ANNUAL REPORT 2019 (January - December 2019)

1.GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone		e-mail
	Office	FAX	
Ramkrishna Ashram KVK P.O.Nimpith Ashram South 24-Parganas, West Bengal, Pin-743338	03218-226002	03218-226636	KVK.S24Parganas1@icar.gov.in nimpithkvk@rediffmail.com nimpithkvk1979@gmail.com

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

Address	Telephone		e- mail
	Office	FAX	
Sri Ramkrishna Ashram, Nimpith P.O. Nimpith Ashram, South 24-Parganas, West Bengal, Pin-743338	03218-226001	03218-226636	secysran@gmail.com nimpithkvk1979@gmail.com

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

Name	Telephone / Contact		
	Residence	Mobile	e-mail
Dr. Nilendu Jyoti Maitra (upto 01.04.2019)	-	9434437053	njmaitra@rediffmail.com
Shri Prasanta Chatterjee (In-Charge, Senior Scientist & Head) (From 02.04.2019 to till date)	-	9434437058	pchatterjee1964@gmail.com

1.4.Year of sanction of KVK: 1979

1.5. Staff Position (as on 1st Januanry, 2019)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay scale with present basic	Date of joining	Permanent /Temporary	Category(SC/ST/ OBC/Others)
1.	Senior Scientist & Head	Dr. Nilendu Jyoti Maitra	Senior Scientist & Head	Administrative & Animal Husbandry	37400- 67000 (GP- 9000) Rs.53820/-	01.06.2010	Permanent	Others
2.	Subject Matter Specialist	Sri Prasanta Chatterjee	SMS (Fishery)	Fishery	15600- 39100 (GP-7600) Rs.42230/-	28.10.1997	Permanent	Others
3.	Subject Matter Specialist	Dr. Manasi Chakraborty	SMS (Home Science)	Home Science	15600- 39100 (GP- 7600) Rs.39370/-	08.12.2000	Permanent	Others
4.	Subject Matter Specialist	Dr. Chandan Kumar Mondal	SMS (Horticulture)	Horticulture	15600- 39100 (GP- 7600) Rs.33430/-	16.05.2005	Permanent	Others
5.	Subject Matter Specialist	Dr. Subhasis Roy	SMS (Animal Husbandry)	Animal Husbandry	15600- 39100 (GP- 6600) Rs.28730/-	01.07.2010	Permanent	Others
6.	Subject Matter Specialist	Sri Prabir Kumar Garain	SMS (Plant Protection)	Plant Protection	15600- 39100 (GP- 6600) Rs.27070/-	17.10.2012	Permanent	Others
7.	Programme Assistant	Dr. Dipak Kumar Roy	Programme Assistant (Agronomy)	Agronomy	15600- 39100 (GP- 6600) Rs.27110/-	12.06.2001	Permanent	Others
8.	Computer Programmer	Sri Partha Banik	Programme Assistant (Computer)	Office	15600- 39100 (GP- 5400) Rs.24350/-	09.06.2003	Permanent	Others
9.	Farm Manager	Utpal Maity	Farm Manager	Fishery	9300- 34800 (GP- 4600) Rs.17560/-	02.12.2011	Permanent	Others
10.	Assistant	Sri Aditya Guchhait	Assistant	Office	9300- 34800 (GP- 4200) Rs.17130/-	01.06.2010	Permanent	Others
11.	Stenographer	Sri Debjyoti Maitra	Stenographer Grade-III	Office	5200- 20200 (GP- 2400) Rs.12220/-	04.01.2011	Permanent	Others
12	Driver	Sri Madhab Chandra Kayet	Driver	Office	5200- 20200 (GP- 2400) Rs.13810/-	01.06.1995	Permanent	Others
13.	Driver	Sri Birendra Nath Das	Driver	Office	5200- 20200 (GP- 2400) Rs.12320/-	01.09.2003	Permanent	OBC
14.	Supporting staff	Sri Nemai Chand Mondal	Skilled supporting staff	Office	5200- 20200 (GP- 2800) Rs.18880/-	01.04.1997	Permanent	SC
15.	Supporting staff	Sri Sailen Das	Skilled supporting staff	Office	5200- 20200 (GP- 2800) Rs.19440/-	01.04.1979	Permanent	Others

1.6. Total land with KVK (in ha):

S. No.	Item	Area (ha)
1	Under Buildings	0.898 ha
2.	Under Demonstration Units	1.813 ha
3.	Under Crops	8.783 ha
4.	Orchard/Agro-forestry	0.813 ha
5.	Others with details	8.803 ha
	Total	21.11ha

Total area should be matched with breakup

1.7 Infrastructure Development:

A) Buildings and others

S. No.	**Name of infrastructure**	**Not yet started**	**Completed up to plinth level**	**Completed up to lintel level**	**Completed up to roof level**	**Totally completed**	**Plinth area (sq.m)**	**Under use or not***	**Source of funding**
1.	Administrative Building	-	-	-	-	Yes	777.545	Use	ICAR
2.	Farmers Hostel	-	-	-	-	-do-	359.639	Use	ICAR
3.	Farm Women Hostel					-	521.25		RKVY
4.	Separate Dinning Hall for farmer					-	350		RKVY
5.	Staff Quarters (6)	-	-	-	-	-do-	411.680	Use	ICAR
6.	Piggery unit	-	-	-	-	-	-	-	-
7.	Fencing	-	-	-	-	-do-	770.00 (running m)	Use	ICAR
8.	Rain Water harvesting structure	-	-	-	-	-do-	17500	Use	ICAR
9.	Threshing floor	-	-	-	-	-do-	371.720	Use	CAPART
10.	Farm godown	-	-	-	-	-do-	378.790	Use	SDB, GOWB
11.	Dairy unit	-	-	-	-	-do-	3500.00	Use	ICAR &Revolving fund of KVK
12.	Soil testing lab	-	-	-	-	-	10.00	Use	Revolving fund of KVK
13.	Poultry unit	-	-	-	-	-do-	280.00	Use	Revolving fund of KVK
14.	Goatery unit	-	-	-	-	-do-	2100.00	Use	RKVY
15.	Pekin Duck Farm	-	-	-	-	-	104.00	Use	Revolving fund of KVK

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S. No.	Name of infrastructure	Not yet started	Completed up to plinth level	Completed up to lintel level	Completed up to roof level	Totally completed	Plinth area (sq.m)	Under use or not*	Source of funding
16	Turkey farm					Yes	144	Use	Revolving fund of KVK
17	Small animal operation theatre					-do-	12	Use	NAIP
18	Procedure room for animals					-do-	6	Use	NAIP
19	Hydroponics unit					-do-	14	Use	Revolving fund of KVK
20	Rabbit farm					-do-	16	Use	Revolving fund of KVK
21	Ornamental bird unit					-do-	12	Use	Revolving fund of KVK
22	Meat processing unit					-do-	120	Use	ATMA
23	Mushroom production unit					-do-	100	Use	ICAR &Revolving fund of KVK
24	Shade house	-	-	-	-	-do-	300	Use	FPI & H
25	Soil test Lab	-	-	-	-	-do-	280	Use	ICAR
26	Vermicompost production unit					-do-	150	Use	ICAR & Susmira
27	Beekeeping					-do-	40	Use	AICRP Honeybees
28	Pan Boroz					-do-	25	Use	ICAR &Revolving fund of KVK
29	Green House					-do-	300	Use	Susmira
30	Food processing unit					-do-	200	Use	ICAR
31	Oilseed Seed Hub – Processing unit and Seed Godown	-	-	-	-	yes	700	Use	ICAR-IIOR (under NFSM-OS of DAC & FW, GOI)

If not use then since when and reason for non-use

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total km. Run	Present status
Mahindra Bolero Power +	2019	8,00,000.00	6126	Running Condition

C) Equipment & AV aids

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
a. Lab equipment				
Atomic Absorption Spectrophotometer PerkinElmer PinAAcleTM 900F AAS	2017-18	2423720	Working condition	RKVY – Strengthening of Soil Lab project
Kel Plus Automatic Nitrogen Estimation System (Model KES 06L R; Model Distyl EM VA)		285654	-do-	
Digital UV-Vis Spectrophotometer ('Systronics' Make; Model 117)	2017-18	180304	-do-	
Micro Controller Based Digital Flame Photometer ('Systronics' Make; Model 128)	2017-18	70328	-do-	
Colorimeter ('Systronics' Make; Model 115)	2017-18	21004	-do-	
Turbidity Meter ('Systronics' Make; Model 135)	2017-18	31270	-do-	
Digital pH Meter ('Systronics' Make; Model 335)	2017-18	12862	-do-	
Digital Conductivity Meter ('Systronics' Make; Model 307)	2017-18	23954	-do-	
Bouyoucos Hydrometer (ASTM 152H; Range 5 – 60 g/lt)	2017-18	9440	-do-	
Brass Sieve (2mm; 1mm; 0.5mm; 0.25mm; 0.1mm; 0.02mm)	2017-18	5487	-do-	
Double Distillation Unit (Borosil; All Glass; Horizontal; Output 2.5 lt/hr)	2017-18	56366	-do-	
Single Distillation Unit (SS) (Barnsted Type; 3Kw; 5 lt/ha)	2017-18	33040	-do-	
Refrigerator (LG make, Model – GL Q2925DSRBOSZEBN)	2017-18	27500	-do-	
Digital Balance ('K. Roy' Make; Model DJ – 302A)	2017-18	17700	-do-	
Hot Air oven (3' x 2' x 2')	2017-18	26550	-do-	
Water Bath (6 hole)	2017-18	12000	-do-	
Hot plate	2017-18	5110	-do-	
Mechanical Shaker (2 hp motor, 3' x 2' x 2')	2017-18	29500	-do-	
Muffel Furnace (2' x 1.5' x 1.5')	2017-18	37170	-do-	

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
a.Lab equipment				
Conductivity meter	2017-18	6,500.00	Working condition	ICAR
Eutech pH-Conductivity meter	2017-18	13,500.00	-do-	ICAR
Rescholar Laminar Air-flow	2008-09	49,500.00	-do-	ICAR
Autoclave	2008-09	25,365.00	-do-	ICAR
Refrigerator (GFE 25/2010)	2010-11	19,560.00	-do-	NAIP
Rescholar Semi-automatic Corcyra rearing system (10 units)	2008-09	1,53,000.00	-do-	ICAR
Rescholar Corcyra egg cleaning device	2008-09	18,000.00	-do-	IRM
Rescholar Corcyra egg sterilization chamber	2008-09	22,500.00	-do-	IRM
Rescholar Trinocular Zoom stereo microscope with eye-piece camera & software	2008-09	1,20,950.00	-do-	IRM
Rescholar Binocular Research Microscope	2008-09	18,500.00	-do-	IRM
Rotary shaker	2010-11	32,500.00	-do-	ICAR
BOD incubator (Simeco)	2010-11	31,650.00	-do-	ICAR
Double distillation unit	2010-11	33,250.00	-do-	ICAR
Afcoset Electronic Balance(Model ER 200A)	2008-09	45,500.00	-do-	ICAR
REMI Centrifuge (Model R 8C)	2008-09	19,350.00	-do-	ICAR
REMI Centrifuge (Model R 24)	2008-09	35,950.00	-do-	NHM
Chrlorophyll meter (SPAD 502 plus)	2010-11	2,25,000.00	-do-	ICAR
Balance	2016-17	35,000.00	-do-	ICAR
pH-meter	2016-17	20,000.00	-do-	NICRA, IARI

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
a.Lab equipment				
Conductivity meter	2016-17	15,000.00	Working condition	NICRA, IARI
Hot Air oven	2016-17	35,000.00	-do-	NICRA, IARI
Spectrophotometer (VIS)	2016-17	45,000.00	-do-	NICRA, IARI
Flame Photometer	2016-17	54,000.00	-do-	NICRA, IARI
Turbidity Meter	2016-17	25,000.00	-do-	NICRA, IARI
Hot plate	2016-17	6,000.00	-do-	NICRA, IARI
Water Bath	2016-17	8,000.00	-do-	NICRA, IARI
Mechanical Shaker	2016-17	30,000.00	-do-	NICRA, IARI
Double Distillation plant Glass	2016-17	45,000.00	-do-	NICRA, IARI
Bottle Top Burrete (digital)	2016-17	1,00,000.00	-do-	NICRA, IARI
Acid Dispenser	2016-17	42,000.00	-do-	NICRA, IARI
Muffel Furnace	2016-17	45,000.00	-do-	NICRA, IARI
Refrigerator	2016-17	26,000.00	-do-	NICRA, IARI
Sony pico- projector	2016-17	27,000.00	-do-	RKVY, Govt. of W.B
Public Address System	2016-17	53,000.00	-do-	RKVY, Govt. of W.B
b. Farm machinery				
Seed grader	2010-11	2,10,000.00	Working condition	TMC
Pump sets	2003-04	50,000.00	-do-	TMC
Thresher & Rotavator	2010-11	2,00,000.00	-do-	ICAR
Disc Harrow	2009-10	70,000.00	Not functioning	ICAR
Power Tiller	2009-10	1,43,000.00	Working condition	ICAR
Generator – 25 KVA	2010-11	3,56,852.00	-do-	ICAR
Seed Grader	2018-19	11,50,000.00	-do-	ICAR-IIOR (Seed Hub Project
Gravity Separator	2018-19	11,50,000.00	-do-	
Sealer machine	2018-19	30,000.00	-do-	
c.**AV Aids**				
Printer	2003-04	4,000.00	Out of order	Nutrition project, SDB
Computer (2 nos)	2003-04	76,899.00	One computer is out of order	ICAR

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
d. AV Aids				
Cannon Digital Camera	2008-09	25,000.00	Out of order	ICAR
V-SAT with e-KVK linkage (5 Dell-Optiplex -755 Computer & One HP Leser Printer-1022n , One HP-G3110 Scanner, One TVS – MSP-245-dot-matrix Printer with Server Computer, 5-650VA APC UPS, 3KVA APC make UPS)	2009-10	-	V-SAT and Dell-optiplex -755 Computers, 650VA APC UPS are out of order *Only 3KVA APC make UPS are in working condition	ICAR
Lenovo Laptop	2008-09	48,000.00	Out of order	NHM
Samsung Notebook	2009-10	22,000.00	Working condition	TMC
HP Desk top Computer with Cannon Printer	2010-11	75,0000	Working condition (Printer out of order)	NAIP
Epson EB-825 Projector Samsung Touch 400TSn-2	2010	2,20,000.00	(Epson EB-825 Projector & SamsungTouch 400TSn-2) Out of order	NAIP
HP LaserJet M1522nf	2009-10	24,000.00	Working condition	AICRP
HP Color Laser Jet 1215	2009-10	22,000.00	Out of order	NAIP

c. AV Aids& electronics				
Two LG LED Projector	2014	1,18,000.00	Working condition (one out of order)	RKVY
Hand Scanner -(1PC)	2016	8000/-	Working condition	ARYA
ITB External HDD - (1PC)	2016	8000/-	-do-	ARYA
DATA Processing System (I3 Processor, 1 TB HDD, 4GB RAM, 15.6 inch Screen with Graphics Card) -(1PC)	2016	36900/-	-do-	ARYA

Color Copier Printer- (1PC)	2016	13500/-	-do-	ARYA
Broadband Router -(1PC)	2016	2300/-	-do-	ARYA
Biometric Systems Fingerprint Time & Attendance System (Including Battery & Power Adopter) X-990	2016	23500/-	-do-	ICAR
Olympus phase contrast microscope with CMOS camera, Lenovo Computer, UPS, printer cum scanner	2015-16	5,00,000.00	-do-	RKVY
Fermenter	2015-16	4,00,000.00	-do-	RKVY
HP LAPTOP 240 G5 CI3 1AS37PA CORE i3 /4 GB/500GB/14"	2016-17	36,800.00	-do-	IARI, ICAR
PA System for Class room	2016-17	48,500.00	-do-	RKVY, Dept. of Agriculture,W.B
Wireless MIC for Conference room	2016-17	27,038.00	-do-	RKVY, Dept. of Agriculture, W.B.
HP Desktop Computer MODEL 48PA, Cori 3 7th Gen, 4gb RAM/1 TB HDD/ 18.5" Monitor/ Key Board/ Mouse/(3 yrs on-site warranty)	2017-18	45430.00	-do-	RKVY – Strengthening of Soil Lab project
H.P Laptop 2UE06PA AMD A9/ 4 GB RAM/ 14"/1 TB HDD (1 yr warranty)	2017-18	37170.00	-do-	RKVY – Strengthening of Soil Lab project
HP Laser Printer All in One A3 size/ Print/Scan/Copy (Model: MFP M435NW) (1 yr on-site warranty)	2017-18	82000.00	-do-	RKVY – Strengthening of Soil Lab project
EPSON PROJECTOR EB-X-31	2017-18	37000.00	Working condition	RKVY – Strengthening of Soil Lab project

D)Farm implements

Name of equipment	**Year of purchase**	**Cost (Rs.)**	**Present status**	**Source of fund**
Honda electric lawn mower	2007-08	14,500.00	Working condition	NHM
Al-Ko Electric hedge cutter	2010-11	22,000.00	Working condition	NHM
GPS	2016-17	14,990.00	Working condition	RKVY, Dept. of Agriculture

1.8. **Details SAC meeting conducted in the year 2018-19**
Salient recommendation in bullet form (Attach a copy of SAC proceeding along with list of participants)

(True copy)

Meeting No. 33 **Date : 11.03.2019**
Place : Nimpith **Time : 10.30 a.m.**

A meeting of the Scientific Advisory Committee of Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith is held to-day, the 11th March, 2019 at 10.30 a.m. in the KVK premises with the following members:

-: Resolutions:-

Members Present:

Sl.No.	**Name**	**Designation**
1.	Swami Sadananda,	Chairman, RAKVK Nimpith
2.	Dr. G.H. Pailan	Officer-in-charge & Principal Scientist, CIFE
3.	Suryabrota Das	District Sub Officer, West Bengal State Seed Corporation
4.	Dr. Ujjaal Kumar Bag	BLDO Joynagar –II, South 24 Parganas
5.	Arka Prava Sarkar	Asst. Director of Horticulture, Baruipur Sub Divisional
6.	Dr. Ajit Kr. Podder	Advisor, VIB, Nimpith
7.	Dr. L. N. Bandyopadhyay	Principal, Green College, RDW
8.	Dr. N. J. Maitra,	Sr. Scientist & Head, RAKVK Nimpith
9.	Prasanta Chatterjee	SMS(Fishery), RAKVK
10.	Manasi Chakraborty	SMS (Home Sc.), RAKVK
11.	Dr.Chandan Kr. Mondal	SMS (Hort.), RAKVK
12.	Dr.Subhasis Roy	SMS (A.H), RAKVK
13.	Prabir Kumar Garain	SMS (P.P.), RAKVK
14.	Dipak Kumar Roy	Programme Assistant (Agronomy), RAKVK, Nimpith
15.	Shyam Sundar Lakshman	Jr. Breeder, (AICRP on Sunflower)
16.	Dr.Avijit Roy	Jr. Agronomist (AICRP on Sunflower)
17.	Debasis Halder	Technical Expert (AICRP)
18.	Partha Banik	Programme Assistant (Computer), RAKVK Nimpith
19.	Utpal Maity	Farm Manager, KVK Nimpith
20.	Aditya Guchhait	Assistant, KVK Nimpith
21.	Dr. Arkendu Halder	Project Assistant, ARYA, RAKVK
22.	Dr. Sandip Hembram	Project NICRA-IARI, YP-II
23.	Saurav Gayen	Project NICRA-IARI, YP-I
24.	Sayan Jana	Project NICRA
25.	Tapas Kumar Sahana	Project AICRP, Honeybees & Pollinators
26.	Pronobesh Halder	DAESI, Facilitator
27.	Bhaskar Mukher	Technical Assistant
28.	Tarak Nath Halder	Progressive farmer, Gillerchat
29.	Bapan Karmakar	Progressive farmer, Gillerchat
30.	Sri Gouranga Naskar	Progressive farmer, Kaikhali
31.	Suparna Halder	Progressive farm Women, Dakshin Durgapur
32.	Mushida Gazi	Progressive farm Women, Purba Raghunathpur

(Salient Recommendation & Action taken – 33th SAC Meeting)

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
1.	11.03.2019	32	One day on water testing kit in 4day KVK training by CIFE experts	Invited CIFE experts in 4 day training of KVK for the participants on water testing kit developed by CIFE	
2.			Promoting homemade pelleted feed with hand pelletiser with mustard oilcake in place of groundnut oil cake	Awareness carried out during different training programme	
3.			Highlighting KVK work through more scientific publications and popular articles	Action has already been taken and some papers have already been sent to Krishi Jagran and some will be sent to different journals	
3.			Cotton plant , or any other plants or plant parts as feed ingredient	Will be evaluated	
5.			Fodder grass on ridge as OFT in next year	Collaboration with Agronomy Section has been made and one OFT will be set on fodder grass	
6.			Buck exchange programme should be made more popular through Panchayet and Block Office	The programme has been taken in the form of Awareness Camp through MVC in different Blocks of South & North 24 Parganas	
7.			Shearing of Garole wool & marketing of Garole meat	Livestock Development Corporation (LDC) has been communicated and discussed about the same	
8.			Screening of different uncommon disease in animals	Deputy Director, ARD, South 24 Pgs has been communicated for the same	

9.			A joint programme for farmers of Pekin duck in collaboration with WBUAFs may be undertaken	Will be conducted during next winter season on processing of duck meat and its value addition	
10.			Collaborative work with Fishery section may be undertaken by other sections	Will be undertaken with respect to capacity building	
11.			Suitable Soil Testing Kit for farmer's field may be used	Mrida parikshak kit is used as and when required. Otherwise soil samples are tested at RAKVK Soil Testing Laboratory	
12.			Using Azotobactor in Betel vine to increase self-life	Azotobactor and other bio-fertilizer are regularly used in betel vine cultivation	
13.			Training on fish processing may be conducted	Will be conducted under 2019-20 training calendar	
14.			Impact assessment of ex-trainees may be conducted	Will be conducted	
15.			Bio-fertilizer –KSB may be used in CFLD Pulse Programme	Will be supplied in the next programme in 2019-20	

2.a. District level data on agriculture, livestock and farming situation (2018-19)

Sl. no.	Item	Information	
1	Major Farming system/enterprise	Agro based farming system – Paddy (monocropped)	
		Agro based farming system – Paddy-Moong/ Cotton /Sunflower	
		Agro based farming system – Paddy – Khesari (paira crop)	
		Agro-horti based farming system- Paddy- Chilli/ Tomato/ okra	
		Ail-bundh (land embankment) farming system – Okra/ Bitter Gourd- Tomato/ French bean	
		Agri-horti-fishery – Paddy- Chilli/ Tomato/ Okra-IMC	
		Agri-poultry (backyard)- Paddy- Moong/ Khesari/ Indigenous poultry	
2	Agro-climatic Zone	Coastal saline zone	
3	Agro ecological situation	Gangetic Alluvial	
		Coastal Alluvial	
		Coastal Saline	
4	Soil type	Clay, clay loam, sandy loam	
5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others Source : District Action Plan 2016-17	Crop	Productivity (Q/ha)
		Paddy (*Aman*)	24.13
		Greengram	6.95
		Lathyrus	8.27
		Sumflower	13.4
		Tomato	182.1
		Brinjal	175.5
		Cabbage	318.5
		Cauliflower	199.6
		Okra	122.1
		Cucurbits	121.2
		Pea	20.8
		Onion	115.1
6	Mean yearly temperature, rainfall, humidity of the district	Mean Yearly Temperature: Max. 36.3* C; Min. 13.6* C Annual Rainfall : 1750 mm to 1770 mm Annual Relative Humidity: 71% to 85% Ref. District website (http://s24pgs.gov.in/s24p/page.php?nm=Geography**)**	

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7	Production and productivity of livestock, poultry, fisheries etc. in the district (New census report is awaiting from the State Department) (Source: Annual Action Plan on ARD(2011-12), South 24 Parganas, West Bengal)	**Category**	**Population**	**Production**	**Productivity**
		Cattle			
		Crossbred	32550	2,65,8,750 lit	1800-2100 lit/lactation
		Indigenous	968986	19,37,97,200 lit	400-500 lit/lactation
		Buffalo	15604	56,71,300 lit	600-700 lit/lactation
		Sheep			
		Crossbred	-	-	-
		Indigenous	212589	22,10,925 kg	10-12 kg/sheep/year
		Goats	696935	78,05,672 kg	11-13 kg/sheep/year
		Pigs			
		Crossbred	-	-	-
		Indigenous	32584	12,05,608 kg	35-40kg/pig/year
		Rabbits	-	-	-
		Poultry	2869243		
		Hens (improved)	713137	12,47,98,975 eggs	170 – 180 eggs/yr/bird
		Desi	2156106	19,83,61,752 eggs	90 – 110 eggs/year/bird
		Improved	-	-	-
		Ducks	1058706	7,67,56,185 eggs	140 – 160 eggs/yr/bird
		Turkey and others	75897	6,22,355 kg	6 – 9 kg/year/bird

8.	**Hand book of Fisheries Statistics2017-18** (Source: Department of Fisheries, Directorate of Fisheries, Govt. of West Bengal)	Production of fish and prawn **2017-18**	
		Marine Fish	185484 MT(WB), 70683 (S 24 Pgs.)
		Marine Prawn	12460 MT (WB),3093 (S 24 Pgs.)
		Inland Fish	1556728 MT (WB), 190425 MT(S 24 Pgs.)
		Fish Seed	20200 million
		Inland Prawn	111129 MT (WB), 25417 MT(S 24 Pgs.)

Weather Report: 2019

	Temperature		R.H		Rainfall (mm)	Total Rainy Days
	Maximum	Minimum	Maximum	Minimum		
Januanry-19	30.2	8.6	83.5	62.1	0	0
February-19	34.2	12.2	82.2	59.4	229	5
March-19	36	17.2	81.6	55.7	172	4
April-19	23	37	52	92	52	4
May-19	26	38	49	95	102.86	4
June-19	23	38	59	93	119	9
July-19	24.2	35.4	61	94	172.5	13
August-19	25	36	62	92	435.5	19
September-19	24.8	35	69	92	375.6	18
October-19	20	34.2	69	100	221	10
November-19	18.6	32	78	100	215	2
December-19	12	30	76	98	10	1

Source: Meteorological observatory, RAKVK, Nimpith

2.b. Details of operational area / villages (2019)

Sl. No.	Name of Taluk	Name of the block	Name of the villages	Major crops & enterprises	Major problems identified (crop-wise)	Identified Thrust Areas
1.	Baruipur Sub-division	Kultali	Kaikhali, Gopalganj, Madhabpur, Bongheri, Sankijahan, Katamari, Deulbari	Paddy, Cotton, Sunflower, Maize, Chilli, Betelvine, Bitter gourd, Okra, Tomato, nursery raising of carp spawn, indigenous fish, Ornamental fish, poultry	**Biophysical :** **i) Yield platuening of major field and horticultural crops** * Inappropriate agronomic practices * Poor genetic stock * Inadequate irrigation facilities * Marginal soil **ii) High post-harvest loss of horticultural crops** **iii) Lesser extent of crop diversification** **iv) Poor rate of farm mechanization** **v) Poor exploitation of aquatic resources** * Less availability of good quality carp and other fish seed * Poor feed management & improper stocking density *No pond preparation before stocking fish *Improper resource utilization for ornamental fish culture **vi) Poor performance of backyard system** * Poor productive performance of existing poultry bred * Untapped potentiality of nutrition garden **vii) Low profitability from broiler and dairy farming** * Poor genetic resources * High cost of commercial feed * High disease incidence **Socio economic :** **i) Very restricted livelihood options** **ii) Recurrence of glut at pick harvest season** **iii) Lack of awareness** **regarding proper management of nutritional garden** **iv) Lack of market support** **v) Lack of credit support**	* Assimilation of good agri-horticultural practices * Providing good quality crop & fish seed, breed and planting materials * Diversification of existing production system * Introduction of poly house concept for off season vegetable cultivation * Efficient utilization of water resources * Proper feed supplementation for fish & animal farming * Providing animal health care service * Soil health management * Popularization of small tools and implements for drudgery reduction * Improvement of backyard system performance * Widening of livelihood options and improvement of women led vocation through SHG * Post harvest management of crops * Development of marketing channel
		Joynagar- I	Dakshin Barasat, Baharu, Biswaser Chak, Jangalia			
		Joynagar –II	Nimpith, Tulsighata, Hanarbati, Hatchapuri, Kasthamahal, Jouthia, Baishata, Sahajadapur, Bottala, Uttarpara, Gardewani, Bele durganagar			
2.	Kakdwip	Pathar Protima	Achintanagar, Gangadharpur, Digampur, Herambagopalpur, Kuyemuri, Ramganga Banashyamnagar, Kamdebpur, Sridhar Nagar, Lakshmi Janardanpur, Raipur, PatharProtima, Rakhalpur, PurbaSripatinagar, DakshinShibganj			
		Kakdwip	Kamarhat, Takipur Abad, Shibkali Nagar, Madhabnagar			
		Namkhana	Shibnagar, Rajnagar, Shibrampur, Mousuni, Radhanagar, Chandanpiri, Fregarganj, Namkhana			
		Sagar	Krishnanagar, Rudranagar, Khansahebabad, Gangasagar, Sumatinagar, Haradhanpur, Mrityunjoynagar, Manasadip			
3.	Diamond Harbour Sub-Division	Mathurapur-I	Ranaghata, Nalua, Lakshmikantapur, Mathurapur, Lalpur, Uttar Lakshmi Narayanpur			
		Mathurapur-II	Radhakantapur, Gilarchat, Bhadrapara, 27 no. Lat, Mandalpara, Damkal, MukherjeerChak, KhariKashinagar, Kankandighi, NagendrapurRaidighi,			
		Kulpi Mandirbajar Magrahat – II Diamond Harbour-I	Belpukur, Keoratala, Gopalnagar, Tulshirchak Pukuria, Karbala, Ghateswar, Gabberia, Amratala, Sherpur Kapat Hat, Mosat			

Sl. No.	Name of Taluk	Name of the block	Name of the villages	Major crops & enterprises	Major problems identified (crop-wise)	Identified Thrust Areas
4.	Dhanurhat	Mandirbazar	Ramchandrapur, Siddeswarpur	Kharif Paddy, Boro paddy, Greengram, Lentil	i)Low productivity in Greengram ii)Non adoption of scientific methods in Lentil cultivation iii) Injudicious use of fertilizers iv)Lacking on proper knowledge on seed treatment in crops	i)Lack of awareness on adoption of scientific technologies ii) Proper nutrient management on the basis of soil testing iii) Replacement of old varieties iv) Production of fish seed
5.	Dhanpota	Magrahat-I	Dhanpota	Kharif Paddy, Boro paddy, Greengram,		
6.	Bhadura	Diamond Harbour-II	Gundia, Sagra, Pana, Bhadura, Bhawkal, Asurali	Kharif Paddy, Boro paddy, Greengram, Lentil		
7.	Nalua	Mathurapur-I	Gambhirnad	Kharif Paddy, Boro paddy, Greengram		
8.	Chuprijhara	Jaynagar-II	Chuprijhara	Kharif Paddy, Boro paddy, Greengram		
9.	Magrahat	Magrahat II	Dhanpota	Carp and catfish & Hatchery		
10.	Ranaghata	Mathurapur II	Sankargheri	Catfish & hatchery		

2. c. Details of village adoption programme:

Name of the villages adopted by PC and SMS (2019) for its development and action plan

Name of village	Block	Action taken for development
Ramchandrapur & Siddeswarpur	Mandirbazar	Training and CFLD on pulse
Gundia, Sagra, Pana, Bhadura, Bhawkal, Asurali	Diamond Harbour-II	Training and CFLD on pulse
Dhanpota	Magrahat-II	Training and CFLD on pulse
Gambhirnad	Mathurapur-I	Training , FLD and CFLD on pulse
Chuprijhara, Tulsighata	Joynagar-II	Promotion of Beekeeping, Demonstration of IPM, CGLD on Greengram, establishment of catfish hatchery through ARYA
Jharkhali	Gosaba	Biotech Kishan Hub programme in collaboration with WBUAFSc, Kolkata
Herombogopalpur	Patharpratima	Overall development of the rural youth through promotion of pekin duck farming, vanaraja farming and creating marketing linkage with Livestock Development Corporation Limited, Govt of West Bengal as convergence programme of ARYA project, establishment of carp hatchery & betel vine boroz through ARYA project.
Rudranagar	Sagar	Enhancement of production and productivity of animal resources through Mobile veterinary Clinic and awareness generation.
Bantra, Karabeg, Sastitala, Bahru, Chaltaberia, Gabberia, Dhosa	Joynagar-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Bakultala, Sonatikari, Nalgora, Taltala, Baishata, Ghoserchak, Gopalnagar, Sahajadapur, Mollarchak, Hanarbati, Manirtat, Dosra Bhagabanpur, Thakurchak	Joynagar-II	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Nutritional upliftment of mother and children through training and demonstration
Nalua, Nayabad Rajpur, Sarat Nagar, Purba Ranaghata	Mathurapur-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Baribhanga abad, Choddorashmi, Kashinagar, Chapla, Pakurtala, Jata Jagendrapu, Paschim Jata, Sankargheri	Mathurapur-II	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Manipulation in plant physiological behavior through hormonal application, establishment of carp& catfish hatchery through ARYA project.
Kaorakhali, Jalaberia, Purba Gabtala, Jamtala, Kripakhali, Kirtankhola, Gopalgunj, Koabati	Kultali	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in vegetable cultivation Manipulation in plant physiological behavior through hormonal application

Name of village	Block	Action taken for development
Uttar Ballavpur, Gabberia, Ramlochanpur	Mandirbazar	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Haripur, Lakshmikantapur	Magrahat-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Tangrachor, Harin khola	Kulpi	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Herambagopalpur, Bhagabatpur, Bahirchak, Kamdebpur, Lakshmi Janardhanpur, Kuyemuri, Achintanagar	Pathar Pratima	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in betel vine cultivation
Dakshin Haradhanpur, Khansaheb abad, Rudranagar, Kirttankhali	Sagar	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in betel vine cultivation
Andinagar, Ramtanunagar, Chakdulalpur, Belpukur, Khasmahal, Sitarampur, Shivkalinagar, Mayahauri, Debipur, Bhubaneswari, Purba & Madhya Gurguria, Kishorimonpur, Baikunthapur,Binodpur, Moipith, Kaikhali, Gopalgang, Dakshin Garankati, Sankijahan, Kantamari, Madhavpur, Deulbari, Dakshin Durgapur, Madhusudanpur	Kulpi, Kakdwip, Joynagar-II & Kultali	Conducted Cluster Front Line Demonstration on oilseed and Pulses; IWMP project work to the SHG & UG members. Training programme for SHG Income generation. Gender mentioning through SHG members.
Bongheri	Kultali	Demonstration of climate resilient agro technologies, plant protection measures, composting, livestock development, custom hiring centre, biopesticide preparation, micro irrigation.
Golbunia, Mahatopara, Kharihat abad, Khawrakhali, Nolkora, Kanmari, Bamangheri, Majhersarberia, Patharghata, Sankdaha, Mondalpara Daspara, Hindupara, Putimari, Jhonjhania Cherakhali, Ghoshpur, Nityaberia, Nemaimore, Collegemore, Chotoshera, Bholakhlai, Borosehera, Singpara, Majherpara, Puratan Sarberia, Taltala, Mothbari, Bastibari Kalimandir, Gazikhali, 10 no. Kanmari, Bawnia, Akhratala, 8 no. Bawnia, 6no. Bawnia, Mondalpara, Janapara, Radhanagar, Adibasipara, Dighirpar, Uttarkhariahat, Agarhati, Sekhpara, Kulapara, Kalabagan, Gazalia, Dhaknamari, Bhatidaha, Handapara, Bazpara, Ghatihara	Sandeshkhali -I	Overall development of animal husbandry through mobile veterinary clinic and fodder development programme through ARD, GoWB
Araibanki	Canning I	Establishment of freshwater prawn hatchery through ARYA project.

Name of village	Block	Action taken for development
Bantra, Karabeg, Sastitala, Bahru, Chaltaberia, Gabberia, Dhosa	Joynagar-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Bakultala, Sonatikari, Nalgora, Taltala, Baishata, Ghoserchak, Gopalnagar, Sahajadapur, Mollarchak, Hanarbati, Manirtat, Dosra Bhagabanpur, Thakurchak	Joynagar-II	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Nalua, Nayabad Rajpur, Sarat Nagar, Purba Ranaghata	Mathurapur-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Baribhanga abad, Choddorashmi, Kashinagar, Chapla, Pakurtala, Jata Jagendrapu, Paschim Jata	Mathurapur-II	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Manipulation in plant physiological behavior through hormonal application
Kaorakhali, Jalaberia, Purba Gabtala, Jamtala, Kripakhali, Kirtankhola, Gopalgunj, Koabati	Kultali	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in vegetable cultivation Manipulation in plant physiological behavior through hormonal application
Uttar Ballavpur, Gabberia, Ramlochanpur	Mandirbazar	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Haripur, Lakshmikantapur	Magrahat-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Tangrachor, Harin khola	Kulpi	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Herambagopalpur, Bhagabatpur, Bahirchak, Kamdebpur, Lakshmi Janardhanpur, Kuyemuri, Achintanagar	Pathar Pratima	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in betel vine cultivation
Dakshin Haradhanpur, Khansaheb abad, Rudranagar, Kirttankhali	Sagar	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in betel vine cultivation

2.1Priority thrust areas

Priority thrust areas

S. No	Thrust area
1	Assimilation of good agri-horticultural practices
2	Providing quality seed, breed, bio-agents and planting materials
3	Diversification of existing production system
4	Efficient utilization of water resources
5	Soil health management
6	Popularization of small tools and implements for drudgery reduction
7	Improvement of backyard system performance
8	Widening of livelihood options and improvement of women led vocation through SHG
9	Attaining food &nutrition security at household level
10	Post-harvest management of crops
11	Development of marketing channel
12	Introduction of poly house concept for off season vegetable cultivation
13	Proper feed supplementation for fish & animal farming
14	Alternative livelihood generation through Animal husbandry activity
15	Promotion of Artificial insemination
16	Providing animal health care service
17	Attracting and retaining youth in agriculture and allied activities
18	Promotion of Climate Resilient Agricultural Practices
19	Promotion of Insecticide Resistance Management
20	Promotion of Integrated Pest Management
21	Promotion of Biological control of pest and diseases
22	Promotion of on-farm mass production of *Trichoderma*
23	Promotion of Beekeeping as alternate livelihood opportunity
24	Proper feed supplementation for animal farming
25	Awareness generation of the farmers associated with animal husbandry practices
26	Doubling farmers income through animal husbandry and fishery activities
27	Augmentation of milk production through good animal husbandry practices
28	Promotion of fodder cultivation
29	Augmenting agricultural productivity through creation of irrigation facility
30	Augmenting horticultural production through creation of upland by Land Shaping & Land Embankment
31	Risk minimization in horticultural production system through adoption of climate smart technologies & perennial crops
32	Augmenting agricultural production through adoption of soil test based correctional interventions and fertilizer application

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievement of mandatory activities by KVK during the year

OFT												FLD											
No. of technologies tested:												No. of technologies demonstrated:											
Number of OFTs		Number of farmers										Number of FLDs		Number of farmers									
Target	Achievement	Target	Achievement									Target	Achieve-ment	Target	Achievement								
			SC		ST		Others		Total						SC		ST		Others		Total		
			M	F	M	F	M	F	M	F	T				M	F	M	F	M	F	M	F	T
10	9	100	32	9	-	-	48	14	80	23	103	**11**	**12**	**540**	**169**	**229**	**-**	**-**	**267**	**328**	**436**	**557**	**993**

Training												Extension activities											
Number of Courses		Number of Participants										Number of activities		Number of participants									
Target	Achiev-ement	Target	Achievement									Target	Achiev-ement	Target	Achievement								
			SC		ST		Others		Total						SC		ST		Others		Total		
			M	F	M	F	M	F	M	F	T				M	F	M	F	M	F	M	F	T
80	119	3876	1189	429	70	60	1644	610	2886	1142	4028	3143	4434	15664	30740	13032	2225	927	69693	7698	102658	21657	125065

Impact of capacity building											Impact of Extension activities										
Number of Participants trained		Number of Trainees got employment (self/ wage/ entrepreneur/ engaged as skilled manpower)									Number of Participants attended		Number of participants got employment (self/ wage/ entrepreneur/ engaged as skilled manpower)								
Target	Achieve-ment	SC		ST		Others		Total			Target	Achievement	SC		ST		Others		Total		
		M	F	M	F	M	F	M	F	T			M	F	M	F	M	F	M	F	T
380	474	119	13	-		154	39	273	52	325	15664	125065	**102**	37	8	1	478	117	588	155	743

Seed production (q)		Planting material (in Lakh)	
Target	Achievement	Target	Achievement
100	73	1.25	1.93

Livestock strains and fish fingerlings produced (in lakh)*		Soil, water, plant, manures samples tested (in lakh)	
Target	Achievement	Target	Achievement
1.5	Katla, Rohu, Mrigal, Bata, Kalbasu, Silver carp, Grass carp, Java punti, Common carp - 19,75,000 Climbing perch - 1,65,000 Asian catfish - 85,000 Ornamental fish - 9,200	0.015	0.01031

* Give no. only in case of fish fingerlings

Publication by KVKs							
Item	Number	No. circulated	No. of Research papers in NAAS rated Journals	Highest NAAS rating of any publication	Average NAAS rating of the publications	Details of awarded publication, if any	Details of Award given to the publication
Research paper	2	21	2	6.5	5.8	Nil	Nil
Seminar/conference/ symposia papers	5						
Books	1	43					
Bulletins	3	198					
News letter							
Popular Articles	2	64					
Book Chapter							
Extension Pamphlets/ literature	5	317					
Technical reports*	81						
Electronic Publication (CD/DVD etc)	1						
TOTAL	100	643	2				

*Technical report=> 12(MVC)+7(NICRA)+5(AICRP HB & P)+4(DAESI)+2(ARYA)+2(RKVY)+4(Oilseed Seed Hub)+24(IWMP 6&7)+2(CFLD)+2(AR, AP)+12(MPR, PMO,AE-MPR)+1(ISO)+4(Others**)

**Others (Doubling of farmers income technology,Most impactful technologies received from NARS during last 10 years,Strategic plan in Agriculture and allied sectors for doubling farmers income of South 24 Parganas District, Case study of WBADMIP.)

Achievements on technologies assessed and refined

OFT-1

Rabi-Summer(2018-19)

1.	Title of On farm Trial	Assessment of weed control efficiency of different weedicides in Greengram during Summer season in South 24 Parganas district
2.	Problem diagnosed	Low productivity of greemgram due to weed infestation
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**Farmers Practice (FP):**Sowing of Greengram (var. IPM-2-3) through broadcast method along with $N:P_2O_5:K_2O$ @ 20:40:20 kg/ha **Technology Option-1:**Sowing of Greengram(var.IPM-02-14)through broadcast method along with $N:P_2O_5:K_2O$ @ 20:40:20 kg/ha and use of Pendimethalin 30 EC @ 1.0 kg a.i. ha^{-1} at 2DA **Technology Option-2:** Sowing of Greengram (var. IPM-02-14) through broadcast method along with $N:P_2O_5:K_2O$ @ 20:40:20 kg/ha and use of Imazethapyr 10% SL @ 80gm a.i. ha^{-1} at 16 DAS **Technology Option-3:** Sowing of Greengram (var. IPM-02-14) through broadcast method along with $N:P_2O_5:K_2O$ @ 20:40:20 kg/ha and use of Pendimethalin 30 EC+Imazethapyr 2EC @ 1.00 kg a.i. ha-1 at 2DAS
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	**Tamang, D.; Nath, R.; Sengupta, K. (2015)** Effect of Herbicide Application on Weed Management in Green Gram [Vigna radiata (L.); Adv Crop Sci Tech 3:163 **Narendra Kumar, K.K. Hazra and N. Nadarajan (2014)** Efficacy of post- emergence application of Imazethapyr in summer mungbean (Vigna radiata L.), Legume Research, 39 (1) 2016: 96-100
5.	Production system and thematic area	Weed Management
6.	Performance of the Technology with performance indicators	This was the 1st year experiment. Unfortunately, heavy rain (361 mm) for 5 days at seedling stage damaged the crop. Thus, no data could be recorded.
7.	Final recommendation for micro level situation	Final recommendation will be given after two years of observation.
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land.

Thematic area: Weed Management

Problem definition:
Greengram is cultivated through broadcast method by utilizing soil residual moisture in medium to low land. During the crop growth period, the predominant weeds viz. *Digitaria sanguinalis, Cynodon dactylon, Eleusine indica, Echinochloa colona*; grasses viz. *Cyperus rotundus* ; and sedges and broad leaf weeds viz. *Chenopodium album, Euphorbia hirta* etc. covers the field. As a result, these weeds reduces the crop growth and yield.

Technology assessed:

Farmers Practice (FP): Sowing of Greengram (var. IPM-2-3) through broadcast method along with N:P_2O_5:K_2O @ 20:40:20 kg/ha
Technology Option-1: Sowing of Greengram(var.IPM-02-14)through broadcast method along with N:P_2O_5:K_2O @ 20:40:20 kg/ha and use of Pendimethalin 30 EC @ 1.0 kg a.i. ha^{-1} at 2DAS
Technology Option-2: Sowing of Greengram (var. IPM-02-14) through broadcast method along with N:P_2O_5:K_2O @ 20:40:20 kg/ha and use of Imazethapyr 10% SL @ 80gm a.i. ha^{-1} at 16 DAS
Technology Option-3: Sowing of Greengram (var. IPM-02-14) through broadcast method along with N:P_2O_5:K_2O @ 20:40:20 kg/ha and use of Pendimethalin 30 EC+Imazethapyr 2EC @ 1.00 kg a.i. ha-1 at 2DAS
Results:

Treatment	**No. of trials**	No. of Grain/pod	No. of harvested pod/plant	Test wt.(g)	Grain yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	15	This was the 1st year experiment. Unfortunately, heavy rain (361 mm) for 5 days at seedling stage damaged the crop. Thus, no data could be recorded							
Technology Option-1									
Technology Option -2									
Technology Option -3									
SEm ±		-	-	-	-	-	-	-	-
CD(0.05)		-	-	-	-	-	-	-	-

OFT-2
2019-20,*Kharif* season

1.	Title of On farm Trial	Assessment of the profitability of paddy variety under medium land situation(1 to 1.5 ft water stagnation) during *kharif* in South 24 Parganas district
2.	Problem diagnosed	Low productivity of paddy due to water logging in growth stage
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**Farmers Practice (FP):**Transplanting of paddy var. Pratikshya with $N:P_2O_5:K_2O$ @80:40:40 kg/ha **Technology option-I (TO-I):**Transplanting of paddy var. Ciherang Sub-1(Bina Dhan-11) with $N:P_2O_5:K_2O$ @ 80:40:40 kg/ha **Technology option-II (TO-II):**Transplanting of paddy var. CR-1009 Sub-1 with $N:P_2O_5:K_2O$ @ 80:40:40 kg/ha
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	**Vivek Kumar, Priyanka Anand, and Ashok Kumar :**Flood-tolerant BINA Dhan 11 impresses rice farmers in Odisha, IRRI, News Media, **Thursday, June 2, 2016**
5.	Production system and thematic area	Rice-Rice, Productivity enhancement technology
6.	Performance of the Technology with performance indicators	*The data is given below
7.	Final recommendation for micro level situation	It is the first year experiment, after 2-3 years observations the final recommendation will be given. In the first year observation, it wasobserved that the both variety. CR-1009 Sub-1 and Ciherang Sub-1(Bina Dhan-11) were performed better than the variety Pratikshya. However, the higher seed yield was recorded in CR-1009 Sub-1. But it is 10-12 days late variety than other two varieties.
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land.

Thematic area: Varietal replacement

Problem definition:
The paddy var. Pratikshya or Sabita is grown in medium land situation (1 to 1.5 ft water stagnation). In this land situation where drainage facility is not good, occasionally, heavy shower during transplanting to tillering stage causes submergence and also reduces crop yield.

Technology assessed:

Farmers Practice (FP): Transplanting of paddy var. Pratikshya with $N:P_2O_5:K_2O$ @80:40:40 kg/ha

Technology option-I (TO-I): Transplanting of paddy var. Ciherang Sub-1(Bina Dhan-11) with $N:P_2O_5:K_2O$ @ 80:40:40 kg/ha

Technology option-I I(TO-II): Transplanting of paddy var. CR-1009 Sub-1 with $N:P_2O_5:K_2O$ @ 80:40:40 kg/ha

Technology option	No. of trials	Yield component			Disease/ insect pest incidence (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		No. of effective tillers/hill	No. of spikelet per panicle	Test wt. (100 grain wt.)						
Farmers Practice (FP)	7	7	10	1.90	Non infested	35.42	38150	51088	12938	1.34
Technology option-I (TO-I)		8	11	2.0	Non infested	36.50	38150	52600	14450	1.38
Technology option-I I(TO-II)		9	12	2.16	Brown spot infestation was recorded during grain filling stage	38.22	38150	55008	16858	1.44
SEm	-	0.36	0.35	0.04	-	0.42	-	-	-	-
CD (P=0.05)	-	NS	NS	NS	-	0.88	-	-	-	-

Results:

Result reveals that the both variety. CR-1009 Sub-1 and Ciherang Sub-1(Bina Dhan-11) were performed better than the variety Pratikshya. However, the seed yield, net return and cost-benefit ratio were recorded higher in CR-1009 Sub-1. But it is 10-12 days late variety than other two varieties.

Farmers Practice

Tech. Option-I

Tech. Option-II

OFT-3

1.	Title of On farm Trial	Assessment of application of non-traditional plant growth regulators on plant growth, disease resistance and yield of Chilli in the South 24 Parganas district
2.	Problem diagnosed	Low productivity of chilli due to biotic and abiotic stresses
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	• **Farmers' Practice**: Chilli cultivation in conventional method with use of traditional plant growth promoters like amino acid, humic acid, micro nutrients etc. • **Technology Option -1:** Farmers' Practice +seed soaking with Cycocel (Chloremequat Chloride)@ 50 ppm for 24 hrs • **Technology Option -2**: Farmers' Practice + spraying Cycocel (Chloremequat Chloride)@ 500 ppm at 20 DAS & 40 DAS.
4.	Source of Technology	• MAJOR USES OF PESTICIDES Registered under the Insecticides Act, 1968 2009; Government of India Ministry of Agriculture Department of Agriculture & Cooperation Directorate of Plant Protection, Quarantine & Storage Central Insecticide Board & Registration Committee N.H. IV, Faridabad-121 001 • Kaddi S.G. Gollagi, S.M. Hiremath and M.B. Chetti. (2009). Effects of growth regulator and nutrients on growth parameters and yield in chilli cv. BYADAGI. *International Journal of Agricultural Science.s***5** (1): 123-125

5.	Production system and thematic area	Horticulture based production system Thematic area: Production technology
6.	Performance of the Technology with performance indicators	*
7.	Final recommendation for micro level situation	Both Technology Option -1 & 2 performed better over farmers' practice with respect to yield, net return & BC ratio. As the testing is done only for one season, so it should have to be repeated for another year to come to final recommendation stage.
8.	Constraints identified and feedback for research	NA
9.	Process of farmers participation and their reaction	Farmers were involved in participatory approach. They are satisfied with the testing and very much enthusiastic about the findings.

* Performance of the Technology with performance indicators

Treatment	Plant Height (cm) (at 90 DAS)	Days to 50% Flowering	No. of fruits /plant	Pests & disease Incidence (10 point scale)	Yield (Q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	63.3	54.6	135.4	7	42.4	62100.00	127200	65100	2.05
Tech. Option-1	58.7	48.9	157.6	4	49.6	62500.00	148800	86300	2.38
Tech. Option -2	60.1	47.8	155.3	4	47.3	64300.00	141900	77600	2.21
CD(0.05)	1.63	2.31	3.42	-	1.34	-	-	-	-

Thematic area: Yield increment in vegetable crop

Problem definition: Chilli is an important commercial crop of South 24 Parganas district. The crop faces different biotic and abiotic stresses like leaf curl disease, sucking pest problem, soil salinity and water stress during different stages of crop growth due to scarcity of irrigation water. These stresses adversely affect crop growth and yield.

In this backdrop, use of non-traditional plant growth regulators was conceptualized to improve crop resistance to biotic and abiotic stresses. Chloremequat Chloride is one such plant growth regulator, which is reported to have the property to improve crop resistance and there by increases crop yield.

Technology assessed:

- **Farmers' Practice**: Chilli cultivation in conventional method with use of traditional plant growth promoters like amino acid, humic acid, micro nutrients etc.
- **Technology Option -1:** Farmers' Practice +seed soaking with Cycocel (Chloremequat Chloride) @ 50 ppm for 24 hrs
- **Technology Option -2**: Farmers' Practice + spraying Cycocel (Chloremequat Chloride)@ 500 ppm at 20 DAS & 40 DAS.

Table:

Treatment	No. of trials	Yield component			Pests & disease Incidence (10 point scale)	Yield (Q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Plant Height (cm) (at 90 DAS)	Days to 50% Flowering	No. of fruits /plant						
Farmer's practice	27	63.3	54.6	135.4	7	42.4	62100.00	127200	65100	2.05
Tech. option-1	27	58.7	48.9	157.6	4	49.6	62500.00	148800	86300	2.38
Tech. option -2	27	60.1	47.8	155.3	4	47.3	64300.00	141900	77600	2.21
CD(0.05)	-	1.63	2.31	3.42	-	1.34	-	-	-	-

Results: Both Technology Option -1 & 2 performed better over farmers' practice with respect to yield, net return & BC ratio. It should have to be repeated for another year to come into final recommendation stage.

OFT-4

1.	Title of On farm Trial	Assessment of artificial pollination methods in cucurbits (Cucumber & bitter gourd) for better fruit setting and yield improvement in the South 24 Parganas district
2.	Problem diagnosed	Low productivity of cucurbits due to poor pollination
3.	Details of technologies selected for assessment	• **Farmers' Practice**: Use of synthetic auxin hormone for better fruit setting. • **Technology Option -1:** Spraying of pollen mixture (pollen of 300 – 500 number of fresh male flower + 15 g boron powder 20% + 25 g glucose + 10 lt water) upon freshly opened female flower in the morning (between 6 am to 8 am) @ 10 lt per 10 Decimal land area • **Technology Option -2**: Hand pollination by dropper (pollen of 50 fresh male flower + 1.5 g boron powder 20% + 2.5 g glucose – all in 1 liter water) upon freshly opened female flower in the morning (between 6 am to 8 am) @ 1-2 drop per flower. • **Technology Option -3**: Hand pollination with fresh male flower @ 1 male flower to 10 female flowers.
4.	Source of Technology	➢ R. Das, S.K. Mandal and T.K. Maity (2009). Insect Pollinators of Pointed Gourd and Effect of Different Artificial Methods of Pollination on Fruit Setting and Subsequent Development of Fruits. *Veg. Sci.* 36(3 Suppl.): 353-355. ➢ Fruit Set Problems in Squash, Melons, and Cucumbers In Home Gardens, Vegetable Research and Information Center,Cooperative Extension, Division of Agricultural Sciences, University of California, Leaflet 21242
5.	Production system and thematic area	Horticulture based production system Pollination Management
6.	Performance of the Technology with performance indicators	*
7.	Final recommendation for micro level situation	Both Technology Option -1, 2 & 3 performed better over farmers' practice. However, Technology Option – 1 & 2 were superior over other treatments with respect to yield, net return & BC ratio. As the testing is done only for one season, so it should have to be repeated for another year to come into final recommendation stage.

8.	Constraints identified and feedback for research	NA
9.	Process of farmers participation and their reaction	Farmers were involved in participatory approach. They are satisfied with the testing and very much enthusiastic about the findings.

*Performance of the Technology with performance indicators

Treatment	Fruit set percentage	Avg. Marketable yield (g/plant)	Avg. weight of unmarketable fruit (g/plant)	Marketable Yield (Q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	75.6	1770.6	340.8	71.4	38900	82110	43210	2.11
Tech. Option-1	87.9	2190.3	75.4	89.8	44800	103270	58470	2.31
Tech. Option -2	90.1	2310.4	55.1	93.5	48300	107525	59225	2.23
Tech. Option -3	84.2	2060.7	80.6	82.7	46200	95105	48905	2.06

Thematic area: Pollination management in vegetable crop

Problem definition: Cucumber & bitter gourd are two important cucurbits grown in South 24 Parganas district in vast areas almost round the year. Being monoecious in nature, the pollination and fruit set in Cucurbits are dependent on insect pollinators (like bee). Decrease in bee population in crop field is a common problem due to various reasons (like indiscriminate use of pesticides in crop field, different environmental hazards like high wind, heavy rainfall etc. and better & attractive source of pollen & nectar for the bees in Sundarban mangrove forests).

About 30 to 37% yield loss in cucurbits occur due to poor pollination & fruit set. Artificial pollination can improve this section of crop yield. In this perspective, three different technological options of artificial pollination were tested to find out best low-cost artificial pollination solution for cucurbit crops.

Technology assessed:

- **Farmers' Practice**: Use of synthetic auxin hormone for better fruit setting.
- **Technology Option -1:** Spraying of pollen mixture (pollen of 300 – 500 number of fresh male flower + 15 g boron powder 20% + 25 g glucose + 10 lt water) upon freshly opened female flower in the morning (between 6 am to 8 am) @ 10 lt per 10 Decimal land area
- **Technology Option -2**: Hand pollination by dropper (pollen of 50 fresh male flower + 1.5 g boron powder 20% + 2.5 g glucose – all in 1 liter water) upon freshly opened female flower in the morning (between 6 am to 8 am) @ 1-2 drop per flower.
- **Technology Option -3**: Hand pollination with fresh male flower @ 1 male flower to 10 female flowers.

Table:

Treatment	No. of trials	Yield component			Marketable Yield (Q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Fruit set percentage	Avg. Marketable yield (g/plant)	Avg. weight of unmarketable fruit (g/plant)					
Farmer's practice	10	75.6	1770.6	340.8	71.4	38900	82110	43210	2.11
Tech. Option-1	10	87.9	2190.3	75.4	89.8	44800	103270	58470	2.31
Tech. Option -2	10	90.1	2310.4	55.1	93.5	48300	107525	59225	2.23
Tech. Option -3	10	84.2	2060.7	80.6	82.7	46200	95105	48905	2.06

Results: Both Technology Option -1, 2 & 3 performed better over farmers' practice. However, Technology Option – 1 & 2 were superior over other treatments with respect to yield, net return & BC ratio. When the crop area is large, then T.O.-1 is more acceptable; T.O.-2 is acceptable and applicable only when the crop area is small.

OFT-5

1.	Title of On farm Trial	Assessment of different farming management practices for Pekin duck to augment production and to reduce drudgery of womenfolk of South 24 Parganas district
2.	Problem diagnose	Low productivity of broiler pekin duck due to improper farming.
3.	Details of technologies selected for assessment/refinement	**Farmers' Practice:** Used to stock 50-60 numbers of ducks and maintain in semi-intensive type of farming where they used to keep the birds for 8 hours in free system. Rest of the time the birds are kept in house and provided with concentrate feed. In the free system a beak level depth water structure are provided. **Technology Option-1:**Complete intensive farming is followed where the birds will not be allowed to roam in the free range system**.** **Technology Option-2:** 1 hour in free range system is allowed in the morning during cleaning of the house **Technology Option-3:** 4 hours free range system is allowed ; 2 hours in the morning and 2 hours in the evening
4.	Source of Technology	Pekin duck (*Anasdomesticus*) farming in Mataram district of Lombok Indonesia: prospects and problems,B. Indarsih, M. Ichsan and M. H. Tamzil, Livestock Research for Rural Development 28 (10) 2016
5.	Production system and thematic area	Livestock based production system, poultry farming
6.	Performance of the Technology with performance indicators	Feed consumed per duck per week, body weight gain (FCR), dressing percentage, BC ratio, hours involved for management
7.	Final recommendation for micro level situation	4 hours free range system (2 hours at morning and 2 hours at evening) provided best result in terms of body weight gain with good dressing percentage.
8.	Constraints identified and feedback for research	Nil
9.	Process of farmers participation and their reaction	The trial has been set following problem identification by the farmers.

Thematic area: Production management

Problem definition: Yield from broiler pekin duck farming varied in different farmers plot with respect to body weight gain. Gradation of the meat was thus difficult leading to problem in marketing.

Technology assessed:

Farmers' Practice: Used to stock 50-60 numbers of ducks and maintain in semi-intensive type of farming where they used to keep the birds for 8 hours in free system. Rest of the time the birds are kept in house and provided with concentrate feed. In the free system a beak level depth water structure are provided.
Technology Option-1: Complete intensive farming is followed where the birds will not be allowed to roam in the free range system**.**
Technology Option-2: 1 hour in free range system is allowed in the morning during cleaning of the house
Technology Option-3: 4 hours free range system is allowed; 2 hours in the morning and 2 hours in the evening

Group	**Indicators of performance**			
	Average Feed consumed per duck per week(0-60 days)	Body weight gain (FCR)	Dressing percentage	BC ratio
Farmers' practice	125	1.2	57.5	1.98
Technology Option-1	145	1.4	60.5	1.95
Technology Option-2	135	1.5	60.0	2.00
Technology Option-3	150	1.6	65.5	2.10

Group	**Indicators of performance**				
	Hours involved for management	Avg. Pulse rate (/minute)*	Avg. Heart rate (/minute)	Angel of deviation	Cortisol (µg/dl)
Farmers' practice	11	105	105	50	18.5
Technology Option-1	6	95	95	50	13.6
Technology Option-2	4	90	90	50	12.5
Technology Option-3	2	80	80	50	12.0

Results: Complete intensive farming of broiler duck provides better benefit to the farmersalong with reducing drudgery during management practices

OFT-6

1.	Title of On farm Trial	Assessment of efficacy of different in-breeding depression reducing technology in black Bengal goat maintained by different members of women SHG groups of South 24 Parganas
2.	Problem diagnose	Low productivity in goat due to inbreeding depression
3.	Details of technologies selected for assessment/refinement	**Farmers' practice:** In normal village condition, farmers used to keep few numbers of goats with one or two buck in flock. The same buck is being used year after year for breeding with successive progenies**.** This leads to inbreeding depressionwhich not only affects the health of the kids but also the future performances.Use of the samebuckinthe village area, to breed other local goats, seriously affects the health condition of the buck. As a result the performance of the male animal also decreases gradually. Inbreeding depression affect on the health of the kids but also the future performances. Mostly it is done individually instead of group activity in SHG. **Technology Option 1:**Exchange of bucks among the 3 different SHG groups **Technology Option 2:** Goats will be inseminated by pure black Bengal semen byArtificial Insemination process
4.	Source of Technology	NDRI, Kalyani
5.	Production system and thematic area	Livestock based production system, goat farming
6.	Performance of the Technology with performance indicators	Disease incidence, Body weight of kid at the time of birth, Litter size , Kidding interval, Skin lusterness, BC ratio, Knowledge Index
7.	Final recommendation for micro level situation	Final recommendation can only be given after 3 years of study
8.	Constraints identified and feedback for research	Awareness on Artificial Insemination for Goat is still is not achieved And many taboos like weak kid, less kid due to AI is prevailing. Thus progressive farmers must be incorporated for this purpose of study.
9.	Process of farmers participation and their reaction	The trial has been set following problem identification by the farmers

Thematic area: Production management

Problem definition: Unscientific breeding practice of goats in field level results in inbreeding depression which in turn causes reduced performance, less vigor, diminished productive and reproductive performances.

Technology assessed:

Farmers' practice: In normal village condition, farmers used to keep few numbers of goats with one or two buck in flock. The same buck is being used year after year for breeding purpose**.** Use of same buck inthe village area to breed the local goats seriously affects on the health condition of the buck. As a result the performance of the male animal decreases gradually. Inbreeding depression not only affects the health of the kids but also their future performances

Technology Option 1: Exchange of bucks among the 3 different SHG groups

Technology Option 2: Goats will be inseminated by pure black Bengal semen by Artificial Insemination process

	Disease incidence in the flock (%)	Average Body weight of kid at the time of birth(Kg)	Litter size	Kidding interval(months)	Skin lusterness (10 point scale)	**BC ratio**	**Knowledge Index**
FP	35.5	0.34	1.2	3.8	7.1	1.23	3
TO-1	22.0	0.61	2.1	3.5	7.8	1.45	7
TO-2	22.0	0.65	2.2	3.1	8.0	1.98	7

Results: Insemination by pure black Bengal semen through Artificial Insemination process helps to promote better farming and reduce the inbreeding depression.

OFT- 7

<table>
<tr><td>1.</td><td>Title of On farm Trial</td><td>Assessment of profitability of Betelvine (Piper betle) cultivation through management of collar rot (Sclerotium rolfsii) diseaseby application of home produced Trichoderma sp. in the coastal South 24 Parganas</td></tr>
<tr><td>2.</td><td>Problem diagnosed</td><td>Low productivity of Betelvine due to fungal collar rot</td></tr>
<tr><td>3.</td><td>Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)</td><td>Farmer practice: Soil drenching with copper oxy-chloride @ 4g/L + Need based foliar spray of Carbendazim + Mancozeb @ 2g/L

Technology Option 1: Soil treatment with Taglife (market available product of Trichoderma harzianum)@ 10 kg/ha + soil drench with Taglife@ 5g/L at 30 days interval + foliar spray with Taglife@ 5g/L at 30 days interval

Technology Option 2: Soil treatment with home producedTrichoderma harzianum @ 10 kg/ha + soil drench with home producedTrichoderma harzianum @ 5g/L at 30 days interval + foliar spray with home producedTrichoderma harzianum @ 5g/L at 30 days interval</td></tr>
<tr><td>4.</td><td>Source of Technology (ICAR/ AICRP/SAU/other, please specify)</td><td>1. National Institute of Plant Health Management (NIPHM), Hyderabad: On-farm Mass Production of Trichoderma, Plant Health News Letter, Vol 4, Issue 2, April-June, 2014.
2. RAKVK, Nimpith: Project report on “On-farm mass production of microbial pesticides”, RKVY funded project, 2015-16
3. Brahmankar, S. B., Dange, N. R. and Tathod, D. G. (2011). Integrated management of betel vine wilt in Vidarbha, International Journal of Plant Protection, 4(1): 146-147</td></tr>
<tr><td>5.</td><td>Production system and Thematic area</td><td>Horticulture based production system
Integrated Disease Management</td></tr>
<tr><td>6.</td><td>Performance of the Technology with performance indicators</td><td>
<table>
<tr><th>Technology option</th><th>Disease incidence (% of wilted plants)</th><th>Yield (lakh leaves/ha)</th><th>Cost of cultivation (Rs. in lakh/ha)</th><th>Gross return (Rs. in lakh/ha)</th><th>Net return (Rs. in lakh/ha)</th><th>BC ratio</th></tr>
<tr><td>FP</td><td>18.7</td><td>21.96</td><td>1960000</td><td>3074400</td><td>1114400</td><td>1.57</td></tr>
<tr><td>TO-1</td><td>6.9</td><td>26.07</td><td>1805000</td><td>3649800</td><td>1844800</td><td>2.02</td></tr>
<tr><td>TO-2</td><td>4.7</td><td>28.3</td><td>1780000</td><td>3962000</td><td>2182000</td><td>2.23</td></tr>
</table>
</td></tr>
<tr><td>7.</td><td>Final recommendation for micro level situation</td><td>Local strains of Trichoderma can be mass multiplied by the farmers themselves and used effectively for management of Collar Rot disease of betel vine (caused by Sclerotium rolfsii)</td></tr>
<tr><td>8.</td><td>Constraints identified and feedback for research</td><td>• Maintenance of the culture
• Use of high dose of chemical fertilizers and fungicides at close interval</td></tr>
<tr><td>9.</td><td>Process of farmers participation and their reaction</td><td>The participants for this trial were identified through a group meeting followed by training on the particular technology. This was followed by regular field visit and monitoring. Considering the past history of the disease incidence and severity in the village, both the beneficiaries as well as the non-beneficiaries took interest in the trial. The OFT was well managed by the beneficiaries themselves.</td></tr>
</table>

Thematic area: Integrated Disease Management

Problem definition: Betel Vine (*Piper betle* L.) is an important cash crop of the coastal saline zone under South 24 Parganas district of West Bengal. The moist, humid and shady microclimate offered to this perennial vine for its optimum growth also invites a series of aerial and soil borne pathogens. *Sclerotium rolfsii* is such a devastating soil borne fungal pathogen, causing collar rot disease in betelvine. Dasgupta *et. al.* (2000) reported 30-100% crop loss in West Bengal due to *S. rolfsii* infestation. The symptom starts as darkening of the stem at the foot of the plant near ground level. The leaves soon turn yellow, become flacid and drop off. Whole vine ultimately wilts and dries up. White, ropy, fan-shaped mycelial strands creeps over the stern portion, developing small light brown to dark-brown sclerotia on the infected portion. The fungi survives in the soil through these sclerotia. Maiti and Sen (1982) reported that sclerotia survived 225 days under 50% moisture level in natural soil. Hence, chemical control of this soil borne pathogen is very difficult as well as impractical.Besides, the cost of chemical pesticides is also very high. Betel leaves, as chewed raw, can also pose threat to our health if chemical pesticides are used indiscriminately.

Technology assessed:

Considering all these, biological control approach was selected to manage the disease. The potential for the use of fungal antagonists as bio-control agents of plant diseases was suggested more than 85 years ago by Weindling (1932), who was the first to report the parasitic activity of *Trichoderma spp*. against *Rhizoctonia solani* and *S. rolfsii*.

In the present trial, two source of *Trichoderma harzianum* were used to compare their relative efficacy against the farmers practice. The talc formulation of *Trichoderma harzianum* available in the local market (trade name: Taglife, Manufactured and marketed by Tropical Agrosystem India Pvt. Ltd.) was used as Technology option – 1. On the other hand, KVK isolated native strain of *Trichoderma harzianum* was mass multiplied by the farmers themselves with the help of KVK demonstrated low cost technology and used as **Technology option – 2.**

Farmer practice: Soil drenching with copper oxy-chloride @ 4g/L + Need based foliar spray of Carbendazim + Mancozeb @ 2g/L

Technology Option 1: Soil treatment with Taglife (market available product of *Trichoderma harzianum)*@ 10 kg/ha + soil drench with Taglife@ 5g/L at 30 days interval + foliar spray with Taglife@ 5g/L at 30 days interval

Technology Option 2: Soil treatment with **home produced***Trichoderma harzianum* @ 10 kg/ha + soil drench with **home produced***Trichoderma harzianum* @ 5g/L at 30 days interval + foliar spray with **home produced***Trichoderma harzianum* @ 5g/L at 30 days interval

Table:

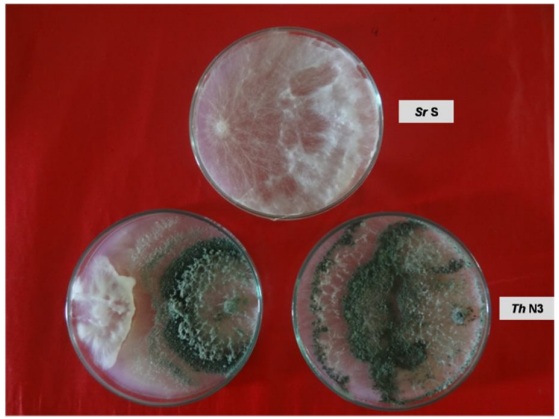
Technology option	No. of trials	Disease incidence (% of wilted plants)	Yield (lakh leaves/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	10	18.7[a] (25.62)*	21.96[a]	1960000	3074400	1114400	1.57
Technology Option – 1		6.9[b] (15.23)	26.07[b]	1805000	3649800	1844800	2.02
Technology Option – 2		4.7[c] (12.52)	28.3[c]	1780000	3962000	2182000	2.23
CD (P=0.05)		1.34	1.52				
SEM (±)		0.45	0.51				

**data in parenthesis are angular transformed data*

[abc]*The mean difference between the treatment data are statistically significant at 5% level*

Results:

Treatment with *Trichoderma* in both the technological options provided better protection to the crop over the farmers practice. But the yield was more in technology option-2. This may be due to some growth promoting effect of the native strain of the *Trichoderma*, used in the technology option-2. Also the cost of cultivation was less in technology option-2, as the *Trichoderma* was prepared by the farmers themselves, involving least expenditure in plant protection. The benefit-cost ratio was highest in this option (technology option-2).



OFT-8

1.	Title of On farm Trial	**Assessment of the profitability by introducing amur carp (*Cyprinus carpio haematopterus*)as a candidate species in polyculture system of freshwater ponds of South 24 Parganas district**
2.	Problem diagnosed	Low profitability from common carp as a candidate species.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Assessment **Farmers Practice:** Polyculture of Indian Major Carps & Exotic Carps in freshwater ponds with usual package of practice, viz. Pond preparation: Organic manure @10,000kg/ha, lime@ 400kg/ha, mahua oil cake@250ppm, Stocking of carps in 3:3:4 model @ 10000 no./ha (Total 4000 no. of mrigal and common carp as bottom feeder), Post stocking management: Monthly organic manuring with cow dung @1000kg/ha, lime@30kg/ha, daily application of supplementary feed prepared from locally available ingredients once daily @ 3% body weight, monthly netting **Technology Option-1:** F.P (3:3:1) + Total 3000 no. of amur carp as bottom feeder **Technology Option-2:** F.P. (3:3:0) + Total 4000 no. of only amur carp as bottom feeder
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Verma, Ashok Kumar. (2013). Growth performance of Amur carp. (https://www.researchgate.net/publication/257947592_Growth_performance_of_Amur_carp)
5.	Production system and thematic area	Fish based production system, composite fish culture
6.	Performance of the Technology with performance indicators	pH, weight of fish, yield, survivality, BC ratio
7.	Final recommendation for micro level situation	Will be continued for another year. After that recommendation will be given
8.	Constraints identified and feedback for research	Unseasonal rain has led to overflowing of ponds for which total harvesting of these bottom feeders was not possible from all the ponds.
9.	Process of farmers participation and their reaction	In participatory mode and satisfied with the new species

Thematic area: composite fish culture

Problem definition: Thoughcommon carp is an important species in freshwater fish culture, the robust belly of the fish makes it less preferable to the consumers. Hence, a suitable alternative of this fish with same benefits may lead to increased profitability.

Technology assessed:

Farmers Practice: Polyculture of Indian Major Carps & Exotic Carps in freshwater ponds with usual package of practice, viz. Pond preparation: Organic manure @10,000kg/ha, lime@ 400kg/ha, mahua oil cake@250ppm, Stocking of carps in 3:3:4 model @ 10000 no./ha (Total 4000 no. of mrigal and common carp as bottom feeder), Post stocking management: Monthly organic manuring with cow dung @1000kg/ha, lime@30kg/ha, daily application of supplementary feed prepared from locally available ingredients once daily @ 3% body weight, monthly netting

Technology Option-1: F.P (3:3:1) + Total 3000 no. of amur carp as bottom feeder

Technology Option-2: F.P. (3:3:0) + Total 4000 no. of only amur carp as bottom feeder

Technology option	**No. of trials**	**Unit area (ha)**	**Survivality (%)**	**Yield (q/ha)**	Additional yield	**Cost of cultivation (Rs./ha)**	**Gross return (Rs/ha)**	**Net return (Rs./ha)**	**BC ratio**
Farmers practice	7	0.065	72.0	1442.0	-	1,35,000.00	216300.00	81300.00	1.60
Technology Option 1		0.065	71.5	1011 + 729.3 =1740.3	298.3	1,22,000.00	261000.00	139000.00	2.14
Technology Option 2		0.065	71.0	875 + 965.6 =1840.6	398.6	117000.00	276000.00	159000.00	2.36

OFT-9

1.	Title of On farm Trial	Assessment of the profitability of amur carp (*Cyprinus carpio haematopterus*) in monoculture system of freshwater ponds of South 24 Parganas district
2.	Problem diagnosed	Low profitability from conventional carp culture
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Assessment **Farmers Practice:** Polyculture of Indian Major Carps & Exotic Carps in freshwater ponds with usual package of practice, viz. Pond preparation: Organic manure @10,000kg/ha, lime@ 400kg/ha, mahua oil cake@250ppm, Stocking of carps @ 10000 no./ha (Total 3000 no. of mrigal and common carp as bottom feeder), Post stocking management: Monthly organic manuring with cow dung @1000kg/ha, lime@30kg/ha, daily application of supplementary feed prepared from locally available ingredients once daily @ 3% body weight, monthly netting **Technology Option-1**: Monoculture of amur carp fingerlings @ 10000nos/ha **Technology Option-2 :** Monoculture of amur carp fingerlings @ 15000nos/ha
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Amur carp variety no small fry for aquaculturists, The Hindu (http://www.thehindu.com/todays-paper/tp-features/tp-sci-tech-and-agri/amur-carp-variety-no-small-fry-for-aquaculturists/article2267446.ece)
5.	Production system and thematic area	Fish based production system, composite fish culture
6.	Performance of the Technology with performance indicators	pH, weight of fish, yield, survivality, BC ratio
7.	Final recommendation for micro level situation	Will be continued for another year. After that recommendation will be given
8.	Constraints identified and feedback for research	Unseasonal rain has led to overflowing of ponds for which total harvesting of these bottom feeders was not possible from all the ponds.
9.	Process of farmers participation and their reaction	In participatory mode and satisfied with the new species

Thematic area: composite fish culture

Problem definition: Low profitability from conventional carp culture

Technology assessed:

Farmers Practice: Polyculture of Indian Major Carps & Exotic Carps in freshwater ponds with usual package of practice, viz. Pond preparation: Organic manure @10,000kg/ha, lime@ 400kg/ha, mahua oil cake@250ppm, Stocking of carps @ 10000 no./ha (Total 4000 no. of mrigal and common carp as bottom feeder), Post stocking management: Monthly organic manuring with cow dung @1000kg/ha, lime@30kg/ha, daily application of supplementary feed prepared from locally available ingredients once daily @ 3% body weight, monthly netting

Technology Option-1: Monoculture of amur carp fingerlings @ 10000nos/ha

Technology Option-2: Monoculture of amur carp fingerlings @ 15000nos/ha

Technology option	No. of trials	Unit area (ha)	Survivality (%)	Yield (q/ha)	Additional yield	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers practice	7	0.065	70.5	1350	-	1,32,000.00	202500.00	70500.00	1.53
Technology Option - 1		0.065	71.0	1775	298.3	1,11,500.00	266250.00	154750.00	2.38
Technology Option - 2		0.065	71.5	2608	398.6	165250.00	391000.00	225750.00	2.37

3.2 Achievements of Frontline Demonstrations

A. Details of FLDs conducted during the year

Cereals

Sl. No.	Crop	Thematic area	Technology Demonstrated with detailed treatments	Area (ha)		No. of farmers/ demonstration									Reasons for shortfall in achievement
				Proposed	Actual	SC		ST		Others		Total			
						M	F	M	F	M	F	M	F	T	
1.	Paddy	Productivity enhancement through varietal replacement	i)Variety-CR Dhan- 401 (Reeta) ii)Seed treatment with *Trichoderma viride* and *Pseudomonas fluorescens* iii)One time foliar spray and foliar spray with chelated zinc	5.0	7.5	1	2	0	0	55	0	56	2	58	Nil

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil (Kg/ha)			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P_2O_5	K_2O					
Paddy	Kharif	Irrigated	Loam	238.4	41.7	273.5	Greengram	15.07.2019	11.12.19	1842.7	39

Performance of FLD

Oilseeds:

Frontline demonstrations on oilseed crops

Crop	Thematic Area	Name of the technology demonstrated	No. of Farmers	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Total															

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

Pulses

Frontline demonstration on pulse crops

Crop	Thematic Area	Name of the technology demonstrated	No. of Farmers	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
	Total														

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

Other crops

Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	Area (ha)	Yield (q/ha)		% change in yield	Other parameters			*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demonst-ration	Check		parameters	Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Cucurbits (Bitter Gourd)		1. Conventional bitter gourd cultivation as per recommended package of practice. 2. Spray of plant growth promoter Ethrel @ 200 ppm (39.5% SL @ 0.5 ml/lt) at 2 and 4 true leaf stage.	20	1.	18.6	15.2	22.37	Days to 50% flowering	39.2	46.7	88200	192600	104400	2.18	85400	156200	70800	1.83
								First node of female flower appearance	11.3	14.2								
								Female : Male flower ratio	4.1:10	3.3:10								
Tomato		1. Seedling raising in 98 hole Plug tray 2. Transplanting at correct stage of seedling (25 DAS) with minimum or no root injury	36	2.1	53.8	46.9	10.82	Days to 50% flowering	47.2	55.8	76800	161400	84600	2.10	72100	140700	68600	1.95
								Incidence of nematode (10 point scale)	1.3	2.9								
								Incidence of bacterial wilt (10 point scale)	1.1	3.2								
Kharif paddy	Productivity enhancement through varietal replacement	i)Variety-CR Dhan-401 (Reeta) ii)Seed treatment with Trichoderma viride and Pseudomonas fluorescens iii)One time foliar spray and foliar spray with chelated zinc	58	7.5	37.85	34.20 (Var. Pratikshya)	10.67	i) Resistance to blast ii)No. of effective tillers/hill-11 iii)1000 seed wt(g)-22.31	i) Resistance to blast ii)No. of effective tillers/hill-9 iii)1000 seed wt(g)-19.4		39000	54490	15490	1.40	37500	49380	11880	1.32
		Total																




Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil (Kg/ha)			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P_2O_5	K_2O					
Cucurbits	Rabi	Partially irrigated	Clay loam	286.5	32.7	583.4	Fallow	03.04.19	26.07.19	452	10
Tomato	Rabi	Partially irrigated	Clay loam	315.5	39.4	455.2	Bitter gourd	13.09.18	19.02.19	345	19

Other crops

Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	Area (ha)	Yield (q/ha)		% change in yield	Other parameters			Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demo	Check		Parameters	Demo	Check	Gross Cost	Gross Return	Net Return	BCR	Gross Cost	Gross Return	Net Return	BCR
Paddy (completed in Nov 2019)	IPM & INM	System of Assured Rice Production (SARP) • Variety: Santoshi • 3-3.5 kg seed in 5 decimal seedbed for transplanting in 1 acre • Seed treatment in Zinc Sulphate solution, *Trichoderma harzianum* and *Pseudomonas fluorescens* • 200 kg organic manure, N: 500g, P: 2 kg, Borax: 200g, Zinc sulphate: 500g in nursery • Transplanting delayed up to 60 days • Need based spraying with Neem oil • Spraying of Pseudomonas fluorescens in cow dung extract	11	1.5	27.3	21	30%	No. of effective tillers/hill	14-16	10-12	27,450	46,410	18,960	1.69	25,875	35,700	9,825	1.38
								No. of grains per panicle	103.25	98.64								
								Test wt (g)	20.23	19.83								
								Stem rot/ root rot at nursery bed	8.6 %	1.4%								
								BLB	6.9 %	1.55 %								
								Sheath blight	1.8 %	1.6%								
								False smut	2.4 %	0.3%								
								YSB	3.85 %	1.28 %								
Chilli (completed in	Integrated Pest Manage	**Management of Chilli leaf curl disease**	25	1	109	76	43.42 %	Thrips (no./twig)	0.22	0.89	184500	545000	360500	2.95	178500	380000	201500	2.13

Feb 2019)	ment (IPM)	(Seed treatment with Thiamethoxam and *Trichoderma*, seedling dip in Imidacloprid, mosquito net covered seedbed, need based spraying with neem oil, fipronil and difenthiuron, other operations same as farmers field)						Yellow mite (no./leaf)	0.28	4.28							
								Whitefly (no./leaf)	0.44	1.67							
								Leaf curl (PDI)	7.5	36.5							
Bitter gourd (completed in Sept 2019)	Biological control	Management of bacterial wilt (Soil treatment with Bleaching powder, seed treatment with *Pseudomonas fluorescens*, soil amelioration with *P. fluorescens* mixed compost, soil drenching with *P. fluorescens*)	50	2	327.5	263.8	24.15 %	Wilting (PDI)	3.15	19.46	212800	687200	474400	3.23	210300	555800	345500	2.64

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil (Kg/ha)			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P_2O_5	K_2O					
Paddy	Kharif	RF	Clay loam	138.4	51.6	427.8	Fallow	Sowing: 24th June, 2019 Transplanting: 16th August, 2019	15th November, 2019	872	46
Chilli	Rabi - Summer	Irrigated	Clay loam	169.5	47.8	501.5	*Kharif* paddy	Sowing: 3rd week of September, 2018 Transplanting: 1st week of November 2018	February, 2018	160	15
Bittergourd	Kharif	Irrigated	Clay loam	171.8	45.4	489.2	*Chilli*	1st week of June, 2018	September, 2018	982	68

FLD on IPM in Chilli

Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters		% change in major parameter	Other parameter		*Economics of demonstration (Rs.)				*Economics of check (Rs.)			
					Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Dairy																	
Cow																	
Buffalo																	
Poultry	Poultry management	Kadaknath poultry	20	20	Kadaknath	Desi poultry birds	-	-	-	4000.00 (20 bird unit)	8500.00	4500.00	1.89	2500.00	4200.00	1700.00	1.68
Rabbitry																	
Pigerry																	
Sheep and goat																	
Duckery																	
Others (pl.specify)																	
Total																	

* Economics to be worked out based on total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

Fisheries

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters			% change in major parameter	Other parameter		*Economics of demonstration (Rs.)				*Economics of check (Rs.)			
					Parameters	Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Common carps	Composite fish culture	Culture of Jayanti rohu in freshwater ponds of South 24 Parganas	40	40 (0.06 ha pond)	Avg. body weight (g)	450	400	12.5%	-	-	26800	40500	13700	1.51	25770	34800	9030	1.35
					Survivability (%)	60	58	2%										
					Yield (kg/0.06 ha)	270	232	16.4%										
Mussels																		
Ornamental fishes																		
Others (pl.specify)																		
		Total																

* Economics to be worked out based on total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

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			
				Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Oyster mushroom	Enterprise development															
Vermicompost																
Sericulture																
Apiculture																
Bio-compost	Use of Waste Decomposer (Microbial Consortium) for quick composting	100	100	Time to composting: **44 days**	Time to composting: **116 days**	62%	N: 0.95% P: 0.51% K: 0.8% N: 0.5%	P: 0.27% K: 0.81%	1020	6600	5580	6.47	1000	3200	2200	3.20
							Total microbe: 2.8 x 10^{12}	Total microbe: 1.0 x 10^{12}								
	Total															

* Economics to be worked out based on total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

FLD on Waste Decomposer

Women empowerment

Category	Name of technology	No. of demonstrations	Observations			Remarks
			Parameters	Demonstration	Check	
Farm Women	Linking Agriculture and Natural resource with Nutrition	75	i) Minimum Diet diversity Score	6.8	3.4	Improved dietary diversity helps to improve the nutritional status of family members specially among women and children.
			ii)No of malnourished children attending ICDS with the participation of mother	123	75	
			iii)No of Moderately acute malnourished children move to normal children	94	56	
			iv)Promotion of nutrition garden(%)	89	46	
			v)Family level crop planning at backyard	Leafy vegetables(5-6 types) , protein rich vegetables-bean, board bean, cow pea, other vegetables	Leafy vegetables (1-2 types), other vegetables	
			vi)Other initiatives	Oyster mushroom , paddy straw mushroom cultivation , composting through natural resource management.	Nil	Improved skill of the farm women helps to increase income in sustainable way.
				Linking SHG with ATMA for doubling of farmers income through adoption of sustainable	Nil	Initiated convergence of programmes help the farm women to avail the benefit of different programmes to increase their production and income

				technology (Support with agril input) Upscaling of LANN programme in different blocks of Joynagar II through NRLM		
Farm women	Health benefits of introducing vitamin A rich Kamala Sundari variety of sweet potato in homestead land(0.02 ha)	500	Availability of vitamin A rich leafy vegetables in daily diet of a family (gm) Availability of vitamin A rich roots in daily diet of a family (gm)	500 800	200 nil	Increased intake of vitamin A helps in prevention of night blindness and xeropthalmia
Pregnant women						
Adolescent Girl						
Other women						
Children						
Neonatal						
Infants						

Farm implements and machinery

Name of the implement	Crop	Name of the technology demonstrated	No. of Farmer	Area (ha)	Filed observation (output/man hour)		% change in major parameter	Labor reduction (man days)				Cost reduction (Rs./ha or Rs./Unit)			
					Demonstration	Check									

*** Economics to be worked out based on total cost of production per unit area and not on critical inputs alone.**

**** BCR= GROSS RETURN/GROSS COST**

Demonstration details on crop hybrids

Crop	Name of the Hybrid	No. of farmers	Area (ha)	Yield (kg/ha) / major parameter			Economics (Rs./ha)			
Cereals				Demo	Local check	% change	Gross Cost	Gross Return	Net Return	BCR
Bajra										
Maize										
Paddy										
Sorghum										
Wheat										
Others (Pl.specify)										
Total										
Oilseeds										
Castor										
Mustard										
Safflower										
Sesame										
Sunflower	KBSH-53	3970	500	1380	1124	22.8				
Groundnut										
Soybean										
Others (Pl.specify)										
Total										
Pulses										
Greengram										
Blackgram										
Bengalgram										
Redgram										
Others (Pl.specify)										
Total										

Crop	Name of the Hybrid	No. of farmers	Area (ha)	Yield (kg/ha) / major parameter			Economics (Rs./ha)			
Cereals				Demo	Local check	% change	Gross Cost	Gross Return	Net Return	BCR
Vegetable crops										
Bottle gourd										
Chilli	Tejaswini	247	18.5	12910	10670	20.9	76800	161400	84600	2.10
Capsicum										
Cucumber										
Tomato	Deb	311	21.8	59460	47380	25.5	86900	171600	84700	1.98
Brinjal										
Okra	Raadhika	371	23.4	18120	14930	21.4	72100	140700	68600	1.95
Onion										
Potato										
Field bean										
Others (Pl.specify)										
Total										
Commercial crops										
Cotton										
Coconut										
Others (Pl.specify)										
Total										
Fodder crops										
Napier (Fodder)										
Maize (Fodder)										
Sorghum (Fodder)										
Others (Pl.specify)										
Total										

Technical Feedback on the demonstrated technologies

Sl. No	Crop	Feed Back
1.	Kadaknath poultry	Lucrative farming
2.	AI in goat	Sustainaible technology
3.	Broiler duck farming	Profitable farming
4.	Kharif paddy	The variety CR-401 is more productive and non lodging and also resistance to blast disease
5.	Paddy (SARP)	Yield of paddy is not reduced even after prolonged dry spell at the time of nursery raising and transplanting
6.	Bitter gourd (Bacterial wilt)	Incidence of wilt is very less in demonstration plots
7.	Chilli (Leaf curl)	Cost of cultivation has been reduced due to use of mosquito net in seed bed
8	Bio-compost	Time of composting reduced to less than 2 months

Extension and Training activities under FLD

Sl.No.	Activity	Date	No. of activities organized	Number of participants	Remarks
1.	Field days	02.12.2019	1	32	Field day was organized on FLD Paddy (Var CR-401)
2.	Field days	01.03.19, 09.07.19	2	37 & 26	Field day was organized on the said dates respectively for Tomato & Cucurbit with participation of village level extension workers, progressive farmers & other farmers attached with respective crops.
3.	Farmers Training				
		06.06.2019 & 21.06.2019	2	14 & 25	SARP
		08.07.2019	1	58	FLD Paddy (Var CR-401)

Performance of the demonstration under CFLD on Pulse and Oilseed Crops during Kharif2019 and Rabi 2019:

Technical Parameters:

Sl. No.	Crop demonstrated	Existing (Farmer's) variety name	Existing yield (q/ha)	Yield gap (Kg/ha) w.r.to			Name of Variety + Technology demonstrated	Number of farmers	Area in ha	Yield obtained (q/ha)			Yield gap minimized (%)		
				District yield (D)	State yield (S)	Potential yield (P)				Max.	Min.	Av.	D	S	P
1	Lentil	B-77	-	-	575	1500	i) Variety- Moitree (WBL-77) ii) *Rhizobium , Trichoderma viride* @ Pseudomonus@1.5 kg/ha each as seed inoculation	50	10.0	The crop has been demonstrated in Kulpi blocks, but, the crop was totally damaged due to consecutive rain (43 mm) for 3 days i.e. on 27th Dec.,19 followed by 3rd& 4th Jan., 20 at seedling stage.					

B. Economic parameters

Sl. No.	Variety demonstrated & Technology demonstrated	Farmer's Existing plot				Demonstration plot			
		Gross Cost (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs/ha)	B:C ratio	Gross Cost (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs/ha)	B:C ratio
1	i) Variety- Moitree (WBL-77) *ii)Rhizobium , Trichoderma viride* @ Pseudomonus@1.5 kg/ha each as seed inoculation	Not been calculated as the crop was damaged due to heavy rain							

C. Socio-economic impact parameters

Sl. No.	Crop and variety Demonstrated	Total Produce Obtained (kg)	Produce sold (Kg/household)	Selling Rate (Rs/Kg)	Produce used for own sowing (Kg)	Produce distributed to other farmers (Kg)	Purpose for which income gained was utilized	Employment Generated (Mandays/house hold)
1	Lentil, Var. Moitree(WBL-77)	Not been recorded as the crop was damaged						

D. Oilseed Farmers' perception of the intervention demonstrated

Sl. No.	Technologies demonstrated (with name)	Farmers' Perception parameters					
		Suitability to their farming system	Likings (Preference)	Affordability	Any negative effect	Is Technology acceptable to all in the group/village	Suggestions, for change/improvement, if any
1	i)Variety- Moitree (WBL-77) *ii)Rhizobium , Trichoderma viride* @ Pseudomonus@1.5 kg/ha each as seed inoculation	Not been recorded as the crop was damaged					

E. Specific Characteristics of Technology and Performance

Specific Characteristic	Performance	Performance of Technology vis-a vis Local Check	Farmers Feedback
Variety- Moitree (WBL-77)	Not been recorded as the crop was damaged		
Rhizobium , Trichoderma viride @ Pseudomonus@1.5 kg/ha each as seed inoculation	Not been recorded as the crop was damaged		

F. Extension activities under FLD conducted:

Sl. No.	Extension Activities organized	Date and place of activity	Number of farmer attended
1	Training under CFLD-Pulse(Lentil)	07.12.19	50

G. Sequential good quality photographs (as per crop stages i.e. growth & development)

H. Farmers' training photographs

I. Quality ActionPhotographs of field visits/field days and technology demonstrated.

J. Details of budget utilization

Crop (provide crop wise information)	Items	Budget Received (Rs.)	Budget Utilization (Rs.)	Balance (Rs.)
Lentil	i) Critical input	81000.00	88500.00	100.00
	ii) TA/DA/POL etc. for monitoring	3000.00	1400.00	
	iii) Extension Activities (Field day)	2500.00	-	
	iv)Publication of literature	2500.00	-	
	v) Contingencies	1000.00	-	
	Total	90000.00	89900.00	100.00

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

A) Farmers and farm women (on campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
I. Crop Production													
Weed Management													
Resource Conservation Technologies	1	20	5	25	14	1	15	2	0	2	36	6	42
Cropping Systems													
Crop Diversification													
Integrated Farming	1	11	9	20	4	10	14	2	1	3	17	20	37
Water management													
Seed production	1	16	10	26	1	1	2	8	4	12	25	15	40
Nursery management													
Integrated Crop Management	3	51	6	57	14	13	27	2	0	2	67	19	86
Fodder production													
Production of organic inputs													
Others, (cultivation of crops)													
II. Horticulture													
a) Vegetable Crops													
Integrated nutrient management	1	19	0	19	19	16	35	0	0	0	38	16	54
Water management	1	5	0	5	9	0	9	7	0	7	21	0	21
Enterprise development													
Skill development													
Yield increment													
Production of low volume and high value crops	1	11	0	11	15	0	15	0	0	0	26	0	26
Off-season vegetables													
Nursery raising	1	0	0	0	15	0	15	0	0	0	15	0	15
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others, if any (physiological disorders of vegetables including pollination problem & their management)	1	4	13	17	5	0	5	0	0	0	9	13	22
b) Fruits													
Layout and Management of Orchards	1	20	0	20	0	0	0	0	0	0	20	0	20
Cultivation of Fruit	1	3	0	3	22	0	22	0	0	0	25	0	25
Management of young plants/orchards													
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards													
Plant propagation techniques													
Others, if any(INM)													
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others, if any													
d) Plantation crops													
Production and Management													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
technology													
Processing and value addition													
Others, if any													
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others, if any													
f) Spices													
Production and Management technology													
Processing and value addition													
Others, if any													
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others, if any													
III. Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation													
Integrated Nutrient Management	5	41	3	44	51	5	56	2	1	3	94	9	103
Production and use of organic inputs													
Management of Problematic soils													
Micro nutrient deficiency in crops													
Nutrient Use Efficiency													
Soil and Water Testing													
Others, if any													
IV. Livestock Production and Management													
Dairy Management	1	2	13	15	5	8	13	0	0	0	7	21	28
Poultry Management	1	33	1	34	7	0	7	1	0	1	41	1	42
Piggery Management													
Rabbit Management													
Disease Management													
Feed management													
Production of quality animal products													
Others, Goat farming / Livelihood through animal husbandry (ornamental bird rearing)	2	42	1	43	43	1	44	0	0	0	85	2	87
Scientific feeding and disease management of small ruminants													
Health management of backyard poultry and duck													
Integrated farming													
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening													
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet	1	0	42	42	0	0	0	0	16	16	0	58	58
Minimization of nutrient loss in													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
processing													
Gender mainstreaming through SHGs													
Storage loss minimization techniques	4	0	67	67	21	13	34	0	0	0	21	80	101
Enterprise development													
Value addition													
Income generation activities for empowerment of rural Women	1	0	32	32	0	0	0	0	19	19	0	51	51
Location specific drudgery reduction technologies													
Rural Crafts													
Capacity building													
Women and child care													
Others, if any	2	21	31	52	0	11	11	0	0	0	21	42	63
VI.Agril. Engineering													
Installation and maintenance of micro irrigation systems													
Use of Plastics in farming practices													
Production of small tools and implements													
Repair and maintenance of farm machinery and implements													
Small scale processing and value addition													
Post Harvest Technology													
Others, if any													
VII. Plant Protection													
Integrated Pest Management	2	17	10	27	12	2	14	7	6	13	36	18	54
Integrated Disease Management													
Bio-control of pests and diseases	1	12	9	21	6	3	9	0	0	0	18	12	30
Production of bio control agents and bio pesticides													
Organic farming	1	4	2	6	9	5	14	0	1	1	13	8	21
Others, if any													
VIII. Fisheries													
Integrated fish farming	1	14	1	15	10	0	10	0	0	0	24	1	25
Carp breeding and hatchery management													
Carp fry and fingerling rearing													
Composite fish culture & fish disease													
Fish feed preparation & its application to fish pond, like nursery, rearing & stocking pond													
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes													
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others, if any													
Backyard system of breeding & culture of Asian catfish for increasing farmer's income	1	6	2	8	16	2	18	0	0	0	22	4	26

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Agri-Fisheries Training to the marginal fishermen of Sundarban Regions	3	86	2	88	61	1	62	0	0	0	147	3	150
Advanced aquaculture technologies for doubling farm income													
IX. Production of Inputs at site													
Seed Production													
Planting material production													
Bio-agents production													
Bio-pesticides production													
Bio-fertilizer production													
Vermi-compost production													
Organic manures production													
Production of fry and fingerlings													
Production of Bee-colonies and wax sheets													
Small tools and implements													
Production of livestock feed and fodder													
Production of Fish feed													
Others, if any													
X. Capacity Building and Group Dynamics													
Leadership development													
Group dynamics													
Formation and Management of SHGs													
Mobilization of social capital													
Entrepreneurial development of farmers/youths													
WTO and IPR issues													
Others, if any													
XI Agro-forestry													
Production technologies													
Nursery management													
Integrated Farming Systems													
XII. Others (Pl. Specify)													
TOTAL	**39**	**438**	**259**	**697**	**359**	**92**	**451**	**31**	**48**	**79**	**828**	**399**	**1227**

B) Rural Youth (on campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Mushroom Production	1	0	41	41	0	23	23	0	0	0	0	64	64
Bee-keeping	8	71	10	81	88	18	106	0	0	0	159	28	187
Integrated farming													
Seed production													
Production of organic inputs													
Integrated Farming													
Planting material production													
Vermi-culture													
Agri-clinic and agri-business													
Production of bio-control agents	1	8	3	11	12	2	14	0	0	0	20	5	25
Organic farming	1	11	0	11	9	0	9	0	0	0	20	0	20
Sericulture													
Protected cultivation of vegetable crops													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Commercial fruit production	1	20	0	20	12	0	12	0	0	0	32	0	32
Repair and maintenance of farm machinery and implements													
Nursery Management of Horticulture crops													
Training and pruning of orchards													
Value addition													
Production of quality animal products													
Dairying													
Sheep and goat rearing													
Rearing of small ruminants													
Goat rearing during quarantine period	1	0	29	29	3	12	15	0	1	1	3	42	45
Quail farming													
Piggery													
Rabbit farming													
Poultry production	1	2	14	16	2	10	12	0	1	1	4	25	29
AI Training	1	3	20	23	1	11	12	1	0	1	5	31	36
Ornamental fisheries													
Enterprise development													
Para vets													
Para extension workers													
Composite fish culture	5	81	46	127	39	12	51	1	2	2	121	60	181
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	18	0	18	12	0	12	0	0	0	30	0	30
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Others (Nutritional care)	1	0	22	22	0	8	8	0	0	0	0	30	30
Others (Coconut Grower – ASCI)	1	11	0	11	9	0	9	0	0	0	20	0	20
Any other (Seed production of Indiginous fishes)	2	50	0	50	41	0	41	1	0	1	92	0	92
TOTAL	**25**	**275**	**185**	**460**	**228**	**96**	**324**	**3**	**4**	**6**	**506**	**285**	**791**

C) Extension Personnel (on campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Productivity enhancement in field crops													
Value addition													
Integrated Pest Management	3	116	10	126	49	5	54	0	0	0	165	15	180
Integrated Nutrient management	1	33	0	33	7	0	7	0	0	0	40	0	40
Rejuvenation of old orchards													
Protected cultivation technology													
Formation and Management of SHGs													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Management in farm animals													
ASCAD													
Biotech Kishan	2	0	2	2	0	56	56	0	0	0	0	58	58
Livestock feed and fodder production													
Household food security													
Women and Child care													
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs													
Agri-clinic and agri-business													
Freshwater fish farming	1	14	0	14	2	0	2	0	0	0	16	0	16
Meen Mitra	1	0	16	16	0	9	9	0	0	0	0	25	25
Hi-tech Horticulture	1	7	0	7	7	0	7	0	0	0	14	0	14
TOTAL	**9**	**170**	**28**	**198**	**65**	**70**	**135**	**0**	**0**	**0**	**235**	**98**	**333**

D) Farmers and farm women (off campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
I. Crop Production													
Weed Management	1	0	0	0	21	1	22	0	0	0	21	1	22
Resource Conservation Technologies													
Cropping Systems													
Crop Diversification													
Integrated Farming													
Water management													
Seed production	1	38	3	41	0	1	1	0	0	0	38	4	42
Nursery management	1	27	3	30	0	0	0	0	0	0	27	3	30
Integrated Crop Management													
Fodder production													
Production of organic inputs	1	25	1	26	5	0	5	0	0	0	30	1	31
Others, (cultivation of crops)													
II. Horticulture													
a) Vegetable Crops													
Integrated nutrient management	1	14	10	24	17	3	20	0	0	0	31	13	44
Water management													
Enterprise development													
Skill development													
Yield increment	1	7	0	7	4	0	4	0	0	0	11	0	11
Production of low volume and high value crops													
Off-season vegetables	1	11	7	18	4	5	9	0	0	0	15	12	27
Nursery raising	1	22	1	23	7	0	7	0	0	0	29	1	30
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others, if any (physiological disorders of vegetables including pollination problem & their management)	1	4	2	6	23	12	35	6	8	14	33	22	55
Training and Pruning													
b) Fruits													
Layout and Management of Orchards													
Cultivation of Fruit	1	37	3	40	4	1	5	0	0	0	41	4	45
Management of young plants/orchards													
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards													
Plant propagation techniques													
Others, if any(INM)													
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others, if any													
d) Plantation crops													
Production and Management technology	1	35	0	35	5	0	5	0	0	0	40	0	40

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Processing and value addition													
Others, if any													
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others, if any													
f) Spices													
Production and Management technology													
Processing and value addition													
Others, if any													
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others, if any													
III. Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation													
Integrated Nutrient Management	2	6	1	7	53	6	59	0	0	0	59	7	66
Production and use of organic inputs	3	99	12	111	8	0	8	2	0	2	109	12	121
Management of Problematic soils													
Micro nutrient deficiency in crops	1	26	0	26	2	0	2	0	0	0	28	0	28
Nutrient Use Efficiency													
Soil and Water Testing	3	57	14	71	123	28	151	0	0	0	180	42	222
Others, if any													
IV. Livestock Production and Management													
Dairy Management													
Poultry Management													
Piggery Management													
Rabbit Management													
Disease Management													
Feed management													
Production of quality animal products													
Others, if any Goat farming													
Awareness on deworming, vaccination of animals with proper nutritional care and management including fodder cultivation													
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening													
Design and development of low/minimum cost diet													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Designing and development for high nutrient efficiency diet													
Minimization of nutrient loss in processing	1	20	0	20	0	9	9	0	0	0	20	9	29
Gender mainstreaming through SHGs													
Storage loss minimization techniques													
Enterprise development													
Value addition													
Income generation activities for empowerment of rural Women													
Location specific drudgery reduction technologies													
Rural Crafts													
Capacity building													
Women and child care													
Others, if any													
VI.Agril. Engineering													
Installation and maintenance of micro irrigation systems													
Use of Plastics in farming practices													
Production of small tools and implements													
Repair and maintenance of farm machinery and implements													
Small scale processing and value addition													
Post Harvest Technology													
Others, if any													
VII. Plant Protection													
Integrated Pest Management	4	62	3	65	38	27	65	0	0	0	100	30	130
Integrated Disease Management													
ITK													
Beekeeping	2	1	0	1	16	51	67	0	0	0	17	51	68
Organic farming													
Bio-control of pests and diseases													
Production of bio control agents and bio pesticides													
Climate resilient agriculture	3	3	0	3	71	23	94	0	0	0	74	23	97
Others, if any													
VIII. Fisheries													
Integrated fish farming													
Carp breeding and hatchery management													
Carp fry and fingerling rearing													
Fish feed preparation & its application to fish pond, like nursery, rearing & stocking pond													
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes													
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Fish and shrimp farming hazards-methods of diagnosis & prevention	**1**	**18**	**2**	**20**	**9**	**0**	**9**	**0**	**0**	**0**	**18**	**2**	**20**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others, if any (Methods of pond preparation for carp culture)	**1**	**11**	**5**	**16**	**8**	**0**	**8**	**0**	**0**	**0**	**11**	**5**	**16**
IX. Production of Inputs at site													
Seed Production	9	182	0	182	68	0	68	28	0	28	278	0	278
Planting material production													
Bio-agents production													
Bio-pesticides production													
Bio-fertilizer production													
Vermi-compost production													
Organic manures production													
Production of fry and fingerlings													
Production of Bee-colonies and wax sheets													
Small tools and implements													
Production of livestock feed and fodder													
Production of Fish feed													
Others, if any													
X. Capacity Building and Group Dynamics													
Leadership development													
Group dynamics													
Formation and Management of SHGs													
Mobilization of social capital													
Entrepreneurial development of farmers/youths													
WTO and IPR issues													
Others, if any													
XI Agro-forestry													
Production technologies													
Nursery management													
Integrated Farming Systems													
XII. Others (Pl. Specify)													
TOTAL	**41**	**705**	**67**	**772**	**486**	**167**	**653**	**36**	**8**	**44**	**1210**	**242**	**1452**

E) RURAL YOUTH (Off Campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Mushroom Production													
Bee-keeping													
Integrated farming													
Seed production													
Production of organic inputs													
Integrated Farming													
Planting material production													
Vermi-culture													
Sericulture													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Protected cultivation of plantation crops	2	38	3	41	42	9	51	0	0	0	80	12	92
Commercial fruit production	1	12	0	12	5	0	5	0	0	0	17	0	17
Repair and maintenance of farm machinery and implements													
Nursery Management of Horticulture crops													
Training and pruning of orchards													
Value addition													
Production of quality animal products													
Dairying													
Sheep and goat rearing													
Quail farming													
Piggery													
Rabbit farming													
Poultry production													
Ornamental fisheries													
Para vets													
Para extension workers													
Composite fish culture													
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing													
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Others, if any													
TOTAL	3	50	3	53	47	9	56	0	0	0	97	12	109

F) Extension Personnel (Off Campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Productivity enhancement in field crops													
Integrated Pest Management													
Integrated Nutrient management													
Rejuvenation of old orchards													
Protected cultivation technology													
Formation and Management of SHGs													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Management in farm animals													
Livestock feed and fodder production													
Household food security													
Women and Child care	1	0	44	44	0	26	26	0	0	0	0	70	70
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs	1	6	24	30	4	12	16	0	0	0	10	36	46
Crop intensification													
TOTAL	**2**	**6**	**68**	**74**	**4**	**38**	**42**	**0**	**0**	**0**	**10**	**106**	**116**

G) Consolidated table (ON and OFF Campus)

A) Farmers and farm women

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
I. Crop Production													
Weed Management	1	0	0	0	21	1	22	0	0	0	21	1	22
Resource Conservation Technologies	1	20	5	25	14	1	15	2	0	2	36	6	42
Cropping Systems													
Crop Diversification													
Integrated Farming	1	11	9	20	4	10	14	2	1	3	17	20	37
Water management													
Seed production	2	54	13	67	1	2	3	8	4	12	63	19	82
Nursery management	1	27	3	30	0	0	0	0	0	0	27	3	30
Integrated Crop Management	3	51	6	57	14	13	27	2	0	2	67	19	86
Fodder production													
Production of organic inputs	1	25	1	26	5	0	5	0	0	0	30	1	31
Others, (cultivation of crops)													
II. Horticulture													
a) Vegetable Crops													
Integrated nutrient management	2	33	10	43	36	19	55	0	0	0	69	29	98
Water management	1	5	0	5	9	0	9	7	0	7	21	0	21
Enterprise development													
Skill development													
Yield increment	1	7	0	7	4	0	4	0	0	0	11	0	11
Production of low volume and high value crops	1	11	0	11	15	0	15	0	0	0	26	0	26
Off-season vegetables	1	11	7	18	4	5	9	0	0	0	15	12	27
Nursery raising	2	22	1	23	22	0	22	0	0	0	44	1	45
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others, if any (physiological disorders of vegetables including pollination problem & their management)	2	8	15	23	28	12	40	6	8	14	42	35	77
b) Fruits													
Layout and Management of Orchards	1	20	0	20	0	0	0	0	0	0	20	0	20
Cultivation of Fruit	2	40	3	43	26	1	27	0	0	0	66	4	70
Management of young plants/orchards													
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards													
Plant propagation techniques													
Others, if any(INM)													
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others, if any													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
d) Plantation crops													
Production and Management technology	1	35	0	35	5	0	5	0	0	0	40	0	40
Processing and value addition													
Others, if any													
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others, if any													
f) Spices													
Production and Management technology													
Processing and value addition													
Others, if any													
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others, if any													
III. Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation													
Integrated Nutrient Management	7	47	4	51	104	11	115	2	1	3	153	16	169
Production and use of organic inputs	3	99	12	111	8	0	8	2	0	2	109	12	121
Management of Problematic soils													
Micro nutrient deficiency in crops	1	26	0	26	2	0	2	0	0	0	28	0	28
Nutrient Use Efficiency													
Soil and Water Testing	3	57	14	71	123	28	151	0	0	0	180	42	222
Others, if any													
IV. Livestock Production and Management													
Dairy Management	1	2	13	15	5	8	13	0	0	0	7	21	28
Poultry Management	1	33	1	34	7	0	7	1	0	1	41	1	42
Piggery Management													
Rabbit Management													
Disease Management													
Feed management													
Production of quality animal products													
Others, Goat farming / Livelihood through animal husbandry (ornamental bird rearing)	2	42	1	43	43	1	44	0	0	0	85	2	87
Scientific feeding and disease management of small ruminants													
Health management of backyard poultry and duck													
Integrated farming													
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening													
Design and development of													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
low/minimum cost diet													
Designing and development for high nutrient efficiency diet	1	0	42	42	0	0	0	0	16	16	0	58	58
Minimization of nutrient loss in processing	1	20	0	20	0	9	9	0	0	0	20	9	29
Gender mainstreaming through SHGs													
Storage loss minimization techniques	4	0	67	67	21	13	34	0	0	0	21	80	101
Enterprise development													
Value addition													
Income generation activities for empowerment of rural Women	1	0	32	32	0	0	0	0	19	19	0	51	51
Location specific drudgery reduction technologies													
Rural Crafts													
Capacity building													
Women and child care													
Others, if any	2	21	31	52	0	11	11	0	0	0	21	42	63
VI. Agril. Engineering													
Installation and maintenance of micro irrigation systems													
Use of Plastics in farming practices													
Production of small tools and implements													
Repair and maintenance of farm machinery and implements													
Small scale processing and value addition													
Post Harvest Technology													
Others, if any													
VII. Plant Protection													
Integrated Pest Management	6	79	13	92	50	29	79	7	6	13	136	48	184
Integrated Disease Management													
Bio-control of pests and diseases	1	12	9	21	6	3	9	0	0	0	18	12	30
Production of bio control agents and bio pesticides													
Organic farming	1	4	2	6	9	5	14	0	1	1	13	8	21
Others, if any													
Beekeeping	2	1	0	1	16	51	67	0	0	0	17	51	68
Climate resilient agriculture	3	3	0	3	71	23	94	0	0	0	74	23	97
VIII. Fisheries													
Integrated fish farming	1	14	1	15	10	0	10	0	0	0	24	1	25
Carp breeding and hatchery management													
Carp fry and fingerling rearing													
Composite fish culture & fish disease													
Fish feed preparation & its application to fish pond, like nursery, rearing & stocking pond													
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes													
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Pearl culture													
Fish processing and value addition													
Others, if any													
Backyard system of breeding & culture of Asian catfish for increasing farmer's income	1	6	2	8	16	2	18	0	0	0	22	4	26
Agri-Fisheries Training to the marginal fishermen of Sundarban Regions	3	86	2	88	61	1	62	0	0	0	147	3	150
Advanced aquaculture technologies for doubling farm income													
Fish and shrimp farming hazards-methods of diagnosis & prevention	1	18	2	20	9	0	9	0	0	0	18	2	20
Methods of pond preparation for carp culture	1	11	5	16	8	0	8	0	0	0	11	5	16
IX. Production of Inputs at site													
Seed Production	9	182	0	182	68	0	68	28	0	28	278	0	278
Planting material production													
Bio-agents production													
Bio-pesticides production													
Bio-fertilizer production													
Vermi-compost production													
Organic manures production													
Production of fry and fingerlings													
Production of Bee-colonies and wax sheets													
Small tools and implements													
Production of livestock feed and fodder													
Production of Fish feed													
Others, if any													
X. Capacity Building and Group Dynamics													
Leadership development													
Group dynamics													
Formation and Management of SHGs													
Mobilization of social capital													
Entrepreneurial development of farmers/youths													
WTO and IPR issues													
Others, if any													
XI Agro-forestry													
Production technologies													
Nursery management													
Integrated Farming Systems													
XII. Others (Pl. Specify)													
TOTAL	**80**	**1143**	**326**	**1469**	**845**	**259**	**1104**	**67**	**56**	**123**	**2038**	**641**	**2679**

B) Rural Youth

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Mushroom Production	1	0	41	41	0	23	23	0	0	0	0	64	64
Bee-keeping	8	71	10	81	88	18	106	0	0	0	159	28	187
Integrated farming													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Seed production													
Production of organic inputs													
Integrated Farming													
Planting material production													
Vermi-culture													
Agri-clinic and agri-business													
Production of bio-control agents	1	8	3	11	12	2	14	0	0	0	20	5	25
Organic farming	1	11	0	11	9	0	9	0	0	0	20	0	20
Sericulture													
Protected cultivation of vegetable crops													
Protected cultivation of plantation crops	2	38	3	41	42	9	51	0	0	0	80	12	92
Commercial fruit production	2	32	0	32	17	0	17	0	0	0	49	0	49
Repair and maintenance of farm machinery and implements													
Nursery Management of Horticulture crops													
Training and pruning of orchards													
Value addition													
Production of quality animal products													
Dairying													
Sheep and goat rearing													
Rearing of small ruminants													
Goat rearing during quarantine period	1	0	29	29	3	12	15	0	1	1	3	42	45
Quail farming													
Piggery													
Rabbit farming													
Poultry production	1	2	14	16	2	10	12	0	1	1	4	25	29
AI Training	1	3	20	23	1	11	12	1	0	1	5	31	36
Ornamental fisheries													
Enterprise development													
Para vets													
Para extension workers													
Composite fish culture	5	81	46	127	39	12	51	1	2	3	121	60	181
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	18	0	18	12	0	12	0	0	0	30	0	30

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Others (Nutritional care)	1	0	22	22	0	8	8	0	0	0	0	30	30
Others (Coconut Grower – ASCI)	1	11	0	11	9	0	9	0	0	0	20	0	20
Any other (Seed production of Indiginous fishes)	2	50	0	50	41	0	41	1	0	1	92	0	92
TOTAL	**28**	**325**	**188**	**513**	**275**	**105**	**380**	**3**	**4**	**7**	**603**	**297**	**900**

C) Extension Personnel

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Productivity enhancement in field crops													
Value addition													
Integrated Pest Management	3	116	10	126	49	5	54	0	0	0	165	15	180
Integrated Nutrient management	1	33	0	33	7	0	7	0	0	0	40	0	40
Rejuvenation of old orchards													
Protected cultivation technology													
Formation and Management of SHGs													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Management in farm animals													
ASCAD													
Biotech Kishan	2	0	2	2	0	56	56	0	0	0	0	58	58
Livestock feed and fodder production													
Household food security													
Women and Child care	1	0	44	44	0	26	26	0	0	0	0	70	70
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs	1	6	24	30	4	12	16	0	0	0	10	36	46
Agri-clinic and agri-business													
Freshwater fish farming	1	14	0	14	2	0	2	0	0	0	16	0	16
Meen Mitra	1	0	16	16	0	9	9	0	0	0	0	25	25
Hi-tech Horticulture	1	7	0	7	7	0	7	0	0	0	14	0	14
TOTAL	**11**	**176**	**96**	**272**	**69**	**108**	**177**	**0**	**0**	**0**	**245**	**204**	**449**

Please furnish the details of training programmes as Annexure in the proforma given below

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Agronomy	EP	Integrated nutrient management in boro paddy	4	On	40	0	40	7	0	7
	F & FW	Natural Resource Management	2	On	36	6	42	16	1	17
	F & FW	Integrated nutrient management in boro paddy	4	On	20	0	20	11	0	11
	F & FW	Integrated nutrient management in Greengram	4	Off	26	5	30	26	5	31
	F & FW	Improved technology on Pulse Production	4	On	14	9	23	6	6	12
	F & FW	Integrated Crop Management	4	On	35	10	45	7	7	14
	F & FW	Importance of soil testing and production of organic inputs	1	Off	30	1	31	5	0	5
	F & FW	Soil test based use of organic manures and bio-fertilizers in different crops	1	Off	21	12	33	1	0	1
	F & FW	Soil test based use of organic manures and bio-fertilizers in different crops	1	Off	23	0	23	2	0	2
	F & FW	Seed treatment with bio fungicides and nursery management of paddy	1	Off	27	3	30	0	0	0
	F & FW	Kharif paddy seed production	1	Off	38	4	42	0	1	1
	F & FW	Kharif paddy seed production	4	On	25	15	40	9	5	14
	F & FW	Integrated crop management	4	On	18	0	18	3	0	3
	F & FW	Integrated nutrient management in paddy	4	On	16	3	19	2	1	3
	F & FW	Integrated nutrient management in cereal, oilseed and pulse crops	4	On	20	0	20	13	0	13
	F & FW	Integrated nutrient management	2	On	17	6	23	13	5	18

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Agronomy	F & FW	Soil test based use of organic manures, bio-fertilizers in oilseed and pulse crops	4	On	21	0	21	14	0	14
	F & FW	Integrated farming	4	On	17	20	37	6	11	17
	F & FW	Weed management in kharif paddy	1	Off	21	1	22	21	1	22
	F & FW	Nutrient management in kharif paddy	1	Off	33	2	35	27	1	28
Horticulture	F & FW	Improved method of profitable fruit cultivation in Sundarban agro-climate	4	On	25	0	25	22	0	22
	F & FW	Nutrient management in vegetable farming with special emphasis to Sundarban Soil	4	On	38	16	54	19	16	35
	F & FW	Identification of different physiological disorders of vegetables including pollination problem & their management	4	On	9	13	22	5	0	5
	F & FW	Scientific methods of non-conventional vegetable cultivation for better profitability	4	On	26	0	26	15	0	15
	F & FW	Scientific methods of seedling raising for off-season tomato	4	On	15	0	15	15	0	15

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	F & FW	Establishment & management of fruit orchard for better climatic resilience	5	On	20	0	20	0	0	0
	F & FW	Importance, utility and mechanism of micro-irrigation in cultivation of fruits and vegetables	5	On	21	0	21	16	0	16
	F & FW	Production of enriched vermicompost	1	Off	65	0	65	7	0	7
	F & FW	Soil testing based crop nutrient management	1	Off	49	0	49	28	0	28
	F & FW	Soil testing based crop nutrient management	1	Off	67	26	93	45	16	61
	F & FW	Soil testing based crop nutrient management	1	Off	64	16	80	50	12	62
	F & FW	Nutrient management in vegetable farming with special emphasis to Sundarban Soil	1	Off	31	13	44	17	3	20
	F & FW	Micro nutrient deficiency in crops	1	Off	28	0	28	2	0	2
	F & FW	Scientific methods of seedling raising for off-season tomato cultivation on land embankment	1	Off	29	1	30	7	0	7

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	F & FW	Identification of different physiological disorders of vegetables including pollination problem & their management	1	Off	33	22	55	29	20	49
	F & FW	Cultivation of non traditional fruits for better profitability	1	Off	41	4	45	4	1	5
	F & FW	Profitable Beetle vine cultivation through bio-based nutrient management and hi-tech boroz	1	Off	40	0	40	5	0	5
	F & FW	Modification of sex expression in bitter gourd through ethylene application	1	Off	11	0	11	4	0	4
	F & FW	Improved methods of early winter Vegetable cultivation	1	Off	15	12	27	4	5	9
	F & FW	Hybrid Seed production – principles and procedure	1	Off	63	0	63	0	0	0
	F & FW	Hybrid Seed production – principles and procedure	1	Off	16	0	16	0	0	0
	F & FW	Hybrid Seed production – principles and procedure	1	Off	29	0	29	11	0	11

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	F & FW	Hybrid Seed production – principles and procedure	1	Off	28	0	28	21	0	21
	F & FW	Hybrid Seed production – principles and procedure	1	Off	36	0	36	12	0	12
	F & FW	Hybrid Seed production – principles and procedure	1	Off	23	0	23	0	0	0
	F & FW	Hybrid Seed production – principles and procedure	1	Off	32	0	32	15	0	15
	F & FW	Hybrid Seed production – principles and procedure	1	Off	17	0	17	3	0	3
	F & FW	Hybrid Seed production – principles and procedure	1	Off	34	0	34	34	0	34
	RY	Improved method of profitable fruit cultivation in the Sundarban region	6	On	12	0	12	32	0	32
	RY	ASCI-Coconut Grower	25	On	20	0	20	9	0	9
	RY	Entrepreneurs hip through Beetle vine cultivation in Climate smart hi-tech boroz	1	Off	26	0	26	7	0	7
	RY	Improved method of profitable fruit cultivation in the Sundarban region	1	Off	17	0	17	5	0	5

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	RY	Entrepreneurship through Beetle vine cultivation in Climate smart hi-tech boroz	1	Off	54	12	66	35	9	44
	EP	Technological advancement in horticultural production system	4	On	14	0	14	7	0	7
Fishery	F & FW	Breeding of Asian catfish in backyard hatcheries	4	On	22	4	26	16	2	18
	F & FW	Agri-fisheries training to the marginal fishermen of Sundarban region	3	On	48	2	50	10	1	11
	F & FW	Agri-fisheries training to the marginal fishermen of Sundarban region	3	On	49	1	50	13	0	13
	F & FW	Agri-fisheries training to the marginal fishermen of Sundarban region	3	On	50	0	50	38	0	38
	F & FW	Integrated fish farming for doubling farm income	4	On	24	1	25	10	0	10
	F& FW	Fish and shrimp farming hazards-methods of diagnosis & prevention	1	Off	18	2	20	9	0	9
	F& FW	Methods of pond preparation for carp culture	1	Off	11	5	16	8	0	8
	RY	Composite fish culture & fish disease	4	On	20	1	21	14	0	14
	RY	Composite fish culture	4	On	44	19	63	10	5	15
	RY	Composite fish culture	4	On	25	22	47	11	6	17
	RY	Fry and fingerling rearing	4	On	30	0	30	12	0	12
	RY	Seed production of Indiginous fishes	4	On	36	0	36	14	0	14

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Fishery	RY	Seed production of Indiginous fishes	4	On	56	0	56	28	0	28
	RY	Good aquculture practices in freshwater fish and prawn farming	4	On	19	10	29	3		3
	RY	Good aquculture practices in freshwater fish and prawn farming		On	13	8	21	2	3	5
	EP	Diversification in freshwater fish and prawn culture for doubling farm income	4	On	16	0	16	2	0	0
	EP	Meen Mitra	15	On	0	25	25	0	9	9
Animal Husbandry	RY	Management of Chicks brroding	5	On	4	25	29	2	11	13
	RY	Goat rearing	4	On	3	42	45	3	13	16
	F & FW	Goat farming	4	On	31	2	33	18	1	19
	RY	Dairy farming	4	On	7	21	28	5	8	13
	F & FW	Goat farming	4	On	54	1	55	25	0	25
	F & FW	Poultry & Duck training	4	On	41	1	42	8	1	9
	RY	AI training	4	On	5	31	36	2	11	13
	EP	Biotech Kisan	5	On	0	15	15	0	15	15
	EP	Biotech Kisan	5	On	0	43	43	0	43	43
Plant Protection	F & FW	Preparation and use of Cue Lure Trap for management of Fruit Fly in Vegetables	1	Off	4	26	30	4	24	28
	RY	On-farm mass production of biocontrol agents	4	On	20	5	25	12	2	14
	RY	Vermicompost Producer	25	On	20	0	20	9	0	9
	RY	Entrepreneurship development through Beekeeping and better crop production through improved pollination	4	On	17	4	21	6	3	9

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Plant Protection	F & FW	Integrated Pest Management in Summer Vegetables	1	Off	44	1	45	10	0	10
	F & FW	Beekeeping as an alternate livelihood option for Rural women	1	Off	1	41	42	0	41	41
	RY	Entrepreneurship development through Beekeeping and better crop production through improved pollination	4	On	16	4	20	10	4	14
	F & FW	Management of honeybees and other pollinators for improved crop production	1	Off	16	10	26	16	10	26
	F & FW	IPM and INM in System of Assured Rice Production (SARP)	1	On	12	2	14	12	2	14
	RY	Entrepreneurship development through Beekeeping and better crop production through improved pollination	4	On	25	1	26	13	1	14
	F & FW	IPM and INM in System of Assured Rice Production (SARP)	1	Off	22	3	25	22	3	25
	F & FW	Preparation and use of Pheromone traps in pest monitoring and IPM	4	On	24	16	40	7	6	13
	F & FW	Contingency planning for Kharif 2019	1	Off	15	5	20	15	5	20
	F & FW	Integrated pest and disease management in betelvine and vegetables	1	Off	30	0	30	2	0	2

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Plant Protection	F & FW	Conservation of water & its judicious use for sustainable development	1	Off	42	18	60	40	18	58
	EP	Anti-counterfeit and safe and judicious use of crop protection products	1	On	98	2	100	30	1	31
	F & FW	Organic plant protection measures in various crops	4	On	18	12	30	6	3	9
	F & FW	Integrated Farming System with special emphasis on Organic Farming	4	On	13	8	21	9	6	15
	F & FW	Post Cyclone (Bulbul) Contingency Planning for Rabi season	1	Off	17	0	17	16	0	16
	RY	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	On	26	0	26	26	0	26
	RY	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	On	9	1	10	2	1	3
	RY	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	On	29	0	29	6	0	6
	RY	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	On	13	8	21	1	0	1
	RY	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	On	24	10	34	24	9	33

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Plant Protection	EP	Diploma in Agricultural Extension Services for Input Dealers (DAESI) - Ninth batch	365	On	36	4	40	8	2	10
	EP	Diploma in Agricultural Extension Services for Input Dealers (DAESI) - Tenth batch	365	On	31	9	40	11	2	13
Home science	F & FW	Food processing and preservation for minimization of storage loss	4	On	0	25	25	0	6	6
	F & FW	Food processing and preservation for minimization of storage loss	4	On	0	15	15	0	7	7
	F & FW	Preparation of jewelry for income generation of SHG members	4	On	0	32	32	0	19	19
	F & FW	Linking agriculture & natural resources with nutrition	4	On	0	42	42	0	16	16
	F & FW	Mushroom cultivation to attain household nutritional securityand for income generation	4	On	21	7	14	11	0	11
	F & FW	Food processing and preservation for income generation and to minimize post harvest loss	4	On	0	16	16	10	0	10
	F & FW	Food processing and preservation for income generation and to minimize post harvest loss	4	On	0	25	25	11	0	11
	F & FW	Post harvest management of vegetables	1	Off	20	0	20	9	0	9

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home science	F & FW	Mushroom production for income generation and to attain household nutrition security	4	On	0	24	24	0	0	0
	RY	Mushroom cultivation	4	On	0	41	41	0	23	23
	RY	Maintenance of nutritional status of adolescent girls	4	On	0	22	22	0	8	8
	EP	Sensitization of SHG members to promote income generation activities	1	Off	6	24	30	4	12	16
	EP	Nutritional management during antenatal and post natal period	1	Off	0	44	44	0	26	26

H) Vocational training programmes for Rural Youth

a) Details of training programmes for Rural Youth

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
				M	F	Total	Type of units	Number of units	Number of persons employed	
Cultivation of Fruits	Commercial fruit cultivation	Improved method of profitable fruit cultivation in the Sundarban region	6	32	0	32	Fruit orchard	11	11	17
Coconut	Coconut Farming	ASCI-Coconut Grower	25	20	0	20	Coconut based Horticulture nursery	7	7	13
Organic farming	Organic manure	Vermicompost Producer	25	20	0	20	Composting yard	20	20	-
Beekeeping	Beekeeping	Entrepreneurship development through Beekeeping and better crop production through improved pollination	4	17	4	21	Backyard beekeeping	21	21	-
Beekeeping	Beekeeping	Entrepreneurship development through Beekeeping and better crop production through	4	16	4	20	Backyard beekeeping	20	20	-

		improved pollination								
Beekeeping	Beekeeping	Entrepreneurship development through Beekeeping and better crop production through improved pollination	4	25	1	26	Backyard beekeeping	26	26	-
Beekeeping	Beekeeping	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	26	0	26	Backyard beekeeping	8	8	-
Beekeeping	Beekeeping	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	9	1	10	Backyard beekeeping	4	4	-
Beekeeping	Beekeeping	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	29	0	29	Backyard beekeeping	11	11	-
Beekeeping	Beekeeping	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	13	8	21	Backyard beekeeping	7	7	-
Beekeeping	Beekeeping	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	4	24	10	34	Backyard beekeeping	15	15	-
Mushroom	Mushroom production	Mushroom production technology	4	0	64	64	Backyard production	29	3	-
Fish	Fry and fingerling rearing	Fry and fingerling rearing	4	30	0	30	Freshwater ponds	12	20	10
Fish	Seed production of indigenious fishes	Breeding and culture of Asian catfish	4	92	0	92	Backyard hatchery	23	58	32
Poultry	Poultry production	Poultry rearing	4	4	25	29	Broiler poultry	12	18	4

*training title should specify the major technology /skill transferred

b) Details of participation

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Crop production and management													
Commercial floriculture													
Commercial fruit production	1	20	0	20	12	0	12	0	0	0	32	0	32
Commercial vegetable production													
Integrated crop management													
Organic farming													
Coconut farming	1	11	0	11	9	0	9	0	0	0	20	0	20
Total	**2**	**31**	**0**	**1**	**21**	**0**	**21**	**0**	**0**	**0**	**52**	**0**	**52**
Post harvest technology and value addition													
Value addition													
Other													
Total													
Livestock and fisheries													
Dairy farming													
Composite fish culture													
Sheep and goat rearing													
Piggery													
Poultry farming	1	2	14	16	2	10	12	0	1	1	4	25	29
Fish fry and fingerlings production	1	18	0	18	12	0	12	0	0	0	30	0	30
Seed production of indigenious fishes	2	50	0	50	41	0	41	1	0	1	92	0	92
Total	**4**	**70**	**14**	**84**	**55**	**10**	**65**	**1**	**1**	**2**	**126**	**25**	**151**
Income generation activities													
Vermicomposting	1	11	0	11	9	0	9	0	0	0	20	0	20
Production of bioagent,biopesticide													
biofertilizers etc.													
Repair and maintenance of farm machinery & imlements													
Rural Crafts													
Seed production													
Sericulture													
Mushroom cultivation	1	0	41	41	0	23	23	0	0	0	0	64	64
Nursery, grafting etc.													
Tailoring, stitching, embroidery, dying etc.													
Agril. Para-workers, paravet training													
Beekeeping	8	90	13	103	109	20	129	0	0	0	199	33	232
Total	**10**	**101**	**54**	**155**	**118**	**43**	**161**	**0**	**0**	**0**	**219**	**97**	**316**
Agricultural Extension													
Capacity building and group dynamics													
Other													
Total													
Grand Total	**16**	**202**	**68**	**240**	**194**	**53**	**247**	**1**	**1**	**2**	**397**	**122**	**519**

I) Sponsored Training Programmes

a) Details of Sponsored Training Programme

Sl. No	Title	Thematic area	Month	Duration (days)	Client PF/RY/EF	No. of courses	No. of participants	Sponsoring Agency
1	Integration of INM and IDPM in paddy	Integrated crop management	June	4	PF	1	18	ATMA, Bharatpur block, Murshidabad
2	Seed production of paddy and pulse crops	Seed production	July	4	PF	1	40	ATMA, Kurseang
3	Nutrient management in cereal, pulse and oil seed crops	Integrated nutrient management	September	4	PF	1	20	ATMA, Falakata block, Alipuduar
4	Nutrient management in pulse and oil seed crops	Integrated nutrient management	October	2	PF	1	23	ATMA, Kaliaganj block, Uttar Dinajpur
5	Nutrient management in pulse and oil seed crops	Integrated nutrient management	November	4	PF	1	21	ATMA, Karandighi block, Uttar Dinajpur
6	Integrated farming	Integrated farming	January	4	PF	1	37	ATMA, Mirik, Darjeeling
7	Breeding of Asian catfish in backyard hatcheries	Breeding of indigenous fish	April	4	F & FW	1	26	Ambuja cement foundation
8	Diversification in freshwater fish and prawn culture for doubling farm income	Integrated farming	April	4	EP	1	16	IFB Agro Industries Ltd.
9	Agri-fisheries training to the marginal fishermen of Sundarban region	Integrated farming	July (22.07.2019 - 24.07.2019)	4	F & FW	1	50	SDB
10	Agri-fisheries training to the marginal fishermen of Sundarban region	Integrated farming	July (29.07.2019 – 31.07.2019)	4	F & FW	1	50	SDB
11	Agri-fisheries training to the marginal fishermen of Sundarban region	Integrated farming	August (05..08.2019 – 07.08.2019)	4	F & FW	1	50	SDB

Sl. No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of participants	Sponsoring Agency
12	Integrated fish farming for doubling farm income	Integrated fish farming	September	4	F & FW	1	25	ADVENTZ, Pune
13	Good aquculture practices in freshwater fish and prawn farming	Integrated fish farming	September	4	RY	1	29	Achrya prafulla Chandra college
14	Meen Mitra	Integrated fish farming	September	15	EP	1	25	WBSRLM
15	Good aquculture practices in freshwater fish and prawn farming	Integrated fish farming	September	4	RY	1	21	BKC College
16	Preparation and use of Cue Lure Trap for management of Fruit Fly in Vegetables	IPM	Jan	1		1	30	ADA, Joynagar II Block
17	On-farm mass production of biocontrol agents	Production of bio-control agents	Feb	4	RY	1	25	ADA, Mandirbazar Block
18	Vermicompost Producer	Organic farming	Feb	25	RY	1	20	ICAR - ASCI
19	Entrepreneurship development through Beekeeping and better crop production through improved pollination	Beekeeping	Mar	4	RY	1	21	AICRP (HB & P)
20	Entrepreneurship development through Beekeeping and better crop production through improved pollination	Beekeeping	Apr	4	RY	1	20	AICRP (HB & P)
21	Management of honeybees and other pollinators for improved crop production	Beekeeping	May	1	F & FW	1	26	AICRP (HB & P)
22	IPM and INM in System of Assured Rice Production (SARP)	IPM	June	1	F & FW	2	39	NICRA, CRIDA
23	Entrepreneurship development through Beekeeping and better crop production through improved pollination	Beekeeping	June	4	RY	1	26	AICRP (HB & P)
24	Preparation and use of Pheromone traps in pest monitoring and IPM	IPM	July	4	F & FW	1	40	ATMA
25	Contingency planning for Kharif 2019	Climate Resilient Agriculture	July	1	F & FW	1	20	NICRA, CRIDA
26	Conservation of water & its judicious use for sustainable development	Climate Resilient Agriculture	Sep	1	F & FW	1	60	NICRA, CRIDA
27	Anti-counterfeit and safe and judicious use of crop protection products	IPM	Sep	1	EP	1	100	Crop Life India
28	Integrated Farming System with special emphasis on Organic Farming	Organic Farming	Oct	4	F & FW	1	21	ATMA

Sl. No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of participants	Sponsoring Agency
29	Post Cyclone (Bulbul) Contingency Planning for Rabi season	Climate Resilient Agriculture	Nov	1	F & FW	1	17	NICRA, CRIDA
30	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	Beekeeping	Nov	4	RY	1	26	DFO, South 24 Parganas Division
31	Beekeeping as an alternative livelihood option for the wild honey hunters of Sunderban	Beekeeping	Dec	4	RY	4	94	DFO, South 24 Parganas Division
32	Diploma in Agricultural Extension Services for Input Dealers (DAESI) - Ninth batch	IPM	Dec	365	EP	2	80	Self/ MANAGE
33	Biotech Kishan	Disease management	October	5	EF	2	58	WBUAFS

b) Details of participation

Thematic Area	**No. of Courses**	**No. of Participants**									**Grand Total**		
		Other			**SC**			**ST**					
		M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**
Crop production and management													
Increasing production and productivity of crops	3	42	19	61	8	11	19	10	5	15	60	35	95
INM	3	18	1	19	38	4	42	2	1	3	58	6	64
Commercial production of vegetables													
Production and value addition													
Fruit Plants													
Ornamental plants													
Spices crops													
Soil health and fertility management													
Production of Inputs at site													
Methods of protective cultivation													
Other (Micro Irrigation)													
Total	**6**	**60**	**20**	**80**	**46**	**15**	**61**	**12**	**6**	**18**	**118**	**41**	**159**
Plant Protection													
IPM	1	0	2	2	4	24	28	0	0	0	4	26	30
Production of bio-control agents	1	8	3	11	12	2	14	0	0	0	20	5	25
Organic farming	1	11	0	11	9	0	9	0	0	0	20	0	20
Beekeeping	1	11	1	12	6	3	9	0	0	0	17	4	21
Beekeeping	1	6	0	6	10	4	14	0	0	0	16	4	20
Beekeeping	1	0	0	0	16	10	26	0	0	0	16	10	26

IPM	2	0	0	0	34	5	39	0	0	0	34	5	39
Beekeeping	1	12	0	12	13	1	14	0	0	0	25	1	26
IPM	1	17	10	27	0	0	0	7	6	13	24	16	40
Climate Resilient Agriculture	1	0	0	0	15	5	20	0	0	0	15	5	20
Climate Resilient Agriculture	1	2	0	2	40	18	58	0	0	0	42	18	60
IPM	1	68	1	69	30	1	31	0	0	0	98	2	100
Organic Farming	1	4	2	6	9	5	14	0	1	1	13	8	21
Climate Resilient Agriculture	1	1	0	1	16	0	16	0	0	0	17	0	17
Beekeeping	1	0	0	0	26	0	26	0	0	0	26	0	26
Beekeeping	4	42	9	51	33	10	43	0	0	0	75	19	94
IPM	2	48	9	57	19	4	23	0	0	0	67	13	80
Total	**22**	**230**	**37**	**267**	**292**	**92**	**384**	**7**	**7**	**14**	**529**	**136**	**665**
Post harvest technology and value addition													
Processing and value addition													
Other													
Total													
Farm machinery													
Farm machinery, tools and implements													
Other													
Total													
Livestock and fisheries													
Livestock production and management													
Animal Nutrition Management													
Animal Disease Management	2	0	2	2	0	13	56	0	0	0	0	58	58
Fisheries Nutrition													
Fisheries Management	8	141	34	175	78	13	91	0	0	0	219	47	266
Other(Seed production)	1	6	2	8	16	2	18	0	0	0	22	4	26
Total	**11**	**147**	**38**	**185**	**94**	**28**	**165**	**0**	**0**	**0**	**241**	**109**	**350**
Home Science													
Household nutritional security													
Economic empowerment of women													
Drudgery reduction of women													
Others (Storage loss minimization techniques)													
Total													
Agricultural Extension													
Capacity Building and Group Dynamics													
Other													
Total													
Grant Total	**39**	**437**	**95**	**532**	**432**	**135**	**610**	**19**	**13**	**32**	**888**	**286**	**1174**

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

Nature of Extension Activity	No. of activities	Farmers				Extension Officials			Total		
		M	F	T	SC/ ST (% of total)	Male	Female	Total	Male	Female	Total
Field Day	5	107	76	183	10.6	8	2	10	115	78	193
KisanMela	4	10003	6162	16165	7.9	53	41	94	10056	6203	16259
Kisan Ghosthi	-	-	-	-	-	-	-	-	-	-	-
Exhibition	1	822	403	1225	31	28	25	53	850	428	1278
Film Show	21	526	313	839	46	19	12	31	545	325	870
Method Demonstrations	7	128	235	463	39.5	-	-	-	128	235	463
Farmers Seminar	5	953	718	1671	40.2	112	62	174	1065	780	1845
Workshop	3	156	67	223	29.8	20	5	25	176	72	248
Group meetings	16	481	175	656	34.1	18	7	25	449	182	681
Lectures delivered as resource persons	26	636	248	884	26.9	180	57	237	816	305	1121
Advisory Services	1387	18513	3389	21902	38.6	1237	204	1441	19750	3593	23343
Scientific visit to farmers field	206	2111	478	2589	33.2	84	35	119	2195	513	2708
Farmers visit to KVK	949	1586	186	1772	30.8	21	15	36	1607	201	1808
Diagnostic visits	253	201	11	212	29.6	35	6	41	236	17	253
Exposure visits	25	528	246	774	35.7	99	52	151	27	298	925
Ex-trainees Sammelan	1	119	38	157	31.6	29	7	36	148	45	193
Soil health Camp	4	117	13	130	34.2	21	10	31	138	23	161
Animal Health Camp	1336	60912	5465	66377	37.2	1563	1532	3095	62475	6997	69472
Animal show(30.01.2019)	2	21	19	40	5	3	0	3	24	19	43
Surgical cases (operations done)	27	19	9	28	26.7	2	3	5	21	12	33
Agri mobile clinic	-	-	-	-	-	-	-	-	-	-	-
Soil test campaigns	2	58	13	71	30	7	3	10	65	16	81
Farm Science Club Conveners meet	10	86	20	106	28.6	13	9	22	99	29	128
Self Help Group Conveners meetings	4	0	197	197	35.4	15	5	20	15	202	217
Mahila Mandals Conveners meetings	-	-	-	-	-	-	-	-	-	-	-
Celebration of important days (specify)											

Nature of Extension Activity	No. of activities	Farmers				Extension Officials			Total		
		M	F	T	SC/ ST (% of total)	Male	Female	Total	Male	Female	Total
National Science Day	1	62	7	69	33.8	2	0	2	64	7	71
World Food Day	1	-	37	37	26	3	2	5	3	39	42
Celebration of Kisan Diwas	1	16	10	26	28.4	3	1	4	19	11	30
National Fish Farmers' Day	1	88	21	109	32.5	9	4	13	97	25	122
World Honeybee Day	1	37	6	43	93.02	8	2	10	45	8	53
Sankalp Se Siddhi	-	-	-	-	-	-	-	-	-	-	-
Swatchta Hi Sewa	27	432	671	1103	36.6	11	5	16	443	676	1119
Mahila Kisan Divas	1	0	31	31	29.8	0	4	4	0	35	35
Any Other (Specify)											
91st ICAR Foundation Day	1	128	68	196	22.2	12	7	19	140	75	215
World Veterinary Day	1	83	20	103	276	6	2	8	89	22	111
Rashtriya Ekta Diwas	1	134	44	178	23.9	6	3	9	140	47	187
Earth Day	1	79	22	101	30	4	0	4	83	22	105
Fertilizer Application Awareness programme	1	83	15	98	36.5	5	1	6	88	16	104
Constitution Day	1	151	42	193	35.2	6	2	8	157	44	201
Awareness on Anticounterfeit and safe & judicious use of crop protection products	100	78	2	80	15.6	18	2	20	96	4	100
Observation of Vigilance Awareness Week	1	174	42	216	27.5	20	11	31	194	53	247
Total	**4434**	**99628**	**19519**	**119247**	**-**	**3680**	**2138**	**5818**	**102658**	**21657**	**125065**

B. Other Extension activities

Nature of Extension Activity	No. of activities
Newspaper coverage	3
Radio talks	6
TV talks	2
Popular articles	2
Extension Literature	Leaflet –4, Book - 1
Other, if any	1. Dimponar chas and Dhaniponar chas in ICAR- CIFA training manual no. 92 2. Outbreak of disease in winter fish cultivation and its remedy in Krishi Darshan, DD Bangla on 23.01.2019 3. Prime Minister Kisan Nidhi Yojana programme with farmers was webcasted in RAKVK on 24.02.2019

3.5 a. Production and supply of Technological products

Village seed

Crop	Variety	Quantity of seed (q)	Value (Rs)	No. of farmers involved in village seed production	Number of farmers to whom seed provided			
					SC	ST	Other	Total
Fodder (cutting)	HY Napier	3015 nos	3015.00	35				
Ornamental bird	Budgeriger	90	7200.00	9	2	0	21	23
Quail	*Q. Japanica*	18	360.00	2	4	1	15	20
					1	2	0	3
Total			10575.00	46	7	3	36	46

KVK farm

Crop	Variety	Quantity of seed (q)	Value (Rs)	Number of farmers to whom seed provided							
				SC		ST		Other		Total	
				M	F	M	F	M	F	M	F
Paddy-kharif-2018	Pratikshya (B-F)	8.40	26880	44	0	5	0	33	2	82	7
	Pratikshya (F-C)	19.20	53760	108	7	7	2	77	10	192	19
	Sabita (B-F)	7.00	22400	42	0	0	0	22	6	64	6
	Sabita (F-C)	26.00	75400	155	24	8	3	79	18	242	45
	CR-401 (B-F)	4.40	14000	30	0	0	0	11	3	41	3
	Varsha Dhan (B-F)	2.80	8960	17	0	0	0	11	0	28	0
	Dudheswar (TL)	14.00	36400	78	11	6	0	67	12	151	17
Pulse- Greengram	PDM-84-139	5.50	6875	40	25	3	0	35	10	78	35
Paddy-Kharif,2019	Puspa	1.5	5250								
	DRR-46	1.0	3500								
	Ciherang Sub-1(Bina dhan)	3.5	12250								
	CR-401(Reeta)	4.55	14560								
	Dhiren	2.0	7000								
	Luna Suvarna	2.4	8400								
	Rajdeep	1.65	5775								
	Pratikshya	22.4	71680								
	Sabita	18.0	57600								
	Varshadhan	16.0	51200								
Grand Total				The seeds will be sold to the farmers from the month of June,20							

Production of planting materials by the KVKs

Crop	Variety	No. of planting materials	Value (Rs)	Number of farmers to whom planting material provided			
				SC	ST	Other	Total
Vegetable seedlings							
Brinjal	Muktakeshi	15550	4665	7	1	16	24
Chilli	Tejaswini	70220	28088	11	-	27	38
Tomato	Deb	50600	35420	68	-	41	109
Pointed Gourd cutting	Raidighi	7000	14000	19	-	32	51
Cauliflower	Dawn	7380	2952	6	-	11	17
Cabbage	Rare ball	10000	4000	4	-	9	13
Knolkhol	Taki Winner	6600	1650	3	-	2	5
Beet	Crimson Globe	7600	1900	-	-	-	-
Fruits							
Guava	Allahabad Safeda	770	15400		-		
Ber	BAU	270	6750	27	-	35	62
Mango	Amrapali	1100	38500	32	-	47	79
Sapota	Cricket Ball	890	31150	21	-	62	83
Lime	Pati	380	7600	12	-	4	16
Ornamental plants	Dahlia, Chrysanthemum	3110	1866	-	-	-	-
Medicinal and Aromatic (Betel vine cutting)	Mitha Pata	2180	8720	2	0	3	5
Plantation (Coconut)	East Coast tall	970	33950	51	-	69	120
Elephant yams							
Fodder crop saplings							
Forest Species (Neem)	Neem	8000	16000	16	-	14	30
Total		**192620**	**252611**	**279**	**1**	**372**	**652**

Production of Bio-Products

Name of product	Quantity Kg	Value (Rs.)	No. of Farmers benefitted			
			SC	ST	Other	Total
Bio-fertilizers						
Bio-pesticide						
Bio-fungicide (*Trichoderma harzianum & Pseudomonas fluorescens*)	1860	-	235	74	426	735
Bio-agents (vermicompost)	40450	404500	-	-	-	-

Production of livestock materials

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	No. of Farmers benefitted			
				SC	ST	Other	Total
Dairy animals							
Cows							
Buffaloes							
Calves	Jersey Cross, Halstein Friesian. Cross breed, Gir,Sahiwal Cross, Red Sindhi Cross	7	21,000.00	0	0	0	0
Others (Pl. specify)							
Small ruminants							
Sheep							
Goat	Black Bengal	20 nos	20,000.00	0	0	4	4
Other, please specify							

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	No. of Farmers benefitted			
				SC	ST	Other	Total
Poultry							
Broilers							
Layers							
Duals (broiler and layer)							
Japanese Quail							
Turkey							
Emu							
Ducks							
Others (Pl. specify) Ornamental bird)	Budgerigar	60	4800.00	0	0	3	3
Piggery							
Piglet							
Hog							
Others (Pl. specify)							
Fisheries							
Indian carp							
Exotic carp							
Mixed carp	Katla, Rohu, Mrigal, Bata, Kalbasu, Silver carp, Grass carp, Java punti, Common carp	455 kg	5,95,230.00	13	2	32	47
Fish fingerlings							
Spawn	Katla, Rohu, Mrigal, Bata, Kalbasu, Silver carp, Grass carp, Java punti, Common carp	19,75,000		8	2	21	31
Others (Pl. specify)	Climbing perch	1,65,000		4	0	4	8
	Asian catfish	85,000		4	1	9	14
	Ornamental fish	9,200		6	2	9	16
Grand Total			6,41,030.00				

3.5. b. Seed Hub Programme-*"Creation of Seed Hubs for Increasing Indigenous Production of Pulses in India"*

1. i) Name of Seed Hub Centre: RAKVK Oilseed Seed Hub (Sunflower & Sesame)
Ramkrishna Ashram KVK, Nimpith, South 24 Parganas
West Bengal - 743338

Name of Nodal Officer :	Dr. Chandan Mondal
Address :	Subject Matter Specialist Ramkrishna Ashram KVK, Nimpith, South 24 Parganas West Bengal - 743338
e-mail :	nimpithkvk@redifmail.com, nimpithkvk1979@gmail.com
Phone No. : Mobile :	03218-226002 9239443957

ii) Quality Seed Production Reports

Season	Crop	Variety	Production (q)			
			Target	Area sown (ha)	Production	Category of Seed (F/S, C/S)
Kharif 2018						
Rabi 2018-19						
Summer/Spring 2019	Sesame	Savitri	400	55	400 q	Certified
	Sunflower	LFSH-171	500	0.3	1 Q	Certified F1 Hybrid

iii) Financial Progress

Fund received (2016-17, 2017-18 and 2018-19)	Expenditure (Rs. in lakhs)		Unspent balance (Rs. in lakhs)	Remarks
	Infrastructure	Revolving fund		
2016-17	-	-	-	-
2017-18	-	-	-	-
2018-19	50.00	19.78	40.22	Seed production of Sesame & Sunflower (Var. LFSH-171)

iv) Infrastructure Development

Item	Progress
Seed processing unit	A Seed processing unit has been established with facility of Fine Cleaner (Cap. 4 TPH) and Gravity Separator. A seed godown of 1200 sqft has been constructed with fully insulated wall.
Seed storage structure	

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

Item	Title	Author's name	Number	Circulation
Research paper	Identification of superior high yielding sunflower (*Helianthus annuus* L.) hybrids for rabi-summer season in West Bengal	S.S. Lakshman, D.K.Roy & Y. G. Shadakshari	1	
	Music-a non chemical method of milk production enhancement in dairy cattle (International Journal of Agricultural Science and Research, Vol. 8 (Issue 2) April 2018. P-89-96	Subhasis Roy, A. Halder, N.J.Maitra, F.H. Rahman and S.S.Singh		
	Effect of variability and edaphological characteristics on growth of *Sclerotiumrolfsii*(Sacc.) causing collar rot disease of sunflower in coastal region of West Bengal, India (Legume Research, DOI: 10.18805/LR-3922, NAAS: 6.23)	P. K. Garain (Co-author)		
Seminar/conference/ symposia papers				
Books	Krishi Vigyan o Samprasaran Porisheba	Prabir Kumar Garain	5000	1000
Bulletins	Dimponar chas and Dhaniponar chas (ICAR- CIFA Training Manual 92)	P. Chatterjee		
News letter	"Demonstration of System of Assured Rice Production (SARP) in Kharif season at South 24 Parganas" in the NICRA News Letter, published by ICAR-ATARI Kolkata, Volume V, no. 2, July 2019, pp. 2	Prabir Kumar Garain	-	-
Popular Articles	Aprachalita Sabji Chas in '*Karmakshetra*'	Chandan Mondal	1	More than 1 lakh
	"Use of Bio-pesticides" in news paper "Ei Samay"	Prabir Kumar Garain		
	"Use of Chemical Pesticides" in journal "Adhunik Sasya Suraksha"	Prabir Kumar Garain		
	"Moumachi O Amra" in monthly Journal 'Samajsiksha', published by Loksiksha Parishad, Ramkrishna Mission Ashrama, Narendrapur, 63rd year, 3rd issue, June, 2019, pp. 145-148	Prabir Kumar Garain		

	Article on "Problems in beekeeping" in Bartaman News paper dated 17-04-2019	Prabir Kumar Garain		
	Article on “Bees on a Plane” in Times of India News Paper dated 17.09.2019	Prabir Kumar Garain		
Book Chapter				
Extension Pamphlets/ literature	1.Unnata Prothay Grishya Kalin Til chas 2.Unnata Projuktite Grishya Kalin Mung Chas 3.Unnata Projuktite Musur Chas 4.Leaflet on IPM in Sunflower	Dipak kumar Roy & Prabir Garain Dipak kumar Roy & Prabir Garain Dipak kumar Roy P. K. Garain	3 2000	Distributed among the CFLD farmers 700
Technical reports	1.Monthly reports of MVC projects 5.Fishery specific assessment and future recommendations for WBADMI Project in the districts of Purulia, Bankura and Birbhum	S.Roy P. Chatterjee	24	-
	Annual report and Action Plan of AICRP (HB & P)	Prabir Kumar Garain	2	
	EFC for AICRP (HB & P)	Prabir Kumar Garain	1	
	Annual report and action plan for NICRA	Prabir Kumar Garain	2	
	Report for Zonal Monitoring Committee under NICRA	Prabir Kumar Garain	1	
	Weekly report for DAESI diploma course	Prabir Kumar Garain	48	
Electronic Publication (CD/DVD etc)				
TOTAL				

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

(B) Details of HRD programmes undergone by KVK personnel:

Sl. No.	Name of programme	Name of course	Name of KVK personnel and designation	Date and Duration	Organized by
1	GB Meeting ATMA	GB Meeting ATMA	Mr. Prabir Kumar Garain, SMS, Plant Protection	04.01.19	PD, ATMA
2	Capacity Building	Soil and Water Management at IIWM, Bhubaneswar	Dr. Dipak Kumar Roy, Programme Assistant, Agronomy	21.01.19 - 24.01.19 (4 days)	ATARI, Kolkata
3	Workshop	State level workshop for evaluation of ASCI programmes	Mr. Prabir Kumar Garain, SMS, Plant Protection	31.01.19	SAMETI, Narendrapur
4	Biennial Workshop	Biennial review workshop of AICRP on Honeybees & Pollinators	Mr. Prabir Kumar Garain, SMS, Plant Protection	07.03.19 - 09.03.19 (3days)	SASRD, Nagaland & AICRP, ICAR, New Delhi
5	Regional Workshop	Protection of Plant Varieties & Farmers' Right at WBUA&FS, Kolkata	Dr. Dipak Kumar Roy, Programme Assistant, Agronomy	15.03. 19	ATARI, Kolkata
6	Review Workshop	Annual Review Workshop of NICRA	Mr. Prabir Kumar Garain, SMS, Plant Protection	03.06.19 - 07.06.2019	CRIDA, Hyderabad
7	Seminar	Seminar on "Bio Nano Fertilizer	Dr. Dipak Kumar Roy, Programme Assistant, Agronomy	25.06.2019	ATC, Chinsurah, Hooghly
8	Workshop	Seed Hub Workshop	Dr. C. K. Mondal , SMS (Horticulture) & Dr. A. Roy, Jr. Agronomist, AICRP on Sunflower	19.07.2019-20.07.2019	IIOR, Hyderabad
9	Meeting	NFSM, District Level Meeting	Dr. C. K. Mondal , SMS (Horticulture)	24.09.2019	Alipore, DM Office
10	Training	On-farm Water Management Technologies for Improving Water Productivity	Dr. Dipak Kumar Roy	4 days, 21st to 24th Jan.,2019	ICAR-Indian Institute of Water Management, Bhubaneswar, Odisha
11	Seminar	"Bio Nano Fertilizers"	Dr. Dipak Kumar Roy	One day, 25th June,2019	IFFCO at ATC, Chinsurah, Hooghly
12	Seminar	India International Science Festival	Mr. Prasanta Chatterjee	06.11.2019	Ministry of Science and Technology and Ministry of Earth Sciences
13.	Workshop & Training	Gender mainstriming in Agriculture	Dr. Manasi Chakarborty	5-6 Dec., 2019	Manage, Hyderabad and SAMETI, W.B.

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

Roof Top Rain Water Harvesting as a sustainable source of potable water for versatile use in rural Sundarbans

Sundarbans is a vast tract of flat, densely forested, marshy islands enclosed by a network of saline tidal estuaries and creeks. Over the time, several of these islands have been inhabited by human beings through destruction of the mangrove forests, erecting dykes along the tidal streams and modifying the lands into cultivable ones. But one constraint, in the form of source of potable water, has remained the same or even worsened in many of these inhabited islands. Groundwater is presently seen as the only source of safe potable water on Sundarban islands, which is dwindling day by day. The NICRA village "Bongheri" is no exception to this reality where the depth of fresh ground water aquifer has reached beyond 1200 ft depth.

To address the scarcity of potable water in this village, an innovative approach was taken up where the rainwater, collected through the roof top catchment area, is used for drinking, cooking and larval rearing in Asian catfish hatchery. This system is composed of the following five components.

a. Catchment: Roof top of the mud houses and pucca houses
b. Conveyance: The rainwater pipes (PVC) are fitted to the outlet of roof surface. In case of corrugated asbestos roof of huts, a half slit PVC pipe is inserted horizontally along the surface and connected to another vertical collection pipe.
c. First flush: The first shower falling on the roof surface carries all the dust and dirt with it and hence is flushed out through a "first flush" device. This device remains in an open position. After few minutes of the start of a shower, when the dirty water flows out and clean water starts to come out, the device is closed. This device thus ensures passage of clean water in the storage tank devoid of silts and other materials deposited on the roof surface.
d. Filter: After first flush, the clean rain water is then channelized through a sand-gravel-charcoal filter to further remove the suspended particles in water and harvest potable water.
e. Storage tank: 1000 L capacity PVC tank is used for storing the filtered rain water.

In NICRA village 13 roof top rain water harvesting structures have been constructed during 2018 to 2020. The harvested rainwater was potable and measured 6.85 of pH and 0.05 of EC.

Support to Asian Catfish Hatchery: Demand for Asian Catfish (*Clarias batrachus*) seeds is growing in the area. But the supply of the fish seeds is poor in the village due to lack of hatcheries nearby. Such hatcheries require clean groundwater for the larval rearing. The root top rainwater harvesting programme allowed several rural youths to take up Asian Catfish hatchery in the village. The storage tanks were filled for four times during the Monsoon season that supported three breeding cycles of Asian catfish. Mr. Gouranga, a young rural entrepreneur,

produced 20000 Asian catfish fry and earned Rs. 60,000/-, in four months.

Support to household usage: The family members enjoyed the potable water for drinking and cooking purpose, throughout the Monsoon months. It helped to reduce the drudgery of the women members, who need not go out, fetching potable water. After the last shower, during "Bulbul cyclone" on 9th November 2019, all the tanks got filled up to their full capacity. Now the family members are using the water only for drinking purpose. It is expected to support "**100 days of drinking water**" to a family of 5 members with 10 litre water per day. This period is again extended, once there is an unseasonal rain during winter or summer.

Roof top rainwater harvesting can ensure a sustainable source of potable water for each and every household of Sundarbans. Apart from drinking and cooking, it can also provide a scope for alternate income generation activities.

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

Sl. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
i.	Cattle	Use of moringa bark powder in mastitis	Reduces the inflammation by increasing the leucocytic count and decreasing the chemical mediators of inflammation to the site of insult/injury.
ii.	Poultry	Use of papaya leaves in coccidiosis in poultry	Proteolytic destruction of *Eimeria* by papain and/or inflammatory suppression by vitamin A was proposed as possible mechanisms by which papaya and its active compounds acted to suppress coccidiosis.
iii.	Cattle	Use of sugar apple leaves in FMD in animals	The leaves are used for medicinal purposes due to their quick healing capability. They are applied directly on to the skin or could be used as a combination with other ingredients. Boiling the leaves and consuming them is believed to be quite beneficial

i. Use of moringa bark powder in mastitis

Ethno veterinary medicine (E.V.M.) is a system that is based on folk beliefs, traditional knowledge, skills, methods and practices used for curing diseases and maintaining health of animals. There are local healers who are knowledgeable and experienced in traditional veterinary health care. They use locally available medicinal plants for treatment of animals.

Mastitis is the inflammation of the mammary gland and udder tissue, and is a major endemic disease of dairy cattle. It usually occurs as an immune response to bacterial invasion of the teat canal by variety of bacterial sources present on the farm, and can also occur as a result of chemical, mechanical,

or thermal injury to the cow's udder. Milk-secreting tissues and various ducts throughout the udder can be damaged by bacterial toxins, and sometimes permanent damage to the udder occurs. Severe acute cases can be fatal, but even in cows that recover there may be consequences for the rest of the lactation and subsequent lactations. The illness is in most respects a very complex disease, affected by a variety of factors: it can be present in a herd subclinically, where few, if any, symptoms are present in most cows. Practices such as close attention to milking hygiene, the culling of chronically-infected cows, good housing management and effective dairy cattle nutrition to promote good cow health are essential in helping to control herd mastitis levels.

Mastitis is most often transmitted by contact with the milking machine, and through contaminated hands or other materials, in housing, bedding and other equipment. Mastitis treatment and control is one of the largest costs to the dairy industry and is also a significant factor in dairy cow welfare.

Details of ITK:

Moringaoleifera Lam.

Local name- Surjan, Sahjan.

Family- Moringaceae

Plant part used- Bark

Ethnoveterinary uses- Bark powder mixed with edible oil is applied on udder in mastitis.

ii. Use of papaya leaves in coccidiosis in poultry

Coccidiosis is the bane of the poultry industry causing considerable economic loss. Eimeria species are known as protozoan parasites to cause morbidity and death in poultry. In addition to anticoccidial chemicals and vaccines, natural products are emerging as an alternative and complementary way to control avian coccidiosis. In this review, we update recent advances in the use of anticoccidialphytoextracts and phytocompounds, which cover 32 plants following a database search in PubMed, Web of Science, and Google Scholar. Four plant products commercially available for coccidiosis are included and discussed.

and 40 phytocompounds,

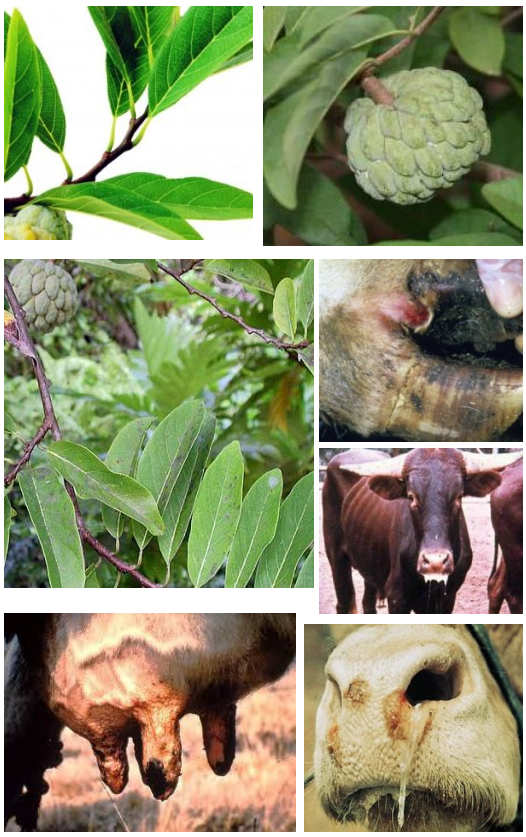
We also highlight the chemical and biological properties of the plants and compounds as related to coccidiosis control. Emphasis is placed on the modes of action of the anticoccidial plants and compounds such as interference with the life cycle of Eimeria, regulation of host immunity to Eimeria, growth regulation of gut bacteria, and/or multiple mechanisms. Biological actions, mechanisms, and prophylactic/therapeutic potential of the compounds and extracts of plant origin in coccidiosis are summarized and discussed.

Two studies have reported that extracts from C. papaya leaves significantly inhibit coccidiosis. Little is known about the anticoccidial mechanism. Proteolytic destruction of Eimeria by papain and/or inflammatory suppression by vitamin A were proposed as possible mechanisms by which papaya and its active compounds acted to suppress coccidiosis

iii. Use of sugar apple leaves in FMD in animals

Foot-and-mouth disease or hoof-and-mouth disease is an infectious and sometimes fatal viral disease that affects cloven-hoofed animals, including domestic and wild bovids. The virus causes a high fever for between two and six days, followed byblisters inside the mouth and on the feet that may rupture and cause lameness.

Foot-and-mouth disease (FMD) has very severe implications for animal farming, since it is highly infectious and can be spread by infected animals comparatively easily through contact with contaminated farming equipment, vehicles, clothing, feed and by domestic and wild predators. Its containment demands considerable efforts in vaccination, strict monitoring, trade restrictions, quarantines and occasionally the culling of animals.



Now a days State government is condicting FMD control programme through mass vaccination of all the catlle as this disease is causing huge econimocal losses in farming.

Use of ata leaves in FMD in animals is long back practiced by the farmers of Patharpratima Block of South 24 parganas district. The sugar-apple, sweetsop, or custard apple is the fruit of Annonasquamosa, the most widely grown species of Annona and a native of the tropical Americas and West Indies. The Spanish traders of Manila galleons brought it to Asia, where its old Mexican name ate may still be found in Bengali ata,

Nepalese aati, Sinhalese matianoda, Burmese awzar thee, Indonesia " Srikaya"' and atis in the Philippines. It is also known as sitaphal in India and Shareefa in Pakistan and in the Philippines and in Australia. The name is also used in Portuguese as ata. The custard apple fruit which is available for a short season (August to October) is one of the most sought after fruits in India. It is made up of a hard green exterior which is non-edible and the main sweet and fleshy fruit is revealed upon cutting open the exterior. While the custard apple has countless health benefits like being rich in antioxidants and minerals like calcium and potassium, its leaves are equally nutritious. They are prized for their health benefits especially in Ayurveda.

The leaves are often used for medicinal purposes due to their quick healing capability. They could be applied directly on to the skin or could be used as a combination with other ingredients. Boiling the leaves and consuming them is believed to be quite beneficial. Ayurvedic expert, Dr. BN Sinha suggests the following benefits of custard apple leaves.

1. Regulates sugar in the body

Packed with fibers, the leaves are known to slow down the absorption of sugar in our body and thus, they help in keeping the blood sugar levels in check. Since fiber is digested slowly, over a period of time, it does not cause sudden spikes in your blood sugar levels and thus, helps in keeping your digestive tract working well. 2-3 leaves can be boiled in water and then the mixture can be consumed every morning for best results.

2. Prevents aging of the skin

The leaves are rich in antioxidants that protect your skin from sun damage and delay the aging of cells. A herbal tea made with simmering custard apple leaves in water can be consumed once a day to ensure optimum benefits for the skin.

3. Keeps the heart healthy

Potassium and magnesium, present in high quantities in these leaves, are known to relax the muscles of the heart and thus, help in preventing the risk of strokes and heart disease.

4. Gives the body overall strength and power

Boiling the leaves in half a cup of water and consuming the mixture every morning keeps your metabolism rate and energy levels up through the day. It helps in flushing out the toxins from your body and you feel more energetic and powerful.

5. Heals wounds

The juice of the leaves can be applied to heal wounds as it has anti-inflammatory properties and a soothing effect. These leaves are a storehouse of benefits. When applied or consumed correctly, they can do wonders to your health. So, don't throw them away!

b. Give details of organic farming practiced by the farmer

Sl. No.	Crop / Enterprise	Area (ha)/ No. covered	Production	No. of farmers involved	Market available (Y/N)
1	Poultry	2000 numbers of RIR	Egg-240/day	12	Y

3.10. Indicate the specific training need analysis tools/methodology followed by KVKs

Sl. No.	Brief details of the tool/ methodology followed	Purpose for which the tool was followed
1	Identification of courses for farmers/farm women, Rural Youth, In-service personnel through participatory discussion during rapport building	Specific training need analysis of different cliental group
2	Training modules are developed by conducting PRA in villages	Problem analysis of different activities and prioritization
3	Semi-structured interview	Assessment of existing knowledge and practice and training need analysis
4	Need analysis and designing of training module through filling the printed proforma "Initial Evaluation" of KVK.	To fulfill the demand and to meetup the requirement of the trainees
5	Impact analysis of training and future planning for refresher courses through filling the printed proforma "Final Evaluation" of KVK.	To mitigate the gap, if any, during training period and also to plan for future off campus/on campus refresher courses for the same trainees.

3.11. a. Details of equipment available in Soil and Water Testing Laboratory

Sl. No	Name of the Equipment	Qty.
1	Atomic Absorption Spectrophotometer PerkinElmer PinAAcleTM 900F AAS	1
2	Kel Plus Automatic Nitrogen Estimation System (Model KES 06L R; Model Distyl EM VA)	1
3	Digital UV-Vis Spectrophotometer ('Systronics' Make; Model 117)	1
4	Colorimeter ('Systronics' Make; Model 115)	1
5	Name of the Equipment	Qty.
6	Turbidity Meter ('Systronics' Make; Model 135)	1
7	Digital Bottle Top Burrete ('Brand' Make)	1
8	Micro Controller Based Digital Flame Photometer ('Systronics' Make; Model 128)	2
9	Digital pH Meter ('Systronics' Make; Model 335)	22
10	Digital Conductivity Meter ('Systronics' Make; Model 307)	2
11	Bouyoucos Hydrometer (ASTM 152H; Range 5 – 60 g/lt)	1
12	Brass Sieve (2mm; 1mm; 0.5mm; 0.25mm; 0.1mm; 0.02mm)	1 Set
13	Double Distillation Unit (Borosil; All Glass; Horizontal; Output 2.5 lt/hr)	1
14	Single Distillation Unit (All Glass) (3Kw; 5 lt/ha)	1
15	Refrigerator (LG make, Model – GL Q2925DSRBOSZEBN)	1
16	Digital Balance ('K. Roy' Make; Model DJ – 302A)	1
17	Digital Balance (Portable Type)	3
18	Hot Air oven (3' x 2' x 2')	1

19	Water Bath (6 hole)	1
20	Hot plate	1
21	Mechanical Shaker (2 hp motor, 3' x 2' x 2')	1
22	Mechanical Shaker (0.5 hp motor, 1' x 1')	1
23	Muffel Furnace (2' x 1.5' x 1.5')	1
24	HP Desktop Computer MODEL 48PA; Cor-i 3 7th Gen, 4gb RAM/1 TB HDD/ 18.5" Monitor/ Key Board/ Mouse/ (3 yrs on-site warranty)	1
25	HP Laser Printer All in One A3 size/ Print/Scan/Copy (Model: MFP M435NW) (1 yr on-site warranty)	1

3.11.b. Details of samples analyzed so far

Number of soil samples analyzed			No. of Farmers	No. of Villages	Amount realized (in Rs.)
Through mini soil testing kit/labs	Through soil testing laboratory	Total			
-	1031	1031	929	48	120200

3.11.c. Details on World Soil Day

Sl. No.	Activity	No. of Participants	No. of VIPs	Name (s) of VIP(s)	Number of Soil Health Cards distributed	No. of farmers benefitted
	1. Stop soil erosion, save our future 2. Ill-effect of Green Revolution, particularly due to indiscriminate use chemical fertilizers 3. Rational use of chemical and organic fertilizers to augment agricultural production 4. Importance of organic manure to maintain the Soil Health.	92	4	1.Dr. K. D. Sah, Principal Scientist (Soil Science) ICAR-NBSS&LUP Block DK, Sector-II Bidhannagar, Kolkata - 700 091 **2.** Dr. Uttam Kumar Mondal, Principal Scientist, Canning, CSSRI, RSS, Canning Town 3. Mrs. Antima Halder, Assistant Director of Agriculture, Govt. of West Bengal, Joynagar –II Block, West Bengal 4.Dr. Sisir Kumar Si, Scientist (Soil Science), Vivekananda Institute of Biotechnology	22	68

3.12. Activities of rain water harvesting structure and micro irrigation system

No of training programme	No of demonstrations	No of plant material produced	Visit by the farmers	Visit by the officials
4	48	4300	320	11

3.13. Technology week celebration

Type of activities	No. of activities	Number of participants	Related crop/livestock technology
Seminar, Demonstration, Exhibition, Crop and animal show -cum-competition, **quiz competition on Agriculture,** prize distribution and cultural programmes.	10	More than 18,000	**"Diversified Farming - Tool to Double Farm Income"** **1.** Research and Development of beekeeping and pollination services in South 24 Parganas **2.** Production of *Trichodermaviride* at household level by the farmers **3.** Landshaping and Rainwater Harvesting, Land Embankment Cultivation, crop diversification, crop intensification **4.** Diversification of fish and prawn species in the same freshwater pond **5.** Farming of monosex tilapia, climbing perch and Asian catfish **6.** Vanaraja Farming, Pekin duck farming, Hydroponics fodder cultivation **7.** Bee keeping, vermicomposting

3.14. RAWE/ FETprogramme - is KVK involved? (Y/N) - N

No of student trained	No of days stayed
N	

ARS trainees trained	No of days stayed
N	

3.15. List of VIP visitors (Minister/ MP/MLA/DM/VC/ZilaSabhadipati/Other Head of Organization/Foreigners)

Date	Name of the person	Purpose of visit
29th January, 2019	Smt. Pratima Mondal, Member of Parliament, Joynagar Constituency	District Kisan Mela
24th February, 2019	Mr. Biswanath Das, MLA, Joynagar Assembly	Pradhan Mantri Kisan Samman Nidhi
18th March, 2019	Dr. Anupam Barik, Additional Commissioner, DoAC, Govt. of India	State Oilseed Kisan Mela
19th March, 2019	Dr. Sampad Ranjan Patra, Director, Dept. of Agriculture, GoWB	State Oilseed Kisan Mela
18.04.2019	Prof. (Mrs.) Om Gupta, DEE, Jwaharlal Nehru Krishi Viswavidyalaya, Jabbalpur, MP	Visit to NICRA village
06.07.2019	Dr. R. Govinda Chary, Director, CRIDA, Hyderabad	Visit to NICRA village
06.07.2019	Dr. K. V. Rao, Principal Scientist, CRIDA, Hyderabad	Visit to NICRA village
10.07.2019	Dr. H. K. Senapati, Former VC, OUAT, Odissa	Zonal Monitoring Committee visit to KVK and NICRA Village
10.07.2019	Dr. B. Kandpal, Joint Director, ICAR Res. Complex, Tripura	Zonal Monitoring Committee visit to KVK and NICRA Village
10.07.2019	Dr. JVNS Prasad, National Coordinator, NICRA, CRIDA, Hyderabad	Zonal Monitoring Committee visit to KVK and NICRA Village
10.07.2019	F. H. Rahman, Principal Scientist, ICAR-ATARI Kolkata	Zonal Monitoring Committee visit to KVK and NICRA Village
17th September, 2019	Mr. Biswanath Das, MLA, Joynagar Assembly	Plantation programme during 2019-20
03.12.2019	Dr. R C Mishra, Chairman of the QRT committee and former project coordinator of AICRP Honeybees & Pollinators	QRT visit for AICRP on HB & P
03.12.2019	Dr. P. Chhuneja, PAU Haryana	QRT visit for AICRP on HB & P
03.12.2019	Dr. Devanesan, KAU, Trivandrum	QRT visit for AICRP on HB & P
03.12.2019	Dr. Balraj Singh, Project Coordinator, AICRP HB & P and ex Vice Chancellor of Rajasthan Agricultural University	QRT visit for AICRP on HB & P

4. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Pekin duck farming	101	95	3500-4000 (200 broiler birds)	21000.00 (in 200 batch strength)
Vanaraja farming	87	85	3500-4000 (200 broiler birds)	13000.00/(in 200 batch strength)
Use of soft music 30 minutes before milking	310	90	24000/year/3 dairy unit	28000/year/3 dairy unit
Hydroponics fodder cultivation	25	29	1800/month (4+1 unit size goatery)	1950/month (4+1 unit size goatery)
Artificial Insemination in goat	30	20	1800/month (4+1 unit size goatery)	2050/month (4 unit size goatery)
Use of specific antibiotic in mastitis after C/S test	180	75	24000/year/3 dairy unit	31000/year/3 dairy unit
Regular screening of faecal samples	570	82	24000/year/3 dairy unit	32500/year/3 dairy unit
Asian catfish breeding	295	65	-	Rs. 3.00 lakh per 700 square ft. (40 glass trays) per year
Hi-tech betel vine boroz	398	85	Rs. 80,000/- per 500 sqm uint	Rs. 1,10,000 per 500 sqm unit
On-farm mass production of *Trichoderma* and its use in betelvine cultivation	610	63%	Rs. 2.87 lakh per ha	Rs. 3.66 lakh per ha
Use of bio-control agents in bacterial wilt management in tomato and bitter gourd	250	72%	Rs. 3.60 lakh per ha	Rs. 5.25 lakh per ha
Scientific management practices in Beekeeping	200	51%	Rs. 2.64 lakh	Rs. 3.10 lakh

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

4.2. Cases of large scale adoption
(Please furnish detailed information for each case)

Horizontal spread of technologies	
Technology	Horizontal spread
Use of biocontrol agents (*Trichoderma harzianum, Pseudomonas fluorescens, Metarhizium anisopliae*) in pest disease management	More than 1000 farmers come and collect biocontrol agents from the KVK laboratory
On-farm mass production of microbial bio-pesticide	More than 600 rural youths adopted the technology through the training cum demonstration project organized under RKVY scheme supported by the State Agriculture department of Govt. of West Bengal

Cotton cultivation in rice fallows	Through cotton cultivation, the KVK generated an additional employment of about 3.5 lakh mandays thus reducing seasonal migration. More than 3500 number of farmers have adopted this technology
Aerial vegetable cultivation	Raising of the land embankment ensures reclamation of degraded land by reducing soil salinity through hindering the capillary movement of the salt ions from beneath. This technology ensures year round crop coverage and reducing soil erosion as the raised embankment can be utilised for year round crop production. About 1.5 to 2 lakh farmers of the district have adopted this technology

Horizontal spread of technologies

Technology	Horizontal spread
Hi-Tech *Pan Boroz* : **A new vista in** **Betel vine cultivation** Betel leaf is one of the important commercial crops of the district South 24 Parganas. Out of total cultivable area of 368197 ha of the district, betel leaf occupies 2685 ha area covering around 35000 number of households from six coastal blocks (Sagar, Namkhana, Kakdwip, Pathar pratima, Mathurapur II and Kulpi). This crop has become mainstay of occupation for three blocks namely Sagar, Namkhana and Pathar Pratima.  **Weather affected traditional Boroz**	Since 2011-12, KVK has demonstrated nearly 650 numbers of units in collaboration with Department of Horticulture, Govt. of W.B., South 24-Parganas through National Horticulture Mission programme. To construct a Hi-Tech boroz of 500 sqmt size, the costing is Rs 3,00,000/- (Rupees Three Lakh). Farmer need to bear 50% of the total cost and the rest half is assisted by State Dept. of Horticulture through NHM scheme. KVK has made an arrangement of getting bank loan of the farmers' contribution amount (50% of the total cost) through a tying-up programme with Axis Bank, Joynagar Branch. For the ease of the farmers, door step bank account opening was done at village level. At present around 2000 farmers approached KVK for getting this type of hi-tech boroz in lieu of their traditional one.

Betel vine is a shade loving crop usually grown in artificial shade structure, called *Boroz*, made up of bamboo, paddy straw and other related bio-degradable items. Growing betel vine within this structure are prone to numerous diseases and insect pests. Also, in the coastal area these structures are frequently affected by storms and cyclones.

New plantation in Hi-Tech Boroz

Considering these aspects Ramkrishna Ashram KVK conceptualized a durable *boroz* structure using GI pipes on concrete basement fitted with green shade net, 75% on the top and 50% on the side walls. Unlike traditional *boroz*, this new *boroz* is made up of non-degradable items and there by chances of pest and disease attack is very less. Also, this modern *boroz* is fitted with micro-sprinkler irrigation facility, which not-only reduces irrigation cost, but maintains temperature and humidity within the boroz during the hot summer and dry winter. Another advantage of this hi-tech *boroz* is the uniformity in shading, there by uniform coloration of leaf is achieved.

Adopting this modern boroz, farmers are experiencing better profitability in betel vine cultivation due to lower cost of cultivation, minimum/no recurring cost for maintenance of *boroz* structure, higher production and higher market value of the produce (leaf) due to good colour, shape (roundish) and luster of the leaf.

Land Shaping and Rain Water Harvesting Technology including Land Embankment Cultivation for Augmentation of Agricultural Production: The Sundarbans falls under the complex-diverse-risk prone (CDR) agro-ecosystem. Although, agriculture is the mainstay of occupation for majority of the people, about 68% of the total cultivable lands is low lying, mostly mono-cropped and low yielding because of excessive rainfall resulting in water-logging due to impeded drainage system in monsoon. Again, scarcity of irrigation water accentuated by high salinity in soil & water, inundation of brackish water in cultivable land and non-availability of area specific technology for effective utilization of natural resources aggravate the problem to raise second crop in Sundarbans. Here, farmers face a unique problem of almost six months of surplus water due to heavy rain (1700-1800 mm/year) most of which are unutilized and mixes with saline estuarine as run-off water in one hand and six months of dry spell with huge scarcity of sweet water on the other hand. In this backdrop, Ramkrishna Ashram KrishiVigyan Kendra, Nimpith, West Bengal, has conceptualized and developed the Land Shaping and rainwater harvesting technology to address the twin problems of raising the level of the cultivable land and harvesting the rain water for second and third crops without altering the ground water level. Over the years, the said technology has under gone modifications and fine tuning through collaborative participation of the farmers and KVK scientists. This is a multi-faceted method by which HYV paddy replaces low yielding indigenous ones in rainy season and makes growing of high value vegetable crops possible during winter season. At the same time, pisciculture with duck rearing in pond and growing of fruit plants is also possible on the embankment developed by the dug up soil. The following points may be attributed to the technology – 1. Engineering solution for productive use of low land 2. Three dimensional (land, water and air) cropping options 3. Diversified cropping possibilities with integrated approach 4. Introduction of double and triple crops 5. Additional crops in pond and land embankment 6. Off seasonal cropping fetching higher market price 7. Water and energy saving module **<u>Principle of Land shaping</u>** ✓ Excavation of 1/5th area of the low land to a depth of 9’ ✓ Adjoining low land raised upto 1.5 feet ✓ Pond embankment – 5 feet wide and 4 feet height ✓ Land embankment around the area – 3’ wide and 3’ height ✓ 6 – 9 acre inch of rain water can be harvested and stored in the pond	This technology has been well accepted & demonstrated by different Govt. projects. For augmenting agri-horticultural production in the Sundarban area, Dept of Ag, GoWB established 1117 number of L.S. & R.H. Model in North 24 Parganas and South 24 Parganas district in the year 2017-18 through IWMP, RKVY and many other projects.

Give information in the same format as in case studies

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

Sl. No.	Brief details of technology	Impact of the technology in subjective terms	Impact of the technology in objective terms
1	Improvement of nutritional status of pregnant women by introducing nutrient rich vegetables in nutrition garden	Increase of hemoglobin level of pregnant mother resulting decreasing anemia among mother	Increase of birth weight of new born babies.
2	Scientific method of new born care by the traditional birth attendant	Improve the health status of the new born babies	Decrease in infant mortality rate

4.4. Details of innovations recorded by the KVK

Thematic area	
Name of the Innovation	
Details of Innovator	
Back ground of innovation	
Technology details	
Practical utility of innovation	

4.5. Details of entrepreneurship development

Entrepreneurship development	
Name of the enterprise	Horticulture Nursery
Name & complete address of the entrepreneur	Mr. Raju Molla
Role of KVK with quantitative data support:	Mr. Molla was provided with training on Horticulture Nursery at KVK. Then he was provided with one Horticulture Nursery support under ARYA Project.
Timeline of the entrepreneurship development	Training received during Early, 2018. Started nursery activity during late, 2018 Provided with horticulture nursery, End of 2018
Technical Components of the Enterprise	Raising of seedling of forest plants Raising of seedling of ornamental plants Seedling of Fruit plants are raised
Status of entrepreneur before and after the enterprise	School dropout Rural Youth, earlier was engaged as contractual worker in different agricultural sectors.
Present working condition of enterprise in terms of raw materials availability, labour availability, consumer preference, marketing the product etc. (Economic viability of the enterprise):	He has established his nursery over 1 acre land. He has two shade house, 2 electric pump, other raw materials like compost, soil, spoly packets etc. He has one mother plant unit on 0.5 acre area. Local women labourers are his main man-power source.
Horizontal spread of enterprise	At present he is capable of supplying 1 lakh seedlings at a time. His main focus is to supply seedlings in different govt programmes (like MGNREGA, ATMA etc.) through Block Development Offices.

4.6. Any other initiative taken by the KVK

4.6. 1. (i) Fishery SMS was the Guest Speaker in the DAPSC programme of ICAR-CIFA, Rahara at Panchuakhali, Kultali on 27.02.2019

(ii) Fishery SMS was deputed to work as Expert of Integrated Watershed Management Institute, New Delhi to assess fishery specific activities of WBADMIP in the districts of Purulia, Bankura and Birbhum from 13.03.2019 to 16.03.2019

4.6.2. Fishery specific assessment and future recommendations for WBADMI Project in the districts of Purulia, Bankura and Birbhum

A visit was conducted in designated Water User's Association in the districts of Purulia, Bankura and Birbhum from 13th to 16th March, 2019 to undertake fishery specific assessment of the various activities under the project of WBADMI. At the beginning, detailed discussion was held with the District Project Management Unit staffs to understand the staff pattern and job responsibilities at the DPMU level. The observations are as follows:

Under the State Project Management Unit or SPMU, there are DPMU or District Project Management unit in each of the districts of the State. Each DPMU has a set up pattern which includes Environmental Specialist, Agriculture Specialist (with additional charge of Horticulture Specialist), Fisheries Specialist, Executive Engineer, Assistant Engineer, Sub Assistant Engineer and Institutional Development Specialist or IDS. Under the Agriculture and Fishery specialist are Agriculture Field Assistant and Fishery Field Assistant. Under the IDS is the Support Organization (SO) or Service Provider(SP) which again has 5 core staffs apart from field staff and community workers.

The core staffs of the SO are to devote 60% of their time to field work and 40% of office work. The core staff comprises of a Community Mobilization Specialist cum Team Leader, Agriculture & Water Expert, Training Co-ordinator cum Facilitator, a Sub Assistant Engineer and an Office Manager who has to undertake 100% office work. The field staff of SO comprises of Community Workers who must be standard 12 passed and should be a bona fide resident of the particular block. Under the Community Workers is Community Service Providers who must be a bona fide resident of the particular village and at least standard 10 passed. Each Community Worker has at least 3 Community Service Provider.

The fund is released from the Dept. of Finance to the SPMU from where it is allotted to DPMU & from DPMU to SO/SP. The fund is released under 4 heads viz. Community Based Institutional Development (component A), Irrigation Infrastructure Development (component B), Agricultural Support Service (component C) and Office Management (component D).

It was revealed during the discussion with DPMU staffs that there has been no financial constraints whatsoever in any respect. However, it is obvious that a raise in salary / increment/ incentives/etc. may be considered for encouraging the staff, particularly for those with a consolidated pay structure.

Regarding training of beneficiaries by the specialists, both on field and on station training programmes are regularly organized by the DPMU's. It has been also noted that the on field trainings are conducted in the line of the very effective FFS mode. It has also been understood that the DPMU implements particular technology through adopting DC's (demonstration centre) where all technological inputs are provided for a period of maximum 12 months and through MP (mass production) where only seed & feed are supplied. DC's are conducted in a single water body which is either taken on lease by the FIG or may even be excavated by the DPMU. Beneficiaries in DC's are

those residing adjacent to the adopted water body. The minimum number of beneficiaries of a particular DC is 10. On the other hand, mass production units are carried out in those water bodies, the owner of which agrees to get registered under the WUA. In either case, normally 3% of the profit is deposited into the account of WUA, 50% is shared among the members and 47% is kept aside for meeting expenses like lease of water body and seed money for next year's culture.

Although 5 WUA were designated for assessment, an additional WUA in **Purulia** and an air breathing fish (indigenous) hatchery in Bankura were also visited and assessed. In Kashipur block of Purulia, in addition to Uluberia WUA, Kalidaha Purbad WUA (also in Uluberia village) was also assessed.

In **Bankura** district, Ashna Mini RLI of Simlapal block and Ramchandrapur Midi RLI of Indpur block were visited for assessment.

In **Birbhum** district, besides Khardanagari WUA in Suri –I block and Amkhoi WUA in Ilambazar block, an indigenous fish hatchery run by women SHG in Choto Bazar village of Rajnagar block was also visited and assessed. This hatchery has been financed by WBADMIP and follow–up guidance is provided by the block level state fisheries unit. The beneficiaries were selected by WBSLRM and trained at RAKVK, Nimpith, South 24 Parganas in July, 2017.

The overall performance was found to be highly positive with the FIG under Ramchandrapur WUA and Amkhoi WUA being "over achievers". FIG's under Uluberia WUA and Khardanagari WUA may be rated as "achievers" while the women FIG of Ashna WUA needs time to graduate from "under achievers" to higher levels. The details of the achievement of all the FIG's are discussed in separate case studies.

A SWOT analysis of the overall project activities with reference to fisheries is as follows:

STRENGTH

1. Experienced and qualified specialists
2. Responsible & dedicated community level workers
3. A well developed MIS
4. Sound financial infrastructure
5. Women participation is exceptional

WEAKNESS

1. Low retention of water, dry area
2. Dearth of carp & catfish hatcheries
3. Higher trans-evaporation loss
4. Most of the ponds are taken on lease so certain portion of profit had to be sacrificed for the purpose.
5. Late rainy season hamper farming

OPPORTUNITY

1. Interest of communities towards increasing income by adopting new technologies
2. Faith of communities on WBADMIP specialists, field staff & support organization
3. More interest among FIG members and women SHG for more involvement in fishery activities
4. Various aquifers are available which may be judiciously utilized for specialised fisheries activities like fish breeding
5. Presence of large water bodies which have an inherent capacity to sustain production
6. Presence of several seasonal and perennial abandoned water-bodies

THREAT

1. Disgruntled section of villagers not yet involved in the project

2. Climatic aberrations leading to variable water accumulation and hence variable productivity
3. Inadequate rainfall during season

Hence, it can be concluded that the fisheries activities under the WBADMI Project run by the DPMUs are guided by a set of methodical and well justifiable rules which makes the project very much viable with regards to accountability, sustainability, equitability and profitability and effective showcasing of the implemented technologies, in some cases, provide a visible impact on the socio-economic development of the target communities.

RECOMMENDATIONS

1. More diverse fish species must be stocked in each of the ponds where carp culture/ composite fishculture/ desi fish culture is undertaken, to increase production. However, the standard stocking density of fish should be strictly followed.
2. Instead of taking up spawn to fingerling culture, among each FIG 3 sub groups may be made for spawn to fry, fry to fingerlings and fingerlings to table fish. This will ensure round the year income for the group instead of only 3-4 months.
3. For spawn culture, small ponds of 0.02 – 0.06ha water area and depth of 3-4 ft. should be selected.
4. For fry rearing upto fingerlings stage, ponds with water area of 0.08 – 0.13ha and depth of 4-5 ft. should be selected and ponds bigger than these with more depth may be utilized for fingerlings to table fish culture.
5. Proper pond preparation and management is a must for undertaking each of the culture practice.
6. The “spawn to fry” group may supply fry to outside farmers to maintain a steady income. The same holds true for the fry to fingerling group.
7. The fingerling to table fish group may follow the process of multiple stocking and repeated harvesting to guarantee regular income throughout the year by selling advanced fingerlings of 150-200g which has good consumer preference.
8. For assured, timely and doorstep supply of quality seeds of carps like catla, rohu, mrigal, bata, calbasu, silver carp, etc. and indigenous high value fish like desi magur, singhi, tangra, koi, pabda, etc., small scale carp and indigenous catfish hatcheries, set up by RAKVK, Nimpith in its ICAR-ARYA project villages, may be established in some of the blocks of each of the 3 districts.
9. Small, shallow and derelict water bodies may properly be renovated and utilized for culture of air breathing fish, particularly desi magur, singhi and koi.
10. Experienced FIG may also take up monosex tilapia farming in medium sized shallow ponds. As the duration of culture for this fish is only3.5 to 4 months, 2-3 culture operations are possible in a year with prospects of a greater return.
11. Stress should be given on integrating fish culture with animal husbandry and horticulture for optimum utilization of all available resources, thereby maximizing profit and minimizing risk.
12. All the FIG members should be given at least 4 days in house training on the particular culture or fish breeding, they wish to pursue, from any KVK having sound farm infrastructure.
13. The DC and the Mass Production in a WUA should be for at least 2 years to observe any discernable change in the culture system.

4.6.3. **Providing expertise in dog show**



Now a days alternative livelihood option is one of the major concerns of all the scientist/preofessionals/extension workers working in the field of agriculture and allied. Rearing of dog is, now a days, one of the lucrative income gerating activity vis-à-vis being a companion animal it serves the purpose of 'Feel good'. One such dog show was organized by Department of ARD, South 24 pargans district on 04.01.2019 at Fultala, Baruipur where expertise as Judge was provided from our KVK.

4.6.4. **Special programme in collaboration with DDARD, South 24 Parganas:**

Threre are so many SHG groups in this district. Few of them are working very well in the animal husbandry sector. After proper identification of such type of groups, ARD Department has been providing skill development training. One such group was on rearing of goats during quarantine period. Actually, these SHGs procure goats from local areas, rear them for 2 months and after that ARD Department used to buy these goats for distribution to the farmers in different schemes. But during quarantine period, remarkable mortality was hampering the entire system. With this backdrop, a special training (21.01.19-25.01.19) was conducted in KVK emphasizing their problems and targeting hands on training.


4.6.5. **Special training organized by DDARD, South 24 Pargans for the Veterinarians of this district:**


Assistance to State for Control of Animal Diseases, a major programme sponsored by central government, is mainly organized every year for the upgradation of knowledge and skill of the veterinarians. Hands on training and glimpse of modern scientific update were demonstrated to the doctors. A very good interactive session made the programme a grand success.

4.6.6. **Diploma in Agricultural Extension Services for Input Dealers (DAESI)**

The public extension system of our country alone is not enough to make our farming community keep appraised on the daily developments in Agriculture. Hence the Ministry of Agriculture, Govt. of India in its National Agricultural Policy and in the 10th Plan approach paper emphasized on the need for reforms in agricultural extension of our country through increased participation of Multi Agency Extension Services like Multi-National Companies, corporate bodies, Voluntary Organizations, Farmers' Associations and Input Dealers, etc.

The large network of about 3 lakh Agri-Input Dealers in our Country are acting as an important source of Farm Information to the Farming Community. However, nearly 90% of them do not have any formal Agricultural Education. They act basically as businessmen without realizing the implication of "laws" relating to handling of Agricultural Inputs. If they are transformed into para-professionals by providing adequate agricultural knowledge, they can be very useful in Market led Extension.

Considering all these facts and opportunities, the National Institute of Agricultural Extension Management (MANAGE), Hyderabad, has designed Diploma in Agricultural Extension Services for Input Dealers (DAESI), a One Year Diploma Course which imparts formal agricultural education to the dealers so that they can couple their business with extension services.

Objectives of the Course:

- To orient on location specific crop production technologies of broad-based agriculture and specific package of practices related to field problems
- To build capacity of Input dealers in efficient handling of Inputs
- To impart knowledge about the laws governing regulation of Agricultural Inputs
- To make Input Dealers an effective source of farm information at the village level (one stop shop) for the farmers/farm women

Initiative taken by RAKVK, Nimpith:

This course has been popularized since 2004-05, but mostly in South Indian States like, Andhra Pradesh, Tamilnadu, etc. It is the first time that any States from the Eastern part of the country has thought off such programme in 2013-14. Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith and SAMETI, Narendrapur are the two pioneer Institutes that have taken initiative to implement this diploma course for the benefit of the farmers of South 24 Parganas District. 40 Agricultural Input Dealers from different Blocks of the District are selected for each batch per center.

Year	Enrolled candidates	Passed out candidates
2013-14 (1 batch)	40	40
2014-15 (1 batch)	41	41
2015-16 (1 batch)	40	40
2016-17 (2 batches)	80	80
2017-18 (2 batches)	80	80
2018-19 (1 batch)	40	40
2019-20 (2 batches)	80	Pursuing

Methodology:

The course is completed in 48 weekly classroom interactions as well as practical and field visits. The weekly classes are mutually agreed upon to be conducted on every Thursday (market holiday for most Dealers). Supply of study materials, use of multi-media instructional devices and engagement of experts as Resource Persons and continuous monitoring as well as final evaluation are followed upon.

Content and coverage:

Along with the basic Agricultural knowledge and practices, more emphasis is given on development of problem-solving apprehensive capabilities among the trainees. This will help the farmers to be mostly benefitted from the course. The overall course is divided into some modules like (a) Local Agro-ecological situation, (b) Soil and integrated nutrient management, (c) Crop production technology, (d) Integrated Pest and Disease Management, (e) Water management, (f) Extension management and (g) Agriculture related Laws.

Till date seven batches (281 dealers) have been completed at KVK Nimpith center. The 2019-20 sessions has been started with 80 candidates (ninth and tenth batch) from December 2019. More and more numbers of Agri-Input Dealers are enquiring for enrollment for the next session. Hope this novel approach will bring enormous changes in the mind of the Input Dealers towards a sustainable production system with minimal exploitation of ecological resources.

4.6.7. Establishment of Beekeeping demonstration unit

Honeybees not only help us by providing highly nutritive 'honey' but also play an important role in increasing the productivity of crops through pollination. Almost one third of the arable crops in the world are pollinated by bees and non-bee pollinators. Considering pollination services for the farm crops and production of honey as bi-product, a beekeeping demonstration unit was set up in the KVK Instructional farm.

Indian honey bee (*Apis cerana*) hive

Three species of Bees are being maintained in the farm:

- *Apis cerana* (Indian honeybee),
- *Apis mellifera* (Italian honeybee) and
- *Tetragonula irridipennis* (Stingless Bee)

To increase honey production, bee loving crops and flowering plants are also introduced into the cropping system of the farm.

A small, manual honey filtering unit has also been set up for pasteurization, filtering and bottling of the farm produced honey.

Stingless bee (*Tetragonula irridipennis*) hive

European honey bee (*Apis mellifera*) hive

4.6.8. Celebration of World Honey Bee Day 2019

AICRP (Honeybees & Pollinators) at KVK Nimpith, celebrated World Honey Bee Day 2019 on 20th May, with the KVK adopted Beekeepers in Chuprijhara Village of Joynagar II Block. The villagers are busy to tap the Mangrove Honey through the *Apis cerana* (Indian Honeybee) hives. World Honeybee Day reminds us to thank Mother Nature in creating such a wonderful insect that not only produces elixir for us in the form of HONEY but also maintains a linkage in the Food Chain through Pollination.

4.6.9. Effect of Pollination Service on yield of Cucumber

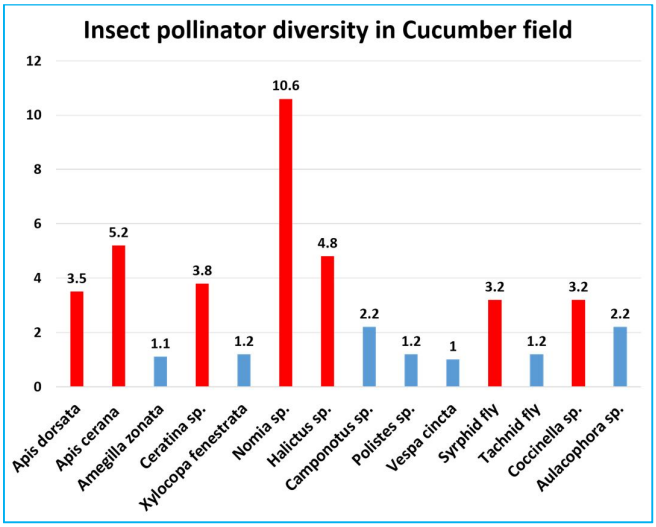
Cucumber is a monoecious, obligate cross-pollinated crop in the Cucurbitaceae family. To achieve successful pollination and fruit production, insects are required to transfer pollen from male flowers to female flowers. One of the effective traditional practices has been the hand pollination by the farmers to improve the fruit setting in this crop.

A comparative study was undertaken between pollination exclusion, open pollination and bee pollination with Indian Honeybee(*Apis cerana)* and Stingless Bee(*Tetragonula irridipennis).*

40 mesh nylon cages of 3m x 3m x 2m size were erected for studying the effect of pollination exclusion and bee pollination. A 4-frame hive of*Apis cerana*and a stingless bee hive (*Tetragonula irridipennis*), having 500 bees, were placed separately inside two cages. For each treatment three replications were maintained. Pollinator diversity in open field was recorded. Pollination service was engaged 30 days after sowing when the plants attained 5% flowering stage.

Yield Parameter	Pollination exclusion	Open pollination	*Apis cerana* Pollination	Stingless bee
Fruit set (%)	0	60.5	66.5	62.4
Fruit weight (g)	-	133.3	148.3	145.8
Fruit length (mm)	-	144.8	157	151.8
Percentage of misshapen fruits with incomplete pollination	-	18.2%	3.7%	4.9%
Yield (t/ha)	-	11.67	13.39	13.22
B:C ratio	-	2.9	3.18	3.26

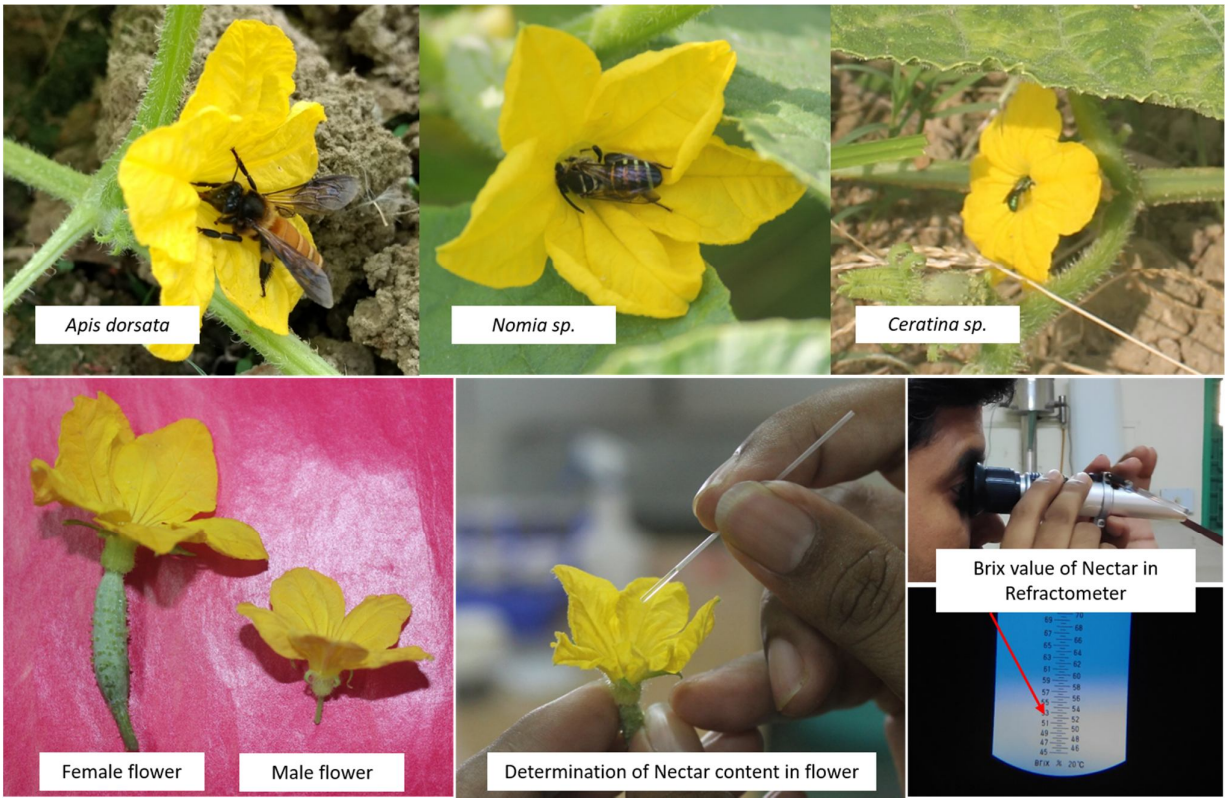
Result of pollination service study:



- The results show that there is no fruit formation when all insect pollinators are excluded.
- Insect pollination is obligatoryin achieving cucumber production. The studies demonstrate the absolute necessity of insect pollination on fruit set as there was 100 percent abortion of all pistillate flowers that received no entomophilous visitation when they were covered with nylon net cages.
- Apart from *Apis cerana* and stingless bees, the native solitary bees and *Apis dorsata* also contribute significantly in pollination service.
- Bee pollination with *Apis cerana* resulted in highest fruit set, fruit length, fruit weight, yield and least Percentage of misshapen fruits, followed by Stingless bee pollinated crop and open pollination.
- Stingless bee pollination does not add burden to the farmers regarding management of bee hive. Hence the overall B:C ratio was highest in this treatment.

Study of floral biology in cucumber:

- Inflorescence is cymose
- Flowers are bracteates, pedicellate, unisexual, actinomorphic, pentamerous and epigynous
- Anther dehiscens occurred in the morning hours at temperatures around 21^{o}C.
- Pollen fertility was greatly reduced after 2:00 p.m.
- Stigmatic secretion as well as nectar content in flowers also drastically dried up with increase in temperature after noon.
- Nectar content varied from 2 – 9 mg per female flower and 1 – 3 mg per male flower.
- Brix value of nectar was found between 57and 58.



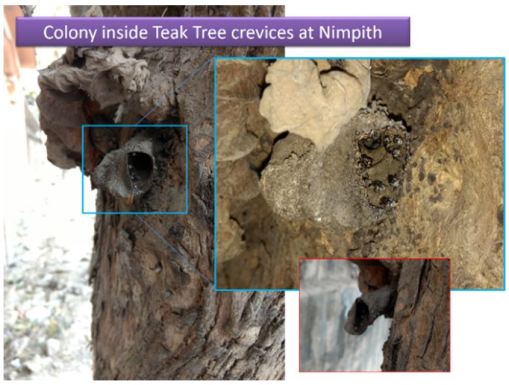
4.6.10. Meliponiculture (Stingless beekeeping) for sustainable agriculture and sustainable livelihood:

Stingless bees,also known as Dammar bees,belong in the family Apidae, and are closely related to common honey bees.Stingless bee is the smallest (4.0 to 5.0 mm long) of the honey bees. They can be found in most tropical or subtropical regions of the world, such as Australia, Africa, Asia and tropical America. Stingless bees are dispersed throughout most parts of India and form an important group of pollinators in agricultural and natural ecosystems. Being tropical, they are active all year round. Unlike other social bees, they do not sting (due to vestigial sting organ), but can defend by biting if their nest is disturbed. They usually nest in hollow tree trunks, wall cavities, underground cavities, termite nests or rock crevices.

Nesting site: The stingless bees, found in Nimpith and Bankura District, are *Tetragonula irridipennis.* At Nimpith they were mostly found to nest inside tree trunk cavities of Teak and Coconut. Whereas in Bankura, they preferred to nest in wall cavities apart from tree trunk cavities. The nests were located at a height ranging from 1 ft above ground to 9 ft.

Nest structure: Unlike common social bees, stingless bees construct egg-shaped pots in cluster. They are made up of bees-wax and plant resin (known as cerumen). These pots are often arranged around a central set of horizontal brood combs, wherein the larvae are housed. When the young worker bees emerge from their cells, they tend to initially remain inside the hive, performing different jobs. As workers grow older, they become guards or foragers. Unlike the larvae of common honeybees and many social wasps, stingless bee larva are not actively fed by adults. Pollen and nectar are placed in a cell, within which an egg is laid, and the cell is sealed until the adult bee emerges after pupation. At any one time, hives can contain 300–80,000 workers, depending on species. The pollen and honey storage pots are larger than the brood pots.

Meliponiculture: Beekeeping with stingless bees is called as **meliponiculture**, which has been practiced for many centuries in various parts of the world. It is found in the wild and also deliberately kept by beekeepers for pollination and its highly priced honey, because of its high medicinal value. They can be easily can be kept in hives like other honeybees. Their small size allows them to have access to many kinds of flowers whose openings are too narrow to permit penetration by other bees and they are common visitors to flowering plants in the tropics. However, there is dearth of information on floral resources of stingless bees in India.



Medicinal properties of stingless bee honey: The honey of *T. iridipennis* is a rich source of antioxidant flavanoids. This is because workers collect honey from medicinally important herbal plants and flowers. Stingless bee honey able to protect against gastrointestinal infection in humans. Due to the emerging of the antibiotic resistant bacteria such as Methicillin-resistant Staphylococcus aureus (MRSA), the potential of this honey to become an antibacterial agent to against this problem were proved by studies done by Nishio et al. (2016) and Medeiros et al. (2016). The antimicrobial activities of honey were reported due to phytochemicals, acidity, high osmolarity, and the presence of hydrogen peroxide in the honey.

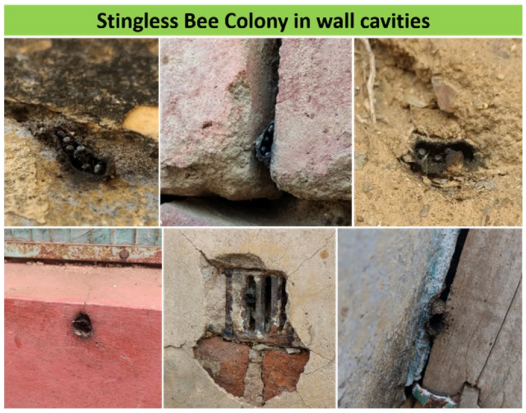
Stingless bee honey has been found to show chemo-preventive properties in rats, induced with colorectal cancer and also was found not toxic towards the animals. Stingless bees honey, propolis and beebread were found to exhibit antioxidant activity and inhibit human

breast adenocarcinoma (MCF-7) cell lines growth.

The quantity of honey produced per hive is a relatively small 200-300 gram per year. But the medicinal properties of this honey has also made its price higher (Rs. 1500 to Rs. 4000 per kg) than the normal honey.

Objectivesof study: Hence a study has been undertaken by KVK Nimpith with the following **objectives**:

- To survey the natural habitation of Stingless bees in the coastal regions
- To design and standardize stingless beehive
- To study the life cycle and foraging behaviour
- To survey and enlist forage plants
- To find out the scope of pollination service with stingless bees



Progress of study:

- Survey of stingless bees:
  - Natural colonies were located at South 24 Parganas District (Nimpith village) and at Bankura District (Mujrakundi village)
- Foraging behaviour:
  - The were found to forage on seasonal flowers, flowering trees, mustard, sunflower, cucurbits, mango, guava, litchi, coconut, areca nut, weeds and on other wild flowers
  - Peak foraging time was found between 9:00 a.m. to 4:00 p. m.

- Collection of stingless bee colony
  - Direct method: The colonies were collected directly from wall cavities. At first 50-100 bees were collected in a plastic bottle by holding mouth of the bottle closely over the entrance of the nest and beating the wall slowly. Then a portion of the wall at the entrance of the nest was cut open carefully. After that a portion of the brood cells along with some pollen and honey pots were collected from the nest and kept in a wooden hive. Then the entrance of the nest in the wall was closed with mud leaving a narrow hole. The original colony returned to its normal activities within one or two days. The collected colony and the bees in the plastic bottle were taken back to the AICRP centre at Nimpith.

  - Indirect method: Wooden hives were made with two holes on them at opposite side. One hole was connected with the entrance of the nest on the wall with a transparent water level pipe (2.5 mm diameter). The junction at the nestentrance was pasted with mud to prevent escape of the bees. Now the bees have only one way to move out of their nest – through the plastic pipe. The bees started to move out through the plastic pipe into the wooden hive and escape through its second hole. The wooden hive was fixed to the wall and covered for protection against heat and rain. The bees are

expected to store pollen and honey inside the wooden hive first and then slowly develop a secondary colony inside it. After a certain time, such wooden hives with newly developed colony will be separated from the original colony and taken out. Presently the wooden hives are being monitored regularly.

- Colony growth:
  - Wooden boxes of different sizes (length: 30 cm, width: 10 cm and height: 10, 15, 20 cm) are being evaluated for optimum colony development and growth.
  - The new colony collected from Bankura, developed new queen after 15 days.
  - The brood volume doubled within two months.

4.6.11. Promotion of Beekeeping for the Honey Hunters (Moule) of Sundarbans in collaboration with Divisional Forest Office, South 24 Parganas and WWF-India

Honey hunting is a traditional practice of collection of forest honey from Sundarbans. The people associated with this profession are called honey hunters (Moule). This profession is associated with high risk resulting from Man-Animal conflict and often leading to casualties of human lives. To minimize this life risk and provide alternative source of livelihood an effort has been initiated by the Divisional Forest of South 24 Parganas and WWF-India in collaboration with AICRP centre on honeybees at KVK Nimpith. As a part of such initiative, skill development trainings have been organized jointly by both the organizations. After completion of training, beehives have been provided to the interested farmers for starting their own apiary, with a condition that they will not venture into the forest for honey collection.

- 120 honey hunters trained by AICRP (HB & P) RAKVK, Nimpith Centre
- One group of them have been provided with 100 mellifera colonies by WWF-India
- Others will take loan from West Bengal cooperative Society
- Potentiality of harvesting 25-30 kg Mangrove honey per hive per season
- Marketing tie up with West Bengal Forest development Corporation Limited

4.6.12. Promotion of Backyard Beekeeping with Indian Honey Bee (*Apis cerana*) for Doubling of Farm Income in Sundarban

Honey collection in the Sundarbans is a life risking business. Yet, thousands of poor fishermen and villagers living around the forests of the Sundarbans Biosphere Reserve depend upon honey collection for their livelihood. This is a seasonal activity that lasts for about three months (March to May) in Sundarbans. During this season, the traditional honey collectors (known as '*Mouli*') risk their lives to reach the most remote parts of the forest to collect one of the best quality honey in the country and in the process, many lose their lives in fatal tiger attacks. About 34% of death attributed to human tiger conflict is reported during this activity. Apart from this, honey collection from natural hives from the wild, there is a growing trend of managed beekeeping at the fringe of the Sundarbans Mangrove forest. Hives of European bees (*Apis mellifera*) are placed in the forest fringes to harvest the mangrove nectar during March to end of May. A total of 56,90,958 kg of honey valuing approximately INR 68,29,14,960 was produced over a period of 12 years (2005-2017) from Sundarban Tiger Reserve alone (STR Annual Reports).

The problem with European Honeybee (*Apis mellifera*) is its voracious foraging habit that makes it mandatory for migratory beekeeping. A beekeeper has to move to different districts with his hives to catch up with floral abundance at different season. As for example, during November-December a beekeeper goes to Midnapur and Bankura to harvest honey from eucalyptus bloom, during December-January to Nadia and Murshidabad for Mustard and Coriander honey, during February-March to Malda, Murshidabad and Baruipur for litchi honey and during April-May to Sundarbans for Mangrove honey. But this seasonal migration may detach the farmers from their regular farming practices and may disturb the social security of the women members of their families. Another problem with *Apis mellifera* colonies is their relative susceptibility to various diseases and mites.

Scope of Indian Honey Bees for backyard beekeeping: On the other hand, Indian Honeybees (*Apis cerana*) are fit for stationary beekeeping as they can easily survive the harsh climatic condition of Sundarbans throughout the year. They can survive with the available forage plants in and around the Mangrove forest, natural vegetation, weeds and agricultural crops. They are also better tolerant to most of the diseases. So the farmers need not migrate to a distant place from their residence and continue beekeeping activities along with the normal farming activities.

Considering all these scopes, Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith, through its All India Coordinated Research Project on Honeybees and Pollinators, has started necessary research work and awareness activities in some of the villages around Sundarbans to promote stationary beekeeping with Indian Honeybees as Backyard Beekeeping. From various research activities of the centre, it has been proved that honeybees also help in increasing crop production by 10-40% through improved pollination, especially in Cucurbits.

Objectives

- Research and development of standard management practices of Indian honeybees (*Apis cerana indica*) under Sundarbans climatic condition
- Backyard beekeeping with Indian honeybees (*Apis cerana indica*)
- Increase in overall farm income from honey production and increased crop production through improved pollination

Strategies

- Skill development on beekeeping
- Establishment of apiary
- Collection of data (weather and bee colony growth parameters) and analysis
- Processing and marketing of Honey

Activities

Selection of Beneficiaries and formation of Group:

Village: Chuprijhara (Block: Joynagar- II)

The village is located adjacent tributaries of Thakurani River and have stretches of mangrove forest along the southern boundary. The villagers grow various vegetables throughout the year. Apart from this there is a thick vegetation cover of trees like Neem, Khirish, Acacia, Eucalyptus, coconut, etc.

Beneficiary : 26 no.

Name of Group: Sundarban Moupalan Samity

Skill development training:

A 4-day long residential capacity building programme was organized at the beginning of the programme and it was followed by another 4-day refresher training. The beneficiaries were provided with training kit containing necessary literatures.

Establishment of Apiary and Scientific Beekeeping:

50 beehives with colonies of Apis cerana were provided to the group under financial assistance from AICRP on Honeybees & Pollinators. Presently the hives are placed near Mangrove forest to tap the floral nectar of Mangrove plants. At the end of June, the hives will be kept at the backyard of individual members to tap nectar from agricultural and horticultural crops in the village.

4.6.13. Visit of QRT to AICRP on Honey Bees and pollinators, RAKVK, Nimpith (Voluntary Centre)

RAKVK, Nimpith is implementing AICRP on Honey Bee & Pollinators as a voluntary research centre since 2015, under its Plant Protection section. As part of the review of progress of AICRP centres of the Eastern and North-Eastern region, the QRT meeting was organized at FACC, Kalyani on 2nd December and that was followed by a field visit to RAKVK Nimpith on 3rd December 2019. Mr. Prabir Kumar Garain, SMS (Plant Protection) and PI, AICRP (HB & P) of this centre made a presentation at the meeting, briefing the centres progress, which were highly commended by the house.

It was a memorable day for the KVK to host the honourable QRT members, Dr. R C Mishra, Chairman of the QRT committee and former project coordinator of AICRP Honeybees & Pollinators, Dr. P. Chhuneja, PAU Haryana, Dr. Devanesan, KAU, Trivandrum, Dr. Balraj Singh, Project Coordinator and Member Secretary and representatives from PC cell and 9 Principal Investigators of Eastern and North-Eastern region. The entire team visited the KVK's apiary, other KVK demonstration units and also visited to Sundarbans. They were highly satisfied with our efforts in promotion of Beekeeping in Sundarban region, especially for the development of the wild honey collectors, who often become prey to fatal tiger attack.

Special programme in nutrition:

4.6.14. Demonstration of LANN Programme has been conducted in Murshidabad District at Nabagram in collaboration with world vision by Home Science of RAKVK, Nimpith

4.6.15. Delivered lecture as resources person at Department of IRDM of Vivekananda University of Narendrapur

4.6.16. Acted as Guide of dissertation programme of Tania Mukherjee, M. Sc IRDM Faculty of Vivekananda

4.6.17. University of Narendrapur on the assessment of nutritional status of migrated slum children (2-5 years). Rajdanga - Ward No. 107 under Kolkata Municipality Corporation of Kolkata, West Bengal

4.6.18. Acted as nutrition expert for evaluation of green college of SRAN sponsored by WHH Germany

5. LINKAGES

5.1. Functional linkage with different organizations

Name of organization	**Nature of linkage**
WBLDC	Marketing of goat, sheep and broiler duck meat from the farmers production, Marketing of pekin duck meat, and ARYA farmers produce
Dept of Forest, Govt. of West Bengal	Training on poultry, goatery, and duckery as alternative livelihood option.
West Bengal university of animal and fishery sciences	Different on farm research, conduction of health cum vaccination camp, organizing exposure visit for veterinarians of different states of West Bengal
Animal Resource development department, South 24 Pgs district	Implementing Prani Mitra programme, Mobile veterinary Clinic programme
Institute of Animal Health and Veterinary Biologicals, Kolkata, West Bengal	Joint diagnostic survey
SIPRD, West Bengal	Research and Extension
Central Glass and Ceramic Research Institute	
Rellience Foundation	Voice SMS, Toll Free Number, Dialout Audio Conference like ICT Based Extension Services
Central Institute of Fisheries Education, Salt Lake, Kolkata	Training and Extension
University of Calcutta, West Bengal	
University of Kalyani, Kalyani, Nadia, West Bengal	
West Bengal State University, Barasat	
District Rural Development Cell, North- 24 Parganas, WB	
District Rural Development Cell, South- 24 Parganas, WB	
SDB, GOWB	
Serampur College, Kolkata	

5. LINKAGES (Contd…)

Name of organization	Nature of linkage
City College, Kolkata	Training
Vivekananda College, Kolkata	
ATMA, Howrah	
ATC & SAMETI, Narendrapur	
ATMA, South 24 Parganas	
SDB, GOWB (Cotton Cultivation)	Demonstration
CICR, Nagpur (IRM)	
Advanta, Excel Crop Care Ltd.	
National Horticulture Mission, Mayukh Bhavan, Salt Lake, Kolkata, West Bengal	
District Horticulture Office, Alipur, South 24 Parganas	
Directorate of Oilseed Research, Hyderabad	
National food security mission	Collaborating work
National food security mission	Collaborating work
Directorate of Extension, BCKV, Mohanpur, Nadia	
Sundarban Milk Union Limited, South 24 – Parganas	Collaborative programme
Central Institute of Fisheries Education, Salt Lake, Kolkata & Versova, Mumbai	
Cotton Corporation of India (CCI), Kolkata	Marketing of farm produce
Rural Development Wing of Ramkrishna Ashram	Conducting flood relief animal health camp at different block of Joynagar-II and Kultali.
ARD Dept, Govt. of West Bengal	Implementing Prani Mitra programme, Mobile veterinary Clinic programme
PBGSBS	Implementation of Artificial insemination technology
National dairy Research Institute, Kalyani	Technology dissemination at field level and organizing farmers meet
Poultry Federation, West Bengal Chapter	Attending Poultry Mela, farmers meet
MANAGE, Hyderabad	A one-year diploma course is being implemented by the KVK in collaboration with MANAGE, Hyderabad. The name of the course is “Diploma in Agricultural Extension Services for Input Dealers”. 40 Agri input dealers from different blocks of the District are studying this course. Weekly classes (every Thursday) are arranged for this 48 week long course.
National Centre for Integrated Pest Management (NCIPM), New Delhi	Collaborative research project
AICRP (HB & P), ICAR, New Delhi	Voluntary Centre of AICRP

1.2. List of special programmes undertaken during 2019 by the KVK, which have been financed by ATMA/ Central Govt/ State Govt./NABARD/NHM/NFDB/Other Agencies **(information of previous years should not be provided)**

a) Programmes for infrastructure development

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.)
All India Coordinated Research Project on Sunflower**(**AICRP**)**	Development of early duration Hybrids for rainfed situations and Rabi-Summer	2019	Indian Institue of Oil Seeds Research, Rajendranagar, Hyderabad	30.17 lakh
All India Coordinated Research Project on Sunflower**(**AICRP**) (SCSP Plan)**	SC, ST Training	2019	Indian Institue of Oil Seeds Research, Rajendranagar, Hyderabad	2.5 lakh
NFSM Oilseed	Oilseed Production	2019	Department of Agriculture, Govt. of West Bengal.	28.88 lakh
NFSM Cotton	Cotton Production	2019	Department of Agriculture, Govt. of West Bengal.	40.44 lakh
Cotton Development Mission **(**CDM**)**	Production of Raw Cotton and improve the bio mass statusof the North and South 24-Parganas districts.	2019	Directorate of Agriculture, Govt. of West Bengal	9.90 lakh
ATMA	Increase in farm income through Beekeeping	2019	Directorate of Agriculture, Govt. of West Bengal	5.00 lakh
DAESI Programme	Diploma in Agricultural Extension Services for Input Dealers	2019	Self Finance	16.00 lakh
National Innovations in Climate Resilient Agriculture **(**NICRA**)**	Strategies to enhance adaptive capacity to climate change in vulnerable regions of district	2019	ICAR, New Delhi	16.00 lakh
National Innovations in Climate Resilient Agriculture **(**NICRA**)**	Landshaping and Retaining Rural Youth in Agriculture through Self Employment Generation programme	2019	IARI, New Delhi	5.00 lakh
AICRP on Honey Bees & Pollinators (Voluntary Centre)	Research and Development of beekeeping and pollination services in South 24 Parganas	2019	Division of Entomology, IARI, New Delhi	4.00 lakh

Attracting and Retaining Youth in Agriculture (ARYA)	Attracting and Retaining Rural Youth in Agriculture through Self Employment Generation programme	2019	ICAR, New Delhi	15.14 lakh
MVC South	Extension of animal health care services in remot areas in west bengal through mobile veterinary clicnic	2019	ARD Department, GOWB	49.32 lakh
MVC North	Extension of animal health care services in remote areas in West Bengal through mobile veterinary clinic	2019	ARD Department, GOWB	49.32 lakh
Seed Hub	Oilseed Production	2019	Indian Institue of Oil Seeds Research, Rajendranagar, Hyderabad	10 lakh

(b) Programme for other activities (training, FLD, OFT, Mela, Exhibition etc.)

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.)
District Kisan Mela	Demonstration of Innovative technologies for large scale adoption	29th to 31st January, 2019	ICAR-ATARI	4 .00 lakh
State Level Oilseed Kisan Mela	Vegetable Oil Scenario in National Perspective &Scope of Oilseed Cultivation in West Bengal	18th to 19th March, 2019	NFSM (OS & OP) Scheme of the Department of Agriculture, Govt. of West Bengal.	8.45 akh

6. PERFORMANCE OF INFRASTRUCTURE IN KVK

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

Sl. No.	Name of demo Unit	Year of estt.	Area(Sq.mt)	Details of production			Amount (Rs.)		Remarks
				Variety/breed	Produce	Qty.	Cost of inputs	Gross income	
1.									
2.									
3.									
4.									
5.									
6.									
7.									
	Total								

6.2. Performance of Instructional Farm (Crops)

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	
Kharif Paddy (2018-19)	14.06.18	05.11.18	0.32	Pratikshya	B-F	8.40	3000	26880	
	15.06.18	06.11.18	0.93	Pratikshya	F-C	19.20	9120	53760	
	10.06.18	20.11.18	0.20	Sabita	B-F	7.00	1800	22400	
	10.06.18	21.11.18	1.53	Sabita	F-C	26.00	14380	75400	
	16.06.18	07.11.18	0.13	CR-401	B-F	4.40	900	14080	
	09.06.18	22.11.18	0.13	Varsha Dhan	B-F	2.80	700	8960	
	11.06.18	16.11.18	0.40	Dudheswar	TL	14.00	2070	36400	
Kharif Paddy (2019-20)	25.06.19	15.11.19	0.065	Puspa	B-F	1.5	2500	5250	
	24.06.19	27.10.19	0.13	DRR-46	B-F	1.0	4000	3500	
	15.06.19	21.11.19	0.13	Ciherang Sub-1(Bina dhan)	B-F	3.5	5100	12250	
	15.06.19	18.11.19	0.20	CR-401(Reeta)	F-C	4.55	8240	14560	
	25.06.19	15.11.19	0.13	Dhiren	B-F	2.0	5100	7000	
	25.06.19	01.12.19	0.13	Luna Suvarna	B-F	2.4	4900	8400	
	25.06.19	15.11.19	0.13	Rajdeep	B-F	1.65	5000	5775	
	25.06.19	20.11.19	1.0	Pratikshya	F-C	22.4	39500	71680	
	20.06.19	26.11.19	1.0	Sabita	F-C	18.0	37860	57600	
	19.06.19	02.12.19	1.0	Varshadhan	F-C	16.0	37000	51200	
	18.06.19	20.11.19	0.20	Dudheswar	TL	3.85	6570	9625	
Green Gram (2018-19)	07.02.18	29.04.18	0.52	PDM-84-139	TL	5.50	1220	6875	
Brinjal	10.09.18	30.03.19	0.20	Muktajhuri	Immature Fruit	58 q	12460	37830	Comsumed at farmers hostel
Cabbage	10.09.18	15.01.19	0.26	Rare ball	Fresh Head	63 q	18970	32890	Comsumed at farmers hostel
Tomato	11.09.18	28.03.19	0.13	Deb	Ripe fruit	47 q	13760	26270	Comsumed at farmers hostel
Cauliflower	18.09.18	05.01.19	0.13	Dawn	Fresh Curd	25 q	9740	17860	Comsumed at farmers hostel
Okra	20.12.18	12.01.19 to 30.03.19	0.13	Rohini	Immature Fruit	8.7 q	7360	16710	Comsumed at farmers hostel
Bottle Gourd	12.04.19	13.10.19	0.13	Jora Bota	Immature Fruit	33 q	11480	24600	Comsumed at farmers hostel
Sponge gourd	14.05.19	20.10.19	0.13	Chikni	Immature Fruit	24 q	6560	14500	Comsumed at farmers hostel
Snake Gourd	12.12.18	16.02.19 – 30.03.19	0.20	Deshi	Immature Fruit	38 q	10650	19800	Comsumed at farmers hostel

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

Sl. No.	Name of the Product	Qty. (Kg)	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1.	Bio-fungicide (*Trichoderma harzianum & Pseudomonas fluorescens*)	1860	-	-	Used for demonstration purpose
	Vermicompost	40450	-	-	Used in KVKs Instructional farm

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

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1.	Poultry	Vanaraja	Meat	172	30500.00	40000.00	
		Kaberi	Meat	110	25000.00	32500.00	
2.	Broilers	Hygrow	Meat	180 (4 cycle)	38000.00	41000.00	
3	Duals (broiler and layer)	RIR, Nirvik, Hitkari, Upkari	Meat, egg	230	24000.00	28000.00	
4	Goat	Black Bengal	Meat, kid	51	47000.00	90000.00	
5	Ducks	Pekin duck	Meat	3800	100000.00	110000.00	
6	Fish	IMC & EC	Spawn	19,75,000	3,92,045.00	5,95,230.00	
			Fingerling	455 kg			
		Climbing perch	Fry	1,65,000			
		Asian catfish	Fry	85,000			
		Ornamental fish	Fry	9200			

6.5 Utilization of hostel facilities

Accommodation available (No. of beds)

Months	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
January, 2019	285	1229	
February,2019	89	269	-
March, 2019	120	570	-
April, 2019	160	728	-
May, 2019	132	616	-
June , 2019	219	852	-
July, 2019	442	1642	-
August, 2019	171	620	-
September, 2019	136	895	-
October, 2019	114	471	-
November, 2019	68	294	-
December, 2019	112	466	-
Total :	**2048**	**8652**	

(For whole of the year)

6.6 Utilization of staff quarters

Whether staff quarters has been completed:
No. of staffquarters:
Date of completion:
Occupancy details:

Months	Q I	QII	Q III	QIV	Q V	QVI
January,2019	Full	Full	-	Full	Full	Full
February,2019	Full	Full	-	Full	Full	Full
March, 2019	Full	Full	-	Full	Full	Full
April, 2019	-	Full	-	Full	Full	Full
May,2019	-	Full	-	Full	Full	Full
June,2019	-	Full	-	Full	Full	Full
July,2019	-	Full	-	Full	Full	Full
August,2019	-	Full	-	Full	Full	Full
September,2019	-	Full	-	Full	Full	Full
October, 2019	-	-	-	Full	Full	Full
November,2019	-	-l	-	Full	Full	Full
December,2019	-	-	-l	Full	Full	Full

7. FINANCIAL PERFORMANCE

7.1. Details of KVK Bank accounts

Bank account	Name of the bank	Location	Account Number
Savings	SBI	Nimpith	11259497721
Savings	SBI	Nimpith	11259496614

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

Item	Released by ICAR		Expenditure		Unspent balance as on -
	Kharif	Rabi	Kharif	Rabi	
-	-	-	-	-	-

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

Item	Released by ICAR		Expenditure		Unspent balance as on 31st Dec.,2019
	Kharif	Rabi	Kharif	Rabi	
Lentil	-	0.90000	-	0.89900	0.00100
Greengram	-	3.60000	-	1.34200	2.25800
Total	-	4.50	-	2.241	2.25900

7.4. Utilization of KVK funds during the year 2019-20 (Not audited)upto Dec'2019

Sl. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	1,50,00,000	1,12,87,000	90,01,000
2	Traveling allowances	1,00,000	1,00,000	15768
3	HRD	30000	30000	0
4	Contingencies			
A	SCSP			
B		13,00,000	9,08,000	8,93,000
C				
D				
E				
F				
G				
H				
I				
J	Swachhta Expenditure			
TOTAL (A)		13,00,000	9,08,000	
B. Non-Recurring Contingencies				
1	Vehicle 4 Wheeler	8,00,000	8,00,000	8,00,000
2	Library	10000	10000	2000
3				
4				
TOTAL (B)				
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		1,72,40,000	1,31,35,000	1,07,11,768

7.5. Status of revolving fund (Rs. in lakh) for last 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 (Kind + cash)
2017-18	216.2732	209.26554	175.16529	250.37345
2018-19	250.37345	95.62846	85.47711	260.5248
2019-20(up to Dec'19)	260.5248	69.4567	65.4761	264.5054

7.6. (i) Number of SHGs formed by KVKs
– No. 32
(ii) Association of KVKs with SHGs formed by other organizations indicating the area of SHG activities
ATMA and NRLM for agricultural activities, gotary and duckery

(iii) Details of marketing channels created for the SHGs
Development of marketing channel through ARYA Project

7.7. Joint activity carried out with line departments and ATMA

Name of activity	Number of activity	Season	With line department	With ATMA	With both
Exposure visit of farmer of ATMA	8	2019		ATMA	
Training cum Exposure visit	14	2019		ATMA	
Diploma in Agricultural Extension Service for Impute Dealers (DEASI)	2	Throughout the year	• Department of Agriculture, WB • SAMETI, Narendrapur • National Institute for Agricultural Extension Management (MANAGE) Hyderabad	ATMA	
Conducting FOCT training programme	1	2019	Coconut Development Board, (Ministry of Agriculture, GOI), BJ-108,Sector-II,Salt Lke,Kolkata-700 091		
IARI, NICRA	5	Throughout the year	NICRA, New Delhi		
IWMP	85	2019	Deptt. Of Agril, GOWB		
AICRP on Sunflower	9	Throughout the year	IIOR, Hyderabad		
AICRP on Honeybees and Pollinators	8	Throughout the year	Division of Entomology, IARI, New Delhi		
NICRA	9	Throughout the year	CRIDA, Hyderabad		
NFSM (OS)	7	Throughout the year	Department of Agriculture, Govt. of West Bengal.		
Seed Hub	4	Throughout the year	IIOR, Hyderabad		
Meen Mitra	1	2019	WBSRLM. GoWB		
Biotech Kisan Hub	3	2019	WBUAFSc		
Cotton Cultivation	5	2019	State Agriculture Deptt Cotton Coporation of India		

8. Other information

8.1. Prevalent diseases in Crops

Name of the disease	Crop	Date of outbreak	Area affected (in ha)	% Commodity loss	Preventive measures taken for area (in ha)

8.2. Prevalent diseases in Livestock/Fishery

Name of the disease	Species affected	Date of outbreak	Number of death/ Morbidity rate (%)	Number of animals vaccinated	Preventive measures taken in pond (in ha)

9.1. Nehru YuvaKendra(NYK) Training

Title of the training programme	Period		No. of the participant		Amount of Fund Received (Rs)
	From	To	M	F	

9.2. PPV & FR Sensitization training Programme

Date of organizing the programme	Resource Person	No. of participants	Registration (crop wise)	
			Name of crop	No. of registration

9.3. *mKisan*Portal (National Farmers' Portal/ SMS Portal)

Type of message	No. of messages	No. of farmers covered
Crop	23	27900
Livestock	0	0
Fishery	8	8218
Weather	1	1816
Marketing	0	0
Awareness	3	2863
Training information	0	0
Other	2	1185
Total	**37**	**41928**

9.4. *KVK*Portal and Mobile App

Sl. No.	Particulars	Description
1.	No. of visitors visited the portal	NA
2.	No. of farmers registered in the portal	175
3.	Mobile Apps developed by KVK	In process
4.	Name of the App	Baidri Pakhi Chas, Banoushodhi,
5.	Language of the App	Bengali
6.	Meant for crop/ livestock/ fishery/ others	169
7.	No. of times downloaded	NA

N.B.

1. Toll free Number Call received through KVK Expert – 3780
2. Dial Out Audio Conference Attend – 8
3. VMS Send through Nimpith Ashram Advisory – 41,500farmers
4. Video module production for JioKisanportal

9.5. a.Observation of Swachh Bharat Programme

Date/ Duration of Observation	Activities undertaken
11.09.2019	Cleaning and sweeping of the Vivekananda Conference Hall of RAKVK after completion of Webcasting of National Animal Disease Control Programme
12.09.2019	Officials of KVK devoted themselves for cleaning and sweeping of the RAKVK Campus
13.09.2019	Officials of KVK devoted themselves for cleaning and sweeping of Bakultala Police Station, Baruipur District Police Campus
14.09.2019	Officials of KVK devoted themselves for cleaning and sweeping of Cotton Godown of Nimpith KVK
16.09.2019	Officials of RAKVK devoted themselves organizing waste collection from Kitchen of Farmers Hostel and cleaning drive in households /common /shared spaces.
17.09.2019	Officials of RAKVK devoted themselves organizing plantation programme at RAKVK, Nimpith
18.09.2019	Staff and officials of RAKVK, Nimpith engaging themselves in planting saplings of fruit plants like amla, jackfruit, guava and mango in the premises of Nimpith Ramkrishna Ashram –Type High School as part of Swachhta Hi Sewa programme
19.09.2019	Staff and officials of RAKVK, Nimpith engaging themselves for conducting Village School-level rallies to generate awareness about plastic free environment as a part of Swachhta Hi Sewa programme
20.09.2019	Staff and officials of RAKVK, Nimpith engaging themselves for conducting collecting different waste plastic materials like carry bag, pet bottles, cups etc. for plastic free environment as a part of Swachhta Hi Seva programme
21.09.2019	RAKVK, Nimpith organised Swachhta Hi Seva programme on 21.09.19 under which local community members were mobilized to build compost pits for decomposing household organic matter to form manure.
23.09.2019	Organizing practical demonstration for better sanitation practices like using a toilet, hand washing, health and hygiene awareness, etc.
24.09.2019	RAKVK organized an awareness programme on filtration and recycling of waste water of the KVK farmers' hostel for its effective use in agricultural field
25.09.2019	RAKVK organized quiz contest on Swachh Bharat Abhiyan programme
26.09.2019	Agri input dealers are engaged in Swachhta Hi Seva Abhiyan along with Officials of RAKVK Nimpith. They participated in segregation of plastics from agricultural field and composting of green waste for a clean environment.
27.09.2019	As a part of Celebration of 150th Birth Anniversary and Swachhta Hi Seva programme on 27.09.19, RAKVK, Nimpith in collaboration with Joynagar Govt. ITI College engaged the teachers, students and other officials for tree plantation programme in the College campus and also conducted a rally to generate awareness about plastic free environment, Clean India Movement & Jal Shakti Abhiyan

Date/ Duration of Observation	Activities undertaken
28.09.2019	As a part of Celebration of 150th Birth Anniversary of Mahatama Gandi and Swachhta Hi Seva programme an Awareness programme was organized by RAKVK, Nimpith on "Health and Hygiene for Anganwadi Workers under Joynagar-II ICDS" in presence of BMOH, Supervisor of ICDS , along with Officials of RAKVK Nimpith
30.09.2019	Wall writing on different aspects of Swachchta Hi Seva by the KVK Staff on the walls in and around KVK on 30.09.19
01.10.2019	Cleaning of wash rooms of KVK farmers hostel of RAKVK, Nimpith on 01.10.19 as a part of Swachchta Hi Seva Programme
02.10.2019	Today on the 2nd of October, 2019, RAKVK, Nimpith celebrated Mahatma Gandhiji's 150th Birth Anniversary by organising different programmes. The programme started with speeches related to various events in Gandhiji's life and his vision of a Clean India by the Chairman and In-charge of the KVK and the Headmaster of the Ashram High School. This was followed by an animation film on Mahatma Gandhi. Thereafter, a quiz competition on the theme of Gandhiji's life and Swachchta was conducted with 40 students of class 11 and 12 of local schools where the audience was about 130 comprising of students, teachers, family members, KVK staff, etc. A sit and draw competition, on the same theme, for the students of class 3 and 4 was also organised to mark the occasion where 25 students participated along with their guardians and other members of their family. Elocution competition was also organised. A film to spread awareness on water conservation was also shown to those present. The programme concluded with distribution of prizes tothe 1st, 2nd and3rd position winners of both the quiz and sit and draw competition.
16.12.2019	Awareness meeting on proper disposal of all types of plastic carry bags, thermocol (polystyrene) plastic cups, bowls, glasses, forks, spoons, containers, straws including single use plastic PET water bottles etc.
17.12.2019	Quiz competition on Swachha Bharat Mission
18.12.2019	Debate on use of plastic materials in daily life
19.12.2019	Organizing practical demonstration on better sanitation practices like hand washing with proper hygienic procedure.
20.12.2019	Film show on Swachhata
21.12.2019	Cleaning of Dining Hall & Wash Basin of KVK Farmers' Hostel
23.12.2019	Cleaning activities at RAKVK premises
24.12.2019	Cleaning activities at RAKVK Campus
26.12.2019	Rally on Swachhata
27.12.2019	Quiz competition on Swachha Bharat Mission
28.12.2019	Plantation programme at Ahsram Type High School Premises, Nimpith
30.12.2019	Demonstration of composting from farmyard waste
31.12.2019	Plantation programme at pond embankment surrounding the Nimpith Ramkrishna Vidyabhavan (High & Higher Secondary School for Boys)

b. Details of Swachhta activities with expenditure

Activities	Number	Expenditure (in Rs.)
1. Digitization of office records/ e-office	8	2000.00
2. Basic maintenance	12	1000.00
3. Sanitation and SBM	101	6500.00
4. Cleaning and beautification of surrounding areas	200	19500.00
5. Vermicomposting/ Composting of biodegradable waste management & other activities on generate of wealth for waste	15	4500.00
6. Used water for agriculture/ horticulture application	5	-
7. Swachhta Awareness at local level	11	5000.00
8. Swachhta Workshops	1	4000.00
9. Swachhta Pledge	5	1500.00
10. Display and Banner	10	4500.00
11. Foster healthy competition	4	6000.00
12. Involvement of print and electronic media	12	-
13. Involving the farmers, farm women and village youth in the adopted villages (no of adopted village)	15	-
14. No of Staff members involved in the activities	35	-
15. No of VIP/VVIPs involved in the activities	6	1500.00
16. Any other specific activity (in details)	18	3000.00
Total	**458**	**59,000.00**

9.6. Observation of National Science day

Date of Observation	Activities undertaken
28th February, 2019	Seminar organised at RAKVK Vivekananda Seminar Hall with participation of Farmers, Rural youths and village level extension workers like Cotton field stuf, sunflower field assistant, Secretary & President of Farm Science Clubs, Agril Input Dealers etc. Dignitaries like Ex Addl. Dir. Of Ag., GoWB, Head of the KVK, Scientists form KVK, Local Bank Managers, Principal, Green College graced the occasion with their valuable talks.

9.7. Programme with SeemaSurakshaBal/ BSF -NA

Title of Programme	Date	No. of participants

9.8. Agriculture Knowledge in rural school

Name and address of school	Date of visit to school	Areas covered	Teaching aids used
Nimpith Vidya Bhavan Vill. Nimpith Ashram Block – Joynagar II	22.04.2019	Earth Day	Quiz, Debate
Nimpith Vidya Bhavan& Ramkrishna Ashram Ashram – Type High School, Vill. Nimpith Ashram Block – Joynagar II	16.07.2019	91st ICAR Foundation Day was celebrated by RAKVK, Nimpith, South 24 Parganas, W.B. on 16th July, 2019 at Nimpith. On this occasion 200 school students were involved to spread the awareness on the importance of agriculture in the perspective of livelihood, employment generation and sustaining life.	Poster, Banner, Audio Visual Aids – Film, PPT and Rally
Sri Ramkrishna Ashram Junior Basic School Vill. Nimpith Ashram Block – Joynagar II	12.03.2019	Preparation and management of nutrition garden in school campus and backyard to attain nutrition security	Visual aids- Flash card on health and hygiene &food groups , picture card, food value chart, books ,Pamplets Audio visual aids- Flim, PPT
Nimpith Ramkrishna Ashram – Type High School, Vill. Nimpith Ashram Block – Joynagar II	18.09.19	Plantation programme under Swachhta Hi Sewa	Planting saplings of fruit plants like amla, jackfruit, guava and mango

9.9. Details of *'Pre-Rabi Campaign'* Programme

Date of programme	No. of Union Ministers attended the programme	No. of Hon'ble MPs (Loksabha/ Rajyasabha) participated	No. of State Govt. Ministers	Participants (No.)							Coverage by Door Darshan (Yes/No)	Coverage by other channels (Number)
				MLAs Attended the programe	Chairman ZilaPanchaya-t	Distt. Collector / DM	Bank Official-s	Farm-ers	Govt. Officials, PRI members etc.	Total		

9.10. Details of Swachhta Hi Sewa programme organized

Sl. No.	Activity	Site of activity undertaken No. of villages Involved	No. of participants	No. of VIPs	Name (s) of VIP(s)
1.	Cleaning and sweeping of the Vivekananda Conference Hall of RAKVK after completion of Webcasting of National Animal Disease Control Programme	1	12		
2.	Officials of KVK devoted themselves for cleaning and sweeping of the RAKVK Campus	1	9		
3.	Officials of KVK devoted themselves for cleaning and sweeping of Bakultala Police Station, Baruipur District Police Campus	1	17		

Sl. No.	Activity	Site of activity undertaken No. of villages Involved	No. of participants	No. of VIPs	Name (s) of VIP(s)
4.	Officials of KVK devoted themselves for cleaning and sweeping of Cotton Godown of Nimpith KVK	1	9		
5.	Officials of RAKVK devoted themselves organizing waste collection from Kitchen of Farmers Hostel and cleaning drive in households /common /shared spaces.	1	8		
6.	Officials of RAKVK devoted themselves organizing plantation programme at RAKVK,	1	61		

	Nimpith				
7.	Staff and officials of RAKVK, Nimpith engaging themselves in planting saplings of fruit plants like amla, jackfruit, guava and mango in the premises of Nimpith Ramkrishna Ashram –Type High School as part of Swachhta Hi Sewa programme	1	11		
8.	Staff and officials of RAKVK, Nimpith engaging themselves for conducting Village School-level rallies to generate awareness about plastic free environment as a part of Swachhta Hi Sewa programme	1	203		
9.	Staff and officials of RAKVK, Nimpith engaging themselves for conducting collecting different waste plastic materials like carry bag, pet bottles, cups etc. for plastic free environment as a part of Swachhta Hi Seva programme	1	10		
10.	RAKVK, Nimpith organised Swachhta Hi Seva programme on 21.09.19 under which local community members were mobilized to build compost pits for decomposing household organic matter to form manure.	1	10		
11.	Organizing practical demonstration for better sanitation practices like using a toilet, hand washing, health and hygiene awareness, etc.	1	29		
12.	RAKVK organized an awareness programme on filtration and recycling of waste water of the KVK farmers' hostel for its effective use in agricultural field	1	31		
13.	RAKVK organized quiz contest on Swachh Bharat Abhiyan programme	1	51	1	Shri Bikas Ranjan Mondal, Head Master, Nimpith Ramkrishna Vidyabhayan HS School

14.	Agri input dealers are engaged in Swachhta Hi Seva Abhiyan along with Officials of RAKVK Nimpith. They participated in segregation of plastics from agricultural field and composting of green waste for a clean environment.	1	49		
15.	As a part of Celebration of 150th Birth Anniversary and Swachhta Hi Seva programme on 27.09.19, RAKVK, Nimpith in collaboration with Joynagar Govt. ITI College engaged the teachers, students and other officials for tree plantation programme in the College campus and also conducted a rally to generate awareness about plastic free environment, Clean India Movement & Jal Shakti Abhiyan	2	246		Sri Ramprasad Ghosh Principal, Joynagar –II, Govt. ITI, P.O. Nimpith Ashram -743338 Dist. South 24 Parganas West Bengal

Sl. No.	Activity	Site of activity undertaken No. of villages Involved	No. of participants	No. of VIPs	Name (s) of VIP(s)
16.	As a part of Celebration of 150th Birth Anniversary of Mahatama Gandi and Swachhta Hi Seva programme an Awareness programme was organized by RAKVK, Nimpith on "Health and Hygiene for Anganwadi Workers under Joynagar-II ICDS" in presence of BMOH, Supervisor of ICDS , along with Officials of RAKVK Nimpith	1	212	1	Dr. Babul Majumdar, BMOH, Nimpith R. M. Hostipal
17.	Wall writing on different aspects of Swachchta Hi Seva by the KVK Staff on the walls in and around KVK on 30.09.19	1	10		
18.	Cleaning of wash rooms of KVK farmers hostel of RAKVK, Nimpith on 01.10.19 as a part of Swachchta Hi Seva Programme	1	11		
19.	Today on the 2nd of October, 2019, RAKVK, Nimpith celebrated Mahatma Gandhiji's 150th Birth Anniversary by organising different programmes. The programme started with speeches related to various events in Gandhiji's life and his vision of a Clean India by the Chairman and In-charge of the KVK and the Headmaster of the Ashram High School. This was	1	130	1	Dr. L. N. Banerjee, Principal Green College

	followed by an animation film on Mahatma Gandhi. Thereafter, a quiz competition on the theme of Gandhiji's life and Swachchta was conducted with 40 students of class 11 and 12 of local schools where the audience was about 130 comprising of students, teachers, family members, KVK staff, etc. A sit and draw competition, on the same theme, for the students of class 3 and 4 was also organised to mark the occasion where 25 students participated along with their guardians and other members of their family. Elocution competition was also organised. A film to spread awareness on water conservation was also shown to those present. The programme concluded with distribution of prizes tothe 1st, 2nd and 3rd position winners of both the quiz and sit and draw competition.				

9.11. Details of Mahila Kisan Divas programme organized

Sl. No.	Activity	No. of villages Involved	No. of Participants	No. of VIPs	Name (s) of VIP(s)
1	On the occasion of Mahila Kisan Diwas 2019, RAKVK, Nimpith has organised awareness programme on alternative livelihood for womenfolk. Field demonstration of integrated farming and different component of integrated farming like goat farming, duck farming, fish farming, hi-tech pan boroz, vermi compost, bee keeping and mushroom cultivation has been conducted	3	35		

9.12. No. of Progressive/Innovative/Lead farmer identified (category wise)

Sl. No.	Name of Farmer	Address of the farmer with contact no.	Innovation/ Leading in enterprise
1	Mr. Bibekananda Halder	Vill: 27 no. Lot, PO: Paschim Kultali, Block: Mathurapur-II, South 24 Parganas, WB Contact: 9153090350	Intensive Vegetable Cultivation through Land Shaping
2	YEASER MOLLA	VILL-SHERHANGAMPUR, P.O. - NIMPITH ASHRAM, PIN - 743338, P.S.- JAYNAGAR, DIST.- SOUTH 24 PARGANAS, STATE- WEST BENGAL, INDIA, MOBILE- 9609087685, email- yeaser9@gmail.com	AUTOMATIC VERMICOMPOST CLINING MACHINE

9.13. Revenue generation

Sl.No.	Name of Head	Income(Rs.)	Sponsoring agency
1.	Contingencies & outsourcing of contractual services	7,00,000	NFSM-cotton, CDM
2.		36,99,000	MVC, South & North 24 Parganas, Dept. of ARD, GoWB
4.		13,00,000	NICRA (ICAR)
5.		45,000	NICRA (IARI)
6.		4,00,000	AICRP Honey Bees
7		6,87,000	ARYA

9.14. Resource Generation:

Sl.No.	Name of the programme	Purpose of the programme	Sources of fund	Amount (Rs. lakhs)	Infrastructure created
1	NICRA (ICAR)	Equipment	ATARI,Kol	3.00	
2	ARYA	Equipment	ATARI,Kol	7.27	

9.15. Performance of Automatic Weather Station in KVK

Date of establishment	Source of funding i.e. IMD/ICAR/Others (pl. specify)	Present status of functioning

9.16. Contingent crop planning

Name of the state	Name of district/KVK	Thematic area	Number of programmes organized	Number of Farmers contacted	A brief about contingent plan executed by the KVK
West Bengal	Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith, South 24 Parganas	Contingency Planning in Agriculture	11	387	❖ Vegetable cultivation in land embankment ❖ Seedling raising in pot tray / plug tray ❖ Use of liquid fertilizers ❖ Application of *Trichoderma viridi* in vegetable seedling to prevent root rot. ❖ Hydroponic fodder cultivation ❖ Distribution of moong bean ❖ Pond bleaching, liming and spraying of Potassium Permanganate

10. Report on Cereal Systems Initiative for South Asia (CSISA) - NA

a) Year:
b) Introduction / General Information:

	Title	Objective	Treatment details	Date of sowing	Replication	Result with photographs
Experiment 1						
Experiment 2						
Experiment 3						
…						
..						
Others (If any)						

11. Details of TSP

a. Achievements of physical output under TSP during 2019 - NA

Programmes	Physical achievements
Asset creation (Number; Sprayer, ridge maker, pump set, weeder etc.)	
On-farm trials (Number)	
Frontline demonstrations (Number)	
Farmers training (in lakh)	
Extension personnel training (in lakh)	
Participants in extension activities (in lakh)	
Seed production (in tonnes)	
Planting material production (in lakh)	
Livestock strains and fingerlings production (in lakh)	
Soil, water, plant, manures samples testing (in lakh)	
Provision of mobile agro – advisory to farmers (in lakh)	
No. of otherprogrammes (Swachha Bharat Abhiyaan, Agriculture knowledge in rural school, Planting material distribution, Vaccination camp etc.)	

b. Fund received under TSP in 2019 (Rs. In lakh): - NA

c. Achievements of physical outcomeunder TSP during 2019 - NA

Sl. No.	Description	Unit	Achievements
1	Change in family income	%	
2	Change in family consumption level	%	
3	Change in availability of agricultural implements/ tools etc.	No. per household	

d. Location and Beneficiary Details during 2019 - NA

District	***Sub-district***	***No. of Village covered***	***Name of village(s) covered***	***ST population benefitted (No.)***		
				M	F	T

12. Progress report of NICRA KVK (Technology Demonstration component) during the period (Applicable for KVKs identified under NICRA)

Natural Resource Management

Name of intervention undertaken	Numbers under taken	No of units	Area (ha)	No of farmers covered / benefitted									Remarks
				SC		ST		Other		Total			
				M	F	M	F	M	F	M	F	T	
Roof Top Rainwater Harvesting	10	10	0.1	10	-	-	-	-	-	10	-	10	The rainwater, collected from the roof top, is filtered through sand-gravel-charcoal filter and stored in a tank. It is used for drinking and cooking purpose. This activity solved drinking water crisis in the beneficiary families during post monsoon season and helped to reduce the drudgery of women members of the families.

Crop Management

Name of intervention undertaken	Area (ha)	No of farmers covered / benefitted									Remarks
		SC		ST		Other		Total			
		M	F	M	F	M	F	M	F	T	
Salt tolerant rice: Gosaba-5	1.33	10	-	-	-	-	-	10	-	10	16.31 % increase in productivity
Submergence tolerant rice: CR-1009	0.53	4	-	-	-	-	-	4	-	4	22% increase in productivity. The normal crop was affected by the intensive rainfall (120 mm on 1st August) and prolonged submergence.
Biofortified rice: CR Dhan – 310		1	-	-	-	-	-	1	-	1	High protein content. High yielding (42.5 q/ha).
System of Assured Rice Production (SARP)	1.47	11	-	-	-	-	-	11	-	11	Due to insufficient rainfall in July (144 mm), the land preparation in main field was delayed resulting in ageing of seedlings (upto 45 days) in normal seedbed. However, under SARP

											demonstration, the modified method of seedling raising helped to minimize the impact of seedling ageing and maintain the crop productivity.
Demonstration on Drumstick		20	-	-	-	-	-	20	-	20	
Distribution of fruit trees		100	-	-	-	-	-	100	-	100	

Livestock and fisheries

Name of intervention undertaken	Number of animals covered	No of units	Area (ha)	No of farmers covered / benefitted									Remarks
				SC		ST		Other		Total			
				M	F	M	F	M	F	M	F	T	
Promotion of Asian Catfish		4		4	-	-	-	-	-	4	-	4	Each of the beneficiaries earned a net profit of Rs. 12600/- on an average for the 500 fish seeds provided to them. Asian Catfish is a stress (salinity) tolerant local species that are better adapted to the climatic vagaries and hence provides cushion during the loss of IMC in their ponds during any stress situation.
Renovation of Cowshed		2		2	-	-	-	-	-	2	-	2	

Institutional interventions

Name of intervention undertaken	No of units	Area (ha)	No of farmers covered / benefitted									Remarks
			SC		ST		Other		Total			
			M	F	M	F	M	F	M	F	T	
Seed Bank	3.9 q	6.5	40	6	-	-	-	-	40	6	46	Paddy seed of Swarna Sub - 1

Capacity building

Thematic area	No of Courses	No of beneficiaries								
		SC		ST		Other		Total		
		M	F	M	F	M	F	M	F	T
a) System of assured Rice production - IPM & INM		11	3	-	-	-	-	11	3	14
b) IPM &INM System of Assured Rice Production (SARP)		19	6	-	-	-	-	19	6	25
c) Contingency planning for kharif 2019		12	8	-	-	-	-	12	8	20
d) Conservation of water & its judicious use for sustainable development		41	19	-	-	-	-	41	19	60
e) Post Cyclone (Bulbul) Contingency Planning for Rabi season		9	8	-	-	-	-	9	8	17

Extension activities

Thematic area	No of activities	No of beneficiaries								
		SC		ST		Other		Total		
		M	F	M	F	M	F	M	F	T
Method demonstrations	1	7	3	-	-	-	-	7	3	10
Group meetings	12	246	67	-	-	-	-	246	67	313
Field day	1	17	8	-	-	-	-	17	8	25
Exposure visits	1	6	15	-	-	-	-	6	15	21
Awareness Campaigns	1	41	19	-	-	-	-	41	19	60
ICT based extension services	30	202	29	-	-	-	-	202	29	231
Diagnostic visit	16	167	54	-	-	-	-	167	54	221

Detailed report should be provided in the circulated Performa

13. Awards/Recognition received by the KVK

Sl. No.	Name of the Award	Year	Conferring Authority	Amount	Purpose
1	Best Research Centre – AICRP on Honey Bees & Pollinators	2019	AICRP on Honey Bees & Pollinators, ICAR, New Delhi	-	For contribution in research on Beekeeping and Pollination

Award received by Farmers from the KVK district

Sl. No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose

14. Any significant achievement of the KVK with facts and figures as well as quality photograph

Award to AICRP (Honeybees & Pollinators) Voluntary Centre, RAKVK, Nimpith

Plant Protection section of RAKVK is implementing All India Coordinated Research Project (AICRP) on Honeybees & Pollinators, as a voluntary research center under ICAR, New Delhi. The objective of the project is to promote beekeeping in the district and improve crop production through improved pollination service.

The PI of the project, Mr. P. K. Garain (SMS-Plant Protection), participated in the Biennial Review Workshop at SASRD, Nagaland and presented the Centre's research activities before Honourable ADG (Plant Protection & Biosafety), ICAR, Dr. P. K. Chakrabarty, the AICRP Team and Eminent beekeeping scientists of this country on 8th March 2019.

RAKVK Centre was adjudged one of the **Best Research Centre** and Mr. P. K. Garain was awarded as the **Best Emerging Scientist** among the 26 AICRP centres of the country.

15. Number of commodity based organizations/ farmers' cooperative society/ FPO formed/ associated with during last one year (Details of the group/society may be indicated)

Sl. No.	Name of the organization/ Society	Trust Deed No.& date	Date of Trust Registration Address	Proposed Activity	Commodity Identified	No. of Members	Financial position (Rupees in lakh)	Success indicator

16. Integrated Farming System (IFS)
Details of KVK Demo. Unit

Sl. No.	Module details (Component wise)	Area under IFS (ha)	Production (Commodity wise)	Cost of production in Rs. (Component wise)	Value realized in Rs. (Commodity wise)	No. of farmer adopted practicing IFS	% Change in adoption during the year
1.	Sapota Orchard	0.10	25 q	13900	38800	482	3
2.	Vegetables	0.35	106 q	33700	64200		
3.	Mushroom	0.001	2.1 q	8600	20760		
4.	Fish	0.12	00.0	00.0	00.0		
5.	Vermicompost		114.7 q	114720	31200		
6.	Duckery		00.0	00.0	00.0		
7.	Honey Bee		00.0	00.0	00.0		

17. Technologies for Doubling Farmers' Income

Sl. No.	Name of the Technology	Brief Details of Technology (3- 5 bullet points)	Net Return to the farmer (Rs.) per ha per year due to adoption of the technology	No. of farmers adopted the technology in the district	One high resolution 'Photo' in 'jpg' format for each technology
1	Vegetable cultivation on the Land Embankment	✓ Creation of upland for vegetable cultivation during kharif and rabi season in the low lying areas. ✓ Productivity is 1.5 to 2 times higher than traditional cultivation of vegetables as because there is only two row of crop, where the outer sides are open and plants get more light and space for growth and yield. ✓ Mitigates the problem of soil salinity through drainage of salts during rainy season.	1,35,000.00 per ha	96000	

Sl. No.	Name of the Technology	Brief Details of Technology (3- 5 bullet points)	Net Return to the farmer (Rs.) per ha per year due to adoption of the technology	No. of farmers adopted the technology in the district	One high resolution 'Photo' in 'jpg' format for each technology
2	Climate smart Shade Net *Pan* Boroz	➢ Betel leaf (*Pan*) is cultivated within a shaded structure called *boroz*, made-up of bio-degradable items (Jute stick, Paddy straw etc), which make the plant prone to different diseases and pests. Climate smart Shade Net *Pan* Boroz eliminates this disease incidence, due to Boroz	11,50,000.00 per ha	2800	

		structure. ➢ Boroz maintenance cost is almost nil compared to avg. Rs. 20000/- per 500 sqm per year in case of traditional system. ➢ Leaf quality is very good fetching higher market price compared to leaves produce in traditional system. ➢ Yield is also 30 to 45% higher in this system of boroz.			

18. Report on Digital Farming Initiatives in Agriculture/ Digital Ag. Extension Service

	Database prepared/ covered for		KVK level Committee		Various activity conducted for farmers
Phase	Total no. of villages	Total no. of farmers	Date of formation	Name of members	
I (up-to 15.03.2018)					
II (up-to 24.04.218)					
Total					

19. Information on Visit of Ministers to KVKs, if any

Date of Visit	Name of Hon'ble Minister	Name of Ministry	Salient points in his/ her observation (2-3 bulleted points)

20. a) Information on **ASCI** Skill Development Training Programme, if undertaken during 2019

Name of the Job role	Name of the certified Trainer of KVK for the Job role	Date of start of training	Date of completion of training	No. of participants						Whether uploaded to SIP Portal (Y/N)	Fund utilized for the training (Rs.)
				SC		ST		Other			
				M	F	M	F	M	F		
Vermicompost producer	Mr. Prabir Kumar Garain, SMS, Plant Protection	01-02-2019	15-03-2019	9	-	-	-	11	-	Y	1,65,200.00
Coconut grower	Dr. Chandan Kumar Mondal, SMS,Horticulture	01-02-2019	15-03-2019	9	0	0	0	11	0	Y	1,65,200.00

b) Information on Skill Development Training Programme (**Other than ASCI or less than 200 hrs**., if any) if undertaken during 2018-19

Thematic area of training	Title of the training	Duration (in hrs.)	No. of participants									Fund utilized for the training (Rs.)
			SC		ST		Other		Total			
			M	F	M	F	M	F	M	F	T	

21. Information on NARI Project(if applicable)

Name of Nodal Officer	No. of OFT on specified aspects	Title(s) of OFT	No. of FLD on specified aspects	No. of capacity development programme on specified aspects	Total no. of farm women/ girls involved in the project	Details of Issues related to gender mainstreaming addressed through the project

22. Information on Krishi Kalyan Abhiyan Phase- I/ Phase-II/ Phase-III, if applicable

Krishi Kalyan Abhiyan- I and II

A. Training

Name of programme	***No. of programmes***	***No. of farmers benefitted***									***No. of officials attended the programme***
		SC		***ST***		***Others***		***Total***			
		M	***F***	***M***	***F***	***M***	***F***	***M***	***F***	***T***	
KKA-I											
KKA-II											

B. Distribution of seed/ planting materials/ input/ others

Name of programme	***No. of Programme***	***Total quantity distributed***				***No. of farmers benefited***									***No. of other officials (except KVK) attended the programme***
		Seed (q)	***Planting material (lakh)***	***Input (kg)***	***Other (kg/ No.)***	***SC***		***ST***		***Others***		***Total***			
						M	***F***	***M***	***F***	***M***	***F***	***M***	***F***	***T***	
KKA-I															
KKA-II															

C. Livestock and Fishery related activities

Name of programme	*No. of Programme*	*Activities performed*				*No. of farmers benefited*									*No. of other officials (except KVK) attended the programme*
		No. of animals vaccinated	*No. of animals dewormed*	*Feed/ nutrient supplements provided (kg)*	*Any other (Distribution of animals/ birds/ fingerlings) [No.]*	*SC*		*ST*		*Others*		*Total*			
						M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*T*	
KKA-I															
KKA-II															

D. Other activities

Name of programme	*Activities*	*No. of farmers benefited*									*No. of other officials (except KVK) attended the programme*
		SC		*ST*		*Others*		*Total*			
		M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	T	
KKA-I	Soil Health Card Distributed										
	NADEP Pit established										
	Farm implements distributed										
	Others, if any										
KKA-II	Soil Health Card Distributed										
	NADEP Pit established										
	Farm implements distributed										
	Others, if any										

KrishiKalyanAbhiyan- III

No. of villages covered	*No. of animal inseminated*	*No. of farmers benefitted*									*Any other, if any (pl. specify)*
		SC		*ST*		*Others*		*Total*			
		M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	T	

23. Any other programme organized by KVK, not covered above

Sl. No.	Name of the programme	Date of the programme	Venue	Purpose	No. of participants
1.	World Honey Bee Day	20.05.2019	Chuprijhara, Joynagar II Block, South 24 - Parganas, W.B.	World Honeybee Day reminds us to thank Mother Nature in creating such a wonderful insect that not only produces elixir for us in the form of HONEY but also maintains a linkage in the Food Chain through Pollination.	53
2.	National Fish Farmers' Day	10.07.2019	RAKVK, Nimpith	To spread awareness of importance of fish in livelihood generation and remembering the contribution of Dr. Hiralal Choudhury in field of induced breeding of fish.	120
3.	91st ICAR Foundation Day	16.07.2019	RAKVK, Nimpith	To spread the awareness on the importance of agriculture in the perspective of livelihood, employment generation and sustaining life and the role of ICAR and its different institutes, including the KVKs, in the agricultural scenario of our country.	215
4	Jal Shakti Abhiyan	03.09.19	Bongheri Village of Sundarbans	To spread the awareness on conservation of water and judicial harvesting of rain water, not only for agricultural purpose but also for domestic use.	85
5.	World Fisheries Day	21.11.2019	RAKVK, Nimpith	The World Fisheries Day helps in highlighting the critical importance to human lives, of water and the lives it sustains, both in and out of water. Water forms a continuum, whether contained in rivers, lakes, and ocean. **Launching of Machli - a Reliance Foundation Mobile App for deep sea fishermen**	122
6.	Training programme on Fertilizer Application Awareness for farmers	21.11.2019	Vivekananda Conference Hall of RAKVK, Nimpith	Fertilizer Application Awareness Programmeto improve soil health	104
7.	Earth Day	22.04.2019	Vivekananda Conference Hall of RAKVK, Nimpith	Celebration of Earth Day (Theme: Protect our Species).	105
8.	World Veterinary Day	27.04.2019	Patharpratima, Sagar, Gosaba, Sandeskhali-I & Sandeshkhali-II and Hingalganj block of South and North 24 Parganas district of West Bengal through Mobile Veterinary Clinic.	Importance of vaccination is paramount in animal husbandry sector in terms of disease prevention, profit maximization, reducing zoonotic diseases as well as doubling farmers' income.	111
9.	Rashtriya Ekta Diwas	31.10.2019	RAKVK, Nimpith	National Integration & Unity	187
10.	Kisan and Vigyan Day	25.12.2019	RAKVK Instructional Farm	To display all the activities, efforts and achievements in the field of science and agriculture for farming community.F	30
11.	NEMA Survey	19.11.2019	Radhakantapur,Mathurapur II	Fisheries Resource Survey in 4 villages covering 25 farmers	35

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Sl. No.	Name of the programme	Date of the programme	Venue	Purpose	No. of participants
12.	World Food Day	16.10.19	Bagmari, Joynagar-II Block	Awareness programme on preparation of nutrient rich healthy food from locally available food sources in Sundarbans	31
13.	NADCP & Nationwide AI Programme	11.09.2019	RAKVK, Nimpith	Awareness on animal disease control and Artificial insemination (AI)	234

World Honey Bee Day on 20.05.19

91st ICAR Foundation Day on 16.07.19

World Fisheries Day on 21.11.19


Training programme on Fertilizer Application Awareness for farmers on 21.11.19


Earth Day on 22.04.19


World Veterinary Day on 27.04.19


Rashtriya Ekta Diwas on 31.10.19


Kisan and Vigyan Day on 25.12.19


NEMA Survey in Matharupur-II Block on 19.11.2019

Jal Shakti Abhiyan at Bongheri Village of Sundarbans

World Food Day on 16.10.19

National Fish Farmers Day on 10.07.19

NADCP & Nationwide AI Programme on 11.09.19

24. Good quality action photographs of overall achievements of KVK during the year (best 10)

Glimpses of the Annual Agricultural Exhibition and Technology Week organized by the KVK

Field Demonstration on Mahila Kisan Diwas

Kisan and Vigyan Day

Webcasting of PM Kisan Samman Nidhi Programme at KVK conference hall

World Fisheries Day

Goat distribution under Biotech Kisan Hub Programme

Mobile Veterinary Clinic (MVC) Camp

A rally organized for spreading awareness on National Unity Day

A rally organized for spreading awareness on Swachh Bharat Abhiyan

Incidence of BULBUL on 9 - 10 November and its devastation in South 24 Parganas District

A Cyclonic Storm 'BulBul' after causing massive devastation in Odisha coast hit the coastal belt of Sundarbans, particularly upon Namkhana and Sagar Bolck of South 24 Parganas district at 8.25 pm on 09.11.2019. The cyclone continues its damage for 9 to 10 hours and moved towards Bangadesh during morning of 10th November, after causing severe damage in the entire district.

Date of impact : **9- 10 November 2019**

Rainfall :

08.11.2019	- 11.9mm
09.11.2019	- 84.4 mm
10.11.2019	- 84.7 mm

The damages were noted upon the following crops -

Damage to Kharif Paddy under low land situation

Important varieties: Morishal, Sabita, Lolat, Pankaj

Damage:

Crop stage	: Flowering to milk stage
Lodging	: 35-40%
Water stagnation	: upto 3 ft
Expected Yield loss	**: 25-30%**
Others	: Felling of trees, Electric pole inside field

Damage to Kharif Paddy under medium to upland situation

Important varieties: Dudheswar, Shatabdi, Swarna, Swarna sub-1

Damage:

Crop stage	: Milk stage to grain filling
Lodging	: 20-25%
Water stagnation	: upto 1 ft
Others	: Felling of trees, Electric pole inside field
Expected Yield loss	**: 15-20%**

Damage to Vegetables under medium to upland situation

Village : Bongheri, Gopalganj, Kaikhali

Vegetables: Chilli, tomata, turnip, cowpea, bittergourd etc.

Damage : 50-60%

Crop stage: Sapling (Chilli, tomata, turnip bittergourd), Fruiting stage (cowpea)

Expected Yield loss : 65-70%

Impact on Ponds

Overflooding of ponds leading to escape of fish stock

Decay of leaves of fallen branches leading to their putrefaction and water quality deterioration

Surfacing of fish and mortality due to oxygen depletion and increased acidity in pond water

Damage in Betel Vine Boroz:

All borozes smashed

Plants within the borozes are fallen and leaves were sheded

The Net cover of Smart Borozes were torned and damaged completely.