PROFORMA FOR ANNUAL REPORT 2018-19 (April 2018 to March 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	-	9434437053	njmaitra@rediffmail.com

1.4.Year of sanction of KVK: 1979

1.5. Staff Position (as on 1st April, 2018)

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)
	Senior Scientist & Head	Dr. Nilendu Jyoti Maitra	Senior Scientist & Head	Administrative & Animal Husbandry	37400- 67000 (GP- 9000) Rs.53820/-	01.06.2010	Permanent	Others
	Subject Matter Specialist	Sri Prasanta Chatterjee	SMS (Fishery)	Fishery	15600- 39100 (GP-6600) Rs.37420/-	28.10.1997	Permanent	Others
	Subject Matter Specialist	Dr. Manasi Chakraborty	SMS (Home Science)	Home Science	15600- 39100 (GP- 6600) Rs.3590/-	08.12.2000	Permanent	Others
	Subject Matter Specialist	Dr. Chandan Kumar Mondal	SMS (Horticulture)	Horticulture	15600- 39100 (GP- 6600) Rs.31260/-	16.05.2005	Permanent	Others
	Subject Matter Specialist	Dr. Subhasis Roy	SMS (Animal Husbandry)	Animal Husbandry	15600- 39100 (GP- 5400) Rs.25840/-	01.07.2010	Permanent	Others
	Subject Matter Specialist	Sri Prabir Kumar Garain	SMS (Plant Protection)	Plant Protection	15600- 39100 (GP- 5400) Rs.24350/-	17.10.2012	Permanent	Others
	Programme Assistant	Dr. Dipak Kumar Roy	Programme Assistant (Agronomy)	Agronomy	9300- 34800 (GP- 4600) Rs.23680/-	12.06.2001	Permanent	Others
	Computer Programmer	Sri Partha Banik	Programme Assistant (Computer)	Office	9300- 34800 (GP- 4600) Rs.22720/-	09.06.2003	Permanent	Others
	Farm Manager	Utpal Maity	Farm Manager	Fishery	9300- 34800 (GP- 4200) Rs.16140/-	02.12.2011	Permanent	Others
	Assistant	Sri Aditya Guchhait	Assistant	Office	9300- 34800 (GP- 4200) Rs.16630/-	01.06.2010	Permanent	Others
	Stenographer	Sri Debjyoti Maitra	Stenographer Grade-III	Office	5200- 20200 (GP- 2400) Rs.11860/-	04.01.2011	Permanent	Others
	Driver	Sri Madhab Chandra Kayet	Driver	Office	5200- 20200 (GP- 2400) Rs.13640/-	01.06.1995	Permanent	Others
	Driver	Sri Birendra Nath Das	Driver	Office	5200- 20200 (GP- 2400) Rs.12910/-	01.09.2003	Permanent	OBC
	Supporting staff	Sri Nemai Chand Mondal	Skilled supporting staff	Office	5200- 20200 (GP- 2800) Rs.18330/-	01.04.1997	Permanent	SC
	Supporting staff	Sri Sailen Das	Skilled supporting staff	Office	5200- 20200 (GP- 2800) Rs.18870/-	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	144.00	Use	Revolving fund of KVK
17	Small animal operation theatre					-do-	12.00	Use	NAIP
18	Procedure room for animals					-do-	6.00	Use	NAIP
19	Hydroponics unit					-do-	14.00	Use	Revolving fund of KVK
20	Rabbit farm					-do-	16.00	Use	Revolving fund of KVK
21	Ornamental bird unit					-do-	12.00	Use	Revolving fund of KVK
22	Meat processing unit					-do-	120.00	Use	ATMA
23	Mushroom Lab	-	-	-	-	-	-	-	-
24	Mushroom production unit					-do-	100.00	Use	ICAR &Revolving fund of KVK
25	Shade house	-	-	-	-	-do-	300.00	Use	FPI & H
26	Soil test Lab	-	-	-	-	-do-	280.00	Use	ICAR
27	Vermicompost production unit					-do-	150.00	Use	ICAR & Susmira
28	Beekeeping					-do-	40.00	Use	AICRP Honeybees
29	Pan Boroz					-do-	25.00	Use	ICAR &Revolving fund of KVK
30	Green House					-do-	300.00	Use	Susmira
31	Food processing unit					-do-	200.00	Use	ICAR

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
Tata Sumo Victa	2008-09	6,00,000.00	215850	Condemned

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
Tractor – Mahindra	2003-04	4,49,250.00	-do-	ICAR
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
Camera TRV	2003-04	36,900.00	Working condition	NWDPRA
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
c.AV Aids				
Cannon Digital Camera	2008-09	25,000.00	Working condition	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	-	The V-SAT with e-KVK linkage One Dell Optiplex-755 Computer, One HP-G3110 Scanner, One TVS –MSP-245-dot-matrix Printer with Server Computer, One 650VA APC make UPS, **(V-SAT and Dell-optiplex - 755 Computers, 650VA APC UPS are out of order)** 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 Working condition) but (Out of order SamsungTouch 400TSn-2)	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-31-3200 Lumens (2 yrs warranty for Projector and 1000 hrs for lamp)	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

SAC (Contd……)

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	

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
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 Report2018 - 19

	Temperature		R.H		Rainfall (mm)	Total Rainy Days
	Maximum	Minimum	Maximum	Minimum		
Apr-18	37.2	22.2	90.8	57.9	88	11
May-18	36.8	25.4	88.8	61.7	73	7
Jun-18	39.6	26	90.6	63.3	388	17
Jul-18	33.6	26	90.7	61.7	449	25
Aug-18	33	25.6	92.3	64.1	328	25
Sep-18	34	25.4	92.1	62.1	243	13
Oct-18	34.6	22	92	65.7	98	6
Nov-18	32	17.8	90	69.4	24	1
Dec-18	29	9.2	86.9	62.3	14	3
Jan-19	30.2	8.6	83.5	62.1	0	0
Feb-19	34.2	12.2	82.2	59.4	229	5
Mar-19	36	17.2	81.6	55.7	172	4
				Total	2106	117

Source: Meteorological observatory, RAKVK, Nimpith

2.b. Details of operational area / villages (2018-19)

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 (2018-19) 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	**10**	**171**	**50**	**14**	**2**	**6**	**115**	**36**	**167**	**56**	**223**	**11**	**12**	**826**	**334**	**127**	**47**	**10**	**393**	**276**	**774**	**413**	**1187**

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
1430	**1587**	**60332**	**14681**	**7779**	**5916**	**2125**	**30596**	**13465**	**51193**	**23369**	**74562**	**4150**	**4243**	**7013**	**2158**	**956**	**305**	**128**	**3915**	**1525**	**6378**	**2609**	**8987**

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
1210	**1359**	**456**	**32**	**0**	**0**	**489**	**19**	**945**	**51**	**996**	**600**	**968**	**137**	**44**	**5**	**13**	**503**	**141**	**645**	**198**	**843**

Seed production (q)		Planting material (in Lakh)	
Target	Achievement	Target	Achievement
85.0	100.8	1.25	1.76

Livestock strains and fish fingerlings produced (in lakh)*		Soil, water, plant, manures samples tested (in lakh)	
Target	Achievement	Target	Achievement
	1.82	0.015	0.01268

* 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							
Books							
Bulletins							
News letter							
Popular Articles							
Book Chapter							
Extension Pamphlets/ literature							
Technical reports*	81						
Electronic Publication (CD/DVD etc)	1						
TOTAL							

*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

1.	Title of On farm Trial	Assessment of Chlormequat (Chlorocholine Chloride 50%) on production potential and economic feasibility of cotton (var.Suravi) during rabi-summer season in South 24 Parganas
2.	Problem diagnosed	Low productivity of cotton due to delayed boll bursting and moisture stress
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**Farmers' Practice:** Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P_2O_5: K_2O @ 80:40:40 kg/ha along with 2 irrigation **Technology Option-1:** Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P_2O_5: K_2O @ 80:40:40 kg/ha and one spray with 50 ppm Chlorocholine Chloride 50% at pre flowering (60-65 DAS) along with 2 irrigation **Technology Option-2:** Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P_2O_5: K_2O @ 80:40:40 kg/ha and two time spray with 50 ppm Chlorocholine Chloride 50% , one at pre flowering stage (60-65 DAS) and another at 15 days after 1st spray along with 2 irrigation
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	i)Lone, N.A., Khan, N.A., Bhat, M.A., Mir, M.R., Razvi, S.M., Baht, K.A., Rather, G.H., Effect of Chlorocholine Chloride (CCC) on plant growth and development, *International Journal of Current Research* , Vol. 6, pp.001-007, July, 2010 ii)Prakash, A.H., N. Gopalakrishnan & S.E.S.A. Khader, Hormonal manipulation to increase cotton productivity, Central Institute for Cotton Research, Regional Station, Coimbatore
5.	Production system and thematic area	Rice- cotton based production system and production technology
6.	Performance of the Technology with performance indicators	*The data is given below
7.	Final recommendation for micro level situation	After two years observation, it is clear that the application of Chlormequat (Chlorocholine Chloride 50% @ 50 ppm is very useful in increasing seed-cotton yield. It is also noted that two sprays, one at pre flowering stage (60-65 DAS) and other spray after 15 days (Tech. Option-2) is a profitable option than one time spraying of the chemical (Tech. Option-1).
8.	Constraints identified and feedback for research	Farmers are very much interested with this chemical, but, this chemical (Chlormequat) is not commercially available.
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land. The field visit with the farmers has been done regularly.

Thematic area: Production technology

Problem definition:

In South 24 Parganas district, cotton is cultivated with var. Suravi during *rabi-summer* season with 1 to 2 irrigations. Before onset of monsoon, the whole boll is not harvested and sometime crop faces moisture stress. In this situation, the application of chlormequat may get earliness in boll maturity and also developed tolerance to moisture stress.

Technology assessed:

Farmers' Practice: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P_2O_5: K_2O @ 80:40:40 kg/ha along with 2 irrigation
Technology Option-1: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P_2O_5: K_2O @ 80:40:40 kg/ha and one spray with 50 ppm Chlorocholine Chloride 50% at pre flowering (60-65 DAS) along with 2 irrigation
Technology Option-2: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P_2O_5: K_2O @ 80:40:40 kg/ha and two time spray with 50 ppm Chlorocholine Chloride 50%, one at pre flowering stage (60-65 DAS) and another spray15 days after 1st spray along with 2 irrigation

*Performance of the Technology with performance indicators

Table:

Treatment	**No. of trials**	No. of boll/plant	No. of harvested boll/plant	Seed-cotton yield/boll	Seed –cotton yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's Practice	30	18.4	14.5	2.43	1320.24	37500	56110	18610	1.50
Technology Option-1		21.9	17.1	2.52	1493.35	39750	63467	23717	1.59
Technology Option -2		24.7	19.8	2.57	1622.60	42336	68960	26624	1.63
SEm ±	-	0.60	0.45	0.028	36.10	-	-	-	-
CD(0.05)	-	1.27	0.96	NS	75.83	-	-	-	-

Results:

Result reveals that the use of 50 ppm Chlorocholine Chloride 50% was increased the no. of boll/plant, no. of harvested boll/plant and seed-cotton yield/boll. The spraying of 50 ppm Chlorocholine Chloride 50% in pre flowering stage in both Tech. Option-1 and Tech. Option-2 and 2nd spray 15 days later in case of Technology Option-II have resulted in higher yield attributes over farmers practice. However, in Tech. Option-2, 22.9 % more seed-cotton yield/ha and an additional Rs.8014.00/ha net return were recorded over Farmers' Practice. The cost-benefit ratio was also recorded higher (1.63) in Tech. Option-2 over Farmers' Practice (1.50). So, it can be concluded that spraying of 50 ppm Chlorocholine Chloride 50% at pre flowering stage and 2nd spray 15 days later is a profitable option in cotton cultivation.

OFT-2

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 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
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-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. 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.

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. 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.

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:

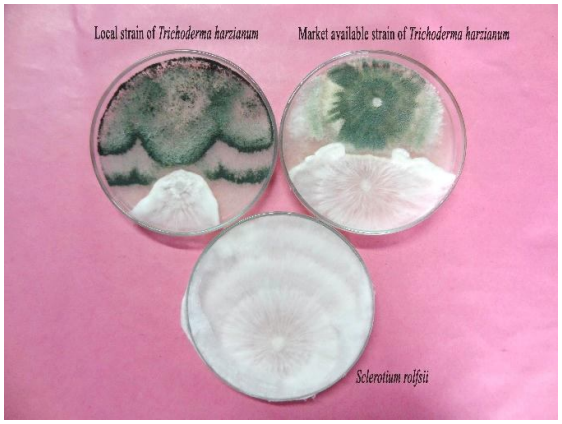
Technology option	No. of trials	Disease incidence (% of wilted plants)	Yield (lakh leaves/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	10	18.7[a] (25.62)*	21.96[a]	1960000	3074400	1114400	1.57
Technology Option – 1		6.9[b] (15.23)	26.07[b]	1805000	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

<table>
<tr><td>1.</td><td>Title of On farm Trial</td><td>Assessment of profitability of Brinjal (Solanum melongena) cultivation by managing Sclerotinia rot through bio- control approach in coastal South 24 Parganas</td></tr>
<tr><td>2.</td><td>Problem diagnosed</td><td>Low productivity of Brinjal due to wilting and stem rot caused by Sclerotinia sclerotiorum</td></tr>
<tr><td>3.</td><td>Details of technologies selected for assessment/refinement
(Mention either Assessed or Refined)</td><td>Farmer practice: No soil treatment + No seed treatment + Need based foliar spray of Chlorothalonil 75WP @ 2g/L
Technology Option 1: Seed treatment with Carboxin + Thiram @ 3g/kg+ Need based spraying with Thiophanate methyl 70WP@ 1g/L
Technology Option 2: Soil amendment with Trichoderma harzianum (@ 2.5 kg/ha) mixed neem cake + Seed treatment with T. harzianum + Spraying with T. harzianum @ 5g/L at 30 days interval

(Fertilizer: 80:40:40 Kg NPK/ha, Spacing: 3ft x 3ft, Variety: Mukta Keshi, same for all treatments)</td></tr>
<tr><td>4.</td><td>Source of Technology (ICAR/ AICRP/SAU/other, please specify)</td><td>1. Department of Plant Pathology, Bidhan Chandra Krishi Viswavidyalaya, Mohunpur, Nadia, WB.
2. Abdullah, Mansour & Y. Ali, Nida & Suleman, Patrice. (2008). Biological control of Sclerotinia sclerotiorum (Lib.) de Bary with Trichoderma harzianum and Bacillus amyloliquefaciens. Crop Protection - CROP PROT. 27. 1354-1359. 10.1016/j.cropro.2008.05.007.</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>22.3</td><td>253.6</td><td>159000</td><td>380400</td><td>221400</td><td>2.39</td></tr>
<tr><td>TO-1</td><td>3.6</td><td>313.9</td><td>171000</td><td>470850</td><td>299850</td><td>2.75</td></tr>
<tr><td>TO-2</td><td>4.5</td><td>324.11</td><td>152000</td><td>486165</td><td>334165</td><td>3.20</td></tr>
</table>
</td></tr>
<tr><td>7.</td><td>Final recommendation for micro level situation</td><td>The trial needs to be conducted for one more year for final recommendation</td></tr>
<tr><td>8.</td><td>Constraints identified and feedback for research</td><td>• Availability of quality biocontrol agents at remote areas.
• 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: Brinjal (*Solanum melongena*) is an important vegetable crop of the coastal saline zone under South 24 Parganas district of West Bengal. Wilting or death of brinjal plant is the major constraint in brinjal cultivation. Among many pathogens, *Sclerotinia sclerotiorum*, a soil borne pathogen, is recently reported to be associated with stem rot and wilting disease of this crop in West Bengal and causes 10-30% crop loss. The Incidence of the disease is noted during the month of December to February in different varieties of brinjal. Infection occurs both on the stem, branches, leaves and fruits. Primary symptom generally appears on main stem, very close to the soil surface as water soaked lesion, which gradually increase in length and reached to the base of one or more branches. White cottony mycelial growth covered the major portion of the infected area. Sclerotia developed on the mycelial growth. As the infection girdle the stem, the plant starts wilting and ultimately die. In some plants, instead of stem infection, symptom appears on the branches and leaves of those branches. Branch infection results in partial wilting of the plant. On opening dry portion of the stem, large, elongated, black coloured fungal sclerotia can be seen attached to each other.

Technology assessed:

Management of disease with crop rotations is unrealistic due to the persistence of survival structures (sclerotia) in the soil for long periods and due to its wide host range. These factors necessitate the use of fungicides, which have been known to have adverse effects on non-target organisms. Biological control as a disease management strategy in such situation would not only be economical but also durable by sustaining the reduction of inoculum potential and amount of disease produced. *Trichoderma harzianum*, a fungal biocontrol agent, has been used successfully to control *Sclerotinia sclerotiorum* in many parts of the world. The mechanisms for the suppression of pathogens by *Trichoderma* include mycoparasitism, competition for space and resources and antibiosis. The extracellular cell wall degrading enzymes produced by many strains of Trichoderma are traditionally included in the concept of mycoparasitism, due to their integral role in direct physical interactions.

However, farmers of this region follow blanket use of fungicides without knowing the nature of the pathogen and its interaction with the host.Considering all these, both chemical and biological control approaches were selected to manage the disease. The chemical control approach included a specific systemic fungicide whereas Trichoderma harzianum was used under biological control approach. The talc formulation of *Trichoderma harzianum* prepared from the locally isolated strain at the KVK was used in this OFT.

Farmer practice: No soil treatment + No seed treatment + Need based foliar spray of Chlorothalonil 75WP @ 2g/L
Technology Option 1: Seed treatment with Carboxin + Thiram @ 3g/kg+ Need based spraying with Thiophanate methyl 70WP@ 1g/L
Technology Option 2: Soil amendment with *Trichoderma harzianum* (@ 2.5 kg/ha) mixed neem cake + Seed treatment with *T. harzianum* + Spraying with *T. harzianum* @ 5g/L at 30 days interval

(Fertilizer: 80:40:40 Kg NPK/ha, Spacing: 3ft x 3ft, Variety: Mukta Keshi, same for all treatments)

Table:

Technology option	No. of trials	Disease incidence (% of wilted plants)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	10	22.3[a] (28.11)*	253.6[a]	159000	380400	221400	2.39
Technology Option – 1		3.6[b] (10.56)	313.9[b]	171000	470850	299850	2.75
Technology Option – 2		4.5[b] (11.91)	324.11[c]	152000	486165	334165	3.20
CD (P=0.05)		2.88	3.06				
SEM (±)		0.97	1.03				

**data in parenthesis are angular transformed data*

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

Results:

Both the technological options (TO1 & TO2) gave better crop protection as well as yield over the farmers practice. Interestingly, there was no statistical difference between the disease incidence (%) in technology option-1 and in technology option-2. But the yield and B:C 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. The benefit-cost ratio was highest in this option (technology option-2).

OFT-9

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: Though common 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-10

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	i) Variety-WGL-20417 ii) Seed treatment with *Trichoderma viride* and *Pseudomonas fluorescens* iii) Pretilachlor 50% EC @ 1.0 lit/ha after transplanting iv) ZnSO4 @ 20 kg/ha v) Spraying of Isoprothiolane 40% EC @ 0.5 lit./ha and Velidamycin 3% EC @ 1.0 lit./ha	1.0	4.0	11	0	0	0	9	0	20	0	20	-

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	Rabi-Summer	Irrigated	Clay-Loam	245.2	36.7	366.3	Paddy	26.12.18	30.04.19	363.0	6

In both the Tables, information of same crop should be provided. For example, if in Table 3.2A crops are mentioned as a,b,c,d etc., in the table for Details of farming situation, the same crop should be mentioned in the identical sequence.

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		Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Cucurbits		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	1.1	15.6	14.2	8.97	57.3 13.2 3.9:10	63.4 16.5 3.2:10	86900	171600	84700	1.98	85400	156200	70800	1.83
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	47.2 1.3 1.1	55.8 2.9 3.2	76800	161400	84600	2.10	72100	140700	68600	1.95
Paddy	Productivity Enhancement	3. i)Variety-WGL-20417 4. ii) Seed treatment with *Trichoderma viride* and *Pseudomonas fluorescens* 5. iii)Pretilachlor 50% EC @ 1.0 lit/ha after transplanting 6. iv)ZnSO4 @ 20 kg/ha 7. v)Spraying of Isoprothiolane 40% EC @ 0.5 lit./ha and Velidamycin 3% EC @ 1.0 lit./ha	20	4.0	60.80	54.0	12.59	i)No. of Panicle/m^2-494.5 ii)Panicle length(cm)-21.7 iii)No. of grain/Panicle-110.3 iv)Test wt.(g)-23.8	i)No. of Panicle/m^2-473.2 ii)Panicle length(cm)-20.3 iii)No. of grain/Panicle-102.6 iv)Test wt.(g)-22.1	50500	97280	46780	1.92	50632	86400	35768	1.70
	Total																

**Other parameters

Cucurbits	Days to 50% flowering First node of female flower appearance Female : Male flower ratio
Tomato	Days to 50% flowering Incidence of nematode (10 point scale) Incidence of bacterial wilt (10 point scale)

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	01.10.18	02.02.19	136	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
Chilli	Integrated Pest Management (IPM)	**Management of Chilli leaf curl disease** (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)	25	1	109	76	43.42 %	Thrips (no./twig)	0.22	0.89	184500	545000	360500	2.95	178500	380000	201500	2.13
								Yellow mite (no./leaf)	0.28	4.28								
								Whitefly (no./leaf)	0.44	1.67								
								Leaf curl (PDI)	7.5	36.5								
Bitter gourd	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*)	100	4	338.4	275.6	22.79 %	Wilting (PDI)	5.28 %	21.55 %	204500	676800	472300	3.31	203000	551200	348200	2.72

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					
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

FLD on bacterial wilt management in Bitter Gourd

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.)			
					Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Common carps																	
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.	Cucurbits	Cucurbits are unisexual and male & female flowers are borne separately in same plant. Sex expression in cucurbits can be modified by different plant hormones. Here, ethrel 39.5% SL was used at 2 & 4 true leaf stage to induce femaleness. Result showed 8.97% increase in total yield due to appearance of more number of female flower compared to check. The result is quiet impressive, but its repetition for another one or two year will establish the findings.
5.	Tomato	Tomato is a transplanted crop. Healthy seedling is a pre requisite for assured good harvest. Conventionally seedlings are raised in bed, which lead to damage of root system during uprooting & transplanting; and also create facility for infestation of several pests like nematode, bacterial wilt etc. In present demonstration of seedling raising in plug tray, root damage has been minimized which resulted in healty and early crop stand, minimum infestation through root system and early and better harvest (yield increased by 10.8%). The result is quiet impressive, but its repetition for another one or two year will establish the findings.
6.	Paddy	By using bio fungicides (*Trichoderma & Pseudomonas*) as seed treatment there is no need of chemical spray in nursery bed

Extension and Training activities under FLD

Sl.No.	Activity	Date	No. of activities organized	Number of participants	Remarks
1.	Field days	01.03.19, 13.03.19	2	37 & 51	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.
2.	Farmers Training	17.04.18 ; 28.09.18	2	21 & 36	One day training programme on 'Use of PGR in vegetable farming' and 'Improved methods of early tomato cultivation through seedling raising in plug trays'
3.	Media coverage				
4.	Training for extension functionaries				
5.	Monitoring	10.09.2018	1	15	Monitoring of kadaknath farm at Patharpratima Village of South 24 Pgs. m
		06.07.2018	1	97	Off campus training
6.	Farm visit	16.8.2018	1	17	Kadaknath farm under FLD
		23.08.2018	1	20	Kadaknath farm under FLD

Performance of the demonstration under CFLD on Pulse and Oilseed Crops during Kharif2018 and Rabi 2018-19:

A. 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* @1.5 kg/ha each as seed inoculation iii) ZnSO4 @ 20kg/ha during final land preparation Micronutrient (B, Mo, Zn) @ 1.5 kg/ha as foliar Spray before flowering & pod formation stages	148	20	The crop has been demonstrated in Mandirbazar and Diamond Harbour-II blocks, but, the crop was totally damaged due to sudden heavy rain (227 mm) for 4 days i.e. 25th to 28th February, 2019 and subsequently, 134 mm on 5th March,2019 at pod development 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	**Crop-Lentil** i) Variety- Moitree (WBL-77) ii) *Rhizobium&Trichoderma viride* @1.5 kg/ha each as seed inoculation iii) ZnSO4 @ 20kg/ha during final land preparation iv) Micronutrient (B, Mo, Zn) @ 1.5 kg/ha as foliar Spray before flowering & pod formation pod formation stages	Not been calculated as the crop was damaged.							

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, Variety-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* @1.5 kg/ha each as seed inoculation iii) ZnSO4 @ 20kg/ha during final land preparation iv) Micronutrient (B, Mo, Zn) @ 1.5 kg/ha as foliar Spray before flowering & pod formation stages	As it is grown during Rabi season, it needs to be sown by the last week of November. In the district of South 24 Parganas, the medium land situation becomes ready for sowing in the mid of December.	i)It is more remunerative crop ii) Used for dal iii) It also improves soil fertility	As the organic matter content in soil is very low, they are convinced to apply organic manures during land preparation	Plants are stunted in growth in few plots due to soil salinity	As the crop was damaged due to heavy rain, they are not willing to answer the above point. However, the crop growth, flowering and pod bearing are better than control plot.	-

E. Specific Characteristics of Technology and Performance

Specific Characteristic	Performance	Performance of Technology vis-a vis Local Check	Farmers Feedback
Variety –Moitree (WBL-77)	Better crop growth i.e. higher no. of branches & higher plant height	i) No. of pod /plant (Demo.-28.3, L. Check-19.5	i) By using *Rhizobium* dose of nitrogenous fertilizer is reduced. ii) By using *Trichoderma viride* the crop is not damaged by root rot disease in seedling stage iii) No. of branches, flower and pod per plant were more by using ZnSO4 & Micronutrient
2. *Rhizobium*-1.5 kg/ha (as seed treatment)	Crop growth is better than farmers plot	Saved 10 kg chemical nitrogenous fertilizer /ha	
3. ZnSO4 @ 20kg/ha during final land preparation & Micronutrient (B, Mo, Zn) @ 1.5 kg/ha as foliar Spray before flowering & pod formation stages	Crop growth is better than farmers plot	The number of branches and No. of pods per plant were recorded higher	
4.*Trichoderma viride* -1.5 kg/ha	No appearance was found on disease infestation during seedling stage	Control root rot disease	

F. Extension activities under FLD conducted:

Sl. No.	Extension Activities organized	Date and place of activity	Number of farmer attended
1.	Training programme	20.11.2018 at Bhadura Haridas GP, D/Harbour-II Block	47
		20.11.2018 at Asurali village of Khurda GP, D/Harbour-II Block	60
		24.11.2018 at Ramchandrapur, Mandirbazar Block	48
2.	Distribution of critical inputs	05.12.2018 at Ramchandrapur, Mandirbazar Block	68
		07.12.2018 at Bhadura Haridas GP and Asurali village, D/Harbour-II Block	80
2.	Field visit	09.01.2019 at at Ramchandrapur, Mandirbazar Block	52
		11.01.2019 at at Bhadura Haridas GP and Asurali village, D/Harbour-II Block	64
		22.02.2019 at Ramchandrapur, Mandirbazar Block	27

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

Field visit at Ramchandrapur of Mandirbazar Block and Bhadura of D/Harbour-II Block

H. Farmers' training photographs

Training and Distribution of critical inputs at Ramchandrapur & Bhadura villages

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

Field visit at seedling stage

Field visit at flowering stage

Field visit at pod development

J. Details of budget utilization

Crop (provide crop wise information)	Items	Budget Received (Rs.)	Budget Utilization (Rs.)	Balance (Rs.)
Pulse (Lentil)	i) Critical input	162000.00	164440.00	51.00
	ii) TA/DA/POL etc. for monitoring	5994.00	3814.00	
	iii) Extension Activities (Field day)	5004.00	3400.00	
	iv)Publication of literature	5004.00	6395.00	
	v)Contingencies	1998.00	1900.00	
Total		**1,80,000.00**	**179949.00**	

A. **Technical Parameters:**

Sl. No.	Crop demonstrated	Existing (Farmer's) variety name	Existing yield (q/ha)	Yield gap (Kg/ha) w.r.t			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
2.	Greengram	Choiti Moong	8.40	715	620	1200	i)Variety IPM 02-03, seed inoculation with *Rhizobium* @1.5 kg/ha &*Trichoderma viride* @ 0.750 kg/ha ii)Foliar spray of Micro nutrient (B, Mo & Zn) @ 2g/lit.of water at before flowering and pod formation stage iii)Spraying of Chlorfenapyr 10% SC @ 1 lit./ha	178	30	The demonstration has been conducted among 178 farmers in Mandirbazar, Magrahat, Mathurapur-I and Joynagar-II blocks, but unfortunately, heavy rainfall (227 mm) for 4 days i.e. 25th to 28th February, 2019 and subsequently, 134 mm rainfall on 5th March,2019 at seedling stage has totally damaged the crop.					

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 IPM 02-03, seed inoculation with *Rhizobium* @1.5 kg/ha &*Trichoderma viride* @ 0.750 kg/ha ii) Foliar spray of Micro nutrient (B, Mo & Zn) @ 2g/lit.of water at before flowering and pod formation stage iii) Spraying of Chlorfenapyr 10% SC @ 1 lit./ha	Not been calculated as the crop was damaged.							

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/household)
1.	Crop: Greengram Variety: IPM 02-03	Not been recorded as the crop was damaged.						

D. 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 IPM 02-03, seed inoculation with *Rhizobium* @1.5 kg/ha &*Trichoderma viride* @ 0.750 kg/ha ii) Foliar spray of Micro nutrient (B, Mo & Zn) @ 2g/lit. of water at before flowering and pod formation stage iii)Spraying of Chlorfenapyr 10% SC @ 1 lit./ha	The crop is cultivated during summer season and it is practiced after harvesting of *Kharif* rice under residual moisture	i)It is more remunerative crop ii) Used for dal iii) It also improves soil fertility	Afford to use *Rhizobium* bio- fertilizer for seed treatment	-	As the crop was damaged at seedling stage, they did not the answer the above point.	-

E. Specific Characteristics of Technology and Performance

Specific Characteristic	Performance	Performance of Technology vis-a vis Local Check	Farmers Feedback
1. Variety-IPM 02-03	As the crop was damaged at seedling stage, the technological performance is not been judged.		
2. Rhizobium-1.5 kg/ha (as seed treatment)			
3. *Trichoderma viride* @ 0.750 Kg/ha (as seed treatment)			
4. Chlorfenapyr 10% SC @ 1 lit./ha			

F. Extension activities under FLD conducted till dates

Sl. No.	Extension Activities organized	Date and place of activity	Number of farmer attended
1.	Training programme	09.01.2019 at Siddeswarpur of Mandirbazar	43
		09.01.2019 at Dhanpota of Magrahat-I	31
		16.01.2019-19.01.19 at RAKVK	23
2.	Distribution of critical inputs	08.01.2019 at Gambhirnad of Mathurapur-I	20
		09.01.2019 at Siddeswarpur of Mandirbazar	43
		09.01.2019 at Dhanpota of Magrahat-I	31
		16.01.2019 at Chuprijhara of joynagar-II	40
		17.01.19 at Karanjali of Kulpi	42
2.	Field visit	04.03.19 at Siddeswarpur of Mandirbazar	33
		11.03.19 at Karanjali of Kulpi	28
		22.03.2019 at Chuprijhara of joynagar-II	20
		25.03.19 at Gambhirnad of Mathurapur-I	17
		26.03.19 at Dhanpota of Magrahat-I	19
3.	Field Days	-	-

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

Water stagnated on the field at seedling stage in the village Gambhirnad

Water stagnated on the field at seedling stage in the village

Distributed critical inputs at Siddedwarpur villageof Mandirbazar

Distributed critical inputs at Dhanpota villageof Magrahat-I Block

H. Farmers' training photographs

Training on Greengram cultivation at Siddeswarpur village of

Training on Greengram cultivation at Dhanpota village of Magrahat-I

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

Field Visit after heavy rain at Ramchandrapur village of Mandirbazar

Field Visit at Gambhirnadr village of Mathurapur-I Block

J. Details of budget utilization

Crop (provide crop wise information)	Items	Budget Received (Rs.)	Budget Utilization(Rs.)	Balance (Rs.)
Greengram	i) Critical input	2,70,000.00	2,26,554.00	15,003.00
	ii) TA/DA/POL etc. for monitoring		10,454.00	
	iii) Extension Activities (Field day)		3,360.00	
	iv) Publication of literature		8,465.00	
	v) Contingencies		6,164.00	
	Sub Total	**2,70,000.00**	**2,54,997.00**	**15,003.00**
	Technology Agent	60,000.00	60,000.00	0.00
	Grand total	**3,30,000.00**	**3,14,997.00**	**15,003.00**

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	1	33	0	33	3	0	3	5	0	5	41	0	41
Integrated Farming	5	31	38	69	44	30	74	5	6	11	80	74	154
Water management													
Seed production	1	12	1	13	0	0	0	0	0	0	12	1	13
Nursery management													
Integrated Crop Management	5	54	23	77	44	22	66	2	0	2	100	45	145
Fodder production													
Production of organic inputs													
Others, (cultivation of crops)													
II. Horticulture													
a) Vegetable Crops													
Integrated nutrient management	1	14	1	15	15	1	16	0	0	0	29	2	31
Water management													
Enterprise development													
Skill development													
Yield increment													
Production of low volume and high value crops	2	27	0	27	21	0	21	0	0	0	48	0	48
Off-season vegetables	2	28	2	30	19	4	23	0	0	0	47	6	53
Nursery raising													
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others, if any (Cultivation of Vegetable)													
Training and Pruning													
b) Fruits													
Layout and Management of Orchards													
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													

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
plants													
Propagation techniques of Ornamental Plants													
Others, if any													
d) Plantation crops													
Production and Management 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	4	34	0	34	56	5	61	0	0	0	90	5	95
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	14	0	14	18	1	19	0	0	0	32	1	33
Poultry Management	1	12	7	19	18	39	57	1	0	1	31	46	77
Piggery Management													
Rabbit Management													
Disease Management	1	32	2	34	28	3	31	0	0	0	60	5	65
Feed management	1	11	0	11	10	1	11	0	0	0	21	1	22
Production of quality animal products													
Others, Goat farming / Livelihood through animal husbandry (ornamental bird rearing)	1	20	1	21	14	0	14	0	0	0	34	1	35

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
Scientific feeding and disease management of small ruminants	1	0	5	5	0	42	42	0	1	1	0	48	48
Health management of backyard poultry and duck	1	2	14	16	2	10	12	0	1	1	4	25	29
Integrated farming	1	1	25	26	0	3	3	0	0	0	1	28	29
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening	1	6	16	22	2	6	8				8	22	30
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet													
Minimization of nutrient loss in processing													
Gender mainstreaming through SHGs	1		13	13		19	19					32	32
Storage loss minimization techniques	2		27	27		13	13					40	40
Enterprise development													
Value addition													
Income generation activities for empowerment of rural Women	1		35	35		40	40					75	75
Location specific drudgery reduction technologies													
Rural Crafts	6		92	92		81	81					173	173
Capacity building	3		86	86		31	31					117	117
Women and child care	1	5	9	14	2	5	7				7	14	21
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	1	33	0	33	10	0	10	1	0	1	44	0	44
Integrated Disease Management													
Bio-control of pests and diseases	1	0	0	0	25	5	30	0	0	0	25	5	30
Production of bio control agents and bio pesticides	2	78	0	78	3	0	3	0	0	0	81	0	81
Others, if any (Beekeeping)	2	27	2	29	13	2	15	33	2	35	73	6	79
VIII. Fisheries													
Integrated fish farming	1	2	35	37	2	9	11	0	2	2	4	46	50
Carp breeding and hatchery 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
Carp fry and fingerling rearing	2	6	3	9	7	4	11	0	0	0	13	7	20
Composite fish culture & fish disease	2	33	0	33	22	0	22	0	0	0	55	0	55
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	1	11	9	20	6	14	20	0	0	0	17	23	40
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	4	62	2	64	45	4	49	2	0	2	109	6	115
Agri-Fisheries Training to the marginal fishermen of Sundarban Regions	3	77	3	80	68	2	70	0	0	0	145	5	150
Advanced aquaculture technologies for doubling farm income	1	1	0	1	39	10	49	0	0	0	40	10	50
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													

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
XI Agro-forestry													
Production technologies													
Nursery management													
Integrated Farming Systems													
XII. Others (Pl. Specify)													
TOTAL	**66**	**689**	**456**	**1145**	**572**	**407**	**979**	**51**	**12**	**63**	**1312**	**875**	**2187**

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		18	18		23	23					41	41
Bee-keeping	1	11	1	12	6	3	9	0	0	0	17	4	21
Integrated farming													
Seed production													
Production of organic inputs													
Integrated Farming													
Planting material production													
Vermi-culture	1	11	0	11	9	0	9	0	0	0	20	0	20
Agri-clinic and agri-business	1	0	16	16	0	3	3	0	0	0	0	19	19
Production of bio-control agents	1	8	3	11	12	2	14	0	0	0	20	5	25
Sericulture													
Protected cultivation of vegetable crops													
Commercial fruit production	2	21	0	21	43	0	43	0	0	0	64	0	64
Repair and maintenance of farm machinery and implements													
Nursery Management of Horticulture crops	1	19		19	13		13			0	32	0	32
Training and pruning of orchards													
Value addition													
Production of quality animal products													
Dairying	1	11	11	22	23	3	26	0	0	0	34	14	48
Sheep and goat rearing	1	0	4	5	2	11	13	0	0	0	2	15	17
Rearing of small ruminants	1	0	1	1	0	48	48	0	0	0	0	49	49
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	0	13	13	0	7	7	0	0	0	0	20	20
Ornamental fisheries													
Enterprise development													
Para vets													
Para extension workers													

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
Composite fish culture	3	59	39	98	27	11	38	2	2	4	88	52	140
Freshwater prawn culture	1	4	3	7	0	0	0	0	0	0	0	0	7
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	16	1	17	8	0	8	0	0	0	24	1	25
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Others (Coconut Grower – ASCI)	1	11		11	9		9			0	20	0	20
TOTAL	**19**	**171**	**139**	**311**	**155**	**123**	**278**	**2**	**3**	**5**	**324**	**262**	**593**

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													
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	2	51	5	56	11	0	11	11	5	16	73	10	83
ASCAD	1	56	1	57	19	1	20	0	0	0	75	2	77
Biotech Kishan	1	0	2	2	1	31	32	0	0	0	1	33	34

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
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	2	31	1	32	12	1	13	0	0	0	43	2	45
Freshwater fish farming	1	4	3	7	0	0	0	0	0	0	0	0	7
TOTAL	**8**	**175**	**12**	**187**	**50**	**33**	**83**	**11**	**5**	**16**	**232**	**47**	**286**

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													
Resource Conservation Technologies													
Cropping Systems													
Crop Diversification													
Integrated Farming													
Water management													
Seed production													
Nursery management	2	34	0	34	41	2	43	0	0	0	75	2	77
Integrated Crop Management	4	86	48	134	38	39	77	2	2	4	126	89	215
Fodder production													
Production of organic inputs													
Others, (cultivation of 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
II. Horticulture													
a) Vegetable Crops													
Integrated nutrient management	1	8		8	13		13			0	21	0	21
Water management													
Enterprise development													
Skill development													
Yield increment													
Production of low volume and high value crops	1	33		33	2		2			0	35	0	35
Off-season vegetables	3	30	2	32	37	4	41	0	0	0	67	6	73
Nursery raising													
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others, if any (Cultivation of Vegetable)	2	34	0	34	41	2	43	0	0	0	75	2	77
Training and Pruning	4	86	48	134	38	39	77	2	2	4	126	89	215
b) Fruits													
Layout and Management of Orchards													
Cultivation of Fruit													
Management of young plants/orchards													
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards													

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
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													
Processing and value addition													
Others, if any													
e) Tuber crops													
Production and Management technology	1	40	6	46	5		5			0	45	6	51
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													

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
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													
Production and use of organic inputs	1	58		58	5		5	2		2	65	0	65
Management of Problematic soils	11	282	19	301	275	34	309	0	0	0	557	53	610
Micro nutrient deficiency in crops													
Nutrient Use Efficiency													
Soil and Water Testing													
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													

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
Awareness on deworming, vaccination of animals with proper nutritional care and management including fodder cultivation	1440	28652	12584	41236	13211	6871	20082	5845	2101	7946	47708	21556	69264
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening													
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet													
Minimization of nutrient loss in processing													
Gender mainstreaming through SHGs													
Storage loss minimization techniques													
Enterprise development													
Value addition													
Income generation activities for empowerment of rural Women													
Location specific drudgery reduction technologies													
Rural Crafts													
Capacity building	3	7	42	49	11	26	37				18	68	86
Women and child care													
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
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	5	63	3	66	59	37	96	0	0	0	122	40	162
Integrated Disease Management	1	16	0	16	4	0	4	0	0	0	20	0	20
ITK	1	0	0	0	26	4	30	0	0	0	26	4	30
Beekeeping	1	1	0	1	0	41	41	0	0	0	1	41	42
Organic farming	1	9	4	13	9	4	13	1	0	1	19	8	27
Bio-control of pests and diseases													
Production of bio control agents and bio pesticides													
Others, if any													
VIII. Fisheries													
Integrated fish farming													
Carp breeding and hatchery management													
Carp fry and fingerling rearing													
Composite fish culture & fish disease													

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
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													
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													

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
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	**1482**	**29439**	**12756**	**42195**	**13815**	**7103**	**20918**	**5852**	**2105**	**7957**	**49106**	**21964**	**71070**

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	2	20	2	22	29	13	42	0	0	0	49	15	64
Integrated farming													
Seed production													
Production of organic inputs													
Integrated Farming													
Planting material production													

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
Vermi-culture													
Sericulture													
Protected cultivation of vegetable crops	3	41	4	45	12	2	14	0	0	0	53	6	59
Commercial fruit production	2	38	1	39	5	0	5	0	0	0	43	1	44
Repair and maintenance of farm machinery and implements													
Nursery Management of Horticulture crops	1	20	51	71	12	45	57			0	32	96	128
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	1	1	0	1	27	7	34	0	0	0	1	34	35
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	1		14	14		8	8					22	22
TOTAL	10	120	72	192	85	75	160	0	0	0	178	174	352

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													

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
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Management in farm animals													
Livestock feed and fodder production													
Household food security													
Women and Child care	1		18	18		26	26					44	44
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs	1	2	12	14	4	12	16				6	24	30
Crop intensification													
TOTAL	**2**	**2**	**30**	**32**	**4**	**38**	**42**				**6**	**68**	**74**

G) Consolidated table (ON and OFF Campus)

i. Farmers & 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													
Resource Conservation Technologies	1	20	5	25	14	1	15	2	0	2	36	6	42
Cropping Systems													
Crop Diversification	1	33	0	33	3	0	3	5	0	5	41	0	41
Integrated Farming	5	31	38	69	44	30	74	5	6	11	80	74	154
Water management													
Seed production	1	12	1	13	0	0	0	0	0	0	12	1	13
Nursery management	2	34	0	34	41	2	43	0	0	0	75	2	77
Integrated Crop Management	9	140	71	211	82	61	143	4	2	6	226	134	360
Fodder													

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
production													
Production of organic inputs													
Others, (cultivation of crops)													
TOTAL													
II. Horticulture													
a) Vegetable Crops													
Integrated nutrient management	2	22	1	23	28	1	29	0	0	0	50	2	52
Water management													
Enterprise development													
Skill development													
Yield increment													
Production of low volume and high value crops	1	33		33	2		2			0	35	0	35
Off-season vegetables	3	30	2	32	37	4	41	0	0	0	67	6	73
Nursery raising													
Exotic vegetables like Broccoli													
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others, if any (Cultivation of Vegetable)	2	34	0	34	41	2	43	0	0	0	75	2	77
Training and Pruning	4	86	48	134	38	39	77	2	2	4	126	89	215
TOTAL	**31**	**475**	**166**	**641**	**330**	**140**	**470**	**18**	**10**	**28**	**823**	**316**	**1139**
b) Fruits													
Training and Pruning													
Layout and Management of Orchards													
Cultivation of	1	3	0	3	22	0	22	0	0	0	25	0	25

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
Fruit													
Management of young plants/orchards													
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards													
Plant propagation techniques													
Others, if any(INM)													
TOTAL	1	3	0	3	22	0	22	0	0	0	25	0	25
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others, if any													
TOTAL													
d) Plantation crops													
Production and Management technology													
Processing and value addition													
Others, if any													
TOTAL													
e) Tuber crops													
Production and Management technology	1	40	6	46	5		5			0	45	6	51
Processing and value addition													
Others, if any													
TOTAL	1	40	6	46	5		5			0	45	6	51
f) Spices													
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													
TOTAL	1	40	6	46	5		5			0	45	6	51
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others, if any													
TOTAL													
III. Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation													
Integrated Nutrient Management	4	34	0	34	56	5	61	0	0	0	90	5	95
Production and use of organic inputs	1	58		58	5		5	2		2	65	0	65
Management of Problematic soils	11	282	19	301	275	34	309	0	0	0	557	53	610
Micro nutrient deficiency in crops													
Nutrient Use Efficiency													
Soil and Water Testing													
Others, if any													
TOTAL													
IV. Livestock Production and Management													
Dairy Management	1	14	0	14	18	1	19	0	0	0	32	1	33
Poultry Management	1	12	7	19	18	39	57	1	0	1	31	46	77
Piggery 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
Rabbit Management													
Disease Management	1	32	2	34	28	3	31	0	0	0	60	5	65
Feed management	1	11	0	11	10	1	11	0	0	0	21	1	22
Production of quality animal products													
Others, if any Goat farming / Livelihood through animal husbandry (ornamental bird rearing)	1	20	1	21	14	0	14	0	0	0	34	1	35
Scientific feeding and disease management of small ruminants	1	0	5	5	0	42	42	0	1	1	0	48	48
Ornamental bird rearing													
Health management of backyard poultry and duck	1	2	14	16	2	10	12	0	1	1	4	25	29
Integrated farming	1	1	25	26	0	3	3	0	0	0	1	28	29
Awareness on deworming, vaccination of animals with proper nutritional care and management including fodder cultivation	1440	28652	12584	41236	13211	6871	20082	5845	2101	7946	47708	21556	69264
TOTAL	**1464**	**29118**	**12657**	**41775**	**13637**	**7009**	**20646**	**5848**	**2103**	**7951**	**48603**	**21769**	**70372**

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
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening	1	6	16	22	2	6	8				8	22	30
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet													
Minimization of nutrient loss in processing													
Gender mainstreaming through SHGs	1		13	13		19	19					32	32
Storage loss minimization techniques	2		27	27		13	13					40	40
Enterprise development													
Value addition													
Income generation activities for empowerment of rural Women	1		35	35		40	40					75	75
Location specific drudgery reduction technologies													
Rural Crafts	6		92	92		81	81					173	173
Capacity building	3		86	86		31	31					117	117
Capacity building	3	7	42	49	11	26	37				18	68	86
Women and child care	1	5	9	14	2	5	7				7	14	21
Others, if any													
TOTAL	**18**	**18**	**320**	**338**	**15**	**221**	**236**	**0**	**0**	**0**	**33**	**541**	**574**

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
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													
TOTAL													
VII. Plant Protection													
Integrated Pest Management	6	96	3	99	69	37	106	1	0	1	166	40	206
Integrated Disease Management	1	16	0	16	4	0	4	0	0	0	20	0	20
Bio-control of pests and diseases	1	0	0	0	25	5	30	0	0	0	25	5	30
Production of bio control agents and bio pesticides	2	78	0	78	3	0	3	0	0	0	81	0	81
Others, if any (Beekeeping)	2	27	2	29	13	2	15	33	2	35	73	6	79
ITK	1	0	0	0	26	4	30	0	0	0	26	4	30
Beekeeping	1	1	0	1	0	41	41	0	0	0	1	41	42
Organic farming	1	9	4	13	9	4	13	1	0	1	19	8	27
TOTAL	**15**	**227**	**9**	**236**	**149**	**93**	**242**	**35**	**2**	**37**	**411**	**104**	**515**
VIII. Fisheries													
Integrated fish farming	1	2	35	37	2	9	11	0	2	2	4	46	50
Carp breeding and hatchery management													
Carp fry and fingerling rearing	2	6	3	9	7	4	11	0	0	0	13	7	20
Composite fish culture & fish disease	2	33	0	33	22	0	22	0	0	0	55	0	55

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
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	1	11	9	20	6	14	20	0	0	0	17	23	40
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	4	62	2	64	45	4	49	2	0	2	109	6	115
Agri-Fisheries Training to the marginal fishermen of Sundarban Regions	3	77	3	80	68	2	70	0	0	0	145	5	150
Advanced aquaculture technologies for doubling farm income	1	1	0	1	39	10	49	0	0	0	40	10	50
TOTAL	**14**	**192**	**52**	**244**	**189**	**43**	**232**	**2**	**2**	**4**	**383**	**97**	**480**

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
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													
TOTAL													
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													
TOTAL													

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
XI Agro-forestry													
Production technologies													
Nursery management													
Integrated Farming Systems													
TOTAL													
XII. Others (Pl. specify)													
TOTAL	**1548**	**30128**	**13212**	**43340**	**14387**	**7510**	**21897**	**5903**	**2117**	**8020**	**50418**	**22839**	**73257**

ii. RURAL YOUTH (On and 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	1		18	18		23	23					41	41
Bee-keeping	3	31	3	34	35	16	51	0	0	0	66	19	85
Integrated farming													
Seed production													
Production of organic inputs													
Planting material production													
Vermi-culture	1	11	0	11	9	0	9	0	0	0	20	0	20
Agri-clinic and agri-business	1	0	16	16	0	3	3	0	0	0	0	19	19
Production of bio-control agents	1	8	3	11	12	2	14	0	0	0	20	5	25
Sericulture													
Protected cultivation of vegetable crops	3	41	4	45	12	2	14	0	0	0	53	6	59
Commercial fruit production	4	59	1	60	48	0	48	0	0	0	107	1	108
Repair and maintenance of farm machinery and implements													
Nursery Management of Horticulture crops	2	39	51	90	25	45	70			0	64	96	160
Training and pruning of orchards													
Value addition													
Production of quality animal products													
Dairying	1	11	11	22	23	3	26	0	0	0	34	14	48

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
Sheep and goat rearing	1	0	4	5	2	11	13	0	0	0	2	15	17
Rearing of small ruminants	1	0	1	1	0	48	48	0	0	0	0	49	49
Quail farming													
Piggery													
Rabbit farming													
Poultry production	1	0	13	13	0	7	7	0	0	0	0	20	20
Goat rearing during quarantine period	1	0	29	29	3	12	15	0	1	1	3	42	45
Ornamental fisheries													
Para vets													
Para extension workers													
Composite fish culture	4	60	39	99	54	18	72	2	2	4	89	86	175
Freshwater prawn culture	1	4	3	7	0	0	0	0	0	0	0	0	7
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	16	1	17	8	0	8	0	0	0	24	1	25
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Enterprise development													
Others if any (ICT application in agriculture)													
(maintenance of nutritional status of adolescent girls)													
Others (Coconut Grower – ASCI)	1	11		11	9		9			0	20	0	20
Others, if any	1		14	14		8	8					22	22
TOTAL	**29**	**291**	**211**	**503**	**240**	**198**	**438**	**2**	**3**	**5**	**502**	**436**	**945**

iii. Extension Personnel (On and 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	1	33	0	33	7	0	7	0	0	0	40	0	40
Rejuvenation of old orchards													
Value addition													
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	2	51	5	56	11	0	11	11	5	16	73	10	83
ASCAD	1	56	1	57	19	1	20	0	0	0	75	2	77
Biotech Kishan	1	0	2	2	1	31	32	0	0	0	1	33	34
Livestock feed and fodder production													
Household food security													
Women and Child care	1		18	18		26	26					44	44
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs	1	2	12	14	4	12	16				6	24	30
Crop intensification													
Others if any													
Agri-clinic and agri-business	2	31	1	32	12	1	13	0	0	0	43	2	45
Freshwater fish farming	1	4	3	7	0	0	0	0	0	0	0	0	7
TOTAL	**10**	**177**	**42**	**219**	**54**	**71**	**125**	**11**	**5**	**16**	**238**	**115**	**360**

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	F & FW	Integrated Nutrient Management in boro paddy	4	On	20	0	20	11	0	11
	F & FW	Scientific method of greengram cultivation	2	On	22	8	30	22	7	29
	F & FW	Integrated Farming	4	On	9	34	43	2	8	10
	F & FW	Integrated farming	5	On	9	20	29	7	15	22
	F & FW	Soil test based work of organic manure, inorganic fertilizer and bio-fertilizers in *Kharif* paddy	4	On	24	0	24	14	0	14
	F & FW	Nursery Management and Integrated Nutrient Management in *Kharif* paddy	4	On	20	0	20	5	0	5
	F & FW	Integrated Nutrient Management in greengram	1	Off	26	5	31	26	5	31
	F & FW	Time of sowing, seed treatment with bio-fertilizers &fungicide in lentil and procedure of soil collection	1	Off	59	6	65	9	3	12
	F & FW	Time of sowing, seed treatment with bio - fertilizers & fungicide of lentil and procedure of soil collection	1	Off	49	31	80	16	16	32
	F & FW	Time of sowing, seed treatment with Bio fertilizers & fungicide of lentil and procedure of soil collection	1	Off	14	13	27	11	6	17
	F & FW	Scientific method of pulse cultivation	1	Off	4	39	43	4	16	20

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	Seed treatment with bio agents and nursery management of paddy	1	Off	40	1	41	6	1	7
	F & FW	Seed treatment with bio agents and nursery management of paddy	1	Off	35	1	36	35	1	36
	F & FW	Seed treatment with bio agents and nursery management of paddy	4	On	22	20	42	16	13	29
	F & FW	Integrated Crop Management in pulse crops	4	On	35	10	45	7	7	14
	F & FW	Integrated Nutrient Management in boro paddy	4	On	40	0	40	7	0	7
	F & FW	Improved pulse production technologies for Sundarbans	4	On	14	9	23	6	6	12
	F & FW	Soil moisture conservation through water harvesting structure and mulching	2	On	36	6	42	16	1	17
	F & FW	Integrated farming	5	On	21	0	21	21	0	21
	F & FW	Scientific method of oilseed and pulse cultivation	2	On	2	18	20	1	2	3
	F & FW	Seed production technologies	4	On	12	1	13	0	0	0
	F & FW	Advanced technologies for boro paddy cultivation towards doubling farmers income	4	On	27	0	27	10	0	10
	F & FW	Scientific method of *Rabi* oilseed cultivation	2	On	41	0	41	8	0	8
	F & FW	Integrated farming and soil health management towards sustainable agriculture	3	On	19	0	19	3	0	3

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	F & FW	Integrated Farming System	4	On	4	46	50	2	11	13
	F & FW	Doubling farmers income by diversifying fish and prawn culture in freshwater ponds	4	On	28	0	28	12	0	12
	F & FW	Backyard system of breeding & culture of Asian catfish for increasing farmer's income	4	On	33	0	33	13	0	13
	F & FW	Doubling farmers income by diversifying fish and prawn culture in freshwater ponds	4	On	27	0	27	10	0	10
	F & FW	Backyard system of breeding & culture of Asian catfish for increasing farmer's income	4	On	29	0	29	18	0	18
	F & FW	Breeding of Asian catfish in backyard hatcheries	4	On	24	7	31	8	4	12
	F & FW	Breeding of Asian catfish in backyard hatcheries	4	On	23	2	25	8	0	8
	F & FW	Improved method of carp fry and fingerling production for doubling farmers income	4	On	13	7	20	7	4	11
	RY	Improved method of carp fry and fingerling production for doubling farmers income	4	On	24	1	25	8	0	8
	EP	Exposure on freshwater fish farming	1	On	4	3	7	0	0	0
	RY	Diversification of freshwater fish culture for doubling farmers income (DFI)	1	Off	28	7	35	27	7	34
	F & FW	Ornamental fish farming	4	On	17	23	40	6	14	20

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	F & FW	Agri-fisheries training to the marginal fishermen of Sundarban region	4	On	49	1	50	22	1	23
	F & FW	Agri-fisheries training to the marginal fishermen of Sundarban region	4	On	49	1	50	37	0	37
	F & FW	Agri-fisheries training to the marginal fishermen of Sundarban region	4	On	47	3	50	9	1	10
	RY	Good aquaculture practices in freshwater fish and prawn farming	6	On	19	11	30	8	2	10
	F & FW	Advanced aquaculture technologies for doubling farm income	4	On	40	10	50	39	10	49
	RY	Good aquaculture practices in freshwater fish and prawn farming	6	On	44	19	63	10	5	15
	F & FW	Fish and shrimp farming hazards-methods of diagnosis & prevention	1	Off	29	0	29	0	0	0
	F & FW	Methods of pond preparation for carp culture	1	Off	18	2	20	18	2	20
	RY	Good aquaculture practices in freshwater fish and prawn farming	5	On	25	22	47	11	6	17
	F & FW	Freshwater fish and prawn culture	2	On	12	6	18	3	0	3

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	Nutrient management in vegetable farming	4	On	29	2	31	15	1	16
	F & FW	Scientific methods of non-conventional vegetable cultivation for better profitability	5	On	25	0	25	3	0	3
	F & FW	Scientific methods of off-season vegetable cultivation on land embankment	4	On	18	0	18	4	0	4
	F & FW	Scientific methods of off-season vegetable cultivation on land embankment	4	On	29	6	35	15	4	19
	F & FW	High value vegetable cultivation in the peri-urban area	4	On	23	0	23	18	0	18
	F & FW	Improved method of profitable fruit cultivation in Sundarban agro-climate	4	On	25	0	25	22	0	22
	RY	Self-employment generation through establishment, maintenance and management of horticultural nursery	6	On	32	0	32	13	0	13
	RY	Self-employment generation through coconut & arecanut Farming	6	On	32	0	32	31	0	31
	RY	Improved method of profitable fruit cultivation in the Sundarban region	6	On	32	0	32	12	0	12
	RY	Coconut Grower (ASCI)	45	On	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
Horticulture	F & FW	Use of PGR in vegetable farming	1	Off	21	0	21	13	0	13
	F & FW	Off-season vegetable cultivation on land embankment	1	Off	16	0	16	8	0	8
	F & FW	Late winter & early summer vegetable cultivation	1	Off	35	0	35	2	0	2
	F & FW	Scientific methods of off-season vegetable cultivation on land embankment	1	Off	21	0	21	9	0	9
	F & FW	Improved methods of early tomato cultivation through seedling raising in plug trays	1	Off	30	6	36	20	4	24
	F & FW	Management of salinity through cultivation of salt tolerant crops	1	Off	41	8	49	26	5	31
	F & FW	Soil health awareness programme	1	Off	39	3	42	3	1	4
	F & FW	Soil health awareness programme	1	Off	29	0	29	16	0	16
	F & FW	Soil health awareness programme	1	Off	74	0	74	7	0	7
	F & FW	Soil health awareness programme	1	Off	38	0	38	24	0	24
	F & FW	Soil health awareness programme	1	Off	53	0	53	50	0	50
	F & FW	Soil health awareness programme	1	Off	51	0	51	5	0	5
	F & FW	Soil health awareness programme	1	Off	52	0	52	21	0	21

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	Improved techniques of growing carotene rich sweet potato varieties for better nutritional security and profitability	1	Off	45	6	51	5	0	5
	F & FW	Production of enriched vermicompost	1	Off	65	0	65	7	0	7
	F & FW	Soil health awareness programme	1	Off	49	0	49	28	0	28
	F & FW	Soil health awareness programme	1	Off	67	26	93	45	16	61
	F & FW	Soil health awareness programme	1	Off	64	16	80	50	12	62
	RY	Hi-tech method of betel vine cultivation	1	Off	8	6	14	4	2	6
	RY	Hi-tech method of betel vine cultivation	1	Off	19	0	19	1	0	1
	RY	Improved method of profitable fruit cultivation in the Sundarban region	1	Off	26	1	27	0	0	0
	RY	Self-employment generation through production of disease free vegetable seedlings	1	Off	32	96	128	12	45	57
	RY	Entrepreneurship through betel 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
Animal Husbandry	F & FW	Scientific poultry and duck rearing	4	On	31	46	77	19	39	58
	RY	Scientific goat rearing	1	On	2	15	17	2	11	13
	F & FW	Scientific rearing of goats	4	On	60	5	65	28	3	31
	RY	Broiler farming	4	On	0	20	20	0	7	7
	F & FW	Integrated farming	5	On	1	28	29	0	3	3
	F & FW	Dairy Farming	4	On	32	1	33	0	1	1
	EF	ASCAD	2	On	75	2	77	19	1	20
	F & FW	Goat farming	5	On	0	48	48	0	43	43
	RY	Rearing of small ruminants	5	On	0	49	49	0	1	1
	F & FW	Ornamental bird rearing	2	On	34	1	35	14	0	14
	RY	Dairy farming	4	On	34	14	48	23	3	26
	F & FW	Feed management	4	On	21	1	22	10	1	11
	EF	Management of farm animals	6	On	73	10	83	22	5	27
	EF	Scientific rearing of small ruminants (Biotech Kishan)	5	On	1	33	34	1	31	32
	F & FW	Chick rearing for Mother Group	5	On	4	25	29	2	11	13
	RY	Goat rearing during quarantine period	5	On	3	12	45	3	13	16
Plant Protection	F & FW	Integration of eco-friendly chemical pesticides and organic plant protection measures	1	Off	32	0	32	3	0	3
	F & FW	Eco-friendly pest management-principles and practices	1	Off	15	10	25	15	10	25
	RY	Beekeeping as an alternative livelihood option in Sundarban adjoining villages	1	Off	21	14	35	18	13	31
	RY	Self-employment generation by farm advisory service in agriculture	4	On	0	19	19	0	3	3
	RY	Beekeeping as an alternative livelihood option for the honey hunters of Sundarban	1	Off	28	1	29	11	0	11
	F & FW	Management of bacterial wilt in bittergourd	1	Off	20	0	20	4	0	4

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	Production and use of bio-pesticides for ecofriendly pest and disease management	4	On	32	0	32	3	0	3
	F & FW	Integrated Pest Management in paddy and vegetables	4	On	44	0	44	11	0	11
	EP	Rural Agricultural Work Experience (RAWE)	4	On	5	0	5	0	0	0
	F & FW	On-farm mass production of biocontrol agents	4	On	49	0	49	0	0	0
	F & FW	Eco-friendly chemical pesticides and organic plant protection measures against pest resurgence	1	Off	27	3	30	27	3	30
	F & FW	Use of indigenous technological knowledge to combat biotic and abiotic stresses in agriculture	1	Off	26	4	30	26	4	30
	F & FW	Scientific management of Indian honeybee for doubling of farmers income	5	On	34	3	37	25	1	26
	F & FW	Use of waste decomposer (Microbial consortium) for quick composting and plant growth promotion	1	Off	19	8	27	10	4	14
	F & FW	Bio-intensive pest and disease management for *Rabi* season	4	On	25	5	30	25	5	30
	F & FW	Scientific management of important pest and diseases in honeybees	4	On	39	3	42	21	3	24

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 Agriculture Extension System for Input Dealers (DAESI)	52	On	38	2	40	12	1	13
	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 (ASCI)	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
	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
Home science	F & FW	Crop planning &management of nutrition garden	4	On	8	22	30	2	6	8
	F & FW	Upscaling of LANN Programme	4	On		25	25		5	5
	F & FW	Upscaling of LANN Programme	4	On		30	30		10	10
	F & FW	Linking agriculture and natural resources with nutrition	1	Off	5	17	22	4	9	13
	F & FW	Linking agriculture and natural resources with nutrition	1	Off	4	41	45	5	9	14
	F & FW	Linking agriculture and natural resources with nutrition	1	Off	9	20	29	2	8	10
	F & FW	Income generation of womenfolk through soft toys making and tailoring	5	On		30	30		17	17

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	Income generation of womenfolk through soft toys making and tailoring	6	On	0	30	30	0	11	11
	F & FW	Income generation of womenfolk through soft toys making and tailoring	5	On	0	30	30	0	23	23
	F & FW	Income generation of womenfolk through soft toys making and tailoring	5	On	0	30	30	0	12	12
	F & FW	Income generation of womenfolk through soft toys making and tailoring	5	On	0	23	23	0	7	7
	F & FW	Income generation of womenfolk through soft toys making and tailoring	6	On	0	30	30	0	11	11
	F & FW	Integrated farming for doubling farmers income	6	On	0	35	35		16	16
	F & FW	Nutritional management of pregnant and lactating mother	3	On	7	14	21	2	5	7
	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	Utilization of household waste & farm waste through vermi compost	4	On	0	40	40	0	24	24
	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

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	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

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
				Male	Female	Total	Type of units	Number of units	Number of persons employed	
Horticulture Nursery	Nursery Management of horticulture crops	Self-employment generation through establishment, maintenance and management of horticultural nursery	6	32	0	32	Horticulture Nursery	6	6	11
Coconut & Arecanut	Production and management technology	Self-employment generation through Coconut & Arecanut Farming	6	32	0	32	Coconut Climber	13	13	5
Fruit production	Commercial fruit production	Improved method of profitable fruit cultivation in the Sundarban region	6	32	0	32	Fruit orchard	8	8	13
Coconut farming	Commercial coconut farming	Coconut Grower (ASCI)	45	20	0	20	Coconut nursery	7	8	9
Beekeeping	Beekeeping	Beekeeping as an alternative livelihood option in Sundarban adjoining villages	1	21	14	35	Backyard beekeeping unit	10	-	3
Plant Protection	Agri-clinic and agri-business	Self-employment generation by farm advisory service in agriculture	4	0	19	19	Pesticide shop	5	10	2

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
Beekeeping	Beekeeping	Beekeeping as an alternative livelihood option for the honey hunters of Sundarban	1	28	1	29	Backyard beekeeping unit	7	-	1
Plant Protection	Production of bio-control agents	On-farm mass production of biocontrol agents	4	20	5	25	Fungicide Production for own use	25	-	-
Vermicompost	Vermi-culture	Vermicompost Producer	25	20	0	20	Compost pit	10	10	-
Beekeeping	Beekeeping	Entrepreneurship development through beekeeping and better crop production through improved pollination	4	17	4	21	Beekeeping with European honeybees	6	12	1
Mushroom	Mushroom production	Mushroom cultivation to attain household nutritional security and income generation	4		41	41	40 bed	3	2	

*training title should specify the major technology /skill transferred

I) Sponsored Training Programmes

Sl.No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants									Sponsoring Agency
					PF/RY/EF		Male			Female			Total			
							Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
1	Integrated farming and soil health management towards sustainable agriculture	Integrated farming	October	3	RY	1	16	3	0	0	0	0	16	3	0	19	NIGAM, Bhubaneswar
2	Seed production technologies of crops	Seed Production	May	4	RY	1	12	0	0	1	0	0	13	0	0	13	Green College, Ramkrishna Ashram RD Wing
3	Integrated Nutrient Management in boro paddy	Integrated Nutrient Management	January	4	EP	1	33	7	0	0	0	0	33	7	0	40	IFFCO, Kalyani, Nadia
4	Integrated fish farming	Integrated fish farming	April	4	F & FW	1	2	2	0	35	9	2	37	11	2	50	DFO, GoWB, Alipore, Kolkata
5	Breeding of Asian catfish in backyard hatcheries	Breeding of indigenous fish	June	4	F & FW	1	16	7	1	3	4	0	19	11	1	31	WBADMIP
6	Breeding of Asian catfish in backyard hatcheries	Breeding of indigenous fish	June	4	F & FW	1	15	7	1	2	0	0	17	7	1	25	WBADMIP
7	Agri-fisheries training to the marginal fishermen of Sundarban region	Integrated farming	November	4	F & FW	1	27	22			1			27	23	50	SDB

Sl.No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants										Sponsoring Agency
							Male			Female			Total				
					PF/RY/EF		Others	SC	ST	Others	SC	S T	Others	SC	ST	Total	
8	Agri-fisheries training to the marginal fishermen of Sundarban region	Integrated farming	November	4	F & FW	1	27	22	0	0	1	0	0	27	23	50	SDB
9	Coconut Grower (ASCI)	Commercial coconut farming	February - March	45	RY	1	11	9	0	0	0	0	11	9	0	20	ICAR (through ASCI)
10	Beekeeping as an alternative livelihood option in Sundarban adjoining villages	Beekeeping	May	1	RY	1	3	18	0	1	13	0	4	31	0	35	AICRP HB & P
11	Eco-friendly chemical pesticides and organic plant protection measures against pest resurgence	IPM	September	1	F & FW	1	0	27	0	0	3	0	0	30	0	30	NICRA
12	Use of indigenous technological knowledge to combat biotic and abiotic stresses in agriculture	ITK	September	1	F & FW	1	0	26	0	0	4	0	0	30	0	30	NICRA
13	Scientific management of Indian Honeybee for doubling of farmers income	Beekeeping	September	5	F & FW	1	9	2	23	2	1	0	11	3	23	37	AICRP HB & P
14	Bio-intensive pest and disease management for *Rabi* season	Bio-control	October	4	F & FW	1	0	25	0	0	5	0	0	30	0	30	NICRA

Sl.No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants										Sponsoring Agency
							Male			Female			Total				
					PF/RY/EF		Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
15	Scientific management of important pest and diseases in honeybees	Beekeeping	November	4	F & FW	1	18	11	10	0	1	2	18	12	12	42	AICRP HB & P
16	Diploma in Agriculture Extension System for Input Dealers (DAESI)	Agri-clinic and agri-business	December	52	EP	1	26	12	0	1	1	0	27	13	0	40	Self-sponsored
17	Preparation and use of Cue Lure Trap for management of fruit fly in vegetables	IPM	January	1	F & FW	1	0	4	0	2	24	0	2	28	0	30	ADA, Joy II
18	On-farm mass production of biocontrol agents	Production of bio-control agents	February	4	RY	1	8	12	0	3	2	0	11	14	0	25	ADA, Mandirbazar
19	Vermicompost Producer	Vermi-culture	February	25	RY	1	11	9	0	0	0	0	11	9	0	20	ICAR/ASCI
20	Entrepreneurship development through beekeeping and better crop production through improved pollination	Beekeeping	March	4	RY	1	11	6	0	1	3	0	12	9	0	21	AICRP HB & P
21	Broiler farming	Poultry production	July	4	RY	1	0	0	0	13	7	20	13	7	0	20	DDARD, South 24 Parganas
22	Integrated farming	IFS	July	5	F & FW	1	1	0	0	25	3	28	26	3	0	29	Dept. of Forest, GOWB

Sl.No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants										Sponsoring Agency
					PF/RY/EF		Male			Female			Total				
							Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
23	ASCAD	ASCAD	September	2	EF	1	56	19	0	1	1	0	57	20	0	77	DDARD, South 24 Parganas
24	Goat farming	Production management	September	5	F & FW	1	0	0	0	5	42	1	5	42	1	48	DBT, GOI under Biotech Kishan through WBUAFSc
25	Small ruminants	Production management	October	5	RY	1	0	0	0	1	48	0	1	48	0	49	DBT, GOI under Biotech Kishan through WBUAFSc
26	Ornamental bird rearing	Disease management	November	2	F & FW	1	20	14	0	1	0	0	21	14	0	35	DDARD, South 24 Parganas
27	Management of farm animals	Production management	December	6	EF	2	51	11	11	5	0	5	56	11	16	83	Bihar Milk Union Dumka, Jharkhand
28	Biotech Kishan	Disease management	December	5	EF	1	0	1	0	2	31	0	2	32	0	34	DBT, GOI under Biotech Kishan through WBUAFSc

Sl.No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants										Sponsoring Agency
					PF/RY/EF		Male			Female			Total				
							Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
29	Chick rearing mother group	Poultry management	January	5	F & FW	1	2	2	0	14	10	0	16	12	1	29	DDARD, South 24 Parganas
30	Goat rearing during quarantine period	Disease management	January	5	RY	1	0	3	0	29	12	1	29	15	1	45	DDARD, South 24 Parganas
31	Income generation of womenfolk through soft toys making and tailoring	Rural craft	May, June, July, August, September	6	PF	6				92	81		92	81		173	Dept of Forest, GOWB, Dept of Agriculture, GOWB

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	12	271	213	484	41	35	16	51	306	229	535
Kisan/Mela	5	5553	3228	8781	44	78	58	136	5631	3286	8917
Kisan Ghosthi	-	-	-	-	-	-	-	-	-	-	-
Exhibition	3	4050	2030	6080	39	69	46	115	4119	2076	6195
Film Show	18	442	252	694	43	12	3	15	454	255	709
Method Demonstrations	9	166	272	438	37	-	-	-	166	272	438
Farmers Seminar	2	123	109	232	46.2	6	2	8	129	111	240
Workshop	2	156	67	223	32	20	5	25	176	72	248
Group meetings	22	798	320	1118	34.8	45	28	73	843	348	1191
Lectures delivered as resource persons	67	1752	398	2150	32.8	572	112	684	2324	510	2834
Advisory Services	1092	1241	432	1673	49	254	173	427	1495	605	2100
Scientific visit to farmers field	295	1691	780	2471	51	49	34	83	1740	814	2554
Farmers visit to KVK	890	1715	655	2370	33	38	47	85	1753	702	2455
Diagnostic visits	276	224	38	262	27	12	3	15	236	41	277
Exposure visits	29	899	260	1159	34	22	17	39	911	277	1188
Ex-trainees Sammelan	2	77	14	91	28	17	6	23	94	20	114
Soil health Camp	8	158	68	226	34	22	7	29	180	75	255
Animal Health Camp	1449	50715	22901	73616	36	1478	1440	2918	52193	24341	76534
Animal show(30.01.2019)	2	21	19	40	5	3	0	3	24	19	43
Surgical cases (operations done)	24	18	6	24	3	2	1	3	20	7	27
Agri mobile clinic	-	-	-	-	-	-	-	-	-	-	-
Soil test campaigns	11	552	51	603	38	5	2	7	557	53	610
Farm Science Club Conveners meet	12	352	35	387	22	36	19	55	388	54	442
Self Help Group Conveners meetings	4	0	213	213	89	3	9	12	3	222	225
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	-	64	64	12	3	2	5	3	66	69
Celebration of Kisan Diwas	1	25	112	137	32	7	0	7	32	137	169
National Fish Farmers' Day	1	36	11	47	31	0	0	0	36	11	47
World Honeybee Day	1	81	12	93	14	6	1	7	87	13	100
Sankalp Se Siddhi	-	-	-	-	-	-	-	-	-	-	-
Swatchta Hi Sewa	1	156	98	254	48	8	5	13	164	103	267
Mahila Kisan Divas	1	0	62	62	30	0	1	1	0	63	63
Any Other (Specify)											
Observation of Vigilance Awareness Week	2	139	38	177	33	18	13	31	157	51	208
Total	**4243**	**71473**	**32765**	**104238**	**1032.6**	**2822**	**2050**	**4872**	**74285**	**34840**	**109125**

B. Other Extension activities

Nature of Extension Activity	No. of activities
Newspaper coverage	21
Radio talks	5
TV talks	2
Popular articles	3
Extension Literature	Leaflet - 7
Other, if any	1. "Use of Chemical Pesticides" in journal Adhunik Sasya Suraksha" 2. Dimponar chas and Dhaniponar chas in ICAR-CIFA training manual no. 92 3. Outbreak of disease in winter fish cultivation and its remedy in Krishi Darshan, DD Bangla on 23.01.2019 4. Video conference by Hon'ble Prime Minister with two KVK adopted farmers at NIC, Alipore, Kolkata on 20.06.2018 5. 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			
Fodder (cutting)	HY Napier	3015 nos	3015.00	35	SC	ST	Other	Total
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
Paddy	Pratikshya (B-F)	8.40	26,880	44	5	35	84
	Pratikshya (F-C)	19.20	53,760	115	9	87	211
	Sabita (B-F)	7.00	22,400	42	0	28	70
	Sabita (F-C)	26.00	75,400	179	11	97	287
	CR-401 (B-F)	4.40	14,000	30	0	14	44
	Varsha Dhan (B-F)	2.80	8,960	17	0	11	28
	Dudheswar (TL)	14.00	36,400	89	6	79	174
Pulse	Greengram	5.50	6,875	65	3	45	113
Amorphophallus	Gajendra	8.9	17800	0	0	3	3
Colocasia	Telia	4.6	5600	0	0	0	0
Grand Total		100.8	2,68,075	581	34	399	1014

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							
Cauliflower	Dawn	18300	18300	7	1	16	24
Cabbage	Rare ball	19900	19900	11	-	27	38
Tomato	Deb	52900	79350	68	-	41	109
Brinjal	Muktakeshi	16500	9900	19	-	32	51
Chilli	Tejaswini	36320	36320	27	-	19	46
Beet	Crimson Globe	6900	6900	6	-	11	17
Knolkhol	Taki Winner	4300	4300	4	-	9	13
Fruits					-		
Mango	Amrapali	950	38000	27	-	35	62
Guava	Allahabad Safeda	2230	55750	16	-	29	45
Lime	Pati	1360	34000	32	-	47	79
Papaya	Honey Dew	860	4300	21	-	62	83

Crop	Variety	No. of planting materials	Value (Rs)	Number of farmers to whom planting material provided			
				SC	ST	Other	Total
Sapota	Cricket Ball	1250	50000	9	-	13	22
Others (Ber)	BAU	270	8100	5	-	9	14
Ornamental plants	Dahlia, Chrysanthemum	9410	18820	123	-	299	422
Medicinal and Aromatic							
Plantation (Coconut)	East Coast tall	320	12800	51	-	69	120
Spices (Betel vine cutting)	Mitha Pata	21800	654000	39	-	47	86
Turmeric							
Tuber							
Elephant yams							
Fodder crop saplings							
Forest Species (Neem)	Neem	8000	40000	296	-	334	630
Others, (Sweet potato cutting)	Kamala Sundari	59700	59700	378	-	126	504
Pointed gourd cutting	Raidighi	7890	39450	26	-	37	63
Total		269160	1189890	1165	1	1262	2428

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	2350.8	2,82,096/-	326	137	558	1021
Bio-agents						
Others, please specify- Vermicompost	51320	205280	169	12	248	429
Total	53670.8	4,87,376/-	495	149	806	1450

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	361 kg	5,70,157.00	15	2	38	55
Fish fingerlings							
Spawn	Katla, Rohu, Mrigal, Bata, Kalbasu, Silver carp, Grass carp, Java punti, Common carp	21,50,000		7	1	17	25
Others (Pl. specify)	Climbing perch	1,50,000		2	0	5	7
	Asian catfish	55,000		3	0	8	11
	Ornamental fish	10,100		4	1	10	15
Grand Total			615,957.00				

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 (expected)	Certified
	Sunflower	LFSH-171	500	1.0	5 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	2.311	-	Seed production of Sesame (Var. Savitri; Seed sown in Feb., 19 in 56 ha area) & Sunflower (Var. LFSH-171; Seed sown in Feb., 19 in 0.4 ha area) is going on with a target of producing 400 q Sesame & 2 q Sunflower seed

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.
Seed storage structure	A seed godown of 1200 sqft has been constructed with fully insulated wall.

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 *Sclerotium rolfsii* (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 Parisheba	P. K. Garain and others		
Bulletins	Dimponar chas and Dhaniponar chas (ICAR- CIFA Training Manual 92)	P. Chatterjee		
News letter				
Popular Articles	1. Article on "Use of Chemical Pesticides" in journal "Adhunik Sasya Suraksha" 2.Article on Biopesticide in News Paper "Eisamay" 3. Aprachalita Sabji Chas in '*Karmakshetra*'	P. K. Garain P. K. Garain Chandan Mondal	1	More than 1 lakh

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 P. K. Garain	3 2000	Distributed among the CFLD farmers 720
Technical reports	1.Monthly reports of MVC projects 2.Annual report and Action Plan of AICRP (HB & P) 3.Annual report and action plan for NICRA 4.Weekly report for DAESI course 5. Fishery specific assessment and future recommendations for WBADMI Project in the districts of Purulia, Bankura and Birbhum	S.Roy P. K. Garain P. K. Garain P. K. Garain P. Chatterjee	24	-
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	National Seminar (Lead speaker and Chairperson)	National Seminar on environmental issues	Mr. Prasanta Chatterjee, SMS, Fishery	07.04.2018	Department of Zoology, Vivekananda College, Kolkata
2	Workshop	HWC and Urban Wildlife problems	Mr. Prasanta Chatterjee, SMS, Fishery	29.04.2018	Range Office, Salt Lake, Dept. of Forest, GoWB

Sl. No.	Name of programme	Name of course	Name of KVK personnel and designation	Date and Duration	Organized by
3	National Seminar	Recent trends in fisheries and ecological sciences	Mr. Prasanta Chatterjee, SMS, Fishery	19.05.18	National Environmental Science Academy
4	Annual Workshop of KVK of Zone -V	Annual Workshop of KVK of Zone -V	Dr. Chandan K Mondal, SMS, Horticulture	26.05.18-27.05.18 (2 days)	OUAT, Bhubeneswar
5	Workshop on Civil Society Organization	Capacity building of CSO for crowd funding	Dr. Manasi Chakrabory, SMS, Home Science	21.06. 18-22.06. 18 (2 days)	WHH, Germany
6	Write Workshop	Write Workshop for Study Material Preparation of DAESI Course	Mr. Prabir Kumar Garain, SMS, Plant Protection	25.06. 18 – 28.06. 18 (4 days)	SAMETI, Narendrapur
7	Training programme	Fish disease and monosex tilapia farming	Mr. Prasanta Chatterjee, SMS, Fishery	30.06.18	Adult and continuing education dept. Kalyani University
8	Workshop (Chief guest)	Catfish breeding	Mr. Prasanta Chatterjee, SMS, Fishery	02.07. 18	ICAR-CIBA, Kakdwip
9	Training programme	Carp hatchery management	Mr. Prasanta Chatterjee, SMS, Fishery	12.07. 18	FFRTC, GoWB, Kalyani
10	Annual Workshop of NICRA	Annual Workshop of NICRA	Dr. N. J. Maitra, Senior Scientist & Head	06.08.18-08.08.18 (3 days)	ATARI, Zone -V
11	Workshop on ARYA	Workshop on ARYA	Dr. N. J. Maitra, Senior Scientist & Head	23.08.18-25.08.18 (3 days)	ICAR- New Delhi
12	Training programme	GPS monitoring of MVC programme	Subhasis Roy , SMS, Animal Husbandry	03.08. 18	ARD Dept, Govt of WB
13	ASCI Training	ASCI Training	Dr. Chandan K Mondal SMS, Horticulture	18.09.18-20.09.18 (3 days)	ATARI, Kolkata
14	ToT for ASCI	Training of Trainers for conducting ASCI sponsored trainings	Mr. Prabir Kumar Garain, SMS, Plant Protection	18.09. 18 – 20.09. 18 (3 days)	ATARI-Kolkata
15	Training programme	ASCAD	Subhasis Roy, SMS, Animal Husbandry	28.09.18 - 29.09.18 (2 days)	ARD Dept, Govt of WB
16	Workshop on website designing	Website designing and writing stories to upload in the website	Dr. Manasi Chakrabory, SMS, Home Science	03.10. 18-05.10. 18 (3 days)	WHH, New Delhi
17	Training Programme	Doubling farmers income through Animal Husbandry and Fishery sction- Role ok KVK	Dr. Arkendu Halder SRF, ARYA Project	09.10. 18-11.10.18 (3 days)	DREF, WBUAFSc, Kolkata, sponsored by ICAR-ATARI, Kolkata
18	Training programme	Ethnoveterinary medicine	Dr. Sudip Nandi VO, MVC, Patharpratima	13.11.18-16.11.18 (4 days)	Tran disciplinary University, Bangalore, Karnataka
19	Workshop on Green College	Midterm evaluation of Green College	Dr. Manasi Chakrabory, SMS, Home Science	27.11. 8-29.11.18 (3 days)	WHH, New Delhi
20	GB Meeting ATMA	GB Meeting ATMA	Mr. Prabir Kumar Garain, SMS, Plant Protection	December, 2018	PD, ATMA
21	Training	Orientation course on IPM in important field and horticultural crops	Mr. Prabir Kumar Garain, SMS, Plant Protection	13.12. 18 - 15.12. 18 (3 days)	ATARI-Kolkata & NCIPM, New Delhi

Sl. No.	Name of programme	Name of course	Name of KVK personnel and designation	Date and Duration	Organized by
22	Workshop	NICRA review workshop	Mr. Prabir Kumar Garain, SMS, Plant Protection	21.12. 18 - 22.12. 18 (2 days)	KVK, Malda and ATARI-Kolkata
23	GB Meeting ATMA	GB Meeting ATMA	Mr. Prabir Kumar Garain, SMS, Plant Protection	04.01. 19	PD, ATMA
24	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
25	Workshop	State level workshop for evaluation of ASCI programmes	Mr. Prabir Kumar Garain, SMS, Plant Protection	31.01. 19	SAMETI, Narendrapur
26	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
27	Regional Workshop	Protection of Plant Varieties & Farmers' Right at WBUA&FS, Kolkata	Dr. Dipak Kumar Roy, Programme Assistant, Agronomy	15.03. 19	ATARI, Kolkata

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

Name of farmer	
Address	
Contact details (Phone, mobile, email Id)	
Landholding (in ha.)	
Name and description of the farm/ enterprise	
Economic impact	
Social impact	
Environmental impact	
Horizontal/ Vertical spread	

A. Mobile Veterinary Clinic (MVC) – door step service to the farmers

West Bengal is basically agriculture based state. Animal husbandry holds a major portion of growth of the state where services to the livestock sector is mainly provided by the ARD department. Majority of livestock sector comprises of dairy, goatery, piggery and backyard farming of poultry and duckery. Most of the agricultural lands are fragmented and of small holding in nature, hence, the importance of this sector is paramount in respect of alternative income generation for livelihood.

West Bengal comprises of different agroclimatic zones which are distinctively separate in nature and some of the areas are ill communicated and challenged in terms of transportation and services. Some hilly areas, red laterite zones (Purulia, Bankura etc.) and Sundarbans (North & South 24 Parganas) are the major constrained areas where animal rearer faces the problem of poor veterinary services, lack of primary veterinary aids vis-à-vis long difficult communication to have the animal husbandry services rendered by ARD department through different block hospitals, additional block hospitals etc. Sundarbans is the most difficult area where number of blocks are in island situation and farmers are o face the problem of availing health care from the block health center or additional block health center situated in mainland situation as the communication in these area is difficult, risky, related to high tide and time bound.

In this background, directorate of animal resource and animal health with financial assistance from RKVY scheme and in collaboration with Ramkrishna Ashram KrishiVigyan Kendra, Nimpith have conceptualized to cater the needs of the animal rearer of these challenged areas through mobile veterinary services. The concept begins with selected blocks of the district with dedicated team comprising of one veterinary doctor, one paravet, one LDA and one dedicated vehicle. The programme has created a havoc impact amongst the farmers especially the animal reares of disadvantaged areas. Services like door step diagnosis along with treatment, modern practices of wound dressing and management, auscultations to arrive a differential diagnosis, recording of temperature to pave a foot for initial treatment are also provided with a positive outcome in terms of productivity and sustainability. Besides, scientific methods for body weight gain in farm animals through application of Burdizo Castrator are being regularly done in mobile health camps. The farmers are now even getting the facility of fluid therapy to augment the recovery process ii a quick fashion. Moreover, emphasis is also given to improve the reproductive health with pregnancy diagnosis to take proper care to their animals. On spot stool examination is done for detecting worm burden as well as to prepare parasitological map.

The programme aims to fulfill the basic needs of the farmers like – Doorstep diagnosis, treatment of ailing animals, preventive care & management, proper guidance on marketing and awareness generation to boost up skill & attitude of the farmers with these objectives the programme is finalized one month. During selection of venue & date, the PRI members are being consulted on a daily manner, conveyed to the respective BLDO’s for their approval & the finalized programme for the next month is being displayed to the respective places for wide circulation through walling along with miking.

The programme is implemented by a dedicated team of veterinary Doctor, Para Vet, and LDA through fixed vehicles / Boat. The camp is generally organized in such a place, so as to enable the farmers to attain the camp with their animals. The following services is being provided like—

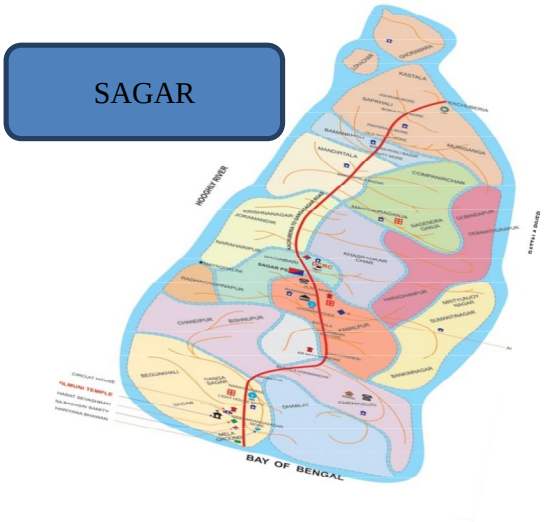
- Proper Diagnosis & the treatment.
- On spot stool examination.
- Necessary further intervention examination.
- Preventive health care & management.
- Routine deworming & supplementation.
- Surgical intervention for correcting obstructive cases.
- Providing consultancy to the entrepreneurs.
- Organizing awareness camp.
- Making liaison with other GO's & NGO's.
- Focus on insurance of animals.
- Inculcated the related Animal Husbandry schemes rendered by State Govt.
- Encourage the women farmers in farming.
- Inspire the rural youth for alternative & lucrative Animal Husbandry Practices to attract & retain them in farming condition.
- Emphasis the reproductive performance of the animals.
- Judicious use of medicine through different deworming & diagnostic test by centralized sample testing laboratory at KVK.

The programme not only ends with implementation but also include evaluation by annually. Modification like use of Banner/ Poster/ Leaflet/ Poster/ Projector for successful impact on the farming community is also taken.

The mobile veterinary clinic is a very innovative approach to reach the expense of animal rearers of the state in general and district in particular. Now the farmers are getting door step diagnosis, treatment and all other preventive management with scientific knowledge gain through this programme. The habit to visit the doctors is achieved through constant service and now the farmers are willing to purchase the medicines as prescribed by the doctors of the unit. The demand for more and more number of visits in a particular area is increasing day by day. However, certain areas of the project like facility of Artificial Insemination need to be addressed for fulfillment of additional requirement of the stakeholders.

The technology was initially introduced among some selected areas of the three blocks of North 24 Parganas and in an integrated way it was attempted to develop those areas. After 1.5 years of intensive try, the benefit of the programme in those areas attracts other neighboring villages, gram panvhyet to have the facility of the programme. Now this technology is almost covering 25 numbers of GPs and 275 villages.

Target area : 3 blocks of South 24 Parganas (Gosaba, Sagar and Patharpratima)
3 blocks of North 24 Parganas (Hingalganj, Sandeskhai-I, Sasdeskhali-II)



Substitution

The previous practice of hospital case treatment and vaccination camp has been substituted with homestead treatment with door step vaccination. The women folk were engaged in either prawn seed catching or working as maid servant. The benefit of this service by enhanced profitability, has changed their life both economically and morally with greater sustainability and assurance. Nowadays they neither go for prawn seed catching nor adopt any other exploitable alternative options. This technology has substituted the traditional practice vis-a-vis uplifting the poorer section faced with devastating natural calamities.

Social impact of the technology

Introduction of this technology by RAKVK, Nimpith have contributed to the rural economy in general and *Aila*affected families in particular. This technology is providing the farming community with a steady cash flow to sustain their livelihood. This technology not only provides additional income generation from the same existing stock, but also empowers them by providing the concept of proper marketing. Previously the animals were uncared for and thus profit from the farming was either negative or negligible. Thus interest towards animal rearing was decreasing day by day. This programme has created a havoc enthusiasm and became successful one for attracting and retaining rural youth in animal husbandry practices.

Challenge

In West Bengal Animal husbandry contributes a major portion in the growth of the state where services to the livestock sector is mainly provided by the Animal Resource Development Department. The livestock sector comprises mostly of dairy, goatery, piggery and backyard farming of poultry and duckery. As most of the agricultural land in the state is fragmented and of small holding in nature, the importance of this sector is paramount in respect of alternative income generation for livelihood. West Bengal comprises of different agro-climatic zones where some of the areas are ill communicated and challenged in terms of transportation and services like Some hilly areas Red laterite zones (Purulia, Bankuraetc), Sunderbans (North & South 24 Parganas)and part of West Midnapur. These areas face several problems like poor veterinary services, lack of primary veterinary aids vis-à-vis distant and difficult communication to avail animal husbandry services rendered by the ARD department through different block hospitals, additional block hospitals etc. Among all these, Sundarbans is the most complex area where a number of blocks are island based and the local farmers face the problem of availing health care from the block health centers or additional block health centers which are situated in mainland situation and access to these areas is difficult, risky and depends on high tide and time bound.

Initiative

Directorate of Animal Resource and Animal Health with financial assistance from RKVY scheme and in collaboration with Ramkrishna Ashram KrishiVigyan Kendra, Nimpith have conceptualized the idea of mobile veterinary clinic in South 24 Parganas to cater the need of the animal rearers of this challenged areas of Sundarbans.

The programme aims to fulfill the basic needs of the farmers like – Doorstep diagnosis, treatment of ailing animals, preventive care & management, proper guidance on marketing and awareness generation to boost up skill & attitude of the farmers with these objectives the programme

is finalized one month. During selection of venue & date, the PRI members are being consulted on a daily manner, conveyed to the respective BLDO's for their approval & the finalized programme for the next month is being displayed to the respective places for wide circulation through walling along with milking.

The programme not only ends with implementation but also include evaluation by annually. Modification like use of Banner/ Poster/ Leaflet/ Poster/ Projector for successful impact on the farming community is also taken.

Women empowerment

Women contribute 65-70% labour in agriculture in the Sundarban region. Most of them are illiterate and as having less scope for receiving training courses with huge domestic responsibilities, rural women fail to adopt new technologies and become unable to take the advantage of modern scientific know-how. Women are the most disadvantages group who suffers more in this serious system due to overburden that arise out of men migration for search of livelihood. They have less control over the lands and other properties. Naturally, they are recognized only as a labour, even though they are working from dusk to dawn for farm production and as well as a home manager. But unfortunately they take last and least throughout their lives even when pregnant and lactation period. Gender sensitization, gender mainstreaming are the main pre condition for the empowerment of the women to become an economic partner of a family in this adverse situation. Economic empowerment with sustainable approach for farming is the only key action point. the MVC programme, through its knowledge imparting techniques by awareness camps, demonstrations and counseling have been able to strengthen the women folk of rural sundarbans in terms of increased productivity, infusing the knowledge of modern scientific concept of disease prevention through vaccination and highlighting the different lucrative aspect of marketing. Over the last three years 5946 nos of farm women have been trained on different aspects of AH practices.

Key results

a. Awareness Generation: Sundarbans, the biggest delta in the world, is mostly disadvantaged by the bottle neck communication, time bound transportation and risky situation. Availing veterinary services from mainland BHC for the farmers of island situation is very difficult and to some extent impossible. Besides, scope for training on modern scientific approaches in farming is also far away. The farmers of these regions mostly accept the newer technologies if provided to them. Here MVC plays an important role for imparting the knowledge of newer methodologies, technologies and knowhow for the farming situations. Till now 7625 no of farmers in south 24 parganas and 7389 in North 24 parganas have been given training on different aspect of animal husbandry services.

b. Demonstrations conducted: Demonstration of different proven technologies like urea molasses mixture, vanaraja farming, pekin duck farming, turkey farming, fodder cultivation, deworming, vaccination have been demonstrated in different block of north and south 24 pargans. The farmers which are selected for the purpose are mostly progressive ad the adoption of these technologies by the fellow

farmers are about78%. Besides, demonstration on ornamental bird rearing for the coastal fringe area of sundarbans has also been conducted as alternative livelihood option. The total demonstrations have been conducted in participatory manner.

Seasonality of Different Diseases In The Project Area

January	IB, Goat Pox, BQ, PPR
February	pox, BQ , PPR
March	anestrus
April	anestrus
May	anestrus
June	HS, BQ, vector borne diseases, pox
July	HS, BQ , vector borne diseases
August	HS
September	Pox , HS, FMD
October	Pox, PPR
November	FMD,POX, PPR
December	FMD, POX, PPR

In case of BQ there is no particular season for its occurrence being the most incidence is in post winter period. This could de due to grazing of animals and digging out the soil that could have brought out the organisms out and cause the disease. Incidence of HS has found during and after rainy season. Most of the time, the disease flare up is related to lowered immunity status of the animals. Foot and Mouth Disease (F.M.D), one of the most important viral diseases of ruminants, found mostly during winter season.

But, spread of the diseases over the different seasons throughout the year has also been recorded. The trends of the disease are declining. Sheep and Goat Pox disease have maximum incidence from October to March which may be due to herdedness in close proximity leading to easy spread of the disease to the healthy animals. Peste- des- petits ruminants (P.P.R) is predominantly seen during the colder periods of the year.

Convergence

A number of convergence programme with line Department, BLDO, Panchyet etc. have been organized. Besides, IVRI-ERS centre ICAR has also been involved in different camps for providing more benefits to the farmers.

MVC is operating in different blocks of north and south 24 Parganas district of West Bengal since last three years. During the work period, it has been observed that there is a potential for backyard farming if the market linkage is established. Rearing of garole sheep and black Bengal goat is one of the important activities taken up by the rural farmers of Sundarbans since long back being the advantage of higher fecundity, higher disease resistance and foraging behavior even in water logged condition. The cost of farming is also significantly low. Besides, the backyard rearing of poultry and duck is also very much promising as the cost of farming is substantially low. The market price of these meats is high; still the farmers are not getting the proper value due to interruption of middle man. In this situation, KVK has taken a new venture for assured marketing of the produce by setting up one semi-automatic meat processing unit at the village level in collaboration with Livestock Development Corporation of West Bengal, Govt. of West Bengal and converging with Attracting and Retaining Youth in Agriculture (ARYA) programme of ICAR, New Delhi. Now the farmers of that particular block are getting facility of door step marketing of the animal produce without any intervention of middle man.

Documentation

One Compact Disc (CD) highlighting the activities of RKVY sponsored scheme MVC has been prepared and submitted to the Deptt. Of ARD, Govt of West Bengal.

Impact

The previous practice of hospital case treatment and vaccination camp has been substituted with homestead treatment with door step vaccination. The women folk were engaged in either prawn seed catching or working as maid servant. The benefit of this service by enhanced profitability has changed their life both economically and morally with greater sustainability and assurance. Nowadays they neither go for prawn seed catching nor adopt any other exploitable alternative options. This technology has substituted the traditional practice vis-a-vis uplifting the poorer section faced with devastating natural calamities.

Introduction of this technology by RAKVK, Nimpith have contributed to the rural economy in general and Aila affected families in particular. This technology is providing the farming community with a steady cash flow to sustain their livelihood.

This technology not only provides additional income generation from the same existing stock, but also empowers them by providing the concept of proper marketing. Previously the animals were uncared for and thus profit from the farming was either negative or negligible. Thus interest towards animal rearing was decreasing day by day. This programme has created a havoc enthusiasm and became successful one for attracting and retaining rural youth in animal husbandry practices.

Lesson learned

Certain areas of the project like facility of Artificial Insemination need to be addressed for fulfillment of additional requirement of the stakeholders.

The mobile veterinary clinic is a very innovative approach to reach the expense of animal rearers of the state in general and district in particular. Now the farmers are getting door step diagnosis, treatment and all other preventive management with scientific knowledge gain through this programme. The habit to visit the doctors is achieved through constant service and now the farmers are willing to purchase the medicines as prescribed by the doctors of the unit. The demand for more and more number of visits in a particular area is increasing day by day.

The technology was initially introduced among some selected areas of the three blocks of North 24 Parganas and in an integrated way it was attempted to develop those areas. After 3.0 years of intensive try, the benefit of the programme in those areas attracts other neighboring villages, gram panvhyet to have the facility of the programme. Now this technology is almost covering 25 numbers of GPs and 275 villages.

Supporting quotes and Images

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Mr.DebeshMondal, MLA of Hingalganj- “Special camp in the flood affected areas of Pukuria village, Sahebkhali G.P of Hingalganj block, North 24 Parganas has been organized on 12.09.2016 by Mobile Veterinary Clinic Hingalganj block in collaboration with BLDO, Hingalganj, ARD Department, Government of West Bengal. Total 156 numbers of cattle, 188 numbers of sheep and goat and 573 numbers of poultry and duck have been treated and covered under the umbrella of vaccination with FMD, PPR, R2B, duck plague to prevent the incidence of disease in face of flood situation. The steps taken by RAKVK, Nimpith, Mobile Veterinary Clinic Unit and BLDO, Hingalganj is really praise worthy”

Special achievement

VC Gosaba Unit have been awarded as best performing Unit in the district and felicitated during State Animal resources Fair 2018.

B. Biotech-Kisan Hub in Sundarban area of South 24 Pgs. district of West Bengal

Technology is the prime moving force of progress. The majority of state farmers being rural habitant and poor in socio-economic condition, the technologies proposed should be in the low risk and high income category. Multidisciplinary approach in various nature is thus needed for technology assessment, refinement and grounding for the state farmers. The South 24 Parganas district is the important representative district in Coastal saline Zone in the state having huge potential of development in agricultural and allied sectors. Reasonably, there is urgent need to establish the Biotech-Krishi Innovation Science Application Network (Biotech-KISAN) in unreached area of the district for direct linkage between science laboratories and farms; it is now imperative that the Indian scientist understand the problems of the local farmer and provide solutions to those problems. Likewise, it is necessary to expose farmers to the scientific solutions available by bringing him to the scientific environment/laboratory. This close interaction and need based research will allow innovative solutions and technologies to be developed and applied at farm level.

Sundarbans is the world's largest prograding delta region that spreads over India and Bangladesh covering around 25,500 sq. k.m. The Indian part is approximately 9,630 sq. k.m. The Indian part of Sundarbans is not confined to one single district. Sundarbans also covers 6 administrative blocks of the adjacent North 24 Parganas district, besides 13 blocks in South 24 Parganas. The livelihood options in these remote islands are indeed very limited till date. Typically in the delta region rain-fed, single-crop agriculture and fishing are the two main sources of livelihood. Nearly 95 per cent of the population primarily depend on agriculture. About 50 per cent of agriculturists are landless labourers. For the blocks bordering the reserve forest, during agricultural lean season, substantial part of the population depends on forest and river resources. Besides, some households entirely and some partially engage in catching fish and crab in the rivers and creeks. Both of these operations are perceived to involve considerable danger due to tigers in the forest and crocodiles in the rivers. It can be perceived that these people directly depend on the forest as a last resort for their livelihood and are almost always very poor with nil or unsustainable landholding. Income from these occupations is often supplemented by catching "meen", the local term for shrimp seedlings. Cultivation of crops, mainly paddy, is mostly for self consumption. This applies even for vegetables. Also, in the absence of alternative livelihood options, agricultural land is held by rural households as valuable assets – even if its size became economically nonviable. With subdivision of landholdings through generations, all of the agricultural households in the region must have experienced dwindling size of average landholding. However, in a mostly rain-fed agricultural region producing a single crop, irrigated land. Hence the need of livestock rearing for alternative livelihood is the major priority of this day.

Black Bengal goat is a very useful small livestock in this area distributed in almost every household in this area. It is also a great source of income for the poor people of this region. Small scale Goat farming has a very important role in reducing unemployment and poverty. Apart from Black Bengal Goat, most interesting Garole sheep are also distributed in the Sundarban region. It is a small-sized breed known for its prolificacy and adaptation to the saline marshy land of the Sundarban region. It is believed that these sheep contributed to the prolificacy gene in Booroola Merino sheep of Australia. The breeding tract of Garole sheep falls under the Coastal Saline Zone of West Bengal and the climate of this region is hot and humid. Garole sheep have the ability to graze in knee deep conditions in marshy land. Small Ruminant especially Black Bengal Goat and Garole Sheep rearing as a small scale enterprise has tremendous potential in this area in terms of nutritional security, gainful self-employment and economic upliftment as more than eighty five percent of the population of this region is non-vegetarian and chevon or mutton is preferred by most of the people. Improvement of sheep and goat production is necessary to benefit the rural community and smallholder farmers through research and policy-making on the physical characteristics, reproductive ability, feeding systems, productivity and health aspects of these animals because increased animal production should be achieved rather than by increasing animal numbers, but enhanced disease control, integration of fodder production, improved husbandry and controlled breeding are essential steps to intensify animal production and the Biotech Kisan Hub will help them for their livelihood security which will be the success of the project.

"Biotech-Krishi Innovation Science Application Network (Biotech-KISAN)" will be implemented in Coastal saline agro-climatic zones of India (Sunder ban of South 24 Pgs District of West Bengal) in phased manner with the objective:

- Linking available science and technology to the farm by first understanding the problem of the local farmer and provide solutions to those problems.
- The working together, in close conjunction, of scientists and farmers is the only way to improve the working conditions of small and marginal farmers.
- This programme aims to work with small and marginal farmers especially the woman farmer for better agriculture productivity through scientific intervention and evolving best farming practices in the Indian context.
- Activities to be carried out with timelines (details of the year wise activity)
- Work plan of proposed project

Achievements of Year I to II

- Survey about the Garole Sheep and Black Bengal Goat population at Sunderban area in West Bengal.
- Survey about the socio-economic status of the Farmers of the Sunderban area in West Bengal.
- Analysis of survey records with statistical interference.
- Selection of 1000 Farmers out of which 600 will be female Farmers
- Selection of 50 best male and 500 best female Garole sheep and Black Bengal Goat of each breed from the farmers of Sunderban for rearing in organized farming system in University Farm and best stock will be distributed among 1000 farmers. Quality male and female is also to be procured from CSWRI, Avikanagar, Rajasthan and CIRG, Makhdoom, UP.
- Establishment of HUB for farmers' knowledge through ICT.
- Generation of software to meet up the requirement of farmers.
- Training of 400 farmers about scientific rearing practices of Garole Sheep and Black Bengal Goat considering 40 numbers of farmers in each batch for 5 days
- Training of 40 scientists about modern scientific know how about Garole Sheep and Black Bengal Goat considering 20 numbers of scientist in each batch for 5 days
- Maintenance of the farm animals with suitable prophylactic, proper managemental practices and proper herd record of the selected animals.
- Study of economics or rearing of such animals along with productive and reproductive performances of those animals.
- Production of kids of those breeds
- Organization of MELA and EXHIBITION for farmers' awareness.
- Fellowship to the women farmers.

Achievements of Year III to V

- Training of another 600 farmers about scientific rearing practices of Garole Sheep and Black Bengal Goat considering 40 numbers of farmers in each batch for 5 days
- Training of another 60 scientists about modern scientific know how about Garole Sheep and Black Bengal Goat considering 20 numbers of scientist in each batch for 5 days.
- Fellowship to the women farmers.
- Recording of progeny performance in terms of productive and reproductive performances parameters.
- Selection of best animals.
- Distribution of best sheep and Goat among the farmers.

- Distribution of other related key inputs for rearing these animals.
- Regular monitoring
- Survey about the socio-economic status of the Farmers for assessment of their economic upliftment and impact of the project in the Sunderban area of West Bengal.
- Propagation of success stories for farmers' inspiration.
- Report writing and presentation.

Expected outcome

The present study should be taken up to identify and record the physical characteristics, productive and reproductive performances of Garole sheep and Black Bengal goat of Sunderban of the state of West Bengal with a view to livelihood security of the poor people of sunderban production. Through this genetic security, the so-called huge poor sheep and goat may be managed with less feed consumption and more disease resistance power to augment meat production mainly.

- ✓ Trained animal husbandry farmers in 1000 in number.
- ✓ The Project will help in poverty alleviation and rural development.
- ✓ The project will in generating additional employment particularly for landless and marginal farmers
- ✓ The Project will produce 1000 young stocks annually for distribution among farmers


TRAINING PROGRAMME ON
IMPROVED METHODS OF SHEEP AND GOAT PRODUCTION
UNDER BIOTECH-KISAN, SPONSORED BY DBT, GOVT. OF INDIA
RAMAKRISHNA ASHRAM KRISHI VIGYAN KENDRA


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

Sl. No.	Name/ Title of the technology	Name/ Details of the Innovator(s)	Brief details of the Innovative Technology
	Innovative methodology of Roof Top Rainwater Harvesting for larval rearing of Asian Catfish and potable water	P. K. Garain & P. Chatterjee	The process of collection and storage of therain water,falling over any roof top surface is known as Roof Top Rainwater Harvesting. The quality of the water, such harvested, is almost close to distilled water and can be used for potable purpose. The village Bongheri, is located in the Sundarban area, on the bank of brackish water river, Matla. Due to the brackish water aquifer lying at the shallow depth, the villagers depend on either water bodies or deep borewell for sweet water. The use of deep borewell is regulated by the Government and is limited for its potable usage. The rainwater, collected in ponds and canals, are used for agricultural and day-to-day usage purpose. The village receives good precipitation during Monsoon season (June to September) but remains almost dry for the rest of the year. So, availability of clean, fresh water is challenging for the villagers, even during the rainy season. Due to this, they were unable to take up breeding of Asian Catfish, as the larval rearing stage requires good amount of clean fresh water.  To address the problem, roof top rainwater harvesting was taken up in three households of the village during 2018 Monsoon. The edges of the inclined roof were fitted with PVC pipe in such a way so that the rainwater, falling over the roof top, were collected in the pipe. This pipe was then extended to a storage tank kept inside house. A lock was provided in the pipe, in between, to control the flow of the rainwater. During first 5 minute of rainfall, the water was allowed to flow outside of the storage tank so as to prevent all the dirt and silts of the roof top from entering into the tank and spoil the water quality. After 5 minutes, the clean water flowing through the pipe were allowed to enter the storage tank through a fine mesh filter. From a 6m X 10mroof area 600 liter potable water can be harvested in a rainy day with 15 mm precipitation (considering effective collection of 10 mm rainwater after flushing the silts). A storage tank of 1500 Litre was installed that was filled in every 3 days if utilized fully. This much water was sufficient to run the breeding and larval rearing of Asian Catfish by the beneficiary

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:

Moringa oleifera 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 and 40 phytocompounds, following a database search in PubMed, Web of Science, and Google Scholar. Four plant products commercially available for coccidiosis are included and discussed.





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

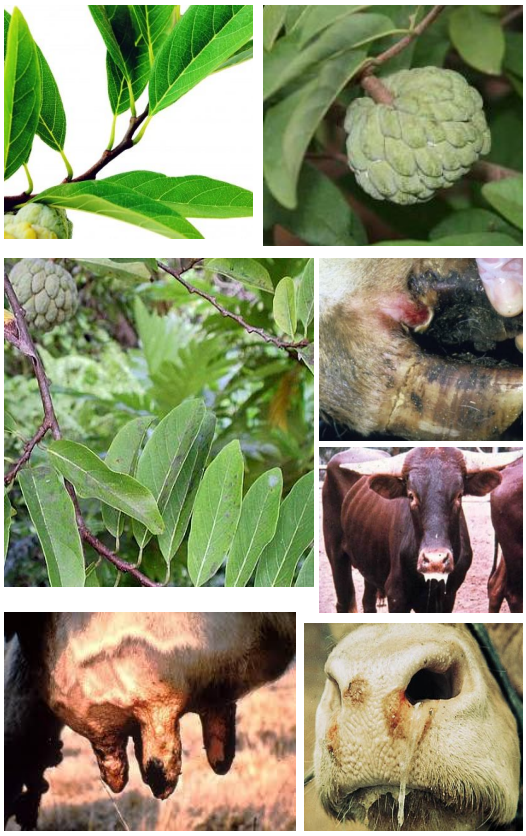
iii. Use of sugar apple leaves in FMD in animals

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			
-	1268	1268	1086	48	201850

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. Importance of soil test, role of different macro & micro nutrients for plant growths 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.	130	3	**1.Dr. Ravi Kumar Mathur,** Director, ICAR IIOPR, Pedavegi ,West Godavari, Andhra Pradesh - 534 450 **2.Dr. B. N. Rao,** Principal Scientist, ICAR - IIOPR, Pedavegi ,West Godavari, Andhra Pradesh - 534 450 3.**Dr.L.N. Bandopadhyay**, **Principal,** Green College, SRAN	100	130

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
6	378	46000	490	16

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 *Trichoderma viride* 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)

No of student trained	No of days stayed
5	23rd July, 2018 to 26th October, 2018 (96 days stayed)

ARS trainees trained	No of days stayed

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
28th June, 2018	Dr. J. S. Samra, Former- DDG (NRM) -ICAR	To observe KVK activities
28th June, 2018	P. S. Jamma	To gather knowledge on use of cowdung for electricity generatin through bio-gas
08th July, 2018	Dr. Chirantan Chattopadhyay, Vice Chancellor, Uttar Banga Krishi Viswavidyalaya, west Bengal	To visit the KVK
04th August, 2018	Rajendra Pawar, Chairman, Baramati KVK	To see KVK activities
14th November, 2018	Dr. B.M.K. Raju, Principal Scientist (Agril. Stat.), ICAR CRIDA	Visit to NICRA project

Date	Name of the person	Purpose of visit
06th December, 2018	Dr. Keshav Kumar Principal Scientist, Division of agril. Extension, Office of DDG(AE), ICAR, New Delhi	Visit to NICRA project
6th -7th December, 2018	Dr. B.M.C. Reddy, Retd. VC, Dr.YSRHU Horticultural University, Andhra Pradesh	Meeting on Reassessment of Potential areas for Oil Palm Cultivation in India
6th -7th December, 2018	Dr. S Arulraj, Retd. Director, ICAR-IIOPR, Pedavegi	Do
6th -7th December, 2018	Dr. Anupam Barik, Additional Commissioner, DoAC, Govt. of India	Do
6th -7th December, 2018	Dr. R K Mathur, Director, ICAR-IIOPR	Do
6th -7th December, 2018	Dr. S. S. Ray, Director, Mahalanobis Crop Forecast Centre, Pusa Campas, New Delhi	Do
6th -7th December, 2018	Dr. B. N. Rao, Principal Scientist, ICAR – IIOPR, Pedavegi ,West Godavari, Andhra Pradesh – 534 450	Do
16th December, 2018	Dr. K. Monoharn, Director, Directorate of Jute Development, Govt. of India, Ministry of Agriculture & Farmers Welfare, Department of Agriculture, Cooperation & Farmers Welfare	Swachhata Rally Programme
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

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
On-farm mass production of *Trichoderma* and its use in betelvine cultivation	600	64	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	200	78	Rs. 3.60 lakh per ha	Rs. 5.25 lakh per ha
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

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 500 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

Horizontal spread of technologies	
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,  **Weather affected traditional Boroz** Mathurapur II and Kulpi). This crop has become mainstay of occupation for three blocks namely Sagar, Namkhana and Pathar Pratima.	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 acted as Lead speaker and Chairperson in National Seminar on Environmental Issues in the technical session –I at Dept. of Zoology Vivekananda College sponsored by State Government on 07.04.2018

(ii) Fishery SMS was the Chief Guest and Speaker in the workshop on catfish breeding organized by ICAR-CIBA, Kakdwip on 02.07.2018

(iii) Fishery SMS acted as Guest Speaker in the capacity building programme on Carp Hatchery Management organized by Freshwater Fisheries Research and Training Centre, GoWB, Kalyani on 12.07.2018

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

(v) 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 fish culture/ 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. **Conducted special training for LDA under Assistance to State for Control of Animal Diseases:**


As the grass roolt level service to the farmers is given by the LDA, it is of immense important to undate and upgrade the knowledge of these extension workers for better service to the farming community. As the veterinary science is quickly developing and related mostly with production oriented farming, hence control of animal diseses will benefited the farmers in terms of additional income generation along with reduction of farming cost. A special endeavor was undertaken by the Deputy Director and P.O., South 24 parganas to impart the knowledge and hands on training to the newly recruited and existing LDA of this district and thus training was organized from 6.09.18 to 7.09.2018.

4.6.5. **Implementation of Biotech Kishan Hub programme sponsored by DBT, Govt. India in collaboration with West Bengal University of Animal and Fishery Sciences, Kolkata**Sundarbans is the world's largest prograding delta region that spreads over India and Bangladesh covering around 25,500 sq. k.m. The Indian part is approximately 9,630 sq. k.m. The Indian part of Sundarbans is not confined to one single district. Sundarbans also covers 6 administrative blocks of the adjacent North 24 Parganas district, besides 13 blocks in South 24 Parganas. The livelihood options in these remote islands are indeed very limited till date. Typically in the delta region rain-fed, single-crop agriculture and fishing are the two main sources of livelihood. Nearly 95 per cent of the population primarily depends on agriculture. About 50 per cent of agriculturists are landless labourers. For the blocks bordering the reserve forest, during agricultural lean season, substantial part of the population depends on forest and river resources. Besides, some households entirely and some partially engage in catching fish and crab in the rivers and creeks. Both of these operations are perceived to involve considerable danger due to tigers in the forest and crocodiles in the rivers. It can be perceived that these people directly depend on the forest as a last resort for their livelihood and are almost always very poor with nil or unsustainable landholding. Income from these occupations is often supplemented by catching "meen", the local term for shrimp seedlings. Cultivation of crops, mainly paddy, is mostly for self consumption. This applies even for vegetables. Also, in the absence of alternative livelihood options, agricultural land is held by rural households as valuable assets – even if its size became economically nonviable. With subdivision of landholdings through generations, all of the agricultural households in the region must have experienced dwindling size of average landholding. However, in a mostly rain-fed agricultural region producing a single crop, irrigated land. Hence the need of livestock rearing for alternative livelihood is the major priority of this day. Black Bengal goat is a very useful small livestock in this area distributed in almost every household in this area. It is also a great source of income for the poor people of this region. Small scale Goat farming has a very important role in reducing unemployment and poverty. Apart from Black Bengal Goat, most interesting Garole sheep are also distributed in the Sundarban region. It is a small-sized breed known for its prolificacy and adaptation to the saline marshy land of the Sundarban region. It is believed that these sheep contributed to the prolificacy gene in Booroola Merino sheep of Australia. The breeding tract of Garole sheep falls under the Coastal Saline Zone of West Bengal and the climate of this region is hot and humid. Garole sheep have the ability to graze in knee deep conditions in marshy land. Small Ruminant especially Black Bengal Goat and Garole Sheep rearing as a small scale enterprise has tremendous potential in this area in terms of nutritional





security, gainful self-employment and economic upliftment as more than eighty five percent of the population of this region is non-vegetarian and chevon or mutton is preferred by most of the people. Improvement of sheep and goat production is necessary to benefit the rural community and smallholder farmers through research and policy-making on the physical characteristics, reproductive ability, feeding systems, productivity and health aspects of these animals because increased animal production should be achieved rather than by increasing animal numbers, but enhanced disease control, integration of fodder production, improved husbandry and controlled breeding are essential steps to intensify animal production and the Biotech Kisan Hub will help them for their livelihood security which will be the success of the project. Different training programme was conducted in KVK in three batches in September, October and December 2018.




4.6.6. **Programme on Mera Gaon Mera Gaurav:**

As a part of extension activities of ICAR institute, one special programe on animal health and vaccination camp along with awareness geration among the farmers, RAKVK in collaboration with Indian Veterinary Research Institute –Easter Regional Station was organized in Gilerchat Village of Mathurapur II block of South 24 Parganas on 28.06.2018. Large numbers of cattle was vaccination against Foot and Mouth Disease (FMD), HaemorrhagicSeptisemia (HS) and Black Quarter (B.Q.).


As the village is mostly affected with goat pox, hewnce all the small rumunants were vaciinated with Goat pox vaccination. Poultry and ducks were vaccinated against Ranikhet disease and Duck plague respectively. The programme created havoc and leaflets on disese prevention and importance of vaccination were distributed by IVRI_ERS

4.6.7. **Special programme for awareness generation on zoonotic disease:**

Indian Veterinary Research Institiute-One of the premier institute of ICAR is working on different field oriented research for long time along with




awareness generation among the farmers. Scientists of IVRI-ERS have a vast knowledge on zoonotic diseases and its importance on public health. Thus a special programme was conducted at Sahajadapur of Joynagar II block mainly for the womenfolk of the society who are engaged with backyard farming on 11.10.2018. Detail discussion on prevention and self protection for the zoonotic diseases were done. Interactive session with the farmers made the programme a grand success

4.6.8. **Imparting training to the women folk especially on broiler farming:**




A special effort was mode to update the mother group of south 24 pargans in coillaborationwioth DDARD and PO South 24 Parganas who are mainly involved with broiler farming. Actually this farming is highly technical now a day and depends on interaction of several factoirs and cpofactors. The farmers mainly womwen folk of the SHG groups who are involved with this farming needs to know the details of the tit bits of this farming. Thus the efforts made a fruitful outcome interms of skill imparting as well as sustainaibility point of view. The training continued from 17.7.18 to 20.7.18. The training included theory as well as maximum hands on practical classes. Many government officials participated in the training to impart the skill amonst the farmers.

4.6.9.**Special programme at Ramkrishna Math, Naora centre**



A special training was imparted to the rural women folk organized by Paschim Bango Swarojgar Nigam Limited and Ramakrishna Math, Naoracenter on 04.08.2018. The training basically included field level conceptual theoretical knowhow vis-à-vis feasible practical do how of poultry and duck rearing. Most of the participants participated in group activities and made the programme a grand success.

4.6.10. **Attended special programme on GPS tagging:**


One workshop was oraganized by ARD Department, Govt. of West Bengal on 03.08.2018 for implementation of GPS monitoring for MVC units of West Bengal. Dddemontratded technology seemed to be very fruitful at the grassroot level encompassing online scheduling of the camps, online reporting and online attendance. The most striking features found to be live tracking of the movement of the vehicle through GPS tagging. Hands on denmontration of the Tab were done along with all procedural steps for registering the device.

4.6.11. **Swachhata Programme at KVK dairy**




As a part of the cleanliness programme, KVK dairy put under swachhata event on 11.12.2018. All the participants who came for training were alospsrticipated in the said programme. Apart from daily cleaning of the farm, cleaning of premices of the farm was also done. Besides, awareness generation of the participants regarding cleaniless was also imparted.

4.6.12. **Collaborative programme with Dept of forest, Govt of West Bengal**




Department of Forest, Govt. of West Bengal is closely associated with conservation of wild animals and forest as well as livelihood generation of the coastal fringed villagers. It has been observed that if livelihood of the people can be gerated, then pressure of the forest for income generation with illegal entry and unlawful activities inside the reserved forest will be reduced. With this observation, the department has been imparting skill development training (23.7.18-28.7.18) to the farmers of this district and after successful completion of the training, critical inputs have been supplied.

4.6.13. **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.

4.6.14. **Workshop organized for the dairy farmers:**




Dairy farming has long been practiced as a profitable venture in South 24 Parganas district. The rural youth are very much interested for this farming. Sundarban Milk union is also providing assured buyback of the produced milk at a very remunerative price. But the main problem is startup loan form a ny bank/ organization. Thus DDARD and P.O, South 24 Pargans have organized a special workshop at KVK in collaboration with different nationalized bank for the aspirant farmers of this district on 9.08.2018.


4.6.15. **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.

4.6.16. **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 Agriculttural 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	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 2018-19 session has been started with 40 candidates (eighth) from December 2018. 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.

4.6.17. 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

4.6.18. Celebration of World Honey Bee Day 2018

AICRP (Honeybees & Pollinators) at KVK Nimpith, celebrated World Honey Bee Day 2018 on 20th May. 100 farmers, beekeepers and Agri Input Dealers participated in the programme. The awareness programme helped the farmers to understand the role of Honeybees in crop production. Special emphasis was given on saving the pollinators with eco-friendly pest management practices. The Agri Input Dealers accepted to the fact that they don't have much knowledge about the ill impacts of injudicious application of the pesticides they recommend. They also agreed to take responsibility to save the Bees. The Beekeepers requested for training on scientific management of their apiary and diversification of Apiary products. The programme ended with field visit to the KVK Apiary.

4.6.19. Effect of Pollination Service on yield of Cucumber

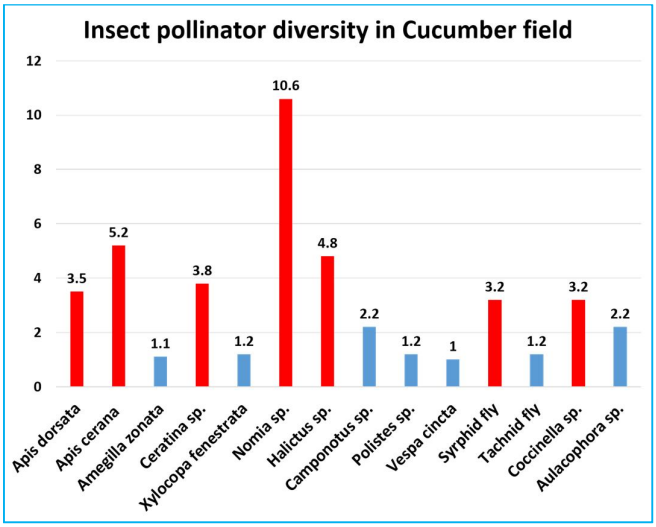
Cucumber is a monoecious, obligate cross-pollinated crop in the Cucurbitaceae family. To achieve successful pollination and fruit production, insects are required to transfer pollen from male flowers to female flowers. One of the effective traditional practices has been the hand pollination by the farmers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

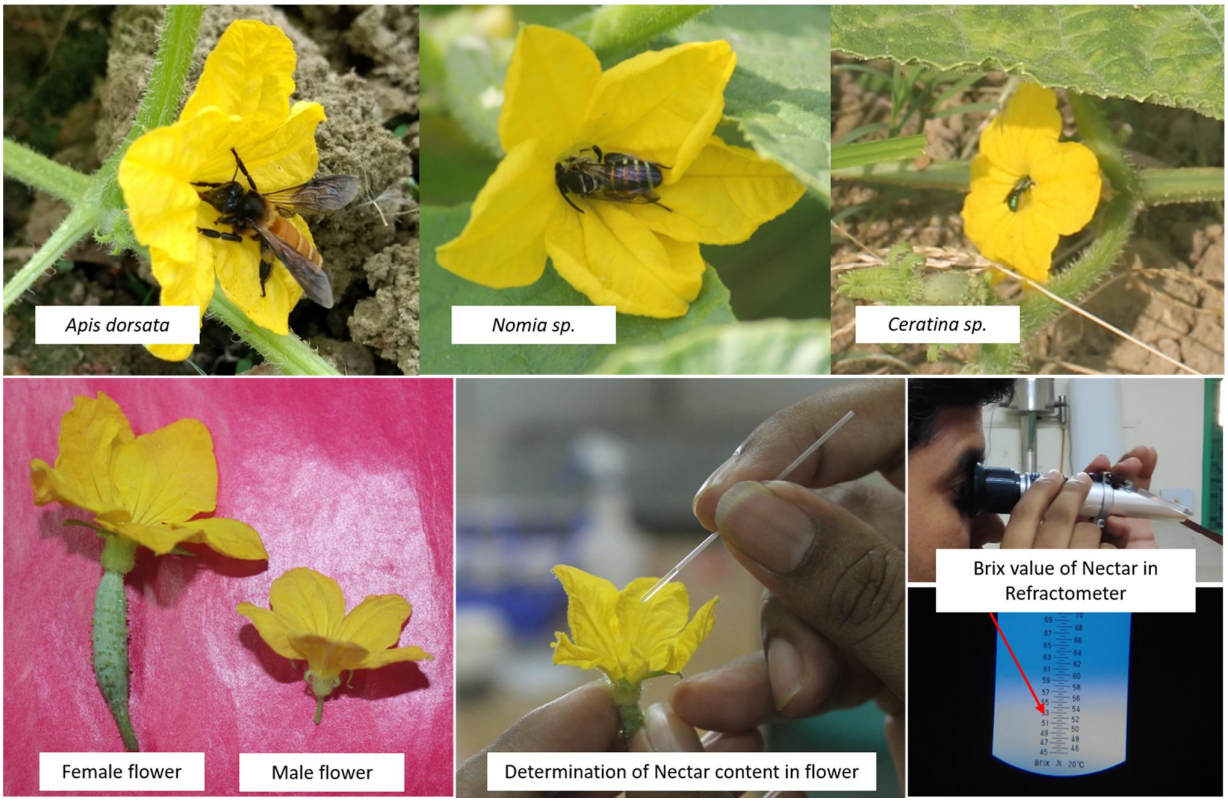
Result of pollination service study:



- 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.



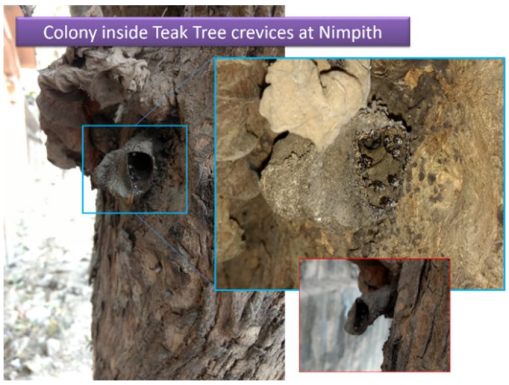
4.6.20. Meliponiculture (Stingless beekeeping) for sustainable agriculture and sustainable livelihood:

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.

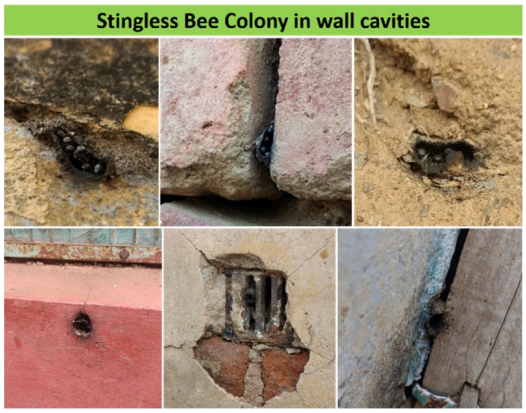
Stingless bee honey has been found to show chemo-preventive properties in rats, induced with colorectal cancer and also was found not toxic towards the animals. Stingless bees honey, propolis and beebread were found to exhibit antioxidant activity and inhibit human

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.

4.6.21. Promotion of Beekeeping for the Honey Hunters (Moule) of Sundarbans in collaboration with 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 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.

- 100 honey hunters trained by AICRP (HB & P) RAKVK, Nimpith Centre
- One group of them have been provided with 100 mellifera colonies by WWF-India
- They are tagged with professional migratory beekeepers
- Potentiality of harvesting 8-25 kg Mangrove honey per hive
- Marketing tie up with West Bengal Forest development Corporation Limited

4.6.22. 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.

Backyard Beekeeping (*Apis cerana*) taken at Chuprijhara village in Sundarban

Special programme in nutrition:

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

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

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

4.6.26. University of Narendrapur on the assessment of nutritional status of migrated slum children (2-5 years)

4.6.27. Rajdanga - Ward No. 107 under Kolkata Municipality Corporation of Kolkata, West Bengal

4.6.28. 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	
Name of organization	Nature of linkage
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 2018-19 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.)
RKVY Funded Strengthening of Soil Testing Laboratory project	Strengthening of Soil Testing Laboratory at KVK for better Soil Health management of the District as well as to increase overall crop productivity of the District South 24 Parganas and neighbouring districts through Soil Test Based Fertilizer recommendation and Soil management programmes	2018-19	Dept. of Agriculture through RKVY Scheme	17.64 lakh
All India Coordinated Research Project on Sunflower**(**AICRP**)**	Development of early duration Hybrids for rainfed situations and Rabi-Summer	2018-19	Indian Institue of Oil Seeds Research, Rajendranagar, Hyderabad	33.64808 lakh
FLD on Sunflower	Demonstration on Sunflower cultivation	2018-19	Director of Oil Seeds Research, Rajendranagar, Hyderabad	2.52 lakh
NFSM Oilseed & OP		2018-19	Department of Agriculture, Govt. of West Bengal.	53.47200 lakh
NFSM Cotton		2018-19	Department of Agriculture, Govt. of West Bengal.	30.40 lakh
District Kisan Mela		2018-19	ATARI-Kolkata	4.00 lakh
Cotton Development Mission **(**CDM**)**	Production of Raw Cotton and improve the bio mass statusof the North and South 24-Parganas districts.	2018-19	Directorate of Agriculture, Govt. of West Bengal	20.625 lakh

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.)
National Innovations in Climate Resilient Agriculture **(**NICRA**)**	Strategies to enhance adaptive capacity to climate change in vulnerable regions of district	2018-19	ICAR, New Delhi	16.50
National Innovations in Climate Resilient Agriculture **(**NICRA**)**	Landshaping and Retaining Rural Youth in Agriculture through Self Employment Generation programme	2018-19	IARI, New Delhi	5.00 lakh
IWMP-6	Integrated watershed development programme	2018-19	Deptt. Of Agril. Govt. W.B.	29.998 lakh
IWMP-7	Integrated watershed development programme	2018-19	Deptt. Of Agril. Govt. W.B.	31.718 lakh
AICRP on Honey Bees & Pollinators (Voluntary Centre)	Research and Development of beekeeping and pollination services in South 24 Parganas	2018-19	Division of Entomology, IARI, New Delhi	5.00 lakh
Attracting and Retaining Youth in Agriculture (ARYA)	Attracting and Retaining Rural Youth in Agriculture through Self Employment Generation programme	2018-19	ICAR, New Delhi	16.72 lakh
MVC South	Extension of animal health care services in remot areas in west bengal through mobile veterinary clicnic	2018-19	ARD Department, GOWB	42.57 lakh
MVC North	Extension of animal health care services in remote areas in West Bengal through mobile veterinary clinic	2018-19	ARD Department, GOWB	42.57 lakh
Seed Hub		2018-19	Indian Institue of Oil Seeds Research, Rajendranagar, Hyderabad	1 crore

(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	
Paddy	14.06.18	05.11.18	0.32	Pratikshya	Foundation	8.40	3000	26880	
	15.06.18	06.11.18	0.93	Pratikshya	Certified	19.20	9120	53760	
	10.06.18	20.11.18	0.20	NC-492	Foundation	7.00	1800	22400	
	10.06.18	21.11.18	1.53	NC-492	Certified	26.00	14380	75400	
	09.06.18	22.11.18	0.13	Varshadhan	Foundation	2.80	700	8960	
	16.06.18	07.11.18	0.13	CR-401	Foundation	4.40	900	14080	
	09.06.18	24.11.18	2.0	Ajirban (Local)	TL	40.00	10440	52000	
	11.06.18	16.11.18	0.40	Dudshwar	TL	14.00	2070	36400	
	12.07.18	13.11.18	0.52	Rajendra Bhagabati	TL	10.00	3144	15000	
Greengram	07.02.18	29.04.18	0.52	PDM-84-139	TL	5.50	1220	6875	
Brinjal	10.09.18	20.12.18 to 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	15.12.18 to 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	01.04.18	14.07.18 to 13.10.18	0.13	Jora Bota	Immature Fruit	33 q	11480	24600	Comsumed at farmers hostel
Sponge gourd	14.05.18	13.08.18 to 20.10.18	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.	Vermicompost	51320	76300	205280	Vermicompost used in KVK Instructional farm and distributed among project farmers
2.	Trichoderma harzianum	1175.4	70,524/-	1,41,048/-	Bio-fungicide
3.	Pseudomonas fluorescens	1175.4	70,524/-	1,41,048/-	Bio-fungicide & Bactericide

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	185	33000.00	49000.00	
		Kaberi	Meat	120	27000.00	38500.00	
2.	Broilers	Hygrow	Meat	200 (4 cycle)	41000.00	47000.00	
3	Duals (broiler and layer)	RIR, Nirvik, Hitkari, Upkari	Meat, egg	250	28000.00	31000.00	
4	Goat	Black Bengal	Meat, kid	60	59000.00	105000.00	
5	Ducks	Pekin duck	Meat	4000	100000.00	120000.00	
6	Fish	IMC & EC	Spawn	21,50,000	3,80,546.00	5,70,157.00	
			Fingerling	361 kg			
		Climbing perch	Fry	1,50,000			
		Asian catfish	Fry	55,000			
		Ornamental fish	Fry	10100			

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)
April, 2018	187	968	-
May, 2018	92	428	-
June ,2018	474	1878	-
July, 2018	259	1068	-
August, 2018	276	918	-
September, 2018	298	830	-
October, 2018	235	930	-
November, 2018	395	1290	-
December, 2018	387	1818	-
January, 2019	285	1229	-
February,2019	89	269	-
March, 2019	120	570	-
Total :	**3097**	**12196**	

(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
April, 2018	Full	Full	Full	Full	Full	Full
May,2018	Full	Full	Full	Full	Full	Full
June,2018	Full	Full	Full	Full	Full	Full
July,2018	Full	Full	Full	Full	Full	Full
August,2018	Full	Full	Full	Full	Full	Full
September,2018	Full	Full	Full	Full	Full	Full
October, 2018	Full	Full	Full	Full	Full	Full
November,2018	Full	Full	Full	Full	Full	Full
December,2018	Full	Full	Full	Full	Full	Full
January,2019	Full	Full	Full	Full	Full	Full
February,2019	Full	Full	Full	Full	Full	Full
March, 2019	Full	Full	Full	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 1st April 2019
	Kharif	Rabi	Kharif	Rabi	
Lentil		1.8		1.79949	0.00051
Greengram		2.7		2.56	0.00014
TA		0.60		0.60	

7.4. Utilization of KVK funds during the year 2018-19 (Not audited)

Sl. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	142,00,000	140,96,724	13087374.50
2	Traveling allowances	80.000	80,000	39618.00
3	Contingencies			
A	SCSP			
B		11,00,000	11,00,000	10,99,938.45
C				
D				
E				
F				
G				
H				
I				
J	Swachhta Expenditure			
TOTAL (A)				
B. Non-Recurring Contingencies				
1				
2				
3				
4				
TOTAL (B)				
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		153,80,000	152,76,724	142,26930.95

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)
2016-17	162.97449	167.32879	114.0300357	216.2732
2017-18	216.2732	209.26554	175.16529	250.37345
2018-19	250.37345	95.62846	85.47711	260.5248

7.6. (i) Number of SHGs formed by KVKs
– No. 42

(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		2018-19		ATMA	
Training cum Exposure visit		2018-19		ATMA	
Diploma in Agricultural Extension Service for Impute Dealers (DEASI)			• Department of Agriculture, WB • SAMETI, Narendrapur • National Institute for Agricultural Extension Management (MANAGE) Hyderabad	ATMA	
Conducting FOCT training programme	3	2018-19	Coconut Development Board, (Ministry of Agriculture, GOI), BJ-108,Sector-II,Salt Lke,Kolkata-700 091		
IARI, NICRA		Throughout the year	NICRA, New Delhi		
IWMP		2011-19	Deptt. Of Agril, GOWB		
AICRP on Sunflower		2018-19	IIOR, Hyderabad		
AICRP on Honeybees and Pollinators	1	2018-19	Division of Entomology, IARI, New Delhi		
NICRA	1	2018-19	CRIDA, Hyderabad		
NFSM (OS & OP)		2018-19	Department of Agriculture, Govt. of West Bengal.		
Seed Hub		2018-19	IIOR, Hyderabad		

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 Yuva Kendra (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	27	33285
Livestock	2	453
Fishery	9	5027
Weather	1	1330
Marketing	0	0
Awareness	2	2654
Training information	0	0
Other	1	1323
Total	**42**	**44072**

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	134
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	159
7.	No. of times downloaded	NA

N.B.

1. Toll free Number Call received through KVK Expert – 3560
2. Dial Out Audio Conference Attend – 2
3. VMS Send through Nimpith Ashram Advisory – 39,852 farmers
4. Video module production for JioKisanportal

9.5. a. Observation of Swachh Bharat Programme

Date/ Duration of Observation	Activities undertaken
15.09.2018	Cleaning and sweeping of the KVK campus on
16.09.2018	Cleaning and sweeping of the KVK Main Building Campus on
17.09.2018	Officials of KVK devoted themselves for cleaning and sweeping of the KVK Soil Testing Building Premises
18.09.2018	Officials of KVK devoted themselves for cleaning and sweeping of the KVK Farmers Hostel Building & Dining Hall Premises
19.09.2018	Officials of KVK devoted themselves for cleaning & sweeping of the KVK Computer Section and Documentation Room
20.09.2018	Officials of KVK devoted themselves for cleaning & sweeping the KVK Kitchen & Farmers Hostel Dining Hall
21.09.2018	Officials of KVK devoted themselves for cleaning and sweeping the Nimpith KVK Farmers Hostel Premises on 21th September, 2018
22.09.2018	Officials of KVK devoted themselves for cleaning and sweepingof streets, drains and back alleys through awareness drives
23.09.2018	Officials of Nimpith KVK devoted themselves for organizing waste collection drives in households and common or shared spaces
24.09.2018	Organizing awareness campaigns around better sanitation practices like using a toilet, hand washing, health and hygiene awareness, etc
25.09.2018	Conducting door-to-door meetings to drive behaviour with respect to sanitation behaviours
26.09.2018	Performing Swachhata related Nukkad Nataks/ street plays, folk song and dance performances
26.09.2018	Conducting Village or School-level rallies to generate awareness about sanitation
27.09.2018	Mobilizing community to build compost pits, where organic matter decomposes to form manure
28.09.2018	Conducting Village / School-level rallies to generate awareness about Save Tree and Save Nature
30.09.2018	Volunteering for segregation of solid waste into non-biodegradable and biodegradable waste
01.10.2018	School level debates, competitions ,awareness programme on “Swachhta-Hi-Sewa” conducted by Nimpith KVK
02.10.2018	Making wall paintings in public places on the theme of Swachhata conducted by Nimpith KVK

b. Details of Swachhta activities with expenditure

Activities	Number	Expenditure (in Rs.)
1. Digitization of office records/ e-office	6	2000.00
2. Basic maintenance	12	7000.00
3. Sanitation and SBM	2	1500.00
4. Cleaning and beautification of surrounding areas	12	5000.00
5. Vermicomposting/ Composting of biodegradable waste management & other activities on generate of wealth for waste	11	11000.00
6. Used water for agriculture/ horticulture application	3	-
7. Swachhta Awareness at local level	11	5000.00
8. Swachhta Workshops	1	4000.00
9. Swachhta Pledge	1	500.00
10. Display and Banner	7	3000.00
11. Foster healthy competition	1	2000.00
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)	6	-
14. No of Staff members involved in the activities	31	-
15. No of VIP/VVIPs involved in the activities	5	2000.00
16. Any other specific activity (in details)	-	-
Total	**121**	**43000.00**

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

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	05.06.2018	Save our environment	Poster, Banner, Audio Visual Aids – Film PPT
Patnighata Girls High School Vill- Ranaghata Block- Joynagar II	25.07.2018	Mushroom Cultivation	Poster, Banner, Audio Visual Aids – Film, Handholding practical demonstration, PPT
Nimpith Sarada Vidyamandir Vill. Nimpith Ashram Block – Joynagar II	16.10.2018	World Food Day	Visual aids- Flash card on food groups , picture card, food value chart, books,pamplets Audio visual aids- Flim, PPT, Drama
Kaikhali Ramkrishna Ashram Primary School P.O. Kaikhali Block - Kultali	15.11.2018	Nutrition Garden	Visual aids- Flash card on health and hygiene &food groups , picture card, food value chart, books ,Pamplets Audio visual aids- Flim, PPT
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

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	No. of villages Involved	No. of Participants	No. of VIPs	Name (s) of VIP(s)
1.	Conducting Village or School-level rallies to generate awareness about sanitation	2		2	Dr. K. Monoharan Director, Directorate of Jute Development, Govt. of India, Ministry of Agriculture & Farmers Welfare, Department of Agriculture, Cooperation & Farmers Welfare Kolkata – 700020
2.	Mobilizing community to build compost pits, where organic matter decomposes to form manure	3		1	Mrs. Antima Halder, ADA, Joynagar -II
3.	Conducting Village / School-level rallies to generate awareness about Save Tree and Save Nature	2		1	Sri Ramprasad Ghosh Principal, Joynagar –II, Govt. ITI, P.O. Nimpith Ashram -743338 Dist. South 24 Parganas West Bengal
4.	Volunteering for segregation of solid waste into non-biodegradable and biodegradable waste	1		2	1. Dr. Pradip Programme Coordinator, Handique, KVK, Sivasagar, Assam 2. Dr. Sanjoy Borthakur Programme Coordinator, KVK Tinsukia Assam
5.	School level debates, competitions, awareness programme on "Swachhta-Hi-Sewa" conducted by Nimpith KVK	2		1	Dr. L. N. Banerjee, Principal Green College

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	Workshop on food and nutrition security	Joynagar-II, Canning -I, Mathurapur I &II, Kultali	62	1	Mrs. Aditi Roy, Technical Specialist –Child Health and Nutrition, World Vision, India.

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

9.13. Revenue generation

Sl.No.	Name of Head	Income(Rs.)	Sponsoring agency
1.	Contingencies & outsourcing of contractual services	5,00,000	NFSM, CDM
2.		47,52,000	MVC, South & North 24 Parganas, Dept. of ARD, GoWB
3.		10,94,400	IWMP (6&7), Dept. of Agriculture, GoWB
4.		3,00,000	NICRA (ICAR)
5.		45.000	NICRA (IARI)
6.		192,000	AICRP Honey Bees
7		981600	ARYA
8		6,24,000	Soil Testing Laboratory

9.14. Resource Generation:

Sl.No.	Name of the programme	Purpose of the programme	Sources of fund	Amount (Rs. lakhs)	Infrastructure created
	Strengthening of Soil Testing Laboratory	Strengthening of Soil Testing Laboratory	RKVY, Dept. of Agriculture, GoWB	242.630	Laboratory instrument

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	7	184	❖ Vegetable cultivation in land embankment ❖ Seedling raising in pot tray / plug tray ❖ Use of liquid fertilizers ❖ Application of *Tricoderama viridi* in vegetable seedling to prevent root rot. ❖ Hydroponic fodder cultivation

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

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 2017-18

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 2017-18 (Rs. In lakh):

c. Achievements of physical outcomeunder TSP during 2017-18

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 2017-18

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	
Micro Irrigation (Sprinkler System)	27	27	10.8	22	5					22	5	27	• 27 families are assisted with sprinkler irrigation system for judicious use of the rainwater harvested in the pond. • Before installation of the sprinkler system, farmers could use the pond water upto the month of January to sustain the fish in the pond. • After using sprinkler irrigation, they are now able to irrigate his vegetable plot upto May, without hampering fish production. • The frequent watering of the soil during winter & summer and continuous crop cover throughout the year, helped to reduce the soil salinity of their land.
Straw Mulching in vegetables	20	20	0.6	15	5					15	5	20	• In-situ moisture conservation measures in, Bitter Gourd (variety: US-6207), Cucumber (variety: Seven Star) and in Poi (Basella) var: Panchsira • Decrease in irrigation frequency • Decrease in weed infestation

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	
Demonstration of IPM in Chilli against damping off, Leaf Curl complex and lepidopteron pests		22	3					22	3	25	• Seed treatment and seedbed management with nylon net covered nursery and Insecticide resistance management by using spray schedule with pesticides of different mode of action. • 32 days delay in leaf curl virus infection in demonstration plots and reduction • 42.18% increase in yield
Intercropping systems Brinjal + Coriander	0.33	5	-	-	-	-	-	5	-	5	• Coriander was grown in between rows of brinjal and harvested as green leaves within 30-35 days that not only fetched 13% additional income but also acted as a cover crop controlling the weeds and deterring the shoot borer infestation in brinjal.
Intercropping systems Cauliflower + Ridge gourd	0.33	5	-	-	-	-	-	5	-	5	• Intercropping of ridge gourd in cauliflower field also increased the per unit productivity by 30%. By the time ridge gourd vines covered the whole field, cauliflower was harvested and marketed.

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	
Stress tolerant fish (Asian Catfish) integrated with IMC	-	5	0.65	4	1	-	-	-	-	4	1	5	IMC (Catla:Rohu:Mrigel@ 3:4:3) = 1300 no./bigha for 4 months + Asian catfish : 1000 no./bigha for 8 months • 238% increase in income
Breeding and larval rearing of Asian Catfish with the help of roof top rain water	-	3	0.1	3	0	-	-	-	-	3	0	3	• Increase availability of Asian Catfish seeds to the fish farmers. • Net income of Rs. 32050/- per beneficiary during 1st year • **Reduction in Women Drudgery**: Roof top harvested rain water is used for cooking and drinking after the fish breeding season is over, up to the end of December, by 20 litres per day.

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
Fishery (Title: Breeding and seed production of Asian Catfish (Desi Magur – *Clarias batrachus*) as a climate resilient species)	1	20	2	-	-	-	-	20	2	22
Crop management (Title: Scientific cultivation of Kharif paddy with special reference to early stress management)	1	16	4	-	-	-	-	16	4	20
IPM (Title: Eco-friendly chemical pesticides and organic plant protection measures against pest resurgence)	1	27	3	-	-	-	-	27	3	30
NRM (Title: Use of indigenous technological knowledge to combat biotic and abiotic stresses in agriculture)	1	26	4	-	-	-	-	26	4	30
Biological Control (Title: Bio-intensive pest and disease management for Rabi season)	1	25	5	-	-	-	-	25	5	30

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	2	37	13	-	-	-	-	37	13	50
Group meetings	4	163	37	-	-	-	-	163	37	200
Field day	1	27	8	-	-	-	-	27	8	35
Exposure visits	2	76	24	-	-	-	-	76	24	100
Awareness Campaigns	2	48	12	-	-	-	-	48	12	60
ICT based extension services	35	216	37	-	-	-	-	216	37	253
Diagnostic visit	12	128	52	-	-	-	-	128	52	180
Field Visit	10	54	18	-	-	-	-	54	18	72
World Environment Day Celebration	1	25	14	-	-	-	-	25	14	39
Live Webcasting	2	41	18	-	-	-	-	41	18	59

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 MVC unit of the District	2018-19	ARD Department, South 24 Parganas	-	
2	Best Emerging Research Centre of AICRP on Honeybees & Pollinators	2018-19	AICRP on Honeybees & Pollinators, IARI, 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
1.	Best Innovative Farmer Award 2018	Sanat Naskar	2018	CRIDA, Hyderabad	-	Climate smart farmer
2.	Krishi Ratna	Kartik Halder	2018	ATMA (FIAC), Joynagar –II Block, Dept. of Agriculture, GoWB	10,000.00	Progressive farmer

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	413	2
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 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.	11,50,000.00 per ha	2800	

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 2017-18 and 2018-19

Year	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 SDMS Portal (Y/N)	Fund utilized for the training (Rs.)
2016-17							
2017-18							
2018-19	Coconut grower	Dr. Chandan Kumar Mondal, SMS,Horticulture	01-02-2019	15-03-2019	20	Y	1,65,200.00
	Vermicompost producer	Mr. Prabir Kumar Garain, SMS, Plant Protection	01-02-2019	15-03-2019	20	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

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

Semi intensive boiler duck farming for economic empowerment of women

ASCI training on vermicompost producer

Hi-tech shade net pan boroz under ICAR-ARYA project in an island village of South 24 Parganas

Off campus training on long time food security for nutritional empowerment of womenfolk

Packaged certified seeds ready for supply to farmers

Process of carp breeding being demonstrated in ICAR-ARYA Carp Hatchery

Promotion of beekeeping (*Apis cerana*) in Sundarbans

Webcasting of PM Kisan Samman Nidhi Programme at KVK conference hall

A rally organized for spreading awareness on Swachh Bharat Mission

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