19

Table-2 Comparison of economics of Vaishali demonstration plot and control plot in tur crop.

Sr.No.	Name of The village	Yield(Qt/ha) Demon.	Yield(Qt/ha) Local Cheque	Increase in yield (%)	Net profit (Rs/ha) Demon.	Net profit (Rs/ha) Localcheque.
1	Year Khari 2007					
	Gatadi & Champawadi	8.84	6.62	33.5	10609	7332
2	Year Kharif 2008					
	Gatadi	12.48	7.40	68	46538	26600
	Gadat					
	Bhitkhurd					
	Bhitbudrak					

Price-Pigeon pea grain (2007)-Rs.12/kg grain.

Pigeon pea grain (2008)-Rs.40/kg grain.

Table-3 Adoption of Vaishali variety

N=100

Characteristics	Number	Percentage
Overall knowledge level		
Low	11	11.00
Medium	74	74.00
High	15	15.00
Total	100	100.00

Head wise knowledge Level		
Cultural practices		
Low	15	15.00
Medium	61	61.00
High	24	24.00
Total	100	100.00
Fertilizer Management		
Low	15	15.00
Medium	70	70.00
High	15	15.00
Total	100	100.00
Irrigation management		
Low	20	20.00
Medium	57	57.00
High	23	23.00
Total	100	100.00
Marketing of Green pod		
Low	22	22.00
Medium	55	55.00
High	23	23.00
Total	100	100.00

Farmer's reactions:

1. Vaishali variety is better than habitual/local cultivars in the villages.
2. Variety is suitable for vegetable as well as for grain/seeds.
3. During the year 2008 only this variety gave substantial yield in this region, all other traditional varieties failed at all.
4. Sowing on ridges allowed all plants to stay alive and produce even in high rainfall area successfully.
5. Vaishali variety gave good economic returns as compared with traditional varieties grown in the province.
6. INM including recommended dose of fertilizers (RDF) +FYM + Rhizobium inoculation) crop was found better than only use chemical fertilizer.
7. Seed production along with green pod marketing gave higher net homecoming as compared with only grain production.
8. No menace against failure of the crop due to early maturing and less pest attacks at maturity stage, due to short duration variety.

Conclusion:

Higher yielding and improved varieties is the one of the most important component to get higher yield in agriculture crop production machinery, which technology promises higher yield. INM & land configuration also helps in improving

yield. Majority of the respondents gained medium level of the overall knowledge and adopted all cultural practices of the tur production, the knowledge level of the farmers regarding scientific cultivation of tur was increased remarkably, (**Table-4**). This may be due to the proper guidance given by KVK scientists, Demonstrations and constant follow up by KVK missionary. The yield was increased to the tune of **33-68% and the net profit was increased to the tune of 30.68%**.

Implication: The study has acknowledged the knowledge level of the tur growers towards improved technology. This study can be guideline for other extension worker to implement this way of extension technology for their clients. On this groundwork the extension personnel may locate clients for training and also those who can be used as counselors to other farmers. The study is also useful for effective propagation of the improved technology in other regions for eco friendly and sustainable agricultural development.

Suggestions :- Based on this study we can suggest our other extension workers as well as to the policy makers to take a keen interest in the matter and do needful for great publicity of such technologies in their respective areas of working for successful journey towards next phase of Green Revolution on sustainable basis. This study is also eye opening for the persons working in the field of extension education. This thing looks like diminutive but its impact is of great magnitude.

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3.7.4 Integrated Nutrient Management, a windfall to get higher production of vegetables in Tribal areas of South Gujarat- A Success story.

Introduction:

Farmers are trailing their productivity and quality of the vegetable crops due to injudicious use of chemical fertilizers and less use of organic matter. An organic matter serves as mechanical spring in soil and improves resilience once stress is removed. Imbalance application of nutrient neither increase yield nor profit in the long run but it may result in accelerating deficiency of other nutrients in the soil. The integrated nutrient management (INM) maintains soil fertility for sustaining increase in crop productivity through optimizing all possible sources, such as organic and inorganic nutrients of plant. Required plant nutrients for growth and quality in an integrated manner, appropriate to ecological, social and economic possibilities (Chundawat, 2001). Farmers of this region struggle for livelihood and divert from traditional agriculture to high output vegetables cropping viz. **Okra, Brinjal, and Papdi**. Therefore, to harvest optimum yield of vegetable crops in eco-friendly way it is very essential to go towards integrated nutrient management which will be capable to improve the soil health. To demonstrate the integrated nutrient management on vegetable crops on farmer's field, this will increase the awareness of this improved technology and to increase the productivity of vegetable crops and to improve the soil health. The demonstrations on INM were conducted in different villages of Tapi District in the State of Gujarat.

Methodology :

Under Rashtriya Krishi Vikas Yojna (RKVY) KVK, Vyara adopted seven tribal villages of Tapi district. 200 acres area had been covered in INM demonstration. Before adopting the villages, vegetable growers losing their productivity and quality of the vegetable crops due to injudicious use of chemical fertilizers and less use of organic matter. Hence, in RKVY scheme the demonstrations on integrated nutrient management on vegetable crops on farmer's field were conducted to increase the awareness of this improved technology and to increase the productivity of vegetable crops as well as to improve the health of soil, water and environment in the golden era of organic Farming.

Demonstrations were planned for INM including organic in form of enriched bio-compost, recommended dose of fertilizers and bio-fertilizers. Seeds/seedlings were treated with bio-fertilizers (*Azotobacter* + PSB) @ 2kg/ha each at the time of sowing/transplanting. Enriched Biocompost @ 10 ton /ha was applied at the time of land preparation in all four crops i.e. Brinjal, Okra and Papdi. The recommended doses of chemical fertilizers for Brinjal was 100-50-50 NPK kg/ha, Okra was 150-50-50 NPK kg/ha, and that for Indean bean 20-40-00 NPK kg/ha. 100% P & K fertilizers was applied at the time of planting. While N fertilizer was applied in 4 equal splits, for Brinjal, 1st at 25 DATP and remaining 3 splits at 25-30 days interval, while for Okra, 1st at 21 DAS and remaining 3 splits at 25 days interval. Where in case of Indean bean 100 % N & P was applied as basal dose. Total 7 demonstrations on Okra and 46 on Brinjal were conducted. Soil samples before sowing and after harvest of crops were taken and analyzed.

Results and Discussion :

Growth and yield were reported higher with integrated nutrient management than conventional method of cultivation of Okra, Brinjal and Papdi. Plant height of Okra plants were reported about 35cm more in INM demonstrated plots than control plot. While in case of Brinjal and Papdi almost similar plant height was recorded. More plant height with INM may be due to better vegetative growth resulted in demonstration plot due to more conversion of photosynthetic product in to protoplasm. About 40%, higher Number of fruits harvested per plant in Okra with INM plot. In Brinjal about 56 % (Rabi) and 78% (Kharif) more number of fruits was harvested with INM treatments compared with control. In case of Papadi 54.04% higher number of pod was harvested with INM treatments compared with control. 35.6% higher Yield was obtained in case of okra. About 53% higher yield was observed in Papdi in INM demonstrated compared with traditional Papadi growing plots. While in brinjal rabi season 53.5 % and in Kharif season 48 % moer yield in INM treatment than conventional methods. The higher yield might be due to better supply of plant nutrients in balance form in INM plots, as organic matter improves soil health and creates sympathetic root environment for better augmentation and there by better absorption of nutrients, organic manures decreases fixation of nutrients and enhance availability by solubilizing action of microbes. Integrated nutrient management demonstration plots reported improvement in soil properties and nutrient content of soil after harvest of crops compared to initial soil nutrient

values based on chemical analysis. The organic carbon content was marginally improved while P and K status was improved considerably. It might be due to solubilizing effect of organic matter on native fixed nutrient by improving physico-chemical and biological properties of soil. It may be a result of positive effect of bio-fertilizers on soil properties. Brinjal and Papadi were demonstrated in kharif season due to got more price in kharif and farmers get double price then seasonal growing.

Conclusion:

It can be concluded that organic manuring play important role for improvement in crop production, soil health and nutrient use efficiency. The quality of fruit and keeping quality also improved by use of balanced ration along with good amount and quality of organic matters. The INM practice is very very essential for eco-friendly vegetable cultivation. It is also important for production of Indian Consumption Quality Agricultural production (ICQAP) as well as Export quality agricultural products (EQAP). To preserve soil, environment and water for their future use the INM technology is a current need of the time. It is proved that INM may be the sole responsible factor to produce better quality as well as well as higher profitable vegetable cultivation in this area.

Implications:

Successful growing of vegetables with INM will be unique tools of TOT for vertical and horizontal spread of the said technology in tribal dominated areas of Tapi district. Tribal farmers are very curious to adopt such technology in their vegetable cultivation. The inquiries from different parts of the district regarding INM technology as well as inquiry of the farmers in market for INM inputs may be called as a grand success of the demonstrated technology. These Demonstrations will be a boon, can say foundation stone of the spread of ecofriendly technology for higher and better production of the vegetables in tribal area and would be responsible for increasing income and thereby raising the standard of living of the "Vanvasi" people. It is really an unique peace of work done by this KVK In the benefit of tribal of South Gujarat.

3.7.5 Role of KVK in upliftment of Tribal dominated areas of South Gujarat through export oriented Okra cultivation.

Introduction:-

Tapi District is one of the Tribal dominated Districts of the South Gujarat. The District covers only **38% area** of cultivable land under irrigation. Major segments of the district are belongs to rain fed farming. The tribal farmers are yet very much conscious regarding economic use of irrigation water. Since last five years the tribal people have started Okra cultivation in the district through motivation and practical training by KVK, Vyara, Dist- Tapi. The dominant pocket is adjacent to Dolvan Market yard. Tribal farmers are using costly seeds of Hybrid okra. Mainly hybrids are produced by Private, National and Multi National Companies. Tribes are using higher doses of Chemical fertilizers and Insecticides- Pesticides. After harvesting of Okra majority of farmers handle very roughly. They transport okra in guny, plastic bag & overloaded it. They did not aware of value addition of okra. So, quality of okra was deteriorated. They expensed a huge budget behind Agrochemicals. Resulted in higher cost of production. Ultimately they are with expectation of higher prices of their okra in the market. Since last four years Export of Okra had been started by brokers. One or two big containers every after an alternate day's are exported from dolvan market which is costed around 33 cores per season. The okra market has created an identity of the region at National as well as international level. The role played by KVK in this task is immeasurable.

In year 2007, **Krishi Vigyan Kendra (KVK), NAU, Vyara** started work to decrease the cost of cultivation, reduce the use of agro chemicals, to train the farmers towards value addition in okra and to introduce eco friendly cultivation of okra in the western region of Tapi district. In this context KVK Subject matter specialist has been started 15 days interval visit in all the village around the Dolvan market for diagnosis of the pest-disease and any other problem related to okra cultivation. KVK scientist hammering the technology for export quality production of okra to the farmers. Subject matter specialist horticulture has been organized ON and OFF campus trainings, celebration of okra day and conduct FLDs on INM in Okra. In krishi mahotsav subject matter specialist (horticulture) had contacted directly with farmers and solved their problems regarding cultivation practices and

how to reduce the cost of cultivation. Subject matter specialist (horticulture) demonstrated INM technology in 124 field of different villages. Field days were arranged at farmer's field to show the technology feed back from the farmers. In field days farmers showed the crop and realized that they are using more seed rate, more use of agrochemical. **Krishi Vigyan Kendra (KVK), NAU, Vyara** has organized one day seminar on **“Export oriented Okra” at Dolvan market on 14th November-2009** for spread of technology related to export quality okra production.

Main aim of organized seminar on export oriented okra was to increase more & more farmers participated & they get knowledge about time of sowing, seed rate, INM,IPM, IBNM, post harvest management & marketing and raising their standard of living through higher net profit.

The technical session was fully for profitable- export oriented okra. Dr. B. M. Tandel delivered his speech on scientific cultivation of Okra. He gave more emphasis on time of sowing which was more important for getting higher price & more net return. Because, in survey of market price of okra has higher in month of mid November to January. Other things were Integrated Nutrient management in okra for better quality production & soil health. Dr. Maganbhai Patel, Entomologist has delivered his speech on Integrated Pest Management (IPM) in Okra. Value addition and export oriented okra was explained by Dr. Alpesh Leuva, IBM, Expert, NAU, Navsari. The team of Expert from Anand Agricultural University headed by Dr, J.G. Patel has delivered their unique speech on **Integrated Bionutrient Management (IBNM) in Okra** for NCF cultivation on Okra in a golden era of Organic Farming. The team of scientists from NAU, Navsari and KVK, Vyara has delivered a nice talk on different aspects of profitable okra cultivation and exporting with higher net return. In questionnaire sessions the puzzles from farmers were solved by the scientists satisfactorily. Nearly **4000 tribal farmers and farm women** had taken active participation in the seminar.

Results:

In earlier, 2000 ha area comes under cultivation of okra during rabi season. It produces 22000 ton okra. Farmers get average price of okra was 17.5 Rs/kg. Total turn over of tribal area of okra growers was 37.4 crores. During this year total area under rabi okra cultivation was 2560 ha & 25600 ton production. Month wise distribution of okra in dolvan market. In Oct.-Nov.2009 53.6 qt. okra was come &

price 28 Rs/kg, but in Dec. –January and Feb-March total 895.2 and 277.3 qt. okra was came and average price of this okra 47.5 and 31 Rs/ kg respectively.

In year 2008-09 dolvan and Surat market 2286 qt. fresh okra came in October to march month. The price of okra was 15 Rs/kg in October, then it was increase up to 27.5 Rs/kg in Nov. Dec.. Up to end of March it was down up to 7.5-10 Rs/kg. But in year 2009-10 1225.5 qt. okra comes in dolvan and 1206.5 qt. in Surat market. In month of October price of okra was starting from 20 Rs/kg and in month of November its increase 27.5 to 30 Rs/kg. Broad publicity of export oriented seminar, national level broker are come to buy okra. They were directly contact with farmer & buy okra on their field & they get 2 to 2.5 Rs/kg higher then dolvan and surat market. They supplied okra in Mumbai & Delhi. In month of Dec. January farmers get 45 to 60 Rs/kg price. Which was so higher & they were never seen this much price in life. Farmer was also growing quality production and more brokers at least 24 was came in market and more competition for buying okra. Earlier 95 % farmers put okra in plastic bag & over loaded in tempo transportation. So deteriorated the quality of okra , ultimately get lower price. After seminar farmers realized that only production was not important but quality & grading is also important for getting higher price. They get higher price in A grade quality & slightly lower in B grade and lowest price of C grade quality okra.

Farmers know that production was not important but grading and transportation was also important and now 35 -40 % farmers are use plastic crates.

Lastly, due to this seminar, farmers grow good quality production, they doing grading in their product, use plastic karats for transportation and get more price as compare to earlier year.

Implications:

This high-tech okra production and marketing technologies has changed the vision of the tribal farmers. 72 new motor cycles had been purchased by tribal youths only due to higher income through okra. Five Tribal farmers were able to purchase four wheelers from export oriented okra cultivation. The whole pockets became famous for export oriented okra cultivation. The NRIs originated from this district can say in foreign countries that this okra is coming form my native. In real sense this success has changed the vision of the KVK scientists towards farming communities and vice versa. This KVK has proved the real role of Information hub in the tribal dominated areas like, Tapi district.

3.7.6 The role of KVK in shifting the life of normal tribal farmer to an innovated high-tech farmer. A success story

Back ground information:

The village Bhitkhurd is a tribal dominated village with 100% per cent tribal population, situated in Utchhal block of Tapi district. It is located 9 km away from block place, 57 km from district place and Krishi Vigyan Kendra, NAU, Vyara. The total population of the village is around 4000. The total geographical area of the village is about 824 ha. Out of which net cultivated area is about 510 ha. The irrigated area of village is 20 ha which is mostly irrigated by tube wells. Total geographical area of the taluka is 8260 ha & out of this 8260 ha area is cultivated and only 701 ha area is covered under irrigation facility.

The main crops of the village are drilled Paddy, Tur, Transplanted Paddy and Sorghum in kharif while Wheat, Chickpea and few vegetables in *Rabi season*.

Intervention:

Process:

In the year 2007, KVK, Vyara has adopted the village Bhitkhurd. In first year for intensive activities of Transfer of Technologies related to agriculture and allied sector for increasing agricultural production there by raised the standard of living of farmers. First Subject Matter Specialist of KVK, Vyara conducted PRA in this village and find out the technological adoption gap in agricultural crop and to identify the thrust areas for the village.

During PRA, interacting with farmers, it was found that the farmers were unable to get economical dwelling coming from their land. As they grow drill paddy, Tur, gram and T.P. paddy with old varieties, which is having very low yielding capacity. In rain fed farming, poor management in their field, such as high seed rate, improper spacing, imbalance use of fertilizers & high weed infestation. All these factors collectively resulted in extravagant agriculture of the village. The farmers of this tribal belt were unable toward adopting new technologies, recent innovations in agriculture. So, some times they left their field. They were frustrated with agriculture; result was migration for livelihood security.

Considering the situation, Subject Matter Specialist (Horticulture) dialoged with farmers and suggested first to replace the seed of all field crops and cultivation of high value vegetable crops. Interested group of farmers were invited to KVK,

Vyara for giving detail training on scientific cultivation of field crops and motivated on growing vegetables and seed plot through video show and power point presentations. Those interested farmers were also visit NAU, campus farm for motivation to old traditional farming.

Among trained farmers, **Mr. Bhanudashbhai Sahitravbhai Gamit**, a resident of Bhitkhurd is a school dropout and presently involved in agriculture and dairy farming. His father, Sahitravbhai is also a farmer and engaged in farming for last 25 years. He is migrated Bhitkhurd from Maharashtra. He has 9 acres of cultivated land. Previously, due to lack of irrigation facility they had to depend on rainfall and were able to cultivate sorghum and drill paddy in *kharif* and gram in *Rabi* on conserved soil moisture. From all the available resources, he was able to earn **net return of only Rs. 22000**.

With availability of irrigation water through lift irrigation in Tapi command area and use of tube well , for 4.2 acres of land led him cultivation of irrigated, T.P. paddy, wheat and gram in initial years, he was able to earn **38-41 thousands** from 4.2 acres of land.

Mr. Bhanudashbhai had bayed pick up van for doing transportation business. But he did not succeed in the form of option other than farming for his livelihood. He has taken interest in his farming. He was eager to know incredible newer developments in agriculture. He has great impatience and curiosity to know recent innovations in agriculture. But as he is residing at remote place, he was unable to get latest information regarding development in agriculture. He was in search of an organization which can cater his need for newer technologies in the field of agriculture.

Technology:

KVK scientist had selected few interested young farmers and conducted training programme on scientific cultivation of paddy & gram. KVK scientist demonstration on newly technology of paddy, tur and gram on farmer's field. All those crops gave 25- 34 % higher yield than conventional method of farming. Mr. Bhanudhas has trust on SMS (Horticulture) and start new technology adopted in field of agriculture. The Subject Matter Specialist (Horticulture) Mr. B. M. Tandel suggested him to grow gram var. GG-2, in life saving irrigated area. He produced 2000kg gram in 4 acres of land and he earned net Rs. 52000. As an innovated farmer, he immediately accepted the idea given by KVK scientist and neighbor state

and started cultivation under guide line of SMS (horticulture). In kharif season he cultivated T.P. paddy & Tur in 6 acres of land and in other area under drill paddy. He had been using 70 % less seeds than earlier and use improve varieties, applied fertilizer under guidance of Mr. B. M. Tandel. Production was double in Tur and T.P. Paddy and 40 % increase in yield of drill paddy. He got net returns of Rs. 83, 495 from 9 acre land. In rabi season he was grow onion in 3 acre, brinjal in 0.5 acre, gram in 1 acre and wheat in 2 acre. He has cultivation of all crops under direct guideline of SMS (Horticulture), time to time supervision given to him by telephonic and direct contact and field visit. He was produced 30 ton onion, 3700 kg brinjal and 1400 kg wheat, which was so higher then earlier production. He able to grow new crop and make self confidence. Total net output from these all crops were Rs .2,67,500. He also produced seeds of onion in this year.

Impact:

Economic:

Due to adoption of scientific approach in agriculture he obtained a higher yield. He received total income of **Rs. 3.5 Lakhs** from total 9 acres of land. The total cost of cultivation was **Rs. 69000 /-**.The net profits was **Rs. 2.81 Lakhs**. This led him higher income and also raised his standard of living with better social status. Previously he had to borrow money from others for his social expenses. At present he is in a position to lend money to others. Cultivation of good quality agriculture product attracted the merchants towards Bhitkhurd village. He started to sell paddy after milling paddy after thorough processing and get more prices than others.

Horizontal spread:

Now, Mr. Bhanudashbhai is become an **innovator** for other farmers for Tur, Gram ,Paddy and Onion cultivation in the region. Under his guidance total **26 farmers are** growing tur and paddy, 25 farmers and Maharastra state farmers are growing Gram having irrigation facility. In this year around other 29 farmers had started growing onion cultivation by guidance of **Mr. Bhanudashbhai**. This can be said as an apparent impact of effective and efficient functioning of KVK in the service of farming communities at grass root level.

Table 1 : Effect of INM on crops.

Particular	Yield attribut			
	Plant height (cm)	Number of fruit per plant	Yield	
			gm. /plant	ton. / ha
Okra(Rabi)				
Conventional method	89.93	15.3	152	13.46
INM (demon.)	121.57	21.4	215	18.20
% increase over conventional	35.18	39.86	41.44	35.6
Brinjal (Rabi)				
Conventional method	70.25	25.97	1210	19.41
INM (demon.)	69.60	42.62	2290	29.92
% increase over conventional	—	56.4	89.25	53.5
Brinjal (Kharif)				
Conventional method	89.35	21.64	1082	18.08
INM (demon.)	98.42	38.57	1492	26.87
% increase over conventional		78	37.8	48.18
Indian bean				
Conventional method	48.21	87.56	138	3.97
INM (demon.)	51.29	134.34	223	5.933
% increase over conventional		54.04	61.5	53

Table 2 : Effect of INM on soil properties .

Soil analysis									
pH		Ec (ds/m ²)		Organic carbon (%)		Available P ₂ O ₅		Available K ₂ O	
Initial	After harvest	initial	After harvest	initial	After harvest	initial	After harvest	initial	After harvest
Okra									
6.74		0.32		0.97		53.57		400.39	
Brinjal									
7.22		0.43		0.82		48.90		451.02	
Indian bean									
7.79		0.48		0.69		38.05		353.73	

3.7.7 Impact of Kitchen Gardening Demonstration in Tribal Farm

Women, A Success Story.

Introduction:

Krishi Vigyan Kendra, NAU, Vyara is an innovative science based institution which is engaged with transfer of scientific technology related to agriculture and allied fields in adopted villages of Tapi district. Tapi district is a Tribal dominated district with poor economic condition of farmers. The farm women of this area are mostly engaged with daily wages farm work which is available in particular crop season. Majority of tribal farm women have lack of knowledge about health & nutrition, dietary pattern of pregnant & lactating women and supplementary feeding for children. Due to poor economic condition, they are enabling to purchase fruits & vegetables from market for their daily dietary need. It resulted in poor health and imbalance nutritional status of farmers, farm women and children.

The farm women of this area are growing one or two vegetable crops of local variety in their backyard in traditional way. To motivate the farm women towards growing improved varieties of different vegetables to fulfill their nutritional requirement, it has been decided to conduct Front Line Demonstrations on Kitchen Gardening in adopted villages of Tapi district. Kitchen Gardening model developed by NAU in satellite village. Total 100 demonstrations have conducted on Kitchen Gardening in total 17 villages of Vyara, Songadh & Uchchhal taluka of Tapi district.

Objectives:

1. To improve the health & nutritional status of Tribal Farm families.
2. To increase the income of Tribal farmers.
3. To demonstrate Kitchen Gardening in scientific way.
4. To make farm women familiar with different vegetables & high value dietary vegetable crops.

Economics of Kitchen Gardening:

Season	No. of Farm Women	Area	Vegetable crops	Total Production (Kg)	Average Rate (Rs./Kg)	Gross Return (Rs.)	
						Before FLD	After FLD
Rabi'08	50	1 Guntha / FW	Okra, Tomato, Brinjal, Cabbage, Cauliflower, Chilli, Bitter gourd, Bottle gourd, Ridge gourd, Palakh	71.1	13	Not done kitchen garden	924=30 Along with domestic consumption
Khari'09	50	1 Guntha / FW	Okra, Tomato, Brinjal, Cowpea, Indean bean, Pigeon pea, Chilli, Fenugreek, Cluster bean, Bitter gourd, Bottle gourd, Ridge gourd, Palakh	120.56	18	546=00	2170=00 Along with domestic consumption

Feedback of Tribal Farm Women :

1	Kitchen gardening gives continuous supply of fresh vegetables at lower cost which gives daily nutritious diet.
2	Income is generated by selling extra vegetables grown in kitchen garden.
3	Before Demonstration, farm women were growing only two or two vegetable crops in their backyard but after demonstration they are growing different vegetable crops through kitchen gardening in scientific way.
4	In kitchen gardening, farm women are not applying any agrochemicals so they produce organic vegetables.
5	Farm women are utilized maximum backyard space and waste water.
6	Farm women are attracted towards hybrid vegetables.
7	Farm women are utilized their spare time through kitchen gardening i.e. Kitchen Gardening is the profit making leisure time activity.

Conclusion:-

Demonstrations on Kitchen Gardening have misrepresented the eye site of the tribal farm women among health and hygienic safety measures. The tribal farm women can not have enough money to purchase costly vegetables for their family. The sickle cell anemia and other disease are great constraints. The main reason behind this is malnutrition, imbalanced ration and illiteracy .The said FLDs has paved the way of healthier, long, prosperous and biodegradable life of the tribal farm women.

Implications:-

Looking to the success of the kitchen garden demonstrations the tribal farm women themselves motivated and ready to adopt this technology by their cost. Next year nearly 200 kitchen garden demonstrations were prearranged in this belt. The tribal farm women from other regions were also demanded for kitchen garden demonstrations. This year almost certainly more than 500 demonstrations will be conducted in Vyara and Songadh block with the help of different agencies. The nutritional discrepancy and undernourishment will be diminishing. The use of back yard space and wear and tear water of domestic purpose would be utilized in a better way.

3.7.8 Collision of linkages with Tribal co-operatives for effective TOT in Tribal Belt.

Krishi Vigyan Kendra working as grass root level TOT institute in Tapi district. Krishi Vigyan Kendra's mandatory work of linkage between GO's, NGO's, Co-operatives, SHGs and all related to agriculture and rural development. Tapi district is newly borned tribal dominated district of South Gujarat. District comprises 5 blocks. In Tapi district the **Hangati Mahila Trust** has a good linkage among tribal farm women. The trust has more than 2500 tribal women members, 2.5 crores deposits and regular crop loan facilities of more than 2 crores to the tribal farm women every year. The said trust has multifarious activities of tribal development such as Kirana shop, Hospitals, Schools, Watershed development project, SHGs, Wadi Yojna, Land leveling scheme and many more. In short ,this is an imperative and foremost organization among eastern belt of Tapi district in South

Gujarat. The **Hangati Mahila Trust** has good linkage with tribal farming community of the district. The main aim of Krishi Vigyan Kendra and the said trust is more or less on same line.

To take and advantage of ready made display place of this organization KVK, Vyara of Tapi district has made MOU in the year 2008. A big Shibir was organized at KVK, Tapi and formulated a frame work for jointly working together. A three tier committee was formulated for effective implementation of the programmes monitoring and evaluation, documentation and impact analysis. The **Three Tier Committees** are as under:

I. Executive committee :

- Members:
1. Programme Co-ordinator, KVK, Vyara
 2. Executive Secretary of Hangati Trust
 3. All SMSs of KVK
 4. Resource persons of related villages

II. Middle level committee :

- Members:
1. All SMS of KVK
 2. Presidents and Secretaries of selected clusters.
 3. Selected progressive farmers and farm women.

III. Grass root level committee :

- Members:
1. Selected leaders of FIGs, FWIGs, Rural Youths and Village workers
 2. Concern SMSs
 3. Representatives of **Hangati Mahila Trust**.

The meeting of executive committee is mandatory at least once in a month. The meeting of middle level committee is scheduled twice in a month and grass root level committee meeting scheduled as and when require. The whole mission was started with a specific goal. The key elements in the mission are Tribal farmers, farm women and rural youth. The mission has been started with commitment to get result oriented, impact oriented and visible outcomes. As a result of this mission, the different extension activities were carried out.

Table 1: Training Programme conducted by KVK

Sr. No.	No. of Training		Participants	
	On Campus	Off Campus	On Campus	Off Campus
1	6	12	243	486

Table 2: Extension Activities

Sr. No.	Venue	Title	Participants
1	Mandal	Dangar Pak Parisamvad-v-Khedut Shibir	558
2	Mandal	Khedut Shibir cum Paddy Crop Symposium	1372
3	Jamkhadi	Pak Parisamvad-v-Khedut Shibir	910
4	Mandal, Amji	Animal Camp	542 Animals
5	Gatadi, Bedi, Mirpur, Ghodchit	Animal Camp	480 Animals
6	Nishana, Bedi	Film shows – 2	90
7	Mandal / Amji	SHG Meeting - 2	2500 women
8	Bedi, Mandal, Amji	Field Day – 3	287

Table 3: Seed Material Distribution

Sr. No.	Crop	Qty	Beneficiaries
1	Paddy – Drilled (GR-5,8 & 9)	1500 Kg.	30
2	Paddy – T.P.(GR-7)	125 Kg.	10
3	Jowar (GJ-42,CSH-20,23)	25 Kg.	8
4	Tur (Vaishali)	1250 Kg.	150

Table 4: FLDs conducted

Sr. No.	Crop	Area	No. of Participants
1	Castor(GCH-5)	5 ha.	10
2	Groundnut(G.G-6)	10 ha.	20
3	Gram(G.G-2)	5 ha.	10
4	Paddy – Drilled (GR-5)	5 ha.	10
5	Paddy – T.P.(GR-7)	5 ha.	10

Table 5: Kitchen Gardening

No. of Beneficiaries	50 Tribal Farm Women
Kitchen Gardening conducted in Bedi, Mandal, Nishana, Amji of Hangati trust	

Looking to the success of the kitchen garden demonstrations the tribal farm women themselves motivated and standing by to adopt this technology by their cost. Next year nearly 200 kitchen garden demonstrations were prearranged in this belt. The tribal farm women from other regions were also demanded for kitchen garden demonstrations. This year almost certainly more than 500 demonstrations will be conducted in Vyara and Songadh block with the help of different agencies. The nutritional discrepancy and undernourishment will be diminishing. The use of back yard space and wear and tear water of domestic purpose would be utilized in a better way.

Live contact was maintained among KVK scientist and Hangati Mahila Trust Family. The constant follow up and spot guidance as and when required is maintained by KVK scientists. The live contact of KVK scientists in the form of On/Off campus trainings, Shibirs, farm visit, field day, fortnightly and monthly meetings, ex-trainee visits, group field visits, kishan gosthis and different programmes are preserved throughout the year.

The tribal farming community has created a sense of belongingness with KVK and they are in such opinion that KVK and Hangati Trust is really working for their own benefits. A good channel was developed among 84 tribal dominated villages of Songadh and Vyara block. Scientist visit to these villages and farmers visit to KVK became common phenomenon. The Union Minister for Tribal Affairs; **Dr. Tushar Chaudhary** has also visited the villages to observe the activities and fully satisfied with it.

Our honourable Vice Chancellor, Director of Research, Director of Extension Education, All Deans and Directors and Research Scientist of NAU also contributed consciously to this mission.

Conclusion:

The 84 villages linked with this mission are on the path of drastic changes in their agriculture and live stock management, each and every problems related to agriculture and animal husbandry could immediately solved by KVK scientists. The all integrated approaches of crop and live stock management had been implemented easily. The recent innovation in the field of agriculture is immediately implemented by KVK scientist among these villages and farmers are very eager to adopt such technologies given by KVK scientist with full interest and confidence. The traditional methods of farming along with same prejudices and religious belief have been

changed scientific technology and we could successfully change mindset of tribal farming communities. This will be a great achievement in the field of agricultural extension management. Linkage with Hangati Mahila Trust was an ideal example of unique piece of work done by this KVK.

Implication:

The study has acknowledged the changing mindset of the tribal farming communities with good empathy building. This study strongly supports the title of “**Reaching the Unreached**” the study can be guideline for other extension workers to implement this way of extension technology for their clients. On this foundation the extension personnel may locate clients for training and also those who can be used as counselor to other farmers, the study also useful for fast conversion of orthodox Vanvasi farming communities towards dynamic farming personality. The study will be helpful to make KVK family Farmer’s Centric, Farmer’s Oriented, Farmer’s Lead and Farmer’s Friendly in the field of Transfer of Technology in agriculture.

3.7.9 The IPM Block, Nizar – A success Story

Nizar taluka is situated at the border of Gujarat & Maharashtra. It is located 110 km from district place and Krishi Vigyan Kendra headquarters, Vyara. The total area of taluka is 40079 ha. out of which net cultivable area is 18922 ha. Nearly 50 per cent cultivated land having irrigation facility which is mostly irrigated through tube well and water lifted from the river Tapi. The Nizar block of Tapi district is far away from district place as well as from NAU research station. Therefore, it is the most neglected block and up till now no any extension agency is available to cater the need of farmers regarding agricultural technology.

The main crops of the taluka are Cotton, Chilly, Tur in *Kharif* and Wheat, Chickpea, Sugarcane and gram in *Rabi*. Cotton is an important cash crop and plays an important role in **Indian economy**. In Gujarat, cotton is grown in about 16 lakh ha area. Cotton is highly susceptible to several pests. About 166 different species of pests and diseases are reported to attack cotton at various stages of its growth. Amongst these, the cotton bollworm *Helicoverpa armigera*, the white fly *Bemisia tabaci*, Jassids, *Amrasca biguttula biguttula* and the pink bollworm *Pectinophora gossypiella* have been causing economic damage to cotton crop all over the country. With introduction of Bt cotton, the incidence of sucking pests viz., Jassids, Thrips,

whiteflies, mealy bugs, mites *etc.* has increased tremendously. Increased use of pesticides resulted in several sour effects like development of resistance in insect pests to insecticides, pest resurgence, pesticides residues, health hazards, destruction of natural fauna, ecological disturbances and environmental pollution, besides increased cost of production.

In the year 2007, **KVK, Vyara** started activities at Nizar taluka as a **Satellite area** for its intensive activities of Transfer of Technologies related to agriculture for increasing agricultural production with two main projects i.e. Technology Mission Cotton and Rashtriya Krushi Vikas Yojana.

To find out the technological adoption gaps and to identify the thrust areas for the agricultural development, a PRA of selected villages was made. During PRA, interacting with the farmers it was found that the farmers were unable to manage the insect pests and diseases even though applying higher doses of insecticides in mixtures. One of the major thrust area identified was to reduce the load of pesticide in cotton ecosystem through **Integrated Pest Management**. The farmers were spending huge amount for the pest management. As they were unable to manage the pests, farmers were frustrated with Cotton cultivation even with the adoption of Bt-cotton. No extension agency was targeting these farmers, they had to rely on private pesticides dealers. Due to over loaded use of pesticides degradation of soil, water and environment was also started. The quality of Cotton was also affected.

Subject Matter Specialist (Plant-Protection) suggested the implementation of Integrated Pest Management in Cotton. Training as well as demonstrations on IPM were the need of taluka for profitable cultivation of cotton. The interested farmers of different villages were given on campus as well as off campus training. The special emphasis was given on identification of insect pests and diseases of cotton, components of IPM, bio-control, use of pesticides on threshold level, use of neem based pesticides, economic use of irrigation water, ways to produce quality products, etc. through video show and power point presentations. The farmers were also motivated to visit and interact with the farmers who have adopted this technology.

Fortunately, with financial assistance under Cotton Technology Mission from Main Cotton Research Station, NAU, Surat and, KVK Vyara was able to give demonstrations in 125 ha. [50 ha. in the year 2007-08, 50 ha. in the year 2008-09 and 25 ha. in the year 2009-10] benefiting 127 farmers. During these three years, the components of IPM were demonstrated, constant follow up visits, Ex trainee visits,

sammelans, field days, farmers days and a grand “Cotton Day-cum Field Day” were done by the KVK staff. Initially, farmers were hesitating in adopting need based application of single pesticides and other IPM component but with constant encouragement, KVK scientists became successful in building up confidence in them. The major achievement of the demonstrations is that farmers were successful in keeping off the mealy bug incidence from their field with the advanced guidance provided by KVK scientists. The farmers from neighboring villages were also attracted and associated with the KVK for adopting their village under IPM scheme. ***The Nizar taluka is now become an IPM Block.*** The surrounding villages Viz., Sarwala, Adada, Khorda, Vanka, Chichoda, Devala, Pisavar, Vyaval, Piplod, Nizar and many more villages adopting IPM in cotton. The total IPM aids costing **Rs.86920**, were supplied to them on free of cost. The constant follow up and monitoring of the IPM practices made them habitant with IPM practices.

Mr. Vinod L. Patel, Mr. Jaypal S. Patel, Mr. Latesh D. Patel, Mr. Savan A. Samudre and Mr. Ravindra R. Patel, were working as field Worker who also helped in selection of farmers for demonstrations, arrangement of training and refreshment, distribution of inputs, collection of row data etc...

Initially, work was started at Velda and its successful adoption helps in transferring the IPM technology in surrounding cotton growing areas of nizar taluka. Last year IPM kits along with Maize (Sweet corn) seed, Castor seed and Bio-control aids was given to 10 selected villages and constant follow up was maintained by KVK scientists. At grand growth period of the crop (16.09.2009), a special “Cotton Day & a Field Day were arranged at Velda. **Dignitaries of the NAU: Hon. Director of Extension Education, Research Scientist(Cotton), NAU, Surat, Plant Protection Scientists of the University, State department of the agriculture and all GOs, /NGOs of the region. Approximately 300 farmers of the surrounding villages were participated in the programme. Beneficiaries shared their experience about the technology and inspired other farmers to the IPM technology. On the basis of which the technology spread to the whole cotton growing farmers of the Nizar taluka.**

Table-1 : Comparison of economics of IPM demonstration plot and control plot in cotton crop.

Particulars	IPM Demonstration Plot	Control Plot (Non IPM Plot)
Number of spray	6	9
Cost of Plant Protection (Rs/ha)	4850	7900
Average Yield (Qt/ha)	30.56	20.18
Income from maize crop(Grown as inter crop), (Rs/ha)	2150.00	00
Gross income(Rs/ha)	90102.00	57900.00
Net profit(Rs/ha)	86101.00	52300.00

Table-2: Adoption of IPM Technology

N=100

Characteristics	Number	Percentage
Overall knowledge level		
Low	15	15.00
Medium	70	70.00
High	15	15.00
Total	100	100.00
Head wise knowledge Level		
Cultural practices		
Low	20	20.00
Medium	60	60.00
High	20	20.00
Total	100	100.00
Mechanical practices		
Low	15	15.00
Medium	70	70.00
High	15	15.00
Total	100	100.00
Biological practices		
Low	25	25.00
Medium	50	50.00
High	25	25.00
Total	100	100.00

Conclusion:

IPM is such a technology reduces the cost of plant protection and increase the yield. It also helps in reducing the pesticide use and thus, prevents/delays development of pesticide resistance, reduces residues in soil, water, food and definite role in the prevention of environment imbalance. Majority of the respondents

gained medium level of the overall knowledge and adopted cultural, mechanical and biological practices for pest control. The adoption of IPM in cotton, the total income of the farmers has been increased by **64.6 %** and the cost of cultivation decreased to the tune of **38.6 %**(**Table-1**). The knowledge level of the farmers regarding IPM in cotton has increased (**Table-2**). This may be due to the proper guidance given by KVK scientists, Demonstrations and constant follow up by KVK missionary.

Implication: The study has acknowledged the knowledge level of the cotton growers towards IPM technology. This story can be guideline for other extension worker to implement this way of extension technology for their clients on IPM .On this foundation the extension personnel may locate clients for training and also those who can be used as counselors to other farmers. The study is also useful for effective propagation of the IPM technology in other regions for eco friendly and sustainable agricultural development.

This success story will be a guideline for other extension workers to perform better in their field. It leads toward effective, efficient and result oriented work in the field of Agricultural extension. This is a mile stone work for the effective TOT in the Tribal dominated interior region of the south Gujarat. It will be eye opening for disseminating any recently released innovative agricultural technology successfully among illiterate and poor participants. At the outset of the concluding we can say KVK Vyara is becoming really an **information hub** for farming communities. Our efforts are to make this KVK Farmers friendly, farmers centric, farmers leading and the overall agricultural development on sustainable basis. Precision farming and Eco friendly development of the region is our prime Motto. The **Research-Extension-Farmer-Market** Linkage Extension approach is a current need of the time to get better agricultural output. The **next phase of Green Revolution** can only be possible through integration of all above said approaches.

3.7.A. CASE STUDIES:

(1) Natural havoc by Ice fall at Velda - A case study

Nizar taluka of the Tapi district is a remote area of the district. As it is on the boarder of the Gujarat & Maharashtra, it is the most neglected block. On 17/12/09, at Velda (Nizar), at evening time near about 7.00 pm, there was a rain of ice continuous for about 20 minutes. Next day farmer of that village informed the Krishi Vigyan Kendra, Vyara (Dist. Tapi) and the head of the centre Dr. H. D. Mehta inform the Hon. Vice Chancellor of Navsari Agricultural University. The VC immediately made a committee to get detail information about this natural calamity. Dr. V. Kumar, Research Scientist (Cotton) was the team leader. This committee visited the affected farmer field on 19/12/2009 at 11 a.m. Farmers were waiting eagerly for getting the solution of the natural havoc.

On 17/12/09, at Velda (Nizar), Dist. Tapi at 7.00 pm there was a heavy snow rain continuously for about 20 minute. It covered about 5 km broad area up to 15 kms. Mostly the border of Velda village was affected due to the snow rain at evening time. As the case happened during evening hour, no any deaths occurred but continue rain of an apple sized ice pieces up to 20 minutes; it completely destroyed the crop standing in a field. The farmers were depressed due to the uncontrolled havoc of the nature. They were not finding any solution to recover from the damage. The committee visited one by one all the affected farmers' field.

First they visited the field of **Gulabbhai Bachubhai Patel** where he planted 4 acres area of **castor** in which all the leaves were damaged. Bunch of capsule was beaked & fall down on the earth. Near about 95 percent crop was destroyed. There were scratches on the stem of plant. Then after they visited the field of **Shankarbhai Madanbhai Patel** where he planted **papaya**. He had 9 acre of papaya which was completely destroyed by snow rain. Some plant was break down due to the snow rain and the fruit of papaya and stem were cracked. Numbers of fruits were fall down from the plant. The quality of fruit was also affected. The purchasers take the advantage of this & were giving the price of 0.80 paise/kg. which was 2.75 rs./kg at one day ago.

Then after the committee visited the wheat field of **Ambalal Chaganbhai Patel**. In his field, 100 percent damage was observed. whole the field was water logged. Wheat crop was failed in the field of **Ambalalbhai Jashvantbhai Patel**. All

the leaves were fall down only the stem was remained. pods were also fall down. In the maize field, the whole crop was lodged. Cotton crop was also badly affected. Mr. Bharatbhai Sudambhai Patel grew 20 acres of cotton. Balls and leaves were fall on the ground. Cotton was hanging out the ball on the plant. Papaya crop of Mr. Pareshbhai J. Patel(15 acres), Mr. Ganeshbhai T. Patel(18 acres) and Sureshbhai D. Patel(6 acres) was totally destroyed.

Investigation team also visited the affected fields of chilly, safflower and gram. 80 to 85 % crop was damaged. Seed plot of Castor and wheat were completely destroyed. Seed plots given by Gujarat State Seed Corporation on Gram(G-2, 52 acres), Wheat (Lok-1, 66 acres and G.W.-496, 13 acres), Tur (B.D.N.-2, 16 acre) and Castor(GCH-4,57 acres) were completely failed. Gram plot (PKV-2) of Mr. Bharatbhai S. Patel was in submerged condition whereas Chilly plot of Mr. Sukhrambhai Y. Patel was also completely dislodged. Overall damage in the area was about 90 to 95 %. Survey carried out by the VLW & talati showed the following picture of damage.

S. N.	Village	Crop	Affected area (Acre)	No. of Farmers
1	Velda	Cotton, Papaya, Banana, Castor , wheat, maize, safflower, Sorghum, gram, tur, chilly and s'cane.	2957	633
2	Kothli	Cotton, Papaya, Castor, wheat, maize, safflower, Sorghum, gram, tur, and chilly	1009	281
3	Mubarakpur	Cotton, Papaya, Banana, Castor , wheat, maize, safflower, Sorghum, gram, tur, chilly	1191	243
4	Vanka	Cotton, Papaya, Banana, Castor , wheat, maize, safflower, Sorghum, gram, tur, chilly	0162	-
5	Antuli	Cotton, Papaya, Banana, Castor , wheat, maize, safflower, Sorghum, gram, tur, chilly	0032	-

Suggestions given by the investigation team:-

No one can prevent natural hazardous but can find some ways to reduce the hazardous effect to certain extent. Here are some suggestions given by the investigation team to the farmers to recover up to certain extent from the unwanted problem created by the nature.

1. Farmer who lost their crop completely can grow wheat who having irrigation facilities.
2. As the soil was moist, farmers were advised to some short duration summer crops.

This was an unique experience for farmers of the Nizar block. Majority of the farmers were in such an impression that it was the curse of the nature. Some of them also believed that it was religious problem. Due to the immediate contact of farmers with KVK, the hidden scientific truth responsible for the event was disclosed. Scientific management of such natural calamities was recommended by the team of KVK scientists. This is the real impact of KVK in the field TOT at grass root level. KVK is working as a bridge between farmers' community and the research system. Hence, KVK is made for reaching the Unreached. KVK is the only place where farmers can get closeness with KVK staff and finding their solutions of the problems. So we can say that this KVK is working as a real hub for the district and as a result of which KVK is Proved as a real farmer centric, Farmers friendly & farmers laid agricultural extension system in which effective participation of farming community is observed.

(2) Hazardous effect of injudicious use of weedicide at Nizar (Tapi), A case Study

About 90 % of the area is covered by cotton crop at Nizar taluka of District Tapi. Farmers of Nizar complained on 1st September, 2009 about the side effect of weedicide on the cotton crop. Repeatedly 8 -10 farmers from different villages called during the day. The substance was discussed herein details. Some farmers applied 2-4 D on sorghum crop which were adjacent to cotton field. It causes serious effect on the adjoining field crops. The farmers of the area were afraid very much due to the unknown havoc. They had fear of complete loss of their crops. On the basis of the complain, two scientists from Vyara KVK, Dr. A. P. Patel and Dr. Janaksinh Rathod visited Nizar on the next day. First they attended a meeting at the Khedut Sahakari Sangh, Nizar. After informal discussion with farmers, they visited 15 different weedicide affected plots of different crops. They visited First the papaya field of Mr. Sunilbhai Patel. Here, the adjoining sorghum farmer applied 2-4 D in his crop to control the post emergence weeds. Earlier only 70 to 80 plants were affected. But, when he cultivated his crop after a week, the dust particles containing residual parts of 2-4 D created problem in papaya plantation. Whole plantation was defectively affected and Leaves were deformed.

After that, they visited other cotton fields where neighboring farmer sprayed sorghum crop by tractor mounted sprayer. Here the crops like cotton, chilly etc. up to 1.5 kilometer were badly deformed. In certain cases, the insecticides were sprayed by the same pump of weedicide. After Nizar, they went Mubarakpur, another village. Total 175 to 250 acres of the crop were deformed due to the elevation effect of 2-4 D spraying.

They returned with the samples of different plant parts of different crops. Both of the scientists visited Navsari and inform the honorable Vice Chancellor about the case with photographs. Honorable Vice Chancellor responded immediately and appointed an investigation team under the leadership of Dr. C.L. Patel, Principal, N. M. College of Agriculture with Mr. Ajay Narwade, Asst. Professor (Physiology), Dr. A. P. Patel, SMS (Agronomy), Dr. J. H. Rathod, SMS(Plant Protection). The team repeatedly visited the Nizar on 05.09.2009 for finding out the exact cause of the hazardous effect and its remedies.

Agriculture Extension Officer (District Panchayat -Tapi) Mr. Kantibhai Patel arranged a meeting at the khedut Sahakari Sangh, Nizar between farmers and the investigation team. They discussed about the problem of side effect of weedicides and its probable reasons. They also visited the affected fields of different crops. Many things came out during the discussion and field visit were as under.

1. They used weedicide injudiciously, having no knowledge regarding safer use and spraying system of weedicide.
2. Spraying was done with Contract system by Private Agro Service Centre
3. Farmers didn't know about pre & post emergence of weedicide.
4. Spraying pumps were not clearly washed after spraying weedicides.
5. Immediate control measures like spraying of simple or glucose water were not taken.
6. Not taken any remedial measures.

Suggestions given by the investigation team were

1. As the farmers of Nizar taluka were using the agrochemicals injudiciously, it was decided to arrange more training programmes in surrounding villages for creating awareness in farmers about the proper utilization of agrochemicals.
2. Utilize fertilizers and water only after analyzing it.
3. Sprayers for insecticides and weedicides should be separated.
4. Person at agro-centre must be at least agricultural graduate.

Implication:

If this problem was not toggle by KVK, the many farmers had been in trouble, not only in this year but also in succeeding years. The naked spaying of the weedicide may hazardous to soil, water and equipment. It will also affect adversely to flora and Fauna. Fortunately, KVK scientists and NAU as a whole has taken this problem seriously and solved wisely. Based on this experience, KVK has made a sound plan for On/Off campus training on integrated weed management, prepared leaflets; given press notes in Newspapers and constant follow up will be made by KVK. This case study may be useful to the other extension workers working in the field of agricultural extension for further improvement.

(3) Case Studies on Entrepreneurship Development of Tribal Farm

Women:

Krishi Vigyan Kendra, N.A.U., Vyara, Dist.Tapi has carried out women empowerment work in adopted villages through Self Help Groups. Tapi district is a tribal dominated district with poor economic condition of farmers. The farm women of this area are mostly engaged with daily wages work in farm, which is available in particular season. So, to generate the regular income it has been decided to organize different activities under Rural Women Entrepreneurship Development Programme. For this, KVK has organized Vocational training programme for Tribal Farm Women/Rural youth on sewing work at Bhitbudrak village of Uchchhal taluka from January, 2009 to March, 2009(3 months). Total 33 Tribal Farm Women of three villages (Bhitbudrak, Fulwadi & Ravjibunda) were actively participated in this programme. After thorough follow up of training programme total two sound Case Studies regarding sewing work are prepared which are given as under.

Case studies after follow up of post trainees regarding sewing work

Case Study : 1

1. Name of tribal women : Smt.Chhayaben Shyambhai Naik
2. Village : Bhitbudrak
3. Taluka & District : Uchchhal, Tapi
4. Month & Year of Training : Jan.'09 to Mar.'09
(Three months)

5. Activity before Training (from sewing) : Cloth repairing
 6. Sewing machine held before Training : Yes (Cost of machine: Rs.5200/- with motor)
 7. Income before Training (From sewing) : Rs.100-150 per month
 8. Supplementary income after training from sewing : Rs.2000-2200 per month
 9. Marketing arrangement : Use of village & social contact / Religious contact/Sakhi Mandal members
- Looking to the success of Smt. Chhayaben Naik other tribal women from the surrounding area are also attracted towards such training and also inquired at KVK for such training at their cluster.

Case Study : 2

1. Name of tribal women : Miss Sumitraben Karmabhai Gamit
2. Village : Fulwadi
3. Taluka & District : Uchchhal, Tapi
4. Month & Year of Training : Jan.'09 to Mar.'09
(Three months)
5. Activity before Training : Daily wages labour work in farm
6. Income before Training : App. Rs.600-800 per month
7. Sewing machine purchased after Training : Rs.4200/- from internal lending through Self Help Group
8. Supplementary income from sewing work : Rs.1200-1500 per month
9. Marketing arrangement : Use of village & social contact/
Self Help Group members

KVK is the First line TOT centre of ICAR at grass root level. The readymade SHGs and other women organizations can be trained for Entrepreneurship oriented vocations. As a result of this, SHGs may be self sufficient and the social status of the tribal farm women can be raised through income generation from small scale vocations at their residence. These two Case Studies is eye opener for organizations working in the field of agricultural extension work as village level.

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

- The mobile telephone numbers of Programme Coordinator and Subject Matter Specialists is being given to farmers and extension functionaries during extension activities which are best utilized by farmers.
- Telephone Advisory Service has been started and its response from farmers is very effective.
- Agricultural Information column in News Paper Gujarat Mitra is regularly run by KVK which is published in its Monday Edition. In this column the answers are being given for the questions asked by the farmers.

3.9 Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1.	All crops	3 kg of Jathropa leaves is taken in 20 liters of water and boiled at a temperature of 60 to 70 ^o C until it becomes 5 liters. Take 250 ml and add it to 15 liters and spray.	For controlling sucking pests
2.	All crops	Farmers are using mixture of cow dung, urine and buttermilk for the control of sucking pest.	For controlling sucking pests
3.	Cotton	One farmer used black ants for the control of cotton insect pests. For the purpose, the used to put jaggery at the base of plant (5-10) grams) and release black ants which are reared in tank.	To control cotton pests
4.	Okra	Growing okra in winter with high seed rate and closer spacing	To get more number of tender fruits per plant which fetch more prices in market.
5.	Pulse crops	Use of ash for storage of Tur, Beans, Gram	To control storage gram pests
6.	Jower	Use of dry neem leaves for sorghum storage	To control storage gram pests
7.	Animal	Use of wild plants with sand and pest it on neck of the animal	To control HAEMORRHAGIC SEPTICEMIA

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

- Identification of courses for farmers / farm women :- PRA and group discussion
- Rural Youth :- Group discussion with youth
- Inservice personnel :- Discussion with extension workers and their superiors

3.11 Field activities

- i. Number of villages adopted :- 10
- ii. No. of farm families selected :- 3538
- iii. No. of survey/PRA conducted :- 10

3.12 Activities of Soil and Water Testing Laboratory

Status of establishment of Lab : Working (under ICAR)

- 1. Year of establishment : 2005-06 (September 2006)
- 2. List of equipments purchased with amount :

Sr. No.	Name of Equipments	Qty.	Cost(Rs.)
1	2	3	4
1.	Whirlpool freeze	1	15800
2.	Electronic Automatic Kel Pus Microprocessor based eight place macro block digestion system model KES-08L	1	88120
3.	Electronic Kel plus micro processor based Automatic Distillation system model distil EM	1	142300
4.	Double still with thermo sensor hr (All glass) cat No 2348	1	38550
5.	Nova Rotary shaking machine		
	(a)Capacity 16 flasks of 250 ml	1	24500
	(b)Capacity 25 flasks of 250 ml	1	29750
6.	Nova Hot plate Rectangular model NV-8535 stainless steel		
	(a) Size 12" x 20"	1	8500
	(b) Size 18" x 24"	1	11250
7.	Nova willy mill stain lese steel camber Size 100 x 50 mm	1	31900
8.	Laboratory Table	4	34400
9.	Racks	6	9000
10.	Stools	12	5400
11.	Steel cupboard	4	19200

	storewel		
12.	Steel cupboard storewel	4	14000
13.	Steel racks	4	8600
14.	Partition racks	3	22500
15.	Office chair	4	4000
16.	Systronics make		
(a)	Micro controller based Digital spectrophotometer model -106	1	26800
(b)	Systronics make micro controller based flame photometer compressor model-128	1	35200
(c)	Systronics make micro controller based PH meter	1	10900
(d)	Systronics make micro processor based conductivity meter	1	12800
17.	Hot air oven	1	21200
18.	Chemical Balance	1	75000
19.	CENTRO FIX WATERBATH	1	10800
20.	CENTRO FIX – Muffle furnace	1	29500
21.	Automatic autoclave	1	21000
22.	City weigh balance model ST-10 Cap- 10 kg	1	10640
23.	LG AC-15 ton	1	23740
24.	Micro kjeldahl Assembly	1	10700
25.	Burner maker type with stop coke	8	2000
26.	Voltas make water cooler	1	26500
Total		67	539780

3. Details of samples analyzed so far :

Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized
Soil Samples	1915	1915	70	173000
Water Samples	106	106	29	5300
Total	2021	2021	99	178300

4.0 IMPACT

4.1. Impact of KVK activities

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Introduce new variety (Vaishali) in Tur	248	96.00	19600	59700
Introduce new crop – Soybean to replaced drilled paddy	114	86.84	4641	19091

IPM in Cotton	443	83.80	33175	42305*
Scientific package of practice of Okra (Time of sowing & INM)	178	84.00	36000	76000
INM in Brinjal	127	82.00	60000	96000
Use of Bio-fertilizer in Gram	236	84.32	25609	38896

* Decrease in spraying by 40% and use of cultivation by 25%.

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

4.2. Cases of large scale adoption (Detail success stories attached – 3.7)

1. KVK for Reaching the Unreached- A Success study
2. Velda-IPM Village, a Success Story
3. Replacement of the Pigeon pea variety through FLD, a success story
4. Integrated Nutrient Management, a windfall to get higher production of vegetables in Tribal areas of South Gujarat- A Success story.
5. Role of KVK in upliftment of Tribal dominated areas of South Gujarat through export oriented Okra cultivation.
6. The role of KVK in shifting the life of normal tribal farmer to an innovated high-tech farmer. A success story
7. Impact of Kitchen Gardening Demonstration in Tribal Farm Women, A Success Story.
8. Collision of linkages with Tribal co-operatives for effective TOT in Tribal Belt.
9. The IPM Block, Nizar – A success Story

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

IMPACT STUDIES:

4.3.1 Impact of training regarding scientific cultivation of okra

The Okra crop is becoming more and more popular in Tapi district. The considerable acreage area (4000 hectare) is under okra cultivation. Due to lack of knowledge regarding scientific package of practices tribal farmers are assassinating huge budget behind crop production, indiscriminating use of agrochemical and loosing the health of soil, water and environment and also unable to get higher net

return due to lack of knowledge regarding value addition and market management. To overcome this problem KVK, Tapi has started an integrated campaign. KVK, Tapi conducted 9 on campus and 7 off campus trainings, total number of beneficiaries of FLD is 124 covering 7 villages of Tapi district and other extension activities during last three year. The details regarding such innovated movement is presented here as an impact study.

Table 1:-Overall knowledge of scientific package of practices of okra

N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of knowledge	55	16
Medium level of knowledge	35	56
High level of knowledge	10	28

Results of overall knowledge of scientific package of practices of Okra indicated that the medium and high level of knowledge before KVK was 35.00 per cent and 10.00 per cent, respectively, which was increased up to 50.00 per cent and 28.00 per cent after contact with of KVK (Table-1).

Table 2:- Knowledge regarding selected scientific innovations for okra cultivation

N=100

Sr.No.	Selected scientific innovations	Low	Medium	High
1	New high yielding varieties	16	28	56
2	Seed rate	11	16	73
3	Integrated Nutrient management	26	35	39
4	Integrated Pest Management	25	61	14
5	Knowledge regarding yellow mosaic virus/ powdery mildew	26	43	31
6	Plant growth regulator	7	11	82
7	Value addition	6	16	78

In case of knowledge regarding selected scientific innovations for okra cultivation medium and high level of knowledge was 35.00 per cent and 39.00 per cent, respectively in case of integrated nutrient management , Whereas in integrated pest management was 61.00 per cent and 14.00 per cent, respectively. High knowledge level regarding plant growth regulators and value addition was 82.00 per cent and 78.00 per cent, respectively (Table-2).

Table 3:- Overall adoption of scientific package of practices of Okra. (Percentage)

N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of adoption	14	4
Medium level of adoption	69	28

High level of adoption	17	68
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The data presented in table 3 indicated that medium and high level adoption was 69.00 per cent and 17.00 before KVK where that of after conducted with KVK was 28.00 per cent and 68.00 per cent, respectively.

Table 4:- Adoption of critical okra production technology (%).

N= 100

Sr. No.	Name of technology	Adoption (%)
1	New high yielding varieties	82
2	Seed rate	76
3	Integrated Nutrient management	82
4	Integrated Pest Management	61
5	Knowledge regarding yellow mosaic virus/ powdery mildew	72
6	Plant growth regulator	73
7	Value addition	77

Adoption of okra production technology, 82.00 per cent farmers adopted high yielding varieties and INM. 76.00 per cent farmers adopted recommended seed rate. In case of plant growth regulator and value adoption 73%.00 per cent and 77.00 per cent adoption was observed (Table-4). From the above discussion, it can be concluded that knowledge level and adoption level of the tribal farmer s were increased after imparting training and conducting FLD by KVK scientists. KVK, Vyara is working as a knowledge hub for latest agricultural technology in Tapi district.

4.3.2 Impact of training regarding scientific cultivation of brinjal

In Tapi district farmers were obtaining very low yield in Brinjal. Low productivity of Brinjal was due to lack of knowledge about scientific cultivation, poor nutrient management and lack of knowledge in IPDM. KVK conducted 9 on campus and 7 off campus trainings, total number of beneficiaries of FLD is 97 covering 7 villages of Tapi district and other extension activities during last three year. Impact study results are present here.

Table 1:- Overall knowledge of scientific package of practices of brinjal

N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of knowledge	59	7
Medium level of knowledge	28	51

High level of knowledge	13	42
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Results of overall knowledge of scientific package of practices of Brinjal indicated that the medium and high level of knowledge before KVK was 28.00 per cent and 13.00 per cent, respectively, which was increased up to 51.00 per cent and 42.00 per cent after contact with KVK (Table-1).

Table 2:- Knowledge regarding selected scientific innovations for Brinjal cultivation
N=100

Sr.No.	Selected scientific innovation	Low	Medium	High
1	Integrated Nutrient management	9	26	65
2	Pest and disease control	22	59	19
3	IPM	29	55	16
4	Plant growth regulator	4	12	84
5	Recommended spacing	6	38	56
6	Value addition	5	14	81

In case of knowledge regarding selected scientific innovations for Brinjal cultivation medium and high level of knowledge was 26.00 per cent and 65.00 per cent, respectively in case of integrated nutrient management, Whereas in pest and disease control was 59.00 per cent and 19.00 per cent, respectively. High knowledge level regarding plant growth regulators and value addition was 84.00 per cent and 81.00 per cent (Table-2).

Table 3:- Overall adoption of scientific package of practices of Brinjal. (Percentage) N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of adoption	28	6
Medium level of adoption	56	22
High level of adoption	16	72

The perusal of data presented Table 3 indicated that before contact with KVK, more than half (56.00 per cent) of the respondents had medium level of adoption followed by low (28.00 per cent) and high (16.00 per cent) level of adoption. But, after contact with KVK, it was found that 72.00 per cent had high level of adoption followed by medium (22.00 per cent) and low (6.00 per cent) level of adoption.

Table 4:- Adoption of critical Brinjal production technology (%).
N= 100

Sr. No.	Name of technology	Adoption (%)
1	Integrated Nutrient management	89
2	Pest and disease control	68
3	IPM	59

4	Plant growth regulator	82
5	Recommended spacing	92
6	Value addition	86

The adoption of Brinjal production technology, 89.00 per cent farmers adopted INM, 92.00 per cent farmers adopted recommended spacing. In case of plant growth regulator and value adoption 82.00 per cent and 86.00 per cent adoption was observed. Pest and disease control & IPM 68% and 59% farmers adopted the technology (Table-4).

From the above discussion, it can be concluded that the impact of training conducted by KVK has beneficial effect on knowledge level and adoption level of the tribal farmers about scientific cultivation of brinjal. Among the Knowledge regarding selected scientific innovations for brinjal cultivation, majority (84.00 per cent) of the respondent had knowledge about plant growth regulator followed by value addition (81.00 per cent) and integrated nutrient management (65.00 per cent) after receiving training. In case of adoption of critical brinjal production technology, majority (92.00 per cent) of the respondents had adopted recommended spacing followed by integrated nutrient management (89.00 per cent), value addition (86.00 per cent) and plant growth regulator (82.00 per cent).

4.3.3 Impact of training regarding package of practices of soybean crop

The soybean cultivation is highly profitable in tribal dominated areas of the Surat and Tapi district. This crop is also advisable to the farmers for improvement of the soil physical, chemical and biological health. The human health point of view this crop is highly advisable to the people of the tribal region to control the diseases related to the mal nutrition and deficiency syndromes. Farmers of Tapi district growing rain fed drill paddy but its produce very low yield so it's get very low remunerative. In place of drill paddy soybean crop earn more net profit then drill paddy. KVK conducted 8 on campus and 10 off campus trainings, total number of beneficiaries of FLD is 43 covering 7 villages of Tapi district and other extension activities during last three year. The impact study results are present here.

Table 1:- Overall knowledge of package of practices of soybean crop.

N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of knowledge	89	07
Medium level of	09	14

knowledge		
High level of knowledge	02	79

Results of overall knowledge of soybean indicated that the low, medium and high level of knowledge before contact with KVK was 89.00 per cent, 09.00 per cent & 02.00 per cent, respectively and it was increased up to 07.00 per cent, 14.00 per cent and 79.00 per cent after contact with KVK (Table-1).

Table 2:- Knowledge regarding selected scientific innovations for soybean crop.
N=100

Sr.No.	Selected scientific innovation	Low	Medium	High
1	New high yielding varieties	10	5	85
2	Seed rate	13	74	13
3	Bio fertilizer	11	16	73
4	Weeding	23	8	69
5	Integrated Nutrient management	09	13	78

In case of Knowledge regarding selected scientific innovations for soybean high knowledge regarding selected scientific innovations were found except seed rat.

Table 3:- Overall adoption of scientific cultivation of soybean. (Percentage)
N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of adoption	75	05
Medium level of adoption	13	06
High level of adoption	12	89

Data presented in table -3 indicated that majority of the farmer had low level of knowledge (75.00 per cent) before contact with KVK. After contact with KVK, 89.00 per cent of the farmers had high level of knowledge.

Table 4:- Adoption of critical soybean production technology (%).
N= 100

Sr. No.	Name of technology	Adoption (%)
1	New high yielding varieties	92
2	Seed rate	87
3	Bio fertilizer	73
4	Weeding	70
5	Integrated Nutrient management	88

Data present in table 4 indicated that 92.00 per cent of the farmer had adopted new high yielding variety followed by INM (88.00 per cent).

From the above discussion, it could be inferred that after imparting training and other intensive approach by KVK, Tapi, majority (79.00 per cent) of the tribal farmers of these area had high the knowledge level and majority (89.00 per cent) of the tribal farmers of these area had high adoption level about package of practices of

soybean crop. At the end we can suggest this crop in the region to increase the income of the farmers and also to improve their own, family as well as soil health.

The study has acknowledged the knowledge level of the farmers towards profitable cultivation of the soybean. This study can be guideline for other extension worker to implement this way of extension technology for their clients in their respective area of operation for TOT. On this foundation the extension personnel may locate clients for training and also those who can be used as counselors to other farmers. The study is also useful for effective propagation of the new technology in other regions for eco friendly and sustainable agricultural development. The study also reflects the role of KVKs in effective Transfer of Technologies (TOTs) at grass root level.

4.3.4 Impact of training regarding package of practices of gram crop

Tribal area of Tapi district grow gram on moisture conserve or in light irrigation, but they get very low yield due to use of low yielding variety, poor knowledge about scientific cultivation of gram. KVK, Tapi had done intensive effort on training about scientific cultivation, demonstration on new variety & land configuration. KVK conducted 6 on campus and 8 off campus trainings, total number of beneficiaries of FLD is 48 covering 7 villages of Tapi district and other extension activities during last three year. So impact study results are present replacing drill paddy.

Table 1:- Overall knowledge of package of practices of gram crop

N=100

Category	Before contact with KVK (%)	After contact with KVK(%)
Low level of knowledge	78	08
Medium level of knowledge	16	10
High level of knowledge	06	82

Data depicted in table 1 indicated that 78.00 per cent of the farmers had low level of knowledge which was increased (82.00 per cent) after contact with KVK.

Table 2:- Knowledge regarding selected scientific innovations for gram crop

N=100

Sr.No.	Selected scientific innovation	Low	Medium	High
1	New high yielding varieties	08	05	87
2	Land configuration	06	13	81
3	Seed rate	14	08	78
4	Bio fertilizer	19	06	75

5	Weeding	17	12	71
6	Integrated Nutrient management	07	10	83

Data show in the table 2 indicated that 87.00 per cent of the farmers had knowledge about new high yielding varieties followed by Integrated Nutrient management (83.00 per cent), Land configuration (81.00 per cent) and bio fertilizer (75.00 per cent).

Table 3:- Overall adoption of scientific cultivation of gram (percentage)

N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of adoption	76	04
Medium level of adoption	18	12
High level of adoption	06	84

Data presented in table-3 indicated that 76.00 per cent of the farmers had low level of adoption which was increased after contact with KVK (84.00 per cent).

Table 4:- Adoption of critical gram production technology (%).

N= 100

Sr. No.	Name of technology	Adoption (%)
1	New high yielding varieties	89
2	Land configuration	85
3	Seed rate	82
4	Bio fertilizer	78
5	Weeding	72
6	Integrated Nutrient management	76

The data show in the table 4 indicated that 89.00 per cent of the farmers had new high yielding varieties which were followed by Land configuration (85.00 per cent), Seed rate (82.00 per cent) and Bio fertilizer (78.00 per cent).

From the above discussion, it could be said that overall knowledge level and adoption level of the tribal farmers about package of practices of gram had increased up to 82.00 per cent and 84.00 per cent, respectively after imparting training by KVK, Tapi.

4.3.5 Impact of training regarding package of practices of pigeon pea crop

Pigeon pea is the main pulse crop in South Gujarat. Tribal belt is preferring pigeon pea as a main leguminous food in their daily diet. Farmers grow very old variety and lack knowledge about improved variety, and scientific cultivation of pigeon pea. So they get very low production. KVK conducted 9 on campus and 12 off campus trainings, total number of beneficiaries of FLD is 73 covering 7 villages of

Tapi district and other extension activities during last three year. So impact study results are present here.

Table 1:- Overall knowledge of package of practices of pigeon pea crop
N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of knowledge	74	06
Medium level of knowledge	21	07
High level of knowledge	05	87

Data depicted in table 1 indicated that 74.00 per cent of the farmers had low level of knowledge which was increased (87.00 per cent) after contact with KVK.

Table 2:- Knowledge regarding selected scientific innovations for pigeon pea crop N=100

Sr.No.	Selected scientific innovation	Low	Medium	High
1	New high yielding varieties	06	12	82
2	Land configuration	07	07	86
3	Seed rate	04	08	88
4	Bio fertilizer	18	06	76
5	Weeding	11	11	78
6	Integrated Nutrient management	10	06	84

Data show in the table 2 indicated that 88.00 per cent of the farmers had knowledge about seed rat followed by, Land configuration (86.00 per cent), INM (84.00 per cent) and bio fertilizer (76.00 per cent).

Table 3:- Overall adoption of scientific cultivation of pigeon pea (percentage)
N=100

Category	Before contact with KVK (%)	After contact with KVK (%)
Low level of adoption	65	05
Medium level of adoption	16	08
High level of adoption	09	87

Data presented in table-3 indicated that 65.00 per cent of the farmers had low level of adoption which was increased after contact with KVK (87.00 per cent).

Table 4:- Adoption of critical pigeon pea production technology (%).
N= 100

Sr. No.	Name of technology	Adoption (%)
1	New high yielding varieties	88
2	Land configuration	90
3	Seed rate	84
4	Bio fertilizer	78
5	Weeding	75
6	Integrated Nutrient management	84

The data show in the table 4 indicated that 90.00 per cent of the farmers had land configuration which was followed by new high yielding varieties (88.00 per cent), Seed rate (84.00 per cent) and INM (84.00 per cent).

From the above discussion, it could be said that majority of the respondents had high level of knowledge and adopted all the pigeon pea production technology. These may be due to the proper guidance given by the KVK scientists, demonstration and constant follow up by KVK missionary.

Based on this study we can suggest our other extension workers as well as to the policy makers to take a keen interest in the matter and do needful for great publicity of such technologies in their respective areas of working for successful journey towards next phase of Green Revolution on sustainable basis. This thing looks like diminutive but its impact is of great magnitude.

4.3.6 Impact of training regarding *IPM components on Cucurbitaceous vegetables*

Cucurbitaceous vegetables *viz.*, bitter gourd, small gourds, cucumber etc. are infested by two species of fruit flies i.e. melon fruit fly, *Bactocera cucurbitae* (Coquilleti) and the Ethiopian fruit fly, *Dacus ciliatus* (Loew), which limits the economic returns to the farmers by their damage to the final product *i.e.*, fruits. The female fly insert its eggs in soft tender fruit tissue by piercing fruits with the ovipositor, as a result, a watery fluid oozes from the punctures which on hardening become resinous brown. The maggots emerged from the eggs, start feeding on pulp of the fruit. The secondary infection by microorganisms from site of egg laying cause rotting of the fruits rendered them unfit for the consumption. This reduces the market value of the produce. The infested fruits become distorted and drop. The mature maggots jumped out of the fruits and pupate inside the soil. The extent of loss reported to be varied from 30 to 100 per cent depending upon cucurbits species and the season.

As the maggot being an internal feeder, it is rather difficult to control the maggot. The only option is to manage the adult fruit flies and that too before they mat and female deposit eggs. The chemicals means *i.e.* using insecticides for managing fruit flies is no longer effective.

The melon fruit fly, *B. cucurbitae* can be effectively managed by Male Annihilation Technique by attracting large numbers of males through "Cue Lure", a

pheromone of *B. cucurbitae*. But, the other species of fruit fly *i.e.*, *D. ciliatus* cannot be managed by Male Annihilation Technique as no pheromones/ Para pheromones are available. To manage this species, application of insecticides with baiting technique is useful. Therefore, to manage both the species integrate approach using field sanitation, large scale destruction of males by Male Annihilation Technique and application of insecticidal baits is effective. Recently, Navsari Agricultural University has developed a specialized **NAUROJI trap** using cue lure. In this trap a ply wood blocks of size 5cm x 5 cm x 1 cm impregnate with cue lure are used.

To popularize the integrated management technique as well as the trap developed by the university, front line demonstrations were given to the farmers of Khadaka chikhali village of Vyara taluka, Dist. Tapi during the year 2007-08 and 2008-09.

The village Khadka Chikhali is situated in Vyara block of Tapi district. It is situated 2 km away from Vyara town, the district place of Tapi and Krishi Vigyan Kendra, Vyara head quarter. Khadka Chikhali is a tribal dominated village with marginal farmers with limited land holdings.

Even though, the village is situated in vicinity of Vyara town; no extension agency was catering the need of the farmers. They have to rely on local pesticide dealer for their technical needs.

The main crops of the village are paddy, groundnut, sugarcane and vegetable. Being an advantage of having in vicinity of the town, the farmers with the limited land holdings grow vegetables and sell it to local market. Among different vegetable crops, the farmers mostly depend on cucurbitaceous vegetables like bitter gourd, little gourd and cucumber. In cucurbits, the menace of fruit fly is one of the major constraints in the area. The farmers were unable to manage the fruit flies with chemical pesticides.

In the year 2008, Krishi Vigyan Kendra, Vyara has decided to demonstrate the technology for integrated management of Fruit fly in the village. The entry point visit was made by the scientists of the KVK, Vyara. Discussing with farmers, it was found that infestation of fruit flies is major limiting factor in production of cucurbitaceous vegetables. Considering the situation and dialogue with the farmers, plant protection specialist suggested implementation of integrated fruit fly management in cucurbitaceous vegetables and training as well as the demonstration was the need of the village. The interested farmers were given training with special emphasis on

fruit fly species, their life cycle, nature of damage, and management strategies through power point presentations. During both the years, 20 farmers each with 0.2 ha land were given demonstrations under Bitter gourd crop. Among different farmers, **Kaushikbhai** acted as resource person for the village.

The detailed components of IPM i.e.

1. Regular collection of damaged and fallen fruits and destruction with deep burying or by burning.
2. Installation of “Cue Lure” NAUROJI traps @ 10 per hectare.
3. Application of bait using fermented water with jaggery and insecticide endosulfan applied as large droplets with broom are demonstrated, constant follow up visits were made and field days were organized.

4. Table 1: Crop parameters from which impact gain measured

S. N.	Particulars	Year	Treated	Untreated	% increase/reduction
1.	Per cent infestation	2007-08	4.8 (3-6%)	18.75 (12-40%)	87.00
		2008-09	2.95 (0-6%)	23.55 (10-40%)	74.40
		Average	3.879	21.15	80.70
2.	Reduce number of sprays	2007-08	1	5	80
		2008-09	1	5	80
		Average	1	5	80
3.	Yield t/ha	2007-08	10.54	9.62	9.56
		2008-09	10.19	8.31	22.12
		Average	10.365	8.965	15.84
4.	Income of the farmer Rs./ha.	2007-08	94860	86580	8280
		2008-09	101900	83100	18800
		Average	98380	84840	13540
5.	Expenditure /ha.	2007-08	1050	2500	1450
		2008-09	1050	2500	1450
		Average	1050	2500	1450
6.	Net income of farmers	2007-08	93810	84080	9730
		2008-09	100850	80600	20250
		Average	97330	82340	14990

Table: 1. Extension activities carried out in the village Khadka Chikhali.

S. N.	Name of activity	N0.	Beneficiaries
1	Training :On campus	One	20
	: Off campus	Two	37
2.	Visits to farmers	Eleven	97
3.	Field day cum impact study	One	20

Table: 2 Knowledge of fruit fly control in farmers of the village.

S. N.	Particulars	Before FLD	After FLD
1	Knowledge about insect pests of crop	Low	High
2.	Knowledge about fruit fly and its damage	Low	High
3.	Knowledge about fruit fly trap	Nil	High
4.	Knowledge about integrated management of fruit fly	Nil	High

5.0 LINKAGES

5.1 Functional linkage with different organizations

Sr. No.	Name of Organization	Nature of Linkage
1	Dept. of Agriculture	Participation <ul style="list-style-type: none"> • Khedut Shibir • Soil Health Card & In-service Training • Extension Activities, ATMA, RKVY, SRI techniques
2	Dept. of Horticulture	Participation <ul style="list-style-type: none"> • Khedut Shibir • Extension Activities, NHB & NHM
3	ATMA	Participation <ul style="list-style-type: none"> • Khedut Shibir/Mahila Shibir • Extension Activities • Training programmes
4	Main Rice Res. Station, AAU, Nawagam	Collaboration-FLD on paddy
5	Main Cotton Res. Station, NAU, Surat	Collaboration-FLD on cotton IPM Mission in Nizar block
6	Main Water Management Research Unit, NAU, Navsari	Collaboration-FLD on soil & water management, Greenhouse
7	Research Stations, NAU	Participation-Farmers day, Seed-FLDs, etc.

8	FTC, Vyara	Joint implementation- Farmers visit and expert lectures, Farmer's Fair
9	Govt. of Gujarat	Collaboration – Krishi Mahotsav, ATMA, RKVY, NFSCM, etc.
10	State Bank of India/Bank of Baroda	SHG work
11	Catholic Charch, Mandal	TOT, Seed village, Kitchen Garden, Vermicompost [52 Villages Network]
12	Integrated Child Development Sevices (ICDS)	Inservice training for Anganwadi workers and SHG activities

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.)
1. Plant Health Clinic	March 08	National Horticulture Mission	15.50 lakhs

5.3 Details of linkage with ATMA

a) Is ATMA implemented in your district Yes / No

Sr. No.	Programme	Nature of linkage	Remarks
1	--	--	--

5.4 Give details of programmes implemented under National Horticultural Mission :- --NIL--

5.5 Nature of linkage with National Fisheries Development Board :- --NIL--

6. PERFORMANCE OF INFRASTRUCTURE IN KVK

6.1 Performance of demonstration units (other than instructional farm)

Sr. 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	2 nd week of July	1 st Week of November	2.0	Jaya	Certified	78 qtl	50000	148200	--

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

6.4 Performance of instructional farm (livestock and fisheries production) :-

--NIL--

6.5 Rainwater Harvesting :- --NIL--

6.6 Utilization of hostel facilities :- --NIL--

7. FINANCIAL PERFORMANCE

7.1 Details of KVK Bank accounts

Bank account	Name of the bank	Location	Account Number
With Host Institute	State Bank of India	Navsari	2704-1
With KVK	State Bank of India	Vyara	10716339605

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

Item	Released by ICAR		Expenditure		Unspent balance as on 1 st April 2010*
	Kharif 2009	Rabi / Summer 2009-10	Kharif 2009	Rabi / Summer 2009-10	
Inputs	--	--	--	41250	--
Extension activities	--	--	--	--	--
TA/DA/POL etc.	--	--	--	--	--
TOTAL	--	--	--	41250	--

* The Grant of the above said FLDs on Oilseed & Pulses is still awaited from ICAR

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

Item	Released by ICAR		Expenditure		Unspent balance as on 1 st April 2010*
	Kharif 2009	Rabi / Summer 2009-10	Kharif 2009	Rabi / Summer 2009-10	
Inputs	--	--	--	32800	--
Extension activities	--	--	--	--	--
TA/DA/POL etc.	--	--	--	--	--
TOTAL	--	--	--	32800	--

* The Grant of the above said FLDs on Oilseed & Pulses is still awaited from ICAR

7.4 Utilization of funds under FLD on Cotton (Rs. in thousand)

Item	Released by ICAR		Expenditure		Unspent balance as on 1 st April 2010
	Kharif 2009-10	Kharif 2009-10	Kharif 2009-10	Kharif 2009-10	
Inputs	70000	70000	69048	69048	952
Extension activities	--	--	--	--	--
TA/DA/POL etc.	--	--	--	--	--
TOTAL	70000	70000	69048	69048	952

7.5 Utilization of KVK funds Year: 2009-10

Sr. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	30.00	30.00	2576842
2	Traveling allowances	1.00	1.00	99640
3	Contingencies	6.00	6.00	
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	1.50	1.5	158095
B	POL, repair of vehicles, tractor and equipments	0.90	0.90	140177
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)	0.85	0.85	87642
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	0.80	0.80	36972
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	0.90	0.90	97342
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	0.65	0.65	9800
G	Training of extension functionaries	0.40	0.40	14350
H	Maintenance of buildings	--	--	--
I	Establishment of Soil, Plant & Water Testing Laboratory	--	--	--
J	Library	--	--	--
TOTAL (A)		37.00	37.00	3220860
B. Non-Recurring Contingencies				
1	Works	41.00	41.00	41.00
2	Equipments including SWTL & Furniture	0.15	0.15	14900
3	Vehicle (Four wheeler/Two wheeler, please specify)	--	--	--
4	Library (Purchase of assets like books & journals)	0.10	0.10	9991
TOTAL (B)		41.25	41.25	4124891
C. REVOLVING FUND		--	--	--
GRAND TOTAL (A+B+C)		78.25	78.25	7345751

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

Year	Opening balance as on 1 st April	Income during the year	Expenditure during the year	Net balance in hand as on 1 st April of each year
April 2007 to March 2008	19727	202831	206603	15955
April 2008 to March 2009	15955	251000	191914	75041
April 2009 to March 2010	75041	264491	229035	110497

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

8.1 Constraints

(a) Administrative

1. The post of Programme Assistant, Office superintendent cum Accountant & Supporting staffs (2) are vacant.

(b) Financial

1. Provision should be made for educational tour for farmers.

(c) Technical

1. Lack of facility of administrative building, staff quarters and farmers hostel.
2. Lack of LCD and Laptop.
3. Lack of facility of Minibus.
4. Lack of Motorcycle (two wheeler).

Summary of Annual Progress of KVK 2009-10

STAFF POSITION

KVK	PC			SMS			PA			ADMN			AX			SUPP			TOTAL		
	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V
Vyara, Dist. Tapi	1	1	-	6	6	-	3	2	1	2	1	1	2	2	-	2	-	2	16	12	4

S- Sanctioned F- Filled V- Vacant

REVOLVING FUND

KVK	Opening Balance on 1.4.09 (Rs.)	Revenue Generated (Rs.)	Closing Balance on 31.3.10 (Rs.)
Vyara, Dist. Tapi	75041	264491	110497

SCIENTIFIC ADVISORY COMMITTEE

KVK	No. of meetings conducted	Date of meeting
Vyara, Dist. Tapi	1	06/07/2009

ACTIVITIES OF KVK

TECHNOLOGY ASSESSMENT AND REFINEMENT

Details of technologies assessed and refined

Technologies assessed**

Sr. No.	Enterprise	Crop/Animal/Species	Name of the technology**	Thematic Area
1	Vegetable	Okra	ICM (Time of sowing)	Paddy – Okra base cropping system
2	Oilseeds	Groundnut	Varietal evaluation	Paddy-Groundnut base cropping system

Technologies refined**

Sr. No.	Category	Crop/Enterprise	Name of the technology**	Thematic Area
1	Pulses	Pigeon pea	Land Configuration	Drill paddy + Pigeon pea cropping system

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	--	--	--	--	--	--	--	1
Integrated Crop Management	--	--	--	--	1	--	--	--	--	1
TOTAL	--	1	--	--	1	--	--	--	--	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
Integrated Crop Management	--	--	1	--	--	--	--	--	--	1
TOTAL	--	--	1	--	--	--	--	--	--	1

Abstract on the number of technologies assessed in respect of livestock/enterprises :- -- NIL --

Abstract on the number of technologies refined in respect of livestock/ enterprises :- -- NIL --

PERFORMANCE OF IMPORTANT TECHNOLOGIES

A. Technology Assessment

Trial 1

1. **Title** : Refinement of Sowing time in okra
2. **Problem diagnose/defined** : Low yield, growing during off season (rabi)
3. **Details of technologies selected for assessment /refinement** : T1. Date of sowing 15th November (Farmers practices)
T2. Date of sowing 15th October
T3. Date of sowing 30th October
4. **Source of technology** : Main Vegetable Research Station, Anand
5. **Production system thematic area** : Paddy – Okra base cropping system, Time of Sowing
6. **Thematic area** : Integrated crop management
7. **Performance of the Technology with performance indicators** : -
8. **Final recommendation for micro level situation** : Farmers of Tapi district should grow okra in month of 15th October. It is the best time for higher yield
9. **Constraints identified and feedback for research** : Research on fertilizer management & spacing in hybrid okra.
10. **Process of farmers participation and their reaction** : Farmers appreciate the technology & ready to adopt.

:

11). Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Data on the parameter					Results of assess- ment	Feedback from the farmer
						No. of branches/ main stem	No. nodules / main stem	No. of fruit / plant	Yield / plant (gm)	Yield / kg/ha		
1	2	3	4	5	6	7					8	9
Okra	Irrigated	Low yield growing during rabi season	Refinement of sowing time in okra	6	T1. Date of sowing at 15 th Nov. (Farmers practices)	0.23	8.03	8.5	84.5	9388	15 th Oct. sowing of okra gave higher yield	Selection of early maturing variety for 15 th October okra sowing which got better income
					T2. Date of sowing at 15 th Oct.	2.06	18.0	22.2	221.7	24632		
					T3. Date of sowing at 30 th Oct.	0.9	12.87	14.6	145.9	16210		

* No. of farmers

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
10	11	12	13
3. Date of sowing at 15 th October	24.632	247750	5.1
4. Date of sowing at 15 th November (Farmers practices)	9.388	60418	2.06

*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 2

- 1. Title** : Varietal evaluation of Groundnut
- 2. Problem diagnose/defined** : Low productivity of nondescript and old groundnut varieties grown in summer season of Tapi district.
- 3. Details of technologies selected for assessment /refinement** : T1. J-11 (Farmers practices)
T2. GG-20
T3. GG-2
T4. GG-6
T5. TG-37A
- 4. Season** : Rabi-Summer – 2009-10
- 5. Source of technology** : NRCG, Junagadh
- 6. Production system thematic area** : Paddy groundnut base cropping system
- 7. Thematic area** : Integrated crop management
- 8. Performance of the Technology with performance indicators** : Result indicated that variety GG-6 recorded higher yield (2359 kg / ha), No. of pod per plant (22.82 g/plant), wt. of dry pod per plant (20.72 g/plant) followed by TG-37 A, GG-2, J-11 and GG-20 respectively.
- 9. Final recommendation for micro level situation** : Groundnut variety GG-6 may be grown in place of variety TG-37A, GG-2, G-20, J-11 in summer season of Tapi district.
- 10. Constraints identified and feedback for research** : Developed suitable variety of late rabi season for this region.
Developed dual purpose (fodder+kernal) variety.
- 11. Process of farmers participation and their reaction** : Farmers are ready to adopt this variety

11). Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Data on the parameter				Results of assessment	Feedback from the farmer
						No. of branches/ plants	No. of pods / plants	wt. of dry pods/plant (g/plant)	Dry pod yield kg/ha		
1	2	3	4	5	6	7				8	9
Ground- nut	Irrigated	Low productivity of old groundnut varieties	Varietal evaluation	3	T1. J-11	5.35	16.50	13.76	1240	Among five variety Cv.GG-6 gave higher yield followed by TG 37A than other Groundnut variety	Groundnut cv. GG-6 have more number of pod than older one & also get higher yield than other variety.
					T2. GG-2	4	14.40	13.84	1724		
					T3. GG-20	6.20	6.24	8.0	961		
					T4. GG-6	5.48	22.82	20.72	2359		
					T5. TG -37A	4.76	9.47	10.71	21429		

* No. of farmers

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
10	11	12	13
J-11	1240	21080	1.45
GG-2	1729	34480	2.40
GG-20	961	17298	1.19
GG-6	2359	51898	3.58
TG-37A	2142	44982	3.10

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

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

B. Technology Refinement

Trial 1

- 1. Title** : Land configuration in Pigeon pea
- 2. Problem diagnose/defined** : Low yield, High rainfall, Poor plant population
- 3. Details of technologies selected for assessment /refinement** : T1 Flat bed sowing (Farmers practices)
T2 Sowing on raised bed / broad bed furrow
T3 Ridge and furrow
- 4. Season** : Kharif - 2009
- 5. Source of technology** : Research scientist, Pulse crop, NAU, Navsari
- 6. Production system thematic area** : Drill Paddy + pigeon pea cropping system
- 7. Thematic area** : Land configuration (ICM)
- 8. Performance of the Technology with performance indicators** : The refined technology ridges and furrow sowing of pigeon pea had more no. of branches per plant (14.70/plant) and no. of pods per plant (586.26/plant) at harvest and higher yield (1415 kg/ha) as compared to other treatment of land configuration.
- 9. Final recommendation for micro level situation** : Ridges and furrow system found better for higher pigeon pea yield.
- 10. Constraints identified and feedback for research** : Developed resistant variety for Tur against pod fly.
- 11. Process of farmers participation and their reaction** : Appreciate the technology and ready to adopt ridge and furrow system

11). Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology refined	Parameters	Data on the parameter				Results of refinem- ent	Feedback from the farmer
							No. of branches/ plants	No. of pods / plants	Seed wt./plant (dry) gm	seed yield / ha (kg/ha)		
1	2	3	4	5	6	7	8				9	10
Pigeon pea	Irrigated	Low yield, high rain fall, poor plant population	Land configuration in pigeon pea	5	T1. Flat bed sowing - Farmer practices	--	9.8	511.37	28.10	1024	Ridges & furrow method of sowing gave good yield	It is difficult to prepare raised bed so adoption of ridges & furrow is better
					T2. Raised bed	--	13.40	534.67	29.70	1120		
					T3. Ridges & furrow	--	14.70	586.26	36.80	1415		

* No. of farmers

Technology Refined	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
12	13	14	15
Flat bed sowing	1024	25600	3.14
Raised Bed	1120	28000	3.44
Ridge & furrow	1415	35375	4.34

Technology Refinement

Trial 1

- | | | |
|--|---|---|
| 1. Title | : | Low milk production of Cow. (New) |
| 2. Problem diagnose/defined | : | 1. Low Milk Production
2. Lack of knowledge about urea treatment.
3. Poor management.
4. Poor knowledge of health & hygiene.
5. Lack of knowledge about feeding management. |
| 3. Details of technologies selected for assessment /refinement | : | 1. Farmers practice (Paddy straw without urea treatment)
2. Paddy straw with urea treatment
3. Paddy straw with urea treatment + Mineral mixture |
| 4. Season | : | 2009-10 |
| 5. Source of technology | : | -- |
| 6. Production system thematic area | : | Management of Milch Animal |
| 7. Thematic area | : | Milk Production |
| 8. Performance of the Technology with performance indicators | : | |
| 9. Final recommendation for micro level situation | : | |
| 10. Constraints identified and feedback for research | : | Under Process |
| 11. Process of farmers participation and their reaction | : | |

Training (including Vocational, Sponsored and FLD Training)

Discipline	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Agronomy	27	42	-	42	612	271	883	654	271	925
Horticulture	21	-	-	-	635	460	1095	635	460	1095
Plant Protection	25	605	-	605	283	46	329	888	46	934
Home Science	17	-	-	-	5	525	530	5	525	530
Animal Science	20	-	-	-	348	312	660	348	312	660
Extension Education	4	-	-	-	81	89	170	81	89	170
TOTAL	114	647	-	647	1964	1703	3667	2611	1703	4314

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	
Home Science	22/12/09 to 23/12/09	Preparation of Masalas	Income generation	2 Days	-	33	33	-- Work in progress --			

In-service Training Programmes

Sl. No	Title of Training	Discipline	Date	No. of Participants									Type of Participants
				Others			SC/ST			Total			
				M	F	T	M	F	T	M	F	T	
1	Paddy Cultivation through SRI	Agronomy	18/04/09	38	-	38	-	-	-	38	-	38	VLWs& EO
2	Integrated Pest and disease	Plant Protection	28-29/07/09	10	-	10	18	-	18	28	-	28	VLWs& EO
3	Book Keeping system in SHGs	Home Science	30-31/07/09	-	2	2	-	27	27	-	29	-	Anganwadi Workers

4	Integrated Nutrient Management	Horticulture	24-25/09/09	20	-	20	-	-	-	20	-	20	VLWs
5	Role of Journalism in agriculture	Extension	09/11/09	9	-	9	11	-	11	20	-	20	Press Reporter of Tapi district
6	Changing Scenario of Agriculture	Extension	25-26/11/09	-	-	-	32	-	32	32	-	32	Agril Teachers & Kamathis of Tapi Districts

Extension activities

Sl. No.	Nature of Extension Activity	No. of activities	Participants											
			Farmers (Others) (I)			SC/ST (Farmers) (II)			Extension officials (III)			Grand Total (I+II+III)		
			M	F	T	M	F	T	M	F	T	M	F	T
1	Field Day	10	95	-	95	258	250	508	9	1	10	362	251	613
2	Khedut Shibir	9	-	-	-	1026	1722	2748	6	1	7	1032	1723	2755
3	Mahila Shibir	4	-	-	-	81	402	483	6	3	9	87	405	492
4	Farmers Day	1	-	-	-	300	703	1003	16	1	17	316	704	1020
5	Krishi Mela	6	18182	3852	22034	19605	48316	67921	28	2	30	37815	52170	89985
6	Agril. Exhibition	5	101	21	122	3533	2583	6116	6	1	7	3640	2605	6245
7	Crop Symposium	4	-	-	-	2749	2130	4879	15	1	16	2764	2131	4895
8	Celebration of Women in Agril. Day	1	-	-	-	-	210	210	3	1	4	3	211	214
9	International Women Day	1	-	-	-	-	54	54	-	2	2	-	56	56
10	Formation of SHG	4	-	-	-	-	64	64	-	1	1	-	65	65
11	SHG Meeting	10	-	-	-	-	270	270	-	1	1	-	271	271
12	Farmers Meeting	3	-	-	-	63	112	175	3	-	3	66	112	178
13	Mahila Meeting	2	-	-	-	-	36	36	-	2	2	-	38	38
14	Ex-Trainee Sammelan	4	-	-	-	91	50	141	6	1	7	97	51	148

15	Guest Lecture	69	-	-	-	13713	11071	24784	6	-	6	13719	11071	24790
16	Film Show	12	51	-	51	200	268	468	5	1	6	256	269	525
17	Diagnostic Visit	1	-	-	-	1	-	1	1	-	1	2	-	2
18	Field Visit	17	12	-	12	73	35	108	6	1	7	91	36	127
19	FLD Meeting	13	-	-	-	1228	2043	3271	5	1	6	1233	2044	3277
20	Scientist visit to Farmers' Filed	65	11	-	11	67	13	80	6	1	7	84	14	98
21	Farmers Visit to KVK	372	-	-	-	261	111	372	6	1	7	267	112	379
22	Exposure Tour	18	60	-	60	323	466	789	4	-	4	387	466	853
23	Telephone Helpline	596	17	-	17	408	171	579	6	1	7	431	172	603
24	Guidance through letter	1	-	-	-	1	-	1	1	-	1	2	-	2
25	Animal Camp	5	-	-	-	-	-	-	2	-	2	-	-	-
26	Pashupalan Shibir	1	-	-	-	-	90	90	2	-	2	2	90	92
27	Method Demonstration	15	-	45	45	128	152	280	5	1	6	133	198	331
28	Popular Articles	50	-	-	-	-	-	-	6	1	7	6	1	7
29	TV Talk	3	-	-	-	-	-	-	3	-	3	3	-	3
30	Radio Talk	1	-	-	-	-	-	-	-	1	1	-	1	1
31	Newspaper Coverage	39	-	-	-	-	-	-	6	1	7	6	1	7
32	Folder Prepared	24	-	-	-	-	-	-	6	1	7	6	1	7
33	Extension literature distributed	2110	-	-	-	-	-	-	-	-	-	-	-	-
34	Bulletin	1	-	-	-	-	-	-	2	-	2	2	-	2
35	Formation of FIG	1	-	-	-	43	-	43	2	-	2	45	-	45
36	Celebration of Tech. Week	11	349	-	349	739	803	1542	51	2	53	1139	805	1944
37	Research Paper	25	-	-	-	-	-	-	6	1	7	6	1	7

	published													
38	PRA Survey	10 villages	32	12	44	419	150	569	6	1	7	457	163	620
39	Soil & Water Sample analyzed	297	-	-	-	-	-	-	-	-	-	-	-	-
40	Sample diagnosed in PHC	59	-	-	-	-	-	-	-	-	-	-	-	-
	Grand Total		18910	3930	22840	45310	72275	117585	241	33	274	64459	76238	140697

Production and supply of quality seed and planting material**SEED MATERIALS**

Major group/class	Crop	Variety	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
CEREALS	Paddy	Jaya	7800	1,48,200	275

SUMMARY

Sr. No.	Major group/class	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
1	CEREALS	7800	1,48,200	275
	TOTAL	7800	1,48,200	275

PLANTING MATERIALS

Major group/class	Crop	Variety	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
FRUITS	Mango	Kesar	800	36000	56
	Mango	Dasherri	200	9000	13
SPICES	Onion	White Onion	75425	10304	22
	Chilli	G-4	19800	2970	8
VEGETABLES	Brinjal	Surti Ravaiya	377720	56763	64
	Cauliflower	Mahalaxmi	28750	5363	16
	Cabbage	Early Kuwari	2450	368	5
	Tomato	S-22	7770	1183	9
	Drumstick	BKM-1	213	2130	62
	Bitter Gourd	Hybrid	70	140	35
	Bottle Gourd	Hybrid	70	140	35
	Ridge Gourd	Hybrid	70	140	35

SUMMARY

Sl. No.	Major group/class	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
1	FRUITS	1000	45000	69
2	VEGETABLES	417113	66227	261
3	SPICES	95225	13274	30
	TOTAL	513338	124501	360

PUBLICATIONS

Type of Publication	No. of Items/topics	Number copies
News Letter	-	-
Technical reports	MPR, QPR, SAC report, FLD report, AAP, APR, MER, AGRESCO, ZREAC report	-
Technical bulletins	-	-
Popular articles	List of articles given in Annexure – I	55
Extension literature	24	34500
Research Paper	29	--
Book Published	5	--

SOIL AND WATER TESTING

Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized
Soil Samples	1915	1915	70	173000
Water Samples	106	106	29	5300
Total	2021	2021	99	178300

Success Stories

1. KVK for Reaching the Unreached- A Success study
2. Velda-IPM Village, a Success Story
3. Replacement of the Pigeon pea variety through FLD, a success story
4. Integrated Nutrient Management, a windfall to get higher production of vegetables in Tribal areas of South Gujarat- A Success story.
5. Role of KVK in upliftment of Tribal dominated areas of South Gujarat through export oriented Okra cultivation.
6. The role of KVK in shifting the life of normal tribal farmer to an innovated high-tech farmer. A success story
7. Impact of Kitchen Gardening Demonstration in Tribal Farm Women, A Success Story.
8. Collision of linkages with Tribal co-operatives for effective TOT in Tribal Belt.
9. The IPM Block, Nizar – A success Story

Case Studies

1. Natural havoc by Ice fall at Velda - A case study
2. Hazardous effect of injudicious use of weedicide at Nizar (Tapi), A case Study
3. Case Studies on Entrepreneurship Development of Tribal Farm Women

Impact Studies

1. Impact of training regarding scientific cultivation of okra
2. Impact of training regarding scientific cultivation of brinjal
3. Impact of training regarding package of practices of soybean crop
4. Impact of training regarding package of practices of gram crop
5. Impact of training regarding package of practices of pigeon pea crop
6. Impact of training regarding IPM components on *Cucurbitaceous* vegetables

Annexure - I

Proceeding of Sixth Scientific Advisory Committee Meeting of Krishi Vigyan Kendra, N.A.U., Vyara held on 06/07/2009 at 10:00 am at Vyara

*** List of the members remained present in the meeting :**

Sr. No	Name	Members/ Invitees	Designation
1	Dr. H. C. Pathak	Chairman	I/c. Vice Chancellor and Director of Research, Navsari Agricultural University, Navsari
2	Dr. M. K. Mandape	Member	Zonal Project Director, Zone-VI, I.C.A.R., Jodhpur, Rajasthan
3	Dr. R. B. Patel	Member	Director of Extension Education, Navsari Agricultural University, Navsari
4	Shri D. Z. Patel	Member	Joint Director of Agriculture and Deputy Director of Agril. and Horticulture, Lal Bunglow, Athwalines, Surat
5	Shri S. M. Modi	Member	Project Administrator, Integrated Tribal Development Project, Songadh Dist. Tapi.
6	Shri R. K. Gavli	Member	Representative of District Agriculture officer, District Panchayat, Vyara, Tapi.
7	Shri P. R. Chuadhari	Member	Deputy Director of Agriculture (Training), FTC, Vyara and A.D.A. (TV), Surat
8	Shri K. K. Bhatt	Member	Representative of Director, District Rural Development Agency, Ramkibir Society, Vyara, Dist. Tapi.
9	Shri K. B. Tandel	Member	Assistant Director (Fisheries), Near CRPF Campus, Ukai, Dist. Tapi.
10	Shri D. G. Gamit	Member	Divisional Forest Officer, Vyara, Dist. Tapi.
11	Shri I. L. Mahyavanshi	Member	Range Forest Officer, Vyara range, Dist. Tapi.
12	Shri K. D. Verma	Member	Representative of Lead Bank Officer, Regional Office, B.O.B., Dutch Garden, Surat.
13	Shri H. N. Mevada	Member	General Manager, District Industrial Center, Dist. Tapi
14	Dr. H. B. Kharecha	Member	Lokseva Trust, At. Moti Bhamti, Ta. Vansada, Dist. Navsari
15	Shri Dilipbhai Gamit	Member	Farmer Representative, At & Po. Gadat, Ta. Vyara, Dist. Tapi
16	Smt. Premlataben A. Gavit	Member	Farm Women Representative, At & Po. Bhitkhurd-1,

			Ta.Uchhal, Dist. Tapi
17	Smt. Induben R. Gamit	Member	Farm Women Representative, At.Po. Kapura, Ta.Vyara, Dist. Tapi
18	Dr. H. D. Mehta	Member	Associate Research Scientist Regional Rice Research Station, N.A.U., Vyara, Dist. Tapi
19	Dr. N. M. Chauhan	Member	Programme Coordinator Krishi Vigyan Kendra, N.A.U.,Vyara, Dist. Tapi
20	Shri R. S. Bhamre	Invitees	Dist. Deputy Manager, NABARD, Surat
21	Shr N. G. Gamit	Invitees	Seed Officer, G.S.S.C., Vyara
22	Shri T. M. Gamit	Invitees	Assi. Director of Agri.(Ext.), Songadh, Dist. Tapi
23	Shri Bhupendra R. Desai	Invitees	Progressive Farmer, Valod, Dist. Tapi
24	Shri B. J. Saraliya	Invitees	GNFC Ltd., Vyara
25	Shri R. M. Patel	Invitees	GSFC Ltd., Vyara
26	Dr. A. P. Patel	Invitees	I/c. Programme Coordinator, Krishi Vigyan Kendra, Navsari
27	Shri I. R. Rathva	Invitees	Extension Officer of Agriculture, Vyara
28	Father Fransis Desoza	Invitees	Mandal, Po. Kikakani, Ta. Songadh
29	Shri Rajubhai Jantraniya	Invitees	Progressive Farmer, Vyara
30	Shri B. G. Aahir	Invitees	Khedut Agro, Buhari, Ta. Valod
31	Shri D. G. Gamit	Invitees	Assistant Conservator of Forest, Vyara

*** List of members who could not remain present in meeting :**

Sr. No.	Designation	Members/ Invitees
1	Deputy Director (Animal Husbandry), District Panchayat, Vyara, Tapi.	Member
2	Executive Engineer, Ukai Kakrapar Irrigation Project, Vyara, Dist.Tapi.	Member
3	Social Welfare Officer, District Panchayat, Vyara, Dist. Tapi	Member
4	Office Incharge, All India Radio, Bhatar Road, Surat.	Member
5	Information Officer, Information and Broadcasting Dept., Chawk Bazar, Surat.	Member
6	Assistant Director, GLDC, Parsiwad, Vyara, Dist. Tapi	Member
7	Principal, Gandhi Vidyapith, Vedachhi, Valod, Dist. Tapi	Member

The Sixth Scientific Advisory Committee meeting of Krishi Vigyan Kendra, NAU, Vyara was organized to review the progress made by KVK during October-2006 to May-2009 and to discuss the action plan for 2009-10. The SAC meeting was held in training hall of KVK, Vyara on 6th July, 2009. The meeting was inaugurated by Dr. H.C. Pathak, Honorable Vice Chancellor, N.A.U., Navsari. Dr. N.M. Chauhan, Programme Coordinator, KVK, Vyara welcomed dignitaries, committee members, farmers and invitees. Dr. M.K. Mandape, Zonal Project Director, Zone-VI, Jodhpur in his speech emphasised the importance of OFT, technical feedback from farmers, value addition and women

empowerment. Dr. R.B. Patel, Director Of Extension Education, NAU, Navsari explained the satellite village concept adopted in KVKs of Navsari Agricultural University. Honorable Vice- Chancellor, Dr. H. C. Pathak in his concluding remarks congratulated Programme Coordinator and his team of scientists and suggested to publish FAQs data base for the major crops of the area. The thorough discussion made during the meet was really unique culminating into a number of remarkable suggestions and feedback which can be utilized for future betterment of the KVK. Vote of thanks was presented by Dr. C. K. Timbadia, Subject Matter Specialist (Extension Education) KVK, Vyara

6.1	<p>Approval of minutes of fifth Scientific Advisory Committee.</p> <p>The action taken report on the minutes of Fifth Scientific Advisory Committee meeting of KVK, Vyara held on 14th October, 2006 was presented by programme Coordinator and approved by the house.</p>														
6.2	<p>Progress made by KVK during October 2006 to May 2009.</p> <p>Programme Coordinator, KVK, Vyara presented the report on progress made by KVK, Vyara for the period of October, 2006 to May 2009. Following suggestions were made by the house.</p> <table border="1" data-bbox="284 891 1473 1115"> <tr> <td data-bbox="284 891 408 947">6.2.1</td> <td data-bbox="408 891 1473 947">The number of On Farm Testing should be increased.</td> </tr> <tr> <td data-bbox="284 947 408 1003">6.2.2</td> <td data-bbox="408 947 1473 1003">Impact assessment of mandatory activities of KVK should be made.</td> </tr> <tr> <td data-bbox="284 1003 408 1115">6.2.3</td> <td data-bbox="408 1003 1473 1115">Prepare and publish FAQs data base for different crops and value added products.</td> </tr> </table>	6.2.1	The number of On Farm Testing should be increased.	6.2.2	Impact assessment of mandatory activities of KVK should be made.	6.2.3	Prepare and publish FAQs data base for different crops and value added products.								
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6.2.3	Prepare and publish FAQs data base for different crops and value added products.														
6.3	<p>Action plan for the period of July 2009 to September 2010.</p> <p>The Action Plan for the period of July 2009 to September 2010 was presented by Programme Coordinator, KVK, Vyara which was thoroughly discussed and approved with following suggestions.</p> <table border="1" data-bbox="284 1339 1473 2056"> <tr> <td data-bbox="284 1339 408 1507">6.3.1</td> <td data-bbox="408 1339 1473 1507">Prepare an action plan to popularize the organic farming in the area and organize demonstration on organic farming incorporating all elements of NCF.</td> </tr> <tr> <td data-bbox="284 1507 408 1619">6.3.2</td> <td data-bbox="408 1507 1473 1619">The number of Vocational trainings pertaining to income generation by farm women should be increased.</td> </tr> <tr> <td data-bbox="284 1619 408 1675">6.3.3</td> <td data-bbox="408 1619 1473 1675">Efforts should be made to make a seed village by KVK, Vyara.</td> </tr> <tr> <td data-bbox="284 1675 408 1731">6.3.4</td> <td data-bbox="408 1675 1473 1731">Arrange exposure tour for progressive farmers.</td> </tr> <tr> <td data-bbox="284 1731 408 1787">6.3.5</td> <td data-bbox="408 1731 1473 1787">The KVK Scientists should be given more exposures for HRD.</td> </tr> <tr> <td data-bbox="284 1787 408 1899">6.3.6</td> <td data-bbox="408 1787 1473 1899">Efforts should be made to enhance value added products from turmeric and ginger.</td> </tr> <tr> <td data-bbox="284 1899 408 2056">6.3.7</td> <td data-bbox="408 1899 1473 2056">Find out specific thrust areas and resource inventory of newly formed Tapi district and incorporate all of the elements in Action Plan in the form of all four mandates of the KVK.</td> </tr> </table>	6.3.1	Prepare an action plan to popularize the organic farming in the area and organize demonstration on organic farming incorporating all elements of NCF.	6.3.2	The number of Vocational trainings pertaining to income generation by farm women should be increased.	6.3.3	Efforts should be made to make a seed village by KVK, Vyara.	6.3.4	Arrange exposure tour for progressive farmers.	6.3.5	The KVK Scientists should be given more exposures for HRD.	6.3.6	Efforts should be made to enhance value added products from turmeric and ginger.	6.3.7	Find out specific thrust areas and resource inventory of newly formed Tapi district and incorporate all of the elements in Action Plan in the form of all four mandates of the KVK.
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6.3.7	Find out specific thrust areas and resource inventory of newly formed Tapi district and incorporate all of the elements in Action Plan in the form of all four mandates of the KVK.														

Annexure - II

• List of Popular Articles

1	Dr. H.M. Viradia (2009) "UNAALA MA MAGFALI NU DODH THI BE GHANU UTPADAN MELAVO" Divya Bhaskar, Date- 6 th April'2009.
2	Dr. N.M. Chauhan (2009) " AGRI INFORMATICS ANE AGRI POLICLINIC NA KARYAKSHETRO" Gujarat Mitra, Date- 6 th April'2009.
3	Dr. J.J. Pastagia (2009) "TAMETAA MA PAK SANARAKSHAN" Gujarat Mitra, Date-13 th April'2009.
4	Dr. J.J. Pastagia (2009) "MARCHAMAA PAAK SANRAKSHAN" Gujarat Mitra, Date- 20 th April'2009.
5	Shri B.M. Tandel (2009) "AAMBA NU VANSH VARDHAN, KALAMO NI PASANDGI ANE ROPNI" Krushi Govidya, April'2009.
6	Shri B.M. Tandel and Shri V.N. Parmar (2009) " GREEN HOUSE MA CAPSICUM MARCHANI KHETI PADHHATI" Narmada Kisan Parivaar Patra, April'2009.
7	Dr. N.M. Chauhan (2009) " KHETI MA JAIVIK KHATARONI AGATYATA" Krushi Jivan, April'2009.
8	Dr. J.J. Pastagia (2009) "SHAKBHAJI PAAKO RINGAN ANE BHINDAMA ROG NIYANTRAN" Gujarat Mitra, Date- 11 th May'2009.
9	Dr. N.M. Chauhan (2009) " DANGAR NU AADARSHA DHARU WADIYU" Gujarat Mitra, Date 18 th May'2009.
10	Shri B.M. Tandel (2009) "PARVAL, TINDOLA ANE KANKODA NI AADHUNIK KHETI PADHHATI APNAAVO" Krushi Govidya, May'2009.
11	Dr. H.D. Mehta, Dr. H.M. Viradia and Dr. P.M. Misty (2009) " DAKSHIN GUJARAT MA DANGAR NI VAIGYANIK KHETI" Krushi Mela'2009 Smarnika, N.A.U., May'2009.
12	Dr. H.D. Mehta, Dr. H.M. Viradia and Dr. P.M. Misty (2009) " DANGAR UTPADAN NI 'SRI' PADHHATI (System of Rice Intensification)" Krushi Mela-2009 Smarnika, N.A.U., May'2009.
13	Dr. H.M. Viradia, Dr. H.D. Mehta and Dr, M.C. Patel (2009) " MAGFALI NI VAIGYANIK KHETI PADHHATI" Krushi Mela-2009 Smarnika, N.A.U., May'2009.
14	Dr. H.M. Viradia, Dr. H.D. Mehta and Dr, M.C. Patel (2009) " DIVELAA NI VAIGYANIK KHETI PADHHATI" Krushi Mela-2009 Smarnika, N.A.U., May'2009.
15	Dr. N.M. Chauhan (2009) " KRUSHI MA MULYAVRUDHHI NO ANIVARYA ABHIGAM" Krushi Mela-2009 Smarnika, N.A.U., May'2009.
16	Dr. N.M. Chauhan (2009) " TAKAAU / CHIRANJIVI KHETI" Krushi Mela-2009 Smarnika, N.A.U., May'2009.
17	Dr. J.J. Pastagia (2009) " KOBIF ANE KOBIFLOWER NI JIVATO" Pak Sanrakshan, A.A.U., Anand , May'2009.
18	Dr. J.J. Pastagia (2009) "PHUL PAAKO MA PAK SANRAKSHAN" Pak Sanrakshan, A.A.U., Anand , May'2009.
19	Dr. J.M. Patel (2009) " SWACHHA DUDH UTPADAN: DUDH NA UTPADAN MATE GAY/BHENS NI PASNDGI" Gujarat Mitra, Date- 1 st June'2009.
20	Arti N. Soni (2009) " KHETI MA KARYA KARTI MAHILAAO MATE POSHAK AAHAR" Gujarat Mitra, Date- 8 th June'2009.
21	Dr. H.D. Mehta and Dr. H.M. Viradia (2009) " DANGAR UTPADAN NI 'SRI'

	PADHHATI" Gujrat Mitra, Date- 29 th June'2009.
22	Dr.J.M. Patel (2009) "CHOMASA DARMYAN DUDHALA DHOR NE THATA ROG" Divya Bhaskar, Date-29 th June'2009.
23	Dr. N.M. Chauhan (2009) " TAKAAU / CHARANJIVI KHETI" Gujarat Mitra, Date- 15 th June'2009 and 13 th July'2009.
24	Shri B.M. Tandel (2009) " AAMBANU VANSHVARADHAN KALAMONI PASANDGI ANE ROPNI" Champion Agro World, June'2009.
25	Shri B.M. Tandel (2009) "PARVAL, TINDOLA ANE KANKODA NI AADHUNIK KHETI PADHHATI APNAVO" Champion Agro World, June'2009.
26	Dr. J.M. Patel (2009) " SASLA PALAN EK UBHARTO VYAVSAY" Gujarat Samachar, Date- 3 rd July' 2009.
27	Dr. J.M. Patel (2009) " VAIGYANIK PADHHATITHI VACHHARDANO UCHHER" Godarshan Guide, Date-5 th July'2009.
28	Dr. N.M. Chauhan (2009) " JANINIK GUNDHARAMA SUDHARNA LABH KE ABHISHAP? EK VIHANGAAVLOKAN" Gujarat Mitra, Date- 20 th and 27 th July'2009.
29	Shri B.M. Tandel (2009) ""OCHHA KHARCHE VADHU NAFO AAPTO PAAK FUDINO" Divya Bhaskar, Date- 27 th July'2009.
30	Dr. J.J. Pastagia (2009) " KAPAAS MA KHETI KHARCH GHATAADVANA UPAYO" Gujarat Mitra, Date- 3 rd August'2009.
31	Dr. N.M. Chauhan (2009) "AADHUNIK KHETI ANE ATYADHUNIK BAHENO" Gujarat Mitra, Date- 24 th August'2009.
32	Dr. J.M. Patel (2009) "PASHUOMA PAROPJIVIOTHI THATA ROGO NI SARVAR TATHA ATKAAVAVANA UPAYO" Gujarat Samachar, Date- 25 th August'2009.
33	Dr. J.M. Patel (2009) "DUDHJANYA ROGONE ATKAVAVAANA UPAYO" Gujarat samachar, Date. 27 th August'2009.
34	Arti N. Soni (2009) " GULAABNA PHULMATHI BANATI VIVIDH BANAVATO: GULABNA PHULOMATHI VIVIDH BANAVATO BANAVI KRUSHI AAVAK VADHARO" Champion Agro World, August '2009.
35	Dr. J.M. Patel (2009) "MIX FARMING SYSTEM ANE TEMA CHHANNU MAHATVA" Gujarat Samachar Date- 17 th September'2009.
36	Dr. J.M. Patel (2009) "NECESSARY NUTRITION PROVIDE TO MAINTAIN MILK PRODUCTION" Gujarat Samachar, Date- 23 rd September'2009.
37	Arti N. Soni (2009) "TANDURAST BALAK TANDURAST RASHTRA" Yojana, Year:36, Ank-9, Date- October'2009.
38	Arti N. Soni (2009) "BALAK NI TANDURASTI MATE MATA O AE DHYAN MA RAKHAVANI BABATO" Krushi Govidhya, Year:62, Ank-6, Date- October'2009.
39	Arti N. Soni (2009) "GRAMYA MAHILAO DVARA FAL ANE SHAKBHAJI PARIRAKSHANNI VAIGNANIK PADHDHHATI NO UPYOG" Champion Agro World, Date- October'2009.
40	Dr. N.M. Chauhan (2009) "SHERADI NI GAIKAL, AAJ ANE AAVATIKAL" Gujarat Mitra, Date- 26 th October'2009.
41	Shri B. M. Tandel (2009) "GATADIMA TUVERNI NAVI JATNI SAFAL KHETI" Divya Bhaskar, Date- 9 th November'2009.
42	Shri C. D. Pandya and Dr. N.M. Chauhan (2009) "JAMIN NO NAMUNO KEVI RITE LEVO?" Gujarat Mitra, Date- 23 th November'2009.
43	Dr. N.M. Chauhan (2009) "KHETINE UDHYOG SAMKAX BANAVVA MATE "DAS MUDDA NI SONERI SALAH"" Gujarat Mitra, Date- 7 th December'2009.

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44	Arti N. Soni (2009) "AAHAR MA SOYBEAN NU MAHATVA" Gujarat Mitra, Date- 28 th December'2009.
45	Dr. A. P. Patel and Dr. N.M. Chauhan (2010) "NINDANNASHAK RASAYANNE OLKHO" Gujarat Mitra, Date- 18 th January'2010.
46	Dr. J. M. Patel (2010) "DUDH NU UTPADAN VADHARVA PASHUONE POSHANXAM AHAR AAPO" Krushi Govidhya, Date- February'2010.
47	Dr. N.M. Chauhan (2010) "UNALU MAGAFALINI VAVETAR PADHDHHATI" Gujarat Mitra, Date- 8 th January'2010.
48	Dr. N.M. Chauhan (2010) "KRISHI MA MULYAVRUDHDHHI NO ANIVARYA ABHIGAM" Shri Olpad-Choryasi Taluka Sahkari Kharid Vechan Sangh Ltd., Surat na Shashthipurti karyakramni Smarnajalika ma, Date- February'2010.
49	Arti N. Soni (2010) "GRAMIN MAHILAO GHARE BETHA POSHANYUKT FARSAN BANAVO" Krushi Govidhya, Year:62, Ank-11, Date- March'2010.
50	Arti N. Soni (2010) "SOYBEAN MATHI BANATI VIVIDH BANAVATO" Yojana, Date- December'2010.
51	Dr. J. M. Patel (2010) "MARGHAMA JOVA MALATI KUTEVO ANE TENU NIVARAN" Krushi Govidhya, Date- March'2010.
52	Dr. A. P. Patel, Shri M. M. Gajjar and Shri M. B. Patel (2010) "UNALU KATHOL PAKOMA PIYAT VYAVASTHA" Gujarat Mitra, Date- 8 th March'2010.
53	Dr. N.M. Chauhan (2010) "SHERADI MA JAIVIK JIVAT NIYANTRAN" Gujarat Mitra, Date- 15 th March'2010.
54	Arti N. Soni (2010) "GRAMIN GRUHINIO ANAJ SANGRAHNI GHARGATHTHU JALAVANI KALA JANI LO" Krushi Govidhya, Date- April'2010.
55	Dr. N.M. Chauhan (2010) "JAGYA TYATHI SAVAR, CHALO PACHHA VALIE, SHERADINI VYAVAHARIK KHETI TARAF... SHERADI NI GAIKAL, AAJ ANE AAVATIKAL" Gujarat Mitra, Date- 29 th March'2010.