ICAR-ATARI, Pune

ANNUAL PROGRESS REPORT OF KVK GANDHINAGAR

(January 2022 to December 2022)

1. GENERAL INFORMATION ABOUT THE KVK

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

Address with PIN code	Telephone		E mail	Website address & No. of visitors (hits)
	Office	FAX		
Krishi Vigyan Kendra, Gujarat Vidyapith, Randheja, Gandhinagar (Guj.) -382620	079- 23975223, 9426075146	-	kvkgandhinagar@gmail.com	www.kvkgandhinagar.org 61221

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

Address	Telephone		E mail	Website address
	Office	FAX		
Gujarat Vidyapith, Near Income Tax Circle, Ashram Road, Ahmedabad-380 014	079-27541148 079-27546767	079-27542547	registrar@gujaratvidyapith.org	www.gujaratvidyapith.org

1.3. Name of the Senior Scientist and Head with phone & mobile No.

Name	Telephone / Contact		
	Office	Mobile	Email
Dr. V. K. Garg	079 23975223	9924171871	gargvk123@gmail.com

1.4. Date and Year of sanction: 1977

1.5. Staff Position (as on 31st December, 2022)

Sl. No.	Sanctioned post	Name of the incumbent	Mobile No.	Discipline	If Permanent, Please indicate			If Temporary pl. indicate the consolidated amount paid (Rs./month)
					Current Pay Band	Current Grade Pay	Date of Joining	
1.	Senior Scientist and Head	Dr. V. K. Garg	9924171871	Soil Science	37400-67000	10000	06-03-10	
2.	Subject Matter Specialist	H. N. Patel	9998746540	Horticulture	15600-39100	7600	21-02-94	
3.	Subject Matter Specialist	Vinay Gour	9374846964	Agronomy	15600-39100	7600	23-01-06	
4.	Subject Matter Specialist	Dr. P. V. Jadav	9428437637	Animal Science	15600-39100	7600	01-07-08	
5.	Subject Matter Specialist	B. B. Hadiya	9274425558	Agri. Extension	15600-39100	6600	02-06-14	
6.	Subject Matter Specialist	Radhaben Chaudhry	9725682615	Soil Science	15600-39100	5400	26-11-20	
7.	Subject Matter Specialist	-	-	-	-	-	-	
8.	Farm Manager	Vijay Modhvadiya	8980717939	-	9300-34800	4200	03-04-21	
9.	Programme Assistant	Chandresh Gohil	9737591569	Home Science	9300-34800	4200	20-11-20	
10.	Programme Assistant (Computer)	-	-	-	-	-	-	
11.	Assistant (Acct./Admn.)	Vishal Pithiya	9106696926	-	9300-34800	4200	04-12-20	
12.	Stenographer	-	-	-	-	-	-	
13.	Driver 1	A. J. Damor	9426037194	-	5200-20200	2400	06-09-06	
14.	Driver 2	-	-	-	-	-	-	-
15.	Supporting staff 1	Madhabhai	-	-	-	-	-	Out sourcing
16.	Supporting staff 2	Rameshbhai	-	-	-	-	-	Out sourcing

1.6. Total land with KVK (in ha):

S. No.	Item	Area (ha)
1	Under Buildings	0.50
2.	Under Demonstration Units	0.50
3.	Under Crops	9.00
4.	Horticulture	9.00
5.	Pond	1.00
	Total	**20.00**

1.7. Infrastructural Development:

A) Buildings

S. No.	Name of building	Stage			
		Complete			
		Source of funding	Completion Year	Plinth area (Sq.m)	Expenditure (Rs.)
1.	Administrative Building	ICAR	1996	750	14,59,844.00
2.	Farmers Hostel	ICAR	1978-79	335	53,377.69
3.	Staff Quarters (6)	ICAR	1979-80, 1983-84	560	118542.94, 160782.49
4.	Demonstration Units (2)	ICAR	1978-79	200	28,995.00
5	Fencing	ICAR	2006-07	3000 m	5,91,766.50
6	Rain Water harvesting system	-	-	-	-
7	Threshing floor	ICAR	2005-06	130	1,37,245.00
8	Farm Godown	ICAR	1978-79	300	122401.08
9	Implement shed	ICAR	2010-11		301711.00
10	Garage and grass Godown	ICAR	1986-87	48	2,00,211.00

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Running	Present status
Bolero Jeep	2009-10	580412.60	155045	Good condition
Motor cycle	2010-11	45029	21875	Good condition
Tractor	2019-20	619916	1649 hrs.	Good condition

C) Equipments & AV aids

Name of the equipment / Implements	Year of purchase	Cost (Rs.)	Present status
Portable TV	1987-88	7050	Not Working
VCR	1988-89	15725	Not working
Colour TV	2002-03	25260	Not working
Fax Machine with stabilizer	2002-03	10350	Not working
Computer (NATP)	2002-03	111865	Not Working
Soil Testing Lab Equipment	2004-05	626947=34	Not Working
DVD Player	2006-07	3700	Not Working
LCD Projector	2006-07	75400	Not Working
Digital Camera	2006-07	15250	Not Working
Handy cam (SONY)	2008-09	25000	Working
Disc Harrow	1978-79	5651	Working
Rotovator	2006-07	47000	Working
Aeroblast sprayer	2008-09	99500	Not working
Generator	2008-09	37972	Not working
Laserjet Printer (HP 1020)	2010-11	6150	Working
Voltage stabilizer (for lab)	2010-11	21417	Working
Seed cum Fertilizer Drill	2010-11	30000	Working
Rotary Tiller (weeder)	2010-11	51450	Not working
Power Sprayer with stand	2010-11	24925	Working
Computer (HP)- Two	2015-16	86259	Working

LCD projector (k-yan)	2016-17	100000	Working
Photocopier machine (canon)	2016-17	89550	Working
Water cooler with RO system	2016-17	80485	Working
Digital camera with zoom kit	2016-17	36000	Working
Computer (HP)	2016-17	36000	Working
LCD projector (hitachi)	2016-17	58995	Working
Projector screen	2016-17	3170	Working
Plastic tables	2016-17	35710	Working
Furniture (Table, chairs)	2016-17	66890	Working
Solar pump with drip irrigation system	2016-17	563267	Working
Levellor (reversible)	2019-20	23500	Working
Tractor wheel ring for puddling	2020-21	21000	Working
UPS	2020-21	17341	Working

1.8. Details of SAC meeting conducted in the year:

Date	Name and Designation of Participants	Salient Recommendations
07/9/2022	Dr. Rajendra Khimani, Hon'ble Vice Chancellor, Gujarat Vidyapith Ahmedabad Dr. Nikhil Bhatt, Registrar, Gujarat Vidyapith Ahmedabad Dr. P. T. Patel, DEE, SDAU, Dantiwada Dr.L. J. Desai, Research Scientist, IFS, SDAU, Dantiwada Dr. B. S. Rathore, Asstt. Res. Scientist, LRS, SDAU, Dantiwada Archana Patel, Project Director, ATMA, Gandhinagar Mr. S. V. Patel, Asstt. Director. Agriculture, Gandhinagar Mr. Vishal Sharma, DDM, NABARD Mr. S. I. Patel, Dy. Director. AH, Gandhinagar Mr. Prerak J. Gondalia, Asstt. Dir. Hort., Gandhinagar Mr. Adesh Juneja, LDM, SBI, Gandhinagar Bhartiben Bhavsar, Jyotsna Parmar, Taraben, Sewa, Gandhinagar Mr. Atmaram Prajapati, Progressive Farmer Parsa Mr. Roopsinh Rathod, Progressive Farmer Devkaran muvada Dr. V. K. Garg, Sr. Scientist & Head, KVK, Randheja	• Organize 2-3 trainings on urban kitchen garden • Record irrigation data in gram FLD • Take seed production of wheat var. GW-513 • Organize demonstrations on non Bt. cotton at KVK • Correct gujarati language error in ppt. • In consultation with registrar, start production trial of nano urea • Each SMS publish one research paper and discuss it in the next meeting. • Make presentation of 2023 action plan and 2022-23 progress report in next meeting. • Prepare Value added items from premature dropped amla • Soil testing of 100 samples till Dec. 22 • Organize demo of drone spray at KVK

2. DETAILS OF DISTRICT / JURISDICTION AREA OF KVK

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

S. No	Farming system/enterprise
1	Agriculture + Animal Husbandry
2	Agriculture + Horticulture
3	Agriculture + Animal Husbandry + Horticulture

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

a) Soil type

S. No.	Agro-climatic Zone	Characteristics
1.	Agro climatic zone IV attributed under semi - arid condition	Rainfall : 600-700 mm
		Soil type : Loamy to sandy loam
		Temperature : Max. - 48°c, Min. - 7°c
		Water table : 500 to 850 ft.

b) Topography

S. No.	Agro ecological situation	Characteristics
1	AES I Alluvial Sandy Loam soils with high rainfall	Major Soil Classes: Sandy Loam, Altitude (m amsl): 150-300, Rain fall: >850, Topography: Flat Topography with less than 5% slope
2	AES II Alluvial Sandy loam with medium rainfall	Major Soil Classes: Sandy Loam, Altitude (m amsl): 150-300, Rain fall: 750-850, Topography: Flat Topography with less than 5% slope

2.3 Soil Types

S. No	Soil type	Characteristics	Area in ha
1.	Alluvial Sandy Loam with high rainfall	High in productivity with moderate fertility	153891
2.	Alluvial Sandy Loam with medium rainfall	Moderate organic matter, Medium Water holding capacity	61947

2.4. Area, Production and Productivity of major crops cultivated in the area of jurisdiction of KVK (2020-21)

S. No	Crop	Area (ha)	Production (MT)	Productivity (kg/ha)
1	Paddy (Kharif)	12371	28827	2330
2	Bajra (Kharif)	2213	3359	1517
3	Bajra (Summer)	5392	16630	3084
4	Green gram	1390	860	619
5	Groundnut	13332	33567	2517
6	Cluterbean	4865	5471	1124
7	Castor	24772	59853	2416
8	Cotton	17552	68285 (bales)	661 (lint)
9	Pigeon pea	18	21	1185
10	Black gram	192	128	665
11	Sesamum	174	32	186
12	Wheat	28843	101051	3503
13	Mustard	802	1585	1975
14	Fennel	1047	1761	1682
15	Tobacco	4908	11330	2308
16	Potato	12134	371666	30630
17	Chick pea	953	1679	1761

Source: Gujarat state agriculture department.

2.5. Weather data (2022)

Month	Rainfall (mm)	Temperature (^{0} C)		Relative Humidity (%)	
		Maximum	Minimum	Maximum	Minimum
January		26.7	8.3	84.5	35.4
February		28.8	9.0	82.5	26.0
March		35.4	13.5	72.5	30.5
April		41.8	23.5	63.8	18.4
May		45.5	26.6	82.4	19.5
June	23	42.5	25.8	80.5	32.4
July	368	36.8	24.7	91.8	49.8
August	265	33.0	22.6	94.5	60.5
September	70	32.8	23.4	92.0	50.5
October	28	34.5	21.8	74.5	23.5
November	-	28.8	11.6	81.5	23.0
December	-	27.0	8.2	91.5	24.5
Total	754				

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

Category	Population	Production	Productivity
Cattle			
Crossbred	89600	148.88	5.097 kg/day
Indigenous	71488	56.78	3.407 kg/day
Buffalo	331367	248.32	3.606 kg/day
Sheep	14214	13.9 (000kg)	1.16 kg/year
Goats	74124	3.81	0.281 kg/day
Poultry			
Deshi poultry	22200	16.08 lakh eggs	138 egg/year
Improved poultry	3600	11.38 lakh eggs	315 egg/year
Fish (Reservoir)	-	-	-

2.7. Details of Operational area / Villages

Taluka / Block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
Gandhinagar	Chekhlarani	Cotton, Castor, Wheat,paddy, Groundnut, Potato, Animal Husbandry, seasonal vegetables	Low productivity of Field crops	Enhancing the productivity though high yielding varieties
	Magodi		Degradation of soil fertility	Natural Resource Management
	Moti Adaraj		Lack of knowledge about balance feeding	INM
	Jalund		Scarcity of labour	Nutritional Management
	Rupal		Low ground water table	Mechanization in agriculture
	Jakhora Haripura		High cost of cultivation	Nutritional management in farmers families

Mansa	Kharna	Castor, cotton, Wheat, Pearl millet, Animal Husbandry, Vegetables	Low productivity of Field crops	Enhancing the productivity of major crops by introduction of high yielding varieties
	Parsa		Low soil fertility	INM
	Maninagar		Lack of nutritious feed	Nutritional Mgmt.
	Ridrol		Scarcity of labour	Fodder Management
	Lodara		Low ground water table	Mechanization in agriculture
	Rajpura			
	Govindpura			
	Dholakuva			
Kalol	Paliyad	Castor, Cotton, Wheat, Mustard, Animal Husbandry, fruits, vegetables and flowers	Reproductive problems	Fodder Management
	Golathra		Scarcity of labour	Nutritional Mgmt.
	Khoraj Dabhi		Low ground water table	Scientific Dairy Mgmt.
	Chandisana		Low productivity of Field crops	Nutritional management in farmers families
	Bhavpura			INM and ICM in field crops
	Maninagar			
	Soja			
Dehgam	Devkaran na muvada	Castor, Cotton, Wheat, Groundnut, Pearl Millet, Animal Husbandry, Vegetables	Imbalance use of fertilizer	Enhancing the productivity of major crops
	Motipura		Low ground water table	Natural Resource Management
	Galajini Muvadi		Soil health degradation	Fertilizer management
	Arjanjina muvada		Scarcity of labour	Scientific Dairy Mgmt.
			Reproductive Problems	Mechanization in agriculture

2.8. Priority thrust areas:

Crop/Enterprise	Thrust area
Cotton, Castor, Wheat, green gram	ICM, INM, IPM, Natural Resource Management
	Enhancing the productivity of major crops
Vegetable/fruit crop	ICM, INM, IPM, Value Addition & Processing,
	Enhancing productivity of vegetables crops
Agricultural extension	Entrepreneurship development
	ICT tools in agriculture & allied
Animal Husbandry	Fertility Management, Nutrition Management, Disease Management, Feed & Fodder Management
Soil Science	INM, Soil fertility management, Soil and Water Testing, organic/natural farming
Home Science	Value addition, Women and child care, Storage loss minimization, drudgery reduction

3. TECHNICAL ACHIEVEMENTS

3.1. A. Details of target and achievements of mandatory activities

OFT				FLD			
1				2			
Number of OFTs		Number of farmers		Number of FLDs		Number of farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
8	8	90	90	24	24	560	561

Training				Extension Programmes			
3				4			
Number of Courses		Number of Participants		Number of Programmes		Number of participants	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
105	3000	108	3068	250	5800	278	6461

Seed Production (Qtl.)		Planting materials (Nos.)	
5		6	
Target	Achievement	Target	Achievement
16	16	-	-

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg/L)	
7		8	
Target	Achievement	Target	Achievement
-	-	4500	4800

3.1. B. Operational areas details during 2022

S. No.	Major crops & enterprises being practiced in cluster villages	Prioritized problems in these crops/ enterprise	Names of Cluster Villages identified for intervention	Intervention (OFT, FLD, Training, extension activity
1	Cotton	Infestation of Diseases & Pests, Degradation of soil fertility, Use of locally available seeds (F2). No use of bio-fertilizers and micronutrients	Magodi, Kharna, Devkaran na muwada, Jhakhora, Arjanji na Muwada, Chekhlarani, Jalund, Paliyad, Soja,	FLD, Training, Extension activities
2	Castor	Arbitrary use of fertilizers Infestation of Diseases & Pests	Chekhlarani, Parsa, Devkaran na muvada, Golathara, Paliyad, Soja, Maninagar, Kharna, Motipura, Bhavpura, Adaraj	FLD, Training, Extension activities
3	Wheat	Use of locally available seeds No use of micronutrients and bio-fertilizers Scarcity of irrigation water	Chekhlarani, Motipura, Jakhora, Kharna, Moti Adaraj, Bardoli, Devkaran na Muvada,	OFT, FLD, Training, Extension activities
4	Pulses	Unavailability of quality seed Low remunerative crop No use of bio-fertilizers	Magodi, Devkaran na muwada, Jhakhora, Arjanji na muwada, Paliyad	OFT, FLD, Training, Extension activities
5	Fruits & Vegetable	High cost of cultivation Infestation of diseases & pests Arbitrary use of fertilizers	Motipura, Parsa, Magodi, Kharna, Arjanji na Muwada, Devkaran na muvada, Chandisana, Paliyad, Pratappura	OFT, FLD, Training, Extension activities
6	Animal Husbandry	Reproductive Problems, Lack of knowledge about balance feeding, Lack of nutritious feed	Vasan, Chekhlarani, Parsa, Magodi, Chandisana, Jalund, Kharna, Devkaran na muvada	OFT, FLD, Training, Extension activities

3.2. Technology Assessment (Kharif 2022, Rabi 2021-22, Summer 2022)

A1. Abstract on the number of technologies assessed in respect of crops

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Integrated Nutrient Management	2	-	1	-	-	1	-	-	-	4
Varietal Evaluation	1	-	-	-	1	-	-	-	-	2
Total	**3**	**-**	**1**	**-**	**1**	**1**	**-**	**-**	**-**	**6**

A2. Abstract on the number of technologies assessed in respect of livestock enterprises

Thematic areas	Cattle	Poultry	Piggery	Rabbitry	Fisheries	TOTAL
Disease Management	1					1
Feed and Fodder	1					1
TOTAL	**2**					**2**

B. Achievements on technologies Assessed

B.1. Technologies Assessed under various Crops

Thematic areas	Crop	Name of the technology assessed	No. of trials	Number of farmers	Area in ha (Per trial covering all the Technological Options)
Integrated Nutrient Management	Chickpea	Zinc Sulphate 25kg/ha + Spray of 2% urea	10	10	2.5
Varietal Evaluation	Wheat	GW-499	10	10	2.5
Varietal Evaluation	Okra	Phule Vimukta	10	10	2.5
Integrated Nutrient Management	Mango	KNO3	10	10	2.5
Integrated Nutrient Management	Wheat	VAM, ZnSO4 & PSB	10	10	2.5
Integrated Nutrient Management	Paddy	Nitrogen management through LCC (Leaf Colour Chart)	20	20	5.0
Varietal Evaluation	Sorghum	High yielding fodder variety GFS-6 and CSV-21F	10	10	2.5
Total			**80**	**80**	**20.0**

B.2. Technologies assessed under Livestock & fishery

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Disease management	Crossbred cow	To assess the effect of Vitamin E and Selenium supplementation on prevention of Mastitis in crossbred cow	10	10
Total			**10**	**10**

C. 1.Results of Technologies Assessed

Results of On Farm Trial-1 (Rabi 21-22)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Chickpea	Irrigated	Low yield of Chickpea due to imbalance fertilization	Integrated Nutrient management in Chickpea	10	Zinc Sulphate 25kg/ha + Spray of 2% urea at flowering and grain forming stage.	No of pods yield	T1-40 T2-48 T3-55 T1-40 T2-48 T3-55	T1-40 T2-48 T3-55 T1 : 15.2 T2 : 18.4 T3 : 20.8	Number of pods increases with application of zinc. 13% yield enhancement observed by use of Zinc sulphate and urea spray as compared to T2.		

Technology Assessed	Source of Technology	Production (q/ha)	Unit	Net Return in Rs./unit	B:C Ratio
13	14	15	16	17	18
T1: N:P:S::30:50:0	Farmers practices	15.2	(q/ha)	46620	2.5
T2: N:P:S::10:30:20	SDAU	18.4		62390	2.98
T3: T2 + Zinc Sulphate 25kg/ha +Spray of 2% urea at flowering and grain forming stage.	SDAU	20.8		73380	3.24

C. 2. Details of On Farm Trial for assessment:

1. Title of Technology Assessed: Integrated Nutrient management in Chickpea
2. Problem Definition: Low yield of Chickpea due to imbalance fertilization
3. Details of technologies selected for assessment: To assess the effect of Zinc Sulphate 25kg/ha +Spray of 2% urea at flowering and grain forming stage.
4. Source of technology: SDAU
5. Production system and thematic area: Mustard-Pearlmillet, INM
6. Performance of the Technology with performance indicators: : Number of branches (number), Yield (q/ha)
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques:
8. Final recommendation for micro level situation: By application of Znso4@25kg/ha along with spray of 2 % urea at flowering and grain formation stages increases number of pods and yield.
9. Constraints identified and feedback for research: Nil
10. Process of farmers' participation and their reaction: Technological Gap analysis, G.D.Meeting, Training, Field Visit and Field Day

Results of On Farm Trial- 2 (Rabi 21-22)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Wheat	Irrigated	Low Yield of late sown wheat due to high temperature.	Assessment of Wheat variety GW-499	10	Assessment of wheat variety GW-499	Test wt yield	gm q/ha	T1:36.8 T2:42.2 T3:44.6 T1 : 30.0 T2 : 32.8 T3 : 36.8	1. variety GW-499 is short duration (95-100). 2. yield is 22.6 % higher than Lok1.	---	--

Technology Assessed	Source of Technology	Production	Unit	Net Return (Profit) in Rs./unit	B:C Ratio
13	14	15	16	17	18
T 1.Farmers Practice: Lok-1	Farmers practices	30	q/ha	23300	1.58
T 2.GW-173	SDAU	32.8		28900	1.72
T 3.GW-499	SDAU	36.8		36900	1.92

C. 2. Details of On Farm Trial for assessment:

1. Title of Technology Assessed: Assessment of Wheat variety GW-499
2. Problem Definition: Low Yield of late sown wheat due to high temperature.
3. Details of technologies selected for assessment: Assessment of wheat variety GW-499
4. Source of technology: SDAU
5. Production system and thematic area: Cotton-wheat, varietal evaluation
6. Performance of the Technology with performance indicators: Plant height (cm), Yield (q/ha)
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques:
8. Final recommendation for micro level situation: 2nd year
9. Constraints identified and feedback for research: Nil
10. Process of farmers participation and their reaction: Technological Gap analysis, G.D.Meeting, Training, Field Visit and Field Day

Results of On Farm Trial-3 (Rabi 21-22, 1st year)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Wheat	Irrigated	Low yield	Assessment of PSB, VAM & ZnSO4 in wheat	10	VAM, ZnSO4 & PSB	Test weight No. of grain/spike Yield	Gram Number q/ha	T1: 38.3 T2: 40.5 T3: 42.9 T1: 31.9 T2: 33.8 T3: 35.0 T1: 34.6 T2: 37.3 T3: 43.8	More yield in treated plot, very less number of shrivelled grain in T3 as compared to T1, root area remain wet for more time after irrigation inT3	-	-

Technology Assessed	Source of Technology	Production	Unit	Net Return (Profit) in Rs. /ha unit	BC Ratio
13	14	15	16	17	18
T1- Farmer practice (N:P:K; 80:140:00)	-	34.6	q/ha	40680	1.97:1
T2- SAU'S recommendation (N:P:K; 120:60:00)	SDAU	37.3	q/ha	49110	2.24:1
T3:30 kg P2O5 + PSB 30 g/kg seed + Inoculation of 20 kg VAM culture + 20 kg ZnSO4 /ha + RDN	SDAU, 2019	43.8	q/ha	60340	2.38:1

C. 2. Details of On Farm Trial for assessment:

1	Title of on-farm trial	Assessment of PSB, VAM & ZnSO4 in wheat
2	Problem diagnose	Low yield due
3	Details of technologies selected for assessment	30 kg P2O5 + PSB 30 g/kg seed + Inoculation of 20 kg VAM culture + 20 kg ZnSO4 /ha + RDN
4	Source of technology	SDAU,2019
5	Production system and thematic area	INM
6	Performance of the Technology with performance indicators	Yield, Test weight
7	Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques	more yield in treated plot, very less number of shrivelled grain, root area remained wet for more time after irrigation
8	Final recommendation for micro level situation	First year
9	Constraints identified and feedback for research	-
10	Process of farmers participation and their reaction	Training, Field day, group meeting

Results of On Farm Trial- 4 (Kharif 22)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Okra	Irrigated	Low yield due to viral YMV	Assessment of Phule Vimukta cultivar	10	Assessment of Phule Vimukta cultivar	Yield	t /ha	T1 : 19 T2: 15 T3 : 22.4	The variety was virus tolerent and high yielding	-	-

Technology Assessed	Source of Technology	Production	Unit	Net Return (Profit) in Rs. /ha unit	BC Ratio
13	14	15	16	17	18
T1- Farmers variety (pvt. Sector var.)	-	19.00	t / ha.	2,30,000	2:1
T2- SAU Recommended variety A-5	SAU	15.00	t / ha.	1,75,000	2.4:1
T3- Phule Vimukta	MPKV - Rahuri	22.40	t / ha.	2,88,000	2.8:1

C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details

1	Title of on-farm trial	Assessment of Phule VIMUKTA Cultivar of Okra
2	Problem diagnose	Low yield due to viral YMV
3	Details of technologies selected for assessment	Assessment of Phule Vimukta cultivar
4	Source of technology	MPKV - Rahuri
5	Production system and thematic area	Varietal assessment
6	Performance of the Technology with performance indicators	40-50 inf.plants/trial/season , 2.08 t / trial
7	Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques	Increase flowering, Fruiting and Greeness in the pods. Also increase number of picking/ Very less virus infected plants.
8	Final recommendation for micro level situation	First year
9	Constraints identified and feedback for research	-
10	Process of farmers participation and their reaction	Training, Field day, group meeting

Results of On Farm Trial-5 (Kharif 22)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Mango	Irrigated	Low yield due to Imbalance Potasic fertilizers	To maintain the health and yield of Mango tree by Foliar spray of KNO3.	10	Foliar spray of KNO3 @50 gm/10 ltr of water in july (2 spray), November (2 spray) and One spray in February	Yield kg/plant	T1: 22 T2: 25 T3: 30.4	T1: 22 T2: 25 T3: 30.4	Recovery of K deficiency is good enough	-	-

Technology Assessed	Source of Technology	Production	Unit	Net Return (Profit) in Rs. /ha unit	BC Ratio
13	14	15	16	17	18
T1-Farmers practices (Arbitrary use of Fertilizers)	-	22	kg/plant	166600	5:1
T2- SAU Recomondaed Dose of Fertilizers I.e. 750 + 160+750 grams per tree per year	AAU	25	kg/plant	185000	6.5:1
Foliar spray of KNO3 @50 gm/10 ltr of water in July (2 spray), November (2 spray) and One spray in February	NAU- Navsari	30.4	kg/plant	213000	7.5:1

C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details

1	Title of on-farm trial	To maintain the health and yield of Mango tree by Foliar spray of KNO3.
2	Problem diagnose	Low yield due to Imbalance Potasic fertilizers
3	Details of technologies selected for assessment	Foliar spray of KNO3 @50 gm/10 ltr of water in July (2 spray), November (2 spray) and One spray in February
4	Source of technology	NMAU- Navsari
5	Production system and thematic area	INM
6	Performance of the Technology with performance indicators	Yield
7	Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques	Foliar spray of potash being effective to overcome K deficiency of mango plants in early years of bearings
8	Final recommendation for micro level situation	First year
9	Constraints identified and feedback for research	-
10	Process of farmers participation and their reaction	Training, Field day, group meeting

Results of On Farm Trial -6 (Kharif 22, 1st year)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Paddy	Irrigated	Inefficient use of Nitrogenous fertilizer, low yield	Need based nitrogen management through LCC	20	Nitrogen management through Leaf Colour Chart (LCC)	Nitrogen appl. Yield	Kg/ha q/ha	T1: 124 T2: 100 T3: 60 T1: 44 T2: 54.8 T3: 56.7	No use of urea fertilizer in T3 even though it gave higher yield		

Technology Assessed	Source of Technology	Production	Unit	Net Return (Profit) in Rs. /ha unit	BC Ratio
13	14	15	16	17	18
T1- Farmer practice (N:P:K;)	-	44	q/ha	40800	2.07:1
T2- SAU'S recommendation (N:P:K; 100:30:00)	AAU, 2021	54.8	q/ha	55920	2.28:1
T3: Basal RDF + Remaining Nitrogen application as per LCC	NAU, 2019	56.7	q/ha	59755	2.39:1

C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details

1	Title of on-farm trial	Need based nitrogen management through LCC
2	Problem diagnose	Inefficient use of Nitrogenous fertilizer, Low yield
3	Details of technologies selected for assessment	Basal RDF + Remaining Nitrogen application as per LCC
4	Source of technology	NAU, 2019
5	Production system and thematic area	INM
6	Performance of the Technology with performance indicators	Yield, Nitrogen saving
7	Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques	T3 has given 3.5% & 28.86% more yield in comparison to T2 and T1 respectively, No use of urea fertilizer in T3 even though it gave higher yield
8	Final recommendation for micro level situation	Use ammonium sulphate instead of urea in paddy as basal dose , afterward apply urea only if needed
9	Constraints identified and feedback for research	-
10	Process of farmers participation and their reaction	Training, Field day, group meeting

Results of On Farm Trial- 7 Kharif-22 (2nd year)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Livestock	---	Low yield of fodder sorghum	Assessment of high yielding fodder sorghum variety	10	HYV CSV-21F and GFS-6	Green fodder yield (qt/ha)	Yield	T1: 255 T2: 279 T3: 313	GFS-6 is shoot fly and stem borer resistant variety	NO	--

Contd..

Technology Assessed	Source of Technology	Production	Please give the unit (qt/ha)	Net Return (Profit) in Rs. / unit	BC Ratio
13	14	15	16	17	18
Technology option 1 (Farmer's practice)	--	255	255	17175	1.57
Technology option 2 (CSV-21F)	AICSIP - 2006	279	279	19770	1.65
Technology option 3 (GFS-6)	NAU - 2018	313	313	25790	1.84

C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details

1 Title of Technology Assessed: Assessment of high yielding fodder variety
2 Problem Definition: Low yield of fodder sorghum
3 Details of technologies selected for assessment: T1- Farmers practice: Marvel Variety, T2- CSV-21F, T3 - GFS-6
4 Source of technology: NAU (2018)
5 Production system and thematic area: Fodder management
6 Performance of the Technology with performance indicators: green fodder yield (qt/ha)
7. Feedback: GFS-6 is shoot fly and stem borer resistant variety hence green fodder quality is superior and yield is alos high as compared to other varieties.
8 Final recommendation for micro level situation: --
9 Constraints identified and feedback for research and developmental departments: --
10 Process of farmer's participation and their reaction: Bench mark survey for identifying problems, Ascertain point of intervention, Probable control measures Finalization of treatments

Results of On Farm Trial - 8 (3rd year)

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Livestock	---	High incidence of Mastitis after calving in crossbred cow	To assess the effect of Vitamin E and Selenium supplementation on prevention of Mastitis in crossbred cow	10	Feeding Concentrate Feeds + Vitamin E (1000 I.U) & Selenium (4 mg.) During last 2 weeks of drying. KVAFSU (2014)	% Mastitis incidence upto 1 month of calving	T1 – 70% T2 – 10%	T1 –2050 ltr/Lactation T2 – 3100 ltr/Lactation	Vit E & Selenium supplementation help to control Mastitis occurrence.	NO	--

Contd..

Technology Assessed	Source of Technology	Production	Unit	Net Return (Profit) in Rs./unit	B:C Ratio
13	14	15	16	17	18
T1- Concentrate Feeds without Vitamin E & Selenium	-	2050	Milk yield, Ltr /lactation	23500	1.38
T2- Concentrate Feeds + Vitamin E (1000 I.U) & Selenium (4 mg.) during last 2 weeks of drying.	KVAFSU-2014	3100	Milk yield, Ltr /lactation	49250	1.80

C. 2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details:

1 Title of Technology Assessed: To assess the effect of Vitamin E and Selenium supplementation on prevention of Mastitis in crossbred cow
2 Problem Definition: High incidence of Mastitis after calving in crossbred cow
3 Details of technologies selected for assessment:
T1- Farmers practice: Concentrate Feeds without Vitamin E & Selenium
T2- Recommendation: Concentrate Feeds + Vitamin E (1000 I.U) & Selenium (4 mg.) during last 2 weeks of drying.
4 Source of technology: KVAFSU (2014)
5 Production system and thematic area: Disease Management
6 Performance of the Technology with performance indicators: % disease incidence (Mastitis) up to 1 month Post calving period
7. Feedback: Vit E & Selenium supplementation help to control Mastitis occurrence in cattle after calving.
8 Final recommendation for micro level situation: --
9 Constraints identified and feedback for research and developmental departments: --

10 Process of farmer's participation and their reaction: Bench mark survey for identifying problems, Ascertain point of intervention, Probable control measures, Finalization of treatment

3.3. FRONTLINE DEMONSTRATION

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

List of technologies demonstrated during previous year and popularized during 2022 and recommended for large scale adoption in the district

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Wheat	Variety	GW-451	Training G.D. meeting Field Demonstration Method demonstration Field days	30	525	225
2	Oat	Fodder Prod.	JHO 99-2		10	225	125
3	Mustard	Variety	GDM-4		08	125	50
4	Fennel	Variety	GF-12		18	425	175
5	Potato	INM	G4 micronutrients		12	120	150
6	Castor	Variety	GCH-8		10	165	115
7	Groundnut	Variety	GJG-24		08	75	45
8	AH	Nutrition Mgmt.	Mineral mixture		44	3850	-

B. Details of FLDs implemented during 2022 (Rabi 2021-22, Summer 2022, Kharif 2022)

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1	Mustard (CFLD)	ICM	Variety GDM-4 + ICM	Rabi 21-22	10	10	-	20	20	-
2	Wheat	INM	1% spray of micronutrient mixture Grade-iv	Rabi 21-22	05	05	-	20	20	-
3	Gram	INM	3%KNO3 spray at flowering & pod development	Rabi 21-22	05	05	-	20	20	-
4	Wheat	Variety	GW-451	Rabi 21-22	10	10	-	40	40	-
5	Fennel	Variety	GF-12	Rabi 21-22	5	5	3	17	20	-
6	Cabbage	IPM	*Beauveria bassiana* 1.5 kg/ha	Rabi 21-22	5	5	-	25	25	-
7	Oat (F)	Variety	JHO 99-2	Rabi 21-22	4	4	-	40	40	-
8	Potato	INM	Micronutrient G4	Rabi 21-22	10	10	-	40	40	-
9	Wheat	IPM	Fripronil 5 EC	Rabi 21-22	05	05	-	25	25	-
10	Green gram	Varietal Evaluation	GM-6 variety	Kharif 22	05	05	3	17	20	-
11	Groundnut (CFLD)	ICM	Variety GJG-32+ ICM	Kharif 22	20	20	4	36	40	-
12	Castor (CFLD)	ICM	Variety GCH-9 + ICM	Kharif 22	20	20	7	33	40	-
13	Brinjal	Varietal Evaluation	Brinjal variety GAB-6	Kharif-22	05	05	-	20	20	-
14	Chilli	INM	Banana sap (psuedostem sap) spray in chilli	Kharif 22	10	10	-	40	40	-
15	Cotton	INM	1% spray of 19-19-19 (NPK) at flowering, ball formation and boll development stage	Kharif 22	10	10	5	35	40	-
16	Sorghum	Varietal Evaluation	COFS-31 variety	Kharif 22	5	5	10	40	50	-
17	Kitchen garden	Nutritional food security	Vegetable seeds + Vermicompost	Kharif 22	0.5	0.5	2	20	22	-

Details of farming situation

Crop	Season	Farming situation	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Mustard (NFSM)	Rabi 21-22	Irrigated	Sandy loam	L	L	H	Cotton, Paddy	Oct.-Nov.	February	-	-
Wheat	Rabi 21-22	Irrigated	Sandy loam	L	M	H	Cotton	Nov.-Dec.	Mar.-April	-	-
Gram	Rabi 21-22	Irrigated	Sandy loam	L	M	H	Paddy	November	March	-	-
Wheat	Rabi 21-22	Irrigated	Sandy loam	L	M	H	Cotton	Nov.-Dec.	Mar.-April	-	-
Fennel	Rabi 21-22	Irrigated	Sandy loam	L	M	H	Vegetables	October	March	-	-
Cabbage	Rabi 21-22	Irrigated	Sandy loam	L	L	H	Cotton	December	Feb-March	-	-
Oat (Fodder)	Rabi 21-22	Irrigated	Sandy loam	L	M	H	Bajra	Nov.	Mar-Apr	-	-
Potato	Rabi 21-22	Irrigated	Sandy loam	L	L	H	Cabbage	November	March	-	-
Wheat	Rabi 21-22	Irrigated	Sandy loam	L	M	H	Paddy	Nov.-Dec.	Mar.-April	-	-
Greengram	Kharif 22	Irrigated	Sandy loam	L	M	H	Veg.	June-july	Aug-sep	-	-
Groundnut (NFSM)	Kharif 22	Irrigated	Sandy loam	L	M	H	Pearl millet	June	october	-	-
Castor (NFSM)	Kharif 22-23	Irrigated	Sandy loam	L	M	H	Pearl millet	August	April	-	-
Brinjal	Kharif -22	Irrigated	Sandy loam	L	L	H	Bajara	July to August	Oct to Dec.	-	-
Chilli	Kharif 22	Irrigated	Sandy loam	L	L	H	Cluster bean	June	October-feb.	-	-
Cotton	Kharif-22	Irrigated	Sandy loam	L	M	H	Wheat	May-June	November-december	-	-
Fodder Sorghum	Kharif 22	Irrigated	Sandy loam	L	M	H	Green gram	July -21	October	-	-

Technical Feedback on the demonstrated technologies

S. No	Technologies	Feed Back
1	Mustard GDM-4(CFLD)	GDM-4 variety is bold seeded and resistant to powdery mildew
2	Wheat (Micronutrient G4)	Vegetative growth is good and stem girth increased. Size of seed and shining
3	Gram (2% KNO3 Spray)	Larger seed size, Seed index is 20.5 g , while 18.6 g is of non-treated plot
4	Wheat GW 451 variety	Variety is short so doesn't lodge.
5	Fennel GF 12 variety	Variety GF-12 has more branches (5.8) as compared to local check (4.8) which results in higher yield.
6	Cabbage	Sucking pest infestation was less in demo plot as compare to check plot
7	Oat (JHO 99-2)	The provided variety of Oat having good growth with 2-3cutting
8	Potato (G4 micronutrient)	The micronutrient gives vigorous plant growth.
9	Wheat (Fipronil)	Infestation of termite is less (less than 10 percent) and in some plot very negligible
10	Greengram GM-6 variety	Bold size seeds with YMV resistance
11	Groundnut GJG-32 (Kharif)	Variety GJG-32 is 18-20 % Yield enhancement was observed by use of INM (Rhizobium,PSB,Sulphur)
12	Castor GCH-9 (CFLD)	16% yield increase was observed due to ICM module
13	Brinjal GAB 6 variety	The variety fetches Good market price
14	Chilli (Banana sap)	The psuedostem liquid is cheaper and impactious
15	Cotton (1%19:19:19 NPK)	15% more yield, saving of nearly half dose of potash and nitrogen
16	Sorghum (COFS-31)	More number of branches so produce high green fodder yield
17	Bypass Fat	Bypass fat feeding increase milk production and milk fat percentage and also reduced weight loss after lactation period
18	Chelated Mineral Mixture	Chelated Mineral mixture feeding increase milk production and milk fat percentage and also reduced service period
19	Kitchen garden	Fresh and chemical free vegetables available round the year
20	Seed dibbler	Time saving and labour saving
21	Revolving stool and milking stool	Drudgery reduction due to Revolving stool and milking stool
22	Drumstick leaves powder	Improve health
23	Vermicompost	Qualitative manure preparation and best utilization of dung

Farmers' reactions on specific technologies

S. No	Technologies	Feed Back
1	Mustard GDM-4(CFLD)	GDM-4 variety is bold seeded and resistant to powdery mildew
2	Wheat (Micronutrient G4)	No whitening and tip burning of leaves
3	Gram (2% KNO3 Spray)	Larger seed size & heavy in weight
4	Wheat GW 451 variety	Larder size shinning grain with good production potential. 2. Good for chapattis.
5	Fennel GF 12 variety	Variety GF-12 has more branches which results in higher yield.
6	Cabbage	Cost effective management of sucking pest
7	Oat (JHO 99-2)	The provided variety of Oat is found superior as compare to other available variety
8	Potato (G4 micronutrient)	It increases the firm size of tubers.
9	Wheat (Fipronil)	Effective control of termite
10	Greengram GM-6 variety	Variety GM-6 is bold seeded high yielding.
11	Groundnut GJG-32 (CFLD)	INM module resulted in higher productivity. Due to irregular /uneven pattern of rain there is 12-15 % damage in crop.
12	Castor GCH-9 (CFLD)	Very less root rot infestation in GCH-9
13	Brinjal GAB 6 variety	The variety has very less little leaf problem
14	Chilli (Banana sap)	It gives more flowers, fruiting and picking.
15	Cotton (1%19:19:19 NPK)	More yield, less drying of leaves , saving of fertilizer
16	Sorghum (COFS-31)	Highly palatable and no residue left by animals
17	Bypass Fat	Bypass fat feeding increase fat percentage and animal become healthy
18	Chelated Mineral Mixture	Chelated Mineral mixture increase milk production and fat % and help to reduce service period of dairy animals.
19	Kitchen garden	Fresh and chemical free vegetables available round the year
20	Seed dibbler	Less labour required for sowing
21	Revolving stool and milking stool	Drudgery reduction due to Revolving stool and milking stool
22	Drumstick leaves powder	Improve health
23	Vermicompost	Qualitative manure preparation and best utilization of dung

Extension and Training activities under FLD

Mustard (CFLD)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	01	25/01/2022	32	
2	Farmers Training	02	13/10/21, 30/12/2021	45	
3	Field Visit	01	07/01/2022	06	

Wheat (micronutrient G4)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	01	29/03/2022	31	
2	Farmers Training	01	24/11/2021	25	
3	Field Visit	01	01/03/2022	06	

Gram (3% KNO3 Spray)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	01	16/03/2022	36	
2	Farmers Training	01	18/11/2021	25	
3	Field Visit	01	11/02/2022	04	

Wheat (GW-451)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	01	10/03/22	46	
2	Farmers Training	02	12/11/21,01/01/22	50	

Fennel (GF-12)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	01	22/2/22	34	
2	Farmers Training	01	17/08/21	22	

Cabbage (*Beuvaria Bassianna*)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Farmers Training	1	16/2/22	27	

Oat (JHO 99-2)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Farmers Training	01	16/11/21	23	
2	Extension activity	01	15/12/22	11	Field visit

Potato (Micronutrient)

Sr.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	1	22/2/22	49	-
2	Farmers Training	1	2/11/21	21	-
3	Group Field Visit	2	5/2/22, 23/3/22	28	-

Wheat (Fipronil)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	1	25/3/22	30	
2	Farmers Training	1	27/11/22	19	

Greengram

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	01	29/09/22	36	
2	Farmers Training	01	14/06/22	20	

Groundnut (CFLD)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	02	03/10/22,13/10/22	81	
2	Farmers Training	04	17/06/22,22/06/22,27/06/22,01/07/22	82	

Castor (CFLD)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	02	02/01/23,24/01/23	84	
2	Farmers Training	02	10/08/22,16/08/22	41	

Brinjal

Sr.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	2	10/10/22, 11/10/22	60	
2	Farmers Training	2	5/7/22	22	
3	Group Field Visit	2	5/11/22,8/11/22	27	

Chilli

Sr.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	1	4/11/22	38	
2	Farmers Training	1	20/6/22, 5/6/22	57	
3	Group Field Visit	2	26/8/22,30/8/22	29	

Cotton (N:P:K, 19:19:19)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	01	04/11/2022	38	
2	Farmers Training	01	21/06/2022,29/08/2022	42	
3	Field Visit	01	25/07/2022, 18/10/2022	10	

Sorghum (COFS-31)

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Farmers Training	01	04/07/22, 13/07/22	45	
2	Extension activity	01	26/07/22, 16/09/22, 23/09/22	19	Group Field visit

Kitchen Garden

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	02	14/12/22,16/12/22	47	
2	Farmers Training	04	27/6/22,8/8/22, 17/11/22, 15/7/22,	136	

Chelated Mineral Mixture

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Farmers Training	01	16/06/22	22	
2	Extension activity	01	10/01/22	08	Group meeting

Bypass Fat

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Farmers Training	01	24/09/22	23	-
2	Extension activity	02	11/08/21, 16/11/22	16	Group field visit

Kitchen garden

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Farmers Training	2	26/11/21, 27/6/22	44	

Revolving stool and milking stand

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Farmers Training	1	22/12/22	24	

C. Performance of Frontline demonstrations

Frontline demonstrations on oilseed crops (NFSM – Oilseed CFLD)

Crop	Thematic Area	Technology demonstrated	Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
						Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
						High	Low	Average										
Groundnut (Kharif 22)	ICM	Variety + ICM	GJG-32	40	20	23.40	19.68	21.6	18.4	17.39	57300	135000	77700	2.6:1	58100	115000	56900	2:1
Castor (Kharif 22)	ICM	Variety + ICM	GCH-9	40	20	30.4	25.6	28	24	16.67	54750	168000	113250	3.06	57200	144000	86800	2.51
Mustard (Rabi 21-22)	ICM	GDM-4 + ICM	GDM-4	20	10	24.0	18.5	21.9	18.3	19.67	44330	120230	75900	2.71	42500	100650	58150	2.36

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

Frontline demonstrations on pulse crops

Crop	Thematic Area	Technology demonstrated	Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
						Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
						High	Low	Average										
Green gram	Variety	Variety	GM-6	20	05	9.2	7.04	8.0	6.4	25	23700	56000	32300	2.4:1	21300	44800	23500	2.1:1

FLD on Other crops

Category & Crop	Thematic Area	Name of the technology	No. of Farmers	Area (ha)	Yield (q/ha)				% Change in Yield	Other Parameters		Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demo			Check											
					High	Low	Average			Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Cereals																			
Wheat	Variety	GW-451	40	10	39.4	36.8	38.4	36.6	14.3	-	-	39450	79800	40350	2:1	38700	70200	31500	1.8:1
Wheat	INM	1% micronutrient mixture grade-4	20	05	44.2	39.8	43.3	38.0	13.95	42.5 g	39.7 g	43500	101090	57590	2.32	41700	87400	45700	2.09:1
Gram	INM	2%KNO3	20	05	21.9	19.4	21.8	18.5	17.84	20.5 g	18.6 g	37800	119670	81870	3.16	34500	101970	67470	2.95:1
Wheat	IPM	Fipronil 5% EC	25	5			37.16	33.96	9.42			36679	76069	39390	2.07	36029	69565	33536	1.93:1
Millets																			
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vegetables																			
Brinjal	Variety	GAB-6	20	5.0	350	280	315	270	16.66	-	-	151000	378000	227000	2.5:1	178000	324000	146000	1.8:1
Chilli	INM	Foliar spray of banana sap @100 ml/pump at an interval of 15-30 days till Harvesting (Three spray)	40	10.0	442	374	408	360	13.34	-	-	201960	448800	246840	2.2:1	209800	396000	186200	1.9:1
Cabbage	IPM	*Beveria Bassiana*	25	5	349	325	334.78	326.42	2.56	-	-	78329	284562	206233	3.63	80068	277459	197391	3.45:1
Spices & condiments																			
Fennel	Variety	GF-12	20	5	18.8	15.8	18.2	15.4	18.18	-	-	48700	154700	106000	3.2:1	51300	130900	79600	2.6:1
Commercial Crops																			
Potato	INM	Foliar spray of micronutrie	20	5.0	323	289	313	267	16.88	-	-	108000	324016	216016	3:1	118000	277200	159200	2.4:1

		nt @ 3 gm. /ltr. At 30, 45, 60 DAS.																	
Cotton	INM	1% spray of 19-19-19, at flowering, ball formation and boll developme nt stage	40	10	16.4	15.8	16.1	14	15.00	240 kg MO P +19 2 kg ure a	120 kg mop +48 kg urea	54530	117000	62470	2.14	57280	105000	47720	1.83
Fodder Crops																			
Oat (Fodder)	Variety	JHO -99-2	20	2	370	300	325.7	285	14.28	-	-	25175	48855	23680	1.94	24650	42750	18100	1.73
Sorghum	Variety	COFS-31	50	5	880	549	677	515	31.44	-	-	35300	121847	86547	3.45	32200	92700	60500	2.88

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone. ** BCR= GROSS RETURN/GROSS COST

FLD on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of Units (Animal/ Poultry/ Birds, etc)	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Dairy Cow	Feeding mgt.	Chelated Mineral mixture	20	20	12.64 Milk yield ltr/animal/day	11.5 Milk yield ltr/animal/day	9.91	68 days	85 days	197	303.99	106.99	1.54	189	246.68	57.68	1.31
Buffalo	Feeding mgt.	Bypass fat	40	40	8.56 Milk yield ltr/animal/day	8.15 Milk yield ltr/animal/day	5.06			202	389.59	187.59	1.93	179.5	328.45	148.95	1.93

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone. ** BCR= GROSS RETURN/GROSS COST

FLD on Other enterprises

Category	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.) or Rs./unit				Economics of check (Rs.) or Rs./unit			
				Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Drumstick leaves powder	Drumstick leaves powder as nutritional supplement in farm women	10	BMI (Kg/m^2) Weight (kg)	24.37 65	25.45 66	1.08 1										
Vermi Compost (2022-23)	Vermibed, worms	8.0	8.0	3800 kg/year	-	-	-	-	9050	28000	18950	3.09	-	-	-	-

Nutrition garden components	Thematic area	Area (sq mt)	No. of Farmer	No. of Units	Yield (Kg)- supply of vegetables, fruits, etc from KG in the year		% change in yield	Household size (number)		Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demonstration	Check*		Demo	Check	Gross Cost	Gross Return/ Savings*	Net Return	BCR (R/C)	Gross Cost	Gross Return/ Savings*	Net Return	BCR (R/C)
Kitchen gardening (Kharif 22)	Nutritional security	0.5	22	22	547.5	71	12.98	-	-	444	3022	2578	6.80	-	-	-	-
Kitchen gardening (Rabi 21-22)	Nutritional security	0.5	21	21	547.5	89	16.25	-	-	444	3662	3218	8.24	-	-	-	-

*check maybe family adopting different Nutrition garden model/ no adoption of Nutrition garden model
Savings from produce of Nutrition garden used for home consumption

FLD on Farm Implements and Machinery

Name of the implement	Crop	Technology demonstrated	No. of Farmer	Area (ha)	Major parameters	Filed observation (output/man hour)		% change in major parameter	Labor reduction (man days)				Cost reduction (Rs./ha or Rs./Unit etc.)			
						Demo	Check		Land preparation	Sowing	Weeding	Total	Land preparation	Labour	Irrigation	Total
Revolving Stool and Milking stand	-	Revolving Stool and Milking stand	5	-	Milking time Body Comfortability	6.30 minute//animal, Reduction in drudgery 2.00	7.00 minute/ animal, Reduction in drudgery 3.6	7.14% 44.4%	-	-	-	-	-	-	-	-
Seed Dibbler	Cotton	Seed Dibbler	10	2.5	Labour and time saving	0.08 ha/ Man hr	0.05 ha/man hr	62.5 %	-	1 man days/ha	-	-	-	300		300
Seed Dibbler	Castor	Seed Dibbler	10	2.5	Labour and time saving	0.10 ha/Man hr	0.06 ha/Man hr	60 %	-	1.25 man days/ha	-	-	-	375	-	375

3.4. Training Programmes (Online programmes if any should be included under On Campus category)

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Integrated Crop Management	7	141	13	154	4	5	9	145	18	163
Natural farming	11	307	62	369	4	6	10	311	68	379
Integrated Nutrient Management	4	65	15	80	5	0	5	70	15	85
Total	**22**	**513**	**90**	**603**	**13**	**11**	**24**	**526**	**101**	**627**
II Horticulture										
a) Vegetable Crops										
Integrated Crop Management	03	62	-	62	01	-	01	63	-	63
Integrated Nutrient Management	03	79	-	79	-	-	-	79	-	79
Urban Kitchen garden	01	15	55	70	-	-	-	15	55	70
Total	**07**	**156**	**55**	**211**	**01**	**-**	**01**	**157**	**55**	**212**
III Soil Health and Fertility Management										
Soil fertility management	02	-	63	-	-	-	-	-	63	63
Integrated Nutrient Management	02	39	07	46	-	-	-	39	07	46
Balance use of fertilizers	03	58	06	64	1	-	1	59	06	65
Soil and Water Testing	01	1	19	20	-	-	-	1	19	20
Total	**08**	**98**	**95**	**130**	**1**	**-**	**1**	**99**	**95**	**194**
IV Livestock Production and Management										
Dairy Management	06	19	206	225	-	10	10	19	216	235
Feed & fodder technology	05	41	75	116	-	-	-	41	75	116
Total	**11**	**60**	**281**	**341**		**10**	**10**	**60**	**291**	**351**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	3	19	95	114	0	0	0	19	95	114
Processing and cooking	1	0	10	10	0	0	0	0	10	10
Women and child care	2	12	65	77	0	00	00	12	65	77
Total	**6**	**31**	**170**	**201**	**0**	**00**	**00**	**31**	**170**	**201**
VI Plant Protection										
Integrated Disease Management	03	63	1	64	-	-	-	63	1	64
Post harvest management	01	2	30	32	-	-	-	2	30	32
Total	**4**	**65**	**31**	**96**	**-**	**-**	**-**	**65**	**31**	**96**
VII Capacity Building and Group Dynamics										
Doubling income through natural farming	02	79	-	79	1	-	1	80	-	80
Farmer Producer Organization	01	-	61	61	-	-	-	-	61	61
Total	**3**	**79**	**61**	**140**	**1**		**1**	**80**	**61**	**141**
GRAND TOTAL	**61**	**1002**	**783**	**1722**	**16**	**21**	**37**	**1018**	**804**	**1822**

Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Integrated Crop Management	04	84	-	84	4	-	4	88	-	88
Natural farming	02	33	12	45	6	3	9	39	15	54
Integrated Nutrient Management	02	40	-	40	3	-	3	43	-	43
Total	**08**	**157**	**12**	**169**	**13**	**3**	**16**	**170**	**15**	**185**
II Horticulture										
Vegetable Crops										
Integrated Crop Management	02	41	-	41	02	-	02	43	-	43
Integrated Nutrient Management	04	74	-	74	03	-	03	77	-	77
Value addition	01	-	-	-	-	30	30	-	30	30
Total	**07**	**115**	**-**	**115**	**05**	**30**	**35**	**120**	**30**	**150**
III Soil Health and Fertility Management										
Soil fertility management	01	28	-	28	-	-	-	28	-	28
Natural farming	02	47	13	60	-	-	-	47	13	60
Integrated Nutrient Management	03	54	13	67	-	-	-	54	13	67
Soil conservation	01	24	-	24	-	-	-	24	-	24
Soil and Water Testing	01	2	28	30	-	-	-	2	28	30
Total	**08**	**155**	**54**	**209**	**-**	**-**	**-**	**155**	**54**	**209**
IV Livestock Production and Management										
Dairy Management	02	45	14	59	-	-	-	45	14	59
Animal Nutrition Management	01	1	27	28	-	-	-	1	27	28
Disease Management	03	33	56	89	-	-	-	33	56	89
Feed & fodder management	01	-	22	22	-	-	-	-	22	22
Total	**07**	**79**	**119**	**198**	**-**	**-**	**-**	**79**	**119**	**198**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	01	-	23	23	-	-	-	-	23	23
Location specific drudgery reduction technologies	01	1	23	24	-	-	-	1	23	24
Women and child care	05	-	190	190	-	-	-	-	190	190
Value addition	03	10	52	62	-	-	-	10	52	62
Total	**10**	**11**	**288**	**299**				**11**	**288**	**299**
VI Plant Protection										
Integrated Disease Management	03	64	10	74	-	-	-	64	10	74
Total	**03**	**64**	**10**	**74**	**-**	**-**	**-**	**64**	**10**	**74**
VII CapacityBuilding and Group Dynamics										
Doubling income through Natural farming	01	10	19	29	-	-	-	10	19	29
ICT tools	01	15	7	22	-	-	-	15	7	22
Total	**2**	**25**	**26**	**51**				**25**	**26**	**51**
GRAND TOTAL	**45**	**606**	**509**	**1115**	**18**	**33**	**51**	**624**	**542**	**1166**

Farmers' Training including sponsored training programmes – CONSOLIDATED (On + Off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Integrated Crop Management	11	225	13	238	8	5	13	233	18	251
Integrated Nutrient Management	6	105	15	120	8	0	8	113	15	128
Natural farming	13	340	74	414	10	9	19	350	83	433
Total	**30**	**670**	**102**	**772**	**26**	**14**	**40**	**696**	**116**	**812**
II Horticulture										
a) Vegetable Crops										
Integrated Crop Management	5	103	-	103	3	-	3	106	-	106
Integrated Nutrient Management	7	153	-	153	3	-	3	156	-	156
Urban kitchen garden	1	15	55	70	-	-	-	15	55	70
Value addition and processing	1	-	-	-	-	30	30	-	30	30
Total	**14**	**271**	**55**	**326**	**6**	**30**	**36**	**277**	**85**	**362**
Soil fertility management	3	28	63	28				28	63	91
Natural farming	2	47	13	60	-	-	-	47	13	60
Integrated Nutrient Management	5	93	20	113				93	20	113
Balance use of fertilizers	3	58	6	64	1	-	1	59	6	65
Soil conservation	1	24	-	24	-	-	-	24	-	24
Soil and Water Testing	2	3	47	50				3	47	50
Total	**16**	**253**	**149**	**339**	**1**		**1**	**254**	**149**	**403**
Dairy Management	8	64	220	284		10	10	64	230	294
Animal Nutrition Management	1	1	27	28	-	-	-	1	27	28
Disease Management	3	33	56	89	-	-	-	33	56	89
Feed & fodder technology	6	41	97	138				41	97	138
Total	**18**	**139**	**400**	**539**		**10**	**10**	**139**	**410**	**549**
Household food security by kitchen gardening and nutrition gardening	4	19	118	137	0	0	0	19	118	137
Processing and cooking	1	0	10	10	0	0	0	0	10	10
Storage loss minimization techniques	1	8	10	18	0	0	0	8	10	18
Value addition	3	10	52	62	-	-	-	10	52	62
Location specific drudgery reduction technologies	1	1	23	24	-	-	-	1	23	24
Women and child care	6	04	245	249	0	0	0	04	245	249
Total	**16**	**42**	**458**	**500**	**0**	**0**	**0**	**42**	**458**	**500**
VII Plant Protection										
Integrated Disease Management	6	127	11	138				127	11	138
Post Harvest Management	1	2	30	32	-	-	-	2	30	32
Total	**7**	**129**	**41**	**170**				**129**	**41**	**170**
Doubling income through natural farming	3	89	19	108	1		1	90	19	109
Farmer producer organization	1	-	61	61	-	-	-	-	61	61
ICT	1	15	7	22	-	-	-	15	7	22
Total	**5**	**104**	**87**	**191**	**1**		**1**	**105**	**87**	**192**
GRAND TOTAL	**106**	**1608**	**1292**	**2837**	**34**	**54**	**88**	**1642**	**1346**	**2988**

Training programmes for Extension Personnel including sponsored training (on campus)

Area of training	No. of Courses	No. of Participants								
		General/ Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Integrated Pest Management	01	38	-	38	-	-	-	38	-	38
TOTAL	**01**	**38**	**-**	**38**	**-**	**-**	**-**	**38**	**-**	**38**

Training programmes for Extension Personnel including sponsored training (off campus)

Area of training	No. of Courses	No. of Participants								
		General/ Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Natural farming	01	37	5	42	-	-	-	37	5	42
TOTAL	**01**	**37**	**5**	**42**	**-**	**-**	**-**	**37**	**5**	**42**

Training programmes for Extension Personnel including sponsored training – CONSOLIDATED (On + Off campus)

Area of training	No. of Courses	No. of Participants								
		General/ Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Integrated Pest Management	01	38	-	38	-	-	-	38	-	38
Natural farming	01	37	5	42	-	-	-	37	5	42
TOTAL	**02**	**75**	**5**	**80**				**75**	**5**	**80**

Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General/ Others			**SC/ST**			**Grand Total**		
		Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Scientific dairy management	03	3	78	81	-	7	7	3	85	88
Natural farming	03	50	51	101	2	6	8	52	57	109
Vermicompost production	02	-	63	63	-	-	-	-	63	63
Soil and water sampling methods	01	1	19	20	-	-	-	1	19	20
ICM in groundnut	01	-	13	13	-	5	5	-	18	18
INM in castor	01	13	11	24	-	-	-	13	11	24
Farmer Producer Organization (FPO)	01	-	61	61	-	-	-	-	61	61
Urban Kitchen Gardening	01	15	55	70	-	-	-	15	55	70
Processing and value addition	01	0	30	30	0	-	-	-	30	30
Women and child care	03	00	135	135	00	00	00	00	135	135
Total	**17**	**82**	**516**	**598**	**2**	**18**	**20**	**84**	**534**	**618**

3.5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services (Other than KMAS)	46	680	22	702
Diagnostic visits	25	135	43	178
Field Day	18	686	24	724
Group discussions	10	106	7	113
Kisan Mela/Exhibition	01	290	13	303
KisanGoshthi	02	97	06	103
Scientists' visit to farmers field	50	473	80	553
Plant/animal health camps	04	101	12	113
Night Goshthi	01	144	02	146
Online webinar	01	58	02	60
Farmers' seminar/workshop	03	103	21	124
Method Demonstrations	08	149	12	161
Celebration of important days	03	142	12	154
Other Lecture delivered	21	1537	39	1576
Farmer visit to KVK	58	785	24	809
Ex trainee meet	02	79	02	81
Farmer scientist interaction	01	78	02	80
Total	**254**	**5643**	**323**	**5980**

Note- Advisory services includes social media, website, telephonic calls etc.

Details of other extension programmes:

Particulars	Number
Extension Literature	10
Newspaper coverage	05
Animal health camps (Number of animals treated)	4 (481)
Social Media (No. of platforms Used)	04
Total	23

3.6 Online activities during year 2022

S. No.	Activity Type	Mode of implementation	Title of Program	No. of Programmes	No. of Participants/ Views
Farmers training					
1	Pl.Protection	Google meet	Post harvest management in wheat	01	32
2	Agronomy	Google meet	Natural farming	05	243
Total				**06**	**275**
Farmers Webinar					
1	Ani.Sci.	Google meet	Profitable dairy farming	01	60
	Total			**01**	**60**
Grand Total				**07**	**335**

3.7. PRODUCTION OF SEED/PLANTING MATERIAL AND BIO-PRODUCTS

Production of seeds by the KVKs

Crop	Name of the crop	Name of the variety	Name of the hybrid	Quantity of seed (q)	Value (Rs)	Number of farmers
Cereals	Wheat	GW-451	-	14	43750	20
Fodder crop seeds	Oat	JHO 822	-	2	10000	20
Total				**16**	**53750**	**40**

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity Kg/Lit	Value (Rs.)	No. of Farmers
Bio-pesticide	Neem, tobacco etc. extract	4800	Job work	14
Total		4800	Job work	14

Production of livestock materials

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	No. of Farmers
Dairy animals	-	-	-	-
Total	-	-	-	-

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

A. KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.): June 2014

B. Literature developed/published

Item	Title	Authors name	Number
Technical reports	Annual action plan, Annual Progress Report	KVK team	5
Extension literature	Natural farming	KVK team	1000

C. Details of Electronic Media Produced

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

D. Details of Social Media Platforms Created / Used

S. No.	Type of social media platform	Title of social media	Number of Followers/ Subscribers
1	YouTube Channel	KVK Gandhinagar	07
2	Facebook page/ Account	KVK Gandhinagar	2919
3	Mobile Apps	-	-
4	WhatsApp groups	KVK Gandhinagar, KVK Randheja Farmer Group	120
5	Twitter Account	@kvkgandhinagar	63
6	Website	www.kvkgandhinagar.org	92880 visitors

E. Success Story

Name of farmer : Patel Rameshbhai Boghabhai

Address: Patel Vass, village: Magodi, Dist. Gandhinagar, Gujarat

Title of intervention: Variety + ICM

Details of technology demonstrated: Groundnut variety GJG 32 + ICM

Institutional Involvement:

As area under Groundnut crop is increasing in the district. So first of all we have conducted a survey to find out ideal cluster for groundnut with irrigation facility. After that conducted technology gap analysis between farmers practice and recommended package & practices. In which we have also find out the major constraints/problem in Groundnut cultivation and probable solution of these constraints. So based on our study we have finalized the ICM module for CFLD.

After that organized three training programme for farmers, constant visit to the farmer's field, telephonic contact and through other mass media like whats app etc helped the farmer during entire crop season.

We have selected the following inputs for demonstration under CFLD Groundnut based on technological gap between farmers practice and recommended practice.

- Integrated Crop management
  - Improved Seeds: GJG32
  - Biofertilizers: Rhizobium, PSB
  - Fertilizer Management: N:P:S::12.5:25:20
  - Ferrous sulphate
  - Dithane M45

Success Point: 1.Use of ICM module.
2. Timely diagnosis of pests and its control.

Farmer Feedback:

Yield (q/ha)	
Demonstration	23.4
Potential yield of variety/technology	33.9
District average	18.3
State average	18.6

Performance of technology vis-à-vis Local check (Increase in productivity and returns)

Practice used	Yield (q/ha)	Gross cost (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Farmer practices	18.4	58100	115000	56900	1.98:1
Demonstration	23.4	57300	146250	88950	2.6:1
% Increase	27	800	31250	32050	-

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

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

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Field crops/vegetables	Use of calotropics decomposed leaves & twigs solution along with irrigation water	To control termite in different crops
2	Field crops/vegetables	Soil application of Neem cake and Tobacco dust	To control termite
3	Wheat/pulses	The grains of cereals and pulses are polished with castor oil and stored for a long period without any damage by the pest.	To control stored grain pests
4	Cattle	Grind the fresh neem & custard apple leaves & apply on wound	Wound healing

5.1. Indicate the specific training need analysis tools/methodology followed for

A. Practicing Farmers: (a). Participatory Rural Appraisal (b). Farmer group discussions (c). Diagnostic services (d). Existing cropping system

B. Rural Youth: (a) Participatory Rural Appraisal (b). Farmer group discussions

C. In-service personnel: (a). Existing cropping system (b). Feedback from state departments as well as NGOs

5.2. Indicate the methodology for identifying OFTs/FLDs

For OFT: (i) PRA (ii) Problem identified from Matrix (iii) Field level observations (iv) Farmer group discussions

For FLD: (i) New variety/technology (ii) Poor yield at farmers level (iii) Existing cropping system

5.3. Field activities

i. Name of villages identified/adopted with block name (from which year)

Sr.No.	Village	Block	Year
1	Chekhlarani	Gandhinagar	2017
2	Magodi	Gandhinagar	2015
3	Jalund	Gandhinagar	2014
4	Rupal	Gandhinagar	2014
5	Moti Adaraj	Gandhinagar	2018
6	Paliyad	Kalol	2012
7	Golthara	Kalol	2010
8	Bhaupura	Kalol	2014
9	Chandisana	Kalol	2012
10	Khoraj dabhi	Kalol	2018
11	Kharna	Mansa	2014
12	Rampura	Mansa	2016
13	Parsa	Mansa	2016
14	Govindpura	Mansa	2011

15	Devkaran na muvada	Dehgam	2016
16	ArjanjinaMuvada	Dehgam	2016
17	Motipura	Dehgam	2016
18	Pato	Dehgam	2018
19	Sonarada	Gandhinagar	2019
20	Vankanerda	Gandhinagar	2019
21	Galudan	Gandhinagar	2019
22	Vira talavadi	Gandhnagar	2019
23	Babra	Dehgam	2019
24	Khoraj Dabhi	Kalol	2020
25	Nava	Kalol	2022

ii. No. of farm families selected per village : 30

iii. No. of survey/PRA conducted : -10

iv. No. of technologies taken to the adopted villages: 18

v. Name of the technologies found suitable by the farmers of the adopted villages: Castror GCH-7, Mustard GDM-4, Greengram GM-6, Cotton GTHH-49, Fennel GF-12, Mineral mixture in cattle, Bypass fat, Wheat GW-451, Pusa Narangi marigold, Micronutrient in vegetable, Liquid bio fertilizers, Banana sap in vegetables

6. LINKAGES

A. Functional linkage with different organizations

Name of organization	Nature of linkage
SDAU, Dantiwada Kamdhenu university, Gandhinagar	For arranging the FLD, OFT Technical support, Participation in meeting
District Agriculture, Horticulture, Animal husbandry Departments	Joint implementation of different extension activities For conducting different demonstration Participation in meeting
Seed Corporation, Gandhinagar	Timely availability of seed Organizing seed multiplication programmes
Co-operative dairy, Gandhinagar	Participation in training programme
GSFC/IFFCO/GUJCOMASOL/GGRC	Timely availability of basic inputs Capacity Building
Co-operative institutes at District, Taluka & Village level	Joint survey for arranging need base training Programmes Participation in organizing extension activities
State Horticulture Department	Joint implementation of extension activities Participation in demonstration
District NGOs	Joint participation in arranging training programmes for farm women & rural youth
B. R .S colleges of the state	Participation in field work experience for students
ATMA Scheme	Jointly organizing extension programmes, participation in meeting

B. List special programmes undertaken by the KVK and operational now, which have been financed by State Govt./Other Agencies

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
-	-	-	-

C. Details of linkage with ATMA

a) Is ATMA implemented in your district: Yes

If yes, role of KVK in preparation of SREP of the district?

Coordination activities between KVK and ATMA

S. No.	Programme	Particulars	No. of programmes attended by KVK staff	No. of programmes Organized by KVK	Remarks
01	Meetings	AGB, AMC, BMC, BFAC, BAP, SAC	1	1	
02	Research projects	-	-	-	
03	Training programmes	Famers training	-	6	
04	Demonstrations	-	-	-	
05	Extension Programmes	Farmer scientist interaction/ lecture delivered	8	1	
06	Publications	-	-	-	
07	Other Activities	-	-	-	

D. Give details of programmes implemented under National Horticultural Mission

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Constraints if any
	-	-	-	-	-

E. Nature of linkage with National Fisheries Development Board

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks
	-	-	-	-	-

F. Details of linkage with RKVY

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks
	-	-	-	-	-

G. Details of linkage with PKVY (Paramparagat Krishi Vikas Yojana)

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks
	-	-	-	-	-

H. Details of linkage with NFSM

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks
	-	-	-	-	-

I. Details of linkage with SMAF (Sub-mission on Agroforestry)

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks

7. Convergence with other agencies and departments: Farmers training programmes with arvind foundation

8. Innovative Farmers Meet

Sl.No.	Particulars	Details
	Have you conducted Farm Innovators meet in your district?	No
	Brief report in this regard	

9. Farmers Field School (FFS)

S. No	Thematic area	Title of the FFS	Budget proposed in Rs.	Expenditure	Brief report
-	-	-	-	-	-

10.1. Technical Feedback of the farmers about the technologies demonstrated and assessed:

S.No.	Technologies	Feed Back
1	Mustard	GDM-4 variety is bold seeded and resistant to powdery mildew
2	Wheat GW 451	Variety is short so doesn't lodge.
3	Fennel GF 12	Variety GF-12 has more branches (5.8) as compared to local check (4.8) which results in higher yield.
4	Cabbage (IPM)	Sucking pest infestation was less in demo plot as compare to check plot
5	Oat JHO 99-2	The provided variety of Oat having good growth with 2-3cutting
6	Potato (micronutrient G4)	Vegetative growth is good and stem girth increased. Size of tubers and shining increased
7	Wheat (IPM)	In demo. plot infestation of termite is less (less than 10 percent) and in some plot very negligible as compare to non treated plot or in check plot.
8	Pearl millet (Azotobacter)	Increase availability of nutrients
9	Paddy (IPM)	In demo plot Leaf folder infestation was very less (1.89 %) as compare to check plot
10	Sorghum (COFS-29)	More number of branches so produce high green fodder yield
11	Groundnut (Summer)	Irrigation Water shortage limits the yield of Summer groundnut.
12	Groundnut (Kharif)	Unavailability of seeds.
13	Cotton	Hybrid GTHH-49 has hairy leaves so least attack of sucking pest.
14	Castor GCH-8	-
15	Cowpea	Less pest and disease infestation as compare to check plot, greenness and tenderness of pods are increase, Economic yield also more as compare to check
16	Cucumber	The quality and girth of the fruit improved. Increase the flowering and fruiting. Reduce pest and disease infestation.
17	Banana sap (psuedostem sap) spray in cowpea	Increase flowering, Fruiting and Greeness in the pods. Also increase number of picking
18	Bypass Fat	Bypass fat feeding increase milk production and milk fat percentage and also reduced weight loss after lactation period
19	Fodder sorghum variety GFS-6	GFS-6 is shoot fly and stem borer resistant variety hence green fodder quality is superior and yield is alos high as compared to other varieties
20	Chelated Mineral Mixture	Chelated Mineral mixture feeding increase milk production and milk fat percentage and also reduced service period

10.2. Technical Feedback from the KVK Scientists (Subject wise) to the research institutions/ universities: Nil

11. Technology Week celebration during 2022: No

12. Interventions on drought mitigation (if the KVK included in this special programme):
KVK is not included in this special programme

13. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./ha)	After (Rs./ha)
Castor (GCH-7 variety)	475	68.42	48000	72000
Wheat (GW-451)	350	51.42	25500	40500
Fennel GF 12 variety	160	53.12	55000	72500
Oat JHO 99-2	120	41.66	48000	65000
Mustard (GDM-4 variety)	90	38.88	21000	30500
Mineral mixture	180	61.11	13.5 litre/day	15.00
Bypass fat	180	52.7	11.50 litre/day	13.50
Green gram GM-6 variety	120	62.5	45000	60000
Kitchen Gardening	180	61.11	-	-

B. Cases of large scale adoption

Sr. No	Name of specific technology/skill transferred	% of Adoption	No. of villages
1	Castor Variety GCH-7	68.42	48
2	Wheat GW-451	51.42	22
3	Magnesium Sulphate in cotton	38.5	25
4	Neem Extract	46.0	35
5	Use of Mineral Mixture in animal ration	61.1	25
6	Greengram GM-6	62.5	16

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

Sr. No.	Name of specific technology/ skill transferred	No. of participants	% of Adoption	Change in income (Rs. /ha.)	
				Before training	After training
1	Production technology of BT cotton	20	40	58000	72500
2	Production technology of wheat GW-451	40	50	52500	65800
3	Production technology of castor	80	41.25	78000	98000
4	Production technology of Kharif Groundnut	40	45	97000	125000
5	Production technology of Kharif vegetables	100	55	235000	290000
6	Natural farming	180	22.22	125000	175000
7	Production technology of fennel GF-12	25	48	75000	100000
8	By pass fat	40	37.5	47000	56000
9	Mineral Mixture	40	60	48000	58000
10	Kitchen gardening	80	41.66	15000	22000

14. Kisan Mobile Advisory Services

Month	No. of SMS sent	No. of farmers to which SMS was sent	No. of feedback / query on SMS sent
March 2022	01	12094	-
May 2022	01	12260	-
Jun 2022	02	24573	-
Jul 2022	01	12280	-

Message Type	Type of Messages						
	Crop	Livestock	Weather	Marketing	Awareness	Other enterprise	Total
Text only	03	01	-	-	01	-	05
Voice only	-	-	-	-	-	-	-
Voice & Text both	-	-	-	-	-	-	-
Total Messages	03	01	-	-	01	-	05
Total farmers Benefitted	**36667**	**12280**	**-**	**-**	**12260**	**-**	**61207**

15. PERFORMANCE OF INFRASTRUCTURE IN KVK

A. Performance of demonstration units (other than instructional farm)

S. No.	Demo Unit	Year of establishment	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	
1	Vermicompost	2002	0.075	-	Vermi compost	4000	-	-	Used in farm

B. Performance of instructional farm (Crops) including seed production (Rabi 2021-22, Summer 2022, Kharif 2022)

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.(q)	Cost of inputs	Gross income	
Cereals									
Wheat	Nov. 21	March 22	3.8	GW-496, 451, 499, Pusa ujala	Seed	57.00	48000	142500	
Barley	Nov. 21	March 22	0.25	Local	Seed	1.24	5000	-	In stock
Pearl millet	Feb. 22	May 22	0.24	Ratna 501	Seed	3.26	3000	8020	
Paddy	July 22	Oct. 22	0.75	GR-13	Seed	26.73	40000	46182	
Oilseeds									
Mustard	Oct. 21	Feb. 22	0.5	GDM-4	Seed	4.13	11000	24367	
Fibers									
Cotton	May 22	Nov. 22	1.90	Ajit 155, albela	Lint	8.48	30000	69415	In stock
Fruits									
Lemon	2004	-	2	Kagdi	Fruit	-	5000	85000	Auction
Aonla	2003	-	1	NA-7 & Anand 2	Fruit	-	1200	410000	
Sapota	2002	-	1.5	Kali Patti	Fruit	-	1500	140000	
Others									
Oat	Nov. 21	March 22	0.25	JHO-99-2	Seed	2.00	6000	-	In stock

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

S.No.	Bio Products	Name of the Product	Qty (Lit)	Amount (Rs.)		Remarks
				Cost of inputs	Gross income	
1	Bio- pesticides	Neem, tobacco extract	4800	371306	380565	Job work

D. Performance of instructional farm (livestock and fisheries production)

S.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	HF, Gir	Milk	13994.6	550632	332085	-

E. Utilization of hostel facilities

Accommodation available (No. of beds):30

Months	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
January 2022	133	06	-
February 2022	186	05	-
March 2022	177	05	-
April 2022	23	01	-
May 2022	20	01	-
June 2022	204	08	-
July 2022	163	08	-
August 2022	111	03	-
September 2022	275	08	-
October 2022	77	04	-
November 2022	133	06	-
December 2022	34	01	-

F. Database management

S. No	Database target	Database created
-	-	-

G. Details on Rain Water Harvesting Structure and micro-irrigation system

Amount sanction (Rs.)	Expenditure (Rs.)	Details of infrastructure created / micro irrigation system etc.	Activities conducted					Quantity of water harvested in '000 litres	Area irrigated / utilization pattern
			No. of Training programmes	No. of Demonstration s	No. of plant materials produced	Visit by farmers (No.)	Visit by officials (No.)		
-	-	-	-	-	-	-	-	-	-

H. Performance of Nutritional Garden at KVK farm

Nutritional Garden developed at KVK farm

Area under nutritional garden (ha)	Component of Nutritional Garden	No. of species / plants in nutritional garden	No. of farmers visited
40x40 ft.	Vegetable crops	20	500
	Fruit crops	5	

Nutritional Garden developed at Village Level (Area under nutritional garden)

No. of Villages covered	Component of Nutritional Garden	No. of species / plants in nutritional garden	No. of farmers covered
3	Vegetable crops	100	40
3	Fruit crops	80	

I. Details of Skill Development Trainings organized

S.No.	Name of KVKs/SAUs/ICAR Institutes	Name of QP/Job role	Duration (hrs)	No. of participants					
				SCs/STs		Others		Total	
				Male	Female	Male	Female	Male	Female
-	-	-	-	-	-	-	-	-	-

17. FINANCIAL PERFORMANCE

A. Details of KVK Bank accounts

Bank account	Name of the bank	Location	Branch code	Account Name	Account Number	MICR Number	IFSC Number
With Host Institute	State Bank of India	Ahmedabad	2628	Gujarat vidyapith	10295506650	380002006	SBIN0002628
With KVK	State Bank of India	Randheja	2678	Guj. Vidyapith krishi vigyan kendra	10686796889	382002116	SBIN0002678
With KVK	State Bank of India	Randheja	2678	Guj. Vidyapith krishi vigyan Kendra Rev. Fund	10686798219	382002116	SBIN0002678

B. Utilization of KVK funds during the year 2022-23 (Rs. in lakh) (Till Dec, 2022)

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	173	123.02	123.57
2	Traveling allowances	0.55		0.40
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		2.23
B	POL, repair of vehicles, tractor and Equipments			1.54
C	Meals/refreshment for trainees			1.03
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)			0.04
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)			1.52
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	4.40	6.50	0.53
G	Training of extension functionaries			0.05
H	Maintenance of buildings			0.07
I	Establishment of Soil, Plant & Water Testing Laboratory			0.12
J	Library			0
TOTAL (A)		**181.75**	**129.52**	**131.10**
B. Non-Recurring Contingencies				
1	Works			
2	Equipments including SWTL & Furniture			
3	Vehicle (Four wheeler/Two wheeler, please specify)			
4	Library (Purchase of assets like books & journals)			
TOTAL (B)				
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		**181.75**	**129.52**	**131.10**

C. Status of revolving fund (Rs. in lakh) for the Four 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 2018 to March 2019	64.85	24.88	17.23	72.50
April 2019 to March 2020	72.50	32.00	16.81	87.69
April 2020 to March 2021	87.69	25.80	16.17	97.32
April 2021 to March, 2022	97.32	43.45	65.45	75.32
April 2022 to Dec., 2023	75.32	19.29	19.13	75.47

17. Details of HRD activities attended by KVK staff during year

Name of the staff	Designation	Title of the training programme	Institute where attended	Mode (Online/ Offline)	Dates
Harshadbhai Patel, Bharat Hadiya	SMS	Gandhi and Gram swaraj	GVP, Ahmedabad	Offline	26-27/3/22
Bharat Hadiya	SMS	Doubling farmer income	ATARI,Pune	Offline	21-22/05/22
Vijay Modhvadiya	Farm manager	Pre kharif workshop	SDAU,Dantiwada	Offline	7-8/06/22
Dr V K Garg, Bharat Hadiya, Radhaben Chaudhry	Sr Sci. & Head, SMSs	Bi-monthly review and pre APR workshop	SDAU,Dantiwada	Offline	28-29/06/22
Dr V K Garg,Vinay Gour, Harshadbhai Patel	Sr Sci. & Head, SMSs	Bi-monthly Review meet & technology backstopping	KVK,Mehsana	Offline	2/09/22
Dr V K Garg, Harshadbhai Patel, Chandresh Gohil	Sr Sci. & Head, SMSs	Bi-monthly Review meet & technology backstopping	KVK, Patan	Offline	30/12/22

18. Details of progress in Doubling Farmers Income (DFI) villages adopted by KVKs

Name of the village	Total No. of families surveyed	Key interventions implemented	No. of farmers covered in each intervention	Change in income (Rs/unit)	
				Before (base year)	After (current year)
Gandhinagar	110	Training, FLD, Natural farming, low cost production technology, ICT tools	110	135000	300000

19. Details of activities planned under NARI /PKVY / TSP / KKA, etc.

S. No.	Name of the programme	No. of villages adopted	Key activities performed	No. of activities carried out	No. of families covered
-	-	-	-	-	-

20. Details of Progress of ARYA Project

Name of Enterprise	No of Training Conducted	No of Beneficiaries	No of Extension Activities	No of Beneficiaries	No of Unit established	Change in income		No. Of Groups Formed
						Before	After	
-	-	-	-	-	-	-	-	-

21. Details of SAP

S. No.	Types of major Activity conducted	No. of Programmes conducted	No. of Participants
1	Swachhta pakhwada, swachhta pledge, cleaning, awareness programme	05	185

21. Please include any other important and relevant information which has not been reflected above (write in detail). nil

APR SUMMARY

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	83	1311	782	2093
Extension functionaries	02	75	5	80
Sponsored Training	17	86	534	620
Online Training	06	245	30	275
Total	**108**	**1717**	**1351**	**3068**

2. Frontline demonstrations

Crops/Enterprise	No. of Farmers	Area(ha)	Units/Animals
Oilseeds	100	50	
Pulses	20	05	
Cereals	80	20	
Vegetables	60	15	
Other crops	90	12	
Hybrid crops	60	15	
Total	**410**	**117**	
Livestock & Fisheries	65	-	65
Other enterprises	86	06	86
Total	**151**	**06**	**151**
Grand Total	**561**	**123**	**151**

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	07	80	80
Livestock	01	10	10
Various enterprises	-	-	-
Total	**08**	**90**	**90**
Technology Refined			
Crops	-	-	-
Livestock	-	-	-
Various enterprises	-	-	-
Total	-	-	-
Grand Total	**08**	**90**	**90**

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	254	5980
Other extension activities	24	481
Total	**278**	**6461**

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Marke -ting	Aware -ness	Other enterprise	Total
Gandhinagar	Text only	03	01	-	-	01	-	05
	Voice only	-	-	-	-	-	-	-
	Voice & Text both	-	-	-	-	-	-	-
	Total Messages	03	01	-	-	01	-	05
	Total farmers Benefitted	**36667**	**12280**	**-**	**-**	**12260**	**-**	**61207**

6. Seed & Planting Material Production

	Quintal/Number	Value (Rs.)
Seed (q)	16	53750
Planting material (No.)	-	-
Bio-Products (kg)	4800	380565
Livestock Production (No.)	-	-
Fishery production (No.)	-	-

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value (Rs.)
Soil	67	5915
Water	-	-
Plant	-	-
Total	**67**	**5915**

8. HRD and Publications

Sr. No.	Category	Number
1	Workshops	06
2	Conferences	01
3	Meetings	02
4	Trainings for KVK officials	06
5	Visits of KVK officials	-
6	Book published	-
7	Training Manual	-
8	Book chapters	-
9	Research papers	-
10	Lead papers	-
11	Seminar papers	-
12	Extension folder	01
13	Proceedings	-
14	Award & recognition	-
15	On-going research projects	-