GUJARAT VIDYAPITH

KRISHI VIGYAN KENDRA

AMBHETI-VALSAD

Gujarat

ANNUAL PROGRESS REPORT

[April 2013 to March 2014]

SUBMITTED
TO
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI. 110 012.

INDEX

1 GENERAL INFORMATION ABOUT THE KVK

1.1 Name and address of the KVK :

Address	Telephone		E .mail
	Office	Fax	
Krishi Vigyan Kendra, **AMBHETI** Ta. Kaparada Di. Valsad Via. Vapi Gujarat Pin. 396 191	(1) 02633 260055	02633 260055	kvkvalsad@gmail.com

1.2 Name of the Host Institution :

Address	Telephone		E. mail
	Office	Fax	
Gujarat Vidhyapith Ashram road AHMEDABAD Pin. 380 014	(1) 079 2754 5044 (2) 079 2754 1148	079 2754 25 47	registrar @gujaratvidyapith.org

1.3 Name of the Programme Coordinator:

Name	Telephone / Contact		
	Residence	Mobile	E .mail
Dr. R.F.Thakor		94271 29451	rthakor1965@yahoo.co.in

1.4 Year of sanction : Sanction letter F. No. 5 (108) / 90 - KVK 28th March 1991

Year of Establishment : 21th Sept. 1992

1.5. Staff position (as on 31st March -2014)

Sr. No	Sanction post	Name of the incumbent	Designation	Discipline	Pay scale (Rs.)	Present basic (Rs.)	Date of joining	Permanent Temporary	Category
1	Programme Coordinator	Dr. R.F.Thakor	Programme Coordinator	Ext . Edu.	37400-67000	51780	19/05/01	Permanent	Other
2	SMS	Sh. K.A.Patel	SMS	Pl. Prot.	15600-39100	29500	28/02/94	Permanent	Other
3	SMS	Sh. A.R.Patel	SMS	Ext . Edu.	15600-39100	29500	23/01/96	Permanent	Other
4	SMS			Horti.	15600-39100				
5	SMS	Sh. L. T. Kapur	SMS	Soil Science	15600-39100	21290	16/12/06	Permanent	SC
6	SMS	Sh. M.M.Gajjar	SMS	Agronomy	15600-39100	15600	17/09/13	Permanent	Other
7	Programme Assistant	Smt. P.R.Ahir	Programme Assistant	Home Sci.	9300-34800	17160	01/05/01	Permanent	OBC
8	Programme Assistant	Sh. B.M.Patel	Programme Assistant	Ani .Sci.	9300-34800	16030	02/12/02	Permanent	Other
9	Programme Assistant	Sh. P.J.Joshi	Programme Assistant	Agri. Engg.	9300-34800	17060	23/12/02	Permanent	Other
10	Farm manager	Sh. P.R.Patel	Farm manager	Farm	9300-34800	16480	01/05/01	Permanent	OBC

				manager					
11	Office Super.	Sh.C.D.Patel	O.S	O.S	9300-34800	9300	27/09/13	Permanent	Other
12	Jr. steno cum Accountant	Sh. V.B.Patel	Jr. steno cum Acc.	Accountant	5200-20200	11970	01/11/99	Permanent	ST
13	Driver	Sh. R. D.Rohit	Driver	Driver	5200-20200	7830	16/06/08	Permanent	SC
14	Driver	Sh. H.G.Valand	Driver	Driver	5200-20200	7540	01/08/09	Permanent	OBC
15	Supporting Staff	Sh. A.R. Patel	Peon	Office attendant	5200-20200	7740	01/11/99	Permanent	ST
16	Supporting Staff	Sh. B.M. Patel	Farm attandent	Farm attendant	5200-20200	5200	01/04/13	Permanent	OBC

1.6. Total land with KVK (ha) : 20 ha

1. 7 Infrastructural Development

Sr . No.	Item	Area (Ha.)
1	Under building	2.0 ha.
2	Under demonstration unit	1.0 ha
3	Crops	8.0 ha
4	Orchard /Agro forestry	6.0 ha
5	Others (Grassland)	3.0 ha

(A) Buildings

Sr No	Name of building	Number	Plinth area (Sq.mt.)	Source of Funding	Status of construction
1	Administrative Building	01	720 Sq.mt	ICAR /GVP	Completed
2	Farmers Hostel	01	138 Sq.mt	ICAR	Completed
3	Staff Quarter	06	154 Sq.mt	ICAR	Completed
4	Demonstration Units -- Dairy Demo. Unit	01	100 Sq.mt	ICAR , TSP ,Valsad	Completed
5	Fencing	01	--	--	--
6	Bore well	01	300 ft	ICAR	Completed
7	Threshing floor	01	100 Sq.mt	ICAR	Completed
8	Farm godown	01	100 Sq.mt	ICAR	Completed
9	Implement shed	01	140 Sq.mt	ICAR	Completed
10	Soil-water testing lab.	01	--	ICAR	Completed
11	Plant Health Clinic	01	--	ICAR	Completed

(B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Tractor	1993	1,94,850	Approx. 45,000 hrs.	Replacement requires.
Tractor Trolley	1995	61,500	-	Working condition.
Jeep (Bolero)	2009	6,00,000	93157	Working condition.
Power tiller	2009	1,25,000	--	Working condition.
Motor Bike	2010	50,000	50775	Working condition.
Power sprayer	2010	19000		Working condition
Rotavator	2010	57750		Working condition

C) Equipments and A.V. aids

Name of the Equipment	Year of purchase	Cost (Rs.)	Present status
Television	1995	10660	Working condition.
P A S system	1997	10230	Working condition.
Xerox machine	2004	65,810	Working condition.
D V D	2006	4400	Working condition.
Computer -2	2007 &2010	1,02,270 +50,000	Working condition.
L C D	2007	75,400	Working condition.
Camera -2	1997 & 2007	2675 + 15250	Working condition.
Lap Top -2	2007 & 2012	51,750	Working condition.
Dot metric printer	2007	11,500	Working condition.
P A S system	2009	28057	Working condition.
Handicam	2009	12990	Working condition.
Generator set	2009	37972	Working condition.

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

Sl. No.	Date	Name and Designation of Participants	Salient Recommendations	Action taken

1	19-12-13	1. Dr Rajendra Khimani Registrar, Gujarat Vidyapith, Ahmedabad 2. Dr H.J. Derashri Director Of Ext.Edu. NAU, Navsari 3. Dr N.I. Shah Asso. Res.Sci. NAU, Paria 4. Shri Umesh H. Patil Rep., Dist. Agril.. Officer, Valsad 5. Shri Keval B.Patel ATMA.,Tech. Officer, Valsad 6. Dr. Harish G.Patel Rep., Deputy Director (A.H.) 7. Dr. Harshil R. Thakor Veterinary Officer, Umargam 8. Dr. Ashok Thakare Vasudhara Dairy, Alipor, Chikhli 9. Shri. K.G.Patel Area Manager, GSFC, Valsad 10. Shri. Jayeshbhai Pandya Programme Officer, A I R, Daman 11. Shri Haresh Patel All India Radio ,Daman 12. Shri. Dipakbhai Thakar District Insti. Of Edu. & Training, Valsad 13. Shri. Ramesh S. Bhoya Rep. J. N. Trust, Kaparada 14. Shri Nileshbhai.K.Patel Farmers Representative 15. Shri Devubhai R. Jadav Farmers Representative 16. Mrs. Ramilaben.M.Patel Farm women Representative 17. Mrs.Pushpaben Patel Farm women Representative	1. Soil samples tested by KVK should be compared with Soil Health Card with guidance of Navsari Agri.Uni . 1. Seed production of sun hemp. 2. Result of varietal trial of paddy should be interpreted. 3. Extension functionary training for rural level worker like Asha worker, ICDS worker etc. should be organized. 4. OFT may be finalized with the technical guidance of Navsari Agriculture Uni. 5. Radio talk should be organized. 6. Feed back of Meha variety of greengram by FLD. 7. Line sowing should be compared with broad casting in green fodder crop. 8. Training of fruit and vegetable preservation for eco club with the linkage of DIET, Valsad. 9. Demonstration of nutritional garden (Gangama Circle) in school in collaboration of DIET. 10. FLD on tomato crop in Hunda/Karjun village in collaboration of J.N.Trust. 11. Participation in various programmes of A.H. Dept. 12. Demonstration on pointed gourd. 13. New variety of sweet potato should be tested by receiving seed material from NAU, Pariya. 14. Demonstration of Sugandham Variety of turmeric. 15. Approach for soft wood grafting in mango instead of approach grafting. 16. Concentrate work on A.H. activities by adopting one village with linkage of Vasudhara dairy. 17. All SMSs should emphasize on On Farm Testing 18. Approach to help for marketing of various items from SHGs.	Action on recommendations will be taken in coming year.

		19 Dr. R.F.Thakor Member Secretary, P C, KVK, Valsad		

B) Proceedings of the 24th Scientific Advisory Committee meeting of Krishi Vigyan Kendra, Ambheti-Valsad- Gujarat

The 24th Scientific Advisory Committee meeting of Krishi Vigyan Kendra, Ambheti-Valsad- Gujarat was held on 19th December, 2013. at 14.00 pm at Krishi Vigyan Kendra, Ambheti . The list of the members who attended the meeting is attached herewith separately.

Dr. Rajendra Khimani, the Registrar, Gujarat Vidyapith welcomed the members of the committee. Agenda wise items were than taken for discussion.

1. Approval of the minutes of the previous SAC meeting

The minutes of the previous SAC meeting held on 16/02/13 was circulated earlier to all the members. As no comments received from any of the members, the minutes was approved unanimously.

2 Review of the progress report

The report on various activities carried out by the Kendra during last year was presented by Dr R. F. Thakor, Programme Coordinator as well as the SMSs of the kendra .

During the discussion some of the members suggested following …

1. Soil samples tested by KVK should be compared with Soil Health Card with guidance of Navsari Agri.Uni .
2. Seed production of sun hemp.
3. Result of varietal trial of paddy should be interpreted.
4. Extension functionary training for rural level worker like Asha worker, ICDS worker etc. should be organized.
5. OFT may be finalized with the technical guidance of Navsari Agriculture Uni.
6. Radio talk should be organized.
7. Feed back of Meha variety of greengram by conducting FLD.

8. Line sowing should be compared with broad casting in green fodder crop.
9. Training of fruit and vegetable preservation for eco club with the linkage of DIET, Valsad

3. Presentation of the action plan

1. Demonstration of nutritional garden (Gangama Circle) in school in collaboration of DIET.
2. FLD on tomato crop in Hunda/Karjun village in collaboration of J.N.Trust.
3. Participation in various programmes of A.H. Department.
4. Demonstration on pointed gourd.
5. New variety of sweet potato should be tested by receiving seed material from NAU, Pariya.
6. Demonstration of Sugandham Variety of turmeric.
7. Approach for soft wood grafting in mango instead of approach grafting.
8. Concentrate work on A.H. activities by adopting one village with linkage of Vasudhara dairy.

4. Item from the chair

Dr. R.A.Khimani addressed the house and appraised the members about approaches adopted by the Gujarat Vidyapith KVKs to serve the poorest of the poor in villages. He specially mentioned following

- All SMSs should emphasize on On Farm Testing
- Approach to help for marketing of various items from SHGs.

2. DETAILS OF DISTRICT (2013-14)

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

Sr. No.	Farming systems / enterprises
1	Agri - Horti Farming systems
2	Agri – Silviculture farming systems
3	Agri - forestry farming systems

2.2 Description of Agro-Climatic zone and major agro ecological situations (based on the soil and topography)

Sr. No.	Agro-Climatic zone	Characteristics
1	South Gujarat Heavy Rainfall Zone -I	Annual Average rainfall 2000-2200 mm
		Black to medium black soil.
		Sticky and Heavy soil.
		Stip slopes cause heavy runoff of rain water resulting into soil erosion.

Sr. No.	Agro-ecological situation	Characteristics
1	Agro-ecological situation – I & II	- Costal belt - Western part
		- Medium black to black soil
		- Hilly ,Shallow ,Undulating land – Eastern part

2.3 Soil types

Sr. No.	Soil type	Characteristics	Area in ha.
1	Shallow soil	- Poor fertility & water holding capacity.	--
2	Medium black to black soil	- Sticky and Heavy in nature .	--
3	Hilly ,Shallow ,Undulating land	- Non fertile and mostly non agril land	--
			2,94,412 ha.

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

Sr. No.	Crops	Area (,000 ha.)	Production (,000 tones.)	Productivity (Kgs / ha.)
1	**Food grains**			
	Paddy (irrigated)	19.786	65.293	3300
	Paddy (Unirrigated)	51.572	133.055	2580
	Total Paddy	**71.358**	**198.328**	**2750**
	Ragi (Finger millet)	5.331	4.264	800
	Jowar	0.708	0.722	1020
	Pigeon Pea	7.555	5.364	710
	Urid	5.749	3.737	650
	Minor pulses	1.002	0.752	750
	Muag	47	0.035	740
	Val	7.767	6.524	840
	Gram	1.777	1.422	800
	Groundnut	0.283	0.427	1510
	Niger	5.763	2.536	440
	Sugarcane	19.781	1285.76	65000
	Total Field crops	**127.121**	**1509.87**	
2	**Fruit crops**			
	Mango	26.250	157.50	6000
	Chiku	3.345	32.513	9720
	Banana	0.770	43.274	56200
	Papaya	0.145	6.254	43130
	Cashewnut	5.590	18.11	3240
	Coconut	2.930	29.30	10000
	Total	**39030**	**286.94**	
3	**Vegetables**			
	Brinjal	1.625	26.00	16000
	Okra	1.620	16.20	10000
	Tomato	1.405	29.50	21000
	Cucurbits	2.831	62.28	22000
	Total	**7.475**	**133.98**	17000
4	**Spices & condiments**			
	Chilli	1.025	1.14	11400

2.5 Weather data

Month	Rainfall (mm)	Rainy days	Temperature C		Relative Humidity (%)	
			Maximum	Minimum	Maximum	Minimum
April	0.25	01	39.3	19.7	95	20
May	--	--	40.1	21.7	93	26
June	244.25	25	36.0	23.9	98	43
July	726	20	32.5	23.8	92	66
August	295.5	30	31.8	23.1	97	61
September	80.75	21	25.6	22.0	100	65
October	34.75	11	36.2	17.1	98	57
November	18.25	03	36.9	11.7	100	21
December	--	--	34.7	6.9	94	21
January	--	--	35.3	5.9	97	18
February	0.25	01	35.5	7.7	95	16
March	0.25	01	Total (113)	9.7	95	14

2.6 Production and Productivity of livestock ,Poultry ,Fisheries etc. in the district 2013-14

Category	Population	Production	Productivity
Cattle	247601	69.93	--
Crossbred	38869	26.31	6.137
Indigenous	208732	43.62	1.884
Buffalo	96487	35.45	3.014
Sheep	3433	--	--
Goats	105094	--	--
Pigs	1825	--	--
Poultry	773599	--	--

Ducks	1262	--	--

Source : CDAP-Valsad

2.7 **Details of Operational area / Villages (2013-14)**

Sr. No.	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Area
1	Kaparada	Mandva, Ambajangal,Virxet, Vavar, Girnara, Aslona, Kurgam, Khutali, Amdha, Arnai, Vajvad, Motivahiyal ,Sutharpada	Paddy , Fingermillet, Sugarcane, Pulses, Vegetables , Micro irrigation & Dairy.	Low productivity in all crops. Water scarcity Poor milk production	ICM ,ANM, IPM, IWM Feed & fodder mgt. Integrated livestock mgt.
2	Dharampur	Kakadkuva,Nani vahiyal, Tutarkhed.	Paddy , Vegetables & Dairy .	Low prod uctivity in all crops. Poor milk production	ICM ,ANM, IPM, IWM Feed & fodder mgt. Integrated livestock mgt.
3	Pardi	Goima, Tarmalia, Velparva, Khuntej, Asma, Ambach, Amli, Pandor, Rohina	Paddy ,Sugarcane, Pulses, Vegetables , Mango & Dairy.	Low productivity in all crops. Poor milk production	ICM ,ANM, IPM, IWM Feed & fodder mgt. Integrated livestock mgt. .
4	Umargam	Saronda, Aklara, Borigam	Paddy & Vegetable.	Low productivity in all crops.	ICM ,ANM, IPM, IWM

2.8 Priority/thrust areas

Crop/Enterprise	Thrust area
Rice	Varietal evaluation ,ICM, IWM, INM, IPM
Fingermillet	Varietal evaluation ,ICM, IWM, INM, IPM
Pigeonpea	Varietal evaluation ,ICM, IWM, INM, IPM
Greengram	Varietal evaluation ,ICM, IWM, INM, IPM
Cucurbits	Integrated Pest & Disease Management, INM.
Sugarcane	Varietal evaluation ,ICM, IWM, INM, IPM
Brinjal, Chilli, Tomato	Varietal evaluation ,ICM, IWM, INM, IPM
Livestock	Feed & fodder mgt., Integrated livestock mgt.
Income generation	Vocational training

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2013-14

OFT (Technology Assessment and Refinement)				FLD (Oilseeds, Pulses, Cotton, Other Crops/Enterprises)			
1				2			
Number of OFTs		Number of Farmers		Number of FLDs		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
10	10	80	80	116.5	191.5	470	1165

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities				
3					4				
Number of Courses			Number of Participants		Name of activities	Number of activities		Number of participants	
Clientele	Targets	Achievement	Targets	Achievement		Target	Achievement	Target	Achievement
Farmers	135	124	2700	4308	Field day	06	08	300	416
Rural youth	07	05	125	119	Farmers seminar	05	08	750	1003
Extension Functionaries	07	19	125	707	Sci.-farmers interaction	25	37	500	728
					Farmers visit to kvk	1000	1239	1000	1247
					Scientist visit to farmers field	100	138	150	213
					Mahila mandal meetings	04	06	100	112
					Lecture delivered	20	27	2000	10653
					Distribution of seeds	1200	2068	1200	2068

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

Paddy – 80.00	88.66	Sugarcane - 400 qt.	327.20 qt.
		Brinjal - 5,00,000 nos.	6,70,000 nos.
		Chilli - 50,000 nos.	1,25,000 nos.
		Tomato - 35,000 nos.	1,00,000 nos.

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	Varietal evaluation	Paddy Fingermillet Brinjal Pigeonpea Chilli Bottlegourd Bittergourd Sugarcane	Low yield	Assessment of Pigeonpea variety for Rainfed *Rabi* cultivation	Demo. of improved variety	Improved package of practices.	Package of practices	Field day , Seminar, Kisan gosthi Diagnostic visits.	Treated Seeds
2	Integrated Crop Management	Paddy Fingermillet Brinjal Pigeonpea Chilli Bottlegourd Bittergourd Sugarcane Chickpea	Low yield	1. Assess the method of sowing in Bitter gourd in Hilly Tribal area . 2. Assess the Nipping practices in Chickpea	--	Package of practices for ICM	--	Kisan gosthi Diagnostic visits.	Seedlings Plastic bags
3	Integrated Nutrient management	Paddy Fingermillet Brinjal Pigeonpea Chilli Bottlegourd Bittergourd Sugarcane	Low yield	1.Assess the tech. for reducing cost of ferti. in Paddy and Bottlegourd. 2. To assess the fruit setting in Chilli. 3. Effect of micronutrient in Mango.	Demo. on INM	INM practices	Package of practices for INM	Field day , Seminar, Kisan gosthi Diagnostic visits.	LBF & micronutrients

Sr. No	Thrust area	Crop/ Activity	Identified	Interventions					
4	Integrated Pest Management	Paddy Fingermillet Brinjal Pigeonpea Chilli Bottlegourd Bittergourd Sugarcane	Low yield	Assessment of technology for control of Snail in Brinjal	Demo. of IPM techniques	IPM practices	--	Kisan gosthi Diagnostic visits.	IPM kits
	Integrated Water Management	Paddy Fingermillet Brinjal Pigeonpea Chilli Bottlegourd Bittergourd Sugarcane	Low yield	To assess the planting method in Chilli.	--	IWM practices	Soil & water conservation practices	Field day , Kisan gosthi Diagnostic visits.	Plasic mulching
4	Feed & fodder mgt.	Fodder sorghum	Low yield	--	Demo. Of improved Fodder variety	Scientific mgt. of milch animals	--	Seminar, Kisan gosthi Diagnostic visits.	Treated seeds
5	Fertility mgt.	Cow	Low milk Production	Management of Anoestrous	--	--	--	Kisan gosthi Diagnostic visits.	
6	Income generation activities	Tailoring and Stitching	No income	--	--	Vocational training	--	--	--
		Preparation of articles from Okra threads	No income	--	--		--	--	--
		Preparation of Paper articles.	No income	--	--		--	--	--

3.1 Achievements on technologies assessed and refined

A.1 Abstract on the number of technologies assessed in respect of crops

Thematic areas	Cereals	Oilseed	Pulses	Commercial crops	Vegetables	Fruits	Flower	Plantation crops	Tuber crops	Total

Varietal Evaluation			01							01
Integrated Pest Management					01					01
Integrated Crop management			01		02					03
Integrated nutrient management	01				02	01				04
TOTAL	01		02		05	01				09

A.2. Abstract on the number of technologies refined in respect of crops : Nil

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

Thematic areas	Cattle	Poultry	Sheep	Goat	Piggery	TOTAL
Nutrition Management	01	--	--	--	--	01
TOTAL	01	--	--	--	--	01

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

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

ON FARM TESTING (1) : A. Technology Assessment

1	Title	:	**To Assess combined use of azolla and liquid biofertilisers in paddy**
2	Problem diagnose/defined	:	Costly chemical fertilizer, reduce net profit and declined soil health
3	Details of technologies	:	**T_1 :** Farmer practice (No use of Azolla and LBF)

	selected for assessment/refinement		**T_2 :** Recommended Dose of Fertiliser (RDF) (100 : 50 : 00 kg NPK ha^{-1}) **T_3 :** 50% N + Twice incorporation of azolla @ 0.1 kg m^{-1}(30 & 60 DAP)+ Liquid Biofertilisers (i.e *Azotobactor* & PSB) @ 1.25 lit ha^{-1} (as seedling treatment)
4	Source of technology	**:**	NAU, Navsari
5	Production system		Rainfed cereal based system (Paddy-pulses system)
6	Thematic area	**:**	Integrated Nutrient Management
7	Performance of the Technology with performance indicators	**:**	Results showed that application of 50% N of RDF with Twice incorporation of azolla and Liquid Biofertilisers recorded highest net profit (29,641 Rs./ha) and B:C ratio (3.20), compared to RDF and Farmer practice
8	Final recommendation for micro level situation	**:**	Need to continue for next year
9	Constraints identified and feedback for research	**:**	Trial is going on.
10	Process of farmers participation and their reaction	**:**	Farmers associated with the paddy cultivation were identified. Information pertaining to application of fertilisers in paddy crop followed by farmers was collected. The problems faced by them was also discussed and prioritized by them. Then problem-causes analysis also has done with their active participation. Treatments were thoroughly discussed with them and lastly according to their suggestions treatments were finalized. From among these farmers five farmers were selected for testing the technology on their farm. The technological backstopping were provided by the KVK scientist as a facilitator as when required by the farmers.

11). Results of On Farm Trials

Crop/ enter prise	**Farming situation**	**Problem Diagnosed**	**Title Of OFT**	**No. of trials***	**Technology Assessed**	**Parameters of assessment**	**Data on the parameter**	**Results of assessment**	**Feedback from the farmer**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Paddy	Rainfed	Costly	To Assess	05	**T_1 :** Farmer practice	Cost	Highest yield	Results showed that application of **50% N**	Trial is

		chemical fertilizer, reduce net profit and declined soil health	combined use of azolla and liquid biofertilisers in paddy		**T_2:**Recommended Dose of Fertiliser (RDF) (100 : 50 : 00 kg NPK ha^{-1}) **T_3 :** 50% N + Twice incorporation of azolla @ 0.1 kg m^{-1}(30 & 60 DAP)+ LBF (i.e *Azotobactor* & PSB) @ 1.25 lit ha^{-1} (as seedling treatment)	and net profit	recorded with **T_2 (**Reco. Dose of Fertiliser), But Highest BCR (3.20)and Net profit (29641 Rs./ha) recorded with Integrated use of Azolla, LBF and Half RDF	of RDF with Twice incorporation of azolla and Liquid Biofertilisers recorded highest net profit (29,641 Rs./ha) and B:C ratio (3.20), compared to RDF and Farmer practice	going on.

**** No. of farmers***

Technology Assessed	***Production (kg/ha)**	**Net Return (Profit) in Rs. / unit**	**B : C Ratio**
11	**12**	**13**	**14**
T_1 : Farmer practice (No use of Azolla and LBF)	3,422	27,359	2.60
T_2 : Recommended Dose of Fertiliser (RDF) (100 : 50 : 00 kg NPK ha^{-1})	3,814	15,646	1.46
T_3 : 50% N + Twice incorporation of azolla @ 0.1 kg m^{-1} (30 & 60 DAP)+ LBF (i.e *Azotobactor* & PSB) @ 1.25 lit ha^{-1} (as seedling treatment)	3,317	29,641	3.20

ON FARM TRIAL - 2 A. Technology Assessment

1	Title	**:**	**Assessment of technology for reducing cost of fertilizers in Bottle gourd**
2	Problem diagnose/defined	**:**	Low return from Bottle gourd crop
3	Details of technologies selected for assessment/refinement	**:**	**T_1 :** Farmer practice (i.e 350 : 150 : 125 kg NPK ha^{-1}) + FYM @ 3 tone ha^{-1}) **T_2 :** Recommended Dose of Fertiliser (RDF) (200:100:100 kg NPK ha^{-1}) + FYM @ 12 tone ha^{-1} **T_3 :** 200 : 100 : 100 kg NPK ha^{-1} (RDF) + FYM @ 3 tone $ha^{-1}$with Liquid Biofertilisers (i.e *Azotobactor* & PSB) @ 2.50 lit ha^{-1} (75% as Basal dose and 25 % at 30 DAP)
4	Source of technology	**:**	NAU, Navsari

5	Production system		Rainfed cereal based system (paddy-vegetable system)
6	Thematic area	:	Integrated Nutrient Management
7	Performance of the Technology with performance indicators	:	Results showed that application of 200 : 100 : 100 kg NPK ha^{-1} (RDF) + FYM @ 3 tone $ha^{-1}$with Liquid Biofertilisers (i.e *Azotobactor* & PSB) @ 2.50 lit ha^{-1} (75% as Basal dose and 25 % at 30 DAP) recorded highest B:C ratio (2.73), compared to RDF and Farmer practice
8	Final recommendation for micro level situation	:	An application of RDF+ FYM @ 3 tone $ha^{-1}$with Liquid Biofertilisers (i.e *Azotobactor* & PSB) @ 2.50 lit ha^{-1} redu ce cost of fertilisers, with highest BCR without deterioration of soil health
9	Constraints identified and feedback for research	:	--
10	Process of farmers participation and their reaction	:	Farmers associated with the Bottlegourd cultivation were identified. Information pertaining to application of fertilisers in bottlegourd crop under hilly area followed by farmers was collected. The problems faced by them was also discussed and prioritized by them. Then problem-causes analysis also has done with their active participation. Treatments were thoroughly discussed with them and lastly according to their suggestions treatments were finalized. From among these farmers five farmers were selected for testing the technology on their farm. The technological backstopping were provided by the KVK scientist as a facilitator as when required by the farmers.

11). Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10

Bottle gourd (Integrated Nutrient Management)	Irrigated	Low return from Bottle gourd cultivation	Assess the technology for reducing cost of fertilizers in Bottle gourd.	05	**T_1 :** Farmer practice (i.e 350 : 150 : 125 kg NPK ha^{-1}) + FYM @ 3 tone ha^{-1} **T_2:**RDF (200:100:100 kg NPK ha^{-1}) + FYM @ 12 tone ha^{-1} **T_3 :** RDF + FYM @ 03 tone ha^{-1} with Liquid Biofertilisers (i.e *Azotobactor* & PSB) @ 2.50 lit ha^{-1}	Cost and Net return	Highest yield recorded with **T_2** : RDF (200:100:100 kg NPK ha^{-1}) + FYM @ 12 tone ha^{-1}, But Highest BCR (2.73)and Net profit (94,827 Rs./ha) recorded with application of RDF + FYM @ 03 tone ha^{-1} with LBF (i.e *Azotobactor* & PSB) @ 2.50 lit ha^{-1}	Application of RDF + FYM @ 03 tone ha^{-1} with Liquid Biofertilisers (i.e *Azotobactor* & PSB) @ 2.50 lit ha^{-1} in Bottlegourd increase net profit without deterioration of soil health	LBF are very convenient for use and Cheaper than other source of nutrients

**** No. of farmers***

Technology Assessed	**Production (*kg/ha*)**	**Net Return (Profit) in Rs. / unit**	**BC Ratio**
11	**12**	**13**	**14**
T_1 : Farmer practice (i.e 350 : 150 : 125 kg NPK ha^{-1}) + FYM @ 3 tone ha^{-1}	31,120	83,267	2.47
T_2:RDF (200:100:100 kg NPK ha^{-1}) + FYM @ 12 tone ha^{-1}	34,840	92,787	2.53
T_3 : RDF + FYM @ 03 tone ha^{-1} with Liquid Biofertilisers (i.e *Azotobactor* & PSB) @ 2.50 lit ha^{-1}	32,520	94,827	2.73

ON FARM TESTING : 3 A. Technology Assessment

1	Title	**:**	**Assessment of technology for Management of Snail in Brinjal.**
2	Problem diagnose/defined	**:**	Low Return from Brinjal Cultivation.

3	Details of technologies selected for assessment/refinement	:	**T_1 :** Farmers practices (Mechanical /arbitrary use of pesticides) **T**2 : Application of Metaldehyde (Snailkill pellets) 10 kg/ha (SAU recommendation) **T**3 : Poison bait of Methomyl (@ 1 kg wheat flor + 500 g Gul + 25 g Methomyl per 0.02 ha) **T**4 : Fencing with Nylon Net (2 to 3 ft height)
4	Source of technology	:	NAU, Navsari / Progressive farmer
5	Production system		Rainfed cereal based system (paddy-vegetable system)
6	Thematic area	:	Integrated Pest Management
7	Performance of the Technology with performance indicators	:	Results showed that Fencing with Nylon Net recorded highest yield (35200 kg/ha), B:C ratio (1:4.68), Infestation of snail (8%).
8	Final recommendation for micro level situation	:	Fencing with Nylon Net (2 to 3 ft height) may protect brinjal crop from snail infestation in southern part of Valsad District
9	Constraints identified and feedback for research	:	Sometimes, Snail may enter in the field through the wooden support provided for the fencing.
10	Process of farmers participation and their reaction	:	Farmers were involved and actively participated at every level i.e.planning, execution, monitoring, evaluation of the trial. Farmers evaluated that Fencing with Nylon Net (2 to 3 ft height) technology found more effective than other practices for the management of snail in brinjal . The Nylon Net is easily available as it is used for capturing fish.

11). Results of On Farm Trials

Crop/ enterprise	**Farming situation**	**Problem Diagnosed**	**Title of OFT**	**No. of trials ***	**Technology Assessed**	**Parameters of assessment**	**Data on the parameter**	**Results of assessment**	**Feedback from the farmer**
1	2	3	4	5	6	7	8	9	10
Brinjal	Irrigated	Low return from	Management of snail in brinjal	05	**T1** : Farmers practices (Mechanical /arbitrary use of pesticides)	Infestation of snail %) Yield (kg/ha)	32 31000	Results showed that Fencing with Nylon Net recorded highest	- Protection is better than cure - Fencing with Nylon Net (2 to 3

		brinjal cultivation			**T2** : Application of Metaldehyde @10 kg/ha (SAU reco.)	Infestation of snail %) Yield (kg/ha)	18 33600	yield (35200 kg/ha), B:C ratio (1:4.68), Infestation of snail (8%) .	ft height) may protect brinjal crop - This practice may also be used for snail management in other field crops.
					T3 : Poison bait of Methomyl (@ 1 kg wheat flor + 500 g Gul + 25 g Methomyl)	Infestation of snail (%) Yield (kg/ha)	20 33200		
					T4 : Fencing with Nylon Net (2 to 3 ft height)	Infestation of snail (%) Yield (kg/ha)	08 35200		

Technology Assessed	Production per unit (kg/ha)	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
T1 : Farmers practices (Mechanical /arbitrary use of pesticides)	31000	104000	3.70
T2 : Application of Metaldehyde @10 kg/ha (SAU recommendation)	33600	127000	4.09
T3 : Poison bait of Methomyl (@ 1 kg wheat flor + 500 g Gul + 25 g Methomyl)	32200	122000	4.12
T4 : Fencing with Nylon Net (2 to 3 ft height)	35200	138450	4.68

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 2013-14 and recommended for large scale adoption in the district

Sr. No	Crop/	Thematic	Technology	Details of popularization methods	Horizontal spread of Technology

	Enterprise	Area*	demonstrated	suggested to the Extension system.	No. of villages	No. of farmers	Area (ha)
1	Paddy	Varietal Evaluation	HYVs of Paddy	Demo. of improved variety seeds	08	150	45
2	Fingermillet	Varietal Evaluation	HYVs of Fingermillet	Demo. of improved variety seeds	05	140	40
3	Sugarcane	Varietal Evaluation	HYVs of Sugarcane	Demo. of improved variety Planting material	03	15	10
4	Brinjal	Varietal Evaluation	HYVs of Brinjal	Demo. of improved variety Seedlings	06	40	15
5	Bottlegourd	Varietal Evaluation	HYVs of Bottlegourd	Demo. of improved variety Seeds	02	25	05
6	Chilli	Varietal Evaluation	HYVs of Chilli	Demo. of improved variety Seedlings	02	20	05
7	Green fodder	Varietal Evaluation	HYVs of Perrenial grass	Demo. of improved variety planting material	15	70	05

b. Details of FLDs implemented during 2013-14 (Information cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops.)

Sr. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall
					Proposed	Actual	SC/ST	Others	Total	
1	Paddy	Varietal Evaluation	HYVs of Paddy	Kharif	20	23	116	--	116	--
2	Sugarcane	Varietal	HYVs of Sugarcane	Rabi	02	02	20	--	20	--

		Evaluation								
3	Finger millet	Varietal Evaluation	HYVs of Finger millet	Kharif	20	23	115	--	115	--
4	Brinjal	Varietal Evaluation	HYVs of Brinjal	Kharif	05	05	22	--	22	--
5	Bittergourd	Varietal Evaluation	HYVs of Bittergourd	Rabi	05	05	25	--	25	--
6	Chilly	Varietal Evaluation	HYVs of Chilly	Rabi	05	05	26	--	26	--
7	Bottlegourd	Varietal Evaluation	HYVs of Bottlegourd	Rabi	05	05	25	--	25	
8	Green Fodder	Varietal Evaluation	HYVs of Fodder Sorghum	Rabi	05	05	60	--	60	--

Details of farming situation

Crop	**Season**	**Farming situation**	**Type of soil**	**Status of soil**			**Previous crop**	**Sowing date**	**Harvest date**	**Seasonal Rainfall**	**No of rainy days**
				N	**P**	**K**					
Paddy	Kharif	Rainfed	Medium black	Low	Medium	High	Pulses	1st fortnight of July	2nd fortnight of October	1900	85
Sugarcane	Rabi	Irrigated	Medium black	Low	Medium	High	Paddy	Oct - Nov -12	Jan -14	--	--
Finger millet	Kharif	Rain fed	Medium black	Low	Medium	High	Pulses	2nd fortnight of July	2nd fortnight of October	1900	85

Brinjal	Kharif	Irrigated	Medium black	Low	Medium	High	Pulses	2nd fortnight of Sept.	Oct -13 to Jan -14	275	22
Bittergourd	Rabi	Irrigated	Medium black	Low	Medium	High	Paddy	0ct-13	Dec-13 -Feb- 14	--	--
Chilly	Rabi	Irrigated	Medium black	Low	Medium	High	Paddy	Dec-12	Mar –April - 13	--	--
Bottlegourd	Rabi	Irrigated	Medium black	Low	Medium	High	Paddy	0ct-13	Dec-13 -Feb- 14	--	--
Fodder-Sorgum	Rabi	Irrigated	Medium black	Low	Medium	High	Paddy	Dec-12	Mar –April - 13	--	--

Performance of FLD

Sr. No.	**Crop**	**Technology Demonstrated**	**Variety**	**No. of Farmers**	**Area (ha.)**	**Demo. Yield qt / ha**			**Yield of local Check qt / ha**	**Increase in yield (%)**	**Data on parameter in relation to technology demonstrated**	
						H	**L**	**A**			**Demo**	**Local**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
1	Paddy	HYVs of Paddy	MTU-1010	116	23	43.3	33.4	41.20	37.15	10.90	500	400
2	Sugarcane	HYVs of Sugarcane	Co-N 5072	20	2.0	114.20	88.00	108.30	90.10	20.11	15000	20000

3	Finger millet	HYVs of Finger millet	Guj. Nagli - 5	115	23	18.02	15.45	17.20	13.80	24.63	120	200
4	Brinjal	HYVs of Brinjal	DPR	22	05	313.1	251.2	260.2	213.0	22.16	3000	1500
5	Bittergourd	HYVs of Bittergourd	F1- Kohinoor	25	05	223.0	200.5	205.0	175.12	17.08	3500	3000
6	Chilly	HYVs of Chilly	F1- 4884	26	05	123.00	83.50	91.27	80.66	13.15	4000	2500
7	Bottlegourd	HYVs of Bottlegourd	Varad	25	05	303.5	235.1	275.12	225.00	22.27	3500	3000
8	Green Fodder	HYVs of Fodder Sorghum	MFSH -4	60	05	527	451	512	417	22.78	3000	2500

Economic Impact (continuation of previous table)

Crop	**Average Cost of cultivation (Rs./ha)**		**Average Gross Return (Rs./ha)**		**Average Net Return (Profit) (Rs./ha)**		**Benefit-Cost Ratio (Gross Return / Gross Cost)**
	Demo.	**Local Check**	**Demo.**	**Local Check**	**Demo.**	**Local Check**	
	14	**15**	**16**	**17**	**18**	**19**	**20**
Paddy	33214	34008	53560	48249	20346	14287	1:1.42
Sugarcane	67039	71400	259920	216640	192881	145240	1:3.03
Finger millet	12500	11720	34400	27600	21900	15880	1:2.35
Brinjal	35500	32500	165000	121500	129500	89000	1:3.74
Bittergourd	85000	82000	240000	205000	155000	123000	1:2.50
Chilly	36800	32700	182540	161320	145740	128600	1:4.93
Bottlegourd	80000	75000	165072	135000	85072	66000	1:1.80
Green Fodder	32014	27587	81920	66720	49906	39133	1:2.41

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 (qt / ha)		Percentage increase in productivity over local check
				Demo.	Local check	
Paddy	Kharif	Variety	Rainfed	41.20	37.15	10.90
Sugarcane	Rabi	Variety	Irrigated	108.30	90.10	20.11
Finger millet	Kharif	Variety	Rainfed	17.20	13.80	24.63
Brinjal	Kharif	Variety	Rainfed	260.2	213.0	22.16
Bittergourd	Rabi	Variety	Rain fed	205.0	175.12	17.08
Chilly	Rabi	Variety	Irrigated	91.27	80.66	13.15
Bottlegourd	Rabi	Variety	Irrigated	275.12	225.00	22.28
Green Fodder	Rabi	Variety	Irrigated	512	417	22.78

Technical Feedback on the demonstrated technologies

Sr. No	Feed Back
1	Fingermillet variety found superior in yield compare to local variety.
2	Fingermillet variety gives good response to longer rainy season.
3	Paddy variety MTU 1010 found lodging resistance in high wind at ripening stage.
4	Application of LBF: is easy to apply, cheaper and maintain soil health.

Farmers' reactions on specific technologies :

Sr. No	Name of Crop/ Commodity	Feedback
1	Paddy	Seed rate as well as seedling rate has been reduced to 20-30 %.
2	Fingermillet	Variety is pest disease resistant compare to local variety.
3	Brinjal	Fruits of this variety have higher pulp content preferred more by the local people and fetches higher market prices compare to local variety.
4	Chilli	Variety is early mature and pest disease resistant compare to local variety.
5	Bittergourd	Production is higher compared to local variety
6	Bottlegourd	Production is higher compared to local variety
7	Sugarcane	Seed rate has been reduced to 50%.

Extension and Training activities under FLD

Sr. No.	Activity	No. of Activities organized	Date	No. of participants	Remarks
1	Trainings	16	21-05-13 22-05-13 04-06-13 05-06-13 19/20-06-13 20-07-13 07-08-13 04-09-13 03-09-13 01-10-13 28-10-13 29-10-13 29-10-13 11-11-13 22-11-13 06-01-14	45 20 34 25 22 42 29 17 32 19 55 63 25 19 25 24	
2	Field day	07	14-03-13 08-04-13 16-07-13 27-08-13 04-09-13 14-10-13 20-02-14	88 37 40 87 48 28 25	

C. Details of FLD on Enterprises : NIL

3.3 Achievements on Training (Including the sponsored and FLD training programmes) :

A) ON Campus

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Farmers / Farm Women										
I Crop Production	07	--	--	--	249	22	271	249	22	271
Weed Management	02	--	--	--	127	13	140	127	13	140
Water management	01	--	--	--	31	02	33	31	02	33
Nursery management	01	--	--	--	17	02	19	17	02	19
Integrated Crop Management	02	--	--	--	49	05	54	49	05	54
Production of organic inputs	01	--	--	--	25	--	25	25	--	25
II Horticulture	12	--	--	--	310	09	319	310	09	319
a) Vegetable Crops										
Production of low volume and high value crops	02	--	--	--	46	02	48	46	02	48
Nursery raising	02	--	--	--	30	20	50	30	20	50
Protective cultivation (Green Houses, Shade Net etc.)	03	--	--	--	46	--	46	46	--	46
b) Fruits										
Cultivation of Fruit	03	--	--	--	84	01	85	84	01	85
c) Tuber crops										
Production and Management technology	02	--	--	--	44	06	50	44	06	50
III Soil Health and Fertility Management	07	--	--	--	150	128	278	150	128	278
Integrated Nutrient Management	02	--	--	--	37	30	67	37	30	67
Production and use of organic inputs	04	--	--	--	85	73	158	85	73	158
Soil and Water Testing	01	--	--	--	28	25	53	28	25	53
IV Livestock Production and Management	08	--	--	--	202	293	495	202	293	495
Dairy Management	02	--	--	--	--	98	98	--	98	98
Disease Management	02	--	--	--	53	63	116	53	63	116
Feed management	04	--	--	--	149	132	281	149	132	281

V Home Science/Women empowerment	06	--	--	--	--	204	204	--	204	204
Nutrition gardening	02	--	--	--	--	37	37	--	37	37
Gender mainstreaming through SHGs	03	--	--	--	--	142	142	--	142	142
Value addition	01	--	--	--	--	25	25	--	25	25
VI Agril. Engineering	06	--	--	--	93	85	178	93	85	178
Installation and maintenance of micro irrigation systems	03	--	--	--	29	38	67	29	38	67
Use of Plastics in farming practices	01	--	--	--	24	01	25	24	01	25
Repair and maintenance of farm machinery and implements	02	--	--	--	40	46	86	40	46	86
VII Plant Protection	08	--	--	--	185	276	461	185	276	461
Integrated Pest Management	04	--	--	--	122	133	255	122	133	255
Integrated Disease Management	02	--	--	--	53	58	111	53	58	111
Bio-control of pests and diseases	02	--	--	--	10	85	95	10	85	95
X Capacity Building and Group Dynamics	10	--	--	--	229	169	398	229	169	398
Leadership development	05	--	--	--	118	81	199	118	81	199
Formation and Management of SHGs	03	--	--	--	76	59	135	76	59	135
Entrepreneurial development of farmers/youths	02	--	--	--	25	19	44	25	19	44
Total	**64**	--	--	--	**1348**	**1196**	**2544**	**1348**	**1196**	**2544**
Rural Youth										
Tailoring and stitching	02	--	--	--	--	40	40	--	40	40
Total	**02**	--	--	--	**--**	**40**	**40**	**--**	**40**	**40**
Extension Personnel										
Productivity enhancement in field crops	04	18	08	26	49	19	68	67	27	94
Care and maintenance of farm machinery and implements	01	08	03	11	14	03	17	22	06	28
Low cost and nutrient efficient	01	--	--	--	12	03	15	12	03	15

diet designing										
Group Dynamics and farmers organization	02	08	--	08	59	06	65	67	06	73
Information networking among farmers	01	06	--	06	05	04	09	11	04	15
Livestock feed and fodder production	01	--	--	--	24	--	24	24	--	24
Total	**10**	**40**	**11**	**51**	**163**	**35**	**198**	**203**	**46**	**249**
Grand Total	**76**	**40**	**11**	**51**	**1511**	**1271**	**2782**	**1551**	**1282**	**2833**

(B) Off Campus

Thematic area	**No. of courses**	**Participants**								
		Others			**SC/ST**			**Grand Total**		
		Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Farmers / Farm Women										
I Crop Production	07	--	--	--	91	81	172	91	81	172
Weed Management	01	--	--	--	10	06	16	10	06	16
Water management	02	--	--	--	18	27	45	18	27	45
Nursery management	02	--	--	--	13	48	61	13	48	61
Integrated Crop Mgt.	02	--	--	--	50	--	50	50	--	50
II Horticulture	08	--	--	--	207	30	237	207	30	237

a) Vegetable Crops										
Production of low volume and high value crops	03	--	--	--	59	08	67	59	08	67
Protective cultivation (Green Houses, Shade Net etc.)	01	--	--	--	47	22	69	47	22	69
b) Fruits										
Cultivation of Fruit	02	--	--	--	51	--	51	51	--	51
c) Tuber crops										
Production and Management technology	02	--	--	--	50	--	50	50	--	50
III Soil Health and Fertility Management	11	--	--	--	209	27	236	209	27	236
Integrated Nutrient Management	04	--	--	--	93	07	100	93	07	100
Production and use of organic inputs	05	--	--	--	72	16	88	72	16	88
Soil and Water Testing	02	--	--	--	45	04	49	45	04	49
IV Livestock Production and Management	10	--	--	--	94	214	308	94	214	308
Dairy Management	04	--	--	--	46	100	146	46	100	146
Feed management	06	--	--	--	48	114	162	48	114	162
V Home Science/Women empowerment	04	--	--	--	--	172	172	--	172	172
Nutrition gardening	01	--	--	--	--	45	45	--	45	45
Gender mainstreaming through SHGs	02	--	--	--	--	102	102	--	102	102
Value addition	01	--	--	--	--	25	25	--	25	25
VI Agril. Engineering	09	--	--	--	213	115	328	213	115	328
Installation and maintenance of micro irrigation systems	05	--	--	--	111	54	165	111	54	165
Use of Plastics in farming practices	02	--	--	--	85	10	95	85	10	95
Repair and maintenance of farm machinery and implements	02	--	--	--	17	51	68	17	51	68
VII Plant Protection	09	--	--	--	183	53	236	183	53	236
Integrated Pest Management	03	--	--	--	77	14	91	77	14	91

Integrated Disease Management	02	--	--	--	51	03	54	51	03	54
Bio-control of pests and diseases	04	--	--	--	55	36	91	55	36	91
X Capacity Building and Group Dynamics	02	--	--	--	32	42	74	32	42	74
Leadership development	01	--	--	--	17	08	25	17	08	25
Formation and Management of SHGs	01	--	--	--	15	34	49	15	34	49
Total	**60**	--	--	--	**1030**	**734**	**1764**	**1020**	**734**	**1764**
Rural Youth										
Rural Crafts	03	--	--	--	--	79	79	--	79	79
Total	**03**	--	--	--	**--**	**79**	**79**	**--**	**79**	**79**
Extension Personnel										
Low cost and nutrient efficient diet designing	03	--	21	21	--	117	117	--	138	138
Group Dynamics and farmers organization	02	06	--	06	77	27	104	83	27	110
Management in farm animals	02	--	--	--	103	--	103	103	--	103
Livestock feed and fodder production	02	--	--	--	107	--	107	107	--	107
Total	**09**	**06**	**21**	**27**	**287**	**144**	**431**	**293**	**165**	**458**
Grand Total	**72**	**06**	**21**	**27**	**1317**	**957**	**2274**	**1323**	**978**	**2301**

C) Consolidated Table (On + Off campus)

Thematic area	**No. of courses**	**Participants**								
		Others			**SC/ST**			**Grand Total**		
		Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Farmers / Farm Women										
I Crop Production	14	--	--	--	340	103	443	340	103	443
Weed Management	03	--	--	--	137	19	156	137	19	156
Water management	03	--	--	--	49	29	78	49	29	78
Nursery management	03	--	--	--	30	50	80	30	50	80
Integrated Crop Management	04	--	--	--	99	05	104	99	05	104
Production of organic inputs	01	--	--	--	25	00	25	25	00	25

II Horticulture	20	--	--	--	457	59	516	457	59	516
a) Vegetable Crops										
Production of low volume and high value crops	05	--	--	--	105	10	115	105	10	115
Nursery raising	02	--	--	--	30	20	50	30	20	50
Protective cultivation (Green Houses, Shade Net etc.)	04	--	--	--	93	22	115	93	22	115
b) Fruits										
Cultivation of Fruit	05	--	--	--	135	01	136	135	01	136
c) Tuber crops										
Production and Management technology	04	--	--	--	94	06	100	94	06	100
III Soil Health and Fertility Management	18	--	--	--	360	155	515	360	155	515
Integrated Nutrient Management	06	--	--	--	130	37	167	130	37	167
Production and use of organic inputs	09	--	--	--	157	89	246	157	89	246
Soil and Water Testing	03	--	--	--	73	29	102	73	29	102
IV Livestock Production and Management	18	--	--	--	296	507	803	296	507	803
Dairy Management	06	--	--	--	46	198	244	46	198	244
Disease Management	02	--	--	--	53	63	116	53	63	116
Feed management	10	--	--	--	197	246	443	197	246	443
V Home Science/Women empowerment	10	--	--	--	00	376	376	00	376	376
Nutrition gardening	03	--	--	--	00	82	82	00	82	82
Gender mainstreaming through SHGs	05	--	--	--	00	244	244	00	244	244
Value addition	02	--	--	--	00	50	50	00	50	50
VI Agril. Engineering	15	--	--	--	306	200	506	306	200	506
Installation and maintenance of micro irrigation systems	08	--	--	--	140	92	232	140	92	232
Use of Plastics in farming practices	03	--	--	--	109	11	120	109	11	120

Repair and maintenance of farm machinery and implements	04	--	--	--	57	97	154	57	97	154
VII Plant Protection	17	--	--	--	368	329	697	368	329	697
Integrated Pest Management	07	--	--	--	199	147	346	199	147	346
Integrated Disease Management	04	--	--	--	104	61	165	104	61	165
Bio-control of pests and diseases	06	--	--	--	65	121	186	65	121	186
X Capacity Building and Group Dynamics	12	--	--	--	251	201	452	251	201	452
Leadership development	06	--	--	--	135	89	224	135	89	224
Formation and Management of SHGs	04	--	--	--	91	93	184	91	93	184
Entrepreneurial deve. of farmers/youths	02	--	--	--	25	19	44	25	19	44
Total	**124**	--	--	--	**2378**	**1930**	**4308**	**2378**	**1930**	**4308**
Rural Youth										
Tailoring and stitching	02	--	--	--	--	40	40	--	40	40
Rural Crafts	03	--	--	--	--	79	79	--	79	79
Total	**05**	--	--	--	**--**	**119**	**119**	**--**	**119**	**119**
Extension Personnel										
Productivity enhancement in field crops	04	18	08	26	49	19	68	67	27	94
Care and maintenance of machinery and implements	01	08	03	11	14	03	17	22	06	28
Low cost and nutrient efficient diet designing	04	--	21	21	12	120	132	12	141	153
Group Dynamics and farmers organization	04	14	--	14	136	33	169	150	33	183
Information networking among farmers	01	06	--	06	05	04	09	11	04	15
Management in farm animals	02	--	--	--	103	--	103	103	--	103
Livestock feed and fodder production	03	--	--	--	131	--	131	131	--	131
Total	**19**	**46**	**32**	**78**	**450**	**179**	**629**	**496**	**211**	**707**

Grand Total	**148**	**46**	**32**	**78**	**2828**	**2228**	**5056**	**2874**	**2260**	**5134**

(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	
Vocational Training	01/05/13 to 31/07/13	Sewing work	Employment generation through skill oriented vocational trainings	90	--	21	21	--	01	03	01
	26/08/13 to 09/10/13	Preparation of Articles from okra fibre.		45	--	30	30	--	01	03	02
	01/01/14 to 15/01/14	Preparation of Articles from okra fibre.		15	--	21	21	--	03	03	02
	01/01/14 to 31/03/14	Sewing work		90	--	19	19	--	-	--	--
	28/01/14 to	Preparation of		30	--	28	28	--	02	02	01

	26/02/14	Articles from paper									

(E) Sponsored Training Programmes :

Sr. No	Date	Disciplin	Thematic area	Duration day	Client PF/RY/EF	No. of course	No.of Participants									Sponsoring agency	Amt of funds received (Rs)
							Others			SC/ST			Grant total				
							Male	Female	Total	Male	Female	Total	Male	Female	Total		
1	2-8-13 to 3-8-13	Soil science	Integrated Nutrient mgt.	02	PF	1	--	--	--	11	31	42	11	31	42	ATMA Dang district	34,250
2	13-8-13 to 14-8-13	Horti.	Off-season vegetables	02	PF	1	--	--	--	34	--	34	34	--	34	ATMA Dang district	
3	23-8-13	Ext. Edu	Entrepreneurial develpment	01	PF	1	02	38	40	--	--	--	02	38	40	ATMA Kheda district	25,700
4	28-6-13	Horti.	Prod. and mgt. tech.	01	EF	1	06	03	09	11	04	15	17	07	24	IWMP Valsad	1,21,018
5	3-7-13	Ext. Edu	Entrepreneurial develpment	01	EF	1	08	03	11	13	03	16	21	06	27		
6	9-7-13 to 10-7-13	Horti.	Nursery raising	02	EF	1	07	04	11	13	04	17	20	08	28		
7	1-8-13	Home	Nutritional	01	EF	1	05	01	06	07	02	09	12	3	15		

		Sci.	gardening														
8	7-8-13 to 8-8-13	Horti.	Cultivation of Fruit	02	EF	1	08	04	12	10	05	15	18	09	27		
9	6-9-13	Horti.	Protective cultivation	01	EF	1	07	03	10	12	03	15	19	06	25		
10	24-9-13 to 25-9-13	Agri. Engg	Installation and mtc. of micro irri. systems	02	EF	1	08	03	11	14	03	17	22	06	28		

3.4 **Extension Activities (including activities of FLD programmes)**

Nature of Extension Programme	Purpose/ topic and Date	No. of Programme	No. of Participants (General)			No. of Participants SC/ST			No. of Extension personnel			Grand Total		
			M	F	T	M	F	T	M	F	T	M	F	T
Field Day	Fodder 14/3/13	01	--	--	--	17	71	88	--	--	--	17	71	88
	Sugarcane 8/4/13	01	--	--	--	25	12	37	--	--	--	25	12	37
	Rabbing 27/6/13	01	--	--	--	36	20	56	02	01	03	38	21	59
	Nagli 16/7/13 27/8/13	02	--	--	--	125	02	127	01	--	01	126	02	128
	Paddy 4/09/13 14/10/13	02	--	--	--	38	38	76	02	--	02	40	38	78
	Bittergourd 20/2/14	01	--	--	--	25	--	25	--	01	01	25	01	26
		08	**--**	**--**	**--**	**266**	**143**	**409**	**05**	**02**	**07**	**271**	**145**	**416**
Kisan Ghosthi		37	--	--	--	476	234	710	12	06	18	488	240	728
Exhibition	23/12/13 15-17/2/14	02	145	260	405	1255	2198	3453	15	05	20	1415	2463	3878
Film Show		16	57	48	105	328	233	561	04	02	06	389	283	672
Method Demonstrations		05	--	--	--	75	42	117	--	--	--	75	42	117
Farmers Seminar	Nutrition 27/6/13 7/10/13	02	--	--	--	30	190	220	--	06	06	30	196	226
	LBF 8/8/13 3/10/13	02	--	--	--	204	79	283	03	--	03	207	79	286
	Nagli 17/8/13	01	--	--	--	111	26	137	02	--	02	113	26	139
	Animal	01	--	--	--	47	73	120	05	--	05	52	73	125

	nutrition 11/9/13													
	Tuber crop 28/9/13	01	--	--	--	96	19	115	04	--	04	100	19	119
	PPV-FRA	01	22	--	22	78	--	78	08	--	08	108	--	108
		08	**22**	**--**	**22**	**566**	**387**	**953**	**22**	**06**	**28**	**610**	**393**	**1003**
Group field visits/ meetings		34	15	--	15	225	23	248	--	--	--	240	23	263
Lectures delivered as resource persons		27	575	255	830	3045	6735	9790	27	06	33	3647	6996	10653
Newpaper Coverage		11	--	--	--	--	--	--	--	--	--	--	--	--
Radio talks		08	--	--	--	--	--	--	--	--	--	--	--	--
TV Talks		00	--	--	--	--	--	--	--	--	--	--	--	--
Popular articles		02	--	--	--	--	--	--	--	--	--	--	--	--
Extension literature		09	--	--	--	--	--	--	--	--	--	--	--	--
Advisory Services		75	--	--	--	--	--	--	--	--	--	82	--	82
Scientific visit to farmers field		138	16	06	22	106	85	191	--	--	--	122	91	213
Farmers visit to KVK		1239	78	89	167	1013	67	1080	--	--	--	1091	156	1247
Diagnostic visits		101	12	08	20	40	121	161	--	--	--	52	129	181
Exposure visits		04	--	--	--	48	57	105	--	--	--	48	57	105
Cattle treatment Camp		01	--	--	--	--	--	--	--	--	--	14	26	40
Agri mobile clients		322	24	08	32	275	15	290	--	--	--	299	23	322
Self Help Group meetings		06	--	--	--	--	112	112	--	--	--	--	112	112
Celebration of important days		07	46	22	68	424	191	615	12	05	17	482	218	700
Total		**--**	**990**	**696**	**1686**	**8142**	**10643**	**18785**	**97**	**32**	**129**	**9229**	**11371**	**20600**

Technology Week Celebration

Period of Technology Week	Types of Activities	No. of Activities	Number of beneficiaries	Related Crop/ livestock / Technolgoy
27-01-14 to 31-01-14	Group Discussion	15	640	Paddy, Sugarcane, Vegetables, Vermicompost, Gobargas, Greenfodder, Mulching, Drip irrigation, Biofertilizers etc.
	Lectures organized	19	1124	Sugarcane and paddy production technologies. Soil Health management. Fruit & Vegetable cultivation. Dairy animal feed & fodder management. Soil and water conservation.
	Exhibition/ Fair	01	556	--
	Film show	08	654	Vermicompost, Gobargas, Greenfodder, Mulching, Drip irrigation, Biofertilizers etc.
	Farm visit	09	432	Various demo.units.
	Diagnostic activities	08	18	Pest-disease problems.
	Extension Literature provided (No)	07	1150	Technical information on different technology.
	Total number of farmers visited the tech. week	654	654	--
	No.of other agencies involved	10	--	--

Kisan Moblie Advisory

No. of Farmers registered - 1342

Details of SMSs:

Content category	Feedback from farmers
Crop Production (03)	--
Event information (02)	--
Inputs Availability (01)	--
Total (06)	

INTERVENTIONS ON DROUGHT MITIGATION : Nil

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 MTU-1010	20.00 68.66	40,000.00 1,37,320.00	650
OILSEEDS	-	-	-	-	-
PULSES	Green gram	Meha	1.04	10,400.00	25
VEGETABLES	Brinjal	DPR	0.20	14,000.00	Farm use
OTHER (Specify)	--	--	--	--	--

SUMMARY

Sl. No.	Major group/class	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
1	CEREALS	88.66	1,77,320.00	650
2	OILSEEDS	-	-	-
3	PULSES	1.04	10,400.00	25
4	VEGETABLES	0.20	14,000.00	--
5	OTHER (Specify)	--	--	--

PLANTING MATERIALS

Major group/class	Crop	Variety	Quantity (Nos.)	Value (Rs.)	Provided to

					No. of Farmers
FRUIT	Mango Grafts	Alpanso Keshar Daseri Amrapali Sonpari	300 1000 200 200 333	21000.00 60000.00 12,000.00 12,000.00 21645.00	136
VEGETABLE (Seedlings)	Brinjal Tomato Chilli Cabbage Cauliflower	DPR Hybrid PKM-1 Hybrid Hybrid F1 F1	6,00,000.00 70,000.00 80,000.00 20,000.00 1,25,000.00 10,000.00 10,000.00	1,50,000.00 42,000.00 20,000.00 20,000.00 1,25,000.00 5000.00 5000.00	825
PLANTATION CROP	Sugarcane	Co.N-5071 Co.N-03131	227.20 100.00	81,600.00 30,000.00	13
OTHER (Specify)	Fodder tousseks	Co-1,2,4	25,000(tousseks)	Free	300

SUMMARY

Sl. No.	**Major group/class**	**Quantity (Nos.)**	**Value (Rs.)**	**Provided to No. of Farmers**
1	FRUIT	2033.00	1,46,645.00	136
2	VEGETABLE	9,15,000.00	3,67,000.00	825
3	PLANTATION CROP	327.20(qtl)	1,10,600.00	13
4	OTHER (Specify)	25000(tousseks)	Free	300
	TOTAL	-	**6,60,245.00**	**1274**

Production of bio- products

BIO PRODUCT

Major group/class	**Product Name**	**Species**	**Quantity**	**Value (Rs.)**	

			No	(kg)		Provided to No. of Farmers
Vermiculture	Earthworms	Udrilus Eugiene	--	325	58,875.00	84
Compost	Vermicompost	--	--	5000	15,000.00	60
Bioagents	Fruitfly trap	Methyle eugenol trap	1439	--	39430	86
Bioagents	Fruitfly trap	Q lure trap	37	--	2210	29

SUMMARY

Sl. No.	Product Name	Species	Quantity		Value (Rs.)	Provided to No. of Farmers
			Nos	(kg)		
1	Earthworms	Udrilus Eugiene	--	325	58,875.00	84
2	Vermicompost	--	--	5000	15,000.00	60
3	Fruitfly trap	Methyle eugenol trap	1439	--	39430	86
4	Fruitfly trap	Q lure trap	37	--	2210	29
	Total				**1,15,515.00**	**259**

Production of live stock

LIVESTOCK

Sl. No.	Type	Breed	Quantity		Value (Rs.)	Provided to No. of Farmers
			Nos	Kgs		
1	Cattle	H F cow	04	-	1,10,500	04

SUMMARY

Sl. No.	Type	Breed	Quantity		Value (Rs.)	Provided to No. of Farmers
			Nos	Kgs		
1	Cattle	H F cow	04	-	1,10,500	04

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

(A) KVK News Letter :

Date of start : 2012-13

Periodicity : Half yearly (Jan-June and July-Dec-2013)

Number of copies distributed : 400

(B) Literature developed / published

Item	Title	Authors name	Number of copies
Research papers	1. Knowledge and attitude of tribal farmers towards soil testing	L.T.Kapur, A.R.Patel & R.F.Thakor	--
	2. Impact of Liquid biofertilizers application on sustainable cultivation of Bottlegourd,Chilli and Brinjal.	L.T.Kapur, R.F.Thakor & P.J.Joshi	--
	3. Influence of Liquid biofertilizers application on yield of Bottlegourd and soil health.	L.T.Kapur, S.U.Zala & R.F.Thakor	--
	4. Role of Co-operative societies in adoption of improved prod. Tech. by Sapota growers.	B.M.Mehta & R.F.Thakor	--
	5. Impact of vocational training on livelihood of tribal farm women.	P.R.Ahir	--
	6. Impact Assessment of FLD in transfer of Fingermillet production technology.	S.U.Zala, K.A.Patel & R.F.Thakor	--
Technical reports	1. Comprehensive District Agril.Plan (CDAP)	Programme Coordinator	--
	2. Annual Progress Report of KVK	Programme Coordinator	--
	3. Annual Action Plan of KVK	Programme Coordinator	--
	4. Zonal Research Extension and Action Committee (ZREAC) report	Programme Coordinator	--

	5. PPV &,FRA report 6. Technology week celebration report 7 NICRA annual progress report	Programme Coordinator Programme Coordinator Programme Coordinator	-- --
Popular articles	1. Method of Liquid Biofertilizers application. 2. Pashupalan Vyavasay	A.R.Patel, L.T.Kapur, & R.F.Thakor A.R.Patel, L.T.Kapur, B.M.Patel & R.F.Thakor	
Leaflet / folders	1. KVK-Profile 2. Krushi Vigyan Kendra- Parichay 3. IPM in Paddy 4. Paryavarniy suraxit Pravahi Jaivik Khataro 5. Azolla – Sastu Jaivik Khatar 6. Tomato ni adhunik Kheti 7. Marchi ni adhunik kheti	- K.A.Patel & others - K.A.Patel & A.R.Patel - K.A.Patel - L.T.Kapur & K.A.Patel - L.T.Kapur & K.A.Patel - K.A.Patel . K.A.Patel	1000 1000 1000 1000 1000 1000 1000
Compendium on seminar	1. Protection of Plant Varieties and Farmers Right Act-2001 2. Vermicompost booklet	- Dr.Vyas,Dr.Parihar (AAU) - A.R.Patel	100 25
Grand TOTAL	**09**		**7125**

C) **. Details of Electronic Media Produced :** Nil.

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

INTEGRATED PLANT NUTRIENT SYSTEM (IPNS) - AN EFFECTIVE APPROACH FOR SMALL FARMERS.

Background:

Mr. Vasantbhai Aendalbahi Patel, has 1.2 acres of land in Goima village of Valsad(Guj.).Goima village is canal irrigated area so paddy cultivation is dominant. The soil of pardi block of Valsad is characterized by medium black, shallow soil with steep slopes which is poor in fertility. Farmers used large amount of chemical fertilizers for the cultivation of paddy to increase yield. But excess use of chemical fertilisers, displaying their ill-effects such as destroying micro-organisms and friendly insects, making the crop more susceptible to the attack of diseases, reducing the soil fertility. Mr. Patel said, I was spent lots of money for costly chemical fertilizers although, could not get high net return.

Mr. Vasantbhai Patel visited his nearby located Gujarat Vidyapith Krishi Vigyan Kendra(GVKVK) –Ambheti and discussed about his problem with KVK-Scientist. Krishi Vigyan Kendra-Ambheti was emphasis on integrated plant nutrient system (IPNS) in paddy crop with low amount of chemical fertilsers for improving soil health and net return.

Mr. Patel said " I was participated in training programmes were KVK scientists taught about the Importance of soil testing, bio-fertilizer, Method of fertilizer application and split application of fertilizers. KVK also conducted method demonstration on the cultivation of Azolla and Seedling treatment with liquid biofertilisers. KVK has supported to laid out mother inoculum nursery in my backyard.

Before cultivation of paddy, Mr. Vasantbhai Patel collected soil samples from his field and sent to soil testing laboratory of KVK. He was applied chemical fertilisers as per the recommendation based on his soil test report. At the time of transplanting KVK scientist also conducted method demonstration on paddy field of Mr. Vasantbhai regarding seedling treatment with liquid culture of *Azotobactor* and Phosphate solubilising Bacteria (PSB). Mr. Patel said, i was make a solution of liquid bacterial culture, little amount of jeggary and make a slurry with puddled soil,according to guidance of KVK scientist. Paddy seedlings were deeped in bacterial culture slurry for ten minutes before transplanting and then they were transplated to puddled field.

IPNS Demonstration plot

Economic gain:

Mr. Patel said "Before contact with KVK, I was raised paddy with the sole use of huge quantity of costly chemical fertilizers. Almost I had to spend about Rs.18,000 per acre with production of 1100 kg ac.$^{-1}$ yield. integrated plant nutrient system (IPNS) reduced the cost of fertilisers and weeding cost by suppression of weed growth with azolla and liquid biofertilisers improved soil fertility and increased paddy yield upto 13.91 per cent(1,385 kg ac.$^{-1}$)." An eco friendly, non expensive and naturally available free-floating aquatic fern-Azolla with eco friendly and cheaper Liquid biofertilisers helps in safeguarding the soil health and also the quality of crop products

Impact: Mr. Patel explained their experience and said that an appearance of crop and results noted from demonstration plot changed my thinking that productivity of paddy could be enhanced with proper fertilizer management through organic and inorganic methods.He also said application of chemical fertilisers based on soil testing report reduced the quantity of costly chemical fertilisers. Integrated use of azolla and Liquid biofertilisers, reduced the attack of pest and diseases and cost of fertilisers and thereby increase net profit.

Mr. Patel also said that small farmers can also adopt integrated nutrient management approach in rainfed paddy with creating their own nursery for growing Azolla in farm ponds. He also said that he would continue to applied IPNS approach in paddy cultivation .

Horizontal Spread:

The demonstration on Mr. Patel`s field plot has created very good impression among the other paddy growers of that village and they have also expressed interest to use azolla and liquid biofertilisers in rainfed paddy cultivation. He is disseminating this message to the other farmers. With a smiling face he expressed that "*Paddy cultivation become profitable with Integrated Nutrient Management approach*"

Contact detail:

Mr. Vasantbhai Aendalbhai Patel,
At & post- Goima Block- Pardi, District-Valsad (Guj.)

3.8. Give details of innovative methodology or innovative technology of Transfer of Technology developed and used during the year : Nil

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

Sr.No.	Crop/Enterprise	ITK Practiced	Purpose of ITK
1	All crops grown by seed sowing.	A white thin thread tied in three lines around the field.	-To protect the newly emerged shoots of seeds sown in the field from damage of the Peacock (birds). As they eats the shoots and tender leaves of plants.

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

- Identification of courses for farmers/farm women - Group discussion , Participatory Rural Appraisal, Diagnostic services,
- Rural Youth - Participatory Rural Appraisal , Group discussion
- Inservice personnel - Feed back from state departments as well as NGOs

3.11 Field activities

I. No of villages adopted 05

ii. No of farm families selected 00

iii. No. of Survey /PRA conducted 03

3.12. Activities of Soil and Water Testing Laboratory and Plant Health Clinic

A) Soil water testing Laboratoty.

Year of Establishment : 2007

Sr. No.	Details of Samples	Particulars			
		No. of Samples analyzed	No. of farmers benefited	No. of Villages	Amount realized (Rs.)
1	Soil samples	309	298	56	18540
2	Water samples	286	282	49	14300
	Total				32840

B) Plant Health Clinic

Year of Establishment : 2012

Sr. No.	Details of Samples	Particulars			
		No. of Samples analyzed	No. of farmers benefited	No. of Villages	Amount realized
1	Plant diagnostic samples	82	103	36	--

4.0 IMPACT

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

Sr . No.	Name of specific technology/skill transferred	No . of participants	% Adoption	Change in income (Rs.)	
				Before training Rs / unit	After training Rs / unit
1	HYV s of Sugarcane	55	70	112,000 Rs. / ha.	135,000 Rs. / ha.
2	HYV s of Paddy	70	85	21,000 Rs. / ha.	23,500 Rs. / ha.
3	HYV s of Fingermillet	50	75	18,500 Rs. / ha.	21,500 Rs. / ha.
4	HYV s of Brinjal	40	65	80,500 Rs. / ha.	110,000 Rs. / ha.
5	HYV s of Green fodder	60	100	36,500 Rs. / ha.	45,500 Rs. / ha.
6	Q lure traps IPM in Vegetable crops (cucurbits)	60	85	35,000 Rs. / ha.	52,000 Rs. / ha.
7	Sewing work	20	70	--	3500 Rs. per month

4.2 Cases of large scale adoption :

IMPACT OF LIQUID BIOFERTILISERS IN CROP PRODUCTION IN TRIBAL AREA OF VALSAD

Background:

Gujarat Vidyapth, Krishi Vigyan Kendra-Ambheti is located in Kaparada Block of Valsad district of Gujarat. The district is composed largely of tribal communities, primarily depends on agriculture for their livelihood. The soil of the valsad district is characterized by medium black, shallow soil with steep slopes which is poor in fertility. Major crops of Valsad district are Paddy, Finger millet, Mango, Sapota, Sugarcane and vegetables such as Brinjal, Chilly and Cucurbits. Farmers spend lots of money for costly fertilizers and increasing cost of production so they getting low return. There is a ample scope for reduction in cost of fertilizer and improvement in soil health through use of biofertilisers. Profitability can be increased with the reduction in cost of cultivation.

Interventions:

Liquid formulation technology developed by Navsari Agriculture University, Navsari (Guj.) found more advantageous than the carrier inoculants. Liquid formulation having longer shelf life, contamination is almost nil, better survive in soil and on seed, high export potential, quantity required per area is too minimum than carrier based inoculants and can be store upto 45^0C temperature.

Process :

As a need of time GVKVK –Ambheti, considering the importance of liquid biofertilisers for sustainable soil health and productivity, started to aware tribal farmers, about importance of liquid biofertilisers for soil health and encourage them to adopt the cheapest alternative of costly chemical fertilisers. Kendra has given about 13 trainings on importance of liquid biofertilsers for sustainable crop productivity, Negative effect of excessive application of chemical fertilizer on soil health etc. About 8-10 method demonstrations on how to use liquid biofertilisers has also been conducted on farmer`s field and on GVKVK campus.



Method demonstration on use of Liquid Biofertilisers

For encouraging tribal farmers of district to adopt liquid biofertilisers, on basis of principle "seeing is believing" GVKVK-Ambheti, has conducted multilocations field demonstrations on liquid biofertilisers i.e *Azotobactor and Phosphorus Solubilising Bacteria* in four villages of Pardi block and seven villages of Kaparada block of Valsad(Guj.) in Paddy, Fingermillet, Brinjal, Bottlegourd and Bittergourd.

Sr. No.	Crop	Area (ha.)	No. of Demonstration

1	Paddy	23.00	116
2	Fingermillet	23.00	115
3	Brinjal	5.00	25
4	Bottlegourd	5.00	25
5	Bittergourd	8.00	31
Total		**64.00**	**312**

GVKVK-Ambheti also organized Seminar and Exhibition to aware and encourage the farmers to adopt this technology, gives good return.

Exhibition

Seminar

Economic gain:

The results of frontline demonstration conducted by GVKVK-Ambheti in Kaparada and Pardi block of Valsad district shows that an application of liquid biofertilisers positively influenced the yield of crops with reduction of average cost of cultivation, 15.2, 7.41, 9.28 % , 14.25 % , 25.13 % and 17.4, 14.37, 15.68 %, 11.83 % ,15.02 % more average net profit ,respectively in Paddy, Fingermillet, Bottlegourd, Chilly and Brinjal cultivation without deteriorating the soil health

Impact: Farmers were selected for demonstration feeling happy because demonstration results appreciating the importance of liquid biofertilisers to increase net profit. Farmers said that use of liquid biofertilisers reduced cost of fertilisers and severity of attack of pest and diseases. Though, they getting high quality produce with high market price. So they were got more profit in cultivation of Paddy, Fingermillet, Brinjal, Bottlegourd and Bittergourd crops. Farmers further said that Liquid biofertilisers can be a safe alternative to chemical fertilizers to minimize the ecological disturbance, improve soil fertility and productivity besides reducing the cost of chemical fertilizers

Horizontal Spread:

Farmers of district are pleased with our efforts for motivation and other nearby farmers came forward to adopt this ecofriendly fertilisers. Till today about 450 lit. liquid biofertilisers i.e *Azotobactor,* PSB and *Rhizobium* are distributed from GVKVK among the farmers of district.

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

1. **Impact of vocational training on Livelihood of tribal women**

The study was conducted in valsad district of Gujarat state. Impact of the vocational training organized by the KVK was Assess. Survey of 150 women trainees trained by the kvk in the different vocations such as Leaf cup preparation, Fruit amd vegetable preservation, tailoring and vermicompost was conducted. The results were presented in the National seminar on women farmer organized by the Junagadh Agril.Uni and National council for climate change at Junagadh.

2. Influence of Liquid biofertilizers application on yield of Bottlegourd and soil health.

Major crops of Valsad district of Gujarat are Paddy, Finger millet, Mango, Sapota, Sugarcane and vegetables such as brinjal, Chilly and cucurbits. Farmers waste lots of money for costly fertilizers and increasing cost so they getting low return, As a need of time GVKVK –Ambheti, considering the importance of liquid biofertilisers for sustainable soil health and productivity, conducted trainings, field demonstrations, seminar etc.to aware tribal farmers, about importance of liquid biofertilisers.

KVK conducted impact study during 2010-12 on influence of liquid biofertilizers application on yield of Bottlegourd and soil health. Liquid fertilizer Demonstration plots shows that average yield of Bottlegourd was 4.50 % and average maximum net return of Rs. 94,499 ha^{-1} with 6.42 % more net profit than sole use of chemical fertilisers.Paper was sent for publication.

5.0 <u>LINKAGES</u>

5.1 Functional linkages with different organization

Sr. No.	Name of organization	Nature of linkage
1	ATMA	Joint implementation of FFS , training and organizing farmers shibir.
2	Dept. of Agril. Valsad.	Involvement of kvk experts for delivering lecture farmers seminars, Agriculture Fair
3	Dept. of Horticulture, Valsad	Involvement for lectures delivering in Technology week.
4	Dept. of Animal husbandry, Valsad	Joint implementation of organizing Cattle Treatment Camp & farmers shibir
5	Dept. of Forest, Valsad	Joint implementation of organizing Ext. Functionaries training.
6	Navsari. Agril. Uni. Navsari	Provides expertise for latest technology and supply of improved seeds of Paddy & Sugarcane.
7	Vasudhara dairy	Joint implementation of A.I. activity & Ext. Functionaries training. .
8	Rural Technology Institute , Pardi	Joint implementation of Vocational trainings.
9	J. N. Trust, Pardi	Joint implementation of farmers trainings & seminars.
10	Jain Irrigation Co , Dharampur	Soil and water sample analysis.
11	Disrtict Industrial Centre,Valsad	Approval of loan case of trainees for bank loan.
12	Jan Shikshan Sansthan Ministry of HRD .	Joint implementation of long term vocational trainings.

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

Sr. No.	Name of agency/ scheme	Details of activity	Date/ Month	No. of Participants	Amt. received (Rs.)
1	IWMP-Valsad	Trainings (7)	28-6-13	24	1,21,018

			3-7-13	27	
			9-7-13 to 10-7-13	28	
			1-8-13	15	
			7-8-13 to8-8-13	27	
			6-9-13	25	
			24-9-13 to25-9-13	28	
2	ATMA – Valsad	FFS –Paddy	July-Sept-2013	25	19,508
		FFS -Bittergourd	Oct-Feb-2013	25	23,999
3	ATMA – Dang	Training (02)	02-08-13 to 03-08-13	42	34,250
			13-08-13 to 14-08-13	34	
4	ATMA –Kheda	Training	23-08-13	40	25,700
5	PPV &FRA	Awareness Shibir	18-02-14	100	49,938
	TOTAL				**2,74,413**

5. 3. Details of linkage with ATMA

a) Is ATMA implemented in your district -- Yes

Sr. No.	Programme	Nature of linkage	Remarks
1	Farm School - Paddy , Bittergourd	Financial assistance	
2	On campus training	Technical expertise ,method demonstration .	
3	Interface meeting	Technical expertise by KVK staff	
4	Joint visit of ATMA villages	Diagnosis visit on farmers field	
5	Kisan gosthi	Technical lectures by KVK staff	
6	Lecture delivered	Technical expertise by KVK staff	

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	Demonstration Unit	Year of establishment	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Quantity	Cost of Input	Gross Income	
1	Vermi compost	2004-05	0.03	*Eudrilus eugeniae*	Verms compost	325 kgs 20 tones	10,000	1,18,875	
2	Fodder	2003-04	0.05	Co-1, Co-2 , Co-4	Tousseks	25,000 nos	--	--	Free supply to trainees
3	Nursery								
	Mango	2001	200 Nos	Kesar	Grafts	1000 grafts	22,000	60,000	
	Mango	2001	100 Nos	Alfanso	Grafts	300 Grafts	8,000	21,000	
	Mango	2001	100 Nos	Dasheri,Amrapali, Sonpari	Grafts	733Grafts	16,600	45,645	
4	Vegetable seedlings	2004	1.0 Acre	Brinjal Tomato Chilly Cabbage Cauliflower	Seedlings	6,70,000 1,00,000 1,25,000 20,000	1,10,000	1,92,000 40,000 1,25,000 10,000	
5	Mango root stock	2007	700 bags	Deshi	Rootstock	500 nos.	2500	10,000	Used on farm
6	Sugarcane	2001	3.0 acre	Co.N-5071 Co.N-03131	Planting Material	327.20 qts	30,000	81,600 30,000	

6.2 Performance of instructional farm (Crops) including seed production

Name of the	Date of	Date of	Area	Details of production	Amount (Rs)	Remark

crop	Sowing	harvest	Ha	Variety	Type of produce	Quantity	Cost of inputs	Gross Income	
Cereals									
Paddy	Nov-12	May-13	0.8	Jaya Jaya	Seed Commercial	20 qtl 10 qtl	20,000	47,500	
Paddy	Jun-13	Oct-13	1.2	MTU-1010	Seed	68.66	30,000	1,37,320	
Spices & Plantation crops									
Sugarcane	Nov-Dec -12	Nov-Dec - 13	0.4	CoN-5071	Planting material	337.20	30,000	1,01,160	
Sugarcane	Nov-Dec -12	Nov-Dec - 13	1.2	CO-N 5071 Co-N 3131	Commercial	1104.78	70,000	2,98,296	
Mango grafts	Mar,13	July,13	0.40	Kesar Alphanso Dasheri, Amrapali, Sonpari	Grafts	2033(nos)	46,600	1,26,645	
Veg. seedlings Brinjal Chilly Tomato	June to February	July to March	0.40	Brinjal Tomato Chilly Cabbage/Cauliflower	Seedlings	9,15,000	1,10,000	3,67,000	
Fruits									
Mango	1997 2004	End of May	03	Kesar Alphanso Amrapali	Fruits	300	10000	50000	3.0 ha. Below 10 yrs.

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

Major group/class	Product Name	Species	Quantity	Value (Rs.)	

			No	(kg)		Provided to No. of Farmers
Vermiculture	Earthworms	Udrilus Eugiene	--	325	58,875.00	84
Compost	Vermicompost	--	--	5000	15,000.00	60
Bioagents	Fruitfly trap	Methyle eugenol trap	1439	--	39430	86
Bioagents	Fruitfly trap	Q lure trap	37	--	2210	29

6.4 Performance of instructional farm (livestock and fisheries production)

Performance of Dairy Unit : Dairy Unit started : 01/12/2007

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1	Cow	H F	Cow animal	04	44,000	1,10,500	

6.5 <u>Rainwater Harvesting</u> :

Training programmes conducted by using Rainwater Harvesting Demonstration Unit : Nil

6.6 Utilization of hostel facilities Accommodation available (No. of beds) : 25 Beds

Months	No. of trainees stayed	Trainee days	Reason for short

		(days stayed)	fall (if any)
April	413	413	--
May	164	164	---
June	574	594	--
July	372	400	--
August	309	562	--
September	317	1215	--
October	420	660	--
November	134	134	--
December	15	15	--
January	43	99	--
February	241	941	--
March	61	61	--

7.0 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, Dena bank	Ahmedabad Ahmedabad	10295506650 015110001547
With KVK	Dena bank	Motapondha	089810003112

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

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

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

7.5 Utilization of KVK funds during the year 2012-13 and 2013-14 (upto March, 2014) (current year and previous year)

Utilization of KVK funds during the year 2012 -13

Sr.No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	93.00	93.00	93.00
2	Traveling allowances	1. 50	1. 50	1.25
3	Contingencies			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	3.80	3.80	3.80
B	POL, repair of vehicles, tractor and equipments			
C	Meals/refreshment for trainees	5.70	5.70	5.70
D	Training material			
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)			
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)			
G	Training of extension functionaries			
H	Maintenance of buildings			
I	Establishment of Soil, Plant & Water Testing Laboratory			
J	Library			
TOTAL (A)		**104. 00**	**104.00**	**103.75**
B. Non-Recurring Contingencies				
1				
A				
2				
TOTAL (B)				
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		**104. 00**	**104.00**	**103.75**

Utilization of KVK funds during the year 2013 -14

Sr.No.	Particulars	Sanctioned	Released	Expenditure

A. Recurring Contingencies				
1	**Pay & Allowances**	92.50	92.50	**9159252**
2	**Traveling allowances**	1.00	1.00	98733
3	Contingencies			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	7.20		663748
B	POL, repair of vehicles, tractor and equipments			
C	Meals/refreshment for trainees	16.80		1406
D	Training material			
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)			
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)			
G	Training of extension functionaries			
H	Maintenance of buildings			
I	Establishment of Soil, Plant & Water Testing Laboratory			
J	Library			
TOTAL (A)		**24.00**	**24.00**	**11327904**
B. Non-Recurring Contingencies				
1				
A				
2				
TOTAL (B)		**0.00**		
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		**117.50**	**117.50**	**11327904**

7. 6 Status of revolving fund (Rs. in lakhs) for the three years

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

April 2010 to March 2011	21,66,539.28	14,25,635.24	7,98,501.00	27,93,672.52
April 2011 to March 2012	27,93,672.52	20,16,002.00	10,72,946.52	37,36,728.00
April 2012 to March 2013	37,36,728.00	15,67,267.00	10,16,474.00	42,87,521.00
April 2013 to March 2014	42,87,521.00	37,20,724.00	13,14,815.00	**67,93,430.00**

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

8.1 Constraints

(a) Administrative : Nil

(a) Financial

Funds are not allocated under Front line demonstrations in oilseed and pulse crops since last three years.

Funds for the activity such as exposure tour, Farmers Seminar in remote villages.

(c) Technical : Nil

National Initiative On Climate Resilient Agriculture (NICRA)

Institutional arrangement

- Village Climate Risk Management Committee (CRMC) : to take up the overall activities of the project
- 5 sub Committees for managing all activities under CRMC (Animal care, NRM, Custom Hiring, Irrigation, forest, 27 groups of winnowing fan users)
- 402 farmers became a member of the NICRA project (membership collection of Rs. 40602 @101 Rs. Per member)

Custom Hiring Centre

- Custom Hiring centre were constructed by the committee from 100 percent member's contribution.
- Timely showing of paddy which was not possible in past years resulting in to timely harvesting of crops leads to facilitate timely showing of gram.
- Rs. 139006/- received as hiring charges of machinary used by the 164 farmers.
- Fasten the process of paddy cleaning by 27 nos. of winnowing fan (50 % Contribution from 27 group with 285 members)

Livestock Production

Perennial Grass demonstration, Deworming and FMD vaccination

Inputs :

- Planting material of Perennial Grass, Tablets and vaccination
- About 0.25 ha. area covered under demonstration (67 farmers)
- 350 tablets for Deworming has been distributed
- FMD vaccination has been carried out for 360 animals in the village

Impact :

- Round the year production of green fodder
- The variety Co-1,Co-2,Co-4 demonstrated under NICRA
- Majority farmers has started to plant Perennial grass on boundary. More area came under green fodder, initially farmers were not prepared to allocate their land for fodder
- Income of milk per day is increased 350 lit to 500 lit per day in village dairy
- Deworming leads to improve health, Fertility and production
- Prevents major loss of outbreak of FMD viral Diseases in the village

Community Nursery – Managed by Shivam Group of Women

- Shed net house (200 sq.mtr)
- Seedling sale:137000 nos.
- Rs 39719 earned from vegetable seedling sell by group nursery

Bio gas slurry mgt. with bio mass for vermicompost

Inputs : 50 nos. HDPE vermi bed.

Impact :

- The gobar gas slurry has been mixed with bio mass usefull for vermi composting
- All the gobar gas (50 nos) units are linked with vermi compost preparation unit.
- The compost utilization will reduced the burden of chemical fertilisers
- Input cost of agri. Production has been reduced.
- Additional income genreded by the poor tribal families from these adjoining activities.

Technology Demonstration : Lodging resistant Variety

- The variety MTU-1010 is short duration, dwarf and resistant to lodging
- The harvesting of paddy was started by 2nd fortnight of October
- Demonstrated variety was found affected only 10 – 15 percent
- Withstand moderate wind velocity
- Prevents the losses to grain yield as well as straw which is main source of dry fodder
- Av. production of demo. plots was 4040 kg/ha

Technology Demonstration : Planting Technique in Bottle gourd

- Area Under Demonstration : 1.2 ha
- Nos of Farmers: 6
- Application of Bio fertilizer and Zinc

Intervention :

- Boundary with RCC pole
- plastic rope which is light in weight with good
- streching capacity provide longer life to the structure.
- Seedlings grown in nursery in poly bags transferred
- to the field at appropriate stage gave uniform growth
- and early production(Gap filling)
- INP and IPM

Major Out comes :

- Introduction of plastic rope.
- RCC pole provides extra strength to the bamboo
- structure thus, prevent from crop losses. Maximum
- rate of produce @ Rs. 13 per kg could received due
- to early and quality production
- Gross Return : Rs. 1,51,500/-per ha.

Technology Demonstration : Seedlings grown in nursery

- Poly bags transferred to the field
- Uniform growth
- Gap filling
- Early production
- INM (Liquid biofertiliser)
- Application of Zinc for improvement of soil

Technology Demonstration: Mulching in vegetable with Drip irrigation (Tomato)

- Area Under Demonstration : 0.2 ha
- Nos of Farmers: 2

Intervention :

- Plastic mulching sheet 25 micron
- Crop: Tomato
- Variety : Abhinav

Impact :

- Law infestations of weed
- Reduced evaporation
- Uniform vegetative growth
- Saving in irrigation

Technology Demonstration : Natural Resources Mgt.

Aforastration on Bunding /Trenching

- Plantaion of fruit and forest tress on Bunding /Trenching technology demonstrated
- Boarder plantation was carried ut with Drumstick, Mango, Grasses, Bamboo, Teakwood e
- About 4 ha. area covered under demonstration (87 farmers 25 % contribution)
- Impact :
- Farmers started growing vegetable crops as soon as they get water in the trench.
- The degraded land brought in to cultivation
- Plantation of Mango, Drumstick and cashew nut will be additional Source of income in a year to come.

Technology Demonstration: (Module: Natural Resource Management)

Micro Irrigation for efficient use of irrigation (PPP mode)

- About 24 ha. area covered under demonstration (24 farmers of three villages 25 % contribution)
- Convergence
- 8 % contribution from farmers, 75 % contribution from Gujarat Green revolution company and 17 % contribution from NICRA project.
- Impact :
- It has minimize the loss of water (Evaporation as well as conveyance loss)
- Control of weeds
- More no. of crops be possible from the available water.

Shelter for vegetable and fruits

Crops produce like Bottlegourd -25030 kg , Spongegourd- 4650 kg, Drumstick -750 kg, Cowpea -1600 kg and Bittergourd 2530 kg were collected from member farmers.

Annexures

District Profile - I

Include the details of

1. General Census:

Valsad falls in Agro-climatic zone-I (as per Gujarat agro-climatic zones). It is located at 20°.07’ to 21°.05’North latitude and 72° 43’ to 73° 00’ East longitude at an elevation of 12 metres above mean sea level. It is surrounded by Navsari district of Gujarat in North, Nasik and Thane districts of Maharashtra in East and South, respectively and Arabian sea in the west, whereas, Dangs district of Gujarat is located in North-east direction.

District and Taluka wise location

Sr. No.	Taluka	Latitude	Longitude
1.	**Valsad**	20° 45’ N	73° 00’ E
2.	**Dharampur**	20° 30’ N	73° 15’ E
3.	**Pardi**	20° 30’ N	73° 00’ E
4.	**Kaprada**	20° 30’ N	73° 15’ E
5.	**Umergaon**	20° 15’ N	72° 45’ E
	Valsad district	20° 37' N	72° 55' E

Geographical area (sq. km.) : 2947 sq.km.

(a) No. of blocks/talukas : 5

(b) No. of villages inhabitated : 469

(c) No. of villages electrified : 469

(d) No. of villages connected by all weather roads : 461

(e) No. of villages having supply of potable water : 280

Administrative Structure

Number of village panchayats and cities

Sr.No.	Taluka	Taluka Panchayat	Nagar Palika	No. of panchayat		
				Village Panchayat	Group Panchayat	Self panchayat
1	Valsad	Valsad	Valsad	94	5	89
2	Dharampur	Dharampur	Dharampur Baro	51	15	37
3	Pardi	Pardi	Vapi, Pardi Baro	78	3	73
4	Kaprada	Kaprada	--	70	19	50
5	Umbergaon	Umbergaon	--	51	3	48
	Total			**344**	**45**	**297**

Source : District Statistical profile

Demographic profile of Valsad district

Geographical area	2,947 sq.km. (2,94,412 ha.)					
Forest area	87,648 ha. (29.77%)					
Net cultivable land	1,63,430 ha.					
Net irrigated land	35,363 ha. (21.64 %)					
Pasture land	2,461 ha.					
Soil types	Black	Medium Black	Alluvial	Sandy	Saline	Hilly/Laterite
Area (ha.)	20,489	36,148	19,357	2,292	1,10,421	95,590
Agro Ecological situation	II					
Average Rainfall	2,000-2,200 mm					
No. of blocks/talukas	6					
No. of Villages	450					
Population Density	561 person / sq.km					
Total Population	17,03,068	Male Population		Female population	SC/ST	

		8,84,064	8,19,004	47.54%
Schedule caste Population	37,304	Male	Female	
		18,628	18,376	
Schedule tribe Population	7,72,405	Male	Female	
		3,86,395	3,86,010	
Literacy rate (%)	80.94	Male	Female	Schedule caste	Schedule tribe
		86.48	74.96	84.70	54.80
Sex Ratio	926 female/1,000 male				
No. of Farmers	95,996	Marginal Farmers (< 1 ha.)	Small Farmers (1-2 ha.)	Big Farmers (> 2 ha)	
		53,632	20,274	22,090	

Source- C-DAP-Valsad

2. Agricultural and allied census

Number of operational land holders

Sr No.	Taluka	Type of farmer	Number				Area (ha.)			
			SC	ST	Others	Total	SC	ST	Others	Total
1	Valsad	Marginal (< 1 ha.)	931	5351	13220	19502	282	2020	4354	6656
2	Dharampur/ Kaprada	Marginal (< 1 ha.)	50	8068	447	8565	29	4067	201	4297
3	Pardi	Marginal (< 1 ha.)	750	9464	6553	16767	255	4050	2438	6743
4	Umbergaon	Marginal (< 1 ha.)	707	4671	3420	8798	269	2339	1470	4078
Total			2428	27554	23640	53632	835	12476	8463	21774
1	Valsad	Small (1-2 ha.)	138	1598	3522	5258	191	2240	5035	7466

2	Dharampur/ Kaprada	Small (1-2 ha.)	27	6240	284	6551	40	9059	412	9511
3	Pardi	Small (1-2 ha.)	118	2900	2265	5283	165	4065	3316	7546
4	Umbergaon	Small (1-2 ha.)	111	1574	1497	3182	155	2222	2079	4456
Total			394	12312	7568	20274	551	17586	10842	28979
1	Valsad	Big (> 2 ha.)	110	1620	3921	5651	373	6309	14919	21601
2	Dharampur/ Kaprada	Big (> 2 ha.)	20	8357	560	8937	70	35642	2672	38384
3	Pardi	Big (> 2 ha.)	85	1953	2763	4801	350	6687	11408	18445
4	Umbergaon	Big (> 2 ha.)	63	605	2033	2701	271	1876	9365	11512
Total			278	12535	9277	22090	1064	50514	38364	89942
District Total			**3110**	**52401**	**40485**	**95996**	**2450**	**80576**	**57669**	**140695**

Land use pattern

Sr. No.	Name of the taluka	Total reported area (ha.)	Forest (ha.)	Cultivable waste (ha.)	Land put to non-agriciultural use (ha.)	Total cultivable land (ha.)	Pasture Land (ha.)	Current Fallow (ha.)	Net cultivated area (ha.)	Area sown more than once (ha.)
1	**Valsad**	54077	715	2290	5400	45672	681	28	44963	3700
2/3	**Dharampur/ Kaprada**	159629	90858	500	7650	60621	302	313	60006	1448
4	**Pardi**	45008	68	738	4080	40122	576	16	39530	6632
5	**Umbergaon**	35681	4318	1354	1821	28188	902	247	27039	811
	District Total	**294395**	**95959**	**4882**	**18951**	**174603**	**2461**	**604**	**171538**	**12591**

Soil classification

Sr. No.	Taluka	Area (ha.)					
		Black	**Medium Black**	**Alluvial**	**Sandy**	**Saline**	**Hilly/Laterite**
1	**Valsad**	6400	10000	15300	---	100092	--
2	**Dharampur**	6000	20000	2000	1600	---	34459
3	**Pardi**	3250	1757	657	---	9892	--
4	**Kaprada**	2714	1941	1100	657	---	21714
5	**Umbergaon**	2125	2450	300	35	437	39417
	Total	**20489**	**36148**	**19357**	**2292**	**110421**	**95590**

Source wise irrigated area

Sr.	Name of the	Net	Net irrigated	Source wise irrigated area (ha.)	Area	Net

No.	taluka	irrigated area (ha.)	area v/s net cultivated area (%)	Govt. Canal (ha.)	Private/ Panchayat Canal/Electric motor (ha.)	Pond/ River (ha.)	Well	Other	irrigated more than once (ha.)	irrigated area (ha.)
1	**Valsad**	19272	45.98	8117	8	1126	8004	2017	0	19272
2	**Dharampur**	2361	4.61	240	0	520	1596	5	0	2361
3	**Kaprada**	2061	3.51	200	0	450	1409	2	0	2061
4	**Pardi**	8090	21.8	2680	0	458	4075	877	0	8090
5	**Umbergaon**	3579	14.05	395	0	534	1991	659	0	3579
	Total	**35363**	**22.02**	**11632**	**8**	**3088**	**17075**	**3560**	**0**	**35363**

Irrigation status in Valsad

Geographically Valsad is situated in South Gujarat region. The geological formation in the district is hard rocks and alluvial formation. The ground water in this area is tapped. Rice and sugarcane covers major irrigated areas in Valsad district through dug wells, dug-cum-bore wells. The alluvial formation has been formed in central and northern parts of the district. The quality of ground water is suitable for irrigation throughout the district except the coastal belt, i.e. Umbergaon and Valsad where it is saline at some places. There are six perennial rivers in the district viz; Auranga, Wanki, Damanganga, Kolak, Tan and man. The district gets heavy rainfall ranging from 1905 to 2858 mm (av 3131 mm). Apart from rainfed areas, the other sources of irrigation are surface and ground water. All the blocks (talukas) in the district have been categorized as “safe”, with exploitation of utilizable ground water being less than 65 per cent. Since the maximum sustainable level of ground water development is 90 per cent, there is much scope foe development. As for the information available, the number of irrigation wells in the district is 4782 with electric motors 5085, oil engines 4262 and submersible pumps 610. Regarding surface water, there are 2 irrigation projects which cover the district under their command areas viz; Damanganga Project (Madhuban dam) 18486 ha. and Ukai- Kakrapar Project 51138 ha.. The talukas covered under these irrigation projects are Valsad, Pardi, Umbergaon and Kaprada. The total potential for irrigation from surface water by canals, branch canals, distributaries, minors and sub-minors are 1084 Kms. (Damanganga Project) and 2820 Kms (Ukai-

Kakrapar Project). The irrigation by surface water in the district is mainly based on 4 canals of Ukai, Kakrapar and Damanganga irrigation projects.

The actual net irrigation area in the district from all sources is 35554 ha. Irrigation type wise : Dug wells (17075 ha.), canals (11632 ha.), Irrigation ponds (3088 ha.), others (3560 ha.) and Tube well/Bore wells (2992 ha.).

3. Agro-climatic zones of Gujarat and Valsad district

Climate, topography, soil characteristics and the cropping pattern are the basic factors determining the delineation of agro-climatic zones. Gujarat as a whole falls in agro-climatic **Zone no. 13 - Gujarat Plains and Hills.** Taking into consideration, the rainfall pattern, topography, soil characteristics, the climate in general and the cropping pattern, eight agro-climatic zones have been identified for Gujarat. The following eight zones have been identified by the ICAR Research review Committee in its report of December, 1979.

Zone-I	**South Gujarat – Heavy Rainfall**
Zone-II	**South Gujarat**
Zone-III	**Middle Gujarat**
Zone-IV	**North Gujarat (Dry Zone)**
Zone-V	**North-West Gujarat (Arid Zone)**
Zone-VI	**North Saurashtra**
Zone VII	**South Saurashtra**
Zone VIII	**The Bhal region**

Valsad district as a whole falls in South Gujarat-heavy rainfall zone-I because of very heavy rainfall region (1800 to 3000 mm) and grows crops like paddy and orchard crops. Part of the heavy rainfall region is hilly in nature and wild tuber crops are the principal crops of this hilly area.

4. Agro-ecological situations

	Situations	
	I	**II**
Physiography	Highly undulating Steep slopes more than 150 m above MSL	Slightly undulating to leveled, 25, 75 and at some places up to 150 m MSL
Soil type	Fine textured shallow to medium depth, slightly acidic	Fine textured, deep alkaline
Rainfall (mm)	High to very high (1750 to 2000 mm)	High to very high (1750 – 2000 and more)
Irrigated/rainfed	Rainfed (90 %)	Partly irrigated (23 %),
Predominant source of irrigation	--	Well (77 %)
Main crops	Paddy hill millets and pulses	Paddy- Pulses-Orchards
Per cent area over to the zone	58	14
Talukas covered	Dharampur, Kaprada	Pardi, Umargam and Valsad

Agro ecologival situation of Valsad district

Valsad district as a whole falls in South Gujarat Heavy Rainfall Zone-I which consists of two distinct agro-ecological situations viz; I and II. AES-I comprises of Dharampur and Kaprada talukas, while AES-II comprises of Valsad, Pardi and Umbergam talukas of Valsad district. Valsad component of South Gujarat Heavy Rainfall Zone-I consists of two situations i.e. Situation I and II. Situation – I consists of Dharampur and

Kaprada talukas, whereas situation-II is spread over Valsad, Pardi and Umbergaon talukas. The general features of these agroe-cological situations are as under.

AES-I : Sub-mountain undulating rainfed, medium black to black, hilly laterite soils

This situation comprises of Dharampur and Kaprada talukas (Blocks) of Valsad district. The major part of this AES is of sub mountainous, undulating topography. Geographically, it adjoins with Nasik district of Maharashtra in the East. Soil type varies from medium black to black to hilly / laterite. Total number of villages in this situation are 237 (107 in Dharampur and 130 in Kaprada talukas) comprising an area of 1650 sq. km. out of which 35.21 per cent area is cultivated. More than ninety per cent (94.68 %) forest and more than 51 per cent (51.82 %) fallow land of Valsad district falls in these two talukas of Valsad district. This region is mainly represented by more than 90 per cent tribal land holders who are mainly marginal (< 1 ha. land) and small (1-2 ha. land) farmers.

Considerable area in this AES is rainfed with limited sources of irrigation (well and check dam built on perennial rivers). Average rainfall in this region varies from 3927 to 4008 mm spread over more than three months (June second week October first week). Net irrigated v/s net cultivated area in this AES is 13.21 per cent. Major food crops of this region are Paddy (mostly rainfed) and Ragi (Finger millet). Pulses occupy major area in kharif season. Major oilseed crop of this region is Niger, whereas amongst fruit crops, mango and cashew has a sizeable area. More than 90 per cent cashew area of Valsad district falls in this AES. All the cashew processing industries of Valsad district and Gujarat state fall in this AES. Banana plantations raised from tissue culture plants are coming in a big way in this AES. This area is also famous for important vegetable crops viz; okra, brinjal and cucurbits. Water melon is grown along river side plots.

More than 40 per cent livestock and 25 per cent poultry population of Valsad district falls in this AES. About 30 per cent milk co-operative societies of Valsad district which are primarily run by women fall in this AES. Local cows and buffaloes are reared as milch animals. Sheep, goats, poultry and pigs are also reared. Percentage of farmers having tractors is lowest in this region, however more than 70 per power tillers of Valsad district are owned by farmers in this AES as most of the farmers of this region are small and marginal who can ill afford to purchase Tractors. This region has a maximum potential of becoming horticultural hub of Gujarat.

AES-II: Central sub-coastal Plain tube well irrigated, medium black to black, saline and alluvial soils

Major blocks (talukas) covered this situation are Valsad and Pardi. The major topography of this AES is plain and soil type varies from medium black to black, whereas remaining part of this AES is coastal which has medium black to saline soils. It shares its borders with Navsari

district of Gujarat in the North and Daman in the West and Dadra nagar Haveli in the East. Total number of villages in AES-II is 180 (99 and 81 villages in Valsad and Pardi talukas, respectively) comprising an area of 927 sq. km. out of which 49.02 per cent area is cultivated.

This area has less than 1 per cent area under forest, while fallow land is about 7 per cent, whereas, more than 50 per cent pasture land of Valsad district falls in this AES. Majority of landholders (< 50 per cent) are marginal and farmers, whereas big farmers share in this region is about 22 per cent.

More than 30 per cent area of the district in AES-II is irrigated (well and checkdam). Net irrigated v/.s net cultivated area of AES-II is about 30 per cent This region is connected by good branch canal networks of Kakrapar and Damanganga (Kakrapar in Valsad and Damanganga in Pardi taluka). Total length of main branch canal in this region is 35 km. Check dams are built on Auranga, Wanki, Par and Kolak rivers. Average rainfall in AES-II varies from 2858 to 2957 mm spread over three months (June second fortnight to September second fortnight).

Major food crop of this region is paddy. Farmers having good irrigation facilities grow sugarcane and are part of the buy back arrangement with Valsad sugar factory. Apart from paddy, AES - II region comprising of Valsad and Pardi talukas is known for mango and sapota orchards. More than 60 per cent orchards of both these crops fall in this region. Pardi taluka is known as heart of Alphonso mango, however farmers now prefer kesar variety of mango for their new plantation. Majority of popular mango varieties viz; Alphonso, Kesar, Langra, Vashibadami, Rajapuri, Totapuri, Pairi, etc grow in this region particularly in Pardi taluka of Valsad district. Another very important crop of this region is sapota, though slowly and slowly farmers are reducing their net area due to declining net profit in this crop. During rabi season, farmers grow pulses, rabi jowar. Pigeon pea is mainly grown as semi-rabi grown. Among the new crops introduced in this region are medicinal and aromatics viz; Patchouli, Safed musli, Aloe Vera and Palmarosa. There is a sizeable area of vegetable crops in this region. The main vegetable crops of AES-II are brinjal, okra, cucurbits, val and chillies. Floriculture is an important profession in AES-II, which is mainly practiced by nursery men. Majority of fruit crops nurseries of Valsad district (> 75 per cent) are located in AES-II.

More than 40 per cent of livestock and more than 50 per cent of poultry population of the district is based in AES-II. About 67 percent of primary milk co-operatives of Valsad district are situated in this region.About 21 per cent area of Valsad district is coastal represented by more than 61 per cent fishermen of Valsad district. The major fishing points/ports are Hingraj, Kosamba, Umarsadi and Kolak.

About 72 per cent tractors of Valsad district are based in AES-II, however, share of power tillers in the district is about 21 per cent. Maximum number of agro-processing industries of Valsad district as well as of South Gujarat is primarily based in AES-II i.e. Valsad and Pardi talukas. This region offers maximum potential of floriculture, medicinal and aromatic plant cultivation. In terms of economic prosperity, AES-II stands first. It has a big network of Gujarat Industrial Development Corporation (GIDC) colonies. Biggest GIDC colony of Gujarat is based at Vapi representing Pardi taluka of AES-II, whereas other GIDC colonies are located at Pardi and Valsad (Gundlav).

5. Major and Micro farming system

Major farming systems based on the analysis made by KVK)

Sr. No.	Farming systems
1	Agri - Horti Farming systems
2	Agri – Silviculture farming systems
3	Agri - forestry farming systems

6. Major production systems

Sr. No.	Major production systems
1	Paddy-pulses / oilseeds-fellow Farming systems
2	Paddy / Nagli –fellow

3	Paddy-Sugarcane farming systems
4	Paddy-Vegetable -fellow farming systems
5	Mango / Sapota with intercrop Vegetables
6	Paddy-Banana cultivation.
7	Cashew with intercrop of Paddy / Nagli

7. Major agriculture and allied enterprises

Agriculture

Agriculture and its allied activities like Dairy Development, Fisheries, Plantation and Horticulture and Non-farm sectors activities are predominant economic activities prevalent in the district. 52 per cent of the total population is engaged in farming and 48 per cent is engaged in other activities.The major food-crop in the district is paddy. The area under paddy cultivation during 2005-06 was 65376 ha. and total production was 179977 MT with average productivity of 2.94 tonnes per ha. contributing to 6.90 and 9..53 per cent of total area and production of the state, respectively.

The second important crop of the district is sugarcane. With Valsad sugar factory in operation and another co-operative sugar factory coming up in area at Dadra Nagar Haveli, the economic development in the district is also attributed to sugarcane cultivation. During the year 2006-07 sugarcane was cultivated in 19781 ha. and the total production was 1286805 MT.

Due to sharp fall in sugar prices in the past few years, the sugarcane growers in some pockets of the district have chosen to horticulture and Medicinal & Aromatic plants.

Horticulture

Valsad is also known as **Mango capital of Gujarat**, wherein major area under horticultural crops is in mango. Fruits like **Mango**, Sapota, Banana (P & H crops) and vegetables are important crops and have the major share in the district economy. The district which grows mangoes (Alphonso) on large scale (contributing to 23.96 per cent and 19.11 in area and production of the state, respectively) is world famous

for some exquisite varieties (Alphonso, Kesar, Rajapuri, Pairi and Vashibadami). The district also grows sapota and coconut on a large scale. The area under horticultural crops during the year 2005-06 was 109344.50 ha.

The agro-climatic conditions prevailing in the district are suitable for cultivation of fruits and vegetables like Mango, Sapota, Banana, Guava, Papaya, Watermelon, Cauliflower, Cabbage, Okra, Carrots etc. Valsad is very important for growing horticultural crops (aggregate of 109344.50 ha yielding a production of 343382.60 MT) where mango alone was grown in 18320 ha. (109250 MT) of land during 2005-06. Valsad produces a variety of vegetables that includes Green Leafy vegetables, tomato, carrot, okra, etc. However, there are no organized sorting, grading, cleaning, packaging facilities to help chanalize their produce to export markets. Besides, condiments and spices like cardamom (300 ha.), chillies (388 ha.), ginger (10 ha.), turmeric (14 ha.), coriander (22 ha.), garlic (17 ha.) and Fenugreek (22 ha.) are also grown in this district. Last but not the least dry fruit like cashew is also grown on a considerable area (212 ha.) in the backward talukas of Kaprada and some parts of Dharampur. Plantations like Rubber (17 ha.) and tea (2 ha.) are also being grown.

Another very important plantation crop being grown in this region is Oil palm covering an area of 4244 ha. yielding 29708 MT. However due to lack of proper oil extraction facilities, farmers have started showing their inclination towards aromatic and medicinal plants.

The forest land covers 95,959 hectares, contributes significantly to the district economy. Mainly the forest produce are teak wood, fire wood, charcoal and timber wood etc. The other minor products are bamboo, grass, mahuva flowers and its seeds, gum and variety of medicinal herbs and plants.

In Valsad district, every year major portions of land is being lost due to soil erosion, Soil erosion, Soil alkalinity, Water logging, deforestation, and desertification and land degradation. The agro-climatic conditions of the district are suitable for many tree crops like Acacia, Teak, Eucalyptus, Khair, Sisso, Gliricidia, Subabul, Tamarind, Neem, Bamboom, Jatropha, Bixa, etc. The district is having 95959 ha. under forest, covering 32.60 per cent of the total geographical area of 294395 ha. Besides, the uncultivable wastelands (4882 ha.), pasture lands (2461 ha.) and other fallows (604 ha.) can also be counted for social forestry which is coming in a big way. Thus the aggregate area available for Forestry and Wasteland Development works out to be 103906.

Area and production of major crops of Valsad district

Sr. No	Name of the crop	Area (ha.)	Production (MT)	Productivity (T/Ha.)
Agricultural Field Crops (Non- Horticultural crops)				
1	Paddy (irrigated)	19.786	65.293	3300
2	Paddy (Unirrigated)	51.572	133.055	2580

	Total Paddy	**71.358**	**198.328**	**2750**
3	Ragi (Finger millet)	5.331	4.264	800
4	Jowar	0.708	0.722	1020
5	Pigeon Pea	7.555	5.364	710
6	Urid	5.749	3.737	650
7	Minor pulses	1.002	0.752	750
8	Mung	47	0.035	740
9	Val	7.767	6.524	840
10	Gram	1.777	1.422	800
11	Groundnut	0.283	0.427	1510
12	Niger	5.763	2.536	440
13	Sugarcane	19.781	1285.76	65000
	Total Field crops	**127.121**	**1509.87**	
Fruit crops/Plantation crops				
14	Mango	26.250	157.50	6000
15	Chiku	3.345	32.513	9720
16	Banana	0.770	43.274	56200
17	Papaya	0.145	6.254	43130
18	Cashewnut	5.590	18.11	3240
19	Coconut	2.930	29.30	10000
	Total	39030	286.94	
Vegetables				
20	Brinjal	1.625	26.00	16000
21	Okra	1.620	16.20	10000
22	Tomato	1.405	29.50	21000
23	Cucurbits	2.831	62.28	22000
	Total	7.475	133.98	17000
Condiments and Spices				
24	Chilli	0.1	1.14	11400
25	Turmeric	95	NA	
26	Tuber crops	35	NA	

27	Coriander	22	22	1.00
28	Other condiments	49	980	20.00
	Total condiments and spices	589	2193	
Floricultural crops				
29	Rose	228	1824	8.00
30	Rajnigandha	50	150	3.00
31	Lilly	105	945	9.00
32	Marigold	46	NA	NA
	Total Flori. crops	429	2919	
Aromatic Plants				
33	Palmarosa	107	2140	20.00
34	Lemon grass	4	120	30.00
35	Citronella	3	75	25.00
35	Patchouli	161	1932	12.00
	Total Aromatics	300	4642	
Medicinal Plants				
36	Safed Musli	84	29.40	0.35
37	Aloe vera	7.5	11	1.47
38	Tulsi	25	375	15.00
	Total Medicinal Plants	116.50	415.40	
	Total Hort. crops	38977.50	344180.40	
	Total Agricultural + Horticultural crops	163469.50	1848227.40	

Animal Husbandry

In Valsad district, the climatic conditions are conducive for dairy activity. As per the latest census total number of cows and buffaloes population of the district was 39206 crossbred cows, 17003 indigeneous cows and 74409 buffaloes. There are 53 Veterinary Centres run by District Panchayat and State Govt. to provide animal services is given below.

Taluka	Total Villages In Taluka	Area in Sq. Km.	Total livestock population	Animal Density/ sq.km.	No. of Vety. Centres	No. of animals/ Vety. Centre	No. of villages/ Vety. Centre	Sq. Km. area covered/ Vety. Centre
Valsad	99	501	**46395**	92.60	7	6627.86	14.14	71.57
Pardi	107	713	**66372**	93.09	5	13274.40	21.40	142.60
Umbergam	81	426	**53664**	125.97	4	13416.00	20.25	106.50
Dharampur	130	937	**89856**	95.90	6	14976.00	21.67	156.17
Kaprada	54	362	**27363**	75.59	5	5472.60	10.80	72.40
Total/Av.	**471**	2939	**283650**	**96.51**	**27**	**10505.56**	**17.44**	**108.85**

Valsad District Co-operative Milk Producers Union Ltd; and Vasudhara dairy have been the main source of development of dairy. An organized dairy in the district was run by Vasudhara dairy which has now been shifted to the adjacent Navsari district (after bifurcation of Valsad into two separate Valsad and Navsari districts). It manages and processes almost 98 per cent of the total milk produced in both the districts. Vasudhara Dairy now has an installed capacity to handle 3 lakhs litres of milk per day as against which it process 2.46 lakh litres of milk per day presently.

Looking to the breed able population, the existing A.I. and Veterinary Aid Service facilities are quite inadequate in Dharampur and Kaprada talukas of the district. New chilling plant is being set up at Motaponda in Kaprada taluka of the district. Good number of Small Road Transport operators will also be benefited once the new milk routes to this chilling plant are established.

Total number of animals of Agricultural importance in Valsad district

Category	Population	Production	Productivity
Cattle	247601	69.93	--

Crossbred	38869	26.31	6.137
Indigenous	208732	43.62	1.884
Buffalo	96487	35.45	3.014
Sheep	3433		
Goats	105094		
Poultry	773599		
Ducks	1262		

Information on Primary Milk Co-operative Societies

Sr. No.	Taluka	No. of Primary Milk Co-operative Societies				
		Tribal Female	Non-Tribal Female	Total Female	Mixed	Total
1	Valsad	175	34	209	102	311
2	Dharampur	121	0	121	45	166
3	Pardi	142	0	142	6	148
4	Kaprada	25	0	25	14	39
5	Umbergaon	17	0	17	0	17
	Total	**480**	**34**	**514**	**167**	**681**

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

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

Krishi Vigyan Kendra is presently working with three blocks namely Kaparada, Dharampur,Umargam and Pardi blocks of the valsad district. Valsad component of South Gujarat Heavy Rainfall Zone-I consists of two situations i.e. Situation I and II. Situation – I consists of Dharampur and Kaprada talukas, whereas situation-II is spread over Valsad, Pardi and Umbergaon talukas.of the two situations , two villages, Varoli and Arnala were selected assuming that both the villages may be the representative villages of different agro ecological situations.

2. Survey methods used

The inventory resource survey was conducted through structured interview schedule as well as using various PRA tools. The datamatic information was also collected from the reports and statistical profile published by the state department.

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

Following PRA tools were used to elicit information from the villagers on various subject.

- Transect
- Resource map
- Seasonal diagram
- Venn diagram
- matrix ranking
- Crop calendar

4. Analysis and conclusions

Sr. No.	Name of the Region	AES No.	Name of Agro-ecological situations	Name of representative village		Brief features
				Village	Taluka (Block)	
A	Sub-mountain undulating	I	Sub-mountain undulating rainfed, medium black to black, hilly laterite soils	Khutali Nani vahiyal	Kaprada Dharampur	Tribal area, forest land, medium black to black, hilly laterite soils, rainfed, highest rainfall , well irrigated, Paddy, Cashew, Mango main crops. Socio-economically farmers are poorest.
B	Central sub-coastal Plain	II	Central Sub-coastal Plain, tube well irrigated and limited canal facilities, medium black to black, saline and alluvial soils	Asma Saronda	Pardi Umargam	Tribal and big farmers are in almost equal proportion, highest irrigation, medium rainfall, Paddy, Mango, Sapota, Sugracane and vegetables, highest fishermen, industrialization, urban areas highest in the district. Socio-economically farmers are most affluent

5.List of location specific problems .

Sr. No.	Problems
1	Reduction of under ground water table
2	Inadequate Supply of fertilizers
3	Higher illiteracy rate
4	Marketing of Agri and Horticulture crops
5	Lack of infrastructure for Post harvest Technology
6	Migration to industrial area for job
7	Non availability of quality seeds/planting material
8	No mechanization due to small holdings
9	Undulating land
10	Poor fertility of soil
11	Use of local varieties of crop
12	Indigenous cattle breed
13	Lack of knowledge about sci. crop/livestock management

6 Ranking of the specific problems .

Sr. No.	Problems	Ranking of the problem
1	Reduction of under ground water table	I
2	Inadequate Supply of fertilizers	VI
3	Higher illiteracy rate	II
4	Marketing of Agri and Horticulture crops	V
5	Lack of infrastructure for Post harvest Technology	VIII
6	Migration to industrial area for job	IX
7	Non availability of quality seeds/planting material	IV
8	No mechanization due to small holdings	X
9	Undulating land	VIII
10	Poor fertility of soil	VII
11	Use of local varieties of crop	II
12	Indigenous cattle breed	V
13	Lack of knowledge about sci. crop/livestock management	III

7 List of location specific thrust areas

1. Increase the productivity of Sugarcane, Paddy, and Gram in particular.
2. Increase the area and productivity of horticultural crops.
3. Increase milk production.
4. Popularize the techniques of soil and water conservation.
5. Income generation activities for rural youth through skill oriented vocational training programme
6. Popularize the integrated approach for the control of pests and diseases.

8. List of location specific technology needs for OFT and FLD

Improved and HYVs of major crops .

Integrated Nutrient Management for major crops

Integrated Pest and disease management for major crops

Integrated water management in major crops

HYVs of Fodder crops .

Breed improvement.

Technology for efficient water use.

9. List of location specific training needs

- Identification and selection of improved varieties of major crops .
- Selection and application of fertilizers for major crops
- Identification and control of pest and disease of major crops
- Water management in major crops .
- Improved package of practices of HYVs of Fodder crops .
- Awareness about cattle breed improvement .
- Awareness about micro irrigation techniques.

- **Matrix ranking of technologies**

Sr.No.	Technologies	Ranking of the technologies
1	Improved and HYVs of major crops .	I
2	Integrated Nutrient Management for major crops	IV
3	Integrated Pest and disease management for major crops	II
4	Integrated water management in major crops	V
5	HYVs of Fodder crops .	VI
6	Breed improvement.	III
7	Technology for efficient water use.	IV

Technology Inventory and Activity Chart – III

1 Names of research institutes, research stations, regional centres of NARS (SAU and ICAR) and other public and private bodies having relevance to location specific technology needs

2 Inventory of latest technology available .

Sl. No	Technology	Crop/enterprise	Year of release or recommendation of technology	Source of technology
1.	NAUR-1	Paddy	2008	Paddy Research Station,AAU ,Navagam
2	Co N 7071	Sugarcane	2007	Regional Sugarcane Research Station, NAU, Navsari
3	Co N 7072	Sugarcane	2007	Regional Sugarcane Research Station, NAU, Navsari
4	GT101	Pigeon pea	2002	Main Pulse Research Station, GAU, S K Nagar
5	GG-2	Gram	1998	Main Pulse Research Station, GAU, S K Nagar
6	GM-4	Green Gram	2005	Main Pulse Research Station, GAU, S K Nagar
7	Meha	Green Gram	2004	Anand Agril.Uni.Anand
8	Guj Nagli -5	Fingermillet	2009	Navsari Agril.Uni.Navsari
9	Co-4	Perrenial grass	2004	TNAU Coimbtore

1 Activity Chart

Crop/Animal/ Enterprise	Problem	Cause	Solution	Activity
Paddy	Low productivity of Paddy under rainfed heavy black soils of Valsad district	1. Use of domestic seeds 2. Imbalance fertilizer application. 3. Pest and disease occurance 4 Improper weed mgt. 5 Improper water mgt.	1 Use of HYVs 2 Appli. of recommend dose of fertilizer 3 Integrated Pest and disease management 4 Timely weed mgt. 5 Proper water mgt	1 Training and FLD to demonstrate HYVs required. 2. Training programme on Integrated Nutrient Management 3. Training and FLD programme on integrated pest management 4 Training on integrated weed management
Fingermillet	Low productivity under rainfed heavy black soils of Valsad district	1. Use of domestic seeds 2. Imbalance fertilizer application. 3. Pest and disease occurance 4 Improper weed mgt. 5 Improper water mgt.	1 Use of HYVs 2 Appli. of recommend dose of fertilizer 3 Integrated Pest and disease management 4 Timely weed mgt. 5 Proper water mgt	1 Training and FLD to demonstrate HYVs required. 2 Training programme on INM 3 Training and FLD programme on IPM 4 Training on IWM 5 Training for water mgt.
Sugarcane	Low productivity of Sugarcane under heavy black soils of Valsad district	1. Use of old age variety 2. Imbalance fertilizer application. 3. Pest and disease occurance 4 Improper weed mgt. 5 Improper water mgt.	1 Use of Latest variety 2 Application of recommend dose of fertilizer 3 Integrated Pest and disease management 4 Timely weed mgt. 5 Proper water mgt	1 Training and FLD to demonstrate latest HYVs . 2 Training programme on Integrated Nutrient Management 3 Training on integrated pest management 4 Training on integrated weed management 5 Training for water mgt .

Mango	Low productivity of Mango in Valsad district	1 Imbalance fertilizer application. 2 Pest and disease occurance.	1 Application of recommend dose of fertilizer 2 Integrated Pest management	1 . Single component FLD to demonstrate effect of recommended dose of nutrients. 2. Training and FLD programme on integrated pest management of Mango pest.
Crossbred Cow	Low milk production	1 Lack of knowledge 2 Imbalance supply of feed and fodder 3 Poor health service.	1 Scientific mgt. of crossbred cows 2 Mgt. for sufficient feed and fodder supply. 3 Improve health services.	1 Training on care and management of cross breed animal. 2 Single component FLD to demonstrate feed and fodder 3 Provide health service.
Vegetables	Low productivity of vegetables	1 Imbalance fertilizer application. 2 Pest and disease occurance. 3. Insufficient supply of seeds of HYVs. 4 Lack of market facility.	1 Appli. of recommend dose of fertilizer 2 Integrated Pest-disease management. 3 Supply of seeds and seedlings of HYVs. 4 Improve marketing facility	1 . Single component FLD to demonstrate effect of recommended dose of nutrients. 2. Training and FLD programme on integrated pest disease mgt. 3 Raising of seedlings of HYVs at kvk farm and supply to farmers . 4 Formation of vegetable growers cooperatives.

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

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

Sr. No	**Crop**	**Variety**	**Recommended Technology**	**Characteristics**
1.	Paddy	MTU-1010	Released by Maruteru Reasearch station, A.P Agri.Uni.,	Semi dwarf with medium tillering green foliage, grain straw glumed, long slender.
2.	Sugarcane	CO N 05071	Developed by Regional Research station, NAU, Navsari, 2007-08	It belonging to early maturity group, gave 26.37 and 24.63% higher cane yield over zonal (CoC 671) and state (CoN 95132) checks, respectively.It gives 16.41 % higher than CON-03131, High yielding (146 t/ha), sugar yield, Disease and Lodging resistant
3	Fingermillet	G.N.-5	Released by NAU, Navsari, 2009	White seeded, 25% &19 % higher yield than GN-3 & GN-4, respectively

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

FLDs Inputs Technical Details

Sr. No.	Crop	Input/ Techn.	Variety	Recommended Technology	Remarks
1.	Paddy	Azolla	Azolla pinnata	Recommended by AAU, Anand	Application of Azolla @ 200 kg ac.$^{-1}$ saving 30-50 kg N/ ha
2	Paddy, Nagli, Bottlegourd, Chilly, Bittergourd	Liquid biofertilisers	Azotobactor, PSB	Recommended by AAU, Anand and TNAU, coimbatore	Application of LBF @ 200 ml/acre as soil application or Seedling treatment or seed treatment can save 20-40 kg N/ ha, And 20 kg P/ ha

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

On farm testing technogical details

Sr. No.	Crop	Input/ Techn.	Variety	Recommended Technology	Remarks
1.	Paddy	Azolla	Azolla pinnata	Recommended by AAU, Anand	Application of Azolla @ 200 kg ac.$^{-1}$ saving 30-50 kg N/ ha
2	Paddy & Bottlegourd	Liquid biofertilisers	Azotobactor, PSB	Recommended by AAU, Anand and TNAU, coimbatore	Application of LBF @ 200 ml/acre as soil application or Seedling treatment or seed treatment can save 20-40 kg N/ ha, And 20 kg P/ ha
3	Brinjal	Metaldihyde	--	Recommended by NAU, Navsari	Application of Metaldehyde (Snailkill pellets) 10 kg/ha