Annual Report 2022

(January-December 2022)

Submitted to

ICAR-Agricultural Technology Application Research Institute
Zone - V, Salt Lake, Kolkata – 700 097

Submitted by

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(An ISO 9001:2005 Certified Institute)

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Annual Report of 2022

(Januanry, 2022 – December, 2022)

Contributed

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INDEX

PROFORMA FOR ANNUAL REPORT 2022 (January 2022 to December 2022)

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	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.org.in nimpithkvk1979@gmail.com nimpithkvk@rediffmail.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 Senior Scientist and Head with phone & mobile No.

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. Chandan Kumar Mondal (Senior Scientist & Head) (From 23.11.2021 to till date)	-	9239443957	drchandanmondal@gmail.com

1.4. Year of sanction of KVK: 1979

1.5. Staff Position (as on 1st Jan, 2022)

Sl. No.	Sanctioned Post	Name of the incumbent	Designation	Discipline/	Pay level	Date of joining	Permanent/Temporary	Category (SC/ST/ OBC/ Others)
1	Senior Scientist & Head	Dr.Chandan Kumar Mondal	Senior Scientist & Head	Scietific & Administrative	Level-13A	23.11.2021	Permanent	General
2	Scientist (Fishery)	Shri Prasanta Chatterjee	Scientist (Fishery)	Technical	Level-10	28.10.1997	Permanent	General
3	Scientist (Home Science)	Dr.Manasi Chakraborty	Scientist (Home Science)	Technical	Level-10	08.12.2000	Permanent	General
4	Subject Matter Specialist (Horticulture)	Sri Aritra Sarkar	Subject Matter Specialist (Horticulture)	Technical	Level-10	30.12.2022	Permanent	SC
5	Subject Matter Specialist (Plant Protection)	Dr. Prabir Kumar Garain	Subject Matter Specialist (Plant Protection)	Technical	Level -10	17.10.2012	Permanent	General
6	Subject Matter Specialist (Agronomy)	Sri Somnath Sardar	Subject Matter Specialist (Agronomy)	Technical	Level-10	30.12.2021	Permanent	ST
7	Subject Matter Specialist (Animal Husbandry)	Dr. Abadhut Dey	Subject Matter Specialist (Animal Husbandry)	Technical	Level-10	19.09.2022	Permanent	General
8	Programme Assistant(Agronomy)	Dr.Dipak Kumar Roy	Programme Assistant (Agronomy)	Technical	Level-11	12.06.2001	Permanent	General
9	Computer Programmer	Sri Partha Banik	Programme Assistant (Computer)	Technical	Level-11	09.06.2003	Permanent	General
10	Farm Manager	Sri Utpal Maity	Farm Manager	Technical	Level-7	02.12.2011	Permanent	General
11	Accountant / Superintendent	Sri Aditya Guchhait	Assistant	Administrative	Level-7	01.06.2010	Permanent	General
12	Stenographer	Sri Debjyoti Maitra	Stenographer	Administrative	Level-5	04.01.2011	Permanent	General
13.	Driver	Sri Birendranath Das	Driver	Technical	Level-4	01.09.2003	Permanent	General
14.	Driver	Sri Madhab Chandra Kayet	Driver	Technical	Level-4	01.06.1995	Permanent	OBC
15.	Supporting staff	VACANT	-	-	-	-	-	-
16.	Supporting staff	VACANT	-	-	-	-	-	-

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	Yes	ICAR
2.	Farmers Hostel	-	-	-	-	Yes	359.639	Yes	ICAR
3.	Farm Women Hostel					Yes	521.25	Yes	RKVY
4.	Separate Dinning Hall for farmer					Yes	350	Yes	RKVY
5.	Staff Quarters (6)	-	-	-	-	Yes	411.680	Yes	ICAR
6.	Piggery unit	-	-	-	-	Yes	-	-	-
7.	Fencing	-	-	-	-	Yes	770.00 (running m)	Yes	ICAR
8.	Rain Water harvesting structure	-	-	-	-	Yes	17500	Yes	ICAR
9.	Threshing floor	-	-	-	-	Yes	371.720	Yes	CAPART
10.	Farm godown	-	-	-	-	Yes	378.790	Yes	SDB, GOWB
11.	Dairy unit	-	-	-	-	Yes	3500.00	Yes	ICAR & RKVY, GoWB
12.	Soil testing lab	-	-	-	-	Yes	10.00	Yes	RKVY, GoWB
13.	Poultry unit	-	-	-	-	Yes	280.00	Yes	Revolving fund of KVK
14.	Goatery unit	-	-	-	-	Yes	2100.00	Yes	RKVY, GoWB
15	Rabbit farm	-	-	-	-	Yes	16	No[$]	Revolving fund of KVK
16	Ornamental bird unit	-	-	-	-	Yes	12	No[$]	Revolving fund of KVK

Contd…

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
17	Small animal operation theatre	-	-	-	-	Yes	12	Yes	NAIP
18	Hydroponics unit	-	-	-	-	Yes	14	Yes	Revolving fund of KVK
19	Mushroom production unit	-	-	-	-	Yes	100	Yes	ICAR &Revolving fund of KVK
20	Shade house	-	-	-	-	Yes	300	Yes	Deptt. of FPI & H, GoWB
21	Vermicompost production unit	-	-	-	-	Yes	150	Yes	ICAR & SASM, IRM
22	Bee Park & Honey Processimg Unit	-	-	-	-	Yes	40	Yes	AICRP Honeybees
23	Hi-tech Pan Boroz	-	-	-	-	Yes	25	Yes	ICAR & SASM, IRM
24	Green House	-	-	-	-	Yes	300	Yes	Deptt. of FPI & H, GoWB
25	Food processing unit	-	-	-	-	Yes	200	Yes	ICAR
26	Oilseed Seed Hub – Processing unit and Seed Godown	-	-	-	-	Yes	700	Yes	ICAR-IIOR (under NFSM-OS of DAC & FW, GOI)
27	Conditional Seed Godown	-	-	-	-	Yes	120	Yes	NFSM (OS), GoWB
28	Biofertilizer production lab					No*	464.5	No	RKVY-RAFTAAR, GoWB

* Under constraction

B) VehiclesVehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total km. Run	Present status
Mahindra Bolero Power +	2019	8,00,000.00	28516 km	Running Condition

C) Equipment & AV aids

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

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
b. 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
c. 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
d. Farm machinery				
Seed grader	2010-11	2,10,000.00	Working condition	TMC
Pump sets	2003-04	50,000.00	-do-	TMC
Thresher & Rotavator	2010-11	2,00,000.00	-do-	ICAR
Disc Harrow	2009-10	70,000.00	Not functioning	ICAR
Power Tiller	2009-10	1,43,000.00	Working condition	ICAR
Generator – 25 KVA	2010-11	3,56,852.00	-do-	ICAR
Seed Grader	2018-19	11,50,000.00	-do-	ICAR-IIOR (Seed Hub Project
Gravity Separator	2018-19	11,50,000.00	-do-	
Sealer machine	2018-19	30,000.00	-do-	
e. AV Aids				
Printer	2003-04	4,000.00	Out of order	Nutrition project, SDB
Computer (2 nos)	2003-04	76,899.00	One computer is out of order	ICAR
Cannon Digital Camera	2008-09	25,000.00	Out of order	ICAR

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
V-SAT with e-KVK linkage (5 Dell-Optiplex -755 Computer & One HP Leser Printer-1022n , One HP-G3110 Scanner, One TVS –MSP-245-dot-matrix Printer with Server Computer, 5-650VA APC UPS, 3KVA APC make UPS)	2009-10	-	V-SAT and Dell-optiplex -755 Computers, 650VA APC UPS are out of order *Only 3KVA APC make UPS are in working condition	ICAR
Lenovo Laptop	2008-09	48,000.00	Out of order	NHM
Samsung Notebook	2009-10	22,000.00	Out of order	TMC
HP Desk top Computer with Cannon Printer	2010-11	75,0000	Out of order	NAIP
Epson EB-825 Projector Samsung Touch 400TSn-2	2010	2,20,000.00	(Epson EB-825 Projector & SamsungTouch 400TSn-2) Out of order	NAIP
HP LaserJet M1522nf	2009-10	24,000.00	Out of order	AICRP
HP Color Laser Jet 1215	2009-10	22,000.00	Out of order	NAIP
Two LG LED Projector	2014	1,18,000.00	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/-	one out of order	ARYA
Broadband Router -(1PC)	2016	2300/-	one out of order	ARYA
Biometric Systems Fingerprint Time & Attendance System (Including Battery & Power Adopter) X-990	2016	23500/-	Working condition	ICAR
Olympus phase contrast microscope with CMOS camera, Lenovo Computer, UPS, printer cum scanner	2015-16	5,00,000.00	-do-	RKVY

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
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	out of order	RKVY, Dept. of Agriculture,W.B
Wireless MIC for Conference room	2016-17	27,038.00	out of order	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	Working condition	RKVY – Strengthening of Soil Lab project
HP Laser Printer All in One A3 size/ Print/Scan/Copy (Model: MFP M435NW) (1 yr on-site warranty)	2017-18	82000.00	-do-	RKVY – Strengthening of Soil Lab project
EPSON PROJECTOR EB-X-31	2017-18	37000.00	Working condition	RKVY – Strengthening of Soil Lab project

D) Farm implements

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
Al-Ko Electric hedge cutter	2010-11	22,000.00	Working condition	NHM
Electric lawn mower	2021-22	21,000.00	Working condition	AICRP (HB&P)
Rotavator	2021-22	1,09,000.00	Working condition	Revolving fund
Tractor- 4 Wheel Drive	2022-23	7,50,000.00	Working condition	ICAR-ATARI

1.8. Details of SAC meeting* conducted in the year

Meeting No. 36
Date: 23.12.2022
Place: Nimpith
Time: 10.30 a.m.

A meeting of the Scientific Advisory Committee of Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith is held today, the 23rd December, 2022 at 10.30 a.m. in the Vivekananda Conference Hall of the KVK. The meeting was conducted in both offline and online mode (through Google Meet) with the participation of the following members:

Resolutions: -

Members Present:

Sl. No.	**Name**	**Designation**
1.	Swami Sadananda,	Chairman, RAKVK Nimpith
2.	Shri Biswanath Das	Member of Legislative Assembly, Joynagar
3.	Dr. Subrata Kumar Roy	Director, ICAR-ATARI, Kolkata
4.	Dr. Umesh Thappa	DEE, BCKV, Nadia
5.	Dr. G.H. Pailan	Officer-in-charge & Principal Scientist, CIFE
6.	Shri Arun Kumar Mondal	District Manager, West Bengal State Seed Corporation
7.	Dr. Sanjiban Datta	Assistant Director, State Poultry Farm,
8.	Shri Abhisek Naskar	Assistant Director, Mathurapur –II, South 24 Parganas
9.	Mrs. Antima Halder	Assistant Director, Joynagar-II, South 24 Parganas
10.	Shri Arka Prava Sarkar	Asst. Director of Horticulture, Baruipur Sub Divisional
11.	Shri Tarun Kumar Das	Rural Development Wing
12.	Mr. Sadhan Kr. Das	VIB, Nimpith
13.	Shri S. Srinivas	Bank Manager, AXIS, Joynagar
14.	Shri Rakesh Banik	AXIS Bank, Joynagar
15.	Shri Prasanta Kumar	UCO Bank
16.	Shri Sudipta Das	Doordarshan Kendra, Kolkata
17.	Shri Gouranga Naskar	Progressive farmer, Kaikhali
18.	Shri Tarak Nath Halder	Progressive farmer, Gillerchat
19.	Mrs. Barnali Dhara	Dutipata Agriculture F.P.C, Aswathatala
20.	Shri Sudhanshu Dey	Sundarban Organic Agro Producer Company Ltd., Patharpratima

1.8. Details of SAC meeting* conducted in the year (Contd….)

21. Shri Surojit Baidya	Progressive farmer, Mathurapur-II
22. Shri Sunanda Sardar	Progressive farmer, Kultali
23. Shri Sanjay halder	Tech. Assistant, VIB
24. Dr. S. S. Lakshman	Jr. Breeder, AICRP on Sunflower, Nimpith
25. Dr. Avijit Roy	Jr. Agronomist, AICRP on Sunflower, Nimpith
26. Shri Sayan Jana	Technical Assistant, AICRP on Sunflower, Nimpith
27. Dr.Chandan Kr. Mondal	Senior Scientist & Head, RAKVK, Nimpith
28. Shri Prasanta Chatterjee	SMS (Fishery), RAKVK, Nimpith
29. Dr. Manasi Chakraborty	SMS (Home Sc.), RAKVK, Nimpith
30. Dr. Prabir Kumar Garain	SMS (P.P.), RAKVK, Nimpith
31. Mr. Somnath Sardar	SMS (Agronomy), RAKVK, Nimpith
32. Dr. Abadhut Dey	SMS (Animal Husbandry), RAKVK, Nimpith
33. Dr. Dipak Kumar Roy	Programme Assistant (Agronomy), RAKVK, Nimpith
34. Shri Partha Banik	Programme Assistant (Computer), RAKVK, Nimpith
35. Shri Aditya Guchhait	Assistant, RAKVK, Nimpith
36. Shri Utpal Maity	Farm Manager, RAKVK, Nimpith
37. Shri Debjyoti Maitra	Stenographer, RAKVK, Nimpith
38. Shri Tapas Kumar Sahana	Bee Professional, AICRP, Honeybees & Pollinators Project, Nimpith
39. Shri Abhijit Saha	SRF, NICRA Project, Nimpith
40. Shri Subrata Mahato	SRF, ARYA Project, Nimpith
41. Shri Kushal Dasgupta	Facilitator, DAESI Course, Nimpith
42. Shri Sudipta Ghosh	Facilitator, DAESI Course, Nimpith
43. Shri Saurav Gayen	Technical Assistant, SDB Project, Nimpith

Salient Recommendation & Action taken - 36th SAC Meeting

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
1	23.12.2022	43	Output and impact of training programme should be highlighted in any type of presentation	Action taken	
2			Liaison between KVK Fishery Scientist & Block Fishery Extension Officer should be strengthened from both end	Ongoing process	
3			Technology for conducting an OFT should be taken from any recognized Institute	Done accordingly	
4			Training and demonstration on medicinal garden should be continued	Done accordingly	
5			Sunflower seed production should be emphasized for demonstration on farmer's field and to meetup the demand of WBSSCL	Action taken	
6			Mushroom project scheme on oyster mushroom should be developed for submission to Horticulture Department Govt. of West Bengal	Action taken	
7			Liassion should be more strengthened with ARD Dept., Govt. of West Bengal for promotion of Black Bengal goat at village level	Action taken	
8			Promotion of SKUS for marketing of betelvine in collaboration with Horticulture Dept. should be initiated	Action taken	
9			Marketing of Kadaknath poultry breed should be initiated	Action taken	
10			More participation of Rural Youth should be confirmed	Action taken through ARYA and NICRA	
11			Promotion of zero tillage Sunflower cultivation should be initiated at village level	Action taken	
12			Promotion of turkey farming should be initiated through collaboration with ARD Dept., GoWB	Action taken	
13			Liaison between farming community and local Financial Institutions (like Axis Bank & UCO Bank) should be emphasized for smooth disbursement of KCC / Agri loan among small & marginal farmers	Action taken	
14			Strengthening of SHG through Input Dealers	Action taken	
15			Conservation of different vegetable seeds suitable for Sundarban should be promoted	Action taken	
16			Documentation of success story	Already done and also Continuing	

2.a. District level data on agriculture, livestock and farming situation (2022)

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 (poira 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 2019-20	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. 31.36 ^{o}C; Min. 22.34.^{o}C Annual Rainfall: 1588 mm Annual Relative Humidity: 90-59%	

2.a. District level data on agriculture, livestock and farming situation (2022) (Contd…)

Sl. no.	Item	Information			
7	Production of major livestock products like milk, egg, meat etc.	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
	(Source: Annual Action Plan on ARD (2017-18), South 24 Parganas, West Bengal)	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
	Production and productivity of Fisheries. (Source: Hand book of Fisheries Statistics 2018, Department of Fisheries, Directorate of Fisheries, Govt. of West Bengal)	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 data

2022	Temperature		Relative Humidity		Rainfall (mm)	Total Rainy Days
	Maximum	Minimum	Maximum	Minimum		
Januanry	24.18	14.79	90.60	59.17	18.00	1
February	26.33	15.98	90.13	59.60	73.07	1
March	33.14	21.60	90.10	48.79	0	0
April	34.31	25.13	90.41	58.78	0	0
May	34.68	26.76	91.89	65.06	166.4	8
June	35.10	26.23	89.10	63.81	58.5	5
July	32.85	25.96	91.60	68.64	254.0	20
August	32.96	26.22	92.06	67.13	445.1	19
September	32.67	25.83	93.31	66.73	455.6	9
October	32.60	25.57	90.83	57.03	117.0	5
November	30.10	19.89	89.07	47.27	0	0
December	27.37	14.14	86.50	47.95	0	0
Total					1588.0	68

2.b. Details of operational area / villages (2022)

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 Joynagar- I Joynagar –II	Kaikhali, Gopalganj, Madhabpur, Bongheri, Sankijahan, Katamari, Deulbari Dakshin Barasat, Baharu, Biswaser Chak, Jangalia Nimpith, Tulsighata, Hanarbati, Hatchapuri, Kasthamahal, Jouthia, Baishata, Sahajadapur, Bottala, Uttarpara, Gardewani, Bele durganagar	Paddy, Cotton, Sunflower, Maize, Chilli, Betelvine, Bitter gourd, Okra, Tomato, nursery raising of carp spawn, indigenous fish, Ornamental fish, poultry	**Biophysical :** **i) Yield enhancement 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
2.	Kakdwip	Pathar Protima Kakdwip Namkhana Sagar	Achintanagar, Gangadharpur, Digampur, Herambagopalpur, Kuyemuri, Ramganga Banashyamnagar, Kamdebpur, Sridhar Nagar, Lakshmi Janardanpur, Raipur, PatharProtima, Rakhalpur, PurbaSripatinagar, DakshinShibganj Kamarhat, Takipur Abad, Shibkali Nagar, Madhabnagar Shibnagar, Rajnagar, Shibrampur, Mousuni, Radhanagar, Chandanpiri, Fregarganj, Namkhana Krishnanagar, Rudranagar, Khansahebabad, Gangasagar, Sumatinagar, Haradhanpur, Mrityunjoynagar, Manasadip			
3.	Diamond Harbour Sub-Division	Mathurapur-I Mathurapur-II Kulpi Mandirbajar Magrahat – II Diamond Harbour-I	Ranaghata, Nalua, Lakshmikantapur, Mathurapur, Lalpur, Uttar Lakshmi Narayanpur Radhakantapur, Gilarchat, Bhadrapara, 27 no. Lat, Mandalpara, Damkal, Mukherjeer Chak, KhariKashinagar, Kankandighi, NagendrapurRaidighi, Belpukur, Keoratala, Gopalnagar, Tulshirchak Pukuria, Karbala, Ghateswar, Gabberia, Ramchanrapur Amratala, Sherpur Kapat Hat, Mosat			

2. c. Details of village adoption programme:

Name of the villages adopted KVK Scientists for its development and action plan

Name of village	Block	Action taken for development
13 No. Nebutala	Kakdwip	Establishment of Catfish hatchery through ARYA project
Bamunerchak, Sonatikari, Gabberia Dhosa	Joynagar-II	Establishment of Catfish hatchery through ARYA project
Noyabad	Mathurapur-I	Establishment of Catfish hatchery through ARYA project
Kakdip Nayapara	Kakdwip	Establishment of Horticulture nursery through ARYA project
Bonmosid	Kulpi	Establishment of Horticulture nursery through ARYA project
Hangharghata Harishpur	Falta	Establishment of Horticulture nursery through ARYA project
Nimpith	Joynagar-II	Establishment of Horticulture nursery through ARYA project
Uttar Ballabhpur	Madirbazar	Establishment of Horticulture nursery through ARYA project
Paschim Kultali	Mathurapur-II	Establishment of Mushroom Production through ARYA project
Kaikhali IV	Kultali	Establishment of Mushroom Production through ARYA project
Kaikhali II	Kultali	Establishment of Mushroom Production through ARYA project
Dashra Bhagabanpur	Joynagar-II	Establishment of Poultry Hatchery through ARYA project
Ramchandrapur	Madirbazar	Establishment of Poultry Hatchery through ARYA project
Kalikapota	Magrahat -I	Establishment of Poultry Hatchery through ARYA project
Baneswarpur	Falta	Establishment of Poultry Hatchery through ARYA project
Panchagram	Diamond Harbour II	Establishment of Poultry Hatchery through ARYA project
Kishorimohanpur, Binodpur, Boikunthapur	Kultali	Training and CFLD on Greengram
Kakhali –I, Kakhali –II, Gillerchat	Kultali	Demonstration of Nutri Garden
Patibunia	Namkhana	Demonstration of Nutri Garden
Nimpith	Joynagar-II	Demonstration of Nutri Garden
Chuprijhara, Tulsighata, Nalgora	Joynagar-II	Promotion of Beekeeping, Demonstration of IPM, Cotton Demonstration
Bongheri, Kaikhali-II	Kultali	Demonstration of climate resilient agro technologies, plant protection measures, composting, livestock development, custom hiring centre, biopesticide preparation, micro irrigation, FLD on saline tolerant paddy
Herambogopalpur, Lakshmi Janardanpur, Achintyanagar, Nagenabad, Purba Dwarapur	Pathar Pratima	FLD on cotton and saline tolerant paddy
Gram Panchayets of Sagar Gosaba, Patharpratima blocks	Sagar Gosaba, Patharpratima	Animal Health Care Services through Mobile Veterinary Clinic.

2.1 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 and nutrition security at household level
10	Post-harvest management of crops
11	Development of marketing channel
12	Rejuvenation of agricultural practices affected by super cyclones and other natural calamities
13	Proper feed supplementation for fish & animal farming
14	Alternative livelihood generation through Animal husbandry activity
15	Promotion of Artificial insemination and health care service in animals
16	Employment generation opportunities for home bound migratory labours
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	Doubling farmers income through animal husbandry, fishery and other agricultural activities
25	Promotion of fodder cultivation
26	Augmenting agricultural productivity through creation of irrigation facility
27	Augmenting horticultural production through creation of upland by Land Shaping & Land Embankment
28	Augmenting agricultural production through adoption of soil test based correctional interventions and fertilizer application

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	Achievement	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
12	11	115	43	74	0	0	10	0	53	74	127	8	8	280	175	47	15	0	43	5	233	52	285

Training												Extension activities											
Number of Courses		Number of Participants										Number of activities		Number of participants									
Target	Achievement	Target	Achievement									Target	Achievement	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
120	135	4225	1600	1212	34	10	1328	425	2962	1647	4609	2125	1624	118290	65076	15270	768	109	29857	7210	95701	22589	118290

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	Achievement	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
150	167	88	13	15	2	39	10	142	25	167	150	94	31	13	2	1	33	14	66	28	94

Seed production (q)		Planting material (in Lakh)	
Target	Achievement	Target	Achievement
188.5 q	124.7 q	1.5	2.053

Livestock strains and fish fingerlings produced (in lakh)*		Soil, water, plant, manures samples tested (in lakh)	
Target	Achievement	Target	Achievement
Carp fingerling: 8.5 q Asian catfish seed: 90000 no. Broiler bird: 13.2 q	IMC Spawn : 9.2 million pcs IMC Fry: 2.6 lakh pcs Asian catfish –Singhi: 17,300 pcs Asian catfish –Desi magur: 93,800 pcs	Soil: 0.0015 Water: 0.00100	Soil: 0.01366 Water:0.00045

* 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		2	7.63	6.6		
Seminar/conference/ symposia papers	2					P. K. Garain (2022). Performance of climate resilient farming models for different farming system typologies in Sundarbans. 3rd National Conference on "Natural, Farming, Organic Farming …". Society of Krishi Vigyan, 17-19 October 2022	Best Oral presentation award
Books	2	-	-	-	-	-	-
Bulletins	-	-	-	-	-	-	-
News letter	3	-	-	-	-	-	-
Popular Articles	-	-	-	-	-	-	-
Book Chapter	-	-	-	-	-	-	-
Extension Pamphlets/ literature	-	-	-	-	-	-	-
Technical reports	100	-	-	-	-	-	-
Electronic Publication (CD/DVD etc)	3	-	-	-	-	-	-
TOTAL	112		2	-	-	-	-

1 Achievements on technologies assessed and refined

OFT-1

1.	Title of On farm Trial	Assessment of weed control efficiency of different weedicides in Green gram during Summer season in South 24 Parganas district
2.	Problem diagnosed	Greengram is cultivated through broadcast method in medium to low land by utilizing soil residual moisture. During the crop growth period, the predominant weeds viz. Digitariasanguinalis, Cynodondactylon, Eleusineindica, Echinochloacolona amaong grasses; Cyperusrotundus among the sedges and the broad leaf weeds are Chenopodium album, Euphorbia hirta, Physalis minima and Amaranthusviridiscovered the field before flowering. Hence, it reduces the crop yield.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmers Practice (FP): Sowing of Green gram (var. IPM-02-14) using N:P_2O_5:K_2O @ 20:40:20 kg/ha, No herbicide application Technology Option-1: Sowing of Green gram using 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 2 DAS Technology Option-2: Sowing of Green gram using 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
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 [Vignaradiata (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 (Vignaradiata L.), Legume Research, 39 (1) 2016: 96-100
5.	Production system and thematic area	Rice-Pulse (Greengram) and Weed Management
6.	Performance of the Technology with performance indicators	After three years observation, it was revealed that the weed infestation in the plot was very less by the application of Imazethapyr 10% SL @ 80gm a.i. ha-1 at 16 DAS (technology option 2). The seed yield and cost benefit ratio were also recorded more than technology option 1 and Farmers' practice.
7.	Final recommendation for micro level situation	After second year observation, It was recommended that application of Imazethapyr 10% SL @ 80 g a.i. ha-1 at 16 DAS (TO - 2) is the best technology in Green gram during Summer season in South 24 Parganas district
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 residual soil moisture in medium to low land. During the crop growth period, the predominant weeds viz. *Digitaria sanguinalis, Cynodon dactylon, Eleusine indica, Echinochloa colona* etc. grasses; sedges like *Cyperus rotundus* and broad leaf weeds viz. *Chenopodium album, Euphorbia hirta* etc. covers the field. These weeds reduce the crop growth and as a result yield decreases.

Technology assessed:
Farmers Practice (FP): Sowing of Greengram (var. IPM-2-3) with N:P2O5:K2O @ 20:40:20 kg/ha, No herbicide application
Technology Option-1 (TO-1): Sowing of Greengram with N:P2O5:K2O @ 20:40:20 kg/ha and use of Pendimethalin 30 EC @ 1.0 kg a.i. ha-1 at 2 DAS
Technology Option-2 (TO-2): Sowing of Greengram with N:P2O5:K2O @ 20:40:20 kg/ha and use of Imazethapyr 10% SL @ 80gm a.i. ha-1 at 16 DAS

Table:

Treatment	Total Weed Density (No./m2)	Total Weed Dry Matter (g/m2)	WCE (%)	No. of Pods per Plant	Pod length (cm)	1000 Seed weight (g)	Seed Yield (Q/ha)	Net Return (Rs./ha)	BC ratio
FP	7.74 (59.45)	15.21	-	9.13	6.77	35.71	9.15	27105	1.92
TO - 1	5.84 (33.57)	8.05	47.07	11.74	6.95	36.12	10.45	33698	2.08
TO - 2	5.06 (25.12)	6.32	58.45	14.25	7.52	36.95	11.32	40279	2.35
CD (0.05)	0.42	1.47	-	1.91	0.05	NS	0.67	-	-


Technology Option-1


Technology Option-2


Farmer's Practice

Results: In Second year of observation, the result revealed that the application of Imazethapyr 10% SL @ 80 g a.i. ha-1 at 16 DAS (TO - 2) recorded the lowest weed density (5.06 no/m2), lowest total weed dry matter (6.32 g/ m2) which influenced more yield than the other technology. Highest seed yield (11.32 q/ha) was observed from technology option-2 which was significantly higher than the other technology. Highest Net Return (Rs.40279/ha) and B-C ratio ware also observed from technology option-2

Final recommendation: After second year observation, Itis recommended that application of Imazethapyr 10% SL @ 80 g a.i. ha-1 at 16 DAS (TO - 2) is the best technology in Green gram during Summer season in South 24 Parganas district

OFT-2

1.	Title of On farm Trial	Assessment of the productivity of Sunflower varieties under irrigated situation during rabi-summer season in the South 24 Parganas district
2.	Problem diagnosed	Sunflowerof Hybrid Ganga Kaveri are cultivated for last 7-8 years during rabi-summer season in Sundarbans. The productivity of these varieties are ranges from 12-13 qt/ha by providing 3-4 irrigation. Hence, the productivity may be enhanced by 10-12 % through varietal replacement
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmers Practice (FP): Sunflower (Ganga Kaveri) with $N:P_2O_5:K_2O$ @ 90:90:40 kg/ha and 3-4 irrigation Technology option-I (TO-I): Sunflower (LSFH-171) with $N:P_2O_5:K_2O$ @ 90:90:40 kg/ha and 3-4 irrigation Technology option-II (TO-II): Sunflower (KBSH-78) with $N:P_2O_5:K_2O$ @ 90:90:40 kg/ha and 3-4 irrigation
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	AICRP on Sunflower, IIOR, Hyderabad; LSFH-171(2016) –Oilseeds Research Station, Latur, Maharastra KBSH-78 (2020)- University of Agricultural Science, Bangalore
5.	Production system and thematic area	Irrigated and Varietal replacement
6.	Performance of the Technology with performance indicators	*
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

*

Treatment	Variety	Duration (DAS)	Size of Head (cm)	No of filled grain per head	Test weight (g)	Seed Yield (q/ha)	Net Return (Rs./ha)	BC ratio
FP	Ganga Kaveri	110	14.5	734	43.20	17.43	37185	1.90
TO - 1	LSFH-171	107	16.62	853	56.20	24.36	68370	2.65
TO - 2	KBSH-78	84	13.85	797	48.70	21.34	54780	2.34
CD (0.05)	-	-	0.73	18.47	2.81	1.90	-	-

Thematic area: Varietal replacement

Problem definition: Sunflowerof Hybrid Ganga Kaveri are cultivated for last 7-8 years during rabi-summer season in Sundarbans. The productivity of these varieties are ranges from 12-13 qt/ha by providing 3-4 irrigation. Hence, the productivity may be enhanced by 10-12 % through varietal replacement.

Technology assessed:

Farmers Practice (FP): Sunflower-var. Ganga Kaveri along with N: P2O5 : K2O @ 90:90:40 kg/ha and 3-4 irrigation

Technology option-I (TO-I): Sunflower-Hybrid LSFH-171 along with N: P2O5 : K2O @ 90:90:40 kg/ha and 3-4 irrigation

Technology option-II (TO-II): Sunflower-var. KBSH-78 along with N: P2O5 : K2O @ 90:90:40 kg/ha and 3-4 irrigation

Table:

Treatment	Variety	Duration (DAS)	Size of Head (cm)	No of filled grain per head	Test weight (g)	Seed Yield (q/ha)	Net Return (Rs./ha)	BC ratio
FP	Ganga Kaveri	110	14.5	734	43.20	17.43	37185	1.90
TO - 1	LSFH-171	107	16.62	853	56.20	24.36	68370	2.65
TO - 2	KBSH-78	84	13.85	797	48.70	21.34	54780	2.34
CD (0.05)	-	-	0.73	18.47	2.81	1.90	-	-

Farmers practice

Technology Option-1

Technology Option-2

Results: In first year of observation, Sunflower var. LFSH-171 (TO - 1) recorded the highest head size (16.62 cm), No. of filled grain per head (853), test weight (56.20 g) and seed yield (24.36q/ha), which were significantly higher than the other treatment. Highest BC ratio was also observed from technology option-1.

Final recommendation: Final recommendation will be given after two years of observation.

OFT-3

1.	Title of On farm Trial	**Assessment of application of Nano Urea as foliar spray on productivity of Bittergourd in the South 24 Parganas district**
2.	Problem diagnosed	Low productivity of bitter gourd due nutrient leaching and waste of fertilizer, which aid extra burden for cultivation
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**Farmers' Practice**: Bitter gourd cultivation on land embankment using RDF (200:100:100). **Technology Option-1:** FP + 25% N as top dressing + 4 Spray with Nano Urea @ 4 ml/lt of water at 15 days interval. **Technology Option-2**: FP + 40% N as top dressing + 4 Spray with Nano Urea @ 2 ml/lt of water at 15 days interval.
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Mondal, D. & Lalrinchhani (2021), Nano fertilizer and its application in horticulture, *Journal of Applied Horticulture*, **23**(1): 70-77 IFFCO https://nanourea.in/en/nano-urea
5.	Production system and thematic area	Irrigated and Nutrient management
6.	Performance of the Technology with performance indicators	Both Technology Option -1 & 2 performed better over farmers' practice with respect to yield, net income & BC ratio. It has been observed that the Technology Option-1 is a bit better than Technology option-2, however, it have to be justified with further trials. So, this technology needs to be repeated for another one year to come to the final recommendation stage.
7.	Final recommendation for micro level situation	Both Technology Option -1 & 2 performed better over farmers' practice with respect to yield, net income & BC ratio. It has been observed that the Technology Option-1 is a bit better than Technology option-2, however, it have to be justified with further trials. So, this technology need to be repeated for another one year to come to the final recommendation stage.
8.	Constraints identified and feedback for research	More study is required to comment on this trail
9.	Process of farmers participation and their reaction	Farmers were involved through participatory approach.

Thematic area: Nutrient Management in vegetable crops

Problem definition: Bitter gourd is an important commercial crop of South 24 Parganas district, particularly in land embankment cultivation. Here nutrient management is always problem, due to narrow space in land embankment and also high leaching problem of nutrients due to natural elevation of embankments, foliar fertilizer application is a better propositation.

Technology assessed:

- **Farmers' Practice**: Bitter gourd cultivation on land embankment using recommended dose of fertilizers (RDF: 200-100-100).
- **Technology Option-1:** FP + 25% N as top dressing + Four Spray with Nano Urea @ 4 ml/lt of water at 15 days interval.
- **Technology Option-2**: FP + 40% N as top dressing + Four Spray with Nano Urea @ 2 ml/lt of water at 15 days interval.

Table:

Treatment	Replication	Plant Height (cm)	Days to 50% Flowering	Fruit size		Fruit weight (g)	Yield (Q/ha)	Net Income (Rs.)	BC ratio
				Length (cm)	Girth (cm)				
Farmer's practice	10	380	64	8.6	12.8	35.7	235	127500	1.57
Tech. Option-1		430	68	10.5	14.2	41.6	263	168500	1.75
Tech. Option -2		415	66	9.8	13.4	39.2	249	146500	1.65
CD (0.05)		16.5	1.32	0.84	0.61	2.1	13.4		

Result: Both Technology Option -1 & 2 performed better over farmers' practice with respect to yield, net income & BC ratio. It has been observed that the Technology Option-1 is a bit better than Technology option-2, however, it have to be justified with further trials. So, this technology need to be repeated for another one year to come to the final recommendation stage.

OFT- 4

1.	Title of On farm Trial	Increasing profitability from carp polyculture ponds (0.065 ha or 10 katha) by diversifying fish culture through the introduction of Pengba (*Osteobrama belangeri*)
2.	Problem diagnosed	Low profitability from conventional carp culture
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Assessment FP: 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, 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. TO-I: Replacement of 20% carp population with Osteobrama belangeri (@ 2000 no/ha); other practices same as FP TO-II: Replacement of 30% carp population with Osteobrama belangeri (@ 3000 no/ha); other practices same as FP
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Pratap Das, Prabhati Sahoo, Suhas Kamble, Murmu, Khuntia & C. Basudha. (2019). Compatibility of pengba, *Osteobrama belangeri* (Valenciennes) with Indian major carps and evaluation of its ideal incorporation level in carp polyculture system in planes of India. Aquaculture 518 (734-845). 10.1016/j.aquaculture.2019.734845. ([1]ICAR-CIFA, [2]ICAR, [3]ICAR-CIFRI, [4]ICAR Research Complex for NEH)
5.	Production system and thematic area	Fish based production system, composite fish culture
6.	Performance of the Technology with performance indicators	The data is given below (parameters: survivality, weight of fish, yield, BC ratio)
7.	Final recommendation for micro level situation	1st years observation shows replacement of 20% carp population with Pengba-*Osteobrama belangeri* has so far given encouraging results. Another year's observation is required to arrive at a final conclusion for recommendation.
8.	Constraints identified and feedback for research	Seeds of pengba are not yet readily available and it seems that the growth of the fish is a bit less when compared to major carps.
9.	Process of farmers participation and their reaction	Participatory mode was followed while designing the trial. Farmers were too eager to culture this fish which is gaining popularity in the locality as a food fish.

Thematic area: Composite fish culture

Problem definition: Almost all the families in the villages of South 24 Parganas possess at least a small pond which is normally stocked with some of the Indian major carps, minor carps and exotic carps. However, due to stocking of insufficient varieties of fish, the productivity and therefore the profitability from such ponds are meager as most of the natural fish food remains unutilized. Augmenting fish productivity requires a pond to be stocked with more varieties of fish species by maintaining the recommended stocking density.

Technology assessed:

FP: 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, 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.

TO-I: Replacement of 20% carp population with *Osteobrama belangeri* (@ 2000no/ha); other practices same as FP

TO-II: Replacement of 30% carp population with *Osteobrama belangeri* (@ 3000 no/ha); other practices same as FP

Technology option	No. of trials	Unit area (ha)	Survivality (%)	Weight of fish (kg)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers practice	7	0.065	Carps-70.5	0.35	Carps(7050pcs)-24.675	1,32,000.00	296100.00	164100.00	2.24
Technology Option - 1		0.065	Carps-70.0 Pengba-68.0	Carps-0.45 Pengba-0.40	Carps(5600 pcs)-25.20 Pengba(1360pcs)-5.44	1,32,000.00	Carps-302400.00 Pengba-54400.00 Total-356800.00	224800.00	2.70
Technology Option - 2		0.065	Carps-71.0 Pengba-66.5	Carps-0.50 Pengba-0.25	Carps(4970 pcs)-24.85 Pengba(1995pcs)-4.99	1,32,000.00	Carps-298200.00 Pengba-49900.00 Total-348100.00	216100.00	2.64

Result: **:** 1st years observation shows replacement of 20% carp population with *Osteobrama belangeri* has so far given encouraging results. Another year's observation is required to arrive at a final conclusion for recommendation.

OFT-5

1.	Title of On farm Trial	Increasing profitability from carp polyculture ponds(0.0325ha or 5 katha) by diversifying fish culture through the introduction of Pearl spot (*Etroplus suratensis*)
2.	Problem diagnosed	Low profitability from conventional carp culture
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Assessment FP: 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, 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 **TO-I**: Replacement of 20% carp population with *Etroplus suratensis* (@ 2000 no/ha); other practices same as FP **TO-II**: Replacement of 30% carp population with *Etroplus suratensis* (@ 3000 no/ha); other practices same as FP
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	TNAU, Agritech Portal, Fisheries,agritech.tnau.ac.in/fishery/fish_cul_brackish_pearlspot
5.	Production system and thematic area	Fish based production system, composite fish culture
6.	Performance of the Technology with performance indicators	The data is given below (parameters: survivality, weight of fish, yield, BC ratio)
7.	Final recommendation for micro level situation	1st years observation shows replacement of 30% carp population with Pearl spot-*Etroplus suratensis* has so far given encouraging results. Another year's observation is required to arrive at a final conclusion for recommendation.
8.	Constraints identified and feedback for research	Seeds of pearl spot are not yet readily available and it seems that the growth of the fish is a bit less in ponds where phytoplanktons and algae are insufficient.
9.	Process of farmers participation and their reaction	Participatory mode was followed while designing the trial. Farmers were too eager to culture this fish which is gaining popularity in the locality due its wide range of salinity tolerance and good taste.

Thematic area: Composite fish culture

Problem definition: Throughout the district of South 24 Parganas there are innumerable small domestic ponds which are unsuitable for production of sufficient quantity of big table fish. In coastal areas these ponds are often threatened with brackishwater inundation during floods and cyclones. All these ponds are normally stocked with a few Indian major carps, minor carps and exotic carps. However, during such calamities mortality of such fish is quite common. Thus, for augmenting fish production from such small ponds, it needs to be stocked with certain varieties of fish species which can withstand salinity fluctuations.

Technology assessed:

FP: 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, 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

TO-I: Replacement of 20% carp population with *Etroplus suratensis* (@ 2000 no/ha); other practices same as FP

TO-II: Replacement of 30% carp population with *Etroplus suratensis* (@ 3000 no/ha); other practices same as FP

Technology option	No. of trials	Unit area (ha)	Survivality (%)	Weight of fish (kg)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers practice	7	0.0325	Carps-67.0	0.30	Carps(6700pcs)-20.10	1,32,000.00	241200.00	109200.00	1.83
Technology Option - 1		0.0325	Carps-66.0 Pearl spot-64.5	Carps-0.35 Pearl spot-0.25	Carps(5280 pcs)-18.48 Pearl spot (1290pcs)-3.22	1,32,000.00	Carps-221760.00 Pearl spot -32200.00 Total-253960.00	121960.00	1.92
Technology Option - 2		0.0325	Carps-68.5 Pearl spot -63.0	Carps-0.40 Pearl spot -0.15	Carps(4795 pcs)-19.18 Pearl spot (1890pcs)-2.83	1,32,000.00	Carps-230160.00 Pearl spot -28300.00 Total-258460.00	126460.00	1.96

Result: 1st years observation shows replacement of 30% carp population with Pearl spot-*Etroplus suratensis* has so far given encouraging results. Another year's observation is required to arrive at a final conclusion for recommendation.

OFT-6

1.	**Title of On farm Trial**	**Assessment of different substrates for oyster mushroom cultivation**
2.	Problem diagnosed	Slow colonization over substrate
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Number of replication- 10 **Farmers' Practice:** paddy straw as a substrate **Technology Option - I**: Paddy straw +rice husk (9:1) **Technology Option - II**: Paddy straw +rice bran (8:2)
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Directorate of mushroom research, Solan, 2017
5.	Production system and thematic area	Small scale production system, Mushroom cultivation
6.	Performance of the Technology with performance indicators	Total production , Formation of fruiting body, No. of times in a cycle, Starting day of pin heads (after preparation of bed
7.	Final recommendation for micro level situation	Technology option 1 is better for increased productivity and to address the problem of slow colonization, Cost of cultivation (Rs./cycle), Protein supplementation for 1 month per day, Additional income (Rs/cycle), Net return Rs./cycle
8.	Constraints identified and feedback for research	Fruit bodies are larger in *Rabi* season than *Kharif* season
9.	Process of farmers participation and their reaction	Active participation and feedback with photographs within 10 days interval

Thematic area: **Assessment of different substrates for oyster mushroom cultivation**

Problem definition : Slow colonization over substrate

Technology assessed :

Farmers' Practice : Paddy straw as a substrate
Technology Option - I : Paddy straw +rice bran (9:1)
Technology Option - II : Paddy straw +rice bran (8:2)

Table:

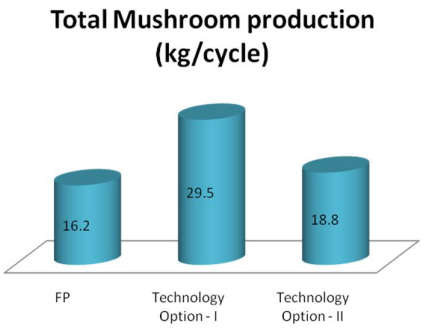
Technology option	Yield component		Starting day of pin heads	Cost of cultivation (Rs./cycle)	Protein supplementation/day (Avg. 1 month)	Additional income (Rs/cycle)	Net return (Rs./cycle)	BC ratio
	Total production (kg)	Fruiting body per cycle						
FP	16.2	3 times	30 days	400/-	31 gm	930/-	2030/-	6.08
Technology Option - I	29.5	3 times	21 days	415/-	66 gm	1425/-	4010/-	10.66
Technology Option - II	18.8	3 times	27 days	420/-	35 gm	1245/-	2400/-	6.71

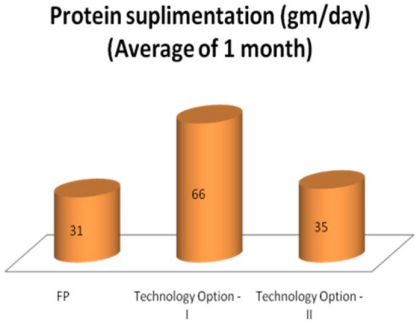
Results: Technology option 1 is better for increased productivity and to address the problem of slow colonization.

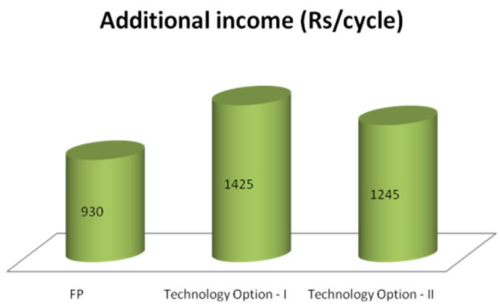
FP

T-1

T-2







OFT-7

1.	Title of On farm Trial	Assessment of different methods of crop planning of nutrition garden to eradicate hidden hunger
2.	Problem diagnosed	Hidden hunger among children and women
3.	Details of technologies selected for assessment/refinement	Number of replication- 25 *Given below
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Pandey, V. L., Mahendra Dev, S. and Jayachandran, U. (2016). Impact of agricultural interventions on the nutritional status in South Asia: A review, *Food Policy* 62: 28-40
5.	Production system and thematic area	Backyard system
6.	Performance of the Technology with performance indicators	Total production availability towards recommended dietary allowance, dietary diversity score, nutritional disease status, economic gain.
7.	Final recommendation for micro level situation	Trial has been conducted for 1 year so it should be repeated to recommend.
8.	Constraints identified and feedback for research	Crop production is hampered due to uncertain rainfall during Rabi season and heavy rainfall in rainy season after germination of seeds
9.	Process of farmers participation and their reaction	Active participation and consultation through WhatsApp group

Thematic area: **Assessment of different methods of crop planning of nutrition garden to eradicate hidden hunger**

Problem definition: Hidden hunger among children and women

Technology assessed:

Farmers practice	Rabi	*Rabi*-Summer	*Kharif*
	Knolkhol, Cauliflower, Raddish	Pumkin	Snake gourd, Sponge gourd, Okra
	Palak, Raddish	Basella	Amaranthus cordatas, Basella
	Broad bean	-	Lafa bean
Technology option-I	Raddish, tomato, Carrot	Okra, Pumkin, Bitter gourd, Ridge gourd, Sponge gourd	Ash gourd, sponge gourd, Brinjal, Okra
	Amaranthus (red, green & cordatas), raddish, palak, fenugreek leaf	-	Amaranthus green, Ipomoea, Basella Sweet potato leaf, Ash gourd leaf
	French bean, Peas, broad bean	Cowpea (green)	Cowpea (green)
Technology option-II	Raddish, , Carrot, Cauliflower (yellow & purple), broccoli, red cabbage, tomato	Okra (red & green), Pumkin, Bitter gourd, Sponge gourd	Ash gourd, sponge gourd, Brinjal, Okra
	Amranthus (red & green), Amaranthus cordatas, Raddish, palak, fenugreek leaf	Amaranthus (green & red), Amarnathus cordatas, Basella (green & red), Coriander, palak, Ipomea, Jute leaves	Amarnathus cordatas, Ipomoea, Basella, Sweet potato leaf, Ashgourd leaf
	French bean, Peas, broad bean	Cowpea (red, green)	Cowpea (red, green)

Table:1

	Rabi		Rabi-Summer		Kharif		Total Additional income (Rs.)
	Dietary diversity score	Additional income (Rs.)	Dietary diversity score	Additional income (Rs.)	Dietary diversity score	Additional income (Rs.)	
FP	3	520/-	3	720/-	4	700/-	2170/-
TO - 1	6	925/-	5	815/-	6	790/-	2520/-
TO - 2	**9**	**1950/-**	**6**	**1120/-**	**8**	**1245/-**	**4315/-**

Result: TO –2 is better for increased dietary diversity to address hidden hunger through nutrient rich crop planning and extra additional income throughout the year




FP **T-1**





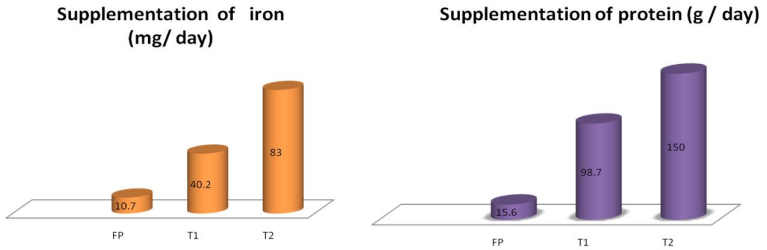


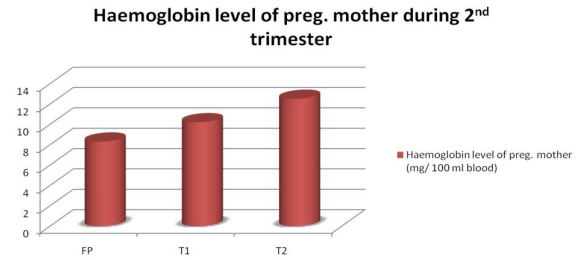
T-2

Table: 2

Treatment	Supplementation of iron (mg/ day/famly)	Supplementation of protein (g / day/ famly)	Haemoglobin level of preg. mother (mg/ 100 ml blood)	Incidence of night blindness (No.)	New nutri-dense recipes	Inclusion in weaning diet
FP	10.7	15.6	8.3	3	-	
T1	40.2	98.7	10.2	1	Sweat potato leaves fry, mixed veg. curry with ash gourd leaves	Pumpkin
T2	83.2	150.4	12.5	-	Red cow pea curry, red okra curry	Red cow pea, Pumpkin, Peas

Result: Option TO –II is better for increased dietary diversity to address hidden hunger through nutrient rich crop planning and extra additional income throughout the year






Farm families harvested red cowpea and get better return than green one

OFT-8

1.	Title of On Farm Trial	Assessment of tolerant varieties against Chilli Leaf Curl Virus infestation in Chilli under coastal saline zone of West Bengal
2.	Problem diagnosed	Yellowing and curling of leaves, reduction in yield
3.	Details of technologies selected for **assessment**/refinement (Mention either Assessed or Refined)	**Farmers Practice (FP)**: Cultivation of popular F1 hybrid chilli variety **Tejasvini**, following recommended package of practices and standard plant protection measures **Technology option-I (TO-I)**: Cultivation of IIHR developed F1 hybrid chilli variety **Arka Gagan**, following recommended package of practices and standard plant protection measures **Technology option-II (TO-II):** Cultivation of IIHR developed F1 hybrid chilli variety **Arka Tejasvi**, following recommended package of practices and standard plant protection measures
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	ICAR-IIHR, Bengaluru
5.	Production system and thematic area	Production system: Integrated farming system Thematic area: Integrated Pest Management
6.	Performance of the Technology with performance indicators	*Table below
7.	Final recommendation for micro level situation	The **Technology Option - II**, *i.e.*, cultivation of F1 hybrid chilli variety **Arka Tejasvi** may be recommended to the farmers for increased yield and higher net return.
8.	Constraints identified and feedback for research	Timely availability of seeds
9.	Process of farmers participation and their reaction	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 leaf curl disease, all the beneficiaries took interest in the trial. The OFT was well managed by the beneficiaries themselves.

*Performance of the Technology

Technology option	Mites (no./leaf)	Thrips (no./leaf)	Whitefly (no./leaf)	**Leaf curl index (%)**	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ ha)	B:C
FP	2.04±0.44[a]	5.34±0.54[a]	2.14±0.15[a]	36.29±7.61[a]	83.71±8.24[a]	185486±4270[a]	418571±41202[a]	233086±37402[a]	2.26
TO-I	0.19±0.09[b]	1.02±0.31[b]	0.46±0.19[b]	9.14±3.98[b]	103.29±5.41[b]	167029±3890[b]	464786±24333[b]	297757±24777[b]	2.78
TO-II	0.17±0.03[b]	0.91±0.16[b]	0.37±0.10[b]	7.43±2.76[b]	98.57±3.46[b]	166886±5676[b]	492857±17286[c]	325971±13824[c]	2.95

Thematic area: Integrated Pest Management with emphasis on varietal resistance

Problem definition: Chilli is an important spice crop in South 24 Parganas. However, due to infestation of chilli leaf curl complex, the area and productivity of this crop is declining year after year. There may be 20 to 75% reduction in yield due to the combined infestation of sucking pests like broad mite, thrips, whitefly and chilli leaf curl virus disease (ChiLCVD) in this crop. Spraying of chemical pesticides increases cost of production and aggravates the human and environmental health but fails to ensure complete prevention or cure to this problem.

Technology assessed: Use of varietal resistance against sucking pests and viral diseases have been reported to be most economical and environmentally safest tools of crop protection in these days. Most of the widely used F1 hybrids (like Mahyco Tejaswini) in the area are highly susceptible to chilli leaf curl disease complex. Hence, two leaf curl tolerant F1 hybrids developed at ICAR-IIHR, Bengaluru (named Arka Gagan and Arka Tejasvi) were used in this OFT to assess their performance at farmers' field condition (7 replication). Similar agronomical package of practices were followed for all treatments. Spraying of chemical pesticides (Neem oil, Acephate, Imidacloprid and Difenthiuron) were done symptomatically, with the recommended doses.

Farmers Practice (FP): Cultivation of popular F1 hybrid chilli variety Tejasvini, following recommended package of practices and standard plant protection measures

Technology option-I (TO-I): Cultivation of IIHR developed F1 hybrid chilli variety Arka Gagan, following recommended package of practices and standard plant protection measures

Technology option-II (TO-II): Cultivation of IIHR developed F1 hybrid chilli variety Arka Tejasvi, following recommended package of practices and standard plant protection measures

Table:

Technology option	No. of trials	Mites (no./leaf)	Thrips (no./leaf)	Whitefly (no./leaf)	**Leaf curl index**	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ ha)	B:C
FP	7	2.04±0.44[a]	5.34±0.54[a]	2.14±0.15[a]	36.29±7.61[a]	83.71±8.24[a]	185486±4270[a]	418571±41202[a]	233086±37402[a]	2.26
TO-I	7	0.19±0.09[b]	1.02±0.31[b]	0.46±0.19[b]	9.14±3.98[b]	103.29±5.41[b]	167029±3890[b]	464786±24333[b]	297757±24777[b]	2.78
TO-II	7	0.17±0.03[b]	0.91±0.16[b]	0.37±0.10[b]	7.43±2.76[b]	98.57±3.46[b]	166886±5676[b]	492857±17286[c]	325971±13824[c]	2.95
SEm (±)		0.10	0.11	0.06	1.84	1.81	654	8806	8827	
CD (P=0.05)		0.32	0.35	0.18	5.66	5.57	2015	27133	27199	

Data represents mean of 7 replications ± standard deviation

[abc]The data in the same column superscripted with same letters are statistically same at 5% level of significance

Leaf Curl Index (%) of ChiLCVD was determined using the formula [(sum of all leaf curl severity score x 100)/ (Total no. of plants observed x maximum score)]

Leaf curl severity scale

No symptom	0
0–5% curling and clearing of upper leaves	1
6-25% curling, clearing of leaves and swelling of veins	2
26–50% curling puckering and yellowing of leaves and swelling of veins	3
51–75% leaf curling and stunted plant growth and blistering of internodes	4
More than 75% curling and deformed small leaves, stunted plant growth with small flowers or without flowering and no or small fruit set	5

Results: Both the varieties, Arka Gagan (TO-I) and Arka Tejasvi (TO-II) showed significant tolerance (P=0.05) against the sucking pests and leaf curl virus infestation. Most importantly, the infestation of the viral disease was delayed in these varieties than in the farmer's practice (Tejaswini). Hence the yield loss in TO-I and TO-II was minimum compared to FP. Again, the number of chemical spraying in FP was more (ranging from 8 to 14 spraying) than in TO-I (4 – 7) and TO-II (4-6). Hence, the cost of cultivation was significantly less in both TO-I and TO-II. The net profit was found to be significantly highest in TO-II. Hence, the TO-I, i.e., cultivation of F1 chilli hybrid Arka Tejasvi may be recommended to the farmers.

FP (Chilli variety Tejaswini)

TO-I (Chilli variety Arka Gagan)

TO-II (Chilli variety Arka Tejasvi)

OFT – 9

1.	Title of On Farm Trial	Assessment of biological control against Angari disease of betelvine caused by *Xanthomonas axonopodis* pv. *betlicola,* under coastal saline zone of West Bengal
2.	Problem diagnosed	Leaf spot disease, reduction in leaf yield and poor market value
3.	Details of technologies selected for **assessment**/refinement (Mention either Assessed or Refined)	Farmers Practice (FP): Spraying with antibiotic (Streptomycin sulfate + Tetracyclin hydrochloride 9:1) @ 100 ppm Technology option-I (TO-I): Spraying with *Pseudomonas fluorescens* 1% @ 5g/L at monthly interval + soil application of *Pseudomonas fluorescens* 1% @ 1g/sq.m Technology option-II (TO-II):Spraying with Waste Decomposer @ 100 ml/L at monthly interval + soil application of Waste Decomposer @ 50ml/sq.m
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	ICAR – AINP on Betelvine, BCKV, Mohanpur
5.	Production system and thematic area	Production system: Plantation crop Thematic area: Biological control
6.	Performance of the Technology with performance indicators	*Table below
7.	Final recommendation for micro level situation	The **technology option - 1**, *i.e.*, Spraying with *Pseudomonas fluorescens* 1% @ 5g/L at monthly interval + soil application of *Pseudomonas fluorescens* 1% @ 1g/sq.m
8.	Constraints identified and feedback for research	Availability of good quality and effective strains of biocontrol agents
9.	Process of farmers participation and their reaction	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 Angari disease, all the beneficiaries took interest in the trial. The OFT was well managed by the beneficiaries themselves.

*Performance of the Technology

Technology option	PDI	Yield (No. of leaves /100 sq.m)	Cost of cultivation (Rs./100 sq.m)	Gross Return (Rs./100 sq.m)	Net Return (Rs./ 100 sq.m)	B:C
FP	12.44±3.09[b]	63727±1192[a]	35764±677	111523±2086	75758±2328	3.12
TO-I	8.25±1.17[a]	81496±1126[b]	34336±1683	146692±2027	112357±1989	4.27
TO-II	12.51±2.80[b]	64569±1114[a]	34079±155	116223±2005	82145±2027	3.41

Thematic area: Biological Control

Problem definition: The Coastal saline zone of West Bengal holds an important position in betelvine cultivation, sharing 46% and 49% of the total area and production, respectively, in the State. Among various diseases, the bacterial leaf spot or "Angari" (*Xanthomonasaxonopodis* pv. *betlicola*) creates havoc and the most difficult one to manage. The symptoms are characterized by the brown to black spots, showing translucent water soaked areas on the lower leaf surface and surrounded by yellow halo on the corresponding upper surface that remain delimited by leaf veins. The disease reduces both the yield and the market value of the green leaves. As green betel leaves are chewed raw, application of chemical pesticides is the least sought option in this crop. The most widely used plant protection measure against bacterial leaf spot in betelvine is the indiscriminate spraying with antibiotics (Streptomycin sulfate + Tetracyclin hydrochloride 9:1). However, farmers are often found helpless to manage the disease even with chemical means.

Technology assessed: Use of biocontrol agents against plant pathogens have been reported to be most economical and environmentally safest tools of crop protection in these days. In this trial the biocontrol agent Pseudomonas fluorescens (TO-I) and NCOF's Waste Decomposer (TO-II) were used to assess their performance at farmers' field condition (with 7 replications). Similar agronomical package of practices were followed for all treatments.

Farmers Practice (FP): Spraying with antibiotic (Streptomycin sulfate + Tetracyclin hydrochloride 9:1) @ 100 ppm

Technology option-I (TO-I): Spraying with *Pseudomonas fluorescens* 1% @ 5g/L at monthly interval + soil application of *Pseudomonas fluorescens* 1% @ 1g/sq.m

Technology option-II (TO-II):Spraying with Waste Decomposer @ 100 ml/L at monthly interval + soil application of Waste Decomposer @ 50ml/sq.m

Table:

Technology option	No. of trials	PDI	Yield (No. of leaves /100 sq.m)	Cost of cultivation (Rs./100 sq.m)	Gross Return (Rs./100 sq.m)	Net Return (Rs./ 100 sq.m)	B:C
FP	7	12.44±3.09[b]	63727±1192[a]	35764±677[b]	111523±2086	75758±2328[a]	3.12
TO-I	7	8.25±1.17[a]	81496±1126[b]	34336±1683[a]	146692±2027	112357±1989[c]	4.27
TO-II	7	12.51±2.80[b]	64569±1114[a]	34079±155[a]	116223±2005	82145±2027[b]	3.41
SEm (±)		0.72	442	414		819	
CD (P=0.05)		2.21	1361	1276		2525	

Data represents mean of 7 replications ± standard deviation; [abc]The data in the same column superscripted with same letters are statistically same at 5% level of significance

Disease severity of bacterial leaf spot: At first the disease rating was done at 1-3 point scale (1= 1-3 spots, 2 = 4-6 spots and 3 = more than 6 spots) from 25 leaves taken randomly from each replication. Then, Percent Disease Index (PDI) was computed based on the formula PDI = {(sum of all disease rating) x 100}/ {(total no. of observation) x (maximum rating)}

Results: Use of the biocontrol agent *Pseudomonas fluorescens* in TO-I significantly (P=0.05) reduced disease severity and increased the leaf yield. The cost of cultivation was significantly lower in both TO-I and TO-II than in FP. The net income was highest in TO-I. Considering disease management ability, yield increase and profitability, the technology option – I (Spraying with *Pseudomonas fluorescens* 1% @ 5g/L at monthly interval + soil application of *Pseudomonas fluorescens* 1% @ 1g/sq.m) performed best among the three treatments and may be recommended to the farmers.

OFT-10

1.	Title of On farm Trial	Assessment of different poultry breeds to augment family income of womenfolk and to enhance nutrition security in the household level in South 24 Parganas district
2.	Problem diagnosed	High disease incidence of the traditional poultry breeds with low productivity
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**Farmers' practice**: Rearing locally available poultry breed in backyard system. **Technology option-I**: Rearing RIR poultry breed in backyard system. **Technology option-II**: Rearing Kadaknath poultry breed in backyard system.
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior;https://icar.org.in/node/8075; ICAR-DPR, Hyderabad.
5.	Production system and thematic area	Backyard system and Poultry farming
6.	Performance of the Technology with performance indicators	*mentioned in the table below
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 survey, group meeting, training and then selection.

Thematic area: Poultry farming

Problem definition: High disease incidence of the traditional poultry breeds with low productivity

Technology assessed:

Farmers' practice: Rearing locally available poultry breed in backyard system.

Technology option-I: Rearing Gramapriya poultry breed in backyard system.

Technology option-II: Rearing Kadaknath poultry breed in backyard system.

Table:

Technology option	No. of trials	**Body weight gain (FCR)**	**Disease incidence**	**mortality percentage**	**protein supplementation per week for child (2-5 years)**	**Symptoms of PCM for child (2-5 years)**	**Additional Income from poultry bird**	**BC ratio**
Result is awaiting								

Results: Trial started in Decemebr, 2022. It is continuing. Result will be available after atleast 6 month .

OFT-11

1.	Title of On farm Trial	Assessment of dietary supplementation with fresh and dried Azolla (Azolla pinnata) on the performance of improved dual-purpose poultry breeds in South 24 Parganas
2.	Problem diagnosed	Low productivity and profitability in rearing dual-purpose poultry breeds in backyard system along with high production cost due to high supplementary feed cost.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**Farmers' practice:** Farmer's traditional practice with foraging only **Technology option-I:** FP + Addition of 50 g concentrate mixture (Maize 75%+ Rice polish 25%) per day per bird **Technology option-II:** FP + 100 g Azolla per day per bird
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Basak, B., Pramanik, M. A. H., Rahman, M. S., Tarafdar, S. U., & Roy, B. C. (2002). Azolla (Azolla pinnata) as a feed ingredient in broiler ration. Int. J. Poult. Sci, 1(1), 29-34.
5.	Production system and thematic area	Backyard system and poultry farming
6.	Performance of the Technology with performance indicators	-
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 survey, group meeting, training and then selection.

Thematic area: Poultry farming

Problem definition: Low productivity and profitability in rearing dual-purpose poultry breeds in backyard system along with high production cost due to high supplementary feed cost.

Technology assessed:

Farmers' practice: Farmer's traditional practice with foraging only

Technology option-I: FP + Addition of 50 g concentrate mixture (Maize 75%+ Rice polish 25%) per day per bird

Technology option-II: FP + 100 g Azolla per day per bird

Table:

Technology option	No. of trials	**Body weight gain (FCR)**	**Avg. No. of eggs per bird**	**Mortality percentage**	**Additional Income from poultry bird**	**BC ratio**
Result is awaiting						

Results: Trial started in Decemebr, 2022. It is continuing. Result will be available after atleast 6 month

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	Varietal replacement	Variety-Luna Suvarna, seed treatment with Trichodermaviride and Pseudomonas fluorescens followed by one or two time foliar spray and foliar spray with chelated zinc	4 ha	3.6 ha	5	5	0	0	2	3	7	8	15	0.4 ha area shortage due to unavailability of Salt tolerant rice variety
2.	Paddy	Nutrient management	LCC for nitrogen requirements in paddy	6 ha	6 ha	43	6	0	0	1	0	44	6	50	-

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil (Kg/ha)			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P_2O_5	K_2O					
Paddy	Kharif	Rainfed-salt affected Medium Land	Clay-Loam	230.5-245.63	32.5-39.0	382.5-428.4	Greengram	29.06.2022-03.07.2022	01.12.2022 - 05.12.2022	1603.9	74
Paddy	Kharif	Rainfed-Medium Land	Clay-Loam	185.0-208.36	26.5-32.3	340.8-409.5	Greengram	22.06.2022-25.06.2022	03.12.2022 - 08.12.2022		

Performance of FLD

Cereals:

Frontline demonstrations on cereals 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
Pady	Varietal replacement	Variety-Luna Suvarna, seed treatment with *Trichoderma viride* and *Pseudomonas fluorescens* followed by one or two time foliar spray of the same as well as foliar spray of chelated zinc	15	3.6 ha	36.2	29.3	23.55	39820	72470	32650	1.82	39578	59705	20127	1.51

Training and Input Distribution, Field visit & Field day under FLD

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
Paddy	Nutrient management	LCC for nitrogen requirements in paddy	50	6 ha	35.8	33.6	6.55	38437	71730	33293	1.87	41250	67660	26410	1.64

Training, Input Distribution Field day of LCC under FLD Field visit

* 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 - NA

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														

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
Cucumber	Integrated Pest Management (IPM)	Management of fruit fly through Cue Lure trap (Installation of cue lure trap in cucumber field @ 4no./bigha)	50	2	119	85	40%	Fruit fly infested fruit	– 4.40%	12.65 %	68400	238000	169600	3.48	75150	170000	94850	2.26
Tomato	Biological control through natural farming	Soil treatment with Jeebamrita, waste decomposer, *Trichoderma harzianum and Pseudomonas fluorescens*, seed treatment with *Beejamrita,* spraying with Neemastra, Agneyastra	25	2	451.84	489.44	-7.68	Wilting (PDI)	-3.13%	19.57%	136730	542208	405478	3.97	189306	587328	398022	3.10

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					
Cucumber	Rabi	Irrigated	Clay loam	138.4	51.6	427.8	Rice	Sowing: 12th October, 2022	Upto December 2022	1588	69
Tomato	Rabi	Irrigated	Clay loam	242.6	33.4	460.2	Bitter gourd	24.09.22	Upto 5th Feb, 2023	1593	70




FLD on management of fruit fly through Cue Lure trap

FLD on biological control of tomato bacterial wilt through natural farming

Livestock - NA

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																	
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.)			
					Parameter	Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Common carps																		
Mussels																		
Ornamental fishes																		
Asian catfish	Composite fish culture	Culture of Asian catfish in carp culture ponds	20	20 (0.065ha each)	Avg. body wt (g)	138.5	200.0	-	-	-	11000	27000	16000	2.45	6000	12600	6600	2.1
					Yield (kg)	45.0	105.0	-										
					Survivality (%)	65	70	-										
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		Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Oyster mushroom	Enterprise development	20	30	Oyster mushroom yield	-		1.34 kg per 100 gm spawn	-	35	234	199	5.6	-	-	-	-
Button mushroom																
Vermicompost																
Sericulture																
Apiculture	Demonstration of Indian Honeybee (*Apis cerana*) for additional income generation (7 - frame colony, pollen substitute, scientific management)	90	90	Honey yield: 10.03 kg/ hive /yr	Honey yield: 8.15 kg/hive /yr	23.10 %	Wax moth: 1.1	3.2	835	3510	2675	4.20	840	2851	2011	3.34
							Colony strength: 4.6	4.2								
							Colony division: 1:2.5 per year	1:0.8 per year								
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

Training and input distribution for FLD on Indian Honeybee (*Apis cerana*) for additional income generation

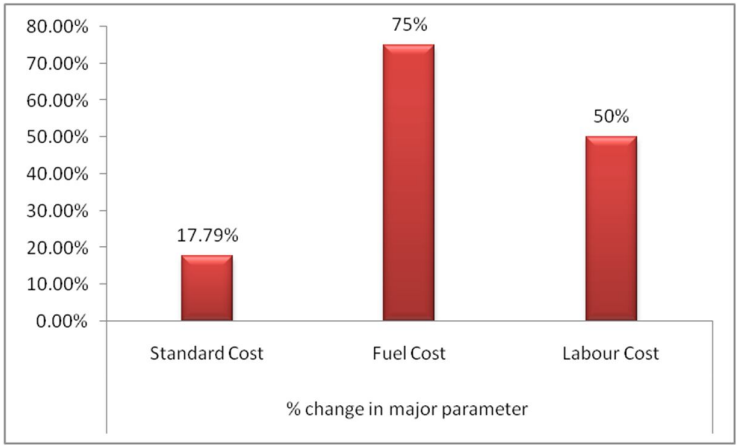
Women empowerment

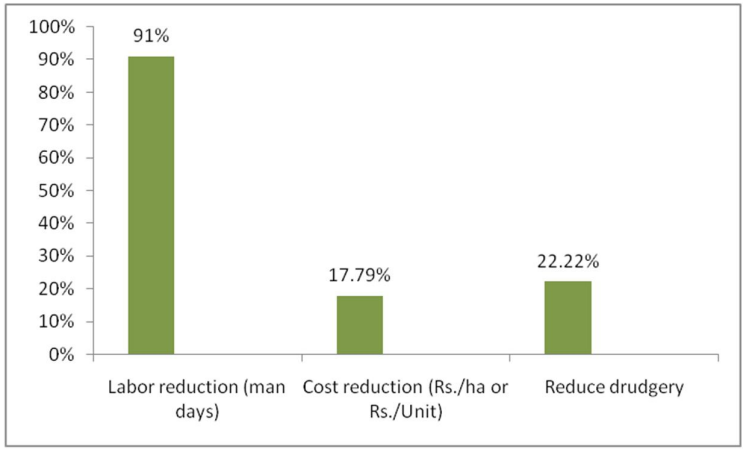
Category	Name of technology	No. of demonstrations	Observations						Remarks
			Demonstration			Check			
Farm Women	Saral Usna - Rice Parboiler to improve the quality of rice, reduce cost and drudgery	15	Angle of deviation (Degree)	Colour of rice (Hedonic Scale)	Odour (Hedonic scale)	Angle of deviation (Degree)	Colour of rice (Hedonic Scale)	Odour (Hedonic scale)	
			45	3	2	10	3	5	Reduce drudgery 22.22%, reduction in carbon emission and eco-friendly
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 (Rs. for 56 kg rice)						% change in major parameter			Labor reduction (man days)	Cost reduction (Rs./ha or Rs./Unit)
					Demonstration			Check							
					Standard Cost	Fuel Cost	Labour Cost	Standard Cost	Fuel Cost	Labour Cost	Standard Cost	Fuel Cost	Labour Cost		
Saral Usna - Parboiler	Rice	Saral Usna - Rice Parboiler to improve the quality of rice, reduce cost and drudgery	15	-	1940/-	40/-	300/-	2360/-	160/-	600/-	17.79%	75%	50%	91%	17.79%

* 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										
Groundnut										
Oilseeds										
Soybean										
Others (Pl.specify)										
Total										
Pulses										
Greengram										
Blackgram										
Bengalgram										
Redgram										
Others (Pl.specify)										
Total										
Vegetable crops										
Chilli	Tejaswini	176	16.7	12910	10670	20.9	76800	161400	84600	2.10
Bottle gourd										
Capsicum										
Cucumber										

Crop	Name of the Hybrid	No. of farmers	Area (ha)	Yield (kg/ha) / major parameter			Economics (Rs./ha)			
				Demo	Local check	% change	Gross Cost	Gross Return	Net Return	BCR
Tomato	Deb	335	25.8	59460	47380	25.5	86900	171600	84700	1.98
Brinjal										
Okra	Rohini	188	21.8	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)										

Technical Feedback on the demonstrated technologies

Sl. No	Crop	Feed Back
1	Paddy (Luna Suwarna)	Good performance in saline areas
2	LCC	Easily judgment for nitrogen requirement but it is not available in local market
3	Beekeeping	Productivity of honey has increased
4	Jayanti Rohu	Increase in total yield
5	Tomato (Plug tray)	Seedlings are healthy
6	Dragon fruit	Crop growth satisfactory. Hand pollination was effective in fruit setting
7	Paddy (DRR-46)	Good customer preference due to fine grain
8	Paddy (Luna suvarna)	Good performance in saline areas

Extension and Training activities under FLD

Sl. No.	Activity	Date	No. of activities organized	Number of participants	Remarks
1.	Field days	26.11.2021, 23.09.2021,	2	42	
2.	Farmers Training	22.06.2021, 05.11.2021	2	90	
3.	Media coverage	22.06.2021, 05.11.2021			
4.	Training for extension functionaries				

Performance of the demonstration under CFLD on Pulse and Oilseed Crops during Kharif 2022 and Rabi 2021-22:

1. **Name of KVK:** Ramkrishna Ashram Krishi Vigyan Kendra
2. **Year of establishment:**1979
3. **Host Institution:** Sri Ramkrishna Ashram, Nimpith Ashram
4. **Address:** PO.- Nimpith Ashram, PS-Joynagar
5. **District:** South 24 Parganas
6. **State**: West Bengal
7. **Performance of the demonstration: Summer, 2022**

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.	Greengram	Choiti Moong	7.95	586	680	1200	i)Variety IPM 205-7 (Virat) ii) Seed inoculation with *Rhizobium,* PSB & KSB @1.5 kg/ha each iii) Foliar spray of micro nutrient (B, Mo & Zn) @ 2g/lit. of water at flowering stage iv) Spraying of Chlorfenapyr 10 % SC @ 1000 ml/ha	142	30.0	10.20	9.15	9.61	63.9	41.3	-

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 205-7 (Virat) ii) Seed inoculation with *Rhizobium,* PSB & KSB @1.5 kg/ha each iii) Foliar spray of micro nutrient (B, Mo & Zn) @ 2g/lit. of water at flowering stage iv) Spraying of Chlorfenapyr 10 % SC @ 1000 ml/ha	26875.00	48495.00	21620.00	1.80 : 1	30375.00	57660.00	27285.00	1.89 : 1

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.	Crop: Greengram Variety: IPM 205-7 (Virat)	30588	90.0	58.00	6.00	20.0	Family maintenance & invested in bank	22 Nos.

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 205-7 (Virat) ii) Seed inoculation with *Rhizobium,* PSB & KSB @1.5 kg/ha each iii) Foliar spray of micro nutrient (B, Mo & Zn) @ 2g/lit. of water at flowering stage iv) Spraying of Chlorfenapyr 10 % SC @ 1000 ml/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 bio-fertilizers for seed treatment	-	Yes	-

E. Specific Characteristics of Technology and Performance

Specific Characteristic	Performance	Performance of Technology vis-a vis Local Check	Farmers Feedback
1.Variety-IPM 205-7 (Virat)	YMV disease infestation was not observed, bold grain and higher pod length than local variety (choiti moong)	i) Plant height- 37.4 cm (Local check) Plant height-44.3cm (Demo.) ii)Pod length-6.6 cm (Local check) Pod length-7.5 cm(Demo.) iii)100 seed wt.-2.4 g (Local check) 100 seed wt.-3.3g (Demo.) iv)Seed yield-795 kg/ha (Local check) Seed yield-961 kg/ha (Demo.)	i)The productivity of Demo. Variety is more than local variety ii)The application of nitrogenous fertilizer is reduce to 10 kg /ha for the use of *Rhizobium* culture
2.Rhizobium-1.5 kg/ha (as seed treatment)	Crop growth was better than choiti moong		
3.Foliar spray of micro nutrient (B, Mo & Zn) @ 2g/lit.of water at flowering stage	No. of pod and/plant was more than local variety (Choiti moong)		
4.Spraying Chlorfenapyr 10 % SC @ 1000 ml/ha	Pod borer damage was very less in demo. plot		

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	25.03.2022 at Bhadrapara of Mathurapur-II block	32
		05.03.22 at RAKVK, Nimpith, Joynagar-II block	69
		23.03.22 at Madhya Gurguria of Kultali block	42
2.	Distribution of critical inputs	25.03.2022 at Bhadrapara of Mathurapur-II block	32
		05.03.22 at RAKVK, Nimpith, Joynagar-II block	69
		23.03.22 at Madhya Gurguria of Kultali block	42
3.	Field visit	28.03.22 at Madhya Gurguria of Kultali block	42
		07.04.22 at Bamoner Chak, Joynagar-II block	35
		11.04.22 at Gilarchat, Mathurapur-II block	31
		28.04.22 at Jouthia, Joynagar-II block	33
4.	Field Days	29.04.22 at Gilarchat, Mathurapur II block	31
		09.05.21 at Jouthia, Joynagar-II block	43

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

H. Farmers' training photographs

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





J. Details of budget utilization

Crop (provide crop wise information)	Items	Budget Received (Rs.)	Budget Utilization (Rs.)	Balance (Rs.)
	i) Critical input	243000.00	247989.00	**71.00**
	ii) TA/DA/POL etc. for monitoring	8990.00	6900.00	
	iii)Extension Activities (Field day)	7480.00	3150.00	
	iv)Publication of literature	7480.00	8890.00	
	v) Contingencies	3050.00	3000.00	
	Total	**270000.00**	**269929.00**	
	vi) Bank interest	291.00	-	291.00
	Grand Total	**270291.00**	**269929.00**	**362.00**

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													
Cropping Systems													
Crop Diversification													
Integrated Farming													
Micro irrigation/irrigation													
Seed production													
Nursery management													
Integrated Crop Management	2	49	11	60	17	7	24	0	0	0	66	18	84
Soil & water conservation													
Integrated nutrient Management	1	6	2	8	47	14	61	0	0	0	53	16	69
Production of organic inputs	1	37	5	42	0	0	0	1	0	1	38	5	43
Others	6	120	29	149	13	9	22	1	1	2	134	39	173
Total	10	212	47	259	77	30	107	2	1	3	291	78	369
II. Horticulture													
a) Vegetable Crops													
Production of low volume and high value crops													
Off season vegetables													
Nursery raising													
Exotic vegetables													
Export potential vegetables													
Grading and standardization													
Protective cultivation													
Others/Horti based Integrated Farming System	6	11	7	18	149	54	203	0	0	0	160	61	221
Total (a)	**6**	**11**	**7**	**18**	**149**	**54**	**203**	**0**	**0**	**0**	**160**	**61**	**221**

Contd…

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
b) Fruits													
Training and Pruning													
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													
Plant propagation techniques													
Others													
Total (b)	0	0	0	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others													
Total (c)	0	0	0	0	0	0	0	0	0	0	0	0	0
d) Plantation crops													
Production and Management technology													
Processing and value addition													
Others													
Total (d)	0	0	0	0	0	0	0	0	0	0	0	0	0
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others													
Total (e)	0	0	0	0	0	0	0	0	0	0	0	0	0
f) Spices													
Production and Management technology													
Processing and value addition													
Others													
Total (f)	0	0	0	0	0	0	0	0	0	0	0	0	0

Contd…

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
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others													
Total (g)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total(a-g)	**6**	**11**	**7**	**18**	**149**	**54**	**203**	**0**	**0**	**0**	**160**	**61**	**221**
III. Soil Health and Fertility Management													
Soil fertility management													
Integrated water management													
Integrated Nutrient Management													
Production and use of organic inputs													
Management of Problematic soils													
Micro nutrient deficiency in crops													
Nutrient Use Efficiency													
Balance Use of fertilizer													
Soil & water testing													
others													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Livestock Production and Management													
Dairy Management													
Poultry Management	2	0	5	5	13	63	76	0	0	0	13	68	81
Piggery Management													
Rabbit Management													
Animal Nutrition Management													
Disease Management													
Feed & fodder technologies													
Production of quality animal products													
Others	6	31	13	44	57	62	119	0	0	0	88	75	163
Total	**8**	**31**	**18**	**49**	**70**	**125**	**195**	**0**	**0**	**0**	**101**	**143**	**244**

Contd..

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	5	22	27	49	25	191	216	0	0	0	47	218	265
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet													
Minimization of nutrient loss in processing													
Processing & cooking													
Gender mainstreaming through SHGs	1	0	0	0	0	45	45	0	0	0	0	45	45
Storage loss minimization techniques													
Value addition													
Women empowerment													
Location specific drudgery reduction technologies													
Rural Crafts													
Women and child care													
Others													
Total	**6**	**22**	**27**	**49**	**25**	**236**	**261**	**0**	**0**	**0**	**47**	**263**	**310**
VI. Agril. Engineering													
Farm machinery & its maintenance													
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													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
VII. Plant Protection													
Integrated Pest Management													
Integrated Disease Management													
Biocontrol of pests and diseases	3	11	0	11	39	34	73	1	0	1	51	34	85
Production of bio control agents and bio pesticides													
Others	6	88	5	93	53	2	55	0	0	0	141	7	148
Total	**9**	**99**	**5**	**104**	**92**	**36**	**128**	**1**	**0**	**1**	**192**	**41**	**233**

Contd…

VIII. Fisheries													
Integrated fish farming	2	15	1	16	37	7	44	0	0	0	52	8	60
Carp breeding and hatchery management													
Carp fry and fingerling rearing	2	0	0	0	114	9	123	0	0	0	114	9	123
Composite fish culture	2	0	0	0	52	9	61	0	0	0	52	9	61
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes	1	0	5	5	0	45	45	0	0	0	0	50	50
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others	8	60	2	62	138	29	167	0	0	0	198	31	229
Total	**15**	**75**	**8**	**83**	**341**	**99**	**440**	**0**	**0**	**0**	**416**	**107**	**523**
IX. Production of Input at site													
Seed Production													
Planting material production													
Bio0agents production													
Bio0pesticides production													
Bio0fertilizer production													
Vermi0compost production													
Organic manures production													
Production of fry and fingerlings													
Production of Bee0colonies and wax sheets													
Small tools and implements													
Production of livestock feed and fodder													
Production of Fish feed													
Mushroom production													
Apiculture													
Others													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Contd..

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
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													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Agro forestry													
Production technologies													
Nursery management													
Integrated Farming Systems													
Others													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
XII. Others (Pl. Specify)													
GRAND TOTAL	**54**	**450**	**112**	**562**	**754**	**580**	**1334**	**3**	**1**	**4**	**1207**	**693**	**1900**

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
Nursery Management of Horticulture crops	1	8	1	9	5	0	5	0	0	0	13	1	14
Training and pruning of orchards													
Protected cultivation of vegetable crops													
Commercial fruit production													
Integrated farming													
Seed production													
Production of organic inputs													
Planting material production													
Vermiculture													
Mushroom Production													
Beekeeping	1	6	0	6	9	0	9	0	0	0	15	0	15
Sericulture													
Repair and maintenance of farm machinery and implements													
Value addition													
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Production of quality animal products													
Dairying													
Sheep and goat rearing													
Quail farming													
Piggery													
Rabbit farming													
Poultry production													
Ornamental fisheries													
Composite fish culture	10	168	106	274	47	24	71	1	1	2	216	131	347
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing													
Others													
Total	**12**	**182**	**107**	**289**	**61**	**24**	**85**	**1**	**1**	**2**	**244**	**132**	**376**

B) 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													
Integrated Pest Management													
Integrated Nutrient management													
Rejuvenation of old orchards													
Protected cultivation technology													
Production and use of organic inputs													
Care and maintenance of farm machinery and implements													
Gender mainstreaming through SHGs													
Formation and Management of SHGs													
Women and Child care													
Low cost and nutrient efficient diet designing													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Management in farm animals													
Livestock feed and fodder production													
Household food security	2	0	0	0	2	58	60	0	5	5	2	63	65
Other	10	217	49	266	93	9	102	0	0	0	310	58	368
Total	**12**	**217**	**49**	**266**	**95**	**67**	**162**	**0**	**5**	**5**	**312**	**121**	**433**

D) Farmers and farm women (off campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
I. Crop Production													
Weed Management	1	1	3	4	17	10	27	0	0	0	18	13	31
Resource Conservation Technologies													
Cropping Systems													
Crop Diversification													
Integrated Farming													
Micro irrigation/irrigation													
Seed production	1	4	1	5	2	0	2	0	0	0	6	1	7
Nursery management	2	7	14	21	13	13	26	0	0	0	20	27	47
Integrated Crop Management													
Soil & water conservation													

D) Farmers and farm women (off campus) (Contd….)

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
Integrated nutrient Management	1	1	0	1	43	6	49	0	0	0	44	6	50
Production of organic inputs	1	16	13	29	2	1	3	0	0	0	18	14	32
Others	11	252	29	281	198	80	278	15	1	16	465	110	575
Total	**17**	**281**	**60**	**341**	**275**	**110**	**385**	**15**	**1**	**16**	**571**	**171**	**742**

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													
Production of low volume and high value crops													
Off season vegetables													
Nursery raising													
Exotic vegetables													
Export potential vegetables													
Grading and standardization													
Protective cultivation													
Others													
Water & Weed Management													
Vegetable cultivation on land embankment													
Integrated nutrient management	4	0	0	0	83	27	110	0	0	0	83	27	110
Management technologies													
Total (a)	**4**	**0**	**0**	**0**	**83**	**27**	**110**	**0**	**0**	**0**	**83**	**27**	**110**
b) Fruits													
Training and Pruning													
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													
Plant propagation techniques													
Others													
Total (b)	0	0	0	0	0	0	0	0	0	0	0	0	0

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													
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others													
Total (c)	0	0	0	0	0	0	0	0	0	0	0	0	0
d) Plantation crops													
Production and Management technology													
Processing and value addition													
Others													
Total (d)	0	0	0	0	0	0	0	0	0	0	0	0	0
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others													
Total (e)	0	0	0	0	0	0	0	0	0	0	0	0	0
f) Spices													
Production and Management technology													
Processing and value addition													
Others													
Total (f)	0	0	0	0	0	0	0	0	0	0	0	0	0
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others													
Total (g)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total(a-g)	**4**	**0**	**0**	**0**	**83**	**27**	**110**	**0**	**0**	**0**	**83**	**27**	**110**
III. Soil Health and Fertility Management													
Soil fertility management													
Integrated water management													
Integrated Nutrient Management													
Production and use of organic inputs													
Management of Problematic soils	1	3	3	6	5	5	10	0	0	0	8	8	16
Micro nutrient deficiency in crops													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
III. Soil Health and Fertility Management		**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**
Nutrient Use Efficiency													
Balance Use of fertilizer													
Soil & water testing	2	19	8	27	7	1	8	0	0	0	26	9	35
others													
Total	**3**	**22**	**11**	**33**	**12**	**6**	**18**	**0**	**0**	**0**	**34**	**17**	**51**
IV. Livestock Production and Management													
Dairy Management													
Poultry Management													
Piggery Management													
Rabbit Management													
Animal Nutrition Management													
Disease Management													
Feed & fodder technologies													
Production of quality animal products													
Others													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening	2	2	0	2	4	37	41	0	2	2	6	39	45
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet	1	0	0	0	15	23	38	0	0	0	15	23	38
Minimization of nutrient loss in processing													
Processing & cooking													
Gender mainstreaming through SHGs	4	0	0	0	7	113	120	0	0	0	7	113	120
Storage loss minimization techniques													
Value addition													
Women empowerment													
Location specific drudgery reduction technologies													
Rural Crafts													
Women and child care	1	0	0	0	0	47	47	0	0	0	0	47	47
Others													
Total	**8**	**2**	**0**	**2**	**26**	**220**	**246**	**0**	**2**	**2**	**28**	**222**	**250**

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													
Farm machinery & its maintenance													
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													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
VII. Plant Protection													
Integrated Pest Management	6	31	23	54	92	47	139	0	0	0	123	70	193
Integrated Disease Management	2	12	0	12	47	8	55	0	0	0	59	8	67
Biocontrol of pests and diseases	1	0	0	0	8	21	29	0	0	0	8	21	29
Production of bio control agents and bio pesticides													
Organic farming	6	18	10	28	114	19	133	15	0	15	147	29	176
Total	**15**	**61**	**33**	**94**	**261**	**95**	**356**	**15**	**0**	**15**	**337**	**128**	**465**
VIII. Fisheries													
Integrated fish farming													
Carp breeding and hatchery management													
Carp fry and fingerling rearing													
Composite fish culture	3	31	51	82	4	9	13	0	0	0	35	60	95
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes	2	0	0	0	0	38	38	0	0	0	0	38	38
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others	1	22	2	24	2	0	2	0	0	0	24	2	26
Total	**6**	**53**	**53**	**106**	**6**	**47**	**53**	**0**	**0**	**0**	**59**	**100**	**159**

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 Input at site													
Seed Production													
Planting material production													
Bio0agents production													
Bio0pesticides production													
Bio0fertilizer production													
Vermi0compost production													
Organic manures production													
Production of fry and fingerlings													
Production of Bee0colonies and wax sheets													
Small tools and implements													
Production of livestock feed and fodder													
Production of Fish feed													
Mushroom production													
Apiculture													
Others													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
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													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Agro forestry													
Production technologies													
Nursery management													
Integrated Farming Systems													
Others													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
XII. Others (Pl. Specify)													
GRAND TOTAL	**53**	**419**	**157**	**576**	**663**	**505**	**1168**	**30**	**3**	**33**	**1112**	**665**	**1777**

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
Nursery Management of Horticulture crops													
Training and pruning of orchards													
Protected cultivation of vegetable crops													
Commercial fruit production													
Integrated farming													
Seed production													
Production of organic inputs													
Planting material production													
Vermiculture													
Mushroom Production													
Beekeeping													
Sericulture													
Repair and maintenance of farm machinery and implements													
Value addition													
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Production of quality animal products													
Dairying													
Sheep and goat rearing													
Quail farming													
Piggery													
Rabbit farming													
Poultry production													
Ornamental fisheries													
Composite fish culture													
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing													
Others	2	30	0	30	20	0	20	0	0	0	50	0	50
Total	**2**	**30**	**0**	**30**	**20**	**0**	**20**	**0**	**0**	**0**	**50**	**0**	**50**

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													
Production and use of organic inputs													
Care and maintenance of farm machinery and implements													
Gender mainstreaming through SHGs													
Formation and Management of SHGs													
Women and Child care													
Low cost and nutrient efficient diet designing													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Management in farm animals													
Livestock feed and fodder production													
Household food security	1	10	0	10	0	33	33	0	0	0	10	33	43
Other	1	20	0	20	7	3	10	0	0	0	27	3	30
Total	**2**	**30**	**0**	**30**	**7**	**36**	**43**	**0**	**0**	**0**	**37**	**36**	**73**

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	1	1	3	4	17	10	27	0	0	0	18	13	31
Resource Conservation Technologies													
Cropping Systems													
Crop Diversification													
Integrated Farming													
Micro irrigation/irrigation													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Seed production	1	4	1	5	2	0	2	0	0	0	6	1	7
Nursery management	2	7	14	21	13	13	26	0	0	0	20	27	47
Integrated Crop Management	2	49	11	60	17	7	24	0	0	0	66	18	84
Soil & water conservation													
Integrated nutrient Management	2	7	2	9	90	20	110	0	0	0	97	22	119
Production of organic inputs	2	53	18	71	2	1	3	1	0	1	56	19	75
Others	17	372	58	430	211	89	300	16	2	18	599	149	748
Total	**27**	**493**	**107**	**600**	**352**	**140**	**492**	**17**	**2**	**19**	**862**	**249**	**1111**
II. Horticulture													
a) Vegetable Crops													
Production of low volume and high value crops													
Off0season vegetables													
Nursery raising													
Exotic vegetables													
Export potential vegetables													
Grading and standardization													
Protective cultivation													
Others													
Horti based Integrated Farming System	6	11	7	18	149	54	203	0	0	0	160	61	221
Horticultural technique													
Water & Weed Management													
Vegetable cultivation on land embankment													
Integrated nutrient management	4	0	0	0	83	27	110	0	0	0	83	27	110
Management technologies													
Total (a)	**10**	**11**	**7**	**18**	**232**	**81**	**313**	**0**	**0**	**0**	**243**	**88**	**331**

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
b) Fruits													
Training and Pruning													
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													
Plant propagation techniques													
Others													
Total (b)													
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others													
Total (c)													
d) Plantation crops													
Production and Management technology													
Processing and value addition													
Others													
Total (d)													
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others													
Total (e)													
f) Spices													
Production and Management technology													
Processing and value addition													
Others													
Total (f)													

Contd….

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
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others													
Total (g)													
Total(a-g)	**10**	**11**	**7**	**18**	**232**	**81**	**313**	**0**	**0**	**0**	**243**	**88**	**331**
III. Soil Health and Fertility Management													
Soil fertility management													
Integrated water management													
Integrated Nutrient Management													
Production and use of organic inputs													
Management of Problematic soils	1	3	3	6	5	5	10	0	0	0	8	8	16
Micro nutrient deficiency in crops													
Nutrient Use Efficiency													
Balance Use of fertilizer													
Soil & water testing	2	19	8	27	7	1	8	0	0	0	26	9	35
others													
Total	**3**	**22**	**11**	**33**	**12**	**6**	**18**	**0**	**0**	**0**	**34**	**17**	**51**
IV. Livestock Production and Management													
Dairy Management													
Poultry Management	2	0	5	5	13	63	76	0	0	0	13	68	81
Piggery Management													
Rabbit Management													
Animal Nutrition Management													
Disease Management													
Feed & fodder technologies													
Production of quality animal products													
Others	6	31	13	44	57	62	119	0	0	0	88	75	163
Total	**8**	**31**	**18**	**49**	**70**	**125**	**195**	**0**	**0**	**0**	**101**	**143**	**244**
V. Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening	7	24	27	51	29	228	257	0	2	2	53	257	310
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet													

Contd…

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
Minimization of nutrient loss in processing													
Processing & cooking													
Gender mainstreaming through SHGs	5	0	0	0	7	158	165	0	0	0	7	158	165
Storage loss minimization techniques													
Value addition													
Women empowerment													
Location specific drudgery reduction technologies													
Rural Crafts													
Women and child care	1	0	0	0	0	47	47	0	0	0	0	47	47
Others													
Total	**14**	**24**	**27**	**51**	**51**	**456**	**507**	**0**	**2**	**2**	**75**	**485**	**560**
VI. Agril. Engineering													
Farm machinery & its maintenance													
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													
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
VII. Plant Protection													
Integrated Pest Management	6	31	23	54	92	47	139	0	0	0	123	70	193
Integrated Disease Management	2	12	0	12	47	8	55	0	0	0	59	8	67
Biocontrol of pests and diseases	4	11	0	11	47	55	102	1	0	1	59	55	114
Production of bio control agents and bio pesticides	12	106	15	121	167	21	188	15	0	15	288	36	324
Organic Farming													
Total	**24**	**160**	**38**	**198**	**353**	**131**	**484**	**16**	**0**	**16**	**529**	**169**	**698**
VIII. Fisheries													
Integrated fish farming	2	15	1	16	37	7	44	0	0	0	52	8	60
Carp breeding and hatchery management	0	0	0	0	0	0	0	0	0	0	0	0	0
Carp fry and fingerling rearing	2	0	0	0	114	9	123	0	0	0	114	9	123
Composite fish culture	5	31	51	82	56	18	74	0	0	0	87	69	156

Contd…

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
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes	3	0	5	5	0	83	83	0	0	0	0	88	88
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others	9	82	4	86	140	29	169	0	0	0	222	33	255
Total	**21**	**128**	**61**	**189**	**347**	**146**	**493**	**0**	**0**	**0**	**475**	**207**	**682**
IX. Production of Input at site													
Seed Production													
Planting material production													
Bio0agents production													
Bio0pesticides production													
Bio0fertilizer production													
Vermi0compost production													
Organic manures production													
Production of fry and fingerlings													
Production of Bee0colonies and wax sheets													
Small tools and implements													
Production of livestock feed and fodder													
Production of Fish feed													
Mushroom production													
Apiculture													
Others													
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
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													
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Contd…

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													
Others													
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
XII. Others (Pl. Specify)													
GRAND TOTAL	**107**	**869**	**269**	**1138**	**1417**	**1085**	**2502**	**33**	**4**	**37**	**2319**	**1358**	**3677**

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
Nursery Management of Horticulture crops	1	8	1	9	5	0	5	0	0	0	13	1	14
Training and pruning of orchards													
Protected cultivation of vegetable crops													
Commercial fruit production													
Integrated farming													
Seed production													
Production of organic inputs													
Planting material production													
Vermiculture													
Mushroom Production													
Beekeeping	1	6	0	6	9	0	9	0	0	0	15	0	15
Sericulture													
Repair and maintenance of farm machinery and implements													
Value addition													
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Production of quality animal products													

Contd….

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
Dairying													
Sheep and goat rearing													
Quail farming													
Piggery													
Rabbit farming													
Poultry production													
Ornamental fisheries													
Composite fish culture	10	168	106	274	47	24	71	1	1	2	216	131	347
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing													
Others	2	30	0	30	20	0	20	0	0	0	50	0	50
Total	**14**	**212**	**107**	**319**	**81**	**24**	**105**	**1**	**1**	**2**	**294**	**132**	**426**

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													
Rejuvenation of old orchards													
Protected cultivation technology													
Production and use of organic inputs													
Care and maintenance of farm machinery and implements													
Gender mainstreaming through SHGs													
Formation and Management of SHGs													
Women and Child care													

Contd..

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Low cost and nutrient efficient diet designing													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Management in farm animals													
Livestock feed and fodder production													
Household food security	3	10	0	10	2	91	93	0	5	5	12	96	108
Other	11	237	49	286	100	12	112	0	0	0	337	61	398
Total	**14**	**247**	**49**	**296**	**102**	**103**	**205**	**0**	**5**	**5**	**349**	**157**	**506**

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	Training on natural farming	1	On	17	5	22	4	0	4
	F & FW	Training on Scientific method of pulse cultivation in rabi-summer season	1	Off	11	3	14	11	3	14
	F & FW	Training on integrated farming	4	On	33	7	40	33	7	40
	F & FW	Training on integrated farming	4	On	19	20	39	19	20	39
	F & FW	Training on integrated farming	3	On	29	13	42	27	13	40
	F & FW	Training on integrated farming	3	On	21	7	28	21	7	28
	F & FW	Training on fodder production of maize through hydroponic	1	Off	14	4	18	14	4	18
	F & FW	Training on fodder production of maize through hydroponic	1	Off	16	2	18	16	2	18
	F & FW	Training on Sunflower under crop diversification	1	Off	42	18	60	42	18	60
	F & FW	Training on improvement in crop productivity following climate resilient practices	3	On	34	12	46	14	4	18
	F & FW	Training on Improved Method of pulse (Greengram) cultivation under CFLD	2	On	53	16	69	47	14	61
	F & FW	Training on Modern Agri.- Horticultural practices	2	On	32	6	38	3	3	6
	F & FW	Training on Natural farming and Improvement of Crop Productivity through Modern Techniques	3	On	23	0	23	0	0	0
	F & FW	Training on Integrated Farming System & Natural Farming	3	On	11	12	23	5	5	10

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	Training on Techniques of Paddy Seed Production	1	Off	6	1	7	2	0	2
	EP	Training on Natural Farming and Integrated Farming System	1	On	25	2	27	2	0	2
	F & FW	Training on Natural farming and Integrated farming System	1	On	15	11	26	2	5	7
	F & FW	Training programme on Seed treatment with chemical or bio-agents and nursery management of Paddy	1	Off	18	9	27	13	8	21
	F & FW	Training programme on productivity enhancement of kharif paddy in salt affected soil-2022 under FLD programme	1	Off	8	8	16	5	5	10
	F & FW	Training programme on Importance of soil testing and use of Biofertilizers & Organic manures	1	Off	16	9	25	1	1	2
	F & FW	Training programme on Judicious application of nitrogen in kharif paddy by using leaf colour chart (LCC) under FLD programme-2022	1	Off	44	6	50	43	6	49
	F & FW	Training programme on Nursery management of rice and treatment of rice seedling with Bio-control agent	1	Off	2	18	20	0	5	5
	F & FW	Training programme on Importance of soil testing and use of Biofertilizers & Organic manures	2	Off	10	0	10	6	0	6
	F & FW	Trainning on "Techniques of vermicompost production"	2	Off	18	14	32	2	1	3
	F & FW	Training programme on Weed management in kharif paddy at Binodpur, Kultali	1	Off	18	13	31	17	10	27
	F & FW	Trainning on "Natural Farming"	2	On	37	12	49	8	2	10
	EP	Internship trainning of Rural Agricultural Work Experience (RAWE) for the B.Sc.(Ag) students of The Neotia University, Sarisha, South 24 Parganas		On	39	12	51	7	2	9
	F & FW	Training programme on Integrated Farming System	4	On	47	2	49	44	2	46
	F & FW	Awareness programme on Natural Farming	1	Off	77	6	83	25	4	29
	F & FW	Awareness programme on Natural Farming	1	Off	39	21	60	39	21	60
	F & FW	Awareness programme on Natural Farming	1	Off	50	11	61	3	11	14
	EP	Vocational Teachers Training on Crop Management	3	On	15	1	16	1	0	1
	F & FW	Training programme on Sustainable Agriculture Technique	3	On	2	11	13	0	3	3
	F & FW	Training cum awareness programme on Natural Farming	1	Off	35	8	43	29	8	37
	F & FW	Training cum awareness programme on Natural Farming	1	Off	36	7	43	33	6	39
	F & FW	Training cum awareness programme on Natural Farming	1	Off	36	7	43	0	0	0
	F & FW	Training cum awareness programme on Natural Farming	1	Off	36	7	43	31	6	37
	F & FW	Training cum awareness programme on Natural Farming	1	Off	6	32	38	6	22	28

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	Training cum awareness programme on Natural Farming	1	Off	34	3	37	0	0	0
	F & FW	Training cum awareness programme on Natural Farming	1	Off	56	3	59	9	1	10
	F & FW	Exposure Visit cum Training Programme for Bio Village Farmers	1	On	38	5	43	1	0	1
	F & FW	Training and visit programme on Sustainable Agriculture sponsored by IFFCO	3	On	40	0	40	0	0	0
	F & FW	Training cum awareness programme on Natural Farming	1	Off	60	5	65	38	2	40
Plant Protection	F & FW	Biocontrol of pests and diseases	1	On	22	3	25	22	3	25
	F & FW	Beekeeping	7	On	25	0	25	8	0	8
	F & FW	Beekeeping	4	On	24	1	25	24	1	25
	F & FW	Beekeeping	4	On	23	2	25	0	0	0
	EP	Diploma in Agricultural Extension Services	365	On	31	9	40	11	0	11
	EP	Diploma in Agricultural Extension Services	365	On	37	3	40	8	2	10
	F & FW	Integrated Disease Management	1	Off	22	0	22	10	0	10
	F & FW	Beekeeping	1	Off	15	0	15	15	0	15
	RY	Beekeeping	7	On	15	0	15	9	0	9
	F & FW	Beekeeping	4	On	31	2	33	15	0	15
	F & FW	Climate resilient agriculture	1	Off	10	5	15	10	5	15
	F & FW	Climate resilient agriculture	1	Off	20	1	21	20	1	21
	F & FW	Beekeeping	4	On	19	1	20	3	1	4
	F & FW	Climate resilient agriculture	1	Off	14	11	25	14	11	25
	F & FW	Integrated Pest Management	1	Off	7	13	20	4	4	8
	EP	Beekeeping	1	On	48	17	65	9	1	10
	F & FW	Integrated Disease Management	1	Off	37	8	45	37	8	45
	EP	Integrated Pest Management	4	On	39	2	41	10	0	10
	F & FW	Beekeeping	4	On	19	1	20	3	0	3
	F & FW	Biocontrol of pests and diseases	1	On	4	31	35	4	31	35
	F & FW	Integrated Pest Management	1	Off	18	7	25	18	7	25
	F & FW	Information and Communication Technology	1	Off	24	12	36	6	2	8
	F & FW	Integrated Pest Management	1	Off	40	22	62	12	8	20
	F & FW	Integrated Pest Management	1	Off	15	10	25	15	10	25
	F & FW	Integrated Pest Management	1	Off	22	13	35	22	13	35
	F & FW	Climate resilient agriculture	1	Off	64	0	64	64	0	64
	F & FW	Biocontrol of pests and diseases	4	On	25	0	25	14	0	14
	F & FW	Integrated Pest Management	1	Off	21	5	26	21	5	26
	F & FW	Biocontrol of pests and diseases	1	Off	8	21	29	8	21	29

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	Intensive integrated fish culture technology	5	On	23	7	30	23	7	30
	F & FW	Freshwater fish & prawn farming	4	On	23	8	31	23	8	31
	F & FW	Freshwater fish & prawn farming	4	On	29	1	30	29	1	30
	RY	Value addition in fisheries and freshwater fisheries options	1	OFF	25	0	25	11	0	11
	RY	Value addition in fisheries and freshwater fisheries options	1	OFF	25	0	25	9	0	9
	F & FW	Freshwater fish and prawn culture	1	OFF	8	22	30	4	6	10
	RY	Catfish hatchery management	4	On	13	1	14	5	0	5
	F & FW	Farming of pearl spot in freshwater ponds	4	On	42	3	45	30	3	33
	RY	Diversified freshwater fish and prawn culture	4	On	9	4	13	0	0	0
	F & FW	Hazards in fish and prawn culture and their remedies	1	Off	24	2	26	2	0	2
	F & FW	Catfish breeding and management	5	On	28	5	33	28	5	33
	RY	Freshwater fish & prawn farming	1	On	23	20	43	9	6	15
	RY	Freshwater fish & prawn farming	1	On	1	16	17	0	5	5
	RY	Diversified freshwater fish and prawn farming	4	On	24	17	41	7	2	9
	F & FW	Breeding and culture of Asian Catfish	4	On	22	0	22	8	0	8
	RY	Diversified freshwater fish and prawn farming	4	On	26	13	39	5	2	7
	RY	Freshwater fish & prawn farming	1	On	23	42	65	5	5	10
	RY	Diversified freshwater fish and prawn farming	4	On	49	8	57	7	2	9
	RY	Freshwater fish & prawn farming	1	On	10	4	14	4	2	6
	F & FW	Breeding and culture of indigenous fish	4	On	39	0	39	20	0	20
	F & FW	Breeding and culture of Asian Catfish	4	On	14	2	16	4	0	4
	F & FW	Ornamental fish farming	1	Off	0	24	24	0	24	24
	F & FW	Diversified freshwater fish and prawn farming	1	Off	0	20	20	0	2	2
	F & FW	Culture of Asian Catfish	4	On	20	0	20	15	0	15
	F & FW	Ornamental fish farming	1	Off	0	14	14	0	14	14
	RY	Fish rearing and management	7	On	15	0	15	6	0	6
	F & FW	Culture of pearl spot and pengba in carp culture ponds	4	On	7	7	14	7	7	14
	F & FW	Culture of nona tangra in carp culture ponds for profit maximizing	4	On	26	14	40	26	14	40
	F & FW	Diversified freshwater fish and prawn farming	1	Off	27	18	45	0	1	1
	F & FW	Carp fingerling rearing and management	2	On	52	3	55	52	3	55
	F & FW	Ornamental fish farming	1	On	0	50	50	0	45	45
	F & FW	Carp fingerling rearing and management	2	On	62	6	68	62	6	68
	RY	Diversified freshwater fish and prawn culture	4	On	36	7	43	5	1	6
	F & FW	Integrated Fish Farming	5	On	29	1	30	14	0	14

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home Science	F & FW	Management of Black Bengal Goat at Backyard System	1	Off	7	53	60	7	53	60
	F & FW	Preparation and management of nutri-garden to attain food and nutrition security	1	Off	0	30	30	0	30	30
	F & FW	Management of Khaki Campbell Rearing	1	Off	0	35	35	0	35	35
	F & FW	Management of Khaki Campbell Rearing	1	Off	0	25	25	0	25	25
	F & FW	Rearing and management of Khaki Campbell	4	On	0	45	45	0	45	45
	F & FW	Oyster Mushroom cultivation during Rainy Season	3	On	0	15	15	0	15	15
	EP	Food and nutrition security management during disaster	2	Off	27	3	30	7	3	10
	F & FW	Preparation and management of nutrition garden during kharif season to attain food and nutrition security	4	On	0	64	64	0	63	63
	F & FW	Natural management of keyhole nutrition garden with saline tolerant variety	3	On	1	34	35	0	30	30
	F & FW	Awareness on rejuvenation of saline soil and cultivation of saline tolerant variety	1	Off	6	9	15	4	9	13
	F & FW	Nutri-rich cereal -Ragi for supplimentation of protein and iron	1	Off	15	23	38	15	23	38
	F & FW	Training on Nutri-garden and bio-fortified varieties	1	On	39	62	101	25	62	87
	F & FW	Training on preparation and management key hole nutition garden	2	On	0	33	33	0	33	33
	EP	Hand holding demonstation on key hole nutrition garden	1	Off	10	33	43	0	33	33
	EP	Oster mushroom cultivation for income generating activities	2	On	22	5	27	22	5	27
	EP	Oster mushroom cultivation for income generating activities	2	On	30	23	53	0	0	0
	EP	Key hole nutrition garden management through minimum water utilization	1	On	0	31	31	0	31	31
	EP	Key hole nutrition garden management through minimum water utilization	1	On	2	32	34	2	32	34
	F & FW	Preparation of management of Keyhole nutrition garden	1	On	7	25	32	0	3	3
	F & FW	Nutritional care of pregnant and lactating mother	1	Off	0	47	47	0	47	47

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 Goat Farming	4	On	9	14	23	2	2	4
	F & FW	Scientific Goat Farming	4	On	28	2	30	28	2	30
	F & FW	Animal Husbandry based IFS with special emphasis on goat rearing	6	On	7	13	20	7	13	20
	F & FW	Animal Husbandry based IFS with special emphasis on Animal Husbandry	6	On	16	14	30	2	13	15
	F & FW	Scientific Backyard Poultry Farming	5	On	3	28	31	3	23	26
	EP	Vocational Teachers Training on Animal Husbandry	3	On	5	0	5	3	0	3
	F & FW	Integrated Farming System with special emphasis on Animal Husbandry	6	On	27	3	30	17	3	20
	F & FW	Scientific Rearing of RIR Poultry Bird at Backyard System	4	On	10	40	50	10	40	50
	F & FW	Assessment of different poultry breeds to augment family income of women folk and to enhance nutrition security in the household level in South 24 Parganas	4	On	0	15	15	0	15	15
	F & FW	Assessment of dietary supplementation with fresh and dried Azolla (Azolla pinnata) on the performance of improved dual-purpose poultry breeds in South 24 Parganas	4	On	1	14	15	1	14	15

H) Vocational training programmes for Rural Youth

a) Details of training programmes for Rural Youth

Crop / Enterprise	Identified Thrust Area	Training title	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
				Male	Female	Total	Type of units	Number of units	Number of persons employed	
Oyster Mushroom	Income generation through alternative livelihood	Different mushroom production suitable in island situation of Sundarbans area for income generation	4	5	25	30	Oyster mushroom production	20	7	-

Thematic Area	**No. of Courses**	**No. of Participants**									**Grand Total**		
		Other			**SC**			**ST**					
		M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**
Crop production and management													
Commercial floriculture													
Commercial fruit production													
Commercial vegetable production													
Integrated crop management													
Organic farming													
Other													
Total													
Post harvest technology and value addition													
Value addition													
Other													
Total													
Livestock and fisheries													
Dairy farming													
Composite fish culture													
Sheep and goat rearing													
Piggery													
Poultry farming													
Other													
Total													
Income generation activities													
Vermicomposting													
Production of bioagents, biopesticides,													
biofertilizers etc.													

b) Details of participation (Contd…)

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
Repair and maintenance of farm machinery &imlements													
Rural Crafts													
Seed production													
Sericulture													
Mushroom cultivation	1	0	0	0	5	25	30	0	0	0	5	25	30
Nursery, grafting etc.													
Tailoring, stitching, embroidery, dying etc.													
Agril. Para-workers, para0vet training													
Other													
Beekeeping													
Total													
Agricultural Extension													
Capacity building and group dynamics													
Other													
Total													
Grand Total	1	0	0	0	5	25	30	0	0	0	5	25	30

I) Sponsored Training Programmes

a) Details of Sponsored Training Programme

Sl. No	Title	Thematic area	Month	Duration (days)	Client PF/RY/EF	No. of courses	No. of participants	Sponsoring Agency
1	NBHM training on Scientific Beekeeping	Beekeeping	January	7	F & FW	1	25	NBHM (NBB)
2	SCSP training on Beekeeping for alternate livelihood and improved pollination	Beekeeping	January	4	F & FW	2	50	SCSP - ATARI Kolkata
3	Diploma in Agricultural Extension Services for Input Dealers (TP 917, TP 1819)	Diploma in Agricultural Extension Services	January	365	EP	2	80	Self
4	Intensive integrated fish culture technology	Integrated Fish Farming	January	5	F & FW		30	MANAGE
5	Freshwater fish & prawn farming	Composite fish culture	January	4	F & FW	2	61	SCSP

Sl. No	Title	Thematic area	Month	Duration (days)	Client PF/RY/EF	No. of courses	No. of participants	Sponsoring Agency
6	STRY training programme on Beekeeping	Beekeeping	March	7	RY	1	15	STRY
7	NBHM Online training on Scientific Beekeeping	Beekeeping	March	4	F & FW	1	33	NBB
8	Climate resilient agricultural practices for Sundarban situation	Climate resilient agriculture	March	1	F & FW	1	15	NICRA
9	Sustainable water management for a sustainable future	Climate resilient agriculture	March	1	F & FW	1	21	NICRA
10	Beekeeping for improved pollination service	Beekeeping	March	4	F & FW	1	20	AICRP
11	Catfish hatchery management	Breeding of Indigenous catfish in backyard system	March	4	RY	1	14	ARYA
12	Farming of pearl spot in freshwater ponds	Introduction of new species	March	4	F & FW	1	45	DGR-SCSP
13	Climate resilient agriculture	Climate change and its mitigation through climate resilient agriculture	April	1	F & FW	1	25	NICRA
14	Diversified freshwater fish and prawn culture	Composite fish culture	April	4	RY	1	13	IFF-BKC College
15	Catfish breeding and management	Breeding of Indigenous catfish in backyard system	April, June	5	F & FW	1	33	DCBS
16	Freshwater fish & prawn farming	Composite fish culture	April	1	RY	1	43	Surendranath College
17	Freshwater fish & prawn farming	Composite fish culture	April	1	RY	1	17	Vivekananda College for woman
18	Diversified freshwater fish and prawn farming	Composite fish culture	May	4	RY	2	80	IFF- Asutosh College
19	Freshwater fish & prawn farming	Composite fish culture	May	1	RY	1	65	Vedanta College
20	Scientific beekeeping	Beekeeping	June	1	EP	1	65	Neotia
21	Seed treatment and seedbed management in kharif paddy	Integrated Disease Management	June	1	F & FW	1	45	NICRA
22	Identification of important pest-diseases and their integrated management	Integrated Pest Management	June	4	EP	1	41	DAESI
23	Scientific Beekeeping as an alternative livelihood option	Beekeeping	June	4	F & FW	1	20	AICRP
24	Principals and practices of Natural farming	Biocontrol of pests and diseases	June	1	F & FW	1	35	NICRA

Contd….

25	Diversified freshwater fish and prawn farming	Composite fish culture	June	1	RY	1	57	Midnapore City College
26	Freshwater fish & prawn farming	Composite fish culture	June	1	RY	1	14	Sammilani Mahavidyalaya
27	Integrated pest management in Kharif vegetables	Integrated Pest Management	July	1	F & FW	1	25	NICRA
28	Pest and disease management in the changing climate scenario	Integrated Pest Management	August	1	F & FW	1	25	NICRA
29	Fish rearing and management	Composite fish culture	August	7	RY	1	15	MANAGE-STRY
30	Integrated pest management for chilli leaf curl virus	Integrated Pest Management	September	1	F & FW	1	35	NICRA
31	Ornamental fish farming	Breeding and culture of ornamental fishes	September	1	F & FW	1	50	ICAR-CIFRI
32	Crop planning for Rabi season in NICRA village	Climate resilient agriculture	October	1	F & FW	1	64	NICRA
33	Diversified freshwater fish and prawn culture	Composite fish culture	October	4	RY	1	43	Khejuri College
34	Scientific Goat Farming	Goat Farming	October	4	F & FW	1	30	SCSP
35	Animal Husbandry based IFS with special emphasis on goat rearing	IFS	October	6	F & FW	1	20	SCSP
36	Animal Husbandry based IFS with special emphasis on Animal Husbandry	IFS	October	6	F & FW	1	30	SDB
37	Vocational Teachers Training on Crop Management	Integrated Crop Management	November	3	EP	1	16	Govt. of West Bengal
38	Integrated Farming System with special emphasis on Animal Husbandry	IFS	December	6	F & FW	1	30	SDB
39	IPM in Rabi crops	Integrated Pest Management	December	1	F & FW	1	26	NICRA
40	Hands on training on biopesticide for natural farming	Biocontrol of pests and diseases	December	1	F & FW	1	29	NICRA
41	Integrated Fish Farming	Integrated Fish Farming	December	5	F & FW	1	30	SDB
42	Scientific Rearing of RIR Poultry Bird at Backyard System	Poultry Management	December	4	F & FW	1	50	SCSP

b) Details of participation

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Crop production and management													
Increasing production and productivity of crops													
Commercial production of vegetables													
Production and value addition													
Fruit Plants													
Ornamental plants													
Spices crops													
Soil health and fertility management													
Production of Inputs at site													
Methods of protective cultivation													
Other													
Beekeeping	8	133	21	154	71	3	74	0	0	0	204	24	228
Climate resilient agriculture	4	0	0	0	108	17	125	0	0	0	108	17	125
Integrated Disease Management	1	0	0	0	37	8	45	0	0	0	37	8	45
Integrated Pest Management	5	29	2	31	86	35	121	0	0	0	115	37	152
Biocontrol of pests and diseases	2	0	0	0	12	52	64	0	0	0	12	52	64

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
Diploma in Agricultural Extension Services	2	49	10	59	19	2	21	0	0	0	68	12	80
Integrated Crop Management	1	14	1	15	1	0	1	0	0	0	15	1	16
Total	**23**	**225**	**34**	**259**	**334**	**117**	**451**	**0**	**0**	**0**	**559**	**151**	**710**
Post harvest technology and value addition													
Processing and value addition													
Other													
Total													
Farm machinery													
Farm machinery, tools and implements													
Other													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Livestock and fisheries													
Livestock production and management													
Animal Nutrition Management													
Animal Disease Management													
Fisheries Nutrition													
Fisheries Management													
Other													
IFS	3	24	1	25	26	29	55	0	0	0	50	30	80
Goat Farming	1	0	0	0	28	2	30	0	0	0	28	2	30
Poultry Management	1	0	0	0	10	40	50	0	0	0	10	40	50
Composite fish culture	12	168	106	274	99	33	132	1	1	2	268	140	408
Integrated Fish Farming	2	15	1	16	37	7	44	0	0	0	52	8	60
introduction of new species	1	12	0	12	30	3	33	0	0	0	42	3	45

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
Breeding and culture of ornamental fishes	1	0	5	5	0	45	45	0	0	0	0	50	50
Breeding of Indigenous catfish in backyard system	2	8	1	9	33	5	38	0	0	0	41	6	47
Total	**23**	**227**	**114**	**341**	**263**	**164**	**427**	**1**	**1**	**2**	**491**	**279**	**770**
Home Science													
Household nutritional security													
Economic empowerment of women													
Drudgery reduction of women													
Other													
Total													
Agricultural Extension													
Capacity Building and Group Dynamics													
Other													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	**46**	**452**	**148**	**600**	**597**	**281**	**878**	**1**	**1**	**2**	**1050**	**430**	**1480**

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	4	108	31	139	79.14	0	0	0	108	31	139
Kisan Mela	6	5670	2586	8256	61.8	130	14	144	5800	2600	8400
Kisan Ghosthi	1	107	38	145	60.1	3	2	5	110	40	150
Exhibition	2	1969	1776	3745	55.88	61	34	95	2030	1810	3840
Film Show	12	410	220	630	62.57	-	-	-	410	220	630
Method Demonstrations	23	1424	301	1725	57.67	-	-	-	1424	301	1725
Farmers Seminar	2	82	11	93	26.88	0	0	0	82	11	93
Workshop	2	78	50	128	62.5	0	0	0	78	50	128
Group meetings	7	776	93	869	68.48	14	8	22	790	101	891
Lectures delivered as resource persons	33	1117	300	1417	74.62	-	-	-	1117	300	1417
Advisory Services	178	159	19	178	55.62	0	0	0	159	19	178
Scientific visit to farmers field	24	291	64	355	50.14	6	0	0	297	64	361
Farmers visit to KVK	52	1185	403	1588	64.9	-	-	-	1185	403	1588
Diagnostic visits	152	151	1	152	54.61	0	0	0	151	1	152
Exposure visits	4	147	19	166	29.52	0	0	0	147	19	166
Ex-trainees Sammelan	2	-	-	-	-	-	-	-	-	-	-
Soil health Camp	5	-	-	-	-	-	-	-	-	-	-
Animal Health Camp MVC	960	22190	11247	33437	48.62	18	-	18	22208	11247	33455
Agri mobile clinic	-	-	-	-	-	-	-	-	-	-	-
Soil test campaigns	-	-	-	-	-	-	-	-	-	-	-
Farm Science Club Conveners meet	6	-	-	-	-	-	-	-	-	-	-
Self Help Group Conveners meetings	-	-	-	-	-	-	-	-	-	-	-
Mahila Mandals Conveners meetings	-	-	-	-	-	-	-	-	-	-	-
Celebration of important days (specify)	23	988	586	1574	62.92	22	14	36	1010	600	1610
Sankalp Se Siddhi	-	-	-	-	-	-	-	-	-	-	-
Swatchta Hi Sewa	74	1309	509	1818	68.47	-	-	-	1309	509	1818
Mahila Kisan Divas	1	0	98	98	67.08	-	1	1	-	98	98
Any Other (Specify)											
Week celebration	5	171	96	267	61.64	2	5	7	173	101	274
SMS alert	46	57113	4064	61177	46.8	-	-	-	57113	4064	61177
Total	**1624**	**95445**	**22512**	**117957**	**-**	**256**	**78**	**328**	**95701**	**22589**	**118290**

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

Nature of Extension Activity	No. of activities
Newspaper coverage	1
Radio talks	12
TV talks	8
Popular articles	6
Extension Literature	8
Other, if any	-
Research paper	2
Books	2
Technical reports	37
Electronic Publication (CD/DVD etc)	4

3.5 a. Production and supply of Technological products

Village seed

Crop	Variety	Quantity of seed (q)	Value (Rs)	No. of farmers involved in village seed production	Number of farmers to whom seed provided			
					SC	ST	Other	Total
Fish (Spawn)	Indian major carps	47.5 million pcs	179638.00	7	18	3	25	46
Catfish (Fry)	Magur & singhi	62100 pcs	217350.00	13	42	7	84	133
Sunflower	LFSH- 171	5.45	441450	22	120	35	5	0
Sesame	Suprava	4.40	96800	13	98	25	3	0
Total								

KVK farm

Crop	Variety	Quantity of seed (q)	Value (Rs)	Number of farmers to whom seed provided							
				SC		ST		Other		Total	
				M	F	M	F	M	F	M	F
Paddy	Sabita (C)	9.75	39000	29	4	1	0	55	11	85	15
	Sabita (F)	4.20	17640	10	6	0	1	20	4	30	11
	VarshaDhan (C)	9.36	37440	22	5	2	0	50	11	74	16
	VarshaDhan (F)	9.00	37800	25	5	0	0	45	10	70	15
	Lunishree (F)	8.00	33600	20	5	1	0	38	5	59	10
	Sujala (F)	13.70	57540	35	11	3	1	62	13	100	25
	CR-Dhan 802 (F)	5.30	22260	12	3	1	0	30	7	43	10
	Ranjit Sub-1(F)	3.40	14280	10	1	0	0	18	5	28	6
	Pratikshya (C)	5.25	21000	15	0	0	0	32	8	47	8
	Pratikshya (F)	7.00	29400	18	3	0	1	27	13	45	17
	BidhanSuruchi (F)	3.90	16380	12	2	0	0	17	5	29	7
	Swarna Shreya (C)	5.10	20400	10	6	1	0	21	7	32	13
	Dudheswar (TL)	1.50	5250	4	0	0	0	5	1	9	1
	Luna Swarna (TL)	3.00	9000	7	3	0	0	16	2	23	5
	MTU-1223 (TL)	4.95	17325	12	4	1	0	16	9	29	13
Greengram	IPM-205-7 (C)	11.60	145000	26	7	2	1	40	25	68	33
Greengram	IPM-02-14 (F)	0.36	5040	3	1	0	0	6	2	9	3
Blackgram	PU-31 (C)	1.40	14000	5	2	0	1	9	6	14	9
Cotton	Surabhi	16.80	294000	48	9	2	2	87	27	137	38
Finger millet	Arjun	0.68	6800	6	4	0	0	17	5	23	9
Rice bean	Bidhan rice bean 2	0.45	5625	4	1	0	0	5	3	9	4
Grand Total		124.7	848780	333	82	14	7	616	179	963	268

Production of planting materials by the KVKs

Crop	Variety	No. of planting materials	Value (Rs)	Number of farmers to whom planting material provided			
				SC	ST	Other	Total
Vegetable seedlings							
Brinjal	Muktakeshi	2870	2870	27	-	75	102
Chilli	Tejaswini	23800	35700	15	-	24	39
Tomato	Deb	25750	38625	14	-	20	34
Cauliflower	Dawn	5670	5670	6		19	25
Cabbage	Rare ball	6540	6540	7	1	9	17
Knolkhol	Taki Winner	3600	3600	5	-	5	10
Beet	Crimson Globe	5230	5230	-	-	-	0
Fruits							0
Guava	Allahabad Safeda	478	19120		-		0
Mango	Amrapali	576	23040	43	-	54	97
Sapota	Cricket Ball	650	26000	62	-	55	117
Lime	Pati	784	31360	15	-	7	22
Dragon fruit	Pink fleshed	2144	85760				0
Ornamental plants	Dahlia, Chrysanthemum	25925	51850	255	-	543	798
Plantation (Coconut)	East Coast tall	3820	114600	56	-	71	127
Elephant yams							
Fodder crop saplings							
Forest Species							
Total		107837	449965	505	1	882	1388

Production of Bio- product by KVKs

Bio -product	Name of the Bio - product	Quantity (no.)	Quantity (Kg.)	Value (Rs.)	Number of farmers	Quantity (no.)	Quantity (Kg.)	Value (Rs.)	Number of farmers	Quantity (no.)	Quantity (Kg.)	Value (Rs.)	Number of farmers	Quantity (no.)	Quantity (Kg.)	Value (Rs.)	Number of farmers
Bio- fertilisers		**A&N Islands**				**Odisha**				**West bengal**				**Total**			
Non Symbiotic Azotobacter																	
Vermi compost										**-**	**96000**	**956614**	**1854**	**-**	**96000**	**956614**	**1854**
Azolla																	
Earth worms																	
Compost																	
Worms																	
Blue green algae																	
NADEP																	
Azatobactor																	
Azospirillum																	
PSB																	
Rhizobium																	
Azolla culture																	
Total																	
Bio- pestisides																	
Neem extract																	
Tobacco extract																	
Trichodermaviride																	
Panchagavya																	
Trichoderma																	
Total																	
Worms																	
Eudriluseuniae																	
Total																	
Earth worm																	
Eiseniafoetida																	
Earth worm																	
Total																	

Contd…

Bio- fungicides																	
Trichoderma harzianum										-							
Pseudomonas fluorescens										-							
Total																	
others																	
Vermiculture																	
Mushroom-spawn																	
Cuelure										-							
Mineral mixture																	
Cow dung(dry)										-	60000	48000	12	-	60000	48000	12
Cow dung(wet)										-	78000	39000	8	-	78000	39000	8
Total										-							
Grand Total										-	-	-	-				

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							
Others (Pl. specify)							
Small ruminants							
Sheep							
Goat							
Other, please specify							
Poultry							
Broilers							
Layers							
Duals (broiler and layer)							
Japanese Quail							
Turkey							
Emu							
Ducks							
Others (Pl. specify)							
Piggery							
Piglet							
Hog							
Others (Pl. specify)							
Fisheries							
Indian carp							
Exotic carp							
Mixed carp							
Fish fingerlings	-	-					
Spawn	IMC Spawn	9.2 million pcs	3,94,345.00	12	2	14	28
Others	IMC Fry	2.6 lakh pcs					
	Asian catfish –Singhi	17,300 pcs					
	Asian catfish –Desi magur	93,800 pcs					
Grand Total							

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 Oilseeds Seed Hub (Sunflower & Sesame); Ramkrishna Ashram KVK, Nimpith, South 24 Parganas, WB - 743338

Name of Nodal Officer :	Dr. Avijit Roy
Address :	Incharge, Seed Hub Project,Ramkrishna Ashram KVK, Nimpith, South 24 Parganas, West Bengal - 743338
e-mail :	nimpithkvk@redifmail.com, nimpithkvk1979@gmail.com
Phone No. : Mobile :	03218-226002 9475689098

ii) Quality Seed Production Reports

Season	Crop	Variety	Production (q)			
			Target	Area sown (ha)	Production (q)	Category of Seed (F/S, C/S)
Kharif 2022	-	-	-	-	-	-
Rabi 2021-22	Sunflower	LSFH-171	1250	65	5.45	C
	Sesame	Suprava (CUMS-17)	500	7	4.40	F
Summer/Spring 2022	-	-	-	-	-	-

i) Financial Progress

Fund received (2019-20, 2020-21, 2021-22,2022-23)		Expenditure (Rs. in lakhs)		Unspent balance (Rs. in lakhs)	Remarks
		Infrastructure	Revolving fund		
2019-20	10.0	-	20.42136	63.25200	Income generation through selling of seeds Rs. 24.00964
2020-21	0	-	8.68490	62.88423	Income generation through selling of seeds: Rs. 6.35892
2021-22	0	-	4.91968	60.79040	Income generation through selling of seeds: 1.89747
2022-23	0	-	5.38995	60.26672	Income generation through selling of seeds: Rs.3.03281

ii) Infrastructure Development

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

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

Item	Title	Author's name	Number	Circulation
Research paper	Biofumigation based integrated disease management against Athelia rolfsii (syn. Sclerotium rolfsii Sacc.) induced collar rot disease of betelvine (Piper betle L.), Journal of Plant Pathology 104 (3), 1027-1038	PK Garain, B Mondal, S Dutta		-
	Collar Rot Disease of Betelvine (Piper betle L.) under Coastal Saline Zone of West Bengal Journal of Krishi Vigyan 11 (1), 39-46	PK Garain, B Mondal		-
Seminar/conference/ symposia papers	Climate resilient farming models for different Farming System Typologies in Sundarbans. Paper presented in 9th Annual Convention and Webinar on "Managing Agro-chemicals for Crop and Environmental Health" of Society for fertilizers & Environment held on February 25 & 26, 2022	P. K. Garain, C. K. Mondal, F. H. Rahman and S. Jana		-
	Performance of climate resilient farming models for different farming system typologies in Sundarbans. 3rd National Conference on Natural, Farming, Organic Farming and Chemical, Farming in Indian Agriculture Present Scenario and Way Forward. Society of Krishi Vigyan, 17-19 October 2022	P. K. Garain		
	Climate Change Adaptation Models for the Major Farming System Typologies in Sundarbans. First International Conference in 'Reimagining Rainfed Agro-ecosystems: Challenges and Opportunities'. Extended Summaries. Indian Society of Dryland Agriculture, Hyderabad. 22-24 December 2022	P. K. Garain, C. K. Mondal, F. H. Rahman and A. Saha		
	Performance of Land Shaping as a Climate Smart Model for the Sundarban. First International Conference in 'Reimagining Rainfed Agro-ecosystems: Challenges and Opportunities'. Extended Summaries. Indian Society of Dryland Agriculture, Hyderabad. 22-24 December 2022	P. K. Garain, C. K. Mondal, A. Saha and F. H. Rahman		
Books	Climate Resilient Agriculture – a road map towards sustainable rural livelihood in Sundarbans	P. K. Garain, P. Chatterjee, S. Jana, R. Rahman		
	Standard Operating Procedure (SOP) on Beekeeping and Honey Production (English and Bengali)	P. K. Garain		

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Item	Title	Author's name	Number	Circulation
Bulletins				
News letter	Doubling of income from bitter gourd cultivation by poly-mulching and innovative trellis design in South 24 Parganas in *NICRA Newsletter*, Page 2 Vol VIII No. 2, July 2022, ICAR-ATARI Kolkata	C. K. Mondal and P. K. Garain		
	"Biotic and abiotic stress tolerance in the bio-fortified (high protein content) rice CR Dhan 310 in Sundarbans of South 24 Parganas"	P. Chatterjee & P. K. Garain	NICRA Newsletter, Page 2, Vol. VII, No. 1, January 2021	
	"Journey of Mrs. Barnali Dhara from a House Wife to National Mahila Kisan Award"	P. K. Garain	DAESI Samachar, Vol. I, Issue II, march-April 2021, pp. 6	
Popular Articles				
Book Chapter				
Extension Pamphlets/ literature	Joiba Upaye Fosoler Rog-Poka Niyantran (Pest-Disease Management of Crops through Organic Method)	P. K. Garain		
Technical reports	Annual report and Action Plan of AICRP (HB & P)	P. K. Garain	2	
	Annual report and action plan for NICRA	P. K. Garain	2	
	Weekly report for DAESI diploma course	P. K. Garain	96	
Electronic Publication (CD/DVD etc)	Success story on DAESI	P. K. Garain		
	Success story on STRY (Beekeeping)	P. K. Garain		
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.	Workshop	Review Workshop	Dr. P. K. Garain	18-19 May 2022	SAMETI, Narendrapur
2.	Workshop-cum-Training Programme	Workshop-cum-Training Programme	Mr. Somnath Sardar, SMS, Agronomy	21.03.2022 -22.03.2022	Bidhan Chandra Krishi Viswavidyalaya, Directorate of Extension Education, Dist. Nadia
3.	NICRA-TDC Capacity Building Programme on data collection and project running in the new phase	Main theme is typology data collection and data should have to be collected in research data collection mode	Dr. C. K. Mondal, Sr. Scientist and Head	21.08.2022-23.08.2022	CRIDA, Hyderabad
4.	Presented paper on NICRA Project. Awarded 'Best Scientist and Best poster presented awards	National Seminar	Dr. P. K. Garain, SMS, Plant Protection	15.10.2022 - 21.10.2022	Society of Krishi Vigyan and KVK Ujjain, Madhyapradesh
5.	Workshop-cum-Training Programme	Workshop-cum-Training Programme	Mr. Somnath Sardar, SMS, Agronomy	17.11.2022 -18.11.2022	Bidhan Chandra Krishi Viswavidyalaya, Directorate of Extension Education, Dist. Nadia
6.	Workshop	Capacity building and Action plan workshop on Natural farming for West Bengal KVKs	Dr. Chandan kr. Mondal, Senior scientist & Head, Mr. SomnathSardar, SMS-Agronomy	29.11.2022	SSKVK, RKMVERI
7.	National workshop	Natural farming	Mr. SomnathSardar, SMS-Agronomy	03.12.2022	RVSKVV, Gwalior
8.	Orientation cum training programme	Natural farming	Mr. SomnathSardar, SMS-Agronomy	12.12.2022-13.12.2022 (2 days)	State Natural Farming Training Centre, Gurukul, Kurukshetra, Haryana
9.	International Workshop	Workshop	Dr. M. Chakraborty, SMS(Home Science)	17.08.22-19.08.22	WHH,Germany

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

Success stories-1

Name of farmers' group	Bonphool Agro Producer Company Ltd. FPC CIN No. U01100WB2021PTC244229
Address	Vill.: Bubaneswari, Block: Kultali, Dist.: South 24 Parganas
Contact details (Phone, mobile, email Id)	Pralay Samanta, Chairman Mob: 9547326188, e-mail: bonphoolfpo@gmail.com
Landholding (in ha.)	1300 beehives, honey processing plant
Name and description of the farm/ enterprise	The FPC is formed to carryout group beekeeping, honey processing and marketing of branded honey in the name of "Bonphool". All the 55 members of this FPC are wild honey hunters of Sundarbans. They used to venture deep forest to collect forest honey from the wild bees (*Apis dorsata*). There are high chance of fatal combat with Tigers during this process. To reduce human death and subsequent drudgery of the tiger widows, these wild honey hunters were trained on scientific beekeeping by the KVK. They have started group beekeeping with the European Honeybee (*Apis mellifera*). Presently the group has 1300 bee colonies. The bee colonies are kept inside the mangrove forest under the protected boundary of Forest Beat Offices (Kalash, Bony Camp and Chulkathi) during honey flow season (April to June) in Sundarban. For rest of the season, the colonies are migrated to different districts according to the honey flow.
Economic impact	The mangrove honey, branded as "Bonphool", is being sold through online platform (Amazon and the cooperative's own website www.sundarbansjfmc.org), Govt. outlet (Biswa Bangla under the West Bengal Government), supermarket (Urban Forestry), local market and middlemen. The group produced 60 MT honey in 2022. The total sale proceeds were Rs. 1.80 crore with a net profit of Rs. 0.98 crore in the same year. Now each member of the FPC earns a minimum of Rs. 1.50 lakh per annum and that also without risking their lives.
Social impact	This group beekeeping enterprise has become an eye opener in the entire Sundarban for safe rehabilitation of wild honey hunters who otherwise risks their lives without any substantial monetary gain.
Environmental impact	Scientific beekeeping enterprise has reduced the pressure on the wild bee population. This initiative has helped to save thousand colonies of *Apis dorsata* from unscientific hunting and destruction.
Horizontal/ Vertical spread	Several *tiger widows* are associated with the programme regretting their misfortune; had their husbands adopted beekeeping, they would have lived now happily together. More than 50 of such distressed families are in the process to join this FPC. Trainings are organized for fore honey hunters to capacitate them and group them into such group beekeeping. More than 100 rural youths received training on beekeeping from the KVK, who are now maintaining beehives in their premises and willing to turn into commercial beekeeper.
Good quality photographs (2-3)	 

Success stories-2

Name of farmer	**Shankar Naskar**
Address	Vill.: Kaikhali, Post : Kaikhali Ashram, Block: Kultali, Dist. : South 24 Parganas, Pin : 743338
Contact details	Mobile: 9083839019, AADHAAR: 330153067115
Landholding	Irrigated: 0.30 acre; Rainfed: 0.74 ac; Pond: 2 no. (0.1 ac); Total: 1.14 acre
Name and description of the farm/ enterprise	➢ In situ water harvesting: Ail cultivation, Rooftop Rain Water Harvesting, Mulching ➢ Ex-situ water harvesting: Land Shaping technology ➢ Improved varieties: Rice (var. Varshadhan), Green gram (Var. IPM 205-7), Chilli (var. Eagle and Arka Tejasvi) etc. ➢ Farm machinery usage: Kisan Drone, Power tiller, paddy thresher, battery operated sprayer etc. ➢ Use of Kisan Drone It is a new experience for Mr. Naskar and the other villagers. All the villagers doubted on the effectiveness of the drone in spraying the fields uniformly. But after the practical demonstration on the greengram field of Mr. Naskar, everyone became ready to spray on their plots also. Greengram is the second most important crop in the District after paddy. It is cultivated as Rabi-Summer pulse crop after harvesting paddy rice. However, least care is taken in this crop regarding pest management as most of the farmers and labourers migrate to cities after harvesting the preceding crop. So it is difficult to find labours to spray the crop in case of pest infestation. In this situation the use of Kisan Drone for foliar application of Neem Oil (Azadirachtin) has twin advantage of saving time and labour in addition to increasing crop productivity. 400 ml Azadirachtin (10000ppm) was sprayed with 10 L water over one acre area in 8 min. To cover the same area with manual spraying would have required 5-6hr for an agricultural labour. In one day it was possible to spray 30 acre of greengram plots with the help of one Kisan Drone.
Economic impact	Net Annual Income: Rs. 251940/- per annum

Crops grown:	Variety	Area (acres)	Productivity (kg/acre)
Paddy (Kharif)	Varshadhan	0.79	1457
Greengram (Rabi)	IPM 205-7	0.44	462
Potato	Kufri jyoti	0.15	12753
Bittergourd (Kharif)	US 1315	0.10	11336
Pumpkin (Kharif)	Tarakeswar (Local)	0.02	12470
Pumpkin (Rabi)	VNR P-6	0.02	12632
Cucumber (Summer)	Seven Star (Local)	0.05	5061
Okra (Rabi)	Rohini	0.22	9069
Chili (Rabi)	Eagle	0.10	4656
Ridgegourd (Kharif)	Uluberia (Local)	0.05	7530
Cabbage (Rabi)	Rareball	0.02	11741
Livestock (no.): 2 cow		Poultry (no.): 11 layers	
Small ruminants (no.): 6 goat		Farm machinery available: Sprayer (Avails the facility of custom hiring centre)	

Success stories-2 (Contd…)

Social impact	➢ Many farmers from within and outside of the state comes to visit Kaikhali village to see the impact of the NICRA project. ➢ Shankar leads them to show the transformation of his farming and his life due to adoption of the climate resilient agricultural practices. ➢ He is also very much interested in biological control of pest and diseases and he practices so. ➢ The use of Kisan Drone helped in o Timely spraying of agro-chemicals while covering large area o Cost effective and saves time and labour o Uniform application of agro-chemical on both surfaces of leaves and throughout the field o Safeguard to the farmer/ labourer
Environmental impact	The climate resilient farming technologies helped to mitigate the effect of intensive rainfall and submergence, drought spell and soil salinity.
Horizontal/ Vertical spread	Many farmers from the village came to visit Mr. Naskars plot duing the spraying with Drone. As per their demand, the Kisan Drone was used in another 40 farmers plot in and around the village. Mr. Naskar led them to show the transformation of his farming and his life due to adoption of several climate resilient agricultural practices. More than 200 ha cropland in the district has been sprayed with nano-urea and neem oil with the help of Kisan Drone in collaboration with the ICAR-ATARI Kolkata.
Good quality photographs (2-3)	 

Success stories-3

Name of farmer	**Sanat Naskar**
Address	Vill. : Bongheri, Post : Kaikhali Ashram, Block: Kultali, Dist. : South 24 Parganas, Pin: 743338
Contact details	Mobile: 9647159390, AADHAAR: 968094882569
Landholding	1.70 acre
Name and description of the farm/ enterprise	Sri Sanat Naskar is a well-educated (graduate) and enthusiastic rural youth, who is always busy in experimentation and improvisation of agricultural technologies in his farm. As a resource conservationist, he has already been recognized by the ICAR-CRIDA Hyderabad for adopting rainwater harvesting and micro-irrigation. Now he experimenting with poly-mulching in his bittergourd plot through an innovative trellis design. He started growing bittergourd (var. US-6207) in his 0.053 ha Land Shaping plot in the 4th week of April 2022. By that time he had very less amount of water for optimum irrigation. The poly-mulching helped him to reduce the water requirement by 30%. As there was no weed infestation, he could save the entire labour cost towards manual weeding. Less weed infestation increased fertilizer use efficiency. According to Mr. Naskar he applied 20% less fertilizers in his plot. At the same time infestation of thrips was less in his plot. The silver-coloured poly-mulch surface helped to reflect the sunshine which in turn reduced the thrips population in his plot. The innovative trellis design (triangular/ zigzag roof) helped to increase the canopy area by 2.5 times over normal trellis (flat roof). Thus, the overall production increased by 36% and net income increased by 114%. Some of the other climate resilient activities taken up by Sanat are: ➢ Land Shaping and ail cultivation ➢ Use of sprinkler irrigation for water saving irrigation ➢ Use of farm machineries from village Custom Hiring Centre for timely land preparation ➢ Use of improved varieties (Paddy - Swarna Sub 1 and hybrid vegetables) ➢ On-farm mass production of microbial bio-pesticides for minimizing chemical pesticide usage ➢ Periodic soil testing and soil test based fertilizer application
Economic impact	After intervention the annual income is Rs. 223661/- from the same area. The increase of income is now 286% over the income earned before NICRA intervention.
Social impact	➢ Many farmers from within and outside of the state comes to visit Bongheri village to see the impact of the NICRA project. ➢ Sanat leads them to show the transformation of his farming and his life due to adoption of the climate resilient agricultural practices. ➢ He is also very much interested in biological control of pest and diseases and he practices so.
Environmental impact	The climate resilient farming technologies helped to mitigate the effect of intensive rainfall and submergence, drought spell and soil salinity. The poly-mulching helped him to reduce the water requirement by 30%. As there was no weed infestation, he could save the entire labour cost towards manual weeding. Less weed infestation increased fertilizer use efficiency. According to Mr. Naskar he applied 20% less fertilizers in his plot. At the same time infestation of thrips was less in his plot. The silver-coloured poly-mulch surface helped to reflect the sunshine which in turn reduced the thrips population in his plot.
Horizontal/ Vertical spread	✓ Horizontal spread of poly mulching for higher production in Bittergourd during moisture stressed saline situation in other nearby villages of Kultali block & Mathurapur II Block. ✓ Good practice of periodic soil testing and soil test based fertilizer application are being promoted in the nearby blocks ✓ Use of improved varieties are being promoted through self-initiative after visible success

Success stories-3 (Contd….)

Good quality photographs (2-3)	 

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
1	Linking agriculture, natural resources and nutrition	Dr. M. Chakraborty	Nutrition sensitive approach for management and planning of agriculture and natyurasl resources by the community in a away that helps them achieve sustainable food and nutritional security
2	Nutrition sensitive integrated farming for dietary diversity and food security	Dr. M. Chakraborty	Participatory learning action process

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
	-	-	-

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	Vegetable crops throughout theyear	3.2 ha	718.3 qts.	96	Yes

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, RRA & Trend analysis at 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.
6	Online training through Googly Meet and Zoom	Online training programme was organized in association with On campus and Off campus training programme to initiate regular support for remote farmers.
7	Webinar	Hand holding demonstration also being organized through webinar

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	Turbidity Meter ('Systronics' Make; Model 135)	1
6	Digital Bottle Top Burrete ('Brand' Make)	1
7	Micro Controller Based Digital Flame Photometer ('Systronics' Make; Model 128)	2
8	Digital pH Meter ('Systronics' Make; Model 335)	22
9	Digital Conductivity Meter ('Systronics' Make; Model 307)	2
10	Bouyoucos Hydrometer (ASTM 152H; Range 5 – 60 g/lt)	1
11	Brass Sieve (2mm; 1mm; 0.5mm; 0.25mm; 0.1mm; 0.02mm)	1 Set
12	Double Distillation Unit (Borosil; All Glass; Horizontal; Output 2.5 lt/hr)	1
13	Single Distillation Unit (All Glass) (3Kw; 5 lt/ha)	1
14	Refrigerator (LG make, Model – GL Q2925DSRBOSZEBN)	1
15	Digital Balance ('K. Roy' Make; Model DJ – 302A)	1

3.11. a. Details of equipment available in Soil and Water Testing Laboratory (Contd…)

Sl. No	Name of the Equipment	Qty.
16	Digital Balance (Portable Type)	3
17	Hot Air oven (3’ x 2’ x 2’)	1
18	Water Bath (6 hole)	1
19	Hot plate	1
20	Mechanical Shaker (2 hp motor, 3’ x 2’ x 2’)	1
21	Mechanical Shaker (0.5 hp motor, 1’ x 1’)	1
22	Muffel Furnace (2’ x 1.5’ x 1.5’)	1
23	HP Desktop Computer MODEL 48PA; Cor-i 3 7th Gen, 4gb RAM/1 TB HDD/ 18.5” Monitor/ Key Board/ Mouse	1
24	HP Laser Printer All in One A3 size/ Print/Scan/Copy (Model: MFP M435NW) (1 yr on-site warranty)	1
25	Kjeldahl digestion and distillation unit	1

3.11.b. Details of samples analyzed so far (during 2022) :

Number of soil samples analyzed in 2022			No. of Farmers	No. of Villages	Amount realized (in Rs.)
Through mini soil testing kit/labs	Through soil testing laboratory	Total			
-	1366	1366	1366	378	269600.00

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	Soil Health Cards distribution	91	2	1. Swami Sadananda, Secretary, Sri Ramkrishna Ashram, Nimpith 2. Mrs. Antima Halder, Assistant Director of Agriculture, Jaynagar-II Block represented District Agriculture Department	86	86

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
5	8	-	611	11

3.13. Technology week celebration

Type of activities	No. of activities	Number of participants	Related crop/ livestock technology
Theme: "Natural Farming for a Sustainable Future" and 'International Year of Millet' Seminar, Exhibition, flower & vegetable show, Technology display stalls, Cattle show.	1	6815	Rainwater harvesting, oilseed cultivation, ornamental fish, vegetables

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

No of student trained	No of days stayed
RAWE Participants of B.Sc. (Ag) of The Neotia University, West Bengal: 51	7 Week (22.09.2022 to 04.11.2022)
MDP training for the Newly recruited Sr Scientist and Head of KVKs: 5	10 days (02.07.22 – 11.07.22)

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

Date	Name of the Person	Purpose of Visit
21st February, 2022	Nandini Ghosh, IAS, Senior Special Secretary, Dept. of Urban Development & Municipal Affairs, GoWB	To attend the meeting at Host Organization
4th March, 2022	Srimat Swami Nityakamanandaji Maharaj, Secretary, Ramakrishna Mission Seva Pratishthan, Kolkata	62nd Annual Celebration of Sri Ramkrishna Ashram, Nimpith and Agricultural Exhibition-cum-Technology Week
4th March, 2022	Hon'ble Justice Smt. Chaitali Chatterjee Das, District Judge-cum-Chairman,	Annual Agricultural Exhibition 2022
4th March, 2022	Dr. S.K. Roy, Director, ICAR-ATARI, Kolkata	Inaugural Programme of the Agricultural Exhibition cum Technology Week - 2022
4th March, 2022	Dr. A. R. Khan, Chief General Manager, NABARD, NABARD Bhawan, Kolkata	Inaugural Programme of the Agricultural Exhibition cum Technology Week - 2022
4th March, 2022	Hon'ble Justice Smt. Chaitali Chatterjee Das, District Judge & Chairman, District Legal Services Authority, Alipore	Inaugural Programme of the Agricultural Exhibition cum Technology Week – 2022
6th March, 2022	Shri Biswanath Das Member of Legislative Assembly, Joynagar	Agriultural Exhibition cum Technology Week - 2022

3.15. List of VIP visitors (Minister/ MP/MLA/DM/VC/Zila Sabhadipati/Other Head of Organization/Foreigners) (Contd…)

17th June, 2022	Dr. B.K. Das, Director, ICAR- CIFRI	Awareness programme about PPV & FR Act
3rd September, 2022	Dr. Amitabha Bandyapadhayay, Formar Director, ICAR Nayabad, Kolkata 94	Visit for Workshop of project formulation to be submitted in NLM and NABARD
31st October, 2022	Shri Bankim Chandra Hazra Hon'ble Minister In-Charge, Dept. of Sundarban Affairs, Govt. of West Bengal	Inaugural Programme of the SDB funded Project on **'Capacity Building Programme for the Youths and Practicing Farmers of Sundarbans'**
31st October, 2022	Shri Biswanath Das Member of Legislative Assembly, Joynagar	Inaugural Programme of the SDB funded Project on **'Capacity Building Programme for the Youths and Practicing Farmers of Sundarbans'**
31st October, 2022	Shri Kallol Khan Hon'ble Chairman, W B Khadi & Village Industry Board	Inaugural Programme of the SDB funded Project on **'Capacity Building Programme for the Youths and Practicing Farmers of Sundarbans'**
23rd December, 2022	Dr. S.K. Roy, Director, ICAR-ATARI, Kolkata	SAC Meeting
23rd December, 2022	Dr. R. K. Samanta Former VC**,** BCKV, Nadia	SAC Meeting
23rd December, 2022	Shri Biswanath Das Member of Legislative Assembly, Joynagar	SAC Meeting
23rd December, 2022	Dr. Umesh Thapa DEE, BCKV, Nadia	SAC Meeting
30th December, 2022	Dr. V. K.Singh Director, ICAR-CRIDA, Hyderabad	Visit for observing NICRA project activities at NICRA village and KVK

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)
On-farm mass production of *Trichoderma* and its use in betelvine cultivation	545	48	Rs. 2.62 lakh per ha	Rs. 3.45 lakh per ha
Use of bio-control agents in bacterial wilt management in tomato and bitter gourd	410	62	Rs. 2.66 lakh per ha	Rs. 4.76 lakh per ha
Scientific management practices in Beekeeping	342	59	Rs. 2.64 lakh per yr	Rs. 3.40 lakh per yr
Diploma in Agricultural Extension Services for Input Dealers	560	61	Rs. 3.8 lakh per yr	Rs. 5.6 lakh per yr
On-farm mass production of *Trichoderma* and its use in betelvine cultivation	545	48	Rs. 2.62 lakh per ha	Rs. 3.45 lakh per ha

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

4.2. Cases of large scale adoption

Name of the Technology / intervention	Horizontal spread of the technology (No of direct beneficiary)
Integrated farming through Land shaping and rain water harvesting	964 ha (4870 farmers)
Ail and Aerial cultivation of vegetable crops	1087 ha (10345 farmers)
Cotton cultivation in rice fallows	562 ha (614 farmers)
Sunflower cultivation under irrigated rice fallows during Rabi-Summer	517 ha (4016 farmers)
Hi-tech betelvine boroj (GI structure and shade net boroj)	316 farmers
On-farm mass production of *Trichoderma* and its use in betelvine cultivation	545
Scientific Beekeeping	2000 beekeepers
Use of biocontrol agents (*Trichoderma harzianum, Pseudomonas fluorescens, Metarhizium anisopliae*) in pest disease management	3940 farmers
Use of bio-control agents in bacterial wilt management in tomato and bitter gourd	410
Improved method of Greengram cultivation a. YVMV resistant variety-IPM-02-14, IPM-205-7 (Virat) b. Seed treatment with Rhizobium, PSB, KSB, *Trichoderma harzianum and Pseudomonas fluorescens* c. Judicious use of environment friendly pesticides and micronutrient application (B and Mo)	387 ha (1520 farmers)
Breeding and larval rearing of Asian catfish (Desi Magur and Singhi)	113 rural youths
Mixed fish and prawn farming a. Stocking density of 11250 carp fingerling, 3750 prawn and 3750 catfish fingerling per ha b. Release of 23 different species of fishes	857 farmers

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

Sl. No.	Brief details of technology	Impact of the technology in subjective terms	Impact of the technology in objective terms
	Transfer of technology	-	-

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	

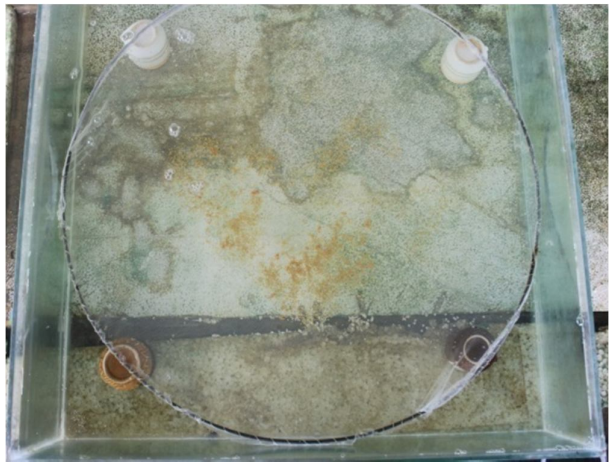
4.5. Details of entrepreneurship development

Agripreneure: 1

Name of farmer	SUBHANKAR HALDAR 
Age	22
Aadhaar No	675327392362
Address	Vill: Nalpukur P.O.: Gilarchat Block: Mathurapur II District: South 24 Parganas
Contact details (Phone, mobile, email Id)	9153057560 Email ID: haldarsubhankar513@gmail.com
Landholding (in ha)	0.53 ha
Education	Higher Secondary
Family members	5
Household income (before ARYA activity)	Rs.180000/- per year

4.5. Details of entrepreneurship development (Contd…)

Training received from RAKVK	Received 2 skill development trainings on breeding and culture of catfish and catfish hatchery management in the year 2021 and 2022
ARYA intervention	One unit of catfish hatchery was established in the year 2021-2022. Continuous technical backstopping and training was provided to the beneficiary as well as her family members for his successful establishment in the new venture.
Present production	Fry : 52000 nos., Fingerling: 8000 nos.
Marketing and income	a) Marketing of catfish seed takes place directly from the hatchery as there is huge demand for these fish seeds. b) Income from selling of fry: Rs.1,55,000.00 c) Income from selling of fingerlings: Rs. 40,000.00 d) Total income from 1st year : Rs. 1,95,000.00
Cost of cultivation	Rs. 45,000/-
Average net income per month	Rs.12,500/-
Social and Environmental impact	As a result of the production of catfish in the ARYA hatchery, the seeds of this almost endangered fish have become available in the villages. The ARYA youth is now utilizing the technology to breed other high valued but sparsely available indigenous fish, thus contributing to the restoration of those in the eco-system. The farmers and youths could culture this highly preferred fish in their domestic ponds to meet their daily protein needs, particularly for serving to the ailing people and children due to its high protein content. Others are taking keen interest to produce seeds of catfish of their own.
Horizontal/ Vertical spread	People from his own village and adjoining villages are buying seeds from him to stock in their ponds and thus the culture of this air breathing fish is once again gaining popularity.




Subhankar Halder in his catfish hatcherv

Agripreneure: 2

Name of farmer	Mihir Mondal 
Age	30
Aadhaar No	89240839983
Address	Vill: Bamanerchak Block: Kultali Dist: South 24 Parganas
Contact details (Phone, email Id)	9064095235
Landholding (in ha)	0.2
Education	Graduate
Family members	6
Household income (before ARYA activity)	96,000/-
Training received from RAKVK	Received skill development training on management of multipurpose horticulture nursery.
ARYA intervention	One unit of Horticulture Nursery consists of shade net house, battery operated sprayer, electric pump with all fitting, nursery tools etc. was established in the year 2021-2022. 4 day long skill developing training and continuous technical backstopping was provided to the beneficiary for his successful establishment in the new enterprise.
Present production	1,50,000 numbers of vegetable and flower seedling
Marketing and income	Direct sell to the consumer with an income of Rs. 2,05,000/- per year
Cost of cultivation	60,000/- (including manure, fertilizer, irrigation, labour fees)
Average net income per month	12,000/-
Social and Environmental impact	More number of farmers are getting interest in this new system of horticulture nursery. This climate smart system of cultivation is very much safe and produces better quality plant with very less use of pesticides.
Horizontal/ Vertical spread	Already he has trained and motivated 3 youths to adopt the technology and develop into entrepreneurship.


Mihir Mondal and his Horticulture Nursery

4.6. Any other initiative taken by the KVK

4.6.1. Agri Input Dealers – valued as quasi extension agents by the farmers

Agri input dealers act as first point of contact for the farmers in agri related consultancy. Approximately 2.82 lakh input dealers are present in the country to cater the farmers. Today's input intensive agriculture makes it compulsory for the Indian farmers to keep contact with their nearby input dealers. And this input related dependency is much often extended to sharing of farming related information. Farmers like to share their daily problems with persons they deal with daily. They go to input dealers to purchase seeds and enquire about any new or better variety. They go to input dealers for fertilizers and expect information regarding their types and doses. Farmers enquire input dealers about new pumpsets or sprayers. And most importantly, farmers are totally blind in plant protection related decision making without the support of input dealers. So, farmers expect the input dealers to perform multi faceted role in answering queries. Diagnosis, identification and solution to pest and diseases are the most important decision making support they sought from the dealers.

Formal training of the agri-input dealers in Sundarban region

Agri Input dealers can be effectively trained in formal Agricultural courses and engaged effectively in agricultural extension work. Ramkrishna Ashram KVK, Nimpith started the MANAGE affiliated one-year long course on Diploma in Agricultural Extension Services for Input Dealers (DAESI), for the first time in the Eastern India, in 2013. Till date, 14 batches have been completed by the KVK, covering 560 input dealers from various blocks of the Sundarban region under the district of South 24 Parganas in West Bengal. The Sundarban region falls under the coastal saline zone and faces the challenges of frequent cyclones, prolonged water stagnation, soil salinity, scarcity of irrigation, etc. Most of the farmers are resource poor and economically backward. Due to poor communication and remote location of the island villages, most of the farmers lack timely access to the agricultural information through the formal extension system. The present study was conducted to understand the impact of the DAESI course among the input dealers in improving the agricultural extension activities in the area and on the overall development of the farmers.

Impact of DAESI programme

Majority of the farmers primarily depend upon the agri-input dealers for agricultural information, followed by radio, KVK, Govt. extension worker, etc. Hence the input dealers are the most available or easily accessible source of information for the farmers. This is due to the large number of input dealers present in the locality. Again, each farmer has to mandatorily visit the input dealers for purchase of agri-

inputs. However, regarding the farmers' satisfaction in terms of usefulness of the information, the input dealers lag far behind. Only 26% of the farmers were found to be satisfied with the information collected from the input dealers in comparison to information collected through KVKs, Govt. extension worker, radio and television.

This may be due to the inadequate knowledge and business mindedness of most of the agri-input dealers who are more interested in maximizing their sale of inputs. However, lack of proper and formal training can't be overruled as the main factor behind the poor agricultural knowledge of the input dealers.

Among the various types of agri-information enquired by the farmers from the input dealers, the most sought information is related to the pest management, followed by fertilizer application.

The farmers pay little importance to the information related to improved crop variety, organic inputs, crop insurance, soil testing, seed treatment and agricultural schemes.

There has been a visible change among the agri-input dealers in their knowledge level after undergoing the DAESI course. The most important improvement has been in the areas of agri-input laws (pesticide act, fertilizer law, seed act, etc.), use of biopesticides and biofertilizers, soil test and safe use of pesticides. Such improvement in the knowledge level of the input dealers is certainly blissful for the farming community.

The one-year long DAESI course has created a distinct difference among the input dealers in the South 24 Parganas district (Fig. 1). Most of the traditional dealers (non-DAESI) still follow certain bad practices (selling loose pesticide – 69.57%, mixing of multiple pesticides – 84.78%) which results in injudicious use of chemical pesticides. On the other hand, the trained dealers (DAESI) have shown a tremendous improvement, regarding the adoption of good practices in agriculture and business ethics. More than 50% of the DAESI trained dealers have started promoting biopesticides, biofertilizers and soil testing. Almost all of them now encourage the farmers to visit agricultural institutions (KVK and State Dept. of Agriculture) for a more scientific diagnosis of their problems and for gathering other agricultural information.

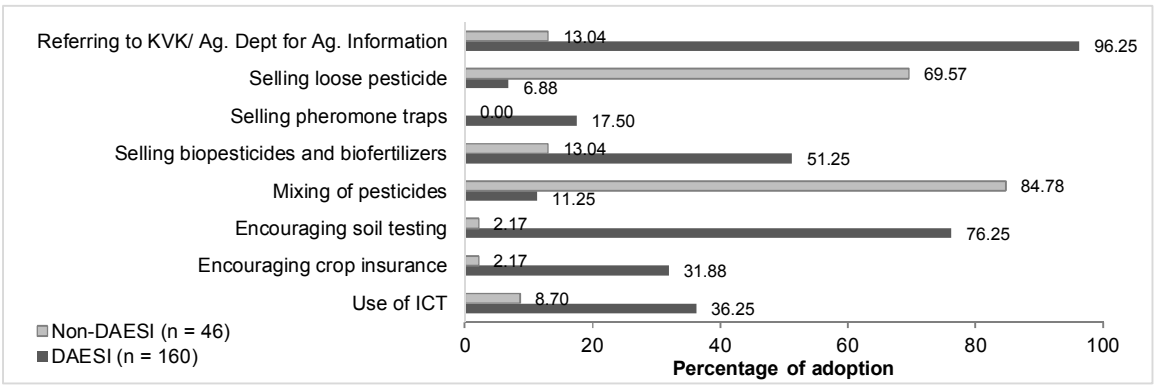


Fig 1. Difference between Non-DAESI and DAESI trained input dealers

Analysis of the last 10 years data on farmers visit to the Ramkrishna Ashram KVK revealed a contrasting figure before and after the start of the DAESI course in the centre. The DAESI course was started in the centre in 2013-14. From 2016-17 onwards there has been a steep increase in the number of farmers visiting the KVK for pest-disease diagnostic services. Around 20% of these farmers were encouraged by the input dealers to visit the KVK for correct plant protection advisory.

Agri-input dealers can play vital role in dissemination of informations and transfer of technologies in the field of agriculture. However, proper training and awareness on agricultural science is necessary to motivate this sector for the development of farmers and farming. The DAESI trained agri-input dealers played a significant role in facilitating extension of agricultural information to the remotely located farmers and channelizing them to the formal institutes.

4.6.2. Establishment of apiary and Bee Hotel

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 has been set up in the KVK under the Plant Protection Section.

Three species of honeybees are being maintained in the unit:

- *Apis indica* (Indian honeybee),
- *Apis mellifera* (Italian honeybee) and
- *Tetragonula bengalensis* (Stingless Bee)

Apart from the honey producing bees, a number of solitary bees are welcomed here with suitable nesting. The following solitary bees can be found nesting in the "Bee Hotel" maintained here:

- Carpenter bee
- Small carpenter bee
- Leaf cutter bee
- Resin bee
- Blue banded bee, etc.

This demonstration unit serves the purpose of a knowledge centre for the farmers who may not be aware about the vast range of pollinators responsible for pollination and yield improvement in most of the crops and vegetables. They can visualize and identify several species of bees and their nesting at this Bee Hotel. Students also take interest to study different varieties of insects and pollinators for enriching their academic knowledge.

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.

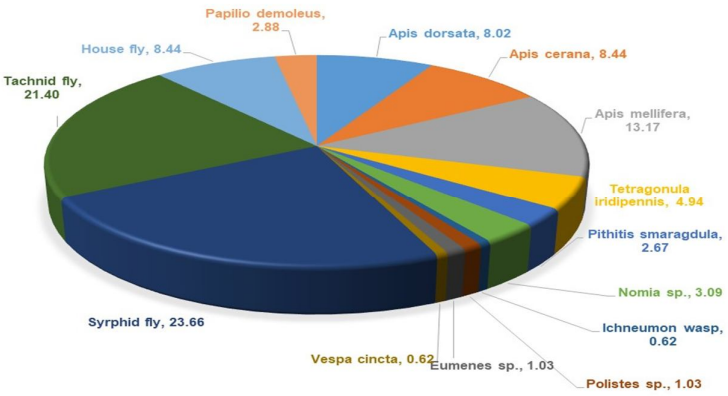
4.6.3. Celebration of World Bee Day 2022

A seminar was organized to celebrate "World Bee Day" by the AICRP (HB & P) centre of RAKVK, Nimpith on 20 May 2022, for the beekeepers, farmers, students and agri-input dealers. The programme emphasized on "Save the

Bee" initiative, where all the stakeholders were reminded about their responsibilities in promotion of scientific beekeeping, conservation of natural pollinators and to follow good agricultural practices. The programme was scheduled with power point and video presentation on the importance of bees and beekeeping and interaction with the participants. 12 beekeepers, 14 farmers, 40 input dealers, 35 students and 4 scientists participated in the webinar.

4.6.4. Pollination study in Litchi

Pollinator diversity



The study was carried out by the Plant Protection Section. Various insect pollinators were observed on Litchi (cv. Bombai) during 10.02.2021 to 25.02.2021. Sirphid fly (23.66%), Technid fly (21.40%) and *Apis mellifera* (13.17%) were the leading visitors followed by *Apis cerana*, house fly bee and *Apis dorsata*.

Pollination service

To study the effect of insect pollinators on yield parameters, three treatments were taken up.

Pollinator exclusion: As the litchi trees were very large, few branches were caged with 40 mesh nylon net. Caging were done on 17.02.2022, in Hogla village (22.254^{o}N, 88.454^{o}E).

Open pollination: Observations were taken from the non-caged branches. Such orchards were selected in the Hogla village (22.254^{o}N, 88.454^{o}E), considering the fact that no *Apis mellifera* colony were placed there.

Open pollination with A. mellifera: This treatment was set up at Sasan village (22^{o}20'24"N, 88^{o}25'29"E), which is 14 km away from Hogla village. *A. mellifera* colonies of were placed (10 colonies per ha) in the orchard after 5% flowering.

Effect of pollination service in Litchi

Treatments	Litchi fruit set (%)	Fruits per panicle	Fruit Weight (g)	TSS (^{o}Bx)
Pollinator exclusion	0.06[a]	0.9±0.41[a]	16.08±0.56[a]	19.32±0.34
Open Pollination	1.19[b]	11.5±1.65[b]	19.27±1.00[b]	19.82±0.20
Open pollination with *A. mellifera* (10 colony/ ha)	1.62[c]	14.9±0.91[c]	20.11±1.14[b]	19.68±0.25
SEm±	0.01	1.06	0.96	0.24
CD (p=0.05)	0.31	3.14	2.86	NS

Result of pollination service study:

- Absence of insect pollinators greatly reduced the litchi fruit set and fruit yield
- Introduction of *Apis mellifera* colonies improved the yield parameters by increasing fruit set (%) and number of fruits per panicle.
- There was no significant difference (p=0.05) in fruit weight between open pollination and *A. mellifera*. However, both were significantly superior over pollination exclusion.
- No significant difference was observed in TSS content among the treatments.

4.6.5. Pollination study in Pointed Gourd (*Trichosanthes dioica* Roxb.)

The study was carried out by the Plant Protection Section. Pointed gourd (*Trichosanthes dioica* Roxb.) is an important cucurbitaceous vegetable crop in West Bengal. The green fruits are rich in protein, vitamin, mineral and claimed to lower cholesterol and blood sugar. They are also used to prepare pickles and confectionary products. A local variety of the crop was planted through root suckers. One staminate plant was planted for every 10 pistillate plants. The vines were trailed on aerial support (trellis).

Reproductive biology

- It is a dioecious plant, hence strictly cross pollinated. Flowering was observed from end of February to November. Peak flowering and fruiting occurred between April to July.Inflorescence is racemose. Flowers are white in colour, sessile, solitary, bracteate with oblong to cylindrical calyx tube.
- Staminate flowers contain three stamens with short filaments deeply inserted on calyx tube. Anther are syngenesiuos.Pistillate flowers have slender styles ending in 3 papillate stigmas. gynoecium has 5 carpels. The ovary is oblong, ovoid, fusiform, globose with many horizontal, semipendulous ovules.
- From initiation of flower bud to anthesis it took 15 to 17 days in male flowers and 10 to 13 days in female flowers. Flowers opened during late evening and closed during early morning. Anthesis started between 7 and 7:30 pm in male and 7:30 and 8:30 pm in female flowers. The petals closed during 7 to 7:30 am.
- Stigma receptivity was maximum during anthesis but was found to remain receptive 12 hr before to 12 hr after anthesis. Pollen remained viable upto 48 hours.Pollens are sticky, hence not suitable for wind pollination.
- The variety under study showed natural parthenocarpy. But, successful pollination increased fruit set, size and weight of fruit.

Insect visitors

The sap beetle,*Haptoncusluteolus* (Coleoptera: Nitudulidae), and small black ant, *Paratrechina longicornis* (Hymenoptera: Formicidae) were frequently observed on both the staminate and pistillate flowers. They are mainly pollen foragers and were found to carry pollen grains. They helped in natural pollination, but are not as efficient as bees in pollinating the crop due to their relatively sedentary habit and absence of dense hairs on their body. Instead of collecting pollens to rear their broods, they visit the flowers to satisfy their own need. As a result, the success of natural pollination is relatively low in pointed gourd.

Insect visitors at night

Insect visitors at early morning

Pollination service

As study was conducted to compare different artificial pollination methods.

Natural pollination: Fifteen plants were selected. From each plant 50 naturally pollinated female flowers were marked.

Hand pollination: Staminate flowers were collected after anthesis (8 pm) and after removing the petals, the anther was touched over the stigma (8 to 9 pm). One staminate flower was used to pollinate 10 pistillate flowers. Such flowers were marked and bagged with fine nylon net.

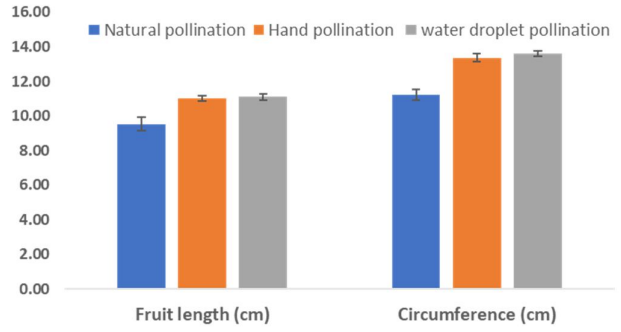
Pollination with pollen suspension: Anthers from 50 male flowers were collected at 8 pm and mixed in 1 litre water along with 5g glucose. One drop of the mixture was poured on the stigma of one female flower. Each drop of pollen suspension contained 30-40 pollen grains. Such flowers were marked and bagged with fine nylon net.

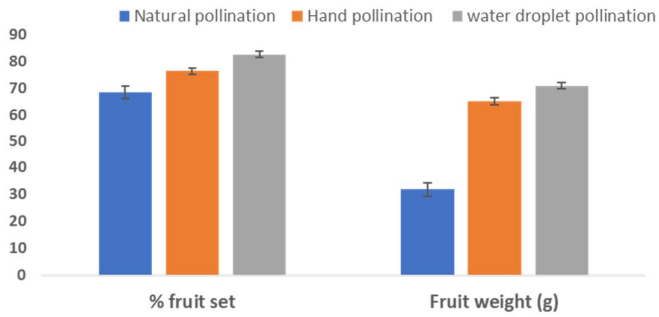
Effect of artificial pollination in pointed gourd

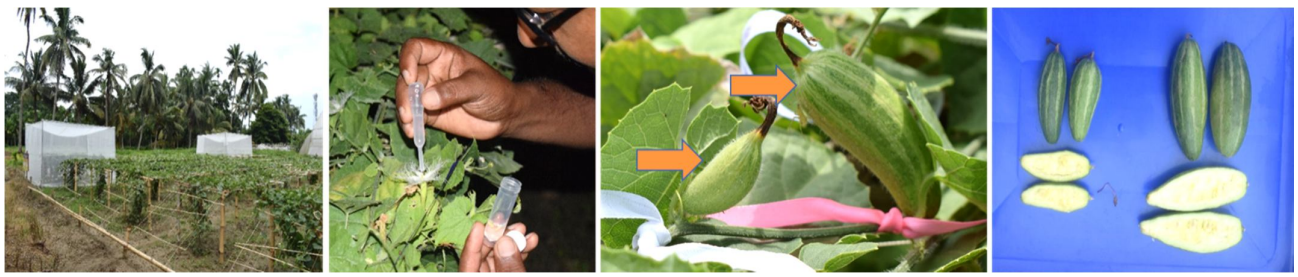
Treatments	Fruit set (%)	Fruits length (mm)	Fruit circumference (mm)	Fruit weight (g)
Natural pollination	68.45 ±2.34[a]	9.53±0.21[a]	11.24±0.32[a]	31.87±2.55[a]
Hand pollination	76.20±1.04[b]	11.02±0.16[b]	13.37±0.22[b]	65.13±1.35[b]
Pollination with pollen suspension	82.50±1.10[c]	11.11±0.18[b]	13.63±0.16[b]	70.80±1.12[c]
SEm±	1.06	0.21	0.24	1.85
CD (p=0.05)	4.22	0.62	0.70	5.35

Result of pollination service study

- Due to natural parthenocarpy in the present cultivar, there was considerable amount of fruit set (68.45%). However artificial pollination increased fruit set percentage.
- Both hand pollination and pollination with pollen suspension increased fruit length, fruit circumference and fruit weight. But, pollination with pollen suspension increased fruit weight over hand pollination also.
- Hence, pollination with pollen suspension is superior in increased pointed gourd yield.







4.6.6. Pollination study in Ivy Gourd or Kundri (*Coccinia grandis* (L.) Voigt)

The study was carried out by the Plant Protection Section.Ivy gourd is a perennial, dioecious creeper, widely used as vegetables in West Bengal. Traditionally different parts of the plant namely the roots, leaves, and fruits are used in folklore medicine for various purposes.

Reproductive biology

- Both the male and female plants produce large, star shaped, single white flowers. Production of flowers and fruits occurs throughout the year, except the winter. The highest flowering and fruiting was noticed during the summer and rainy season.
- Male flowers solitary, pedicel 4 to 6 cm, glabrous. Perianth tube glabrous. Calyx lobes 1.2–3.5 mm long. Corolla 1.8–4.2 cm long, white. Corolla lobes 0.8–1.8 cm. The 3 stamens originate from the base of the perianth tube, and the filaments are fused to a central column. The anthers together form a globose head. Filament column and anther head pale greenish, pollen sacs yellow.
- Female flowers solitary. Pedicel 0.8 to 1.5 cm, glabrous. While sepals and petals were identical to male flowers. However, here three stamens were found to be reduced to rudimentary staminodes that originate from the interior perianth wall, forming a hypanthium. The anthers of the staminodes are strongly reduced to a slightly yellowish spot at the apex. Pistillate flowers are epigynous and have three carpels. Ovary glabrous. Style 3-5 mm, columnar, yellowish-green. Stigmas 3-lobed, greenish. Each stigma lobe is U-shaped with the ends of the lower sides of the arms touching each other. The stigmatic branches are long and free.
- Fruits ellipsoid to cylindrical. Size 4.5-7.0 cm × 1.3-1.5 cm, glabrous. Unripe fruits greenish with few pale lines, becoming scarlet red when ripe.
- Anthesis occurs during day time (7:30 to 8:30 am). The flowers start wilting after 3:00 pm. They closes completely during 4:30 to 5:00 pm.

Insect visitors

The ivy gourd flowers were mostly visited by solitary bees like *Nomia* spp., *Ceratina* spp, *Megachile* spp., etc. Stingless bees (*Tetragonula* sp.) were also found visiting the flowers. The coccinia flowers are good source of nectar, thus inviting many insects to them.

Ants were also found to collect the nectar from extra-floral nectar glands located (shunken) on the lower lamina of the leaves and on the bracts and probracts.

Experiment on pollination service

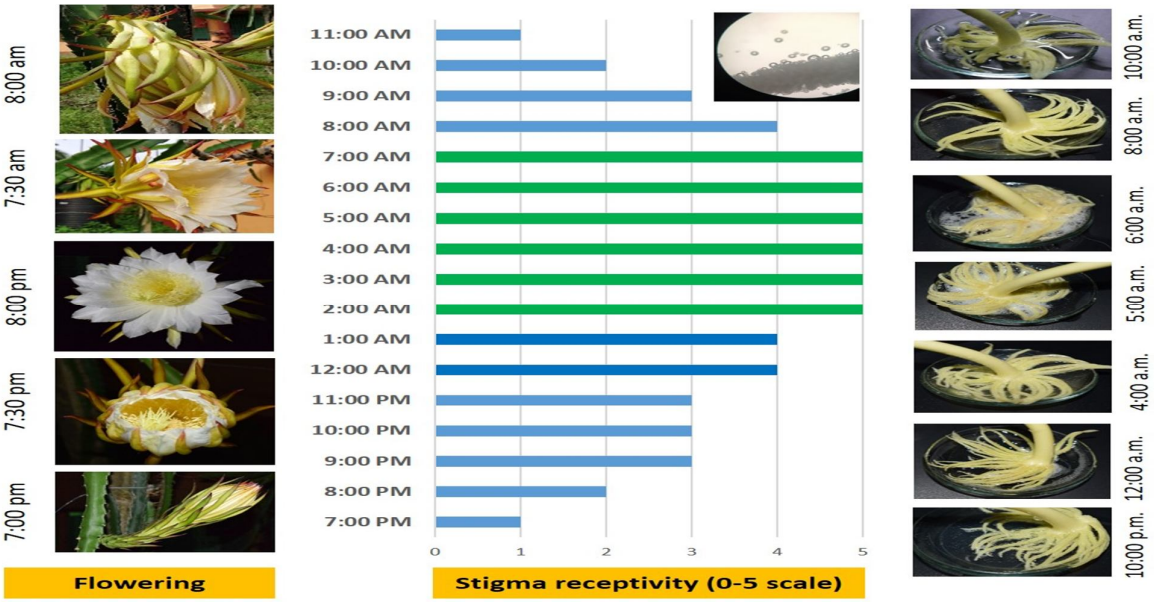
HP -1: Pollen suspension in glucose (0.4%) solution; HP-2: Pollen suspension in glucose (0.4%) & boron (0.2%) solution

4.6.7. Pollination study in Dragon Fruit (*Hylocereus costaricensis* var. Royal Morocan Red)

The study was carried out by the Plant Protection Section. The variety under this study produces stout fruits with red flesh. Stem of the vigorous vine is are waxy white and bears very long (25–30 cm) flowers with reddish tips and margins on the perianth.

Reproductive biology

- Flowers are white in colour, hermaphrodite, bearing all floral parts, pedunculated, with the floral bud originating at the spine base and its axis. The stigma is positioned above the stamens. Self-incompatibility of the plant is evidenced by spatial segregation of the sexual organs with approach herkogamy.
- Flowering was observed from May to November. Even, flowering was induced in December, by artificial light to increase day length.
- There are numerous stamens on a slender anther stalk. The style is tubular and 18-21 cm in length and 0.5 cm in diameter. The stigma has 21 slender lobes, creamy green in colour.
- From budding to anthesis it took 17 to 20 days. From anthesis to harvest it takes around 30 days.
- Anthesis began at 7:30 to 8:00 pm. Flowers closed completely, next morning, at 7:30 to 8:00 am.
- Stigma was receptive from 7:00 pm to 11:00 am, next day. However peak receptive period occurred between 12:00 am and 7:00 am.
- Anther dehiscence commenced 2-3 hour before opening of the flower.



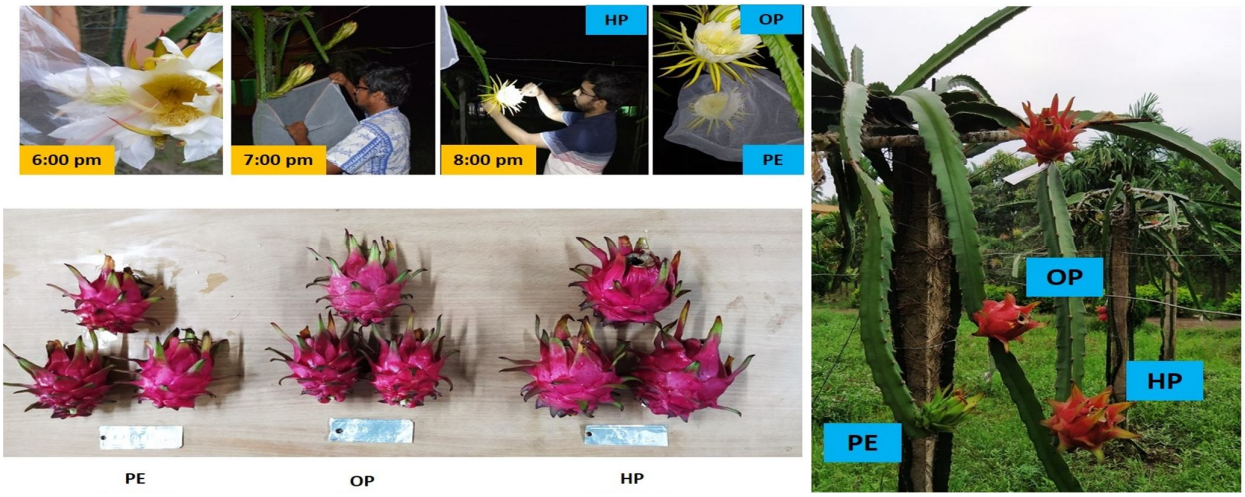
Insect visitors:

- *Apis cerana* – 6:00 am to 7:00 am
- *Apis dorsata* – 6:00 am to 7:00 am
- Stingless bees – 8:00 to10:00 am
- Ant (*Camponotus* sp.) - Night

Effect of pollination service

An experiment was conducted to study the comparative performance of hand pollination and pollination exclusion over open pollination.

Parameters	Pollination exclusion	Open pollination	Hand pollination
Days to fruit maturity	34 – 38	29 – 33	28 – 32
Fruit weight (g)	112(108 – 116)	187.6(148 – 306)	247.6 (203 – 310)
TSS (^{o}Bx)	11.5 ± 0.8	14.6 ± 0.6	15.2 ± 0.7

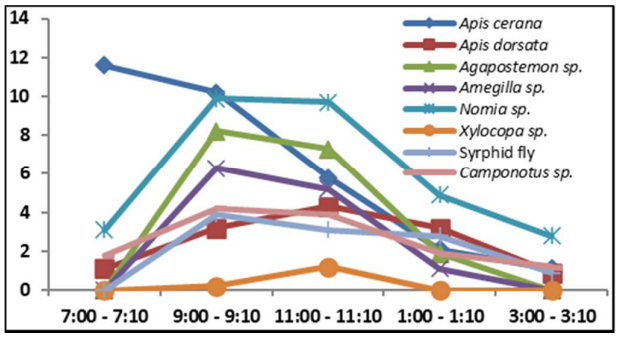


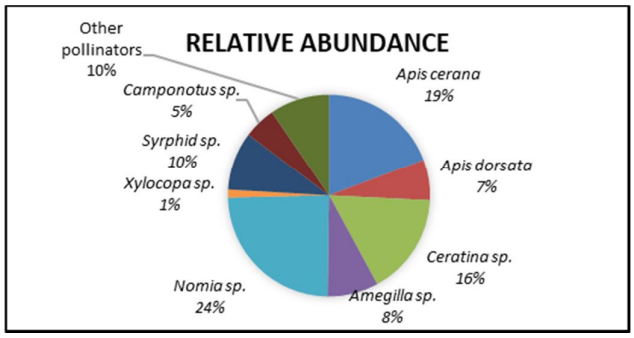
4.6.7. Pollinator diversity study in cucumber

The study was carried out by the Plant Protection Section.

Pollinator diversity: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.

Among the various flower visitors, *Nomia* sp. (24%) was the dominant one followed by *Apis cerana* (19%) and *Ceratina* sp. (16%). Peak insect visit was found between 9:00 a.m. to 1:00 p.m. *Apis cerana* was the first to visit cucumber flowers (7 a.m.).



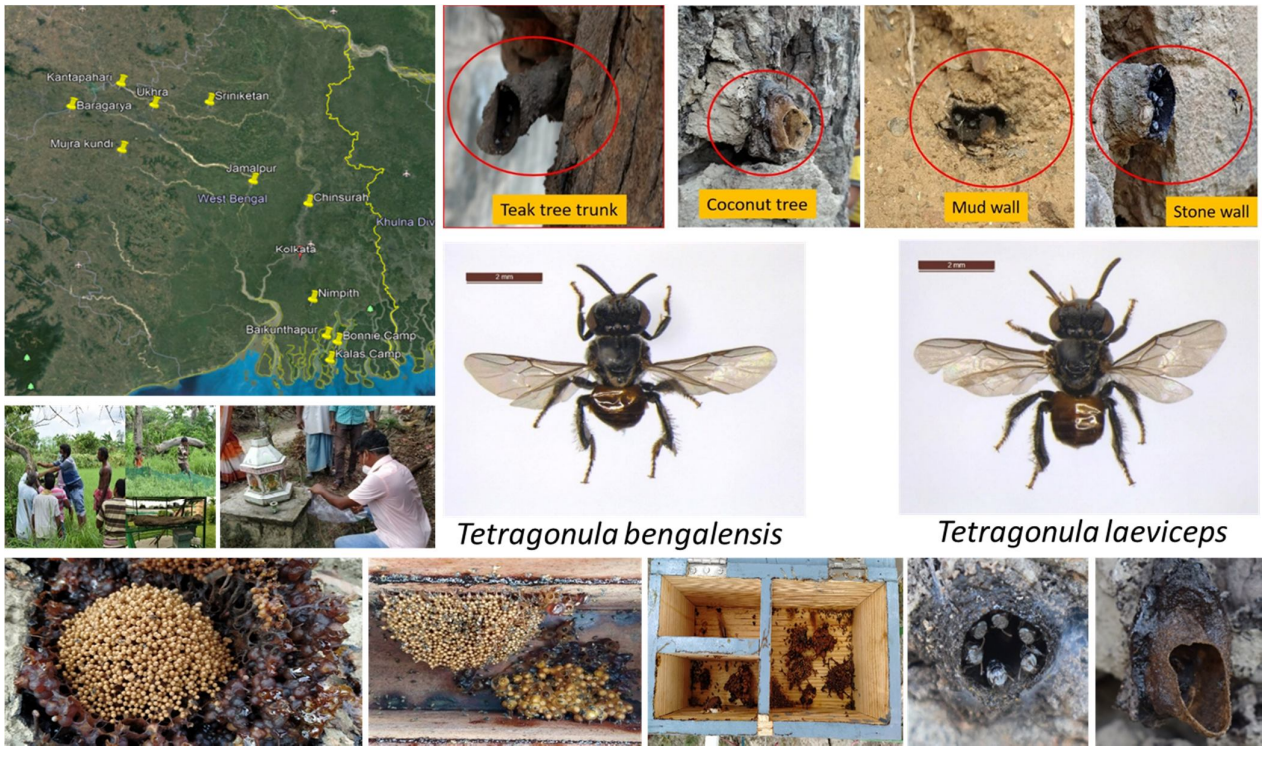


Number of pollinators per 9m^{2}area

4.6.8. Exploration studies in stingless bees

The study was carried out by the Plant Protection Section.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.

Different places in the southern parts of West Bengal were surveyed for stingless bees. These bees were found to be prevalent in almost all the places surveyed. The samples collected from three location (Nimpith, Mujrakundi and Baikunthapur) have been sent to the AICRP (HB & P) Project coordinator's office at IARI, New Delhi for their proper identification.



Nesting site:

The stingless bees, found in the above areas were found to nest inside cavities of trees (like Teak, Coconut), cavities of walls (mud and brick wall), Tulsi Mandir etc. The nests were located at a height ranging from 1 ft to 9 ft above ground.

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. The hives housed 500–20,000 workers. The pollen and honey storage pots are larger than the brood pots.The honey pots and pollen pots were separated from the brood cells. Pollen pots were place near the entrance, followed by the brood cells which were surrounded by the honey pots.

Foraging behaviour:

They were found to forage on seasonal flowers, flowering trees, mustard, sunflower, cucurbits, mango, guava, litchi, coconut, areca nut, weeds, Mangrove plants 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 and tree hollow. 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. In case of the dead tree trunk, the entire nest portion was cut carefully after closing the entrance and the trunk was taken to the centre. 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 wasconnected with the entrance of the nest on the wall with a transparent water level pipe (2.5 mm diameter). The junction at the nest entrance 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 started to store pollen and honey inside the wooden hive first and then slowly developed a secondary colony inside it. After six to ten months, such wooden hives with newly developed colony were separated from the original colony and taken out. Presently the wooden hives are kept at KVK campus at Nimpith and 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 brood volume doubled within two months.

4.6.9. Promotion of Indian honeybee (*Apis cerana*) in the Sundarban villages

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 *A. 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, the AICRP centre 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 10-25% through improved pollination, especially in Cucurbits.

Performance of Apis cerana in Sundarbans:

Rural youths and farmers were trained and *Apis cerana* hives were distributed in various villages (Chuprijhara, Nalgora, Baikunthapur, Bhubaneswari, Nagenabad, Maipith, etc.), through various programmes sponsoredby AICRP (HB & P), ATMA and National Bee Board.The villages were selected based on their proximity to Mangroveforest. Vegetables are grown in these villages that support the colonies with bee forage during rainy season.

4.6.10. Conservation of giant honeybee (*Apis dorsata*)

The study was carried out by the Plant Protection Section.

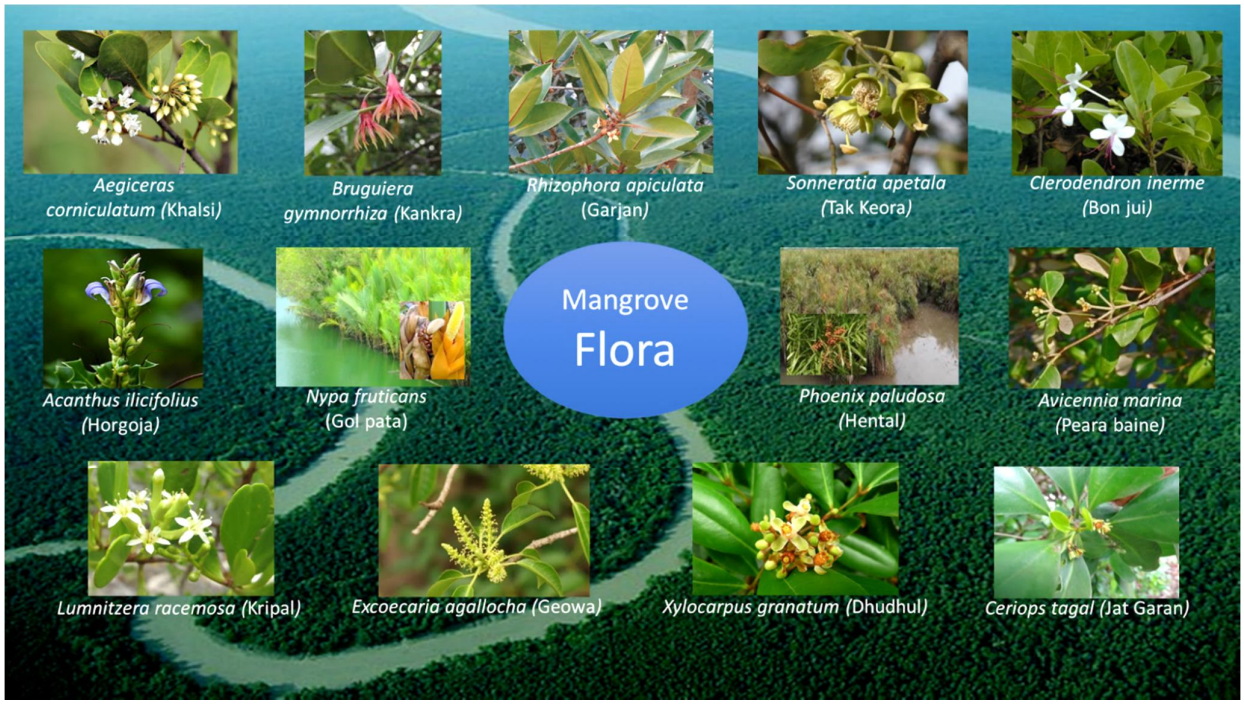
Sundarban and the giant honeybees

The Sundarban, designated as the World Heritage Site by UNESCO, is the largest contiguous deltaic mangrove forest, stretched over India and Bangladesh for nearly 10000 km^2 and known for its rich biodiversity. The Indian Sundarbans were declared as Sundarban Biosphere Reserve in 1989. There are three wildlife sanctuaries, viz. Sajnekhali, Halliday and Lothian.Many of the mangrove species like sundari, hental, goran, geoan, bani, golpata, pasur, kakra, keora, etc., are unique to Sundarban. But among all, Sundarban is best known for the endangered Royal Bengal tigers (*Panthera tigris tigris)* that are exclusive in the world for their ability to survive in this tidal landscape and harsh climate.

The first human settlement in Sundarban dates back to the late 19th century. The migrant population from the adjoining district of Midnapore and the tribal population of central India, brought here by the British to construct the embankments, contribute to the major proportion. Sundarban still remains as one of the most remote parts of West Bengal due to poor road connectivity. The only mode of transport to reach the islands is by small motor boats.Around five million people, living in the forest fringe, depend primarily upon agriculture, fishing and collection of forest produce (NTFPs). The villages are protected from the tidal brackish water rivers and estuaries by dykes erected along the bank. However, their livelihood is often challenged by the frequent cyclones, breaching the river embankments and ravaging through the crops, livestock, fisheries and the entire settlement. Also, for most of the drier months, when surface soil turns saline, the land remains fallow. Hence, people depend upon the forest to survive here. Those, residing close to the urban areas, migrate for petty jobs. Others venture into the forest to collect crabs, shrimps and NTFPs like golpata, honey, wax, etc.

The *A. dorsata* colonies start migrating from the mainland towards the Sundarbans mangrove forest during October to February. They build their single comb nests preferably on some specific mangrove trees like, Bani, Geoan, Chapal, Kankra, Garjan, Pasur, Keora and Dhudhul. Most of the nests are found at 6 to 8 ft height, hanging from slightly oblique to horizontal branches. The combs are large (1.0 to 1.5 m wide; 0.6 to 1.0 m high; 0.1 to 0.6 m deep). On an average, 8 to 12 kg honey (with a maximum of 25 kg) is harvested from each comb.

The maximum brood strength and maximum number of colonies are observed during March to May, when the mangrove forest is in full bloom. The most important nectar sources are Khalsi (*Aegiceras corniculatum*), Goran (*Ceriops* spp.), Kakra (*Bruguiera* spp.), Keora (*Sonneratia* spp.) and Bain (*Avicennia* spp.). The Khalsi flowers bloom earliest (February to March) and its honey is the sweetest among all.



***Moule* - the traditional wild honey collectors of Sundarban**

The traditional honey collectors of Sundarban are known as '*Moule*'. This folk community is generally engaged in agriculture during the rainy season after which they venture into the forest for honey collection. Honey collection is a seasonal activity extending from March to May. Despite the profession being laden with fatal risks of human lives, it still has approximately 2000 *moule* engaged in wild honey collection, each collecting an average of 2 quintals of honey during the season.

There is a systematic procedure for venturing into the Sundarbans for honey collection, controlled by the forest department. But many *Moule* evade the system and enter the forest illegally, bypassing all permits. They sometimes venture into the core areas of the forest that are strictly reserved and eventually invite a greater chance of tiger encounter.

Wild honey collection process in Sundarban

The honey collectors search for the beehives directly or by observing the movement of flying bees. The bees carrying nectar in their honey gut looks heavy and fly in a straight direction in comparison to scout bees those move fast in a zigzag direction. The *moule* follows the former ones to locate the hive. In a five member team, one person waits on the boat, one keeps watch on possible presence of tiger in and around, one makes arrangement for the smoke, while the rest two remains busy gathering the honey. The *A. dorsata* colonies in Sundarban are generally located at low height (6 – 8 ft). After locating the nest, they lit up a bundle of dry paddy straw and green leaves of hental or golpata mangrove to produce smoke. After covering their faces with a piece of cotton cloth (*gamcha*), they place the smoke just under the nest to drive the bees away. With the help of a sharp knife (*Katari* or *Hansua*), one member reaches the comb and cuts the honey head of the deserted comb while the other member places a vessel underneath to collect the cut comb. Sometimes, in anxiety of tiger attack, they cut the entire comb and immediately rush back to the boat. On this process, several colonies are destroyed every year, unnecessarily.

After returning to the boat, they squeeze the honeycomb with bare hands, strain the honey by cotton cloth and store the honey in plastic drums. The wax is stored separately in a gunny bag. The same process is repeated as they sail along the narrow creeks, deeper inside the forest. They spend their days and night on the country boat by cooking, eating and singing. After 7 to 15 days, depending upon the volume of harvest, they return to the forest Beat office to sell the honey. They again prepare for their next journey, until the season is over. On a particular season, the same group ventures 2 to 3 trip to the forest.

Quality of Sundarban wild honey (*A. dorsata*)

Parameters of extracted honey	Test Method	Wild honey from Sundarban (*Apis dorsata*)
HMF (mg/kg)	IS:4941:1994	12.50
Moisture (%)	IS:4941:1994	18.86
Total Ash (%)	IS:4941:1994	0.05
FIEHES Content in Honey	IS:4941:1994	Negative
Specific gravity (27°C)	IS:4941:1994	1.37
Fructose : Glucose Ratio	IS:4941:1994	1.29
Total Reducing Sugars (% w/w)	IS:4941:1994	72.79
Sucrose content (% w/w)	IS:4941:1994	0.39
Total Acidity as Formic acid (%)	IS:4941:1994	0.02
Optical Density	IS:4941:1994	0.22
Pollen count (no. per gram honey)		40000

Marketing of the "Sundarban wild honey"

After returning from the forest, the group assembles at the forest Beat Office and sale the honey to the department, against the price fixed by the West Bengal Forest Development Corporation Ltd. (WBFDCL). Every year, the WBFDCL puts a ceiling on the total quantity of honey that will be procured by them. According to this quantity, wild honey collection is regulated by the forest department by issuing one time permits to the honey collectors during collection season. With time, the price has varied from Rs. 110/- to Rs.135/- per kg. All the

honey collectors are covered under accidental insurance (Janata Policy) before proceeding to the forest, the premium of which is borne by WBFDCL. The crude honey, thus collected by the WBFDCL is processed and marketed under the brand name "Mouban". But the *moule* doesn't get the payment immediately. The honey collectors always extract huge surplus honey which is sold in open market or to some middleman (agent) at a variable price (Rs. 100/- to Rs. 200/- per kg). The instant cash received is used to reimburse the expenditures borne at grocery stores before embarking on the honey collection trip.

Profitable livelihood option?

In a particular season, the wild honey collection lasts for about 2 months. By this period, each *moule* earns between Rs. 30000/- to Rs. 35000/-. They spend around Rs. 10000/- towards all arrangements for boat, grocery, medicine, etc. Hence, they make a net profit of around Rs. 25000/- in a season. Around 2000 *moule* depend upon wild honey collection in Indian part of Sundarban. Approximately 500 MT of wild honey (*A. dorsata*) is collected each year. The WBFDCL purchases only 30-35 MT honey per season. The rest of the honey is either sold in the unorganised market directly or through the Mahajan (private money lenders) to whom they are already indebted. In this case the price fluctuates steeply. The Mahajan extorts the honey collectors at their will by offering the least price (Rs. 100 to Rs. 125 per kg) to repay their loan liability.

Problems associated with wild honey collection in Sundarban

Man-animal conflict and the "blood honey"

This mangrove forest is the only ecological habitat of the Royal Bengal tiger of its kind, not only in India but also in the world. Around 34% of human death during the forest venture is associated with tiger attack. In most of the cases, these *tiger widows* do not receive any compensation from the Government as they trespass the strictly prohibited core areas of the forest, in quest of more honey. Hence, the wild honey collected by the *moule* is sarcastically referred as "blood honey".

Loss of colony and bee population

-While collecting the honey, the *moule* must stay alert for any possible tiger attack. Hence they don't want, or to be more precisely, don't get much time to pay attention for scientific collection of honey. They don't bother about the loss of bee colonies during the cruel hunting episode. The *moule* follow an age old traditional method of honey collection from the giant bee hives. The process involves spotting a hive and smoking it to drive away the bees. The flame often kills a considerable population of the bees along with the queen bee. Sometimes the entire comb is harvested thus destroying all the broods and young bees.

Quality and hygiene of squeezed honey

After harvesting the honey head (sealed and non-sealed comb) along with some brood chambers containing eggs and larvae, the entire portion is squeezed together by bare hands to extract the honey, till its last drop. This results in admixing of wax particles, bee pollen, body juice of the eggs and larvae, dirt, etc., with the honey. This lowers the quality and storability of the honey. As they keep on sailing on the river for 7 to 15 days, the harvested honey, which is a mixture of ripe and unripe honey and dirt, it undergoes quick fermentation.

Sustainable development of the wild honey collectors

The wild mangrove or Sundarban honey collected from the *A. dorsata* colonies carry a legacy in terms of its exquisite flavour and nutritive and medicinal values. The term "Sundarban" is itself a brand in the National and International market. However, the poor, illiterate and backward community of the Sundarban doesn't get the appropriate value for their life risking profession. The WBFDCL offers a decent price but purchases not more than 5% of the total collection. The rest of the collection is exploited by the commercial sector, purchasing at a cheap price but selling at as high as Rs. 1000 per kg. As collected from the chemical free forest bloom, Sundarban honey is also sometimes certified with Organic label and fetches even higher rate. Major share of the profit goes to the middleman and the processing industry. To sustain the livelihood of the honey collectors a comprehensive development plan is required.

Counselling of the traditional moule

The traditional honey collectors need to be made aware about the ecological balance and the value of their lives to stop any mishap. They are the only bread earners of their family, so they should abide by the strict regulations of the forest department and restrict their movement inside the forest within the permitted boundary. In most of the cases the *tiger widows* don't receive any compensation for the loss of lives of their guardians simply because of illegal trespassing in forest. As for example, if anyone encounters a fatal combat with the tiger inside the boundary of core forest area or enters the forest without any official permit, his family members are not eligible for any Government compensation. The honey collectors should also abide by the safety protocols like entering the forest only during daytime, moving as a group, abstaining from sailing through the narrow creeks, avoiding passing through the nylon net barrier, etc.

Scientific collection and extraction of honey

The giant bees are important pollinators of mangroves and need to be conserved for the regeneration and restoration of the depleting forest. So, tapping the natural gift without destroying the colony is utmost important. The moule should be equipped with both scientific knowledge and modern instruments for removal of the sealed honey head. Use of modern smokers may be promoted to minimize damage to the bees. The portion of the comb containing eggs and larvae should be separated before honey extraction to avoid mixing of extraneous proteins with the honey. Instead of squeezing, the cut combs should be carefully uncapped with sharp knife, sliced into pieces and the honey should be allowed to be drained out by a gravity flow mechanism. Stainless steel or food grade plastic containers should be used for all operations. The AICRP (Honeybee and Pollinators) centre of Ramkrishna Ashram KVK Nimpith is closely working with the forest department to train the honey collectors on scientific extraction and processing of wild honey.

Collective processing and marketing

Many organizations have recently come forward to organise the moule into groups to stop their exploitation. The Vivekananda Institute of Biotechnology, under the aegis of Sri Ramkrishna Ashram Nimpith have started mobilizing hundreds of moule to form a cooperative. A honey processing unit (100 kg per day capacity) has been established where 20 to 25 MT wild honey is processed yearly and marketed in the brand name of Vivek honey. The honey collectors get a price of Rs. 200 to Rs. 250 per kg.

Mainstreaming of honey collectors into scientific beekeeping:

The *A. dorsata* honey is unmatched regarding its quality. But the profession of fetching this honey from the forest in Sundarban is rather cruelsome. Hence it will be more humane to look for alternative lively options based on the inherent skills and available local resources. The *moule* are habituated with the most painful bee stings and their villages are located adjacent to the beautiful mangrove flora. Hence, scientific beekeeping may be an ideal alternative livelihood option for them to utilize best of their knowledge, experience and available resources.

Capacity building on safe and scientific honey collection

The AICRP (Honeybee and Pollinators) centre of Ramkrishna Ashram KVK Nimpith, in close association with the forest department and local NGOs have trained more than 500 moule and rural youths of this region on scientific beekeeping with *Apis cerana* and *Apis mellifera*, over the last 5 years. More than 100 moule are now actively engaged in beekeeping and stopped venturing into the forest.

Promotion of managed beekeeping (Apis mellifera) among the traditional honey hunters

After the training, the Directorate of Forest of Government of West Bengal in association with the Panchayat and Rural Development Department formed three cooperatives (Kultali Sundarban Banarakshak Banmukhi Samabay Samity Ltd., Nolgora Sundarban Banarakshak Bahumukhi Samabay Samity Ltd. and Jharkhali Sundarban Banarakshak Bahumukhi Samabay Samity Ltd.) with 72 families. After that three SHGs were formed within the cooperative societies at Jharkhali, Kultali and Nalgora to take up migratory beekeeping as a group entrepreneurship. The West Bengal State Co-operative Bank extended a term loan of Rs. 25.80 lakh to purchase 1500 beehives,bee colonies and accessories. They also sanctioned a cash credit of Rs. 25.00 lakh to meet the recurring expenses. The bee colonies are kept inside the mangrove forest under the protected boundary of Forest Beat Offices (Kalash, Bony Camp and Chulkathi) during honey flow season (April to June) in Sundarban. For rest of the season, the colonies are migrated to different districts according to the honey flow.

Bonphool Agro Producer Company Ltd.

By seeing the benefits from scientific beekeeping, a farmers' producer company was formed to expand honey production, its processing and marketing. The company was registered as Bonphool Agro Producer Company Ltd., in 2021(CIN no. U01100WB2021PTC244229). There are 55 members (31 male and 24 female) in this group to look after the colonies, processing and marketing. The mangrove honey, branded as "Bonphool", is being sold through online platform (Amazon and the cooperative's own website www.sundarbansjfmc.org), Govt. outlet (Biswa Bangla under the West Bengal Government), supermarket (Urban Forestry), local market and middlemen. The WWF-India, a NGO, has installed a mechanical honey processing plant.

Training under NBHM scheme

The FPC members were imparted skill development training on scientific migratory beekeeping, processing and maintaining industry standards by the Krishi Bigyan Kendra, under NBHM scheme of GoI through the National Bee Board and ICAR-ATARI Kolkata. As a result, productivity of honey increased from 30kg per hive to 45kg per hive. They are now well aware about the good management practices in beekeeping to maintain the highest quality parameters.

The group produced 60 MT honey in 2022. The total sale proceeds were Rs. 1.80 crore with a net profit of Rs. 0.98 crore in the same year. Now each member of the FPC earns a minimum of Rs. 1.50 lakh per annum and that also without risking their lives. This group beekeeping enterprise has become an eye opener in the entire Sundarban for safe rehabilitation of wild honey hunters who otherwise risks their lives without any substantial monetary gain. Several *tiger widows* are associated with the programme regretting their misfortune; had their husbands adopted beekeeping, they would have lived now happily together.

4.6.10 Establishment of Biofertilizer Production Laboratory:

Under the RKVY-RAFTAAR scheme, a project worth Rs. 176 lakh was sanctioned for the establishment of a Biofertilizer Production Laboratory. The laboratory is constructed over an area of 5000 sq. ft, with an annual production capacity of 50000 litre per annum. There are 7 fermenters with a total of 2500L capacity per cycle. The laboratory is equipped with all modern instruments and machineries to produce liquid formulation of biofertilizers with extended shelf life. The mass production, packing and labelling will be automated to reduce dependency on manual labour and maintain quality and consistency. Various biofertilizers like Rhizobium, Azotobacter, Azospirillum, PSB, KMB and plant growth promoting microbes will be produced and supplied to the farmers at a very reasonable price.

5.1. Functional linkage with different organizations

Name of organization	Nature of linkage
ARD Dept, Govt. of West Bengal	Implementing Mobile Veterinary Clinic programme
ATC, Narendrapur	STRY Training
Bal Raksha Bharat, Save the Children	Training on Pond based integrated farming.
Coconut Development Board	Laying out Demonstration plots
Directorate of Agriculture, Govt. of W.B.	NFSM Cotton programme
Directorate of Agriculture, Govt. of W.B.	NFSM Oilseeds
Directorate of Groundnut Research	SCSP Programme
IARI, New Delhi	NICRA Programme
ICAR, New Delhi	AICRP on Honeybee and Pollinators
ICAR-CRIDA, Hyderabad	NICRA-TDC
ICAR-IIOR, Hyderabad	AICRP On Sunflower
IIOR, Hyderabad	SCSP Programme
MANAGE, Hyderabad and SAMETI, Narendrapur	Diploma in Agricultural Extension Services for Input Dealers
NFDB and MANAGE	Training on Fish Farming
State Fisheries Dept. Govt. of W.B	Carp fry and fingerling production
WBP, Dept. of Ag, DDA, South 24 Parganas	ATMA programme

5.2. List of special programmes undertaken during 2022 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 (in Lakhs)
Land Shaping & Rain water harvesting under RKVY-RAFTAAR	Promotion of Integrated Farming through Land Shaping & Rain Water Harvesting for Augmenting Agricultural Productivity in the South 24-Parganas District	2022	Dept. of Agriculture, Govt. of W.B	5.0
Biofertilizer Production Unit under RKVY-RAFTAAR	Establishment of Biofertilizer Production Unit for Improvement in Agricultural Productivity in South 24 Parganas	2022	Dept. of Agriculture, Govt. of W.B	176.00
ARYA	Hatchery unit	2022	ICAR, ATARI	0.78
ARYA	Horticulture Nursery unit	2022	ICAR, ATARI	2.17
ARYA	Catfish unit	2022	ICAR, ATARI	3.85
ARYA	Mushroom Unit	2022	ICAR, ATARI	1.18
NICRA	NICRA	2022	ICAR, ATARI	3.00
SCSP Programme	Training programme and input distribution	2022	ICAR,-ATARI, Kolkata	23.00
SCSP Programme	Training and input distribution	2022	AICRP on Sunflower	5.00
DAESI Programme	DAESI Training Programme	January'22	ATC, Narendrapur	16.00
Fish rearing and management	STRY Training	22.08.22 - 28.08.22	ATC, Narendrapur	0.80
NFSM Oilseeds	FLD, Training	2022	Dept. of Ag., Govt. of W.B.	2.04
NFSM Cotton	FLD, Training	2022	Dept. of Ag., Govt. of W.B.	35.25

(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. in lakh)
STRY Programme	Training programme	2022	State Agricultural Management & Extension Training Institute, Ramakrishna Mission Ashrama Narendrapur	0.84
FOCT Programme	Training and input distribution	2022	Coconut Development Board, State Centre, DA-94, Sector-I, Salt Lake City, Kolkata-700 064	0.565
Vocational Training Programme	Training programme	2022	Vocational Education WBSCTVESD	0.746
Groundnut Trial	Trial	2022	ICAR-Directorate of Groundnut Research, PB No.5, Ivnagar Road, Junagadh	0.368
Exposure training programme	Training programme	2022	Asutosh College, Kolkata	1.91
Fishery training programme	Training programme	2022	Midnapore City College Paschim Medinipur	1.32
ATMA training programme	Training programme	2022	Jamshedpur, Bihar	1.0
RAWE training programme	Training programme	2022	Neotia University, Jhinga, Sarisa	2.49
Dhosa Chandaneswar Bratojone Samity Training programme	Training programme	2022	DCBS, CB-35, Sector -1, Salt Lake City, Kol-64	0.866
SDB training programme	Training and input distribution	2022	Sundarban Development Board, Department of Sundarban Affairs, Govt. of West Bengal, Mayukh, Ground Floor, Salt Lake, Kolkata - 700091	7.33
Training programme on Sustainable Agriculture Techniques	Training programme	2022	Rupantaran Foundation, 22/2, Deshbandhu Road,Baghajatin, Kolkata-700 086	0.34
IFFCO	Training programme	2022	IFFCO, Barasat	0.133
Training programme	Training programme	2022	Anandadhara Project Unnati, Joynagar -II	0.322

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.m)	Details of production			Amount (Rs.)		Remarks
				Variety/ breed	Produce	Qty.	Cost of inputs	Gross income	
1	Nutritional garden	2003	140	Local	Seasonal vegetables	382 kg	1826	5736	Running
2	Apiary	2015	300	Apis cerana, Stingless bee	Honey	33 kg	3790	10130	Running
3	Ornamental fish and catfish breeding unit	2006	100	Egg bearing and live bearing ornamental fish	Goldfish, angel, barbs, printed carps etc.	6228	10270	22420	Running
4	Flower garden cum nursery	1984	890	Seasonal flowers, Palm, crotons, etc.	Flower seedlings	30780 no.	24560	66570	Running
5	Fodder	2009	720	Napier, barseem, hydroponic maize	Fodder and cuttings	6030 no. cutting & 86 qts. green fodder	9900	16355	Running
Total							**50343**	**121211**	

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	09.06.2022	02.12.2022	0.72	Sabita	F-C	9.75	7560.00	39000.00	The seed will be sold among the farmers, different Govt. Farms, NGOs as per their requirement
	22.06.2022	29.11.2022	0.40	Sabita	B-F	4.20	4200.00	17640.00	
	09.06.2.22	14.12.2022	0.78	VarshaDhan	F-C	9.36	7605.00	37440.00	
	22.06.2022	12.12.2022	0.40	VarshaDhan	B-F	9.00	3900.00	37800.00	
	22.06.2022	02.12.2022	0.40	Lunishree	B-F	8.00	4100.00	33600.00	
	02.07.2022	17.11.2022	0.65	Sujala	B-F	13.70	8150.00	57540.00	
	01.07.2022	13.11.2022	0.20	CR-Dhan 802	B-F	5.30	2570.00	22260.00	
	01.07.2022	24.11.2022	0.13	Ranjit Sub-1	B-F	3.40	1760.00	14280.00	
	01.07.2022	30.11.2022	0.33	Pratikshya	F-C	5.25	3860.00	21000.00	
	01.07.2022	07.12.2022	0.20	Pratikshya	B-F	7.00	2340.00	29400.00	
	14.07.2022	21.10.2022	0.26	BidhanSuruchi	B-F	3.90	3360.00	16380.00	
	14.07.2022	06.11.2022	0.26	Swarna Shreya	F-C	5.10	3435.00	20400.00	
	01.07.2022	30.11.2022	0.33	Dudheswar	TL	1.50	2475.00	5250.00	
	22.06.2022	07.12.2022	0.40	Luna Swarna	TL	3.00	4875.00	9000.00	
	01.07.2022	08.12.2022	0.20	MTU-1223	TL	4.95	2685.00	17325.00	

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	
Green Gram	24.01.2022	04.03.2022	1.03	IPM-205-7	F-C	11.60	14750.00	145000.00	The seed will be sold among the farmers, different Govt. Farms, NGOs as per their requirement
	26.01.2022	05.03.2022	0.065	IPM-02-14	B-F	0.36	930.00	5040.00	
Black Gram	19.09.2022	12.12.2022	0.13	PU-31	F-C	1.40	1425.00	14000.00	
Cotton	26.02.2022	09.06.2022	1.86	Surabhi	TL	16.80	33160.00	294000.00	
Finger Millet	25.09.2022	10.01.2023	0.017	Arjun	TL	0.68	710.00	6800.00	
Rice Bean	21.06.2022	12.02.2023	0.065	Bidhan rice bean 2	TL	0.45	625.00	5625.00	

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

Sl. No.	Name of the Product	Qty. (Kg)	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1.	Bio-fungicide (*Trichoderma harzianum & Pseudomonas fluorescens*)	2330 kg + 1395 kg	-	-	Distributed for demonstration
2.	Vermicompost	96000	430972	956614	Used in KVK farm and distributed among the farmers

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	Dairy	Jersey, Gir	Milk	18250 lit.	587426.00	766524.00	Running
3	Broilers	RIR	Meat	570 kg	62100.00	85400.00	Running
4	Goat	-	-	-	-	-	-
5	Ducks	Khaki cambel	Egg	708	1863.00	4248.00	Running
6	Fish	IMC	Table fish	1016 kg	3,80,836.00	4,21,550.00	Running
		IMC	Spawn	8.5 million pcs			
		IMC	Fry	3.1 lakh pcs			
		Asian catfish –Singhi	Seed	22,254 pcs			
		Asian catfish – Desi magur	Seed	1,08,340 pcs			

6.5 Utilization of hostel facilities

Accommodation available (No. of beds)

Months	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
January, 2022	212	564	-
February, 2022	125	303	-
March, 2022	144	343	-
April, 2022	192	410	-
May, 2022	101	338	-
June, 2022	184	713	-
July, 2022	20	60	-
August, 2022	49	198	-
September, 2022	75	190	-
October, 2022	192	913	-
November, 2022	109	522	-
December, 2022	103	468	-
Total :	**1506**	**5022**	-

(For whole of the year)

6.6 Utilization of staff quarters

Whether staff quarters has been completed : Yes
No. of staffquarters : 14
Date of completion : 1984
Occupancy details:

Months	**Q I**	**Q II**	**Q III**	**Q IV**	**Q V**	**Q VI**	**Q VII**	**Q VIII**	**Q IX**	**Q X**	**Q XI**	**Q XII**	**Q XIII**	**Q XIV**
January, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
February, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
March, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
April, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
May, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
June, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
July, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
August, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-
September, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-
October, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-
November, 2022	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	Full	-
December, 2022	Full	Full	Full	Full	Full	Full	Full	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
Ramkrishna Ashram KVK	SBI	Nimpith	11259497721
Ramkrishna Ashram KVK Revolving Fund	SBI	Nimpith	11259496614

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

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 2023
	Kharif	Rabi	Kharif	Rabi	
Greengram		1.80		1.80	0

7.4. Utilization of KVK funds during the year 2022-23 (Not audited)

Sl. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	179.32	179.32	179.31970
2	Traveling allowances	0.80	0.80	0.79989
3	HRD	0.30	0.30	0.29998
4	Contingencies			
A	Stationery and others		8.15	
B	Meals for residential and non-residential training	8.15		8.14906
C	Frontline demonstration		1.95	
D	On farm testing	1.95		1.94640
E	Maintenance of building	1.00	1.00	1.00000
F	SCSP	23.00	23.00	22.9999
TOTAL (A)		**214.52**	**214.52**	**214.51498**
B. Non-Recurring Contingencies				
1	Procurement of Tractor	7.50	7.50	7.50
2	Office Equipment	0.15	0.15	0.15
3	Information Technology	0.45	0.45	0.45
4	Works	6.61	6.61	6.61
5	Library	0.10	0.10	0.10
TOTAL (B)		**14.81**	**14.81**	**14.81**
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		**229.33**	**229.33**	**229.32498**

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)
2020-21	264.5054	55.46	52.32	267.6454
2021-22	267.6454	15.35	43.70	239.2954
2022-23	239.2954	71.80	66.38	244.7154

7.6. (i) Number of SHGs formed by KVKs : 8 nos.

(ii) Association of KVKs with SHGs formed by other organizations indicating the area of SHG activities: Training, demonstration, marketing, food processing, mushroom cultivation.

(iii) Details of marketing channels created for the SHGs : Village level seed production of paddy and greengram, processed food through local market

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
Name of activity	Number of activity	Season	With line department	With ATMA	With both
Exposure visit of farmer of ATMA	6	January, March, December	Dept. of Agriculture	Yes	Yes
Soil reclamation and enhancement of productivity and profitability in the coastal cyclone prone areas of South 24 Parganas district of West Bengal	1	2022	Dept. of Agriculture	Yes	Yes
Training on Cotton	6	Rabi-Summer,2022	NFSM-Cotton, Department of Agriculture, Govt. of West Bengal.	-	-
Training for Sunflower Growers	2	Rabi, 2022	NFSM-OS, Department of Agriculture, Govt. of West Bengal	-	-
Diploma in Agricultural Extension Service for Impute Dealers (DAESI)	2	Throughout the year	Department of Agriculture, WB; SAMETI, Narendrapur; MANAGE, Hyderabad	Yes	Yes
AICRP on Sunflower	1	Throughout the year	IIOR, Hyderabad	-	-
AICRP on Honeybees and Pollinators	1	Throughout the year	Division of Entomology, IARI, New Delhi	-	-
NICRA - TDC	1	Throughout the year	CRIDA, Hyderabad	-	
	1	Throughout the year	IIOR, Hyderabad	-	-
Training on scientific beekeeping	6	Throughout the year	National Bee Board	-	

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)
Sheath blight	Boro-Paddy	February to March	500	13-18%	Field vist and advise to apply *Trichoderma viride* and *Pseudomonas fluorescens*

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)
Myxosporidiosis	*Catla catla*	Post winter months	12%	-	Regular pond manuring, limimg and feeding
Argulosis	All carps	Summer	7%	-	Recommended dose of Cypermethrin

9.1. Nehru Yuva Kendra (NYK) Training - NA

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 - NA

Date of organizing the programme	Resource Person	No. of participants	Registration (crop wise)	
			Name of crop	No. of registration
Awareness programme about PPV & FR Act at RAKVK and collaboration with ICAR-CIFRI on 17th June, 2022	Dr. B.K. Das, Director, ICAR- CIFRI Barrackpore	80		

9.3. *mKisan*Portal (National Farmers' Portal/ SMSPortal) / Kisan Sarathi

Type of message	No. of messages	No. of farmers covered
Crop	26	30573
Livestock	5	2460
Fishery	10	10242
Weather	0	0
Marketing	0	0
Awareness	1	219
Training information	0	0
Other	4	17683
Total	**46**	**61,177**

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	*NA*
3.	Mobile Apps developed by KVK	Nil
4.	Name of the App	Nil
5.	Language of the App	Bengali
6.	Meant for crop/ livestock/ fishery/ others	*Others*
7.	No. of times downloaded	*NA*

N.B.: Toll free Number Call received through KVK Expert –3401;
Dial-Out Audio Conference Attend – 14; VMS Send through Reliance Foundation, Kolkata – 62099 farmers; Video Conference: 45

9.5. a. Observation of Swachh Bharat Programme

Date/ Duration of Observation	Activities undertaken
January, 2022	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID 19, Preparation of organic manure from farm waste & kitchen waste and cleaning activities by covering217 participants in the 7 programmes
February, 2022	Use of different medicinal plants for prevention of disease, Preparation of organic manure from farm waste & kitchen waste and cleaning activities, training on sustainable agriculture with emphasis on Natural farming by covering 111 participants in the 5 programmes
March, 2022	Maintenance of personal health and preventive measures of diseases during summer, Preparation of organic manure from farm waste & kitchen waste and cleaning activities, training on sustainable agriculture with emphasis on Natural farming by covering 103 participants in the 4 programmes
April, 2022	Cleaning activities of KVK premises which includes Staff quarters premises, Farmers Hostel, Farm Women Hostel, KVK Conference Hall, Dinning Room, Gust House,KVK Source Center, Kitchen Room , dairy unit, poultry unit, KVK Instructional Farm, Hostel, Computer Room, Kitchen, Soil testing lab, Account Section and Guest Room, Vehicle and Preparation of organic manure from homestead waste, Training on sustainable agriculture with emphasis on Natural farming by covering 141 participants in the 5 programmes
May, 2022	Maintenance of personal health and hygiene during rainy season, preparation of organic manure from homestead waste and training on sustainable agriculture with emphasis on Natural farming by covering 128 participants in the 3 programmes
June, 2022	Maintenance of personal health and hygiene during rainy season , preparation of organic manure from homestead waste and training on sustainable agriculture with emphasis on Natural farming by covering 259 participants in the 4 programmes
July, 2022	Maintenance of personal health and hygiene during rainy season , preparation of organic manure from homestead waste and training on sustainable agriculture with emphasis on Natural farming by covering 203 participants in the 5 programmes
August, 2022	Maintenance of personal health and hygiene during rainy season and preparation of organic manure from homestead waste by covering 84 participants in the 4 programmes
September, 2022	Nutri rich varieties of vegetables to improved nutritional security , preparation of organic manure from homestead waste and on campus training on Natural Farming by covering 167 participants in the 4 programmes
October, 2022	Nutri rich varieties of vegetables to improved nutritional security, preparation of organic manure from homestead waste and demonstration on utilization of crop residue by covering 177 participants in the 11 programmes
November, 2022	Nutri rich varieties of vegetables to improved nutritional security, preparation of organic manure from homestead waste and demonstration on utilization of crop residue by covering 249 participants in the 6 programmes
December, 2022	Nutri rich varieties of vegetables to improved nutritional security and demonstration on utilization of crop residueby covering 52 participants in the 2 programmes

b. Details of Swachhta activities with expenditure

Activities	Number	Expenditure (in Rs.)
1. Digitization of office records/ e-office	3	1100.00
2. Basic maintenance	4	1100.00
3. Sanitation and SBM	8	5000.00
4. Cleaning and beautification of surrounding areas	84	5800.00
5.Vermicomposting/ Composting of biodegradable waste management & other activities on generate of wealth for waste	12	-
6. Used water for agriculture/ horticulture application	11	-
7. Swachhta Awareness at local level	22	-
8. Swachhta Workshops	1	-
9. Swachhta Pledge	1	-
10. Display and Banner	17	-
11. Foster healthy competition	-	-
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)	25	-
14. No of Staff members involved in the activities	51	-
15. No of VIP/VVIPs involved in the activities	5	-
16. Any other specific activity (in details)- Training and Awareness, method demonstration	41	21500.00
Total		**34500.00**

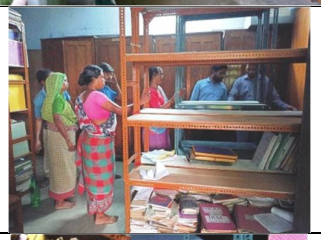
N.B.
Swachhata (Special Campaign 2.0)
By RAKVK, Nimpth (2nd October to 31st October, 2022)

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
1.	Cleaning of Weed and scrap materials in front of generator room of RAKVK	Beside of generator room of RAKVK	11.10.22	9	4		 
2.	Proper arrangement of lab materials and glass ware	KVK Lab	11.10.22	6	5		
3.	Disposable of materials and weeds for Cleaning of Poultry Demonstration Unit of RAKVK, Nimpith on 12.10.22	Poultry Demonstration Unit of RAKVK, Nimpith	12.10.22	16	7		

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
4.	Cleaning of weed behind the fish feed store room of RAKVK	Fish feed store room of RAKVK	13.10.22	9	4		 
5.	Cleaning of scrap and other materials behind the feed store house and fishery pond embankment of RAKVK	Behind the feed store house and fishery pond embankment of RAKVK	14.10.22	9	4		
6	Weeding and cleaningbehind the poultry unit of RAKVK	Poultry unit of RAKVK	15.10.22	9	3		

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
7.	Cleaning of scrap and other materials behind the Farmer's Hostel and Fishery Pond Embankment of RAKVK	Farmers Hostel and Fishery Pond Embankment of RAKVK	17.10.22	11	5		 
8.	Preparation of key hole nutrition garden by using farm and kitchen waste	RAKVK Premises	17.10.22	37	6		
9.	Cleaning of scrap and other official materials from RAKVK Office and Information Desk Zone.	RAKVK Office and Information Desk Zone.	18.10.22	7	4	 	

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
10.	Demonstration of natural farming through management of kitchen & farm waste of RAKVK	RKVK Premises	18.10.22	42	**2**		
11.	Weeding and cleaningsurrounding the mango orchard area of RAKVK	Mango Orchard area of RAKVK	19.10.22	7	**2**		 

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
12.	Cleaning of office store room and disposal of scrap materials from RAKVK	RAKVK Store Room	20.10.22	8	**4**		 
13.	Cleaning of office record keeping room and disposal of scrap materials from RAKVK	RAKVK Office Record Keeping Room	21.10.22	9	4		 

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
14.	Weeding and cleaning behind the Soil Testing Lab, Animal Husbandry OT unit and Fishery Pond Embankment of RAKVK	Near about Soil Testing Lab, Animal Husbandry OT unit and Fishery Pond Embankment of RAKVK	22.10.22	9	3		
15.	Gathering of village wastes and weeds for microbial based waste management and Vermicomposting at Bongheri village and cleaning activities surrounding the CHC of NICRA adopted village, Kaikhali of South 24 Pgs district on 22.10.22by RAKVK, Nimpith under SBM (Special Campaign 2.0)	Bongheri village and CHC of NICRA adopted village, Kaikhali of South 24 Pargans district	22.10.22	57	6		 
16.	Cleaning of office record keeping room and disposal of scrap materials from RAKVK	RAKVK Office Record Keeping Room	25.10.22	8	4		

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
17.	Cleaning of waste water management unit of RAKVK, Nimpith	Waste water management unit, Farmers Hostel Compound of RAKVK, Nimpith	26.10.22	13	3		
18.	Cleaning of office store room and disposal of scrap materials from RAKVK	Office store room of RAKVK, Nimpith	29.10.22	6	3		
							

Sl. No.	Activities	Site of activity undertaken	Date	Total No. of participants	No. of KVK employees participated	Action photographs (before) (2-3 best quality)	Action photographs (after) (2-3 best quality)
19.	Cleaning of Source Centre and disposal of scrap materials from RAKVK	RAKVK Source Centre, Nimpith	31.10.22	6	4		 
20.	Awareness on hygiene, sanitation, cleanliness for the School Children	Hostel Ground of Nimpith Ramkrishna Vidyabhavan School	31.10.2022	59	6		  

9.6. Observation of National Science day

Date of Observation	Activities undertaken
28.02.2022	A seminar on Natural Farming on " Importance and use of Natural Farming in Agriculture"
	Field visit to Natural Farming Plots
	Organized a field day on Natural farming
	Method demonstration on Natural Farming

9.7. Programme with Seema Suraksha Bal/ BSF: NA

Title of Programme	Date	No. of participants

9.8. Agriculture Knowledge in rural school

Name and address of school	Date of visit to school	Areas covered	Teaching aids used
Nimpith Ashram Sarada Vidyamandir for Girls, Vill. Nimpith Ashram, Block Joynagar	17.10.2022	Nutritional and clinical value of vegetables and fruits	Method Demonstration of Nutrient Rich Diet
Nimpith Ashram Sarada Vidyamandir for Girls, Vill. Nimpith Ashram, Block Joynagar	18.10.2022	Preventive qualities of herbs and spices	Poster, Banner, Audio Visual Aids – Film, PPT and Rally
Nimpith Ramkrishna Ashram Type High School, Vill. Nimpith Ashram Block Joynagar II	19.10.2022	Plantation programme under Swachhta Hi Sewa	Planting saplings of fruit plants like amla, jackfruit, guava and mango
Nimpith Vidya Bhavan & Ramkrishna Ashram Ashram Type High School, Vill. Nimpith Ashram Block Joynagar II	29.10.2022	Quiz, debate on personal health and hygiene	Poster, Banner, Audio Visual Aids – Film, PPT and Rally
Nimpith Vidya Bhavan Vill. Nimpith Ashram Block Joynagar II	31.10.2022	Handholding demonstration for cleaning and maintenance of playground	Story card

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 programme	Chairman ZilaPanchayat	Distt. Collector/ DM	Bank Officials	Farmers	Govt. Officials, PRI members etc.	Total		
17.10.2022	-	-	-	-	-	-	-	197	1	198	Yes	1

9.10. Details of Swachhta Hi Suraksha programme organized: - NA

Sl. No.	Activity	No. of villages Involved	No. of Participants	No. of VIPs	Name (s) of VIP(s)

9.11. Details of Mahila Kisan Divas programme (15.10.2022) organized

Sl. No.	Activity	No. of villages Involved	No. of Participants	No. of VIPs	Name (s) of VIP(s)
1	On the occasion of Mahila Kisan Diwas 15rh October, 2022, RAKVK, Nimpith has organised awareness programme on alternative livelihood for womenfolk. Field demonstration of integrated farming and different component of integrated farming like goat farming, duck farming, fish farming, hi- tech pan boroz, vermi compost, bee keeping and mushroom cultivation has been conducted	2	72	-	-

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

Sl. No.	Name of Farmer	Address of the farmer with contact no.	Innovation/ Leading in enterprise
1	Shankar Naskar	Kaikhali (Block : Kultali) 9083839019	Adoption of ex-situ water harvesting and in-situ water harvesting in vegetables crops Improved varieties of tomato, Pea and cabbage, use of tractor drawn implements and use of Kisan drone spraying
2	Sanat Naskar	Bongheri (Block : Kultali) 9647159390	Adoption of ex-situ water harvesting and in-situ water harvesting in vegetables crops Improved varieties of chilli, bringal, bittergourd, tomato, Pea and cabbage, use drip irrigation system, mulching for soil water conservation
3	Sunanda Sardar	Gopalganj (Block : Kultali) 8617851254	Adoption of ex-situ water harvesting and in-situ water harvesting in vegetables crops Improved varieties of chilli, bitter gourd use of poly mulching for soil water conservation, use of bio fertilizer and bio pesticides like *Trichoderma, psudomonus etc.*
4	Swapan Bhunia	Khansahebabad (Block: Sagar) 9800650883	Organic Betelvine cultivation with home grown *Trichoderma* (Biofungicide) in hi-tech boroj
5	Sri Manabendra Halder	Jhupkhali (Block-Joynagar-II), 9732967947	Beekeeping and integrated farming
6	Tilak Roychowdhury	Dakshin Baikunthapur (Block: Kultali) 6294480461	Small scale culture of climbing perch in canals

Contd…

Sl. No.	Name of Farmer	Address of the farmer with contact no.	Innovation/ Leading in enterprise
7	Sujit Kumar Mondal	Hyatnagar (Block: Magrahat II) 9007812314	Breeding and culture of variants of ornamental fish - zebra fish and tetra in cemented cisterns
8	Dipak Maity	Patharpratima (Block:Patharpratima) 9609269212	Cultivation of multiple vegetables through natural farming
9	Surajit Baidya	Kankandighi (Mathurapur II) 8670672359	Cultivation of multiple vegetables through natural farming
10	Sonali Adhikari	Ranaghata (Joynagar II) 8116563855	Cultivation of bio fortified and oyster mushroom cultivation
11	Debasish Giri	Herombo Gopalpur, (Block: Patharpratima), 8145293478	Cotton cultivation in low land rice fallow, Sunflower cultivation
12	Manoranjan Maity	Dakshin Durgapur (Block: Namkhana) 9002663283	Zero tillage potato cultivation in muddy soil
13	Barnali Dhara	Ashwathatala (Block: Kulpi) 7980870157	DAESI diploma holder, community mobilizer, progressive farmer
14	Sushanta Roy	Katamari (Block:Kultali) 9564716465	Lead the cyclone (Aila) affected farmers of his village to form a cooperative society with enrolment of about 210 members in fisheries field
15	Sachin Sardar	Sankijahan (Block:Kultali) 9733549702	Backyard system of breeding of the high priced fish *Mystus gulio*
16	Bapan Karmakar	Gilarchat (Block: Mathurapur II) 9733572784	Seed production of greengram
17	Ashok Bar	Mollar chak (Block: Joynagar-II) 9735817615	Cotton cultivation in lowland rice fallows
18	Gouranga Naskar	Kaikhali (Block: Kultali) 9733916917	Asian catfish breeding and larval rearing with water collected by rooftop rain water harvisting
19	Gopal Jana	Rajnagar (Block: Namkhana) 9734015178	Betelvine cultivation in green shade net
20	Sudhanshu Sekhar Dey	Durbachati (Block Pathar Pratima)	Paddy and Sunflower Cultivation

9.13. Revenue generation

Sl.No.	Name of Head	Income (Rs.)	Sponsoring agency
1.	Contingencies	4.00	NFSM-cotton
2.	Contingencies & outsourcing of contractual services	3.30	MVC, South & North 24 Parganas, Dept. of ARD, GoWB
3.	Contingencies	4.27	NICRA (ICAR)
4	Contingencies	2.07	NFSM-Oilseed
5	Contingencies	1.07	AICRP Honey Bees
6	Contingencies	1.22	ARYA
7	Contingencies	2.00	DAESI
8	Contingencies	1.00	Landshaping RKVY-RAFTAAR
9	Contingencies	15.00	Biofertilizer Laboratory
10	Contingencies	0.027	CFLD On Pulse

9.14. Resource Generation:

Sl.No.	Name of the programme	Purpose of the programme	Sources of fund	Amount (Rs. lakhs)	Infrastructure created
1	NICRA (ICAR)	Strategies to enhance adaptive capacity to climate change in vulnerable regions of district	ATARI, Kol	3.00	Equipment at Village CHC
2	ARYA	Attracting and Retaining Rural Youth in Agriculture through Self Employment Generation programme	ATARI, Kol	8.00	Capital (at Beneficiary end)
3	DRONE (ICAR)	Demonstration of Nano Urea and Bio pesticides on Cotton and Sunflower field at different Block of South 24 Pgs	ATARI, Kol	10.00	Equipment
4	Biofertilizer Production Unit under RKVY-RAFTAAR	Establishment of Biofertilizer Production Unit for Improvement in Agricultural Productivity in South 24 Parganas District	Dept. of Agriculture, Govt. of W.B	176.00	Building & Equipment

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
January, 2007	Established by IMD at KVK Instructional Farm; maintenance by IMD	Working Condition

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	5	660	• Floating seedbed for rice nursery • Vegetable cultivation in land embankment • Seedling raising in pot tray / plug tray • Use of liquid fertilizers • Application of *Trichoderma viridi* in vegetable seedling to prevent root rot. • Hydroponic fodder cultivation • Distribution of greengram • Pond bleaching, liming and spraying of Potassium Permanganate

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

a) Year:

b) Introduction / General Information:

	Title	Objective	Treatment details	Date of sowing	Replication	Result with photographs
Experiment 1						

11. Details of TSP

a. Achievements of physical output under TSP during 2022-2023 - **NA**

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

b. Fund received under TSP in 2022-23 (Rs. In lakh):

c. Achievements of physical outcome under TSP during 2022-2023

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 2022-2023

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 (January – December, 2022)

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	
Land embankment (*Ail*) cultivation	8	8	1.07	7	1	0	0	0	0	7	1	8	
Broad bed cum trench system	1	1	0.06	1	0	0	0	0	0	1	0	1	
Desiltation	25	25	1.33	23	2	0	0	0	0	23	2	25	

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	
Soil health cards issued and advised on necessary soil amelioration and fertilizer dose I. Liming II. Compost application III. Balanced fertilizer dose		35	5	0	0	0	0	35	5	40	
Salt tolerant Rice Variety: Luna Suwarna (CR LC2096-71-2)	1.07	5	3	0	0	0	0	5	3	8	
Submergence tolerant Rice Variety: Varshadhan (CRLC 899)	1.33	9	1	0	0	0	0	9	1	10	
Distribution of Biofertilizer and bio fungicides	2.67	12	8	0	0	0	0	12	8	20	
Yellow Mosaic Virus (YMV) tolerant Black Gram Variety PU-31	0.36	9	2	0	0	0	0	9	2	11	
Distribution of Dhaincha Seed for Green Manuring	6.68	43	7	0	0	0	0	43	7	50	
Distribution of Nutritional Garden seeds	1.00	4	31	0	0	0	0	4	31	35	
Distribution of leaf curl virus tolerant Chilli variety Arka Tejasvi	0.10	7	0	0	0	0	0	7	0	7	
Distribution of Mulching paper for moisture conservation	1.00	47	3	0	0	0	0	47	3	50	
Distribution of low BOAA content Lathyrus Variety Prateek	1.33	6	4	0	0	0	0	6	4	10	

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	
Wide range of salinity tolerant Fish Nona Tangra (Mystus gulio) integrated with IMC	-	10	-	10	0	0	0	0	0	10	0	10	
Distribution of Black Bengal goat	6	6	-	3	3	0	0	0	0	3	3	6	

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	
Custom hiring centre (Power tiller, Power operated paddy thresher, pumpset, Spade, Sickle, Khurpi & Nirani)	Power tiller -1 Power operated paddy thresher -1 Pumpset-1 Spade- 33 Sickle- 33 Khurpi-33 Nirani- 33	32	72	23	0	0	28	17	100	40	140	The farm machineries are hired out to the resource poor farmers at reasonable rent

Capacity building

Thematic area	No of Courses	No of beneficiaries								
		SC		ST		Other		Total		
		M	F	M	F	M	F	M	F	T
Principles and practices of natural farming	1	5	30	0	0	0	0	5	30	35
Mangrove Plantation Programme)	1	64	0	0	0	0	0	64	0	64
Seed treatment and seed bed management in kharif paddy	1	35	10	0	0	0	0	35	10	45
Integrated pest management in kharif vegetables	1	7	18	0	0	0	0	7	18	25
Pest and disease management in the changing climate scenario	1	15	10	0	0	0	0	15	10	25
Integrated pest management for chilli leafcurl virus	1	22	13	0	0	0	0	22	13	35
IPM in Rabi Crops	1	21	5	0	0	0	0	21	5	26
Hands on Training on Biopesticides for Natural Farming	1	21	8	0	0	0	0	21	8	29
Use of biocontrol agents for the pest-disease management in rabi crops	1	3	26	0	0	0	0	3	26	29
Crop Planning for Rabi season in NICRA village	1	64	0	0	0	0	0	64	0	64
Indentification & management of lumpy skin disease of cattle in changing climate scenario	1	13	7	0	0	0	0	13	7	20
Hands on training on vermicomposting Preparation	1	9	20	0	0	0	0	9	20	29

Extension activities

Thematic area	No of activities	No of beneficiaries								
		SC		ST		Other		Total		
		M	F	M	F	M	F	M	F	T
Field days	7	80	15	0	0	0	0	80	15	95
Method demonstrations	2	26	9	0	0	0	0	26	9	35
Audio conference	0	0	0	0	0	0	0	0	0	0
Video conference	1	75	45	0	0	0	0	75	45	120
Participation in the Daridra Kalyan Sammelan at KVK	120	75	45	0	0	0	0	75	25	120
Awareness on stress tolerant varieties	30	16	14	0	0	0	0	16	14	30
Awareness on nutritional garden	38	18	20	0	0	0	0	18	20	38
Method demonstration on rice seedling treatment	28	22	6	0	0	0	0	22	6	28
Awareness on Har ghar tiranga campaign under azadi ki amrit mahotsav	135	95	40	0	0	0	0	95	40	135
Awareness on worm infestation in farm animals at NICRA village	46	31	15	0	0	0	0	31	15	46
Mangrove Afforestation	64	64	0	0	0	0	0	64	0	64
Input distribution cum training programme at gopalganj school by ADA	60	42	18	0	0	0	0	42	18	60
Awareness Programme on Prevention and control measure of Lumpy Skin Disease of cattle	55	45	10	0	0	0	0	45	10	55
Animal Health cum Vaccination camp	110	65	45	0	0	0	0	65	45	110

13. Awards/Recognition received by the KVK

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

Award received by Farmers from the KVK district

Sl. No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose
1	Khet Khamare Bazimat	Mr. Sanat Naskar	2022	DD Bangla	-	Agricultural Quiz Competition
2	Khet Khamare Bazimat	Mr. Shankar Naskar	2022	DD Bangla	-	Agricultural Quiz Competition

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

SL	Achievement	
1	**Mobile Veterinary Clinic** All the six MVC camps operated in the remote islands of Sundarbans inspite of several natural disasters Conducted in 3 Blocks, each in 2 districts South 24 Parganas: Sagar, Patharpratima, Gosaba North 24 Parganas: Sandeshkhali I & II, Hingalganj ➢ Total camp: 960 ➢ Total beneficiary : 33455 	
2	**Training under National Beekeeping and Honey Mission:** The honey hunters of Sundarbans were trained on beekeeping and grouped into three cooperative societies (at Kultali, Nalgora & Jharkhali). They purchased 1500 bee colonies (*Apis mellifera*) through bank loan and produced 60 tonne honey in 2022. The honey is processed and branded (Bonphool brand) after obtaining FSSAI liscence.	 

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
1	Joynagar Farmer Producer Company Ltd.	U01403WB2015 PTC207939	29-Sep-2015 Jaynagar Farmers Producer Company Ltd. Vill.+ P.O. Joynagar -1, PS- Joynagar -1, South 24 Pgs, Pin- 743337	✓Production of vegetables and marketing of the produce of member farmers in organized way, ✓Create facility for the member farmers to get all types of critical inputs like seed, Pesticides, fertilizers at their door step at dealer's price. ✓Provision for financial support through short term loan to the member farmers	Bitter gourd, Ridge gourd, Cucumber, Cowpea, Bottle gourd, Okra, Tomato	1046	23.0	Increase in income, better health, education and nutrition. Overall betterment of the quality of life
2	Dutipata Farmers Producer Company Ltd.	U01100WB2019 PTC231331	4 April, 2019 Dutipata Farmers Producer Company Ltd. Raidighi Dist. South 24 Pgs	✓Demonstration of oilseed and pulses among the SHG members ✓Training imparted to SHG members on agriculture technologies in collaboration with KVK ✓Education to child labours ✓Organic input marketing for betel vine and other agricultural crops	Organic inputs like biopesticides and biofungicides	2000	3.0	

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
3	Suryanagar Madhusudanpur Farmer Producer Company Ltd.	U01403WB2016 PTC210402	18 March, 2016 Suryanagar Madhusudanpur Farmer Producer Company Ltd Bazar Beria P.O.- Suryanagar, P.S.- Kakdwip, South 24 Pgs, Pin- 743374, West Bengal	✓Marketing of agricultural and fishery inputs at doorstep to the farmers ✓Marketing of processed dal and rice to other FPCs of North Bengal districts for onward transmission to Sufal Bangla ✓Marketing of sunflower oil after crushing and processing with the oil expeller machine obtained on the recommendation of the KVK	Agricultural and fishery inputs and products	1000	15.0	
4	Karnjali Sabuj Biplab Krishi Udyog Producer Company Ltd.	U01400WB2016 PTC210073	4 March, 2016 Vill.- Shyamnagar near Karanjali Mrket, P.O.- Karanjali P.S.- Kulpi, South 24 Pgs, WB- 743348	✓Marketing of agricultural inputs like pesticides, organic manure, crop seeds among the members as well as other farmers ✓Marketing of seasonal vegetables ✓Procurement of paddy grain and selling to Government Mills ✓Demonstration on sunflower and pulses in collaboration with KVK	Tomato, cucumber, okra, bitter gourd, ridge gourd, snake gourd, green chilli, etc.	1000	10.0	
5	Ramkrishnapur Farmer Producer Company Ltd.	U01403WB2016 PTC210143	9 March, 2016 Vill.- Kaliberia, P.O.- Ramkrishnapur P.S. -Kulpi, Pin- 743351, West Bengal	✓Marketing of coconut, paddy, potato and vegetables				

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
6	Belpukur Bidhan Chandra Krishi Vikash Producer Company	U01100WB2016 PTC216293	23 June, 2016 Vill.- Nischintapur, P.O.- Nischintapur, P.S. Kulpi, Dist. South 24 Pgs, Pin-743374, West Bengal	✓Marketing of paddy, sunflower and vegetables				
7	Patharpratima Sundarban Producer Company Ltd	U01100WB2018 PTC227103	20 July, 2018 Vill.- Dakshin Durgapur, P.O.-Sridurgapur,Block Patharpratima, Dist. South 24 Pgs, Pin-743349, West Bengal	✓Marketing of vegetables				
8	Pallymangal Agro Producer Company Ltd.	U0100WB2021P TC244205	26 March, 2021 New Pallymongal Samity Manika, Ramnagar, South 24 Pgs Pin-743504	✓Marketing of fishery and goatery				
9	Badabon Farmers Produc er Company Ltd.	U0110WB2018P TC225248	20 March, 2018 4 No. Garankati Road, Dakshin Garankati, Kultali, Pin-743338 South 24 Pgs	✓Demonstration of crops ✓Market of Horticulture crops				

16. Integrated Farming System (IFS)

Details of KVK Demonstration 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	Component 1 - Horticulture (Vegetables & fruit)	0.10	2640 kg	40520	47520	123	22.37
2	Component 2 – Fish	0.12	215kg	15736	32240		
3	Component 3 – Field crops (Paddy & Sunflower)	0.18	1525	19810	45115		

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	Seed production of Asian catfish	➢ Eggs of female fish collected and fertilized with squashed testis of male fish ➢ Fertilized eggs spread in glass trays for hatching ➢ Continuous cleaning of tray bottom and aeration ➢ Feeding with freshly hatched brne shrimp for 10 days followed by feeding with worms	126390.00/yr	115	
2	Horticulture nursery	➢ Quality seedlings of vegetables, flowers, fruits and ornamental plants are the key to horticultural plant multiplication and propagation. ➢ Vegetable seedlings were raised in 98 hole plug tray for healthy seedling growth, easy transplanting and better plant stand ➢ Fruit saplings were raised through budding and grafting upon rootstock raised in plastic bags	145760.00/0.13 ha /year	83	

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
3	Kharif okra cultivation	➢ Okra is a summer crop, which is normally cultivated in summer and rainy season ➢ In this innovative method, okra is sown in December-January, after harvest of kharif paddy ➢ In winter, to overcome germination problem of okra seeds, special germination technique is followed and only germinated seeds are sown ➢ Before sowing, seeds are treated with cycocel 50ppm for 12 hours to enhance crop resistance against biotic (YVMV, sucking pest , etc) and abiotic (cold, draught, soil salinity etc.) stresses. ➢ This technology ultimately gives offseason harvest of okra with high market price as well as prolonged and better harvest due to cycocel treatment	90864.00/ha/ season	1375	
4	Integrated fish farming	➢ Integration of horticulture, fish and poultry ➢ Vegetables and fruit plants on pond embankment and aerial cultivation of cucurbits ➢ Vegetables on land embankment during kharif and rabi ➢ Poultry birds	37290.00/0.20ha/ yr	1489	
5	Greengram cultivation	➢ YVMV resistant variety IPM-205-7 ➢ Seed inoculation with *Rhizobium*, PSB and KSB ➢ Use of *Trichoderma* and *Pseudomonas* biofungicides ➢ Use of micro nutrients (B & Mo)	28918.00/ha	274	

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) / **27.02.2018**	534	7302	5th February, 2018	Senior Scientist & Head, Programme Assistant (Computer) and two Progressive Farmers	Cropwise SMS Alerts are sent to the farmers
II (up-to 24.04.2018)/ **23.04.2018**	474	9968			
Total	1008	17270			

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)
3rd November, 2022	Hon'ble Minister In-Charge Shri Bankim Chandra Hazra	Dept. of Sundarban Affairs, Govt. of West Bengal	Simply amazing experience. Totally overwhelmed by the dedication and sincerity of all associated with the RAKVK.

20. a) Information on ASCI Skill Development Training Programme, if undertaken during 2022 - NA

Name of the Job role	Name of the certified Trainer of KVK for the Job role	Date of start of training	Date of completion of training	No. of participants						Whether uploaded to SIP Portal (Y/N)	Fund utilized for the training (Rs.)
				SC		ST		Other			
				M	F	M	F	M	F		

b) Information on Skill Development Training Programme (Other than ASCI or less than 200 hrs., if any) if undertaken during 2022

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) – N.A.

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-III, if applicable – N.A.

a) Training achievements

Name of KVK	***Period***	***No. of Training on diversified farming practices for doubling farmers' income organized***	***No. of farmers trained***	
			Male	***Female***
	01.01.2022 to 31.12.2022			

b) Other achievements

Sl. No.	**Particulars**	**January, 2022 to December, 2022**
1	Number of demonstrations other than oilseeds and pulses	
2	Number of demonstrations on oilseed crops	
3	Number of demonstrations on pulse crops	
4	Number of farmers trained	
5	Number of participants in Extension activities	
6	Number of farmers for Mobile Advisory	
7	Production of seeds (in quintal)	
8	Production of planting material (Number)	
9	Number of soil sample tested	
10	Number of farmers covered in Climate Resilient villages	
11	Number of farm families covered in Farmer FIRST project	
12	ARYA project: Number of youth trained	
13	ARYA project: Number of entrepreneurial activities started	
14	Number of farm families in DFI villages	

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

Sl. No.	Name of the programme	Date of the programme	Venue	Purpose	No. of participants
1.	Viewing the webcast on "Release of 10th Installment under PM-Kisan and Release of Equity Grant to FPOs" through the portal https://pmindiawebcast.nic.in	01.01.22	Online	"Release of 10th Installment under PM-Kisan and Release of Equity Grant to FPOs"	108
2.	Commemorative Celebration of 75 years of India's Independence -Celebration of National Girl Child Day 2022	24.01.22	RAKVK, Nimpith	Celebration of National Girl Child Day 2022	132
3.	Workshop on Prospect of Pulse Crops in the South 24 Parganas in the occasion of "Commemoration of 75 years of Independence Bharat Ka Amrut Mahotsav"	31.01.22	RAKVK, Nimpith	Workshop on Prospect of Pulse Crops in the South 24 Parganas	72
4.	World Pulses Day 2022	10.02.22	RAKVK, Nimpith	Celebration of World Pulses Day 2022	70
5.	Annual Agricultural Exhibition cum Technology Week 2022	04/3/22 to 6/3/22	Vivekananda Play Ground of Sri Ramkrishna Ashram, Nimpith	Annual Agricultural Exhibition cum Technology Week 2022	6815
6.	Celebration of World Water Day 2022	22.03.22	RAKVK, Nimpith	Celebration of World Water Day 2022	39
7	National Campaign on "Bharatiya Prakritik Krishi Paddhati" under Azadi Ka Amrit Mahotsav & Farmers' Fair	26.04.22	RAKVK, Nimpith	Celebration of "Bharatiya Prakritik Krishi Paddhati"	331
8	National Campaign on "Kisan Bhagidari, Prathmikta Hamari" under Azadi Ka Amrit Mahotsav and Kisan Bhagidari Mela 2022	28.04.22	RAKVK, Nimpith	National Campaign on "Kisan Bhagidari, Prathmikta Hamari"	131
9	Celebration of World Bee Day 2022	20.05.22	RAKVK, Nimpith	Celebration of World Bee Day 2022	99

Sl. No.	Name of the programme	Date of the programme	Venue	Purpose	No. of participants
10	Kharif Kisan Sammelan 2022	31.05.22	RAKVK, Nimpith	Kharif Kisan Sammelan 2022	442
11	Observing the event PM Kisan Samman Nidhi through the portal https://pmindiawebcast.nic.in	31.05.22	Online	PM Kisan Samman Nidhi	102
12	Farmers Fair - Garib Kalyan Sammelan	31.05.22	RAKVK, Nimpith	Farmers Fair - Garib Kalyan Sammelan	566
13	Awareness programme on Protection of plant varieties and farmers right and other IPR issues	18.06.22	RAKVK, Nimpith	Awareness programme on Protection of plant varieties and farmers right and other IPR issues	70
14	Celebration of International Yoga Day' under Azadi Ka Amrit Mahotsav	21.06.22	RAKVK, Nimpith	Celebration of International Yoga Day' under Azadi Ka Amrit Mahotsav	67
15	Celebration of 94th ICAR Foundation Day and Award Ceremony	16.07.22	RAKVK, Nimpith	Celebration of 94th ICAR Foundation Day	196
16	Celebration of 'International Women's Day 2022' for National Campaign under Azadi Ka Amrit Mahotsav	08.03.22	Villages - Binodpur & Sankijahan, Kultali Block, South 24 Pargans	Celebration of 'International Women's Day 2022'	110
17	Celebration of National Fish Farmers Day	10.07.2022	RAKVK NICRA Village 'Bongheri', Kultali of South 24 Parganas	Celebration of National Fish Farmers Day	53
18	HAR GHAR TIRANGA (Campaign & Celebration of Independence Week 13 to 15 August, 2022)	13.08.22 to 15.08.22	RAKVK, Nimpith and at Bongheri village, Kultali	HAR GHAR TIRANGA	169

Sl. No.	Name of the programme	Date of the programme	Venue	Purpose	No. of participants
19	Celebration of Parthenium Week	16/08/22 to 22/08/22	RAKVK, Nimpith	Celebration of Parthenium Week	111
20	Internship training of Rural Agricultural Work Experience (RAWE) for the B.Sc.(Ag) students of The Neotia University, Sarisha, South 24 Parganas	14/09/22 to 24/11/22	RAKVK, Nimpith	Rural Agricultural Work Experience (RAWE)	51
21	National Campaign on Poshan Abhiyan and Tree Plantation	17/09/22	RAKVK, Nimpith	National Campaign on Poshan Abhiyan and Tree Plantation	103
22	Participation of webcasting on PM Kisan Samman Sammelan 2022	17/10/22	Online	PM Kisan Samman Sammelan 2022	110
23	Observance of Vigilance Awareness Week, 2022	31/10/22 to 06/11/22	RAKVK, Nimpith	Observance of Vigilance Awareness Week, 2022	55
24	Celebration of World Soil Day 2022	05/12/22	Vivekananda Conference Hall of RAKVK, Nimpith	Celebration of World Soil Day 2022	76
25	KISAN SAMMAN DIWAS 2022	23/12/22	RAKVK, Nimpith	KISAN SAMMAN DIWAS 2022	107

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

Dr. S. K. Roy, Director, ICAR-ATARI, Kolkata delivered lecture on the light of Natural Farming for a sustainable future during Technology Week Celebration

Srimat Swami Nityakamalanandaji, Secretary, Ramakrishna Mission, Seva Pratisthan and MLA Shri Biswanath Das visited the KVK stall on 'Natural Farming on 04.02.2022

A view of vegetables fruits and flower competition during Agriculture Exhibition -2022

Observation of 94th ICAR Foundation Day at the RAKVK

Observation of Independence Day at RAKVK, Nimpith

Oath taking ceremony during Vigilence Awareness Week-2022, in presence of MLA, Joynagar Assembly and Chairman, RAKVK, Nimpith

Off campus training programme on Bengal Goat rearing on the day of International Womens Day at Kishorimohanpur

Kisan Mela on Natural Farming on the occasion of Kisan Bhagidari Prathamikata Hamari to comomorate the Azadi Ka Anrut Utsab at RAKVK, Nimpith on 26.04.23

Farmers were keenly observing the demonstration of Natural Farming by Senior Scientist & Head of RAKVK, Nimpith

Observation of National Fish Farmers Day 2022 at Community Carp Hatchery, Bongheri village

Celebration of World Soil Day 2022 in presence of ADA, Joynagar-II at RAKVK, Nimpith

Inauguration of Tableau on Natural Farming by Prof. R. K. Samanta, Former VC, BCKV in presence of Reverent Chairman Swamiji, RAKVK, Dr S K Roy, Director, ICAR-ATARI, Kolkata, MLA, Joynagar

Celebration of Kisan Saman Diwas 2022 at RAKVK, Nimpith on 23.12.23

Farmer Scientist interaction during Garib Kalyan Sammelan on 31.05.2022 at RAKVK, Nimpith

Celebration of Garib Kalyan Sammelan on 31.05.2022 at RAKVK, Nimpith

Celebration of World Pulse Day on 10.02.2022 at RAKVK, NImpith

Celebration of World Water Day 2022 at RAKVK, Nimpith

Deliberation of the Chairman, Prof. R. K. Samanta, Former VC, BCKV during 36th SAC Meeting at RAKVK, Nimpith in presence of DEE, BCKV, Director, ICAR-ATARI, Kolkata, Chairman, RAKVK, MLA, Joynagar Assembly along with Scientific members on 23.12.22

Presentation of Actin Plan of *Kharif* 2023 and activities done during *Rabi* 2022 by Senior Scientist & Head, RAKVK, Nimpith