

Annual Report 2021

(January-December 2021)



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 2021

(January, 2021 – December, 2021)

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PROFORMA FOR ANNUAL REPORT 2021 (January 2021 to December 2021)

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 1stJan, 2021)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline/	Pay Scale with present basic	Date of joining	Permanent/Temporary	Category (SC/ST/OBC/ Others)
1	Senior Scientist& Head	VACANT						
2	Subject Matter Specialist (Fishery)	Shri Prasanta Chatterjee	In-Charge, Senior Scientist& Head and SHS(Fishery)	Technical	15600-39100,GP-7600/-, Basic Pay Rs.44810/-	28.10.1997	Permanent	Others
3	Subject Matter Specialist (Home Science)	Dr.Manasi Chakraborty	Subject Matter Specialist (Home Science)	Technical	15600-39100,GP-7600/-, Basic Pay Rs.41780/-	08.12.2000	Permanent	Others
4	Subject Matter Specialist (Horticulture)	Dr.Chandan Kumar Mondal	Subject Matter Specialist (Horticulture)	Technical	15600-39100,GP-7600/-, Basic Pay Rs.35480/-	16.05.2005	Permanent	Others
5	Subject Matter Specialist (Plant Protection)	Shri Prabir Kumar Garain	Subject Matter Specialist (Plant Protection)	Technical	15600-39100,GP-6600/-, Basic Pay Rs.28730/-	17.10.2012	Permanent	Others
6	Subject Matter Specialist	VACANT	-	-	-	-	-	-
7	Subject Matter Specialist	VACANT	-	-	-	-	-	-
8	Programme Assistant(Agronomy)	Dr.Dipak Kumar Roy	Programme Assistant(Agronomy)	Technical	15600-39100,GP-6600/-,Basic Pay Rs.28770/-	12.06.2001	Permanent	Others
9	Computer Programmer	Shri Partha Banik	Programme Assistant(Computer)	Technical	15600-39100,GP-6600/-,Basic Pay Rs.27110/-	09.06.2003	Permanent	Others
10	Farm Manager	Shri Utpal Maity	Farm Manager	Technical	9300-34800,GP-4600/- Basic Pay Rs.18640/-	02.12.2011	Permanent	Others
11	Accountant / Superintendent	Shri Aditya Guchhait	Assistant	Administrative	9300-34800,GP-4200/- Basic Pay Rs.18180/-	01.06.2010	Permanent	Others
12	Stenographer	Shri Debjyoti Maitra	Stenographer	Administrative	5200-20200,GP-2400/- Basic Pay Rs.12970/-	04.01.2011	Permanent	Others
13.	Driver	Shri Birendranath Das	Driver	Technical	5200-20200,GP-2400/- Basic Pay Rs.13070/-	01.09.2003	Permanent	Others
14.	Driver	Shri Madhab Chandra Kayet	Driver	Technical	5200-20200,GP-2400/- Basic Pay Rs.14660/-	01.06.1995	Permanent	OBC
15.	Supporting staff	VACANT	-	-	-	-	-	-
16.	Supporting staff	Shri Sailen Das	Supporting staff	Administrative	5200-20200,GP-2800/- Basic Pay Rs.20630/-	01.07.1979	Permanent	Others

1.6. Total land with KVK (in ha)

:

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

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	-	-	-	-	-do-	359.639	Yes	ICAR
3.	Farm Women Hostel					-	521.25	Yes	RKVY
4.	Separate Dinning Hall for farmer					-	350	Yes	RKVY
5.	Staff Quarters (6)	-	-	-	-	-do-	411.680	Yes	ICAR
6.	Piggery unit	-	-	-	-	-	-	-	-
7.	Fencing	-	-	-	-	-do-	770.00 (running m)	Yes	ICAR
8.	Rain Water harvesting structure	-	-	-	-	-do-	17500	Yes	ICAR
9.	Threshing floor	-	-	-	-	-do-	371.720	Yes	CAPART
10.	Farm godown	-	-	-	-	-do-	378.790	Yes	SDB, GoWB
11.	Dairy unit	-	-	-	-	-do-	3500.00	Yes	ICAR & RKVY, GoWB
12.	Soil testing lab	-	-	-	-	-do-	10.00	Yes	RKVY, GoWB
13.	Poultry unit	-	-	-	-	-do-	280.00	Yes	Revolving fund of KVK
14.	Goatery unit	-	-	-	-	-do-	2100.00	Yes	RKVY, GoWB
15	Rabbit farm	-	-	-	-	-do-	16	No ^s	Revolving fund of KVK
16	Ornamental bird unit	-	-	-	-	-do-	12	No ^s	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	-	-	-	-	-do-	12	No ^{\$}	N AIP
18	Hydroponics unit	-	-	-	-	-do-	14	Yes	Revolving fund of KVK
19	Mushroom production unit	-	-	-	-	-do-	100	Yes	ICAR & Revolving fund of KVK
20	Shade house	-	-	-	-	-do-	300	Yes	Deptt. of FPI & H, GoWB
21	Vermicompost production unit	-	-	-	-	-do-	150	Yes	ICAR & SASM, IRM
22	Bee Park & Honey Processing Unit	-	-	-	-	-do-	40	Yes	AICRP Honeybees
23	Hi-tech Pan Boroz	-	-	-	-	-do-	25	Yes	ICAR & SASM, IRM
24	Green House	-	-	-	-	-do-	300	Yes	Deptt. of FPI & H, GoWB
25	Food processing unit	-	-	-	-	-do-	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

\$ not in use due to non availability of SMS, Animal Husbandry

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

B) Vehicles Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total km. Run	Present status
Mahindra Bolero Power +	2019	8,00,000.00	20397 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 PinAAcle™ 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/l)	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/hr)	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
Chlorophyll 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

V-SAT with e-KVK linkage (5 Dell-Optiplex -755 Computer & One HP Leser Printer-1022n , One HP- G3110 Scanner, One TVS –MSP-245- dot-matrix Printer with Server Computer, 5-650VA APC UPS, 3KVA APC make UPS)	2009-10	-	V-SAT and Dell- optiplex -755 Computers, 650VA APC UPS are out of order *Only 3KVA APC make UPS are in working condition	ICAR
Lenovo Laptop	2008-09	48,000.00	Out of order	NHM
Samsung Notebook	2009-10	22,000.00	Working condition	TMC
HP Desk top Computer with Cannon Printer	2010-11	75,0000	Working condition (Printer out of order)	NAIP
Epson EB-825 Projector	2010	2,20,000.00	(Epson EB-825 Projector & SamsungTouch 400TSn-2) Out of order	NAIP
Samsung Touch 400TSn-2				
HP LaserJet M1522nf	2009-10	24,000.00	Working condition	AICRP
HP Color Laser Jet 1215	2009-10	22,000.00	Out of order	NAIP
Two LG LED Projector	2014	1,18,000.00	Working condition (one out of order)	RKVY
Hand Scanner -(1PC)	2016	8000/-	Working condition	ARYA
ITB External HDD - (1PC)	2016	8000/-	-do-	ARYA
DATA Processing System (I3 Processor, 1 TB HDD, 4GB RAM, 15.6 inch Screen with Graphics Card) - (1PC)	2016	36900/-	-do-	ARYA
Color Copier Printer- (1PC)	2016	13500/-	-do-	ARYA
Broadband Router -(1PC)	2016	2300/-	-do-	ARYA
Biometric Systems Fingerprint Time & Attendance System (Including Battery & Power Adopter) X-990	2016	23500/-	-do-	ICAR
Olympus phase contrast microscope with CMOS camera, Lenovo Computer, UPS, printer cum scanner	2015-16	5,00,000.00	-do-	RKVY

Fermenter	2015-16	4,00,000.00	-do-	RKVY
HP LAPTOP 240 G5 CI3 1AS37PA CORE i3 /4 GB/500GB/14"	2016-17	36,800.00	-do-	IARI, ICAR
PA System for Class room	2016-17	48,500.00	-do-	RKVY, Dept. of Agriculture, W.B
Wireless MIC for Conference room	2016-17	27,038.00	-do-	RKVY, Dept. of Agriculture, W.B.
HP Desktop Computer MODEL 48PA, Cori 3 7 th Gen, 4gb RAM/1 TB HDD/ 18.5" Monitor/ Key Board/ Mouse/(3 yrs on-site warranty)	2017-18	45430.00	-do-	RKVY – Strengthening of Soil Lab project
H.P Laptop 2UE06PA AMD A9/ 4 GB RAM/ 14"/1 TB HDD (1 yr warranty)	2017-18	37170.00	-do-	RKVY – Strengthening of Soil Lab project
HP Laser Printer All in One A3 size/ Print/Scan/Copy (Model: MFP M435NW) (1 yr on-site warranty)	2017-18	82000.00	-do-	RKVY – Strengthening of Soil Lab project
EPSON PROJECTOR EB-X-31	2017-18	37000.00	Working condition	RKVY – Strengthening of Soil Lab project

D) Farm implements

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
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

1.8. Details SAC meeting conducted in the year

Salient recommendation in bullet form (Attach a copy of SAC proceeding along with list of participants)

(True copy)

Meeting No. 35

Date : 24.09.2021

Place : Nimpith

Time : 11.00 a.m.

A meeting of the Scientific Advisory Committee of Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith is held today, the 24th September, 2021 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:

Members Present:

Sl. No. Name

1. Swami Sadananda,
2. Dr. Subrata Kumar Roy
3. Dr. Shyam Thappa
4. Shri Biswanath Das
5. Dr. Debasish Dey
CIBA
6. Dr. D. Burman
7. Dr. G.H. Pailan
8. Shri Arun Kumar Mondal
9. Dr. Tara Sankar Pan
10. Shri Arnab Goswami
11. Shri Arka Prava Sarkar
12. Dr. Ajit Kr. Podder
13. Dr. L. N. Bandyopadhyay
14. Shri Prasanta Chatterjee
15. Dr. Manasi Chakraborty
16. Dr. Chandan Kr. Mondal
17. Dr. Prabir Kumar Garain
18. Dr. Dipak Kumar Roy
19. Shri. Partha Banik
20. Shri Utpal Maity
21. Shri Aditya Guchhait
22. Shri. Debashis Saha
23. Shri S. Srinivas
24. Shri Pritish Purkait
25. Shri Sudip Kr. Chakraborty
26. Shri Sudipta Das
27. Shri Sayan Jana
28. Shri Tapas Kumar Sahana
Project
29. Shri Tarak Nath Halder
30. Shri Bapan Karmakar
31. Shri Gouranga Naskar

: Resolutions:-

Designation

- Chairman, RAKVK Nimpith
- Director, ICAR-ATARI, Kolkata
- DEE, BCKV, Nadia
- Member of Legislative Assembly, Joynagar
- Principal Scientist & OIC, Kakdwip Research Centre of
- Officer -In-charge & Principal Scientist, CSSRI, RRS,
Canning Town, Canning
- Officer-in-charge & Principal Scientist, CIFE
- District Manager, West Bengal State Seed Corporation
- Deputy Director, ARD, South 24 Parganas
- District Development Manager, South 24 Parganas
- Asst. Director of Horticulture, Baruipur Sub Divisional
Advisor, VIB, Nimpith
- Principal, Green College, RDW
- In-Charge, Senior Scientist & Head, RAKVK, Nimpith
- SMS (Home Sc.), RAKVK
- SMS (Hort.), RAKVK
- SMS (P.P.), RAKVK
- Programme Assistant (Agronomy), RAKVK, Nimpith
- Programme Assistant (Computer), RAKVK Nimpith
- Farm Manager, KVK Nimpith
- Assistant, KVK Nimpith
- Bank Manager, SBI, Nimpith
- Bank Manager, AXIS, Joynagar
- AXIS Bank, Joynagar
- Doordarshan Kendra, Kolkata
- Doordarshan Kendra, Kolkata
- SRF, NICRA Project
- Bee Professional, AICRP, Honeybees & Pollinators
- Progressive farmer, Gillerchat
- Progressive farmer, Gillerchat
- Progressive farmer, Kaikhali

(Salient Recommendation & Action taken - 35th SAC Meeting)

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
1.	24.09.2021	31	Programmes of Ministry of Ag. & FW, Govt. of India should be given priority	Always priority is given in these programmes	-
2.			On line training programme should be continued and it may be organized in more number when offline training programme is not possible during COVID situation maintaining all COVID protocol in the KVK campus	Both Online and Offline (maintaining COVID protocol) programme are conducted according to situation	
3.			Stress should be given on quality input production and supply to farmers	Quality inputs are produced both in KVK Demo units as well as KVK trained Youths & SHGs (like ARYA & other projects)	
4			Intercropping in chilli may be undertaken	Already Conducted	
5.			Horticulture OFT on curcubit management through different mode of pollination should be modified	Action Taken	
6.			Seed bank at the village level for salt tolerant rice variety should be initiated	Already in running condition in KVK adopted villages	
7.			Demonstration of poultry bird should be initiated for protein supplementation to prevent mal-nutrition among rural women and children	Action Taken through SCSP programmes	
8.			Promotion of Kadaknath may be taken into consideration	Action Taken	
9.			Backyard Poultry bird may be initiated in more number		
10			Mass vaccination for goat should be initiated with line Department	Action Taken	
11.			Programme on promotion of fodder cultivation should be undertaken	Action Taken by conducting FLD	
12.			Hydroponic fodder on tray may be initiated		
13			Diversification in fish farming with Amur carp, pengba, small indigenous fish, pearl spot etc. may be considered	Action Taken by conducting OFT	

(Salient Recommendation & Action taken - 35th SAC Meeting ----- Contd.....)

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
14.			Breeding of chital may be attempted	Chital fingerling rearing already started in farm pond to produce Brood fish for the purpose	
15.			Youth employment generation should be considered	Action Taken through ARYA project	
16.			Study of the adoption level of the demonstrated technologies should be done along with its feedback	Always it is conducted after FLD, OFT & other Demonstrations	
17.			OFT on animal disease/ bio security in animal health/ Zoonotic disease may be conducted	Action should be taken after joining of Animal Husbandry SMS at RAKVK	
18.			Zero tillage potato cultivation technology developed and standardized by CSSRI – KVK can take up for large scale demonstration	Demonstration on Zero tillage potato cultivation already in practice by the farmers under RAKVK in Namkhana & Sagar Blocks	
19.			Farmer friendly marketing system should be explored	KVK started promoting FPOs & FPCs for better marketing of Farmers' produce	
20.			Marketing of betelvine should be promoted through cooperative system with the help of Dept. of Horticulture, W.B.		
21.			Success stories on Garole, Khanki campbell, Dragon fruit etc. for wide publicity through Doordarshan should be initiated	May be conducted as and when Doordarshan would contact with KVK.	
22.			Area specific fodder should be promoted	Action Taken	
23.			Hilsa fish in pond & rooftop rainwater harvesting may be supported through NABARD	Proposal would be sent to NABARD	
24.			Adoption of Hilsa culture in small pond may be initiated through SHGs of RAKVK in collaboration with CIBA, Kakdwip	Programme would be taken in consultation with ICAR-CIBA, Kakdwip.	

2.a. District level data on agriculture, livestock and farming situation (2021)

Sl. no.	Item	Information	
1	Major Farming system/enterprise	Agro based farming system – Paddy (monocropped)	
		Agro based farming system – Paddy-Moong/ Cotton /Sunflower	
		Agro based farming system – Paddy – Khesari (paira crop)	
		Agro-horti based farming system- Paddy- Chilli/ Tomato/ okra	
		Ail-bundh (land embankment) farming system – Okra/ Bitter Gourd- Tomato/ French bean	
		Agri-horti-fishery – Paddy- Chilli/ Tomato/ Okra-IMC	
		Agri-poultry (backyard)- Paddy- Moong/ Khesari/ Indigenous poultry	
2	Agro-climatic Zone	Coastal saline zone	
3	Agro ecological situation	Gangetic Alluvial	
		Coastal Alluvial	
		Coastal Saline	
4	Soil type	Clay, clay loam, sandy loam	
5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others Source : District Action Plan 2017-18	Crop	Productivity (Q/ha)
		Paddy (<i>Aman</i>)	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. 32.2°C; Min. 22.4.°C Annual Rainfall 2528.2 mm Annual Relative Humidity: 96.0-52.9%	

Contd...

Sl. no.	Item	Information				
		Category	Population	Production	Productivity	
7	Production of major livestock products like milk, egg, meat etc. (Source: Annual Action Plan on ARD (2011-12), South 24 Parganas, West Bengal)	Cattle				
		Crossbred	32550	2,65,8,750 lit	1800-2100 lit/lactation	
		Indigenous	968986	19,37,97,200 lit	400-500 lit/lactation	
		Buffalo	15604	56,71,300 lit	600-700 lit/lactation	
		Sheep				
		Crossbred	-	-	-	
		Indigenous	212589	22,10,925 kg	10-12 kg/sheep/year	
		Goats	696935	78,05,672 kg	11-13 kg/sheep/year	
		Pigs				
		Crossbred	-	-	-	
		Indigenous	32584	12,05,608 kg	35-40kg/pig/year	
		Rabbits	-	-	-	
		Poultry	2869243			
		Hens (improved)	713137	12,47,98,975 eggs	170 – 180 eggs/yr/bird	
		Desi	2156106	19,83,61,752 eggs	90 – 110 eggs/year/bird	
		Improved	-	-	-	
		Ducks	1058706	7,67,56,185 eggs	140 – 160 eggs/yr/bird	
		Turkey and others	75897	6,22,355 kg	6 – 9 kg/year/bird	
		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**

2021	Temperature		Relative Humidity		Rainfall (mm)	Total Rainy Days
	Maximum	Minimum	Maximum	Minimum		
January	26.4	13.2	90.0	53.4	0	-
March	34.4	21.9	87.0	44.6	0	-
April	36.9	25.8	85.0	43.2	0	-
May	36.7	26.6	95.0	41.9	98.6	5
June	32.5	25.7	94.0	52.2	528.0	13
July	33.8	26.2	98.0	64.1	628.8	9
August	33.4	26.6	95.9	65.0	328.7	21
September	32.5	26.0	93.4	67.1	616.7	15
October	33.1	25.9	91.8	61.3	253.0	7
November	29.8	19.7	87.9	46.2	2.6	-
December	25.9	16.0	90.6	57.8	71.8	4
	32.1	22.4	91.69	52.9	2528.2	74

2.b. Details of operational area / villages (2021)

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, Hanarbat, 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 platuening of major field and horticultural crops * Inappropriate agronomic practices * Poor genetic stock * Inadequate irrigation facilities * Marginal soil ii) High post-harvest loss of horticultural crops iii) Lesser extent of crop diversification iv) Poor rate of farm mechanization v) Poor exploitation of aquatic resources * Less availability of good quality carp and other fish seed * Poor feed management & improper stocking density *No pond preparation before stocking fish *Improper resource utilization for ornamental fish culture vi) Poor performance of backyard system * Poor productive performance of existing poultry bred * Untapped potentiality of nutrition garden vii) Low profitability from broiler and dairy farming * Poor genetic resources * High cost of commercial feed * High disease incidence Socio economic : i) Very restricted livelihood options ii) Recurrence of glut at pick harvest season iii) Lack of awareness regarding proper management of nutritional garden iv) Lack of market support v) Lack of credit support	* Assimilation of good agri-horticultural practices * Providing good quality crop & fish seed, breed and planting materials * Diversification of existing production system * Introduction of poly house concept for off season vegetable cultivation * Efficient utilization of water resources * Proper feed supplementation for fish & animal farming * Providing animal health care service * Soil health management * Popularization of small tools and implements for drudgery reduction * Improvement of backyard system performance * Widening of livelihood options and improvement of women led vocation through SHG * Post harvest management of crops * Development of marketing channel
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, Bhadrappara, 27 no. Lat, Mandalpara, Damkal, Mukherjeer Chak, KhariKashinagar, Kankandighi, NagendrapurRaidighi, Belpukur, Keoratala, Gopalnagar, Tulshirchak Pukuria, Karbala, Ghateswar, Gabberia, Ramchanrapur Amratata, 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
Beliadanga, Baharu, Uttarpara	Joynagar-I	Development of fish hatchery & horticulture nursery through ARYA project.
Chuprijhara, Tulsighata, Nalgora	Joynagar-II	Promotion of Beekeeping, Demonstration of IPM, CFLD on Greengram, Cotton Demonstration, establishment of catfish hatchery through ARYA, FLD on Nutri-Garden
Bongheri, Kaikhali-II, Gurguria, Bamuner Chak	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, development of fish hatchery & horticulture nursery through ARYA project.
Lalpur, Belgachia	Mathurapur-I	Horticulture nursery through ARYA project
Domkal, Singherchak, Gilarchat, Lot No. 27, Bhadrappara, Subhasnagar, Purba Jata	Mathurapur-II	CFLD on pulses, development of fish hatchery & horticulture nursery through ARYA project.
Ramchandrapur, Siddheswarpur, Bansberia	Mandirbazar	FLD on HYV Paddy, cat fish hatchery & horticulture nursery through ARYA project.
Andhinagar, Ramtanunagar, Paschim Karanjali, Dakshin Sukdebpur, Siddhiberia	Kulpi	Training and CFLD on pulse, cat fish hatchery through ARYA project
Herambogopalpur, Lakshmi Janardanpur, Achintyanagar, Nagenabad, Purba Dwarapur	Pathar Pratima	FLD on cotton and saline tolerant paddy, CFLD on Greengram, FLD on Nutri-Garden, Horticulture nursery through ARYA project
Gram Panchayets of Sagar Gosaba, Patharpratima blocks	Sagar Gosaba, Patharpratima	Animal Health Care Services through Mobile veterinary Clinic.
Mousuni, Namkhana	Namkhana	Training and CFLD on pulse, Sunflower Demonstration
Hyatnagar, Agradani	Magrahat-I	Cat fish hatchery through ARYA project
Hansury, Alida	Magrahat-II	Cat fish hatchery through ARYA project
Nila, Manika, Kapat Hat	Diamond Harbour-II	Cat fish hatchery & horticulture nursery through ARYA project, CFLD on Pulses
Baneswarpur	Falta	Horticulture nursery through ARYA project.
Pirkhali, Dakshin Bagi	Bishnupur-I	Cat fish hatchery & horticulture nursery through ARYA project.

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 <i>Trichoderma</i>
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	T	M	F	T	M	F	T				M	F	T	M	F	T	M	F	T	M	F	T			
13	10	115	24	45	0	0	18	4	42	49	91	14	14	480	153	44	0	46	168	0	321	80	401						

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	T	M	F	T	M	F	T				M	F	T	M	F	T	M	F	T	M	F	T			
149	120	5854	1231	868	108	116	1279	652	2618	1636	4254	3143	1583	15664	26675	14363	2206	1458	42288	19741	71169	35563	106732						

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	T	M	F	T	M	F	T	M	F	T			M	F	T	M	F	T	M	F	T			
0	0	0	0	0	0	0	0	0	0	0	0	0	4	11	107	0	0	0	2	11	109	120					

Seed production (q)						Planting material (in Lakh)					
Target			Achievement			Target			Achievement		
188.5 q			55.99 q			0.10			1.04023		

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 Milk: 30500 L			Carp fingerling: 2.6 lakh pcs Asian catfish seed: 111100 no. Broiler bird: 43.50 q Milk: 12000 L			0.015			0.0387		

* 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	6.64	6.27	-	-
Seminar/conference/ symposia papers	1	-	-	-	-	-	-
Books	2	-	-	-	-	-	-
Bulletins	-	-	-	-	-	-	-
News letter	3	-	-	-	-	-	-
Popular Articles	-	-	-	-	-	-	-
Book Chapter	-	-	-	-	-	-	-
Extension Pamphlets/ literature	-	-	-	-	-	-	-
Technical reports	100	-	-	-	-	-	-
Electronic Publication (CD/DVD etc)	3	-	-	-	-	-	-
TOTAL	111						

1 Achievements on technologies assessed and refined

OFT-1

1.	Title of On farm Trial	Assessment of weed control efficiency of different weedicides in Greengram during Summer season in South 24 Parganas district
2.	Problem diagnosed	Low productivity of greengram due to weed infestation
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmers Practice (FP):Sowing of Greengram (var. IPM-02-14) through broadcast method along with N:P ₂ O ₅ :K ₂ O @ 20:40:20 kg/ha, without weedicide application Technology Option-1:Sowing of Greengram(var.IPM-02-14)through broadcast method along with N:P ₂ O ₅ :K ₂ O @ 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 Greengram (var. IPM-02-14) through broadcast method along with N:P ₂ O ₅ :K ₂ O @ 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 [Vigna radiata (L.); Adv Crop Sci Tech 3:163 Narendra Kumar, K.K. Hazra and N. Nadarajan (2014) Efficacy of post- emergence application of Imazethapyr in summer mungbean (Vigna radiata L.), Legume Research, 39 (1) 2016: 96-100
5.	Production system and thematic area	Weed Management
6.	Performance of the Technology with performance indicators	After two 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	Final recommendation will be given after three years of observation.
8.	Constraints identified and feedback for research	In case of deficit soil moisture condition, green gram crop shown less of vigour after application of imazethapyr.
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land.

Thematic area: Weed Management

Problem definition:

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

Technology assessed:

- **Farmers Practice (FP):** Sowing of Greengram (var. IPM-2-3) through broadcast method along with N:P₂O₅:K₂O @ 20:40:20 kg/ha
- **Technology Option-1 (TO-1):** Sowing of Greengram (var. IPM-02-14) through broadcast method along 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 (var. IPM-02-14) through broadcast method along 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	Repl-ication	Total Weed Density (No/m ²)	Total Weed Dry Matter (g/m ²)	WCE (%)	No. of Pods per Plant	Pod length (cm)	1000 Seed weight (g)	Seed Yield (Q/ha)	Net Return (Rs./ha)	BC ratio
Farmer's Practice	7	7.47* (55.3)	14.52	-	8.8	6.52	35.1	8.1	26400	2.00
Tech. Option-1		5.58 (30.7)	7.87	45.57	10.6	6.83	35.7	9.18	30920	2.07
Tech. Option-2		5.29 (27.5)	6.72	53.71	12.5	7.1	36.2	9.64	33410	2.14
CD (0.05)		0.53	1.97	-	1.23	0.06	NS	0.36	-	-

*value is the square root transformation value



Results:

In one year of observation, the result indicated that the application of **Imazethapyr 10% SL @ 80g a.i. ha⁻¹ at 16 DAS (TO - 2)** recorded lesser weeds in 10.6 and 8.8 qt./ha in TO - 1 and Farmers Practice respectively. Final recommendation will be given after three years of observation.

OFT-2

1.	Title of On farm Trial	Assessment of the profitability of paddy variety under medium land situation (1 to 1.5 ft water stagnation) during kharif in South 24 Parganas district
2.	Problem diagnosed	Low productivity of paddy due to water logging & submergence of crop during vegetative growth stage
3.	Details of technologies selected for assessment	<p>Farmers Practice (FP): Transplanting of paddy var. Pratikshya with N:P₂O₅:K₂O @ 80:40:40 kg/ha</p> <p>Technology option-1 (TO-1): Transplanting of paddy var. Ciherang Sub-1(Bina Dhan-11) with N:P₂O₅:K₂O @ 80:40:40 kg/ha</p> <p>Technology option-2 (TO-2): Transplanting of paddy var. CR-1009 Sub-1 with N:P₂O₅:K₂O @ 80:40:40 kg/ha</p>
4.	Source of Technology (ICAR/AICRP/SAU/other, please specify)	Vivek Kumar, Priyanka Anand, and Ashok Kumar: Flood-tolerant BINA Dhan 11 impresses rice farmers in Odisha, IRRI, News Media, Thursday, June 2, 2016
5.	Production system and thematic area	Rice-Green gram, rice based cropping system with pulse crop, Productivity enhancement technology
6.	Performance of the Technology with performance indicators	*The data is given below
7.	Final recommendation for micro level situation	After 3 years observation, the result reveals that the variety CR-1009 Sub-1 performed better than the variety Pratikshya and Ciherang Sub-1(Bina Dhan-11). On the basis of grain yield and net return, the variety CR-1009 Sub-1 can be grown instead of Pratikshya in medium land in <i>Kharif</i>
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land.

Thematic area: Varietal replacement

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

Technology assessed:

Farmers Practice (FP): Transplanting of paddy var. Pratikshya with N:P₂O₅:K₂O @80:40:40 kg/ha

Technology option-I (TO-1): Transplanting of paddy var. Ciherang Sub-1(Bina Dhan-11) with N:P₂O₅:K₂O @ 80:40:40 kg/ha

Technology option-I I (TO-2): Transplanting of paddy var. CR-1009 Sub-1 with N:P₂O₅:K₂O @ 80:40:40 kg/ha

Table:

Treatment	Replication	No. of effective tiller/hill	Panicle length (cm)	No. of grains/panicle	1000 Seed weight (g)	Grain Yield (q/ha)	Net Return (Rs./ha)	BC ratio
Farmer's practice	7	10.0	22.4	146.2	19.0	35.55	21240	1.49
Tech. Option-1		12.2	21.6	153.5	20.2	38.40	26370	1.61
Tech. Option -2		13.1	23.0	178.6	21.7	42.06	32958	1.77
CD (0.05)		1.10	NS	3.78	0.03	2.26	-	-



Results:

Result reveals that the variety **CR-1009 Sub-1** performed better than the variety Pratikshya and Ciherang Sub-1(Bina Dhan-11) .The lower grain yield (35.55 q/ha) was recorded in Pratikshya. The higher grain yield (42.06 qt/ha), net return (Rs. 32958/ha) and benefit-cost ratio (1.77) were recorded in CR-1009 Sub-1). On the basis of grain yield and net return, it is concluded that the variety **CR-1009 Sub-1** can be grown instead of Pratikshya in medium land in *Kharif*.

OFT-3

1	Title of On farm Trial	Assessment of application of non-traditional plant growth regulators on plant growth, disease resistance and yield of Chilli in the South 24 Parganas district
2	Problem diagnosed	Low productivity of chilli due to biotic and abiotic stresses
3	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	<ul style="list-style-type: none"> • Farmers' Practice: Chilli cultivation in conventional method with use of traditional plant growth promoters like amino acid, humic acid, micro nutrients etc. • Technology Option -1: Farmers' Practice + seed soaking with Cycocel (Chloremequat Chloride) @ 50 ppm for 24 hrs • Technology Option -2: Farmers' Practice + spraying Cycocel (Chloremequat Chloride) @ 500 ppm at 20 DAS & 40 DAS
4	Source of Technology	<ul style="list-style-type: none"> • MAJOR USES OF PESTICIDES Registered under the Insecticides Act, 1968 2009; Government of India Ministry of Agriculture, Department of Agriculture & Cooperation, Directorate of Plant Protection Quarantine & Storage, Central Insecticide Board & Registration Committee N.H. IV, Faridabad-121 001 • Kaddi, S.G.; Gollagi, S.M.; Hiremath and Chetti, M.B. (2009). Effects of growth regulator and nutrients on growth parameters and yield in chilli cv. BYADAGI. <i>International Journal of Agricultural Sciences</i>. 5 (1): 123-125
5	Production system and thematic area	Horticulture based production system Thematic area: Production technology
6	Performance of the Technology with performance indicators	*The data is given below
7	Final recommendation for micro level situation	Both Technology Option -1& 2 performed better over farmers' practice with respect to yield, net return & BC ratio. The testing has been done for two consecutive years. It has been observed that the Technology Option-2 is more convenient to practice and well accepted by the farmers. So, this technology has been considered for final recommendation.
8	Constraints identified and feedback for research	Cycocel is not readily available in market.
9	Process of farmers participation and their reaction	Farmers were involved in participatory approach. They are satisfied with the testing and very much enthusiastic about the findings.

Thematic area: Yield increment in vegetable crop

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

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

Technology assessed:

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

Table:

Treatment	Replication	Plant Height (cm) (at 90 DAS)	Days to 50% Flowering	No. of fruits / plant	Pests & disease (10 point scale)	Yield (Q/ha)	BC ratio
Farmer's practice	7	79.8	60.6	142.7	8	67.9	1.89
Tech. Option-1		65.4	56.1	162.9	3	83.6	2.23
Tech. Option -2		70.6	55.3	159.6	4	84.7	2.22
CD (0.05)		2.01	2.17	6.03	-	12.27	-

Result: Both Technology Option -1 & 2 performed better over farmers' practice with respect to yield, net return & BC ratio. The testing has been done for two consecutive years. It has been observed that the Technology Option-2 is more convenient to practice and well accepted by the farmers. So, this technology has been considered for final recommendation.

OFT-4

1.	Title of On farm Trial	Assessment of artificial pollination methods in cucurbits (Cucumber & Bitter gourd) for better fruit setting and yield improvement in the South 24 Parganas district
2.	Problem diagnosed	Low productivity of cucumber and bitter gourd owing to non-setting of fruits due to poor pollination
3.	Details of technologies selected for assessment	<ul style="list-style-type: none"> • Farmers' Practice: Use of synthetic auxin hormone for better fruit setting. • Technology Option -1: Spraying of pollen mixture (pollen of 300 – 500 number of fresh male flower + 15 g boron powder 20% + 25 g glucose + 10 lt water) upon freshly opened female flower in the morning (between 6 am to 8 am) @ 10 lt per 10 decimal land area • Technology Option -2: Hand pollination by dropper (pollen of 50 fresh male flower + 1.5 g boron powder 20% + 2.5 g glucose – all in 1 liter water) upon freshly opened female flower in the morning (between 6 am to 8 am) @ 1-2 drop per flower. • Technology Option -3: Hand pollination with fresh male flower @ 1 male flower to 10 female flowers.
4.	Source of Technology	<ul style="list-style-type: none"> ➤ R. Das, S.K. Mandal and T.K. Maity (2009). Insect Pollinators of Pointed Gourd and Effect of Different Artificial Methods of Pollination on Fruit Setting and Subsequent Development of Fruits. <i>Veg. Sci.</i> 36(3 Suppl.): 353-355. ➤ Fruit Set Problems in Squash, Melons, and Cucumbers In Home Gardens, Vegetable Research and Information Center, Cooperative Extension, Division of Agricultural Sciences, University of California, Leaflet 21242
5.	Production system and thematic area	Horticulture based production system Pollination Management
6.	Performance of the Technology with performance indicators	*The data is given below
7.	Final recommendation for micro level situation	Both Technology Option-1, 2 & 3 performed better over farmers' practice. However, Technology Option – 1 & 2 were superior over other treatments with respect to yield, net return & BC ratio. Due to ease of application, Technology option 1 is recommended at farmers' level use.
8.	Constraints identified and feedback for research	NA
9.	Process of farmers participation and their reaction	Farmers were involved in participatory approach. They are satisfied with the testing and very much enthusiastic about the findings.

Thematic area: Pollination management in vegetable crop

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

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

Technology assessed:

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

Treatment	Replication	Fruit set percentage	Avg. Marketable yield (g/plant)	Avg. weight of unmarketable fruit (g/plant)	Marketable Yield (Q/ha)	BC ratio
Farmer's practice	7	72.8	1695	432	107.6	1.84
Tech. Option-1		86.1	2237	147	122.3	1.95
Tech. Option -2		89.3	2567	84	131.4	1.79
Tech. Option -3		88.7	2452	97	127.7	1.67

Result: Both, Technology Option-1, 2 & 3 performed better over farmers' practice. However, Technology Option – 1 & 2 were superior over other treatments with respect to yield, net return & BC ratio. Due to ease of application, Technology option 1 is recommended at farmers' level use.

OFT- 5

1.	Title of On farm Trial	Enhancing profitability by culturing <i>Mystus gulio</i> in small monoculture freshwater ponds (0.065ha) of Sundarbans
2.	Problem diagnosed	Low profitability from small domestic ponds
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	<p>Assessment</p> <p>FP: Random stocking of <i>Mystus gulio</i> without any fixed stocking density, no specific management, occasional feeding with homemade food and occasional liming.</p> <p>TO-I: Stocking of <i>Mystus gulio</i> @ 16 m⁻² with pond management (Pond preparation: OM @10000 kg ha⁻¹, lime@ 400kg ha⁻¹, mahua oil cake@250ppm); Post stocking management: Monthly cow dung @1000kgha⁻¹, lime@30kgha⁻¹, locally prepared supplementary feed @ 3% body weight, monthly netting</p> <p>TO-II: Stocking of <i>Mystus gulio</i> @ 20 m⁻² along with pond management and post stocking management like TO-I</p>
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Mamun et al., (2015) Optimization of stocking density of <i>Mystus gulio</i> (Brackishwater catfish), Int .J. Nat. Soc. Sci. 2(2015) 60-63.
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: pH, weight of fish, yield, survivality, BC ratio)
7.	Final recommendation for micro level situation	Monoculture of <i>Mystus gulio</i> @ 20 m ⁻² along with pond management and post stocking management is recommended to enhance the profitability from small ponds
8.	Constraints identified and feedback for research	Suitable feed for <i>Mystus gulio</i> is required to prevent the rate of cannibalism among them and increase the profit margin
9.	Process of farmers participation and their reaction	Participatory mode was followed while designing the trial. Farmers were too eager to try this fish which is very popular as 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 a mixture of all fish including the very popular *Mystus gulio*. However, due to injudicious stocking, the productivity and therefore the profitability from such ponds are meagre. Hence, to augment profit from such ponds which are not suitable for growing big fish like carps, *Mystus gulio* is being tried for the economic and nutritional benefit of the farmers.

Technology assessed:

FP: Random stocking of *Mystus gulio* without any fixed stocking density, no specific management, occasional feeding with homemade food and occasional liming.

TO-I: Stocking of *Mystus gulio* @ 16 m⁻² with pond management (Pond preparation: Organic manure @10000 kg ha⁻¹, lime@ 400kg ha⁻¹, mahua oil cake@250ppm); Post stocking management: Monthly cow dung @1000kgha⁻¹, lime@30kgha⁻¹, locally prepared supplementary feed @ 3% body weight, monthly netting

TO-II: Stocking of *Mystus gulio* @ 20 m⁻² along with pond management and post stocking management like TO-I

Technology option	No. of trials	Unit area (ha)	Survivality (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers practice	7	0.065	70.5	25.00	1,32,000.00	250000.00	118000.00	1.89
Technology Option - 1		0.065	45.0	26.64	4,42,000.00	799200.00	357200.00	1.80
Technology Option - 2		0.065	40.0	28.00	4,55,000.00	840000.00	385000.00	1.84



Result: : Monoculture of *Mystus gulio* @ 20 m⁻² along with pond management and post stocking management is recommended to enhance both productivity and profitability

OFT-6

1.	Title of On farm Trial	Increasing profitability from carp polyculture ponds (0.065ha) by introduction of <i>Mystus gulio</i>
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 IMC & Exotic Carps in freshwater ponds with usual package of practice, viz. pond management (Pond preparation: Organic manure @10000 kg ha ⁻¹ , lime@ 400kg ha ⁻¹ , mahua oil cake@250ppm); Post stocking management: Monthly cow dung @1000kgha ⁻¹ , lime@30kgha ⁻¹ , locally prepared supplementary feed @ 3% body weight, monthly netting TO-I: FP+ <i>Mystus gulio</i> at the rate of 5000 no/ha TO-II: FP+ <i>Mystus gulio</i> at the rate of 7500 no/ha
4.	Source of Technology (ICAR/AICRP/SAU/other, please specify)	Kohinoor et al. (2009) Evaluation of different stocking density of two small indigenous fish, pabda (<i>Ompak pabda</i>) and gulsha (<i>Mystus cavasious</i>) with IMC in polyculture system; J Fish Sci 8 (1)57-64)
5.	Production system and thematic area	Fish based production system, composite fish culture
6.	Performance of the Technology with performance indicators	pH, weight of fish, yield, survivality, BC ratio
7.	Final recommendation for micro level situation	Polyculture of <i>Mystus gulio</i> @ 7500 no/ha along with normal farmers practice for carp culture is recommended to enhance both productivity and profitability
8.	Constraints identified and feedback for research	Suitable feed for <i>Mystus gulio</i> is required to prevent the rate of cannibalism among them and increase the profit margin
9.	Process of farmers participation and their reaction	Participatory mode was followed while designing the trial. Farmers were too eager to try this fish which is very popular as food fish.

Thematic area: Composite fish culture

Problem definition: The profitability from conventional carp culture is low due low market price. Hence, an alternative to increase the profitability from such ponds, was the demand of the farming communities which was addressed by trying the culture of the high priced and popular indigenous fish, *Mystus gulio* alongwith carps.

Technology assessed:

FP: Polyculture of IMC & Exotic Carps in freshwater ponds with usual package of practice, viz. pond management (Pond preparation: Organic manure @10000 kg ha⁻¹, lime@ 400kg ha⁻¹, mahua oil cake@250ppm); Post stocking management: Monthly cow dung @1000kgha⁻¹, lime@30kgha⁻¹, locally prepared supplementary feed @ 3% body weight, monthly netting

TO-I: FP+ *Mystus gulio* at the rate of 5000 no/ha

TO-II: FP+ *Mystus gulio* at the rate of 7500 no/ha

Technology option	No. of trials	Unit area (ha)	Survivality (%)	Yield (q/ha)	Additional Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers practice	7	0.065	70.5	25.00	-	1,32,000.00	250000.00	118000.00	1.89
Technology Option - 1		0.065	61.0	26.89	1.89	1,66,000.00	306730.00	140730.00	1.85
Technology Option - 2		0.065	55.0	55.0	27.47	2.47	1,75,000.00	324250.00	149250.00



Result: Polyculture of *Mystus gulio* @ 7500 no/ha along with normal farmers practice for carp culture is recommended to enhance both productivity and profitability.

OFT-7

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	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 husk (9:1) + Neem oil (Spray @ 3ml/liter-1000ppm for quicker decomposition of lignocellulosic materials)
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 <i>Rabi</i> season than <i>Kharif</i> 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 (9:1) +Neem oil (Spray @ 3ml/liter-1000ppm for quicker decomposition of lignocellulosic materials)

Technology option	No. of unit	No. of trials	Yield component		Starting day of pin heads (after preparation of bed)	Cost of cultivation (Rs./cycle)	Protein supplementation per day (Average of 1 month)	Additional income (Rs./cycle)	Net return (Rs./cycle)	BC ratio
			Total production (kg)	Formation of fruiting body No. of times in a cycle						
FP	20 beds (100gm spawn x20)	10	16.2	3 times	30 days	400/-	31 gm	930/-	2030/-	6.08
Technology Option - I	20 beds (100gm spawn x20)		29.5	3 times	21 days	415/-	66 gm	1425/-	4010/-	10.66
Technology Option - II	20 beds (100gm spawn x20)		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



TO-1



TO-2

OFT-8

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)	International Food Policy Research Institute (IFPRI)2019 https://www.sciencedirect.com/science/article/pii/S0306919216300264 , Impact of agricultural interventions on the nutritional status in South Asia: A review, https://journals.sagepub.com/doi/abs/10.1177/156482650502600204 , Nutrition Knowledge and Practices, and Consumption of Vitamin A-Rich Plants by Rural Nepali Participants and Nonparticipants in a Kitchen-Garden Program
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

*Details of technologies selected for assessment/refinement (OFT-8)

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)

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	<i>Rabi</i> -Summer	<i>Kharif</i>
	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)

Result with parameters: Trial has been conducted for 1 year so it should be repeated to recommend.



Farmers practice	Rabi				Rabi-Summer				Kharif				Total Additional income (Rs.)
	Crop	Availability towards(RDA) for 4 family member	Dietary diversity score	Additional income (Rs.)	Crop	Availability towards(RDA)	Dietary diversity score	Additional income (Rs.)	Crop	Availability towards (RDA)	Dietary diversity score	Additional income (Rs.)	
Area 0.015 ha	Knolkhol, Cauliflower, Raddish	250 gm (RDA -400)	4	520/-	Pumkin	50 gm (RDA -200)	3	720/-	Snake gourd, Sponge gourd, Okra	800 gm (RDA -400)	3	700/-	2170
	Palak, Raddish leaves	300 gm (RDA -500)			Basella	300 gm (RDA -500)			Amaranthus cordatas, Basella	500 gm (RDA -500)			
	Broad bean	100 gm (RDA-200)			-	-			Lafa bean	100 gm (RDA-200)			
Technology option-I	Raddish,	400 gm (RDA -300)	6	925/-	Okra	300 gm (RDA -500)	5	815/-	Ash gourd, sponge gourd,	400 gm (RDA -500)	6	790/-	2520/-
	Amaranthus (red, green & cordatas),	600 gm (RDA -500)			Pumkin,	400 gm (RDA -500)			Amaranthus green, Ipomeea, Basella	400 gm (RDA -400)			
	Raddish palak, fenugreek leaf	100 gm (RDA-200)			Bitter gourd	150 gm (RDA -100)			Brinjal, Okra	400 gm (RDA -320)			
	Tomato, Carrot	320 gm (RDA-200)			Ridge gourd, Sponge gourd	400 gm (RDA -320)			Sweet potato leaf, Ash gourd leaf	200 gm (RDA -200)			
	French bean, Peas, broad bean	500 gm (RDA-200)			Cowpea (green)	150 gm (RDA -200)			Cowpea (green)	150 gm (RDA -200)			
Technology option-II	Raddish,	250 gm (RDA-200)	8	1950/-	Okra (red & green)	250 gm (RDA -320)	6	1120/-	Ash gourd, sponge gourd,	200 gm (RDA -200)	7	1245/-	4315/-
	Carrot, Cauliflower yellow	500 gm (RDA-500)			Pumkin	150 gm (RDA -200)			Brinjal	200 gm (RDA -200)			
	Broccoli, cauliflower purple, red cabbage, cherry tomato	500 gm (RDA-500)			Bitter gourd, Sponge gourd	200 gm (RDA -200)			Okra	150 gm (RDA -200)			
	Amaranthus (red & green), Amaranthus cordatas,	400 gm (RDA-400)			Amaranthus (green & red), Amaranthus cordatas, Basella (green & red), Coriander, Ipomeea	500 gm (RDA -400)			Amarnathus cordatas, Ipomeea, Basella,	500 gm (RDA -400)			
	Raddish, palak, fenugreek leaf	400 gm (RDA-400)			Palak, Jute leaves	200 gm (RDA -200)			Sweet potato leaf, Ashgourd leaf	300 gm (RDA -400)			
	French bean, Peas, broad bean	300 gm (RDA-200)			Cowpea (red, green)	200 gm (RDA -200)			Cowpea (red, green)	200 gm (RDA -200)			

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



FP



TO-1



TO-2 (Rabi season)

OFT-9

1.	Title of on farm Trial	Assessment of pollination service for increasing productivity in Cucumber in the coastal South 24 Parganas
2.	Problem diagnosed	Low productivity of Cucumber due to fruit drop
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmer practice: Open pollination Technology Option 1: Open pollination + Installation of Indian honeybee (<i>Apis cerana</i>) colony in the vegetable plot Technology Option 2: Open pollination + Installation of Stingless bee (<i>Tetragonula irridipennis</i>) colony in the vegetable plot
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	AICRP on Honeybees & Pollinators
5.	Production system and Thematic area	Horticulture based production system Beekeeping and pollination service
6.	Performance of the Technology with performance indicators	*Table below
7.	Final recommendation for micro level situation	The technology option -2 , i.e., pollination service with stingless bee may be recommended to the farmers for increased yield and higher net return.
8.	Constraints identified and feedback for research	Indiscriminate spraying of chemical pesticides
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 fruit drop, both the beneficiaries as well as the non-beneficiaries took interest in the trial. The OFT was well managed by the beneficiaries themselves.

*Performance of the Technology

Technology option	Fruit set (%)	Average fruit weight (g)	Fruit length (cm)	Misshapen fruits (%)	Yield (t/ha)	Net return (Lakh Rs./ ha)	B:C
FP	55.20	128.70	16.90	9.82	11.12	1.09	2.58
TO-1	62.90	144.20	17.95	3.29	12.03	1.46	3.05
TO-2	62.30	143.60	18.30	3.61	11.79	1.42	3.03

Thematic area: Beekeeping and pollination service

Problem definition: Cucumber (*Cucumis sativus* L.) is an important vegetable crop of the coastal saline zone under South 24 Parganas district of West Bengal. However the crop often suffer from lack of pollination or incomplete pollination, which results in fruit drop, deformed fruits and reduction in marketable yield. To counter the situation farmers rely on hand pollination and spraying with Auxin hormone, which in turn increase the cost burden. Honey bees play an important role in pollination in Cucumber, thus ensuring complete pollination and potential yield. But due to indiscriminate use of pesticides and a quick decline in bee friendly environment, the bee population is also dropping sharply.

Technology assessed: Considering all these, it was decided to employ bee pollination service in the crop field, to reduce fruit drop and increase yield. In the present trial, two types of honey bees were used for pollination service to compare their relative efficacy against the farmers practice (open pollination). The Indian honeybee (*Apis cerana*) is a native bee that can forage upto 1 km distance. Stingless bees (*Tetragonula irridipennis*) are also native bees that are most easy to maintain. They are very good foragers for small flowers having short tube length.

Farmer practice: Open pollination

Technology Option 1: Open pollination + Installation of Indian Honeybee (*Apis cerana*) colony in the vegetable plot (1 colony/ 400 sq.m)

Technology Option 2: Open pollination + Installation of Stingless bee (*Tetragonula irridipennis*) colony in the vegetable plot (1 colony/ 400 sq.m)

Table:

Yield Parameter	No. of trials	Fruit set (%)	Average Fruit weight (g)	Fruit length (cm)	Misshapen fruits (%)	Yield (t/ha)	Gross cost (Lakh Rs./ ha)	Gross return (Lakh Rs./ ha)	Net return (Lakh Rs./ ha)	B:C
Farmer's practice	7	55.20 ^a	128.70 ^a	16.90	9.82	11.12 ^a	0.69	1.78	1.09 ^a	2.58 ^a
Technology Option 1		62.90 ^b	144.20 ^b	17.95	3.29	12.03 ^b	0.71	2.17	1.46 ^b	3.05 ^b
Technology Option 2		62.30 ^b	143.60 ^b	18.30	3.61	11.79 ^b	0.70	2.12	1.42 ^b	3.03 ^b
SEm (±)		0.44	1.17	NS	0.26	0.16	-	-	0.08	0.01
CD (P=0.05)		1.37	3.52	NS	0.88	0.49	-	-	0.27	0.03

^{ab}The data superscribed with same letters are statistically same at 5% level of significance

Results:

Pollination service with both the Indian honeybee and stingless bee significantly improved fruitset, fruit weight, total yield, net return and significantly reduced misshapen fruits (%). The cost-benefit-ratio of the **Technology option -1** and **Technology Option -2** were statistically similar but both were significantly higher than farmer's practice. However, considering the lower cost and easier colony maintenance, the **Technology Option -2, i.e., pollination service with stingless bee** may be recommended to the farmers.



OFT-10

1.	Title of on farm Trial	Assessment of IPM against Rugose Spiraling Whitefly (<i>Aleurodicus rugioperculatus</i>) infestation in Coconut under coastal saline zone of West Bengal
2.	Problem diagnosed	Low productivity of Coconut due to infestation of Rugose Spiraling Whitefly
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmer practice: Spraying with Imidacloprid 200 SL @ 4ml /10 L, Technology Option 1: Application of 1% starch solution on leaflets + Installation of yellow sticky traps + spraying Azadiractin 10000 ppm (2ml/ L) Technology Option 2: Application of 1% starch solution on leaflets + Installation of yellow sticky traps + root feeding of Azadiractin 10000 ppm (25 ml neem oil + 25 ml water per palm)
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	TO-1: IPM module developed by ICAR – Central Plantation Crops Research Institute, Kasaragod TO-2: Refinement of TO-1
5.	Production system and Thematic area	Horticulture based production system Plantation crops
6.	Performance of the Technology with performance indicators	*Table below
7.	Final recommendation for micro level situation	The technology option – 2 may be recommended for the farmers due to its performance in managing the pest infestation, increasing nut yield and net return.
8.	Constraints identified and feedback for research	Indiscriminate spraying of chemical pesticides
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 fruit drop, both the beneficiaries as well as the non-beneficiaries took interest in the trial. The OFT was well managed by the beneficiaries themselves.

*Performance of the Technology

Technology option	Preference for egg laying	Colonization of leaf area	Shooty mold	Natural enemy	Production (nuts/ ha)	Net return (Rs./ ha)	BC ratio
FP	4.71 ^a	3.57 ^a	4.29 ^a	2.14 ^a	6853 ^a	41351 ^a	2.01
TO-1	2.14 ^b	2.43 ^b	2.14 ^b	4.00 ^b	11473 ^b	69349 ^b	2.02
TO-2	2.43 ^b	2.57 ^b	2.29 ^b	4.57 ^b	11766 ^b	82964 ^c	2.42

Thematic area: IPM and Plantation crops

Problem definition: The Rugose Spiraling Whitefly (*Aleurodicus rugioperculatus*) appeared as a serious alien threat to Indian agriculture with its devastating infestation on coconut and banana in southern India during 2016. Recently, in 2019, the pest was recorded to infest several plants in the South 24 Parganas district of West Bengal, with its serious implication in coconut. Adult Rugose Spiraling Whiteflies can be easily identified by their large habitus (almost 2.5mm) and irregular brown markings on white forewings. Adult males have large pincers at the end of the abdomen. Females lay yellowish eggs mostly the under surface of the leaves in a spiraling or concentric manner and cover them with waxy substances. Among the five developmental stages in the life cycle of the Rugose Spiraling Whitefly, only the 1st instar is a mobile one and known as crawler. Immature with progressive instars produce a profuse quantity of wax filaments which appear as a tuft of fluffy and long crystal-like glass rods. The 4th instar *i.e.* the puparium is distinctly thick and larger than the commonly occurring species *Bemisia tabaci*. The puparium is characterized by dorsal reticulations, apically acute lingula, rugose (corrugated) operculum with a pair of ventromedial fine setae and hence the name Rugose Spiraling Whitefly.

A survey through the locality of primary detection and the neighbouring areas revealed the pest's severe to medium infestation on Coconut, especially on the dwarf varieties. The middle and lower leaves are more vulnerable (50 -100% colonization of leaf area). Conventional chemicals against this sucking pest are not efficient to tackle the population below ETL and conserve its natural enemies.

Technology assessed:

In order to manage the pest with an aim to conserve the natural enemies, it was decided to employ integrated pest management module developed by ICAR – Central plantation Crops research Institute, Kasaragod, as technology option -1. Considering the practical problems associated with spraying on the coconut canopy, a refinement was also made in the form of root feeding of the neem oil, as technological option – 2.

Farmer practice: Spraying with Imidacloprid 200 SL @ 4 ml /10 L

Technology Option 1: Application of 1% starch solution on leaflets + installation of yellow sticky traps + spraying of Azadiractin 10000 ppm (2 ml/ L)

Technology Option 2: Application of 1% starch solution on leaflets + installation of yellow sticky traps + root feeding of Azadiractin 10000 ppm (25 ml neem oil + 25 ml water per palm)

Table:

Yield Parameter	No. of trials	Preference for egg laying*	Colonization of leaf area*	Shooty mold*	Natural enemy*	Production (nuts/ ha)	Gross return (Rs./ha)	Cost of production (Rs./ha)	Net return (Rs./ ha)	BC ratio
Farmer's practice	7	4.71 ^a	3.57 ^a	4.29 ^a	2.14 ^a	6853 ^a	82238	40887	41351 ^a	2.01
Technology Option 1		2.14 ^b	2.43 ^b	2.14 ^b	4.00 ^b	11473 ^b	137671	68322	69349 ^b	2.02
Technology Option 2		2.43 ^b	2.57 ^b	2.29 ^b	4.57 ^b	11766 ^b	141197	58233	82964 ^c	2.42
SEm (±)		0.18	0.20	0.33	0.27	132.57	-	-	328.55	-
CD (P=0.05)		0.57	0.60	1.02	0.83	408.50	-	-	1012.36	-

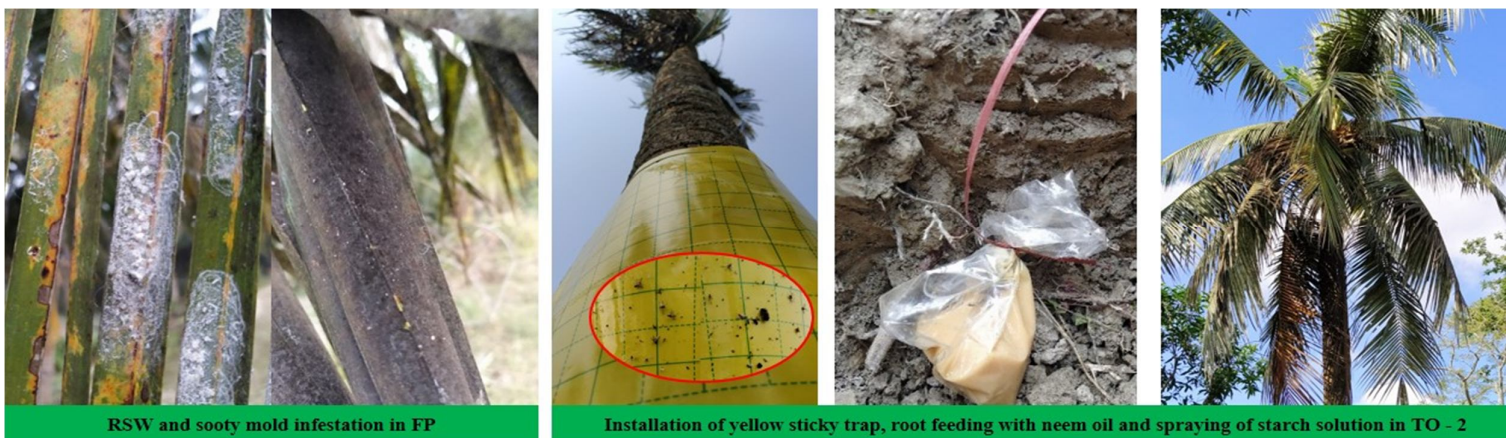
^{abc} The data in the same column superscribed with same letters are statistically same at 5% level of significance

* Rating scales

Preference for egg laying: 1 to 5 (5: Highly preferred; 4: Preferred; 3: Moderately preferred, 2: Less preferred, 1: No egg laying); Colonization of leaf area: 0 to 5 (5: > 75%; 4: 51% - 75%; 3: 25% - 50%; 2: 11% - 25%; 1: 1% - 10%; 0: < 1%); Shooty mold: 1 to 5 (5: > 75%; 4: 51% - 75%; 3: 21% - 50%; 2: 5% - 20%; 1: <5%); Natural enemy: 0 to 5 (5: Highly satisfactory; 4: Satisfactory; 3: Moderate; 2: Low; 1: Very low, 0: Not detected)

Results:

The Technology Option - 1 & Technology Option - 2 performed better than farmer's practice in reducing the preference of whitefly for egg laying, leaf colonization and shooty mold infestation. The natural enemy population and diversity was also better in treatments with neem oil application. The **Technology Option – 2** recorded significant increase in nut yield and net return. BC ratio was also found to be highest in TO-2 due to increased production.



3.2 Achievements of Frontline Demonstrations

A. Details of FLDs conducted during the year

Cereals:

Sl. No.	Crop	Thematic area	Technology Demonstrated with detailed treatments	Area (ha)		No. of farmers/ demonstration								Reasons for shortfall in achievement	
				Proposed	Actual	SC		ST		Others		Total			
						M	F	M	F	M	F	M	F		T
1.	Paddy	Productivity Enhancement	Varietal replacement with HYV paddy-var. Sampriti alongwith soil test based fertilizers application and zinc sulphate @ 20 kg per ha	8.93	8.93	15	-	-	-	49	-	64	-	64	

Pulses:

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
2.	Black Gram	Productivity Enhancement	Varietal replacement with var. PU-31, seed treatment with rhizobium PSB & KSB and spring of micro nutrient with B & Mo	6.0	6.0	12	3	-	-	28	2	40	5	45	

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 ₂ O ₅	K ₂ O					
Paddy	Kharif	Irrigated – Medium land	Clay - loam	195.2	39.0	432.4	Greengram	22 th July, 2021	19 th December, 2021	1829.8	52
Black Gram	Kharif	Irrigated high land	Clay - loam	180.0	38.3	417.2	Vegetable	7 th August, 2021	2 nd November, 2021	1198.4	43

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

Performance of FLD

Cereals:

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)			
					De mo	Che ck		Paramet ers	Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Paddy	Productivity Enhancement	Varietal replacement with HYV paddy-var. Sampriti alongwith soil test based fertilizers application and zinc sulphate @ 20 kg per ha	64	8.93	36.2	29.3	23.55	a. Test wt. b. No. of filled grain/pa nicle	17.5 g 162.1	15.4 g 144.6	36822	66970	30148	1.82	34078	54205	20127	1.59



Field visit during panicle initiation stage



Field day programme during harvesting stage

Performance of FLD

Oilseeds:

Frontline demonstrations on oilseed crops

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

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

** BCR= GROSS RETURN/GROSS COST

Pulses

Frontline demonstration on pulse crops

Crop	Thematic Area	Name of the technology demonstrated	No. of Farmers	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Black Gram	Productivity Enhancement	Varietal replacement with var. PU-31, seed treatment with rhizobium PSB & KSB and spring of micro nutrient with B & Mo	45	6.0	6.74	5.82	15.80	24187	53920	29733	2.23	22830	46560	23730	2.04
	Total														

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

** BCR= GROSS RETURN/GROSS COST



Other crops

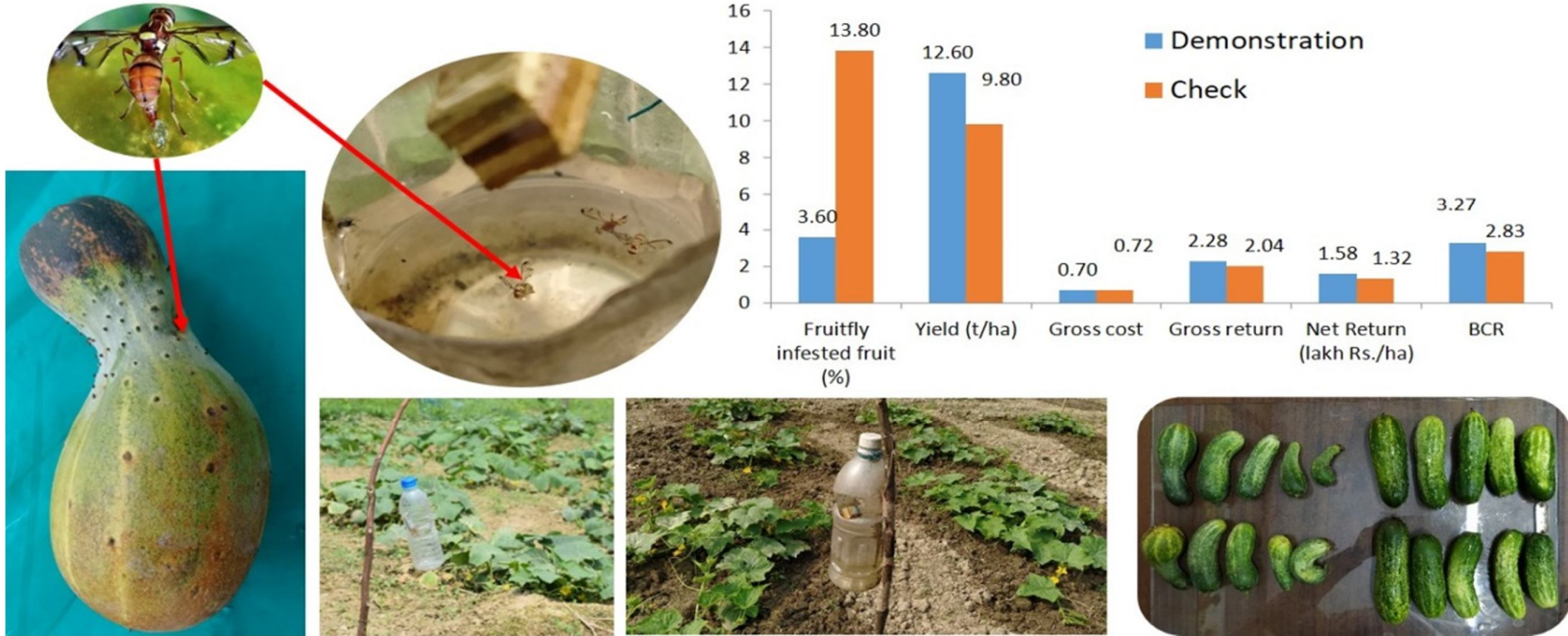
Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	Area (ha)	Yield (q/ha)		% change in yield	Other parameters			Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demo	Check		Parameters	Demo	Check	Gross Cost	Gross Return	Net Return	BCR	Gross Cost	Gross Return	Net Return	BCR
Cucurbits (Bitter Gourd)	Vegetable cultivation	1. Conventional bitter gourd cultivation as per recommended package of practice. 2. Spray of plant growth promoter Ethrel @ 200 ppm (39.5% SL @ 0.5 ml/l) at 2 and 4 true leaf stage.	10	1	212.2	184.1	15.22	Days to 50% flowering	44.6	49.8	93890	183450	89560	1.95	87900	161400	73500	1.84
								First node of female flower appearance	10.9	15.1								
								Female : Male flower ratio	4.3:10	3.5:10								
Tomato	Vegetable cultivation	1. Seedling raising in 98 hole Plug tray 2. Transplanting at correct stage of seedling (25 DAS) with minimum or no root injury	10	1.5	515.8	436.7	18.7	Days to 50% flowering	46.7	53.9	77500	169700	92200	2.19	73800	149700	75900	2.03
								Incidence of nematode (10 point scale)	1.6	3.3								
								Incidence of bacterial wilt (10 point scale)	1.8	4.1								
Dragon fruit	Exotic fruit	Introduction of new fruit	24	0.3	272.4	-	-	Fruit yield per plant	16.2	-	432000	1121000	689000	2.59	-	-	-	-
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	126	98	28.57%	Fruitfly infested fruit (%)	3.6	13.8	69700	228000	158300	3.27	72000	204000	132000	2.83
Bitter gourd	Biological control	Biointensive management of bacterial wilt (Soil treatment with Bleaching powder, seed treatment with <i>Pseudomonas fluorescens</i> , soil amelioration with <i>P. fluorescens</i> mixed compost, soil drenching with <i>P. fluorescens</i>)	50	2	293.4	194.2	51.08%	Wilting (PDI)	2.1	24.7	212000	645480	433480	3.04	227000	427240	200240	1.88

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 ₂ O ₅	K ₂ O					
Cucurbits	Rabi	Partially irrigated	Clay loam	225.4	38.3	430.7	Fallow	20.02.21	Continuing upto June, 2021	382.4	15
Tomato	Rabi	Partially irrigated	Clay loam	242.6	33.4	460.2	Bitter gourd	24.09.21	Upto 5 th Feb, 2022	999.1	30
Dragon fruit	Round theyear	Irrigated	Clay loam	270.1	42.6	412.8	Vegetables	08.02.21	-	999.1	30
Cucumber	Rabi	Irrigated	Clay loam	138.4	51.6	427.8	Rice	Sowing: 12 th October, 2021	Upto December 2021	12	4
Bittergourd	Kharif	Irrigated	Clay loam	171.8	45.4	489.2	Chilli	1 st week of June, 2021	September, 2021	423	22



FLD on bittergourd bacterial wilt management



FLD on management of fruit fly with Cue lure trap

Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of units	Major parameters		% change in major parameter	Other parameter		*Economics of demonstration (Rs.)				*Economics of check (Rs.)			
					Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Dairy																	
Cow																	
Buffalo																	
Poultry																	
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	0.065 ha (2000 fingerlings)	Avg. body wt (g)	125	-	-	-	-	18000	75000	57000	4.16	7500	22500	15000	3.0	
					Yield (kg)	125	-	-											
					Survivability (%)	50	-	-											
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	60	60	Oyster mushroom yield	-		1.2 kg per 100 gm spawn	-	32	180	140	60	-	-	-	-
Saral Ushna Perboiling machine	Enterprise development and drudgery reduction, quality improvement of product	48	5	i. Ergonomic cost ii. Angle of deviation iii. Additional income iv. Colour of rice	-	Result waiting										
Button mushroom																
Vermicompost																
Sericulture																
Apiculture	Demonstration of Indian Honeybee (<i>Apis cerana</i>) for additional income generation (6 - frame colony, Pollen substitute)	20	20	Honey yield: 9.6 kg/ hive /yr	7.8 kg/hive /yr	23 %	Wax moth: 1.5 Colony strength: 4.6 Colony division: 1:2.5 per year	2.9 4.2 1:0.8 per year	850	3360	2510	3.95	825	2738	1913	3.32
Total																

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

** BCR= GROSS RETURN/GROSS COST



FLD on beekeeping

Women empowerment

Category	Name of technology	No. of demonstrations	Observations		Remarks
			Demonstration	Check	
Farm Women					
Pregnant women					
Adolescent Girl					
Other women					
Children					
Neonatal					
Infants					

Farm implements and machinery

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

Demonstration details on crop hybrids

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
Cereals										
Bajra										
Maize										
Paddy										
Sorghum										
Wheat										
Others (Pl.specify)										
Total										
Oilseeds										
Castor										
Mustard										
Safflower										
Sesame										
Sunflower										
Groundnut										

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	NetReturn	BCR
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										
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	Bitter gourd (Bacterial wilt)	Incidence of wilt is very less in demonstration plots
2	Cucumber (fruit fly trap)	Cost of cultivation has been reduced due to use of cue lure trap
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				
4.	Training for extension functionaries				

Performance of the demonstration under CFLD on Pulse and Oilseed Crops during Kharif2021, Rabi and Summer2020-2021:

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
2.	Greengram	Choiti Moong	6.10	585	630	1200	i)Variety IPM 205-7 (Virat) ii) Seed inoculation with <i>Rhizobium</i> , 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	173	40	8.62	6.45	7.39	20.83	14.75	-

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 <i>Rhizobium</i> , 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	24075	39650	15575	1.64	25650	48035	22385	1.87

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)	29825	110.0	65.00	30.00	30.0	Family maintenance & invested in bank	21 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 <i>Rhizobium</i> , 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 <i>Kharif</i> 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- 33.2 cm (Local check) Plant height-40.4 cm (Demo.) ii)Pod length-6.7 cm (Local check) Pod length-7.4 cm (Demo.) iii)100 seed wt.-2.3 g (Local check) 100 seed wt.-3.1 g (Demo.) iv)Seed yield-610 kg/ha (Local check) Seed yield-753 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 <i>Rhizobium</i> 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 low in demo. plot		

F. Extension activities under FLD conducted:

Sl. No.	Extension Activities organized	Date and place of activity	Number of farmer attended
1.	Training programme	10.01.21 at Paschim Karanjali of Kulpi block	44
		16.01.21 at Damkal of Mathurapur-II block	52
		02.02.21 at Debipur of Kultali block	30
		28.01.21 at Achintanagar of P. Pratima-II block	21
2.	Distribution of critical inputs	10.01.21 at Paschim Karanjali of Kulpi block	44
		16.01.21 at Damkal of Mathurapur-II block	52
		02.02.21 at Debipur of Kultali block	30
		28.01.21 at Achintanagar of P. Pratima-II block	26
		23.03.21 at Sutabecha of Mandirbazar block	21
3.	Field visit	20.03.21 at Paschim Karanjali of Kulpi block	36
		24.03.21 at Damkal of Mathurapur-II block	39
		23.03.21 at Debipur of Kultali block	28
		25.03.21 at Sutabecha of Mandirbazar block	16
		27.03.21 at Achintanagar of P. Pratima-II block	23
4.	Field Days	20.04.21 at Achintanagar of P. Pratima-II block	24
		22.04.21 at Damkal of Mathurapur-II block	48

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



Field visit at Achintanagar of P. Pratima and Sutabecha of Mandirbazar Block



Field visit at Damkal of Mathurapur-II and P. Karanjali of Kulpi Block

H. Farmers' training photographs



Training & inputs distribution

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.)
Greengram	i) Critical input	3,24,000.00	3,22,550.00	20.00
	ii) TA/DA/POL etc. for monitoring	12,000.00	12,170.00	
	iii) Extension Activities (Field Day)	10,000.00	10,450.00	
	iv) Publication of literature	10,000.00	10,600.00	
	v) Contingencies	4,000.00	4210.00	
	Sub Total	3,60,000.00	3,59,980.00	
	Technology Agent	-	-	-
	Grand total	3,60,000.00	3,59,980.00	20.00

Traning 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	2	10	11	21	13	5	18	2	0	2	25	16	41	
Integrated Farming	1	4	5	9	8	16	24	2	0	2	10	23	33	
Micro irrigation/irrigation														
Seed production														
Nursery management														
Integrated Crop Management														
Soil & water conservation														
Integrated nutrient Management	1	8	0	8	12	0	12	0	0	0	20	0	20	
Production of organic inputs														
Others														
Total	4	22	16	38	33	21	54	4	0	4	55	39	94	
II. Horticulture														
a) Vegetable Crops														
Production of low volume and high value crops														
Off season vegetables	1	21	2	23	4	4	8	1	0	1	26	6	32	
Nursery raising	1	8	0	8	6	1	7	0	0	0	14	1	15	
Exotic vegetables														
Export potential vegetables														
Grading and standardization														
Protective cultivation														
Others/IFS	1	24	0	24	14	0	14	2	0	2	40	0	40	
Horticultural technique	1	13	0	13	13	1	14	3	0	3	29	1	30	
Total (a)	4	66	2	68	37	6	43	6	0	6	109	8	117	

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	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	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	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	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	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	0
Total(a-g)	4	66	2	68	37	6	43	6	0	6	109	8	117	
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	0
IV. Livestock Production and Management														
Dairy Management														
Poultry Management	2	18	0	18	3	56	59	0	3	3	21	59	80	
Piggery Management														
Rabbit Management														
Animal Nutrition Management														
Disease Management														
Feed & fodder technologies														
Production of quality animal products														
Others														
Total	2	18	0	18	3	56	59	0	3	3	21	59	80	

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	1	4	21	25	0	0	0	2	3	5	6	24	30	
Design and development of low/minimum cost diet														
Designing and development for high nutrient efficiency diet	1	0	21	21	0	12	12	0	0	0	0	33	33	
Minimization of nutrient loss in processing	1	3	7	10	2	3	5	0	0	0	5	10	15	
Processing & cooking														
Gender mainstreaming through SHGs	3	0	0	0	7	88	95	8	15	23	15	103	118	
Storage loss minimization techniques														
Value addition														
Women empowerment	2	0	2	2	1	57	58	0	0	0	1	59	60	
Location specific drudgery reduction technologies														
Rural Crafts														
Women and child care														
Others														
Mushroom cultivation to attain nutrition security	3	5	58	63	0	22	22	0	10	10	5	90	95	
Total	11	12	109	121	10	182	192	10	28	38	32	319	351	
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	1	18	0	18	32	0	32	0	0	0	50	0	50	
Integrated Disease Management														
Biocontrol of pests and diseases														
Production of bio control agents and bio pesticides														
Beekeeping	4	41	5	46	32	20	52	1	1	2	74	26	100	
Total	5	59	5	64	64	20	84	1	1	2	124	26	150	

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VIII. Fisheries													
Integrated fish farming	6	80	59	139	59	20	79	4	1	5	143	80	223
Carp breeding and hatchery management													
Carp fry and fingerling rearing	6	5	109	114	31	114	145	17	4	21	53	227	280
Composite fish culture	4	10	0	10	98	25	123	1	0	1	109	25	134
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes													
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others	1	8	0	8	4	2	6	0	0	0	12	2	14
Total	17	103	168	271	192	161	353	22	5	27	317	334	651
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	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	0
XII. Others (Pl. Specify)														
GRAND TOTAL	43	280	300	580	339	446	785	43	37	80	658	785	1443	

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	11	0	11	8	1	9	0	0	0	19	1	20
Training and pruning of orchards													
Protected cultivation of vegetable crops	2	10	5	15	80	22	102	2	0	2	92	27	119
Commercial fruit production													
Integrated farming													
Seed production													
Production of organic inputs													
Planting material production													
Vermiculture													
Mushroom Production	1	5	12	17	0	13	13	0	0	0	5	25	30
Beekeeping	1	13	0	13	2	0	2	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													
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing													
Others/Breeding of Indigenous catfish in backyard system	1	16	0	16	7	2	9	0	0	0	23	2	25
Total	6	55	17	72	97	38	135	2	0	2	154	55	209

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	2	49	5	54	26	0	26	0	0	0	75	5	80	
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	1	3	12	15	0	4	5	0	0	0	3	18	21	
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														
Other														
Total	3	52	17	69	26	4	31	0	0	0	78	23	101	

D) Farmers and farm women (off campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST			M	F	T
		M	F	T	M	F	T	M	F	T			
I. Crop Production													
Weed Management													
Resource Conservation Technologies													
Cropping Systems													
Crop Diversification	1	15	1	16	22	3	25	5	2	7	42	8	50
Integrated Farming													
Micro irrigation/irrigation													
Seed production													
Nursery management													
Integrated Crop Management	7	167	16	183	62	7	69	30	2	32	259	25	284
Soil & water conservation													
Integrated nutrient Management	3	44	12	56	47	8	55	2	0	2	101	12	113
Production of organic inputs													
Others													
Total	11	226	29	255	131	18	149	37	4	41	402	45	447

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	1	0	0	0	12	3	15	2	0	2	14	3	17
Nursery raising	1	15	25	40	14	2	16	3	0	3	32	27	59
Exotic vegetables													
Export potential vegetables													
Grading and standardization													
Protective cultivation													
Others													
Water & Weed Management	2	19	0	19	20	1	21	2	0	2	41	1	42
Vegetable cultivation on land embankment	1	0	0	0	46	0	46	0	0	0	46	0	46
Integrated nutrient management	3	10	2	12	40	9	49	3	1	4	53	12	65
Management technologies	1	23	1	24	16	0	16	0	0	0	39	1	40
Total (a)	9	67	28	95	148	15	163	10	1	11	225	44	269
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

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				
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	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	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	0
Total(a-g)	9	67	28	95	148	15	163	10	1	11	225	44	269	
III. Soil Health and Fertility Management														
Soil fertility management														
Integrated water management	3	57	2	59	21	23	44	0	0	0	78	25	103	
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	3	57	2	59	21	23	44	0	0	0	78	25	103	

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				
IV. Livestock Production and Management														
Dairy Management														
Poultry Management														
Piggery Management														
Rabbit Management														
Animal Nutrition Management	1	27	8	35	1	22	23	0	1	1	28	31	59	
Disease Management														
Feed & fodder technologies														
Production of quality animal products														
Others														
Total	1	27	8	35	1	22	23	0	1	1	28	31	59	
V. Home Science/Women empowerment														
Household food security by kitchen gardening and nutrition gardening	5	23	42	65	3	55	58	6	45	51	23	151	174	
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	2	34	8	42	0	20	20	0	8	8	34	36	70	
Storage loss minimization techniques														
Value addition														
Women empowerment	4	3	62	65	1	85	86	0	2	2	4	149	153	
Location specific drudgery reduction technologies														
Rural Crafts														
Women and child care	2	9	23	32	0	23	23	0	15	15	9	61	70	
Others														
Total	13	69	135	204	4	183	187	6	70	76	70	397	467	

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	0
VII. Plant Protection														
Integrated Pest Management	5	57	15	72	38	22	60	0	1	1	95	38	133	
Integrated Disease Management	5	57	23	80	33	4	37	0	0	0	90	27	117	
Biocontrol of pests and diseases	7	79	3	82	150	37	187	0	0	0	229	40	269	
Production of bio control agents and bio pesticides														
Beekeeping														
Organic farming	1	0	0	0	19	2	21	0	0	0	19	2	21	
Total	18	193	41	234	240	65	305	0	1	1	433	107	540	
VIII. Fisheries														
Integrated fish farming														
Carp breeding and hatchery management														
Carp fry and fingerling rearing														
Composite fish culture	12	243	74	317	219	54	273	10	2	12	472	130	602	
Hatchery management and culture of freshwater prawn														
Breeding and culture of ornamental fishes														
Portable plastic carp hatchery														
Pen culture of fish and prawn														
Shrimp farming														
Edible oyster farming														
Pearl culture														
Fish processing and value addition														
Others														
Total	12	243	74	317	219	54	273	10	2	12	472	130	602	

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	67	882	317	1199	764	380	1144	63	79	142	1708	779	2487

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													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

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	1	10	1	11	5	1	6	0	0	0	15	2	17	
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														
Other														
Total	1	10	1	11	5	1	6	0	0	0	15	2	17	

G) Consolidated table (ON and OFF Campus)

i. Farmers & Farm Women

Thematic Area	No. of Courses	No. of Participants									Grand Total			
		Other			SC			ST			M	F	T	
		M	F	T	M	F	T	M	F	T				
I. Crop Production														
Weed Management														
Resource Conservation Technologies														
Cropping Systems														
Crop Diversification	3	25	12	37	35	8	43	7	2	9	67	24	91	
Integrated Farming	1	4	5	9	8	16	24	2	0	2	10	23	33	
Micro irrigation/irrigation														
Seed production														
Nursery management														
Integrated Crop Management	7	167	16	183	62	7	69	30	2	32	259	25	284	
Soil & water conservation														
Integrated nutrient Management	4	52	12	64	59	8	67	2	0	2	121	12	133	
Production of organic inputs														
Others														
Total	15	248	45	293	164	39	203	41	4	45	457	84	541	
II. Horticulture														
a) Vegetable Crops														
Production of low volume and high value crops														
Off0season vegetables	2	21	2	23	16	7	23	3	0	3	40	9	49	
Nursery raising	2	23	25	48	20	3	23	3	0	3	46	28	74	
Exotic vegetables														
Export potential vegetables														
Grading and standardization														
Protective cultivation														
Others														
IFS	1	24	0	24	14	0	14	2	0	2	40	0	40	
Horticultural technique	1	13	0	13	13	1	14	3	0	3	29	1	30	
Water & Weed Management	2	19	0	19	20	1	21	2	0	2	41	1	42	
Vegetable cultivation on land embankment	1	0	0	0	46	0	46	0	0	0	46	0	46	
Integrated nutrient management	3	10	2	12	40	9	49	3	1	4	53	12	65	
Management technologies	1	23	1	24	16	0	16	0	0	0	39	1	40	
Total (a)	13	133	30	163	185	21	206	16	1	17	334	52	386	

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	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	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	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	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	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	0
Total(a-g)	13	133	30	163	185	21	206	16	1	17	334	52	396	
III. Soil Health and Fertility Management														
Soil fertility management														
Integrated water management	3	57	2	59	21	23	44	0	0	0	78	25	103	
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	3	57	2	59	21	23	44	0	0	0	78	25	103	
IV. Livestock Production and Management														
Dairy Management														
Poultry Management	2	18	0	18	3	56	59	0	3	3	21	59	80	
Piggery Management														
Rabbit Management														
Animal Nutrition Management	1	27	8	35	1	22	23	0	1	1	28	31	59	
Disease Management														
Feed & fodder technologies														
Production of quality animal products														
Others														
Total	3	45	8	53	4	78	82	0	4	4	49	90	139	
V. Home Science/Women empowerment														
Household food security by kitchen gardening and nutrition gardening	6	27	63	90	3	55	58	8	48	56	29	175	204	
Design and development of low/minimum cost diet														
Designing and development for high nutrient efficiency diet	1	0	21	21	0	12	12	0	0	0	0	33	33	

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	1	3	7	10	2	3	5	0	0	0	5	10	15
Processing & cooking													
Gender mainstreaming through SHGs	5	34	8	42	7	108	115	8	23	31	49	139	188
Storage loss minimization techniques													
Value addition													
Women empowerment	6	3	64	67	2	142	144	0	2	2	5	208	213
Location specific drudgery reduction technologies													
Rural Crafts													
Women and child care	2	9	23	32	0	23	23	0	15	15	9	61	70
Others													
Mushroom cultivation to attain nutrition security	3	5	58	63	0	22	22	0	10	10	5	90	95
Total	24	81	244	325	14	365	379	16	98	114	102	716	818
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	75	15	90	70	22	92	0	1	1	145	38	183
Integrated Disease Management	5	57	23	80	33	4	37	0	0	0	90	27	117
Biocontrol of pests and diseases	7	79	3	82	150	37	187	0	0	0	229	40	269
Production of bio control agents and bio pesticides													
Beekeeping	4	41	5	46	32	20	52	1	1	2	74	26	100
Organic Farming	1	0	0	0	19	2	21	0	0	0	19	2	21
Total	23	252	46	298	304	85	389	1	2	3	557	133	690
VIII. Fisheries													
Integrated fish farming	6	80	59	139	59	20	79	4	1	5	143	80	223
Carp breeding and hatchery management													
Carp fry and fingerling rearing	6	5	109	114	31	114	145	17	4	21	53	227	280
Composite fish culture	16	253	74	327	317	79	396	11	2	13	581	155	736

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														
Portable plastic carp hatchery														
Pen culture of fish and prawn														
Shrimp farming														
Edible oyster farming														
Pearl culture														
Fish processing and value addition														
Others/ Breeding of Indigenous fish	1	8	0	8	4	2	6	0	0	0	12	2	14	
Total	29	346	242	588	411	215	626	32	7	39	789	464	1253	
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	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	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	0
XII. Others (Pl. Specify)														
GRAND TOTAL	110	1162	617	1779	1103	826	1929	106	116	222	2366	1564	3930	

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	11	0	11	8	1	9	0	0	0	19	1	20
Training and pruning of orchards													
Protected cultivation of vegetable crops	2	10	5	15	80	22	102	2	0	2	92	27	119
Commercial fruit production													
Integrated farming													
Seed production													
Production of organic inputs													
Planting material production													
Vermiculture													
Mushroom Production	1	5	12	17	0	13	13	0	0	0	5	25	30
Beekeeping	1	13	0	13	2	0	2	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														
Freshwater prawn culture														
Shrimp farming														
Pearl culture														
Cold water fisheries														
Fish harvest and processing technology														
Fry and fingerling rearing														
Others/Breeding of Indigenous catfish in backyard system	1	16	0	16	7	2	9	0	0	0	23	2	25	
Total	6	55	17	72	97	38	135	2	0	2	154	55	209	

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	2	49	5	54	26	0	26	0	0	0	75	5	80	
Integrated Nutrient management														
Rejuvenation of old orchards														
Protected cultivation technology														
Production and use of organic inputs	1	10	1	11	5	1	6	0	0	0	15	2	17	
Care and maintenance of farm machinery and implements														
Gender mainstreaming through SHGs	1	3	12	15	0	4	5	0	0	0	3	18	21	
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														
Other														
Total	4	62	18	80	31	5	37	0	0	0	93	25	118	

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

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Agronomy	F&FW	Integrated nutrient management	1	Off	33	5	38	18	3	21
	F&FW	Integrated nutrient management	1	Off	37	3	40	20	3	23
	F&FW	Integrated nutrient management on pulse (Greengram) cultivation	1	Off	31	4	35	11	2	13
	F&FW	Integrated farming with Special Emphasis to Agri Fishery Farming System	5	On	10	23	33	10	16	26
	F&FW	Scientific Method of Sunflower Cultivation during Rabi Summer Season in Sundarbans	3	On	14	1	15	5	0	5
	F&FW	Improved method of sunflower cultivation	1	Off	42	8	50	27	5	32
	F&FW	Training programme on seed treatment with bio fungicides and use of micronutrient (Zn) during land preparation	1	Off	64	0	64	16	0	16
	F&FW	Training programme on seed treatment with bio fungicides and use of micronutrient (B & Mo) during flowering stage	1	Off	45	0	45	13	0	13
	F&FW	Online Nutrient and weed management in kharif rice (webinar)	1	Off	26	5	31	10	2	12
	F&FW	Integrated nutrient management in oilseed & pulse crops	4	On	20	0	20	12	0	12
	F&FW	Improved method of oilseed cultivation	4	On	11	15	26	10	5	15
	F&FW	Soil test based nutrient management and disease-pest management in boro paddy(Off Campus)	1	Off	12	8	20	6	3	9
	F&FW	Best technologies to boost up the pulse production in Sundarbans (Off Campus)	1	Off	12	8	20	6	3	9
	F&FW	Performance of HYV kharif paddy of variety Sampriti with application of Zinc	1	Off	64	0	64	16	0	16
F&FW	Summer Pulse (Greengram) cultivation towards productivity enhancement	1	Off	36	4	40	24	2	26	

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	F&FW	Off Campus Training on Nutrient Management in Early Summer Vegetable	1	Off	14	3	17	14	3	17
	RY	Diversified Crop Cultivation	4	On	47	21	68	42	21	63
	RY	Crop Diversification	4	On	45	6	51	40	1	41
	F&FW	Skill Development Training on Nursery Management	7	On	14	1	15	6	1	7
	F&FW	Horti-Fishery Based Integrated Farming System	4	On	40	0	40	16	0	16
	F&FW	Improved methods of horticultural technologies	4	On	29	1	30	16	1	17
	RY	Multipurpose horticulture nursery under ARYA	4	On	19	1	20	8	1	9
	F&FW	Online farmer's training on maximizing water use efficiency in vegetables	1	Off	34	1	35	15	1	16
	F&FW	Online training on early Kharif Vegetable cultivation on Land Embankment	1	Off	20	0	20	20	0	20
	F&FW	Online training on balanced use of fertilizer	1	Off	28	4	32	18	2	20
	F&FW	Online training on Vegetable cultivation on land embankment	1	Off	26	0	26	26	0	26
	F&FW	Online training on management of vegetable field after intensive rainfall and prolonged submergence	1	Off	39	1	40	16	0	16
	F&FW	Improved methods of vegetable farming for the Sundarbans Agro Climate	1	On	26	6	32	5	4	9
	F&FW	Off campus training on Seed treatment and nursery raising for rabi vegetables	1	Off	32	27	59	17	2	19
	F&FW	Nutrient Management of Vegetable Crops	1	Off	16	0	16	16	0	16
	F&FW	Use of water soluble fertilizer in vegetable cultivation	1	Off	9	8	17	9	8	17
F&FW	Poly mulching in chilli cultivation	1	Off	7	0	7	7	0	7	

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Plant Protection	EP	Diploma in Agricultural Extension Services for Input Dealers - 11th batch	365	On	39	1	40	16	0	16
	EP	Diploma in Agricultural Extension Services for Input Dealers - 12th batch	365	On	36	4	40	10	0	10
	F & FW	Application of biocontrol agents in pest and disease management in pulse and oilseeds	1	Off	21	4	25	21	4	25
	F & FW	Role and use of biofertilizers in pulse production	1	Off	19	2	21	19	2	21
	RY	Beekeeping	7	On	15	0	15	2	0	2
	F & FW	Integrated disease management in vegetables	1	Off	7	8	15	0	0	0
	F & FW	Training programme on improved crop pest management	4	On	50	0	50	32	0	32
	F & FW	Scientific Beekeeping	7	On	3	22	25	0	17	17
	F & FW	Scientific Beekeeping	7	On	25	0	25	16	0	16
	F & FW	Integrated Pest Management in summer crops	1	Off	20	11	31	8	4	12
	EP	Use of biopesticides for the pest and disease management in vegetables	1	Off	15	2	17	15	0	15
	F & FW	Integrated Pest Management in kharif crops	1	Off	20	0	20	15	0	15
	F & FW	Pest and disease management in cucurbits in monsoon months	1	Off	3	22	25	3	17	21
	F & FW	Integrated disease management in Betelvine	1	Off	12	8	20	1	0	1
	F & FW	Pest and disease management in Kharif Paddy	1	Off	20	0	20	2	0	2
	F & FW	Seed treatment and nursery raising for Rabi vegetables	1	Off	20	0	20	12	0	12
	F & FW	Climate change and its impact on pest and diseases	1	Off	22	8	30	18	4	22
	F & FW	Scientific Beekeeping	7	On	25	0	25	5	0	5
	F & FW	Scientific Beekeeping	7	On	21	4	25	9	4	13
	F & FW	Environment friendly pest management to safeguard pollinators	1	Off	41	4	45	11	4	15
	F & FW	Preparation of biopesticides at homestead level	1	Off	27	13	40	27	13	40
	F & FW	Role of beneficial insects in IPM and their conservation	1	Off	33	7	40	32	7	39
	F & FW	Preparation of cue lure to control fruitfly in vegetables	1	Off	33	7	40	33	7	40
	F & FW	Online training on maximizing water use efficiency in vegetables	1	Off	34	1	35	0	0	0
	F & FW	Online training on use of biocontrol agents in pest and disease management	1	Off	36	4	40	8	2	10
	F & FW	Online training on post cyclone use of rooftop rainwater for drinking and cooking	1	Off	5	23	28	5	23	28
	F & FW	Online training on Types of fungicides and their mode of action in disease management	1	Off	29	3	32	2	0	2
	F & FW	Online training on Management of vegetable field after intensive rainfall and prolonged submergence	1	Off	39	1	40	16	0	16
	F & FW	Online training on pest and disease management in kharif vegetables	1	Off	32	5	37	10	2	12
	F & FW	Online training on Biological management of Parthenium weed	1	Off	38	1	39	18	0	18

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Fishery	F & FW	Carp fry and fingerlings production	4	On	2	34	36	0	2	2
	F & FW	Carp fry and fingerlings production	4	On	0	51	51	0	12	12
	F & FW	Carp fry and fingerlings production	4	On	4	53	57	1	31	32
	F & FW	Carp fry and fingerlings production	4	On	6	50	56	6	34	40
	F & FW	Training program on Horticulture Fishery based Integrated Farming	4	On	40	0	40	40	0	40
	F & FW	Pond preparation and management for carp fry & fingerling production	4	On	20	30	50	20	30	50
	F & FW	Integrated Farming	3	On	27	0	27	6	0	6
	RY	Breeding of Indigenous catfish in backyard system under ARYA	4	On	23	2	25	7	2	9
	F & FW	Composite Fish Culture And Indigenous Fish Breeding	1	Off	82	20	102	62	15	77
	F & FW	Pond preparation for fish culture	1	Off	12	6	18	7	2	9
	F & FW	Online multi-location video conference on fish pond management through Google Meet	1	Off	42	8	50	22	3	25
	F & FW	Procedures for breeding of Asian Catfish	4	On	12	2	14	4	2	6
	F & FW	Online training on "Stocking and post stocking management for carp spawn, fry and fingerling "	1	Off	43	14	57	18	7	25
	F & FW	Online training on "Mixed fish and prawn farming"	1	Off	39	8	47	14	3	17
	F & FW	Online training on Suitable fish farming methodologies in the Yaas affected freshwater water bodies of Sundarbans	1	Off	29	6	35	20	2	22
	F & FW	Online training on " Scientific pond management with diversified fish species for doubling farmers income"	1	Off	38	1	39	15	0	15
	F & FW	Online training on "Optimum utilization of pond water resource through diversified fish farming"	1	Off	36	4	40	9	1	10
	F & FW	Fish rearing and management under STRY Scheme	7	On	15	0	15	5	0	5
	F & FW	Online training on "Fish pond management during enhanced rainfall condition"	1	Off	20	20	40	11	6	17
	F & FW	Climate resilient fish species for culture in fresh water ponds(Off Campus)	1	Off	61	25	86	27	8	35
F & FW	Pond based integrated farming (On Campus)	4	On	12	23	35	3	6	9	
F & FW	Pond based integrated farming (On Campus)	4	On	30	10	40	6	3	9	
F & FW	Fish culture management in winter (Off Campus)	1	Off	20	0	20	13	0	13	
F & FW	Fish culture management (Off Campus)	1	Off	50	18	68	11	9	20	

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off/ On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Fishery	F & FW	Pond based integrated farming (On Campus)	4	On	9	27	36	1	4	5
	F & FW	Pond based integrated farming (On Campus)	4	On	25	20	45	7	8	15
	F & FW	Fresh water fish and prawn farming(On Campus)	4	On	30	4	34	30	4	34
	F & FW	Mixed fish and prawn farming for doubling farm income(On campus)	3	On	40	10	50	40	10	50
	F & FW	Fresh water fish and prawn farming(On Campus)	4	On	24	11	35	24	11	35
	F & FW	Carp, fry and fingerlings production in domestic ponds (On campus)	5	On	21	9	30	21	9	30
Animal Husbandry	F& FW	Backyard poultry farming under SCSP	4	On	0	30	30	0	30	30
	F& FW	Backyard farming	4	on	21	29	50	3	29	32
	F& FW	Animal Nutrition	1	Off	28	31	59	1	23	24

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home Science	F & FW	Preparation of Bari and Papad	1	On	5	10	15	2	3	5
	F & FW	Nutrition Garden Management	1	Off	3	28	31	2	15	17
	F & FW	Cultivation of Oyster Mushroom for attaining Nutritional Security at house hold level	3	On	0	35	35	0	10	10
	F & FW	Mushroom Cultivation	1	Off	4	21	25	1	20	21
	F & FW	Webinar on Women in leadership	1	Off	11	36	47	2	14	16
	F & FW	Oyster Mushroom Cultivation	3	On	5	25	30	0	4	4
	F & FW	Webinar on mother and child care programme in Sunderban area	1	Off	0	38	38	0	25	25
	F & FW	Preparation and management of Nutrition garden during kharip season	1	Off	12	20	32	0	12	12
	F & FW	Food and nutrition management during Covid situation and Nutrition Garden development and management	1	Off	0	39	39	0	20	20
	F & FW	A multi location video conference on "Food and nutrition management during Covid situation" through google meet	1	Off	9	23	32	0	13	13
	F & FW	Preparation and management of nutrition garden in backyard area to attain nutritional security at household level	3	On	6	24	30	2	3	5
	F & FW	Online training on jam jelly preparation	1	Off	24	6	30	5	11	16
	F & FW	Off Campus training on preparation of medicinal garden for alternative livelihood through SHG	1	Off	10	30	40	0	12	12
	F & FW	Commemorative Celebration of 75 years of India's Independence - Preparation of nutri thali from locally available food for pregnant and lactating mother	3	On	0	33	33	0	12	12
	F & FW	Training on oyster mushroom cultivation at homestead level for nutrition security (Off Campus)	1	Off	0	45	45	0	15	15
	F & FW	Mushroom cultivation for income generation and attaining nutritional security	1	Off	0	38	38	0	37	37
	F & FW	Preparation and management of nutri-garden to attain food and nutrition security(under FLD)	1	Off	0	22	22	10	10	20
	F & FW	Training on oyster mushroom cultivation at homestead level for nutrition security	1	Off	0	45	45	0	15	15
	F & FW	Preparation and management of nutri-garden to attain food and nutrition security	1	Off	8	42	50	0	40	40
	F & FW	Training on Goat farming for income generation	4	On	15	45	60	15	45	60
	F & FW	Mushroom production for income generation and to attain house hold food & nutrition security	4	On	0	30	30	0	18	18
	F & FW	Backyard Poultry Farming	4	On	0	30	30	0	30	30
F & FW	Backyard Poultry Farming	4	On	0	28	28	1	27	28	
EP		Food preservation & processing for alternative livelihood of Womenfolk	3	On	3	12	15	0	4	4

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	3	-
Beekeeping	Income generation through alternative livelihood	Beekeeping for alternate livelihood	7	15	0	15	Backyard beekeeping	8	8	1

b) Details of participation

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST			M	F	T
		M	F	T	M	F	T	M	F	T			
Crop production and management													
Commercial floriculture													
Commercial fruit production													
Commercial vegetable production													
Integrated crop management													
Organic farming													
Other													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition													
Value addition													
Other													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Livestock and fisheries													
Dairy farming													
Composite fish culture													
Sheep and goat rearing													
Piggery													
Poultry farming													
Other													
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
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 & implements														
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	1	13	0	13	2	0	2	0	0	0	15	0	15	
Total														
Agricultural Extension														
Capacity building and group dynamics														
Other														
Total														
Grand Total	2	13	0	13	7	25	32	0	0	0	20	25	45	

D) Sponsored Training Programmes

a) Details of Sponsored Training Programme

Sl. No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of participants	Sponsoring Agency
					PF/R Y/EF			
1	Diploma in Agricultural Extension Services for Input Dealers	Integrated Pest Management	January	365	EP	2	80	Self
2	Application of biocontrol agents in pest and disease management in pulse and oilseeds	Biocontrol	January	1	F & FW	1	25	NICRA
3	Role and use of biofertilizers in pulse production	Organic Farming	January	1	F & FW	1	21	NICRA
4	Beekeeping	Beekeeping	February	7	RY	1	15	STRY
5	Scientific Beekeeping	Beekeeping	March	7	F & FW	2	50	NBHM (NBB)
6	Climate change and its impact on pest and diseases	Integrated disease management	October	1	F & FW	1	30	NICRA
7	Scientific Beekeeping	Beekeeping	November	7	F & FW	2	50	NBHM (NBB)
8	Environment friendly pest management to safeguard pollinators	Biocontrol	November	1	F & FW	1	45	AICRP
9	Preparation of biopesticides at homestead level	Biocontrol	December	1	F & FW	1	40	NICRA
10	Role of beneficial insects in IPM and their conservation	Biocontrol	December	1	F & FW	1	40	NICRA
11	Preparation of cue lure to control fruitfly in vegetables	Biocontrol	December	1	F & FW	1	40	NICRA

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														
Integrated Pest Management	2	49	5	54	26	0	26	0	0	0	75	5	80	
Integrated disease management	1	4	4	8	18	4	22	0	0	0	22	8	30	
Organic Farming	1	0	0	0	19	2	21	0	0	0	19	2	21	
Biocontrol	5	31	0	31	124	35	159	0	0	0	155	35	190	
Beekeeping	5	54	5	59	34	20	54	1	1	2	89	26	115	
Total	14	138	14	152	221	61	282	1	1	2	360	76	436	
Post harvest technology and value addition														
Processing and value addition														
Other														
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
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														
Total	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				
Home Science														
Household nutritional security														
Economic empowerment of women														
Drudgery reduction of women														
Other														
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural Extension														
Capacity Building and Group Dynamics														
Other														
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grant Total	14	138	14	152	221	61	282	1	1	2	360	76	436	

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	6	174	40	214	46.73	-	-	-	174	40	214
Kisan Mela	1	1789	711	2500	50.80	30	8	38	1819	719	2538
Kisan Ghosthi	-	-	-	-	-	-	-	-	-	-	-
Exhibition	2	1741	1587	3328	43.27	48	30	76	1787	1617	3404
Film Show	2	110	42	152	64.47	-	-	-	110	42	152
Method Demonstrations	3	74	1	75	30.67	-	-	-	74	1	75
Farmers Seminar	1	52	23	75	22.67	2	1	3	54	24	78
Workshop	3	84	7	91	5.49	7	2	9	91	9	100
Group meetings	2	235	154	389	65.55	10	16	26	245	170	415
Lectures delivered as resource persons	13	306	112	418	72.01	-	-	-	306	112	418
Advisory Services	8	129	50	179	27.40	-	-	-	129	50	179
Scientific visit to farmers field	44	957	351	1308	34.25	-	-	-	957	351	1308
Farmers visit to KVK	22	495	76	571	34.90	-	-	-	495	76	571
Diagnostic visits	12	413	101	514	31.60	-	-	-	413	101	514
Exposure visits	2	121	5	126	24.70	2	1	3	123	6	129
Ex-trainees Sammelan	-	-	-	-	-	-	-	-	-	-	-
Soil health Camp	-	-	-	-	-	-	-	-	-	-	-
Animal Health Camp	1350	26179	29566	55745	48.62	32	-	32	26211	29566	55777
Agri mobile clinic	-	-	-	-	-	-	-	-	-	-	-
Soil test campaigns	-	-	-	-	-	-	-	-	-	-	-
Farm Science Club Conveners meet	-	-	-	-	-	-	-	-	-	-	-
Self Help Group Conveners meetings	-	-	-	-	-	-	-	-	-	-	-
Mahila Mandals Conveners meetings	-	-	-	-	-	-	-	-	-	-	-
Celebration of important days (specify)	15	733	496	1229	41.50	12	7	19	745	503	1248
Sankalp Se Siddhi	-	-	-	-	-	-	-	-	-	-	-
Swatchta Hi Sewa	64	1113	312	1425	28.50	-	-	-	1113	312	1425
Mahila Kisan Divas	1	0	87	87	31.03	-	1	1	-	88	88
Any Other (Specify)											
Week celebration	3	112	66	178	31.46	1	3	4	113	69	182
SMS alert	29	36210	1707	37917	33.31	-	-	-	36210	1707	37917
Total	1583	71027	35494	106521	38.45	144	69	211	71169	35563	106732

B. Other Extension activities

Nature of Extension Activity	No. of activities
Newspaper coverage	1
Radio talks	10
TV talks	2
Popular articles	2
Extension Literature	1
Other, if any	-
Research paper	2
Books	2
Technical reports	15
Electronic Publication (CD/DVD etc)	5

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	41.8 million pcs	167200.00	4	12	2	18	32
Catfish (Fry)	Magur & singhi	53700 pcs	268500.00	12	28	4	93	125
Sesame	Suprava	14.8	148000.00	8	1	2	2	5
Total			583700.00	24	41	8	113	162

KVK farm

Crop	Variety	Quantity of seed (q)	Value (Rs)	Number of farmers to whom seed provided			
				SC	ST	Other	Total
Paddy	NC-492, Foundation	2.80	14000.00	20	1	11	32
	NC-492, Certified	7.80	31200.00	53	7	25	85
	Luna Suwarna, Certified	1.30	5200.00	12	2	10	24
	Varshadhan, Foundation	2.50	12500.00	18	1	14	33
	Ciherang Sub-I, Certified	6.00	24000.00	37	3	22	62
	Dudheswar, TL	25.00	75000.00	102	10	58	170
Greengram	IPM-205-7 (Virat) Foundation	0.42	5250.00	4	1	9	14
	IPM-205-7 (Virat) Certified	2.75	34375.00	52	4	34	90
Blackgram	PU-31-Foundation	2.42	24200.00	53	3	24	80
Sesame	Suprava	2.80	28000.00	35	-	227	262
Sunflower	LSFH-171	2.20	79420.00	12	-	13	25
Grand Total		55.99	3,33,145.00	398	32	447	877



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	2700	2700	21	-	62	83
Chilli	Tejaswini	25700	38550	11	-	27	38
Tomato	Deb	24900	37350	12	-	16	28
Cauliflower	Dawn	5200	5200	7	1	16	24
Cabbage	Rare ball	4500	4500	4	-	9	13
Knolkhol	Taki Winner	3400	3400	3	-	2	5
Beet	Crimson Globe	4700	4700	-	-	-	-
Fruits							
Guava	Allahabad Safeda	441	17640		-		
Mango	Amrapali	561	22440	32	-	47	79
Sapota	Cricket Ball	627	25080	68	-	41	109
Lime	Pati	714	28560	12	-	4	16
Dragon fruit	Pink fleshed	1810	72400				
Ornamental plants	Dahlia, Chrysanthemum	25650	51300	240	-	470	710
Plantation (Coconut)	East Coast tall	3120	93600	51	-	69	120
Elephant yams							
Fodder crop saplings							
Forest Species							
Total		104023	407420.00	461	1	763	1225

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										-	7600	76000	1260	-	7600	76000	1260	
Azolla																		
Earth worms																		
Compost																		
Worms																		
Blue green algae																		
NADEP																		
Azatobactor																		
Azospirillum																		
PSB																		
Rhizobium																		
Azolla culture																		
Total																		
Bio- pesticides																		
Neem extract																		
Tobacco extract																		
Trichodermaviride																		
Panchagavya																		
Trichoderma																		
Total																		
Worms																		
Eudriluseuniae																		
Total																		
Earth worm																		
Eiseniafoetida																		
Earth worm																		
Total										-	7600	76000	1260	-	7600	76000	1260	

Contd...

Bio- fungicides																	
<i>Trichoderma harzianum</i>									-	1850	-	627	-	1850	-	627	
<i>Pseudomonas fluorescens</i>									-	1920	-	644	-	1920	-	644	
Total																	
others																	
Vermiculture																	
Mushroom-spawn																	
Cuelure									-	355	-	245	-	355	-	245	
Mineral mixture																	
Cow dung(dry)																	
Cow dung(wet)																	
Total									-	4125	0	1516	0	4125	0	1516	
Grand Total									-	11725	76000	2776	-	11725	76000	2776	

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					
Others	IMC Fry	2.6 lakh pcs	3,94,345.00	12	2	14	28
	Asian catfish –Singhi	17,300 pcs					
	Asian catfish –Desi magur	93,800 pcs					
Grand Total			3,94,345.00				

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

1. i) Name of Seed Hub Centre: RAKVK Oilseed Seed Hub (Sunflower & Sesame); Ramkrishna Ashram KVK, Nimpith, South 24 Parganas, 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. :	03218-226002
Mobile :	9475689098

ii) Quality Seed Production Reports

Season	Crop	Variety	Production (q)			
			Target	Area sown (ha)	Production	Category of Seed (F/S, C/S)
Khariif 2020	-	-	-	-	-	-
Rabi 2020-21	Sunflower	LSFH-171	1250	65	2.2 q	Certified
	Sesame	Suprava (CUMS-17)	500	7	17.6q	Certified
Summer/Spring 2021	-	-	-	-	-	-
Khariif 2021	-	-	-	-	-	-
Rabi 2021-22	Sunflower	LSFH-171	75	23		

i) Financial Progress

Fund received (2017-18, 2018-19, 2019-20, 2020-21, 2021-22)		Expenditure (Rs. in lakhs)		Unspent balance (Rs. in lakhs)	Remarks
		Infrastructure	Revolving fund		
2017-18					
2018-19	100.00	50.00	2.311	47.852	Infrastructure work completed
2019-20	10.00	-	20.42	63.252	
2020-2021	0	-	8.685	62.884	
2021-2022	0	-	4.882	59.35	

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	Influence of weather factors, soil temperature and moisture on collar rot disease of betel vine (<i>Piper betle</i> L.) under coastal saline zone of West Bengal	P. K. Garain	Journal of Agrometeorology (2021), 23(4): 428-434	-
	Effect of biofumigation by Indian mustard (<i>Brassica juncea</i> L.) on <i>Sclerotium rolfsii</i> Sacc. causing collar rot in betelvine (<i>Piper betle</i> L.)	P. K. Garain	Indian Phytopathology (2021) 74(4): 1015 - 1025	-
Seminar/conference/symposia papers	“Land shaping – A climate resilient model for the coastal Sundarban farmers” in the Fifth International Agronomy Congress on “Agri Innovations to Combat Food and Nutrition Challenges” organized by Indian Society of Agronomy (Web Conference), 23 – 27 November, PJTSAU, Hyderabad	P. K. Garain, P. Chatterjee, S. Jana, R. Rahman	Extended Summaries : 5th International Agronomy Congress, November 23-27, 2021, India, Vol. I, pp. 43-44	-
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		
Bulletins				
News letter	“Bongheri, NICRA village withstands the massacre of cyclone Yaas in Sundarbans of South 24 Parganas”	P. Chatterjee & P. K. Garain	NICRA Newsletter, Page 2, Vol. VII, No. 2, July 2021	
	“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				
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)	Bongheri: The journey of a climate smart village	P. K. Garain, P. Chatterjee, S. Jana		
	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	P. K. Garain	7 th October, 2021	SAMETI, Narendrapur
2	Orientation Workshop	Scientific Agri-Horti Practices	P. K. Garain	8 th - 9 th December, 2021	WBUAFS, Belgachia


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

Name of farmer	Sri Dipak Maiti																																																							
Address	Vill- Debichak, PO: Shibgobindapur, Block- Patharpratima, South 24 Parganas, West Bengal, Pin-743371																																																							
Contact details	Mob: 9609269212, E-mail:maiti6286@gmail.com																																																							
Landholding (in ha.)	0.55 ha																																																							
Name and description of the farm/ enterprise	Farm pond, natural farming, use of FYM, vermicompost, jeevamrita, panchagavya, sashyagavya, kunapaja, neem leaf extract, neem seed ke extract, green leaf extract, mycorrhiza, on-farm mass production of <i>Trichoderma</i> , neemastra, dasaparni, agneyastra, garlic extract, chilli-coria extract, egg-lemon liquid manure, fish-meat amino acid.																																																							
Economic impact	<p>He used to get annual income of Rs. 16789/- from traditional method of farming. He had no irrigation facility and used to depend heavily upon chemical fertilizers and pesticides. The cost of cultivation was high. After excavating the farm pond he is now assured of irrigation. He has also adopted multiple cropping and locally available low cost organic inputs. He is now getting net annual income of Rs. 64613/- (285% increase).</p> <table border="1"> <thead> <tr> <th>Names</th> <th>Area (Acre)</th> <th>Production (q)</th> <th>Gross cost (Rs.)</th> <th>Gross Income (Rs.)</th> <th>Net Income (Rs.)</th> </tr> </thead> <tbody> <tr> <td>Rice</td> <td>1.16</td> <td>18.00</td> <td>16719</td> <td>28800</td> <td>12081</td> </tr> <tr> <td>Bitter gourd</td> <td>0.10</td> <td>10.87</td> <td>12467</td> <td>16302</td> <td>3835</td> </tr> <tr> <td>Brinjal</td> <td>0.20</td> <td>22.72</td> <td>13801</td> <td>34086</td> <td>20285</td> </tr> <tr> <td>Okra</td> <td>0.10</td> <td>7.71</td> <td>2825</td> <td>6165</td> <td>3340</td> </tr> <tr> <td>Chilli</td> <td>0.52</td> <td>12.97</td> <td>31252</td> <td>49277</td> <td>18025</td> </tr> <tr> <td>Bean</td> <td>0.07</td> <td>5.19</td> <td>3892</td> <td>6743</td> <td>2851</td> </tr> <tr> <td>Bottlegourd</td> <td>0.10</td> <td>11.86</td> <td>2917</td> <td>7114</td> <td>4196</td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td>83873</td> <td>14848</td> <td>64613</td> </tr> </tbody> </table>		Names	Area (Acre)	Production (q)	Gross cost (Rs.)	Gross Income (Rs.)	Net Income (Rs.)	Rice	1.16	18.00	16719	28800	12081	Bitter gourd	0.10	10.87	12467	16302	3835	Brinjal	0.20	22.72	13801	34086	20285	Okra	0.10	7.71	2825	6165	3340	Chilli	0.52	12.97	31252	49277	18025	Bean	0.07	5.19	3892	6743	2851	Bottlegourd	0.10	11.86	2917	7114	4196	Total			83873	14848	64613
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Environmental impact	He has stopped using chemical pesticides. There is more visit of honeybees in his plot than earlier.																																																							
Horizontal/ Vertical spread	More than 50 rural youth has been motivated by Mr. Maity, in and around his village and have adopted chemical free farming. They have now started selling their produce in shopping malls in Kolkata through different NGOs. They are in a process of forming FPO.																																																							



Name of farmer	Sri Surojit Baidya																																																																									
Address	Vill: Dakshin Kankandighi Dactarergheri, GP: Kankandighi, PO: Kankandighi, Block: Mathurapur – II, South 24 Parganas, Pin: 743383																																																																									
Contact details	Mob: 8670672359/ 8637389520, E-mail: baidyasurojit613@gmail.com																																																																									
Landholding (in ha.)	0.68 ha																																																																									
Name and description of the farm/ enterprise	Farm pond, natural farming, use of vermicompost, jeevamrita, panchagavya, sashyagavya, kunapaja, neem leaf extract, neem seed kernel extract, green leaf extract, mycorrhiza, biofertilizers (<i>Rhizobium</i> , <i>Azotobacter</i> , <i>Azospirillum</i> , PSB, KMB), on-farm mass production of <i>Trichoderma</i> , neemastra, dasaparni, agneyastra, garlic extract, chilli-coriander extract, egg-lemon liquid manure, fish-meat amino acid, stone liquid manure, Pheromone trap, etc.																																																																									
Economic impact	<p>He used to get annual income of Rs. 55965/- from traditional method of farming. He had no irrigation facility and used to depend heavily upon chemical fertilizers and pesticides. The cost of cultivation was high. After excavating the farm pond he is now assured of irrigation. He has also adopted multiple cropping and locally available low cost organic inputs. He is now getting net annual income of Rs. 144385/- (158% increase).</p> <table border="1"> <thead> <tr> <th>Crops/animal/fish</th> <th>Area (Acre)</th> <th>Production (q)</th> <th>Gross cost (Rs.)</th> <th>Gross Income (Rs.)</th> <th>Net Income (Rs.)</th> </tr> </thead> <tbody> <tr> <td>Rice (HYV)</td> <td>1.2</td> <td>20</td> <td>13484</td> <td>27658</td> <td>14174</td> </tr> <tr> <td>Beans</td> <td>0.05</td> <td>3.46</td> <td>2397</td> <td>6224</td> <td>3827</td> </tr> <tr> <td>Bitter gourd</td> <td>0.1</td> <td>19.56</td> <td>18218</td> <td>32125</td> <td>13907</td> </tr> <tr> <td>Brinjal</td> <td>0.2</td> <td>25.29</td> <td>11825</td> <td>30939</td> <td>19114</td> </tr> <tr> <td>Okra</td> <td>0.12</td> <td>10.89</td> <td>3807</td> <td>12893</td> <td>9086</td> </tr> <tr> <td>Chilli</td> <td>0.5</td> <td>16</td> <td>25306</td> <td>66097</td> <td>40791</td> </tr> <tr> <td>Cucumber</td> <td>0.2</td> <td>8</td> <td>2139</td> <td>9880</td> <td>7741</td> </tr> <tr> <td>Tomato</td> <td>0.10</td> <td>17.78</td> <td>6422</td> <td>14227</td> <td>7805</td> </tr> <tr> <td>Cow</td> <td>2 no.</td> <td></td> <td>32500</td> <td>45800</td> <td>13300</td> </tr> <tr> <td>Fishery</td> <td>0.25</td> <td>2</td> <td>11000</td> <td>25640</td> <td>14640</td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td>127098</td> <td>271483</td> <td>144385</td> </tr> </tbody> </table>		Crops/animal/fish	Area (Acre)	Production (q)	Gross cost (Rs.)	Gross Income (Rs.)	Net Income (Rs.)	Rice (HYV)	1.2	20	13484	27658	14174	Beans	0.05	3.46	2397	6224	3827	Bitter gourd	0.1	19.56	18218	32125	13907	Brinjal	0.2	25.29	11825	30939	19114	Okra	0.12	10.89	3807	12893	9086	Chilli	0.5	16	25306	66097	40791	Cucumber	0.2	8	2139	9880	7741	Tomato	0.10	17.78	6422	14227	7805	Cow	2 no.		32500	45800	13300	Fishery	0.25	2	11000	25640	14640	Total			127098	271483	144385
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Environmental impact	He has now completely stopped using chemical pesticides. There is more visit of honeybees and beneficial insects in his plot than earlier.																																																																									
Horizontal/ Vertical spread	More than 30 rural youth has been motivated by Mr. Baidya, in and around his village and have adopted chemical free farming. They are in a process of forming a Farmers Producer Organization under the guidance of KVK.																																																																									



Name of farmer	Sri Manabendra Halder					
Address	Vill-Jhupkhali, PO: Chuprihira, Block-Joynagar-II South 24 Parganas, West Bengal, Pin-743349					
Contact details	Mob: 9732967947					
Landholding (in ha.)	0.63 ha					
Name and description of the farm/ enterprise	Beekeeping and integrated farming					
Economic impact	He used to get annual income of Rs. 28653/- from traditional method of farming. After adoption of integrated farming with beekeeping, he is now able to earn a net annual income of Rs. 144138560/- (384% increase).					
	Crops/animal/fish	Area (Acre)	Production (q)	Gross cost (Rs.)	Gross Income (Rs.)	Net Income (Rs.)
	Rice (HYV)	1.58	22	19447.00	42681.00	23234.00
	Chilli	0.20	8.50	12498.00	42484.00	29986.00
	Okra	0.10	20.3	7410.00	19760.00	12350.00
	Bottlegourd	0.12	16	3646.00	12350.00	8703.00
	Cow	2 no.	2.5 L/day/animal	16150.00	32600.00	16450.00
	Fishery	0.12	2.0	7663.00	30000.00	22337.00
	Beekeeping	15 hives	1.25	12000.00	37500.00	25500.00
	Total			78814.00	217375.00	138560.00
Social impact	He is now able to cultivate throughout the year with the available resources. Hence, he has stopped migrating to cities for petty jobs. Now he wants to continue farming. Many rural youths in his area are now motivated for beekeeping and stay in the village.					
Environmental impact	After placing beehives, the crop productivity has increased. He is also using environment friendly pesticides and biopesticides to minimize the environmental pollution and give a healthy environment for the crop pollinators.					
Horizontal/ Vertical spread	More than 20 rural youth has adopted beekeeping in his village. Besides, he is also promoting beekeeping in the neighbouring villages to improve crop production. He is hired by many villagers to capture feral colonies of honeybees.					



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 natural resources by the community in a way 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)

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

Sl. No.	Brief details of the tool/ methodology followed	Purpose for which the tool was followed
1	Identification of courses for farmers/farm women, Rural Youth, In-service personnel through participatory discussion during rapport building	Specific training need analysis of different cliental group
2	Training modules are developed by conducting PRA in villages	Problem analysis of different activities and prioritization
3	Semi-structured interview	Assessment of existing knowledge and practice and training need analysis
4	Need analysis and designing of training module through filling the printed proforma "Initial Evaluation" of KVK.	To fulfill the demand and to meetup the requirement of the trainees
5	Impact analysis of training and future planning for refresher courses through filling the printed proforma "Final Evaluation" of KVK.	To mitigate the gap, if any, during training period and also to plan for future off campus/on campus refresher courses for the same trainees.
6	Online training through Googly Meet and Zoom	Due to COVID situation Online training programme was organized to prevent contamination and spread of COVID -19
7	Webinar	Due to COVID situation Online training programme was organized to prevent contamination and spread of COVID -19

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 PinAAcle™ 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/hr)	1
14	Refrigerator (LG make, Model – GL Q2925DSRBOSZEBN)	1
15	Digital Balance ('K. Roy' Make; Model DJ – 302A)	1
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 7 th 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 :

Number of soil samples analyzed			No. of Farmers	No. of Villages	Amount realized (in Rs.)
Through mini soil testing kit/labs	Through soil testing laboratory	Total			
-	2131	2131	2131	472	549320.00

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	-	-	-	-	-
2	Webinar	47	-	-	42	42

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
3	34	-	175	3

3.13. Technology week celebration

Type of activities	No. of activities	Number of participants	Related crop/ livestock technology
Seminar, Exhibition, flower & vegetable show, Technology display stalls, Cattle show	1	2300	Rainwater harvesting, oilseed cultivation, ornamental fish, vegetables

3.14. RAWE/ FET programme - is KVK involved? (Y/N): N

No of student trained	No of days stayed

ARS trainees trained	No of days stayed
-	-

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
09.02.2021	Sri Sampad Ranjan Patra, Director of Agriculture, Govt. of West Bengal	State Oilseed Kisan Mela
09.02.2021	Sri Biswanaith Das (MLA, Joynagar Assembly)	State Oilseed Kisan Mela
24.09.2021	Dr. Subrata Kumar Roy, Director, ICAR-ATARI, Kolkata	Scientific Advisory Committee Meeting
24.09.2021	Sri Biswanaith Das (MLA, Joynagar Assembly)	Scientific Advisory Committee Meeting
24.09.2021	Dr. Shyam Thappa, Director of Extension Education, BCKV, Mohanpur, Nadia	Scientific Advisory Committee Meeting
06.10.2021	Prof. Biswajit Ghosh, Vice Chancellor, The Neotia University	Planning of Joint Work Programme between The Neotia University and RAKVK

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)
Hydroponics fodder cultivation	22	31	Rs.1800/month (4+1 unit size goatery)	2250/month (4+1 unit size goatery)
Asian catfish breeding	411	47	-	Rs. 3.20 lakh per 700 sq. ft (40 glass trays) per year
Mixed fish and prawn farming	478	52	Rs. 262500 per ha per yr	Rs. 450000 per ha per yr
Hi-tech betel vine boroz	398	58	Rs. 80,000/- per 500 sqm unit	Rs. 1,10,000 per 500 sqm unit
On-farm mass production of <i>Trichoderma</i> and its use in betelvine cultivation	410	52	Rs. 2.62 lakh per ha	Rs. 3.40 lakh per ha
Use of bio-control agents in bacterial wilt management in tomato and bitter gourd	305	59	Rs. 2.66 lakh per ha	Rs. 4.53 lakh per ha
Scientific management practices in Beekeeping	315	63	Rs. 2.64 lakh per yr	Rs. 3.10 lakh per yr
Diploma in Agricultural Extension Services for Input Dealers	480	58	Rs. 3.8 lakh per yr	Rs. 5.2 lakh per yr

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

4.2. Cases of large scale adoption

Horizontal spread of technologies	
Technology	Horizontal spread
Land shaping	1500 ha (6000 farmers)
Aerial vegetable cultivation	500 ha (14800 farmers)
Cotton cultivation in rice fallows	600 ha (3500 farmers)
Sunflower cultivation under irrigated situation during Rabi-Summer	900 ha (6700 farmers)
On-farm mass production of microbial bio-pesticide	400 farmers
Use of biocontrol agents (<i>Trichoderma harzianum</i> , <i>Pseudomonas fluorescens</i> , <i>Metarhizium anisopliae</i>) in pest disease management	2200 farmers
Improved method of Greengram cultivation <ul style="list-style-type: none"> a. YVMV resistant variety IPM-02-14, IPM-205-7 (Virat) b. Seed treatment with Rhizobium, PSB, KSB, <i>Trichoderma harzianum</i> and <i>Pseudomonas fluorescens</i> c. Judicious use of environment friendly pesticides and micronutrient application (B and Mo) 	350 ha (550 farmers)
Hi-tech betelvine boroz (GI structure and shade net boroz)	1200 farmers
Breeding and larval rearing of Asian catfish (Desi Magur and Singhi)	155 rural youths
Mixed fish and prawn farming <ul style="list-style-type: none"> a. Stocking density of 11250 carp fingerling, 3750 prawn and 3750 catfish fingerling per ha b. Release of 23 different species of fishes 	400 farmers
Scientific Beekeeping	2000 beekeepers


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

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

Name of farmer	Monisha Debbarman, C/O – Samaresh Debbarman	
Age	32	
Aadhaar No	7549-3519-4939	
Address	Vill - Uttarpara, Block – Joynagar-I, Dist- South 24 Parganas.	
Contact details	Mob: 9903233480	
Landholding (in ha.)	0.05 ha	
Education	Madhyamik	
Training received from RAKVK	Received skill development training on Management of multipurpose horticulture Nursery.	
Intervention	One Horticulture Nursery was established in 400 sqm of land in the year 2020-21 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	Vegetable seedlings : 1,38,300 no., Flower seedlings 45,750 no.	
Marketing and income	First year: 2,31,000/- (expected to reach 4 – 5 LAKH IN 2-3 YEARS)	
Cost of cultivation	First year: Rs. 1,35,000/- (Manure, fertilizer, pesticides, seed, labourer etc.)	
Average net income per month	Rs. 12000/- per month	
Social and Environmental impact	Increase in social prestige and acceptability of the youth. Contribution to environmental improvement through production of planting materials and its plantation.	
Horizontal/ Vertical spread	More number of farmers are getting interest in this new system of horticulture nursery system. This climate smart system of cultivation is very much environment safe and produces better quality leaf with very less use of pesticides.	



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 informations. 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, 12 batches have been completed by the KVK, covering 480 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.



MATERIALS AND METHODS

A total of 958 farmers across 8 Blocks (Joynagar II, Mathurapur I, Mathurapur II, Kultali, Patharpratina, Kakdwip, Namkhana and Sagar) of the district South 24 Parganas of west Bengal were surveyed (structured interview) in 2021 to document the use of different extension delivery system by the farmers for various agricultural information. In another study, 160 DAESI trained input dealers were surveyed before and after the DAESI course (80 in 2018-19 and 80 in 2019-20 session) to understand the improvement in their knowledge level. A 0-5 scale (0 - no knowledge; 1 – very poor; 2 – poor; 3 – moderate; 4 – good; 5 – excellent) was used for this study. Among the 480 trained dealers, 160 dealers were surveyed for the level of adoption of good practices and malpractices (Use of ICT, encouraging crop insurance, soil testing, selling biopesticides and biofertilizers, selling pheromone traps, referring to KVK/ Ag. Dept for agri information, mixing of pesticides and selling loose pesticides) and compared against non-trained dealers (n = 46).

A secondary data on farmers visit was collected from the Ramkrishna Ashram KVK (RAKVK) for the period of 2010-11 to 2019-20. The data was analyzed to find out the number of farmers referred by the input dealers in the district for diagnostic service regarding pest and disease identification.

RESULTS AND DISCUSSION:

The result (Fig. 1) suggests that out of the 958 surveyed farmers majority of them primarily depend upon the agri-input dealers (341) for agricultural information, followed by radio (161), KVK (114), Govt. extension worker (109), 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 (77%), Govt. extension worker (71%), radio (64%) and television (63%). 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.

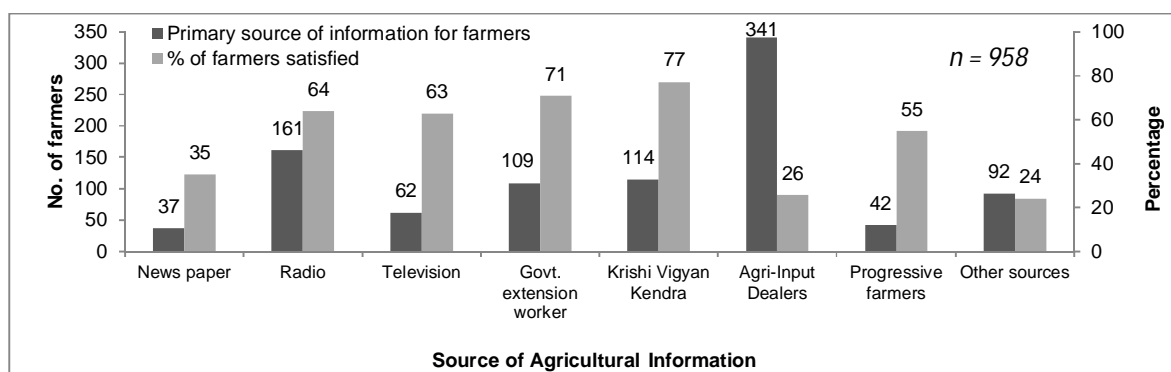


Fig 1. Different sources of agricultural information used by farmers with their level of satisfaction

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 (66%), followed by fertilizer application (14%). The farmers pay little importance to the information related to improved crop variety, organic inputs, crop insurance, soil testing, seed treatment and agricultural schemes (Fig. 2).

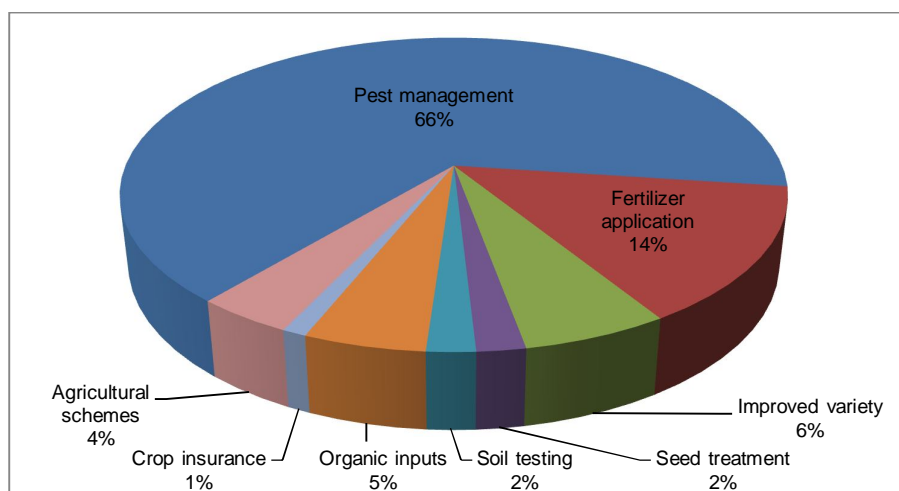


Fig 2. Agricultural information sought by farmers from Input Dealers

There has been a visible change among the agri-input dealers in their knowledge level (Fig. 3) 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.

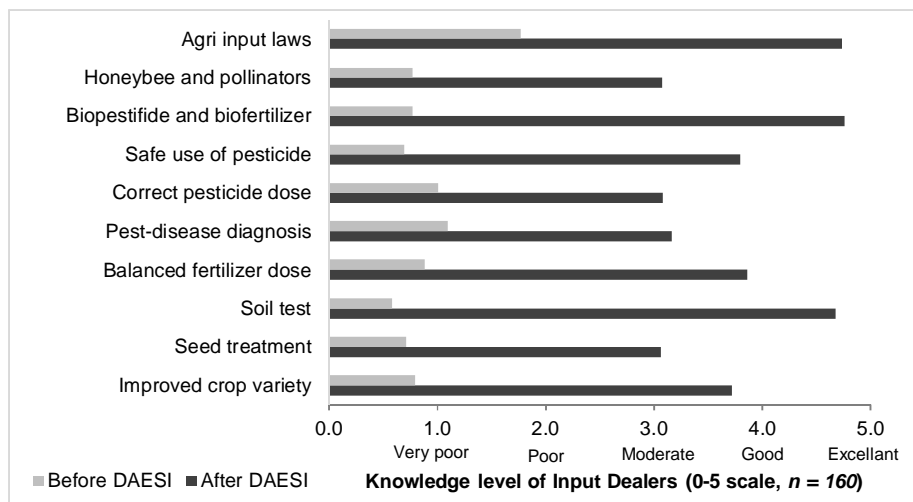


Fig 3. Change in knowledge level among input dealers after DAESI

The one-year long DAESI course has created a distinct difference among the input dealers in the South 24 Parganas district (Fig. 4). 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.

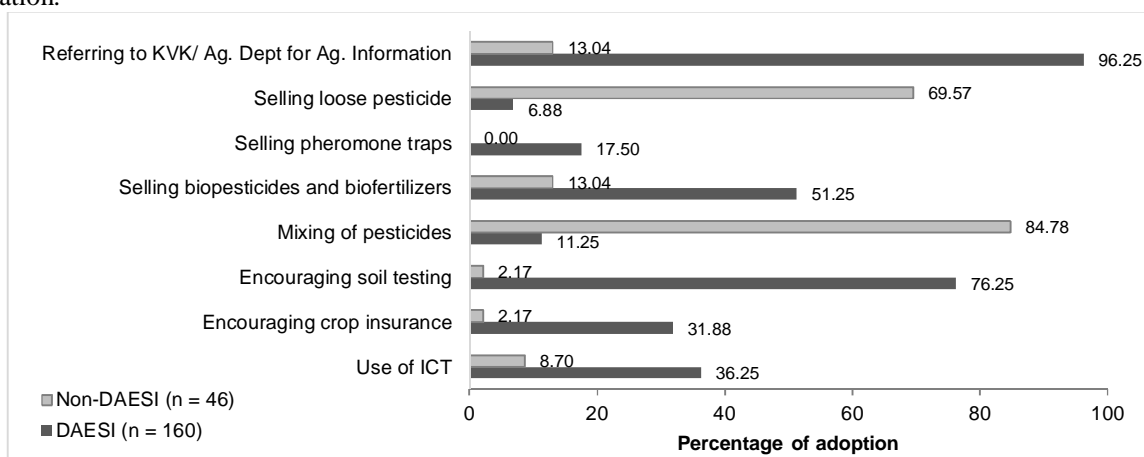


Fig 4. Difference between Non-DAESI and DAESI trained input dealers

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.

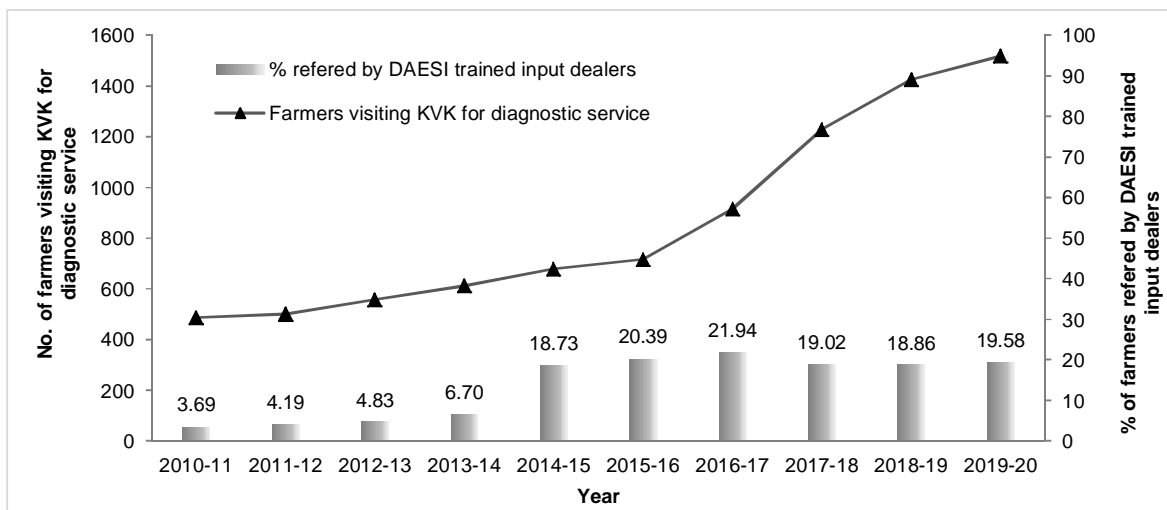


Fig 5. Farmers visit to RAKVK for pest-disease diagnosis and plant protection advisory

CONCLUSION

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 Beekeeping demonstration unit

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

Three species of honeybees are being maintained in the farm:

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

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

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



4.6.3. Celebration of World Honey Bee Day 2020

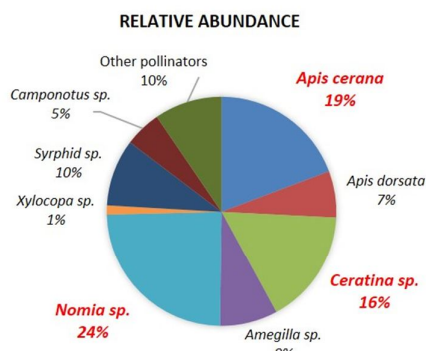
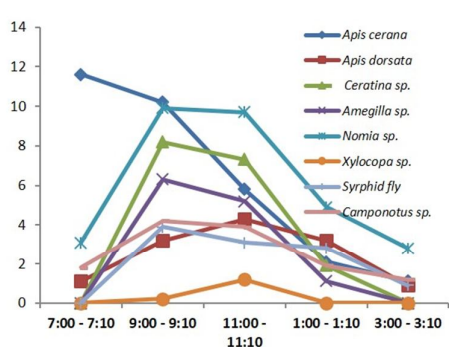
A Webinar was organized on celebration of “World Bee Day” by AICRP (HB & P), RAKVK, Nimpith centre on 20 May 2021 (9:00 – 10:00 a.m.), through Google Meet, for the beekeepers, farmers and agri-input dealers. The programme emphasised on “Save the Bee” initiative, where

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, 61 input dealers and 4 scientists participated in the webinar.



4.6.4. Effect of Pollination Service on yield of Cucumber



Number of pollinators per 9m² area (24.01.2021 to 20.02.2021)

Floral biology:

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



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

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

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

Yield Parameter	Pollination exclusion	Open pollination	<i>Apis cerana</i> Pollination	Stingless bee pollination	CD (P=0.05)
Fruit set (%)	10.6	63.7	61.8	60.3	2.24
Fruit weight (g)	108.2	132.6	137.4	135.7	2.91
Fruit length (cm)	9.2	16.5	15.2	15.7	1.63
Misshapen fruits (%)	69%	11.4%	2.9%	3.4%	1.44
Yield (t/ha)	1.3	6.24	6.05	5.98	0.18
Yield increase over pollination exclusion	-	+380%	+365%	+360%	-

Result of pollination service study:

- The results show that there is minimum fruit set when all insect pollinators are excluded.
- Insect pollination is almost obligatory in achieving cucumber production. The studies demonstrate the absolute necessity of insect pollination on fruit set as there was approximately 80-90% percent abortion of all pistillate flowers that received no entomophilous visitation when they were covered with nylon net cages.
- Apart from *Apis cerana* and stingless bees, the native solitary bees and *Apis dorsata* also contribute significantly in pollination service.
- Bee pollination with *Apis cerana* resulted in highest fruit set, fruit length, fruit weight, yield and least Percentage of misshapen fruits, followed by Stingless bee pollinated crop and open pollination.
- Stingless bee pollination does not add burden to the farmers regarding management of bee hive. Hence the overall B:C ratio was highest in this treatment.

4.6.5. Pollination study in Litchi

Pollinator diversity:

Various insect pollinators were observed on Litchi (var. Baruipur local) during 05.02.2021 to 25.02.2021. Syrphid fly (23.58%), Technid fly (21.26%) and *Apis mellifera* (14.95%) were the leading visitors followed by *Apis cerana*, stingless 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 12.02.2021, in Sasan village (22°20'24"N, 88°25'29"E).

Open pollination: Observations were taken from the non-caged branches. Such orchards were selected in the Sasan village (22°20'24"N, 88°25'29"E), considering the fact that no *Apis mellifera* colony were placed there.

Open pollination with A. mellifera: This treatment was set up at Hogla village (22°25'52"N, 88°45'33"E), which is 14 km away from Sasan village. *Apis mellifera* colonies of were placed (10 colonies per ha) in the orchard after 5% flowering.

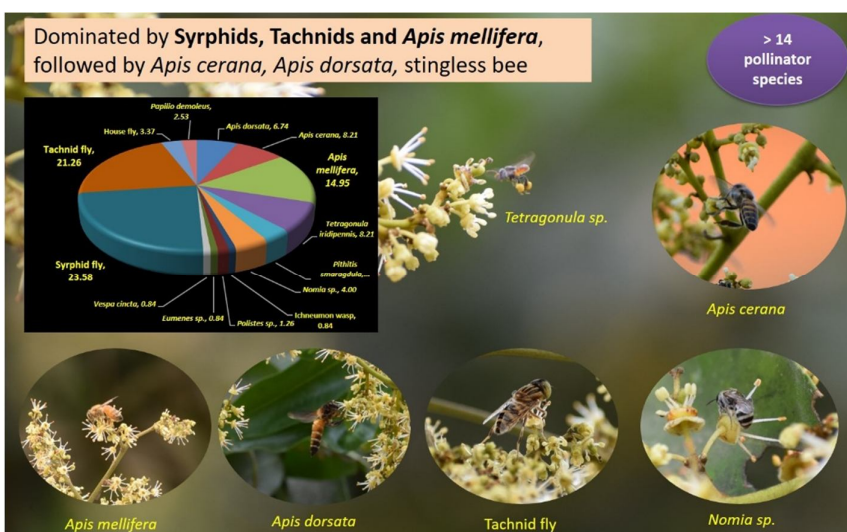


Table: Effect of pollination service in Litchi

Parameters	Pollinator exclusion	Open Pollination	Open pollination with <i>A. mellifera</i> (10 colony/ ha)	CD (P=0.05)
Litchi fruit set (%)	0.12 ^a	2.89 ^b	3.62 ^c	0.43
Fruits per panicle	2.4 ^a	11.7 ^b	13.8 ^c	1.62
Fruit Weight (g)	14.3 ^a	18.1 ^b	22.9 ^c	2.06
Litchi yield (kg/tree)	12.5 ^a	108.4 ^b	125.3 ^c	7.83



Result of pollination service study:

- Absence of insect pollinators greatly reduced the litchi fruit set and overall fruit yield
- Introduction of *Apis mellifera* colonies improved the yield parameters by increasing fruit set (%), number of fruits per panicle and individual fruit weight over open pollination alone.

4.6.6. Effect of Pollination Service by Indian honeybee on Cotton (Var. Suravi)

Season : Middle of January – Middle of June (2021)

Though cotton is self-pollinated, cross pollination can improve certain yield parameters in this crop. A comparative study was undertaken between pollination exclusion, open pollination and bee pollination situation.

3m x 3m area of cotton field was covered by fine mesh nylon cage for exclusion of insect pollination service. Another plot of same area (3m x 3m) was covered by same kind of cage where a 4-frame beehive (*Apis cerana*) was placed inside it for pollination service. Pollination service was engaged 85 days after sowing when the plants attained 5% flowering stage.



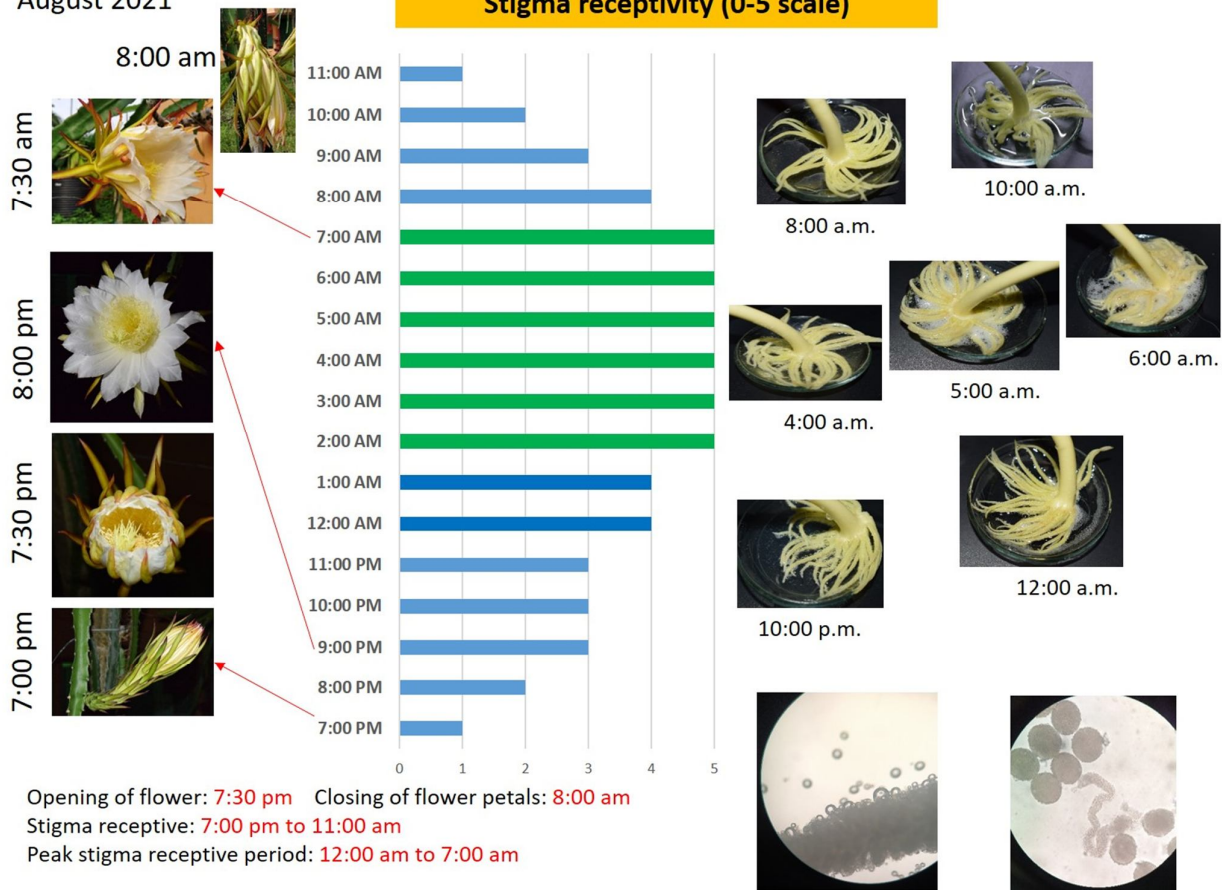
Yield parameters	Pollination exclusion	Open pollination	Bee Pollination	SEM (±)	CD (5%)
No. of Bolls/Plant	20.7 ^a	22.9 ^b	21.6 ^c	0.32	0.51
Average boll weight (g)	3.65 ^a	3.84 ^b	4.02 ^c	0.02	0.05
Seed cotton yield (q/ha)	12.87 ^a	13.95 ^b	14.12 ^b	0.09	0.21

Both open pollination and bee pollination (*Apis cerana* hive inside nylon cage) resulted in increase in no. of bolls per plant, average boll weight and seed cotton yield. There was no significant difference between open pollination and bee pollination regarding seed cotton yield. But bee pollination increased average boll weight over both pollination exclusion and open pollination.

4.6.7. Pollination study in Dragon fruit (*Hylocereus costaricensis* var. Royal moroccan red)

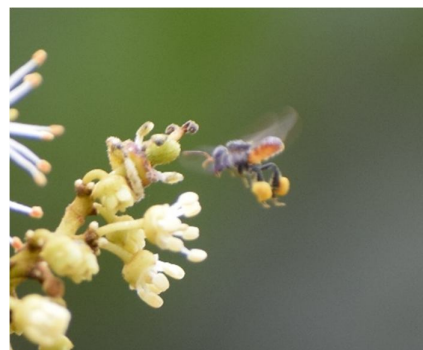


August 2021



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

Stingless bees, also known as Dammar bees, belong in the family Apidae, and are closely related to common honey bees. Stingless bee is the smallest (4.0 to 5.0 mm long) of the honey bees. They can be found in most tropical or subtropical regions of the world, such as Australia, Africa, Asia and tropical America.



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

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

Stingless bee honey has been found to show chemo-preventive properties in rats, induced with colorectal cancer and also was found not toxic towards the animals. Stingless bees honey, propolis and beebread were found to exhibit antioxidant activity and inhibit human breast adenocarcinoma (MCF-7) cell lines growth.

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

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.

Table: Exploration sites of stingless bee

SL No.	State	District	Place	Latitude	Longitude	Abundance
1	West Bengal	South 24 Parganas	Nimpith	22° 9'20.13"N	88°26'22.86"E	+++
2			Baikunthapur	21°52'35.76"N	88°32'31.04"E	+++
3			Kalas	21°41'24.75"N	88°34'04.72"E	+++
4			Bonnie camp	21°49'49.05"N	88°37'24.67"E	+++
5		Bankura	Mujrakundi	23°17'56.38"N	87° 0'23.58"E	+++
6		Purulia	Baragarya	23°37'47.52"N	86°37'10.66"E	++
7		Hooghly	Chinsurah	22°53'40.95"N	88°24'14.79"E	+
8		East Burdwan	Jamalpur	23° 3'56.64"N	87°59'30.20"E	+
9		West Burdwan	Ukhra	23°38'46.09"N	87°14'41.68"E	+
10			Kantapahari	23°48'32.72"N	86°59'32.05"E	+++
11		Birbhum	Sriniketan	23°40'12.71"N	87°39'42.15"E	+++

Nesting site:

- Inside cavities of trees (like Teak, Coconut), 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:

- 500–20,000 workers; 480 to 10000 cc
- Honey pots and pollen pots were separately placed from the brood cells. Pollen pots were constructed near the entrance, followed by the brood cells which were surrounded by the honey pots.



Foraging behaviour

- Forage on seasonal flowers, trees, mustard, sunflower, cucurbits, mango, guava, litchi, coconut, areca nut, weeds, Mangrove plants and on other wild flowers.
- Peak foraging time - 9:00 a.m. to 4:00 p. m.



Colony growth:

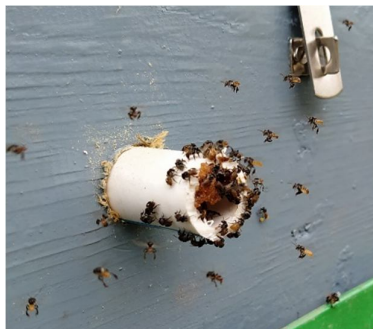
- Wooden boxes of different sizes (length: 30 cm, width: 10 cm and height: 10, 15, 20 cm) are being evaluated for optimum colony development and growth. The brood volume doubled within two months



Collection of stingless bee colony:

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

Indirect method: Wooden hives were made with two holes on them at opposite side. One hole was connected with the entrance of the nest on the wall with a transparent water level pipe (2.5 mm diameter). The junction at the 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.



4.6.9. Conservation of *Apis dorsata*

Wild honey collection is a traditional practice of collection of forest honey (*Apis dorsata*) from the Mangrove forest of Sundarbans. The people associated with this profession are called honey hunters (Moule). This profession is associated with high risk resulting from Man-Animal conflict and often leads to casualties of human lives. At the same time, thousands of *Apis dorsata* colonies are destroyed due to unscientific collection procedure. But this native species are utmost important for pollination among the unique Mangrove species of the Sundarbans.

To conserve the *Apis dorsata* in Sundarbans, following activities were taken up.

- **Capacity building on safe and scientific honey collection**

Several awareness camps and training programmes were organized to train the Moule (traditional honey hunter) community. Special attention was given to collect only the sealed portion of the combs located at the upper end of the comb, instead of destroying the entire hive. For extraction of honey, it was advised to drain the honey through gravitational flow, instead of squeezing the comb.

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

In collaboration with the Divisional Forest Office, South 24 Parganas and WWF-India (an International NGO) a comprehensive programme was taken up.

As a part of such initiative, skill development trainings have been organized jointly by both the organizations. After completion of training, beehives have been provided to the interested farmers for starting their own apiary, with a condition that they will not venture into the forest for honey collection.

By seeing their interest, commercial beekeeping was introduced with *Apis mellifera* colonies. A total of four multipurpose cooperative societies were formed in Sundarbans covering 5000 families. At present three SHGs are formed in the three out of four cooperative societies. The members under the

SHGs at Jharkhali, Kultali and Nalgora are 26, 20 and 20, respectively. Each society has taken loan from the West Bengal Cooperative Society and purchased 500 colonies each. So, total colony strength of these three SHGs are 1500. These hives were placed inside Mangrove forest camps after special permission from the Forest Department. The total Mangrove honey collection was 50 tonne during 2021.

The produced honey is processed by the SHGs, manually and marketed under the trade name “Bonphool”. By seeing the profit, more members are willing to be associated with this group.



4.6.10. 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 *Apis mellifera* colonies is their relative susceptibility to various diseases and mites.

Scope of Indian Honey Bees for backyard beekeeping:

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

Considering all these scopes, 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 sponsored by AICRP (HB & P), ATMA and National Bee Board. The villages were selected based on their proximity to Mangrove forest. Vegetables are grown in these villages that support the colonies with bee forage during rainy season.



4.6.11. Weed flora of Sundarbans as important bee forage

Weeds are perceived as a nuisance in the agricultural field worldwide. However, the role of weeds in the larger ecosystem is gradually being explored. Several weeds act as forage source when the main agricultural crops are absent. Below are some of the predominant weeds found around the year in Sundarbans situation that provides all important nectar and pollens to the native pollinators during dearth period.

SL. No.	Botanical Name	Common English Name	Family	Flowering Month	Frequency of visit	Bee forage
1	<i>Abutilon indicum</i>	Indian mallow	Malvaceae	Sep – Dec	++	N2P2
2	<i>Adhatoda vasica</i>	Basak	Acanthaceae	Nov-Jul	++	N2P2
3	<i>Ageratum conyzoides</i>	Goat weed	Asteraceae	Jul – Dec	++	N1P1
4	<i>Alternanthera sessilis</i>	Dwarf copper leaf	Amaranthaceae	Aug – Dec	+	N2P1
5	<i>Amaranthus viridis</i>	Green amaranth	Amaranthaceae	Sep – Dec	++	N2P2
6	<i>Antigonon leptopus</i>	Mexican creeper	Polygonaceae	Sep – Nov	+++	N3
7	<i>Bacopa monnieri</i>	Brahmi	Plantaginaceae	Oct – Dec	+	N2P2
8	<i>Blumea lacera</i>	Lettuce-Leaf Blumea	Asteraceae	Dec – Mar	+++	N2P2
9	<i>Boerhavia diffusa</i>	Punarnava	Nyctaginaceae	Sep – Nov	++	N2P2
10	<i>Calotropis gigantean</i>	Milk weed	Apocynaceae	Jul – Dec	+	N2
11	<i>Canscora diffusa</i>	Spreading Canscora	Gentianaceae	Sep – Jan	+	P2
12	<i>Cleome hassleriana</i>	Spider flower	Cleomaceae	Oct – Dec	+++	N3P2

13	<i>Coccinia indica</i>	Little gourd	Cucurbitaceae	Aug – Dec	++	N2P2
14	<i>Commelina bengalensis</i>	Bengal Dayflower	Commelinaceae	Sep – Dec	+++	N2P3
15	<i>Croton bonplandianum</i>	Bon tulusi	Euphorbiaceae	Oct – Dec	++	N2P3
16	<i>Cyanotis cristata</i>	Nabhali	Commelinaceae	Jul – Oct	+++	N2P3
17	<i>Datura stramonium</i>	Datura	Solanaceae	Jul – Dec	+	N1P3
18	<i>Eclipta alba</i>	Bhringaraj	Asteraceae	Jul - Feb	+	N2P2
19	<i>Eclipta prostrata</i>	False daisy	Asteraceae	Jul - Feb	+	N2P2
20	<i>Euphorbia hirta</i>	Bara dudhia	Euphorbiaceae	Jun – Jul	+	P3
21	<i>Heliotropium indicum</i>	Indian heliotrope	Boraginaceae	Jan – Dec	+	N2P2
22	<i>Hygrophila auriculata</i>	Kulekhara	Acanthaceae	Jul – Sep	+	N3P3
23	<i>Ipomoea fistulosa</i>	Morning glory	Convolvulaceae	Oct – Dec	+	N3P3
24	<i>Lantana camara</i>	Common lantana	Verbenaceae	Jan - Dec	+++	N2P3
25	<i>Leucas aspera</i>	Thumbai, Shetadrone	Lamiaceae	Sep – Dec	+++	N2P3
26	<i>Mikania micrantha</i>	Bitter vine	Asteraceae	Oct – Feb	++	N2P1
27	<i>Mimosa pudica</i>	Touch me not	Mimosaceae	Nov – Mar	+++	N3P3
28	<i>Oxalis stricta</i>	Sour clover	Oxalidaceae	Sep – Oct	+	N1P3
29	<i>Parthenium hysterophorus</i>	Congress grass	Asteraceae	Sep – Dec	+	N3P3
30	<i>Phyllanthus niruri</i>	Bhumi amla	Phyllanthaceae	May – Sep	+	N1
31	<i>Physalis minima</i>	Little Gooseberry	Solanaceae	Aug - Nov	++	N1
32	<i>Portuleca oleracea</i>	Moss rose	Portulacaceae	Sep – Dec	+++	N3P3
33	<i>Pulicaria wightiana</i>	Sontikli	Asteraceae	Oct – Dec	+	N3P2
34	<i>Solanum nigrum</i>	Black nightshade	Solanaceae	May – Dec	+	N3P3
35	<i>Solanum xanthocarpum</i>	Kantakari	Solanaceae	May - Dec	+	N3P3
36	<i>Sphagneticola trilobata</i>	Singapore daisy	Asteraceae	Sep – Nov	+	N1P1
37	<i>Trianthema portulacastrum</i>	Horse purslane	Aizoaceae	Jun – Sep	+++	N3P3
38	<i>Trichodesma indicum</i>	Chota kalpa	Boraginaceae	Aug – Oct	++	N3P2
39	<i>Tridax procumbens</i>	Coat buttons	Asteraceae	Jan – Dec	+++	N2P3
40	<i>Vernonia cinerea</i>	Ironweed	Asteraceae	Sep – Dec	+	N3P2
41	<i>Vitex negundo</i>	Nishinda	Lamiaceae	Apr – Jun	+++	N2P2

N: Nectar source (N1: Minor, N2: Medium, N3: Major); P: Pollen source (P1: Minor, P2: Normal, P3: Major)



Pollinators foraging on Weeds

4.6.12. Impact of cyclones on *Apis dorsata*

Sundarbans witnessed two super cyclones – Amphan in 2020 (May) and Yaas in 2021 (May).

The month of May is considered as the peak honey flow period for wild honey collection in Sundarbans. The cyclones resulted in deleterious effect in the colony growth and survival of this honey bee, which prefer to nest in open areas (on trees). The population of *Apis dorsata* and total honey collection got both affected during these two years.



The uprooting and breaking of trees (Mangroves in the forest and other trees in the village) killed thousands of colonies before snatching the shelter from the bees. The destruction of flowers and intrusion of saline water resulted in scarcity of forage and fresh water for them.

The village survey (8 villages in and around the Sundarbans) revealed that there was a steep fall in *Apis dorsata* colony in the village/hamlet after the cyclone Yaas.

Table. *Apis dorsata* colonies observed in the villages in the month of April

Sl. No.	Place	Number of colonies observed	
		April 2020 (Before Amphan)	April 2021 (After Amphan)
1	Bongheri	20	3
2	Baikunthapur	55	7
3	Bhubaneswari	63	12
4	Maipith	46	6
5	Chuprijhara	26	4
6	Nalgora	39	8
7	Hogla	42	11
8	Nimpith	44	14

In the Mangrove forest, a group of 5-9 *Moule* (wild honey collectors) goes for honey collection after obtaining a special “Pass” for entering the forest. They generally harvest 200 to 250 *Apis dorsata* hives during April to May. Five such groups were interviewed during April, 2021 regarding their harvest this year.

Table. *Apis dorsata* colonies observed in Mangrove forest in the month of April

Sl. No.	Group/ village	Harvest of colonies	
		April 2020 (Before Amphan)	April 2021 (After Amphan)
1	Group 1/ Raidighi	201	62
2	Group 2/ Jharkhali	214	57
3	Group 3/ Maipith	217	72
4	Group 4/ Bhubaneswari	198	69
5	Group 5/ Baikunthapur	204	75
	Average	206.8	67

5. LINKAGES

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 2020-21 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)
Conditional Godwan	Conditional Godwan	2021	Dir. of Agriculture, Govt. of W.B	29.29
ATMA	ATMA Programme	2021	ATC, Narendrapur	5.00
ARYA	Hatchery unit	2021	ICAR, ATARI	15.00

(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)
State Oilseed Kisan Mela	Promotion of oilseed cultivation in West Bengal	8 th -9 th February 2021	NFSM (OS), Dept.of Agriculture, GoWB	11.95
Technology week	Display and promotion of improved agro-technologies in South 24 Parganas district	10 th -11 th February 2021	-	-
SCSP Programme	Training and input distribution	November'21	AICRP on Sunflower	5.00
DAESI Programme	DAESI Training Programme	January'21	ATC, Narendrapur	16.00
STRY Training	STRY Training	November'21	ATC, Narendrapur	0.84
Carp fry and fingerling production	Carp fry and fingerling production	November'21	State Fisheries Dept., GoWB	6.02
Fish Farming	Fish Farming	November'21	NFDB/ MANAGE	1.84
Pond based integrated farming.	Pond based integrated farming.	December'21	Bal Raksha Bharat, Save the Children	4.02
NFSM Oilseeds	FLD,MELA, Training	February'21	Directorate of Agriculture, Govt. of W.B	26.35
SCSP Programme	Training and input distribution	December'21	Directorate of Groundnut Research	10.00

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	Mushroom	2016	10	Oyster	Mushroom	70 kg	2650	8600	Running
2	Nutritional garden	2003	20	Local	Seasonal vegetables	300 kg	1750	5200	Running
3	Apiary	2015	300	Apis cerana, Stingless bee	Honey	30 kg	3500	7500	Running
4	Ornamental fish and catfish breeding unit	2006	100	Egg bearing and live bearing ornamental fish	Goldfish, angel, barbs, printed carps, live bearers	5000	8800	18000	Running
5	Flower garden cum nursery	1984	890	Seasonal flowers, Palm, crotons, etc.	Flower seedlings	28000 no.	22000	56000	Running
6	Fodder	2009	720	Napier, barseem, hydroponic maize	Fodder and cuttings	12000 no.	7820	15600	Running
Total							46520	110900	

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	20.06.2021	26.11.2021	0.20	NC-492	B-F	2.80	1000	14000	The seed will be sold among the farmers, different Govt. Farms, NGOs as per their requiremet.
	20.06.2021	26.11.2021	0.65	NC-492	F-C	7.80	2200	31200	
	22.06.2021	27.11.2021	0.065	Luna Suwarna	F-C	1.30	700	5200	
	21.06.2021	07.12.2021	0.065	Varshadhan	B-F	2.50	700	12500	
	14.08.2021	05.11.2021	0.26	Ciherang Sub-I	F-C	6.0	1900	24000	
	27.06.2021	23.11.2021	1.0	Dudheswar	TL	25.0	5000	75000	
Greengram	27.01.2021	02.03.2021	0.13	IPM-205-7 (Virat)	B - F	0.42	800	5250	
Greengram	27.01.2021	02.03.2021	0.73	IPM-205-7 (Virat)	F-C	2.75	4200	34375	
Blackgram	17.09.2021	07.12.2021	0.40	PU-31	B - F	2.42	2400	24200	
Sesame	12.03.2021	27.05.2021	2.4	Suprava (CUMS 17)	F-C	17.60	1500	14250	

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 (<i>Trichoderma harzianum</i> & <i>Pseudomonas fluorescens</i>)	1850 kg + 1920 kg	-	-	Distributed for demonstration
2.	Vermicompost	32790	-	-	Used in KVK farm

6.4 Performance of instructional farm (livestock and fisheries production)

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1	Dairy	Jersey, Gir	Milk	12000 L	495000.00	540000.00	Running
2	Poultry	Vanaraja	Meat	600	12,000.00	7000.00	Running
		Kaberi	Meat	250	5000.00	3000.00	Running
3	Broilers	RIR	Meat	3500	67,000.00	38,500.00	Running
4	Goat	Black Bengal	Meat, kid	32	30,000.00	47,000.00	Running
5	Ducks	Khaki cambel, Pekin duck	Meat	1600	1,30,000.00	56,000.00	Running
6	Fish	IMC	Table fish	1120 kg	3,94,345.00	5,11,000.00	Running
		IMC	Spawn	9.2 million pcs			
		IMC	Fry	2.6 lakh pcs			
		Asian catfish –Singhi	Seed	17,300 pcs			
		Asian catfish – Desi magur	Seed	93,800 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, 2021	191	14	-
February, 2021	227	29	-
March, 2021	293	34	-
April, 2021	-	-	Due to COVID situation the hostel was closed during this period
May, 2021	-	-	
June, 2021	-	-	
July, 2021	-	-	
August, 2021	15	6	-
September, 2021	46	6	-
October, 2021	60	2	-
November, 2021	218	30	-
December, 2021	290	19	-
Total :	1345	142	

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, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
February, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
March, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
April, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
May, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
June, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
July, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
August, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
September, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
October, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
November, 2021	Full	Full	Full	Full	Full	Full	Full	Full	Full	-	-	-	-	-
December, 2021	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 1 st April 2021
	Kharif	Rabi	Kharif	Rabi	
Lentil	-	1.80000	-	1.79955	0.0045
Greengram	-	3.60000	-	3.59980	0.0020
Total	-	5.40000		5.39935	0.0065

7.4. Utilization of KVK funds during the year 2021-22 (Not audited)

Sl. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	145.00	117.00	122.79
2	Traveling allowances	1.20		
3	HRD	0.30		
3	Contingencies			
A	Stationery	0.80	23.90	20.52
B	POL			
C	Refreshment			
D	Training Materials	0.60		
E	FLD	0.30		
F	OFT	0.30		
G	SCSP	25.00		
TOTAL (A)		173.50	140.90	20.52
B. Non-Recurring Contingencies				
1	Equipments & Furniture	2.20	0	
2	Repairing and Renovation of Administrative Building	10.00	10.00	
3	Irrigation System	04.00	04.00	
4	Bore Well	02.00	02.00	
5	Library	0.10	0.10	
TOTAL (B)		18.30	16.10	
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		191.80	157.00	143.31

7.5. Status of revolving fund (Rs. in lakh) for last three years

Year	Opening balance as on 1 st April	Income during the year	Expenditure during the year	Net balance in hand as on 1 st April of each year (Kind + cash)
2019-20	260.5248	69.4567	65.4761	264.5054
2020-21	264.5054	55.46	52.32	267.6454
2021-22	267.6454	15.35	43.70	239.2954

7.6. (i) Number of SHGs formed by KVKs : 10 nos.

(ii) Association of KVKs with SHGs formed by other organizations indicating the area of SHG activities: Training imparted on seasonal vegetable cultivation, pulse and oilseed cultivation during *Rabi* – Summer, a food processing and preservation.

(iii) Details of marketing channels created for the SHGs : Selling the product/produces to FPC and 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
Exposure visit of farmer of ATMA	2	March and November	Dept. of Agriculture	Yes	Yes
Short term research project on reclamation of salinity affected soils	1	2021	Dept. of Agriculture	Yes	Yes
Training on Cotton	6	Rabi-Summer,2021	NFSM-Cotton, Department of Agriculture, Govt. of West Bengal.		
Training on Sunflower	4	Rabi, 2021	NFSM-OS, Department of Agriculture, Govt. of West Bengal		
Training on Sunflower	2	Rabi, 2021	IIOR, Hyderabad		
Diploma in Agricultural Extension Service for Impute Dealers (DAESI)	2	Throughout the year	Department of Agriculture, WB; SAMETI, Narendrapur; MANAGE, Hyderabad	Yes	Yes
IARI, NICRA	1	Throughout the year	NICRA, New Delhi		
AICRP on Sunflower		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		
Seed Hub	1	Throughout the year	IIOR, Hyderabad		
Training on carp fry and fingerling production	4	January – Marh	State Fisheries Department		
Training on fish farming	2	December	MANAGE and NFDB		
Training on scientific beekeeping	5	Throughout the year	National Bee Board		
Coconut nursery accreditation	1	September	Coconut Development 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)
Rugose spiraling whitefly	Coconut	Throughout the year	200	10%	OFT set for selection and refinement of IPM technology

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	<i>Catla catla</i>	Post winter months	12%	-	Regular pond manuring, liming 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

9.3. mKisan Portal (National Farmers' Portal/ SMSPortal)

Type of message	No. of messages	No. of farmers covered
Crop	20	26305
Livestock	0	0
Fishery	6	6352
Weather	0	0
Marketing	0	0
Awareness	1	1962
Training information	0	0
Other	2	3298
Total	29	37917

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 –3350;

Dial-Out Audio Conference Attend – 12; VMS Send through Reliance Foundation, Kolkata – 60000 farmers; Video Conference: 43

9.5. a. Observation of Swachh Bharat Programme

Date/ Duration of Observation	Activities undertaken
January, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID 19, Water, hygiene and sanitation, Personal hygiene and nutritional care along with preventive measures by covering 102 participants in the 3 programmes
February, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID19, Personal hygiene and nutritional care along with preventive measures, Eco friendly technologies adopted and climate smart, energy efficient measures taken by covering 188 participants in the 9 programmes
March, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID19, Personal hygiene and nutritional care along with preventive measures by covering 100 participants in the 5 programmes
April, 2021	Sensitization of KVK Main Office Building including Staff quarters premises, Farmers Hostel, Farm Women Hostel, KVK Conference Hall, Dining Room, Guest House, KVK Source Centre, Kitchen Room during COVID19 situation, Sensitization of dairy unit, poultry unit, KVK Instructional Farm, Hostel, Computer Room, Kitchen, Soil testing lab, Account Section and Guest Room, Vehicle etc. during COVID19 situation, Cleaning activities of KVK premises during COVID19 situation by covering 47 participants in the 7 programmes
May, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID19 (online awareness programme) by covering 39 participants in the 1 programmes
June, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID19 (online awareness programme, Preparation of organic manure from farm waste & kitchen waste by covering 63 participants in the 2 programmes
July, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID 19 (online awareness programme), Preparation of organic manure from farm waste & kitchen waste by covering 62 participants in the 3 programmes
August, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID 19 (online awareness programme), Preparation of organic manure from farm waste & kitchen waste by covering 98 participants in the 8 programmes

9.5. a. Observation of Swachh Bharat Programme (Contd....)

Date/ Duration of Observation	Activities undertaken
September, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID 19 (online awareness programme), Preparation of organic manure from farm waste & kitchen waste by covering 78 participants in the 5 programmes
October, 2021	Office scrap materials and old, obsolete files disposed-off suitably, Awareness among the members of Kisan Gosthi on preventive measures to be taken to overcome the spread of COVID 19, Awareness among the Kisan Gosthi on the importance of home and farm made composting and vermicomposting for quality farm production and also for keeping the environment clean, Interactive Demonstration of vermicomposting by crop residue, household waste materials, etc. in the village, Distribution of face masks among the school children to avoid COVID 19 disease and awareness on methods of cleanliness, hygiene and personal protection from diseases, Cleanliness drive in a village school at Sahajadapur with participation of the villagers by covering 81 participants in the 2 programmes
November, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID 19, Cleaning activity at KVK farm and demo units conducted, Cleaning activity of KVK office premises conducted by covering 96 participants in the 7 programmes
December, 2021	Maintenance of personal hygiene to prevent infectious diseases to prevent COVID 19, Preparation of organic manure from farm waste & kitchen waste and cleaning activities, training on sustainable agriculture by covering 473 participants in the 12 programmes

b. Details of Swachhta activities with expenditure

Activities	Number	Expenditure (in Rs.)
1. Digitization of office records/ e-office	5	2000.00
2. Basic maintenance	7	25000.00
3. Sanitation and SBM	12	20000.00
4. Cleaning and beautification of surrounding areas	84	200000.00
6. Vermicomposting/ Composting of biodegradable waste management & other activities on generate of wealth for waste	15	50000.00
7. Used water for agriculture/ horticulture application	5	10000.00
8. Swachhta Awareness at local level	30	7000.00
9. Swachhta Workshops	1	11000.00
10. Swachhta Pledge	1	-
11. Display and Banner	10	3000.00
12. Foster healthy competition	-	-
13. Involvement of print and electronic media	2	-
14. Involving the farmers, farm women and village youth in the adopted villages (no. of adopted village)	15	-
15. No of Staff members involved in the activities	35	-
16. No of VIP/VVIPs involved in the activities	3	-
17. Any other specific activity (in details)	-	-
Total		328000.00

9.6. Observation of National Science day

Date of Observation	Activities undertaken
28.02.2021	A seminar on oilseed cultivation in rice fallows
	Field visit to sunflower seed hub
	Organized a field day on Sunflower seed production
	Method demonstration on sunflower seed separator refined by RAKVK

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 II	17.09.2021	Plantation programme and Nutrition Gardening	Planting of saplings of fruit plants like jackfruit, guava and mango and Seed Distribution of Bi-Fortified Vegetable Seeds
Nimpith Ashram Sarada Vidyamandir for Girls, Vill. Nimpith Ashram, Block – Joynagar II	15.11.2021	Nutri-Thali	Method Demonstration of Nutrient Rich Diet
Nimpith Vidya Bhavan Vill. Nimpith Ashram, Block – Joynagar II	07.12.2021	Awareness about COVID-19 and nutritional management to prevent different disease.	Visual aids- Flash card on health and hygiene & food groups , picture card, food value chart, books,Pamphlets Audio visual aids-Flim, PPT

Due to pandemic situation all schools were September, 2021.

9.9. 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)

9.10. Details of Mahila Kisan Divas programme (15.10.2021) organized

Sl. No.	Activity	No. of villages Involved	No. of Participants	No. of VIPs	Name (s) of VIP(s)
1	Seminar on role of women folk in agriculture during pandemic situation	7	87	-	-
2	Training on leadership development	5	58	-	-

9.11. 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	Tilak Roychowdhury	Dakshin Baikunthapur (Block: Kultali) 6294480461	Small scale culture of climbing perch in canals
2	Sujit Kumar Mondal	Hyatnagar (Block: Magrahat II) 9007812314	Breeding and culture of variants of ornamental fish - zebra fish and tetra in cemented cisterns
3	Dipak Maity	Patharpratima (Block:Patharpratima) 9609269212	Cultivation of multiple vegetables through natural farming
4	Surajit Baidya	Kankandighi (Mathurapur II) 8670672359	Cultivation of multiple vegetables through natural farming
5	Sonali Adhikari	Ranaghata (Joynagar II) 8116563855	Cultivation of bio fortified and oyster mushroom cultivation
6	Debasish Giri	Herombo Gopalpur, (Block: Patharpratima), 8145293478	Cotton cultivation in low land rice fallow, Sunflower cultivation
7	Sri Manabendra Halder	Jhupkhali (Block-Joynagar-II), 9732967947	Beekeeping and integrated farming
8	Manoranjan Maity	Dakshin Durgapur (Block: Namkhana) 9002663283	Zero tillage potato cultivation in muddy soil
9	Barnali Dhara	Ashwathatala (Block: Kulpi) 7980870157	DAESI diploma holder, community mobilizer, progressive farmer
10	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
11	Sachin Sardar	Sankijahan (Block:Kultali) 9733549702	Backyard system of breeding of the high priced fish <i>Mystus gulio</i>

9.11. No. of Progressive/Innovative/Lead farmer identified (category wise) -- Contd....

12	Bapan Karmakar	Gilarchat (Block: Mathurapur II) 9733572784	Seed production of greengram
13	Ashok Bar	Mollar chak (Block: Joynagar-II) 9735817615	Cotton cultivation in lowland rice fallows
14	Gouranga Naskar	Kaikhali (Block: Kultali) 9733916917	Asian catfish breeding and larval rearing with water collected by rooftop rain water harvesting
15	Swapan Bhunia	Khansahebabad (Block: Sagar) 9800650883	Betelvine cultivation with home grown <i>Trichoderma</i> (Biofungicide) in hi-tech boroj
16	Gopal Jana	Rajnagar (Block: Namkhana) 9734015178	Betelvine cultivation in green shade net

9.12. Revenue generation

Sl.No.	Name of Head	Income (Rs.)	Sponsoring agency
1.	Contingencies & outsourcing of contractual services	5,00,000	NFSM-cotton
2.		3,32,640	MVC, South & North 24 Parganas, Dept. of ARD, GoWB
3.		20,000	NICRA (ICAR)
4		30,500	NICRA (IARI)
5		40,000	AICRP Honey Bees
6		20,000	ARYA
7		45,000	DAESI

9.13. 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	2.00	Equipment
2	ARYA	Attracting and Retaining Rural Youth in Agriculture through Self Employment Generation programme	ATARI,Kol	15.00	Capital
3	AICRP Honey bee	Development of early duration Hybrids for rainfed situations and Rabi-Summer	Division of Entomology, IARI, New Delhi	2.50	Equipment
4	Conditional Godwan	Conditional Godwan	Deptt. Of Agriculture	29.29	Building

9.14. 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	IMD	Working Condition

9.15. 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	19	1568	<ul style="list-style-type: none"> • Floating seedbed for rice nursery • Vegetable cultivation in land embankment • Seedling raising in pot tray / plug tray • Use of liquid fertilizers • Application of <i>Trichoderma viridi</i> 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. Celebration of World Food Day in 2021

Sl. No.	Activities undertaken	No. of VIPs attended	No. of participants		
			M	F	T
1	<p>“World Food Day-2021” was celebrated by organizing Workshop on 16th October, 2021. The theme is “Safe food now for a healthy tomorrow”</p> <p>Lecture on Improved Technologies for production of safe food was delivered by the KVK Scientists. During the Workshop KVK faculties described the important the Natural Farming for safe food. Different procedure for handling and cooking of food materials to maintain proper health and hygiene was also narrated in the Workshop. A farmers Scientist interaction was conducted regarding handling and utilization of safe food.</p>	-	21	37	58

12. Progress report of NICRA KVK (Technology Demonstration component) during the period (January – December, 2021)

(Applicable for KVKs identified under NICRA)

Natural Resource Management

Name of intervention undertaken	Numbers under taken	No of units	Area (ha)	No of farmers covered / benefitted									Remarks
				SC		ST		Other		Total			
				M	F	M	F	M	F	M	F	T	
Land embankment (<i>Ail</i>) cultivation	20	20	60.2	10	1	0	0	0	0	11	1	11	
Broad bed cum trench system	4	4	8.3	4	0	0	0	0	0	4	0	4	
Rooftop rain water harvesting for drinking purpose	30	30	-	21	9	0	0	0	0	21	9	30	

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		94	6	0	0	0	0	94	6	100	
I. Liming											
II. Compost application											
III. Balanced fertilizer dose											
System of Assured Rice Production (SARP) in kharif.	1.6	12	0	0	0	0	0	10	0	10	
Leaf curl resistant var of chilli Var. Arka Gagan	0.08	2	0	0	0	0	0	2	0	2	
Distribution of short duration greengram Var. IPM 205-7	10	80	20	0	0	0	0	80	20	100	
Distribution of biocontrol agents	3.5	70	30	0	0	0	0	70	30	100	

Livestock and fisheries

Name of intervention undertaken	Number of animals covered	No of units	Area (ha)	No. of farmers covered / benefitted									Remarks	
				SC		ST		Other		Total				
				M	F	M	F	M	F	M	F	T		
Fish seed of Asian catfish and Asian stinging catfish	-	10	-	10	0	0	0	0	0	0	10	0	10	

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)	Power tiller -1 Power operated paddy thresher -1 Pumpset-2	37	54	18	0	0	12	7	66	25	91	The farm machineries are hired out to the resource poor farmers at easonable rent

Capacity building

Thematic area	No of Courses	No of beneficiaries								
		SC		ST		Other		Total		
		M	F	M	F	M	F	M	F	T
Application of biocontrol agents in pest and disease management in pulse and oilseeds	1	21	4	0	0	0	0	21	4	25
Role and use of biofertilizers in pulse production	1	19	2	0	0	0	0	19	2	21
Climate change and its impact on pest and disease	1	18	4	0	0	4	4	22	8	30
Preparation of biopesticides at homestead level	1	27	13	0	0	0	0	27	13	40
Role of beneficial insects in IPM and their conservation	1	32	7	0	0	1	0	33	7	40
Preparation of cue lure to control fruitfly in vegetables	1	33	7	0	0	0	0	33	7	40

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	5	120	11	0	0	0	0	120	11	131
Method demonstrations	2	55	2	0	0	0	0	55	2	57
Audio conference	1	15	8	0	0	0	0	15	8	23
Video conference	2	30	20	0	0	0	0	30	20	50

13. Awards/Recognition received by the KVK



Sl. No.	Name of the Award	Year	Conferring Authority	Amount	Purpose
1	Mahindra Samriddhi Krishi Vigyan Kendra Samman	2020-2021	Mahindra & Mahindra	Rs. 1.00 lakh	For the innovative technology demonstrated in NICRA Village

Award received by Farmers from the KVK district

Sl. No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose
1	Best Innovative Farmer Award	Gauranga Naskar	2021	CRIDA, Hyderabad		Climate smart farmer



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

SL	Achievement	
1	<p>Mobile Veterinary Clinic All the six MVC camps operated in the remote islands of Sundarbans inspite of several natural disasters and Covid-19 pandemic situation.</p> <p>Conducted in 3 Blocks, each in 2 districts South 24 Parganas: Sagar, Patharpratima, Gosaba North 24 Parganas: Sandeshkhali I & II, Hingalganj</p> <ul style="list-style-type: none"> ➤ Total camp: 1350 ➤ Total beneficiary : 55745 	
2	<p>Training under National Beekeeping and Honey Mission:</p> <p>The honey hunters of Sundarbans were trained on beekeeping and grouped into three cooperative societies (at Kultali, Nalgora & Jharkhali). They purchased 1500 bee colonies (<i>Apis mellifera</i>) through bank loan and produced 50 tonne honey in 2021. The honey is processed and branded (Bonphool brand) after obtaining FSSAI liscence.</p>	

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 (Rs. in lakh)	Success indicator
1	Joynagar Farmer Producer Company Ltd.	U01403WB2015PTC207939	29-Sep-2015	<ul style="list-style-type: none"> ✓ 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	Bhangar Vegetable Producer Company Ltd.,	U01403WB2012PTC186588	28 September, 2012	<ul style="list-style-type: none"> ✓ Production of vegetables and marketing of the produce of member farmers in organized way, through the marketing outlet of Mother Dairy, GoWB ✓ 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 	Capsicum, Potato, Ridge gourd, Cucumber , Cowpea, Bottle gourd, Okra	1751	25.0	
3	Suryanagar Madhusudanpur Farmer Producer Company Ltd.	U01403WB2016PTC210402	18 March, 2016	<ul style="list-style-type: none"> ✓ 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	Dutipata Farmers Producer Company Ltd.	U01100WB2019PTC231331	4 April, 2019	<ul style="list-style-type: none"> ✓ 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	
5	Karnjali Sabuj Biplab Krishi Udyog Producer Company Ltd.	U01400WB2016PTC210073	4 March, 2016	<ul style="list-style-type: none"> ✓ 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	




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 & mushroom)	0.10	6300 kg	41600	65200	135	25.18
2	Component 2 – Fish	0.12	211kg	14650	31650		
3	Component 3 – Field crops	0.18	1140	16430	29760		

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	<ul style="list-style-type: none"> ➤ 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 	138000.00/yr	159	
2	Horticulture nursery	<ul style="list-style-type: none"> ➤ 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 	171000.00/0.13 ha /year	77	

3	Winter okra cultivation	<ul style="list-style-type: none"> ➤ 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 	99000.00/ha/ season	1226	
4	Integrated fish farming	<ul style="list-style-type: none"> ➤ 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 	51500.00/0.20ha/ yr	1354	
5	Greengram cultivation	<ul style="list-style-type: none"> ➤ YVMV resistant variety IPM-205-7 ➤ Seed inoculation with <i>Rhizobium</i>, PSB and KSB ➤ Use of <i>Trichoderma</i> and <i>Pseudomonas</i> biofungicides ➤ Use of micro nutrients (B & Mo) 	41500.00/ha	561	

18.a) Information on ASCI Skill Development Training Programme, if undertaken during 2021

1. a) Information on ASCI Skill Development Training Programme, if undertaken during 2021

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 2021

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	
			-	-	-	-	-	-	-	-	-	-

19. Information on NARI Project (if applicable) : NA

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
-	-	-	-	-	-	-

20. Specific programmes for the period

i. Achievements in SCSP (Scheduled Caste Sub-Plan) (Specific for SC farmers only)

Sl. No.	Activity	No. of SC farmers/ stakeholders		
		Male	Female	Total
1	On- farm trials	24	45	69
2	Frontline demonstrations	153	44	197
3	No. of Training programmes for farmers	-	-	110
4	Farmers trained	1103	826	1929
5	No. of Training programmes for Extension Personnel	-	-	4
6	Extension Personnel trained	31	5	37
7	Participants in extension activities	26675	14363	41038
8	Distribution of seed	0	30	30
9	Planting material distributed	390	71	461
10	Livestock strains and fingerlings distributed	15	105	120
11	Soil, water, plant, manures samples tested	805	47	852
12	Mobile agro-advisory provided to farmers	10105	5820	15925

ii. Capacity building of farmers through training on Profitable Dairy Farming and Livestock Management (In case your KVK has Scientist (Animal/Veterinary Science))

S.No	Name of the KVK	Title of the training	Date/ Duration	No. of Participants							
				SC		ST		Others		Total	
				M	F	M	F	M	F	M	F
1	Ramkrishna Ashram KVK, Nimpith, South 24 Parganas	Backyard Poultry Farming	01.12.2021-04.12.2021	0	30	0	0	0	0	0	30
2		Backyard Poultry Farming	06.12.2021-09.12.2021	1	27	0	0	0	2	1	29
3		Scientific Goat rearing in backyard system	21.12.2021-24.12.2021	10	50	0	0	0	0	10	50
Total				11	107	0	0	0	2	11	109

NOTE: In absence of SMS (Animal/Veterinary Science), the training programme was conducted by inviting Veterinary Officer from ARD Department and Veterinary Doctor under MVC Project implemented by RAKVK, Nimpith

iii. Status of Natural Farming

Crop/ Commodity involved in Natural farming	Area covered under such farming (ha)	No. of farmers practicing Natural farming at present	Details of individual farmers (Name and Contact No.)	Organic component/ inputs used for such farming
Okra, Bittergourd, Ridge gourd, Snake gourd, Bottle gourd, Pumpkin, Tomato, Chilli, Cabbage, Cauliflower, Broccoli, Coriander, Radish, Beans, Cucumber, Papaya	3	20	Surajit Gayen (8436782030), Shankar Naskar (9083839019), Sunanda Sardar (8101857886), Anupam Munda (7001451843), Surajit Baidya (8670672359), Gauranga Naskar (9733916917), Tarun Halder (9800745029), Santabas Naskar (7585854242), Gopal Naskar (9735462766), Biswajit Sardar (9932611611), Sambhu Naskar (6296397986), Nimai Naskar (8250786727), Anup Das (7001573613), Anup Chhatui (6295134561), Mrinmay Das (9609373527), Pratima Patra (8336940108), Debasis Makur (9800288918), Dipak Dhara (9733703770), Sajal Kumar Halder (6296050600), Lakshmi Ghosh (8902050957)	Vermicompost, jeevamrita, panchagavya, sashyagavya, kunapaja, neem leaf extract, neem seed kernel extract, green leaf extract, mycorrhiza, biofertilizers (<i>Rhizobium</i> , <i>Azotobacter</i> , <i>Azospirillum</i> , PSB, KMB), on-farm mass production of <i>Trichoderma</i> , neemastra, dasaparni, agneyastra, garlic extract, chilli-coriander extract, egg-lemon liquid manure, fish-meat amino acid, stone liquid manure, Pheromone trap, etc.

iv. Farmer Producer Organizations

a) General information

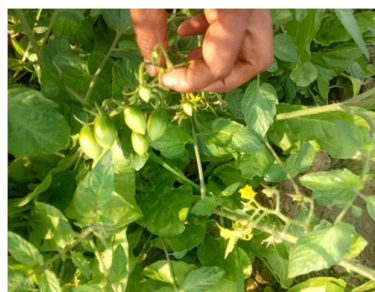
Sl. No.	Name & Address of FPO	Name & Contact No. of Head of FPO	No. of farmer members of FPO			Crop/ Enterprise dealt with by FPO	Kind of support provided by KVK in running/ starting of FPO (in brief)
			M	F	T		
1	Bhangar Vegetable Producer Company Ltd., Vill.-Bhogali -II, GP Ground floor, Kathalya Bus stand Bhangar -II, Block Tal Baruipur, Dist. South 24 Pgs, West Bengal	Md. Abdul Zabbar Khan, 9734871457, bvpcl2012@gmail.com	1384	367	1751	Capsicum, Potato, Ridge gourd, cucumber, Cowpea, Bottle gourd, okra	➤ Technical backstopping through training and capacity building of farmers.
2	Jaynagar Farmers Producer Company Ltd. Vill.+ P.O. Joynagar -1, PS- Joynagar -1, South 24 Pgs, Pin- 743337	Mr. Prantik Manna, 8240652496, priyoprantik@gmail.com	828	218	1046	Tomato, cucumber, okra, bitter gourd, ridge gourd, snake gourd, chilli	➤ Supply of critical inputs like vegetable seed, pulse seed, seedlings of fruit crops, bio-pesticides like <i>Trichoderma</i> , <i>Pseudomonas</i> , <i>Metarrhizium</i> , biofertilizers, etc
3	Suryanagar Madhusudanpur Farmer Producer Company Ltd Bazar Beria P.O.- Suryanagar, P.S.- Kakdwip, South 24 Pgs, Pin- 743374, West Bengal	Mr. Kishor Mondal, 8145264837, suriyanagarmfpc@rediffmail.com	788	212	1000	Capsicum, Potato, Ridge gourd, Cucumber, Okra, Cowpea, Bottle gourd	➤ Soil testing facility for member farmers
4	Karnjali Sabuj Biplab Krishi Udhog Producer Company Ltd. Vill.- Shyamnagar near Karanjali Mrket, P.O.- Karanjali P.S.- Kulpi, South 24 Pgs, WB- 743348	Mr. Mohan Kr. Palta, 786582, karanjalisbkupcl@gmail.com	793	207	1000	Bitter gourd, Ridge gourd, Cucumber, Cowpea, Bottle gourd, Okra, Tomato	➤ Development of master trainer for mobilization of women farmer
5	Dutipata Farmers Producer Company Ltd. Raidighi Dist. South 24 Pgs	Subhajit Kayal	1595	405	2000	Capsicum, Potato, Ridge gourd, Cucumber, Okra, Cowpea, Bottle gourd	

b) Financial information

Name & Address of FPO	Date of Registration	FPO Registered (Y/N)	Application Submitted for Registration (Y/N)	No. of share-holding farmer members	Equity Amount Collected (Lakh Rs.)	Bank Account Opened (Y/N)	Board Reconstituted after attaining minimum membership (Y/N)
Bhangar Vegetable Producer Company Ltd., Vill.-Bhogali -II, GP Ground floor, Kathalya Bus stand Bhangar -II,Block Tal Baruipur, Dist. South 24 Pgs, West Bengal	28 September, 2012	Y (Trust Deed No. U01403WB2012PTC186588)	-	1751	25.0	Y	Y
Jaynagar Farmers Producer Company Ltd. Vill.+ P.O. Joynagar -1, PS- Joynagar -1, South 24 Pgs, Pin- 743337	29-Sep-2015	Y (Trust Deed No. U01403WB2015PTC207939)	-	1046	23.0	Y	Y
Suryanagar Madhusudanpur Farmer Producer Company Ltd Bazar Beria P.O.- Suryanagar, P.S.- Kakdwip, South 24 Pgs, Pin- 743374, West Bengal	18 March, 2016	Y (Trust Deed No. U01403WB2016PTC210402)	-	1000	15.0	Y	Y
Karnjali Sabuj Biplab Krishi Udhog Producer Company Ltd. Vill.- Shyamnagar near Karanjali Mrket, P.O.- Karanjali P.S.- Kulpi, South 24 Pgs, Pin- 743348, West Bengal	4 March, 2016	Y (Trust Deed No. U01400WB2016PTC210073)	-	1000	10.0	Y	Y
Dutipata Farmers Producer Company Ltd. Raidighi Dist. South 24 Pgs	4 April, 2019	Y (Trust Deed No. U01100WB2019PTC231331)	-	2000	3.0	Y	Y

v. Nutri-gardens (Village wise)

Sl. No.	Name of village	Name of crop	Area under the crop (acre)	No. of farmers			Whether bio-fortified variety of crop used (If yes, mention variety & crop)
				M	F	T	
Khariif							
1	Gilarchat	Okra (red), Okra (green), Bittergourd- <i>uchea</i> Pumkin, White amaranthus, Red amaranthus, Amaranthus small, Basella (green), Basella (red), Cowpea (red), Cowpea (green), Ipomoea	0.321 acre	8	52	60	Okra (red) Basella (red) Cowpea (red)
2	Nolgora			0	30	30	
3	Nogenabad			0	30	30	
4	Chuprijhara			3	12	15	
5	Kaikhali -II			0	60	60	
6	Bongheri			4	26	30	
7	Nimpith			0	30	30	
8	Kamalpur			0	30	30	
Rabi							
1	Gilarchat	Palak, Coriander, Fenugreek, Amaranthus red, Radish (red), Frenchbean (dwarf), Peas Carrot, Beet Red cowpea Violet cauliflower Orange Cauliflower Broccoli	0.321 acre	8	52	60	Violet cauliflower: Valentina Orange Cauliflower: Carotena Broccoli: Fiesta Radish (red)
2	Nolgora			0	30	30	
3	Nogenabad			0	30	30	
4	Chuprijhara			3	12	15	
5	Kaikhali -II			0	60	60	
5	Bongheri			4	26	30	
7	Nimpith			0	30	30	
8	Kamalpur			0	30	30	




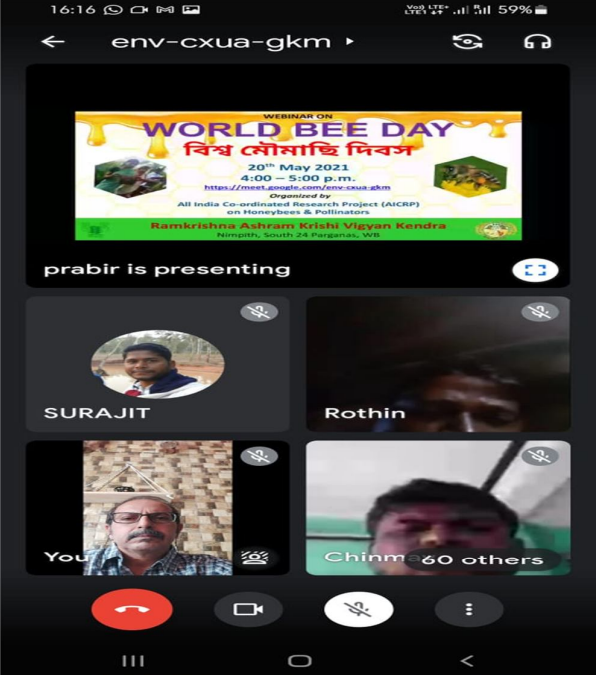
vi. Progress report on scientific beekeeping (2020-21 & 2021-22)



Name of KVK	Total budget allotted (Rs.)	Total budget utilized (Rs.)	Physical Training organized				Online Training organized			
			No. of training	No. of total participants			No. of training	No. of total participants		
				M	F	T		M	F	T
Ramkrishna Ashram KVK, Nimpith	9,21,150	9,06,150	5	99	26	125	-	-	-	-

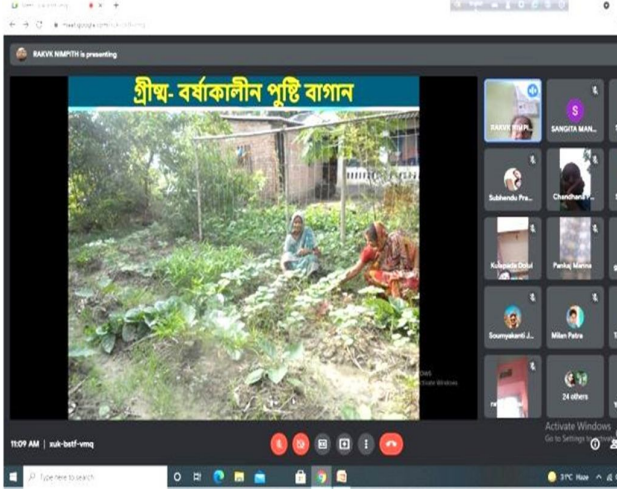
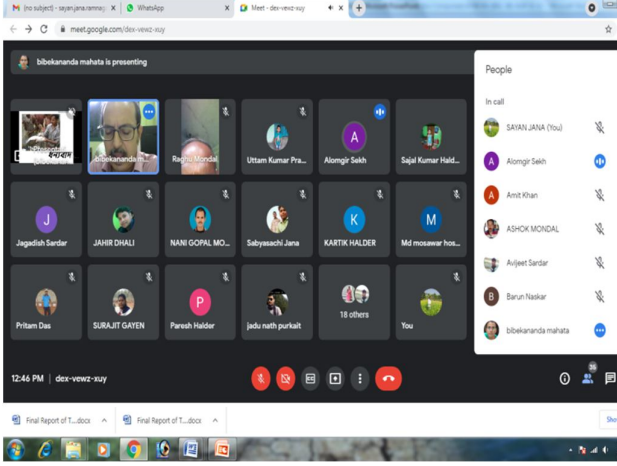
21. Any other programme organized by KVK, not covered above



Programmes organized on the occasion of Commemorative Celebration of 75 years of India's Independence (Azadi Ka Amrit Mahotsav):

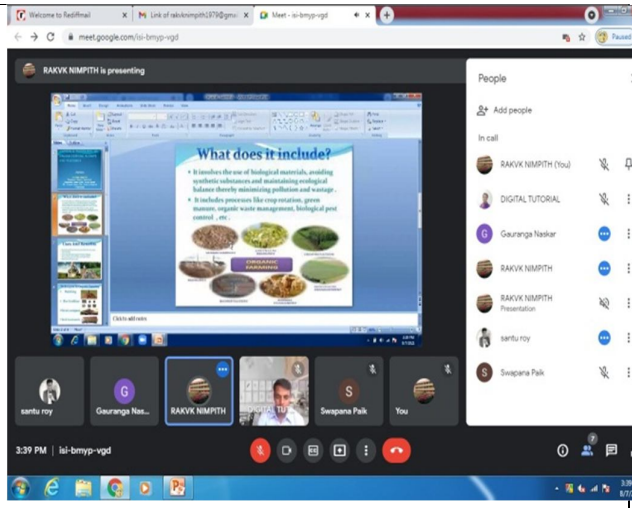

Sl No	Name of the Programme	Date	Venue	Purpose	No. of participants	Photo
1	Climate Resilient Agriculture: Per drop more crop (World Water Day)	22.03.2021	RAKVK, Nimpith	World Water Day 2021	82	



2	Augmenting rural income: The Beekeeping way (World Bee Day 20 th May)	20.05.2021	Online	Webinar on World Bee Day Organised by AICRP (Honey Bees & Pollinators) and RAKVK, Nimpith	78	
3	Animal Health and Productivity (Commemorative Celebration of 75 years of India's Independence - Awareness on animal health)	11.06.2021	RAKVK Demo. Unit - Dairy	Awareness Campaign on Animal	15	


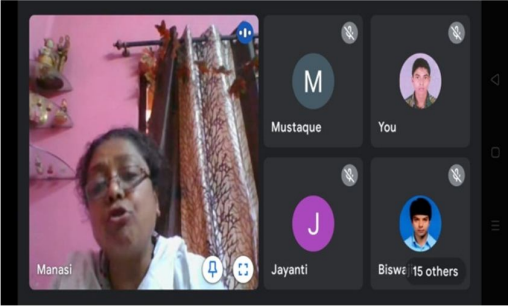

3	Contd....	11.06.2021	Motilal Village, Dakshin Gangadharpur Gram Panchyat, Pathar Pratima	Mass Awareness Campaign On Animal Health	20	
4	Balanced use of fertilizer	18.06.2021	RAKVK, Soil Testing Lab.	An awareness programme on balanced use of fertilizer	32	

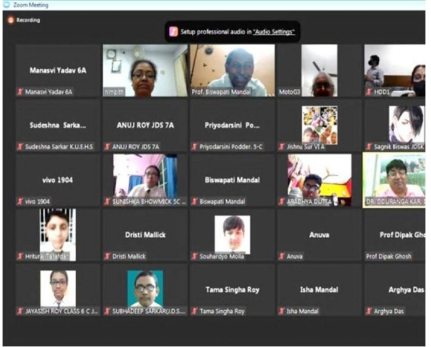

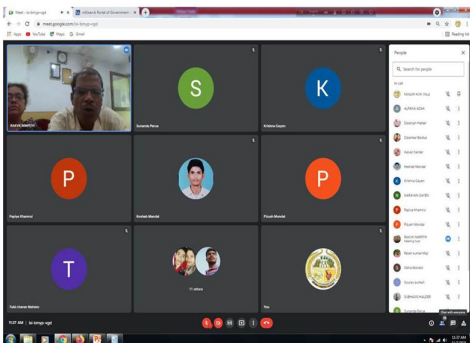
5	Sustainable integrated cropping system models for enhanced income of farmers	01.07.2021	Online	Awareness on sustainable cropping pattern in backyard system through Google meet	38	
6	Species and system diversification in Aquaculture	15.07.2021	Online	Online training on "Optimum utilization of pond water resource through diversified fish farming"	39	

7	Atma Nirbhar Krishi- ICAR Foundation Day, 16th July	16.07.2021	RAKVK Audio Visual Room	Celebration of ICAR Foundation Day 2021	35	
8	Demonstration on gender and eco-friendly farm machinates for sustainable agriculture	29.07.2021	RAKVK Instructional Farm	Demonstration on gender and eco- friendly farm machinates for sustainable agriculture	17	

9	Organic Farming Awareness campaign in crops, fruits and vegetables	07.08.2021	Online	Awareness programme on “Organic farming in crops and vegetables” (through Google Meet)	76	
10	Agriculture and Nutrition: The way of Tribal Agriculture	17.08.2021	Purba Devipur, Kultali	Agriculture and Nutrition: The way of Tribal Agriculture (Purba Devipur, Kultali Block)	35	

11 a)	Food and Nutrition for Farmers	26.08.2021	RAKVK, Nimpith	Food and Nutrition for Farmers (Off Campus training)	16	
b)	Food and Nutrition for Farmers	26.08.2021	RAKVK, Nimpith	Food and Nutrition for Farmers (An exhibition on different green leafy vegetables, other vegetables and food items was also organised to encourage and aware the farmers on the importance of nutrition in present day rural scenario)	30	

c)	Food and Nutrition for Farmers	26.08.2021	RAKVK, Nimpith	National Level Campaign on “Food and nutrition for farmers”	75	
12 a)	National Nutrition Week 2021	05.09.2021	Online	Observation of National Nutrition Week 2021 (Poshan Maah) Through Google Meet	32	
b)	National Nutrition Week 2021	06.09.2021	Atteshertala , Mathurapur-II	Preparation of nutri thali from locally available food for pregnant and lactating mother	33	

c)	National Nutrition Week 2021	07.09.2021	Online	Acting as resource person in the Webinar on "Importance of nutritive foods for health" organised by National Academy of Agricultural Sciences (Online through Zoom)	59	
d)	National Nutrition Week 2021	07.09.2021	All India Radio	Radio broadcasting about – feeding smart right from start	-	
13	Agriculture and Environment:	03.11.21	Online	Agriculture and Environment: Interaction with School Children (Online)	30	

	Agriculture and environment	15.11.21	All India Radio	Radio broadcasting about – Agriculture and environment	-	
	National Milk Day 2021	26.11.21	Dairy Unit of RAKVK	Observance of National Milk Day 2021 at Dairy Unit of RAKVK, Nimpith	44	
	Constitution Day 2021	26.11.21	RAKVK, Nimpith	Observance of Constitution Day 2021 at RAKVK, Nimpith	52	
14	Kisan Diwas 2021	23.12.21	RAKVK, Nimpith	Observance Of Kisan DIwas 2021 and National Campaign on Jai Jawan Jai Kisan at RAKVK, Nimpith	118	

22. Good quality action photographs (with proper caption) of overall achievements of KVK during the year



Participants of "Inauguration Programme of DAESI Training Course for 2020-21" on 15.01.2021 at Vivekananda Conference Hall, RAKVK, Nimpith



State Oilseed Kisan Mela under NFSM (Oilseeds), 2020-21 was organized by RAKVK, Nimpith by maintaining COVID-19 protocols on 08.02.2021



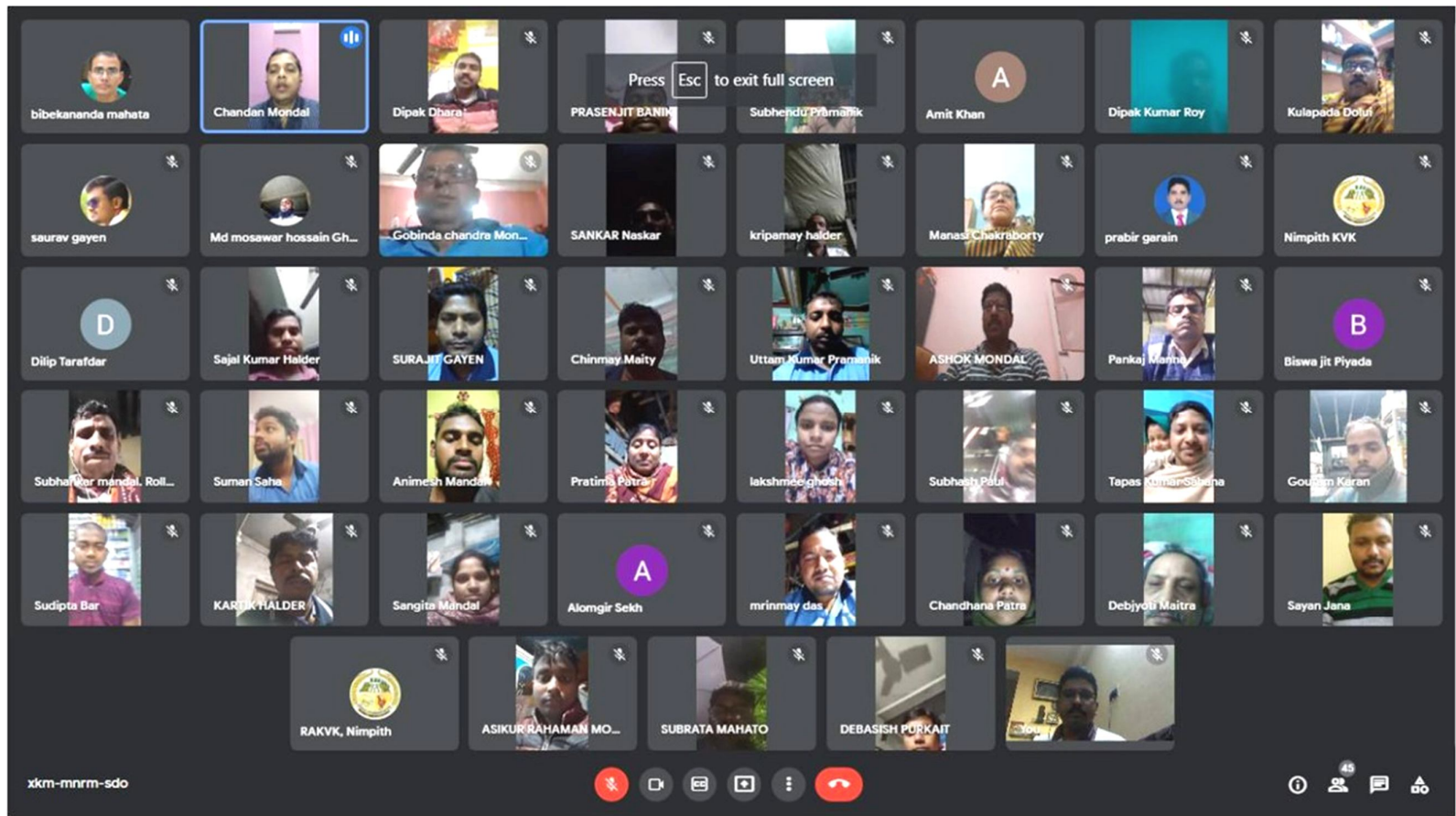
Practical demonstration on measurement of water transparency under STRY Programme



Webcasting of Conference on Zero Budget Natural Farming on 16.12.21 deliveration by Hon'ble Governor of Gujarat Acharya Devvrat



On and off campus training on Nutri thali for SC/ST Farm Women



Webiner on World Soil Day 2021 with farmers and input dealers



Field Day on performance of PU 31 of Blackgram during *kharif*



Demonstration on Modification of Sex Expression in Papaya at Farmers' Field



Method Demonstration on Beehive monitoring and Maintenance



Skill Development Training programme on Beekeeping under NBHM, National Bee Board, GOI