

ANNUAL REPORT 2017-18

(April, 2017 to March, 2018)

1. GENERAL INFORMATION ABOUT THE KVK

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

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

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

Address	Telephone		e-mail
	Office	FAX	
Sri Ramkrishna Ashram, Nimpith P.O. Nimpith Ashram, South 24-Parganas, West Bengal, Pin-743338	03218- 226001	03218- 226636	KVK.S24Parganas1@icar.gov.in nimpithkvk@rediffmail.com nimpithkvk1979@gmail.com

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

Name	Telephone / Contact		
	Residence	Mobile	e-mail
Dr. Nilendu Jyoti Maitra	-	09434437053	njmaitra@rediffmail.com

1.4. Year of sanction of KVK: 1979

1.5. Staff Position (as on 1st April, 2017)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay scale with present basic	Date of joining	Permanent /Temporary	Category(SC/ST/OBC/Others)
	Senior Scientist & Head	Dr. Nilendu Jyoti Maitra	Senior Scientist & Head	Administrative & Animal Husbandry	37400- 67000 (GP- 9000) Rs.52250/-	01.06.2010	Permanent	Others
	Subject Matter Specialist	Sri Prasanta Chatterjee	SMS (Fishery)	Fishery	15600- 39100 (GP-6600) Rs.36330/-	28.10.1997	Permanent	Others
	Subject Matter Specialist	Dr. Manasi Chakraborty	SMS (Home Science)	Home Science	15600- 39100 (GP- 6600) Rs.34060/-	08.12.2000	Permanent	Others
	Subject Matter Specialist	Dr. Chandan Kumar Mondal	SMS (Horticulture)	Horticulture	15600-39100 (GP- 6600) Rs.30350/-	16.05.2005	Permanent	Others
	Subject Matter Specialist	Dr. Subhasis Roy	SMS (Animal Husbandry)	Animal Husbandry	15600- 39100 (GP- 5400) Rs.25080/-	01.07.2010	Permanent	Others
	Subject Matter Specialist	Sri Prabir Kumar Garain	SMS (Plant Protection)	Plant Protection	15600- 39100 (GP- 5400) Rs.23640/-	17.10.2012	Permanent	Others
	Programme Assistant	Dr. Dipak Kumar Roy	Programme Assistant (Agronomy)	Agronomy	9300- 34800 (GP- 4600) Rs.22990/-	12.06.2001	Permanent	Others
	Computer Programmer	Sri Partha Banik	Programme Assistant (Computer)	Office	9300- 34800 (GP- 4600) Rs.22050/-	09.06.2003	Permanent	Others
	Farm Manager	Utpal Maity	Farm Manager	Fishery	9300- 34800 (GP- 4200) Rs.15670/-	02.12.2011	Permanent	Others
	Assistant	Sri Aditya Guchhait	Assistant	Office	9300- 34800 (GP- 4200) Rs.17260/-	01.06.2010	Permanent	Others
	Stenographer	Sri Debjyoti Maitra	Stenographer Grade-III	Office	5200- 20200 (GP- 2400) Rs.11510/-	04.01.2011	Permanent	Others
	Driver	Sri Madhab Chandra Kayet	Driver	Office	5200- 20200 (GP- 2400) Rs.13240/-	01.06.1995	Permanent	Others
	Driver	Sri Birendra Nath Das	Driver	Office	5200- 20200 (GP- 2400) Rs.12530/-	01.09.2003	Permanent	OBC
	Supporting staff	Sri Nema Chand Mondal	Skilled supporting staff	Office	5200- 20200 (GP- 2800) Rs.18040/-	01.04.1997	Permanent	SC
	Supporting staff	Sri Sailen Das	Skilled supporting staff	Office	9300- 34800 (GP- 4200) Rs.20270/-	01.04.1979	Permanent	Others

1.6. Total land with KVK (in ha)

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

Total ara should be matched with break up

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	-	-	-	-	Totally completed	777.545	Use	ICAR
2.	Farmers Hostel	-	-	-	-	-do-	359.639	Use	ICAR
3.	Farm Women Hostel						521.25		RKVY
4.	Separate Dinning Hall for farmmer						350		RKVY
5.	Staff Quarters (6)	-	-	-	-	-do-	411.680	Use	ICAR
6.	Piggery unit	-	-	-	-	-	-	-	-
7.	Fencing	-	-	-	-	-do-	770.00 (running m)	Use	ICAR
8.	Rain Water harvesting structure	-	-	-	-	-do-	17500	Use	ICAR
9.	Threshing floor	-	-	-	-	-do-	371.720	Use	CAPART
10.	Farm godown	-	-	-	-	-do-	378.790	Use	SDB, GOWB
11.	Dairy unit	-	-	-	-	-do-	3500.00	Use	ICAR &Revolving fund of KVK
12.	Sample testing lab	-	-	-	-	-	10.00	Use	Revolving fund of KVK
13.	Poultry unit	-	-	-	-	-do-	280.00	Use	Revolving fund of KVK
14.	Goatary unit	-	-	-	-	-do-	2100.00	Use	RKVY
15	Pekind Duck Farm	-	-	-	-	-	104.00	Use	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
16	Turkey farm					yes	144.00	Use	Revolving fund of KVK
17	Small animal operation theatre					yes	12.00	Use	NAIP
18	Procedure room for animals					yes	6.00	Use	NAIP
19	Hydroponics unit					yes	14.00	Use	Revolving fund of KVK
20	Rabbit farm					yes	16.00	Use	Revolving fund of KVK
21	Ornamental bird unit					yes	12.00	Use	Revolving fund of KVK
22	Meat processing unit					yes	120.00	Use	ATMA
23	Mushroom Lab	-	-	-	-	-	-	-	-
24	Mushroom production unit					Yes	100.00	Use	ICAR & Revolving fund of KVK
25	Shade house	-	-	-	-	yes	300.00	Use	FPI & H
26	Soil test Lab	-	-	-	-	yes	280.00	Use	ICAR
27	Vermicompost production unit					yes	150.00	Use	ICAR & Susmira
28	Beekeeping					yes	40.00	Use	AICRP Honeybees
29	Pan Boroz					Yes	25.00	Use	ICAR & Revolving fund of KVK
30	Green House					Yes	300.00	Use	Susmira
31	Food processing unit					Yes	200.00	Use	ICAR

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

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total km. Run	Present status
Tata Sumo Victa	2008-09	6,00,000.00	1,88,000	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	Working condition	
Digital UV-Vis Spectrophotometer ('Systronics' Make; Model 117)	2017-18	180304	Working condition	
Micro Controller Based Digital Flame Photometer ('Systronics' Make; Model 128)	2017-18	70328	Working condition	
Colorimeter ('Systronics' Make; Model 115)	2017-18	21004	Working condition	
Turbidity Meter ('Systronics' Make; Model 135)	2017-18	31270	Working condition	
Digital pH Meter ('Systronics' Make; Model 335)	2017-18	12862	Working condition	
Digital Conductivity Meter ('Systronics' Make; Model 307)	2017-18	23954	Working condition	
Bouyoucos Hydrometer (ASTM 152H; Range 5 – 60 g/lit)	2017-18	9440	Working condition	
Brass Sieve (2mm; 1mm; 0.5mm; 0.25mm; 0.1mm; 0.02mm)	2017-18	5487	Working condition	
Double Distillation Unit (Borosil; All Glass; Horizontal; Output 2.5 lt/hr)	2017-18	56366	Working condition	
Single Distillation Unit (SS) (Barnsted Type; 3Kw; 5 lt/hr)	2017-18	33040	Working condition	
Refrigerator (LG make, Model – GL Q2925DSRBOSZEBN)	2017-18	27500	Working condition	
Digital Balance ('K. Roy' Make; Model DJ – 302A)	2017-18	17700	Working condition	
Hot Air oven (3' x 2' x 2')	2017-18	26550	Working condition	
Water Bath (6 hole)	2017-18	12000	Working condition	
Hot plate	2017-18	5110	Working condition	
Mechanical Shaker (2 hp motor, 3' x 2' x 2')	2017-18	29500	Working condition	
Muffel Furnace (2' x 1.5' x 1.5')	2017-18	37170	Working condition	

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

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
a. Lab equipment				
Conductivity meter	2016-17	15,000.00	Working condition	NICRA, IARI
Hot Air oven	2016-17	35,000.00	Working condition	NICRA, IARI
Spectrophotometer (VIS)	2016-17	45,000.00	Working condition	NICRA, IARI
Flame Photometer	2016-17	54,000.00	Working condition	NICRA, IARI
Turbidity Meter	2016-17	25,000.00	Working condition	NICRA, IARI
Hot plate	2016-17	6,000.00	Working condition	NICRA, IARI
Water Bath	2016-17	8,000.00	Working condition	NICRA, IARI
Mechanical Shaker	2016-17	30,000.00	Working condition	NICRA, IARI
Double Distillation plant Glass	2016-17	45,000.00	Working condition	NICRA, IARI
Bottle Top Burrete (digital)	2016-17	1,00,000.00	Working condition	NICRA, IARI
Acid Dispenser	2016-17	42,000.00	Working condition	NICRA, IARI
Muffel Furnace	2016-17	45,000.00	Working condition	NICRA, IARI
Refrigerator	2016-17	26,000.00	Working condition	NICRA, IARI
Sony pico- projector	2016-17	27,000.00	Working condition	RKVY, Govt. of W.B
Public Address System	2016-17	53,000.00	Working condition	RKVY, Govt. of W.B
b. Farm machinery				
Seed grader	2010-11	2,10,000.00	Working condition	TMC
Pump sets	2003-04	50,000.00	Working condition	TMC
Tractor – Mahindra	2003-04	4,49,250.00	Working condition	ICAR
Thresher & Rotavator	2010-11	2,00,000.00	Working condition	ICAR
Disc Harrow	2009-10	70,000.00	Working condition	ICAR
Power Tiller	2009-10	1,43,000.00	Working condition	ICAR
Generator – 25 KVA	2010-11	3,56,852.00	Working condition	ICAR

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
c. AV Aids				
Camera TRV	2003-04	36,900.00	Working condition	NWDPRA
Printer	2003-04	4,000.00	Working condition	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	Working condition	ICAR
V-SAT with e-KVK linkage (5 Dell-optiplex -755 Computer & One HP Leser Printer-1022n , One HP-G3110 Scanner, One TVS – MSP-245-dot-matrix Printer with Server Computer, 5-650VA APC UPS, 3KVA APC make UPS)	2009-10	-	The V-SAT with e-KVK linkage One Dell Optiplex-755 Computer, One HP-G3110 Scanner, One TVS –MSP-245-dot-matrix Printer with Server Computer, One 650VA APC make UPS, (V-SAT and Dell-optiplex - 755 Computers, 650VA APC UPS are out of order) 3KVA APC make UPS are in working condition	ICAR
Lenovo Laptop	2008-09	48,000.00	Working condition	NHM
Samsung Notebook	2009-10	22,000.00	Working condition	TMC

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
a. AV Aids				
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	Working condition	NAIP
Samsung Touch 400TSn-2				
HP LaserJet M1522nf	2009-10	24,000.00	Working condition	AICRP
HP Color Jeser Jet 1215	2009-10	22,000.00	Out of order	NAIP
AV Aids				
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/-	Working condition	ARYA
DATA Processing System (I3 Processor, 1 TB HDD, 4GB RAM, 15.6 inch Screen with Graphics Card) -(1PC)	2016	36900/-	Working condition	ARYA
Color Copier Printer-(1PC)	2016	13500/-	Working condition	ARYA
Broadband Router -(1PC)	2016	2300/-	Working condition	ARYA
Biometric Systems Fingerprint Time & Attendance System (Including Battery & Power Adopter) X-990	2016	23500/-	Working condition	ICAR
Olympus phase contrast microscope with CMOS camera, Lenovo Computer, UPS, printer cum scanner	2015-16	5,00,000.00	Working condition	RKVY
Fermenter	2015-16	4,00,000.00	Working condition	RKVY
Samsung refrigerator-192L Model: RR20M272ZU2/NL/2017 with digital inverter technology	2016-17	16350.00 (inclusive of all taxes)	Working condition	RKVY

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
a. AV Aids				
HP LAPTOP 240 G5 CI3 1AS37PA CORE i3 /4 GB/500GB/14”	2016-17	36,800.00	Working condition	IARI, ICAR
PA System for Class room	2016-17	48,500.00	Working condition	RKVY, Deptt. of Agriculture, W.B
Wireless MIC for Conference room	2016-17	27,038.00	Working condition	RKVY, Deptt. 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	Working condition	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	Working condition	RKVY – Strengthening of Soil Lab project
HP Laser Printer All in One A3 size/ Print/Scan/Copy (Model: MFP M435NW) (1 yr on-site warranty)	2017-18	82000.00	Working condition	RKVY – Strengthening of Soil Lab project
EPSON PROJECTOR EB-X-31-3200 Lumens (2 yrs warranty for Projector and 1000 hrs for lamp)	2017-18	37000.00	Working condition	RKVY – Strengthening of Soil Lab project

D) Farm implements

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

1.8. Details SAC meeting conducted in the year 2017-18

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

Meeting No. 32

Date : 18.11.2017

Place : Nimpith

Time : 10.30 a.m.

A meeting of the Scientific Advisory Committee of Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith is held to-day, the 18th November, 2017 at 10.30 a.m. in the KVK premises with the following members:

-: Resolutions:-

Members Present:

Sl.No.	Name	Designation
1.	Swami Sadananda,	Chairman, RAKVK Nimpith
2.	Biswanath Das	MLA, Joynagar
3.	Dr. S.K. Roy	Principal Scientist, ICAR-ATARI, Kolkata
4.	Dr. N.C. Sahu	Senior Scientist & Head, Sasya Shyamala KVK, Narendrapur
5.	Dr. Tapas Kr. Ghosh	Manager (HR) WBLDCL
6.	Dr. Tapas Paria	ADF, South 24 Parganas, W.B.
7.	Dr. Subhasish Bandopadhyaya	OIC, IVRI-ERS, Kolkata
8.	Prof. A. Goswami	Director, Directorate of Research Extension & Farms, WBUAFS
9.	Dr. T. K. Ghosal South 24 Pgs	Incharge, Kakddwip Research Centre of CIBA, Kakddwip,
10.	Dr. G.H. Pailan	Officer-in-charge & Principal Scientist, CIFE
11.	Dr. Uttam Kumar Mondal	Principal Scientist, CSSRI, RRS, Canning Town
12.	Dr. Ajit Kr. Podder	Advisor, VIB, Nimpith
13.	Dr. Sisir Kumar Si	Soil Scientist VIB
14.	Sudipita Das	Doordarshan Kolkata
15.	Arup kumar Paul	Principal, Green College, RDW
16.	Dr. Binayak Purakayastha,	A.D., ARD,SPDF Nimpith
17.	Arka Prava Sarkar	Assistant Director of Horticulture, Alipore, Kolkata
18.	Antima Halder	Assistant Director of Agriculture, Joynagar-II Block
19.	Amartya Roy	Branch Head, Axis Bank
20.	Sutirtha Roy	Branch Head, Bandhan Bank
21.	Dr. N. J. Maitra,	Sr. Scientist & Head, RAKVK Nimpith
22.	Prasanta Chatterjee	Scientist, Fishery, RAKVK
23.	Manasi Chakraborty	Scientist (Home Sc.), RAKVK
24.	Dr.Chandan Kr. Mondal	Scientist (Hort.), RAKVK
25.	Dr.Subhasis Roy	Scientist (A.H) RAKVK
26.	Prabir Kumar Garain	Scientist (P.P.), RAKVK
27.	Dipak Kumar Roy	Programme Assistant (Agronomy), RAKVK, Nimpith
28.	Shyam Sundar Lakshman	Jr. Breeder, (AICRP on Sunflower)
29.	Dr.Avijit Roy	Jr. Agronomist (AICRP on Sunflower)
30.	Debasis Halder	Technical Expert (AICRP)
31.	Partha Banik	Programme Assistant (Computer), RAKVK Nimpith
32.	Utpal Maity	Farm Manager, KVK Nimpith
33.	Pritam Das	DAESI, Facilitator
34.	Lakshmi Ghosh	IWMP (WDT Socail Welfare Member)
35.	Arkendu Halder	Project Assistant, ARYA, RAKVK
36.	Tarak Nath Halder	Progressive farmer, Radhakantapur
37.	Bapan Karmakar	Progressive farmer, Radhakantapur
38.	Sri Gouranga Naskar	Progressive farmer, Kaikhali
39.	Sri Tarun Halder	Progressive farmer
40.	Suniti Mondal	Progressive farm Women, Baishata
41.	Suparna Halder	Progressive farm Women, Dakshin Durgapur
42.	Mushida Gazi	Progressive farm Women, Purba Raghunathpur

(Salient Recommendation & Action taken – 32nd SAC Meeting)

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
	18.11.2017	42	Mridaparikshak Soil Test Kit by the Nagarjuna Company may be purchased, when next fund for the same is available from the council, after repairing old Kit.	Old machine repaired by Nagarjuna technician, but the machine is not working satisfactorily.	
			In case of soil testing through kit, the kit should be calibrated against the result of traditional method. Soil testing of pond may also be considered	The kit has been calibrated against the result of traditional method. Awareness on Soil Testing of pond has been organized in different villages and during the On Campus training programme. Farmers are taking initiative for testing of ponds soil.	
			OFT on Music therapy now may be transferred to FLD	Action taken	
			More emphasis should be given to Bio aquatics to control the birds particularly in Sunflower cultivation	Action taken and informed to Director, ATARI	
			OFT on heat synchronization may be taken in to FLD after another year of trial	Action taken	
			In the OFT of monosex Tilapia - consultation may be done with Dr. Gouranga of CIBA, Kakdwip to observe the quantity of phytoplankton trapped through peri-python net & substitution of feed.	Estimation has been made	
			In OFT of Koi, Groundnut cake may be replaced with Mustard Oil Cake	Could not be materialised due to unavailability & high price	
			Banraja breed is voracious feeder, so it may create problem in vegetable farming, if Banraja is promoted in backyard system. In that case a distinguished area should be there to minimize the loss.	Action taken	
			In CFLD, PDM-139 Should be replaced with PDM 2-3 from next year. The seed of new variety would be available from SSKVK, Narendrapur	Action taken	

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
Contd..	18.11.2017	42	Hi-Tech Betel vine cultivation may be upscaled through convergence with Dept. of FPI & H, GOWB	Already 150nos. of Structure have been irected through Dept. of FPI&H.	
			Bee Wax may be used in fish feed formulation as binder	Action will be taken when feed will be formulated	
			Canal renovation like in NICRA village may be done through block FEO, Fishery dept. or by MGNREGA. KVK may take initiative to establish the linkage between village level organization and other Govt. Department	Already linkages have been made with 3 village level organisations with line dept. to renovate canal	
			Antibiotic awareness camp by IVRI should be included in each veterinary training at KVK	Action taken through MVC programme	
			New fish sp. like Nona tangra may be initiated in FLD programme in collaboration with CIBA, Kakdwip& other organisation	Action taken	
			Some more FLD in fishery may be considered if fund permits	Action taken	
			Fishery SMSs of two KVKs viz. Nimpith and Narendrapur alongwith CIBA and CIFE may come in one platform for some new fishery related work	Action taken	
			Salt tolerant scented rice variety of CSSRI, Canning town may be taken in next OFT	-	
			An exclusive Training of ATM & BTM of all blocks may be held at KVK. DD-ATMA may take initiative for this programme	-	
			For seed hub of SSKVK,Narendrapur, moong seed may be produced by farmers of NimpithKVK and the said produce would be procured by SSKVK	-	
			Awareness on KCC in each training programme of KVK would be conducted by ADA or his/ her representative	Action taken	

1) The minutes of the last meeting are read and confirmed
 2) The Senior Scientist & Head of KVK presented the progress of work of KVK for the period from December, 2016 to October, 2017 before the members present in the meeting. Thereafter, Senior Scientist & Head with all Sectional Incharges of different disciplines of KVK participated in detail discussion on their respective subjects and problems raised on different aspects of work with the members present. After a good deal of discussion, the following recommendations have come out for betterment of the KVK activities.

- i) Mridaparikshak Soil Test Kit by the Nagarjuna Company may be purchased, when next fund for the same is available from the council, after repairing old Kit.
- ii) In case of soil testing through kit, the kit should be calibrated against the result of traditional method. Soil testing of pond may also be considered.
- iii) OFT on Music therapy now may be transferred to FLD
- iv) More emphasis should be given to Bio aquatics to control the birds particularly in Sunflower cultivation
- v) OFT on heat synchronization may be taken in to FLD after another year of trial
- vi) In the OFT of monosex Tilapia - consultation may be done with Dr. Gouranga of CIBA, Kakdwip to observe the quantity of phytoplankton trapped through peri-python net & substitution of feed.
- vii) In OFT of Koi, Groundnut cake may be replaced with Mustard Oil Cake
- viii) Banraja breed is voracious feeder, so it may create problem in vegetable farming, if Banraja is promoted in backyard system. In that case a distinguished area should be there to minimize the loss.
- ix) In CFLD, PDM-139 Should be replaced with PDM 2-3 from next year. The seed of new variety would be available from SSKVK, Narendrapur
- x) Hi-Tech Betel vine cultivation may be upscaled through convergence with Dept. of FPI & H, GOWB
- xi) Bee Wax may be used in fish feed formulation as binder
- xii) Canal renovation like in NICRA village may be done through block FEO, Fishery dept. or by MGNREGA. KVK may take initiative to establish the linkage between village level organization and other Govt. Department
- xiii) Antibiotic awareness camp by IVRI should be included in each veterinary training at KVK
- xiv) New fish sp. like Nona tangra may be initiated in FLD programme in collaboration with CIBA, Kakdwip
- xv) Some more FLD in fishery may be considered if fund permits
- xvi) Fishery SMSs of two KVKs viz. Nimpith and Narndrapuralongwith CIBA and CIFE may be come in one platform for some new fishery related work
- xvii) Salt tolerant scented rice variety of CSSRI, Canning town may be taken in next OFT
- xviii) An exclusive Training of ATM & BTM of all blocks may be held at KVK. DD-ATMA may take initiative for this programme
- xix) For seed hub of SSKVK, Narendrapur, moong seed may be produced by farmers of Nimpith KVK and the said produce would be procured by SSKVK
- xx) Awareness on KCC in each training programme of KVK would be conducted by ADA or his/ her representative

Sd/- Swami Sadananda

2.a. District level data on agriculture, livestock and farming situation (2017-18)

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 2013-14	Crop	Productivity (kg/ha)
		Tomato	18.2 t/ha
		Brinjal	17.55
		Cabbage	31.85
		Cauliflower	19.96
		Okra	12.21
		Cucurbits	12.12
		Pea	2.08
Onion	11.51		
6	Mean yearly temperature, rainfall, humidity of the district	Mean Yearly Temperature: Max. 36.3* C; Min. 13.6* C Annual Rainfall : 1750 mm to 1770 mm Annual Relative Humidity: 71% to 85% Ref. District website (http://s24pgs.gov.in/s24p/page.php?nm=Geography)	

2017 - 18	Temperature (°C)		R.H. (%)		Rainfall (mm)	Total Rainy Days
	Maximum	Minimum	Maximum	Minimum		
Apr-17	35	26.86	94.93	56.76	24	3
May-17	36.56	27.36	92.06	59.64	35.5	4
Jun-17	35.07	26.27	93.66	66.76	288.25	16
Jul-17	32.38	24.17	94.68	74.41	698.5	23
Aug-17	33.27	23.78	95.51	89.38	316	20
Sep-17	33.12	23.44	96.56	91.13	205	10
Oct-17	32.38	23.18	96.25	86.54	322	12
Nov-17	28.87	20.17	95.16	64.93	60	3
Dec-17	26.04	16.73	94.41	67.25	37	3
Jan-18	24.92	11.25	93.12	59.38	0	0
Feb-18	30.38	17.02	91.32	48.82	0	0
Mar-18	34.25	22.56	93.32	55.22	0	0
					1986.25	94

Contd..

7	Production and productivity of livestock, poultry, fisheries etc. in the district (New census report is awaiting from the State Department)	Category	Population	Production	Productivity
Cattle					
		<i>Crossbred</i>	32550	2,65,8,750 lit	1800-2100 lit/lactation
		<i>Indigenous</i>	968986	19,37,97,200 lit	400-500 lit/lactation
		Buffalo	15604	56,71,300 lit	600-700 lit/lactation
Sheep					
		Crossbred	-	-	-
		<i>Indigenous</i>	212589	22,10,925 kg	10-12 kg/sheep/year
		Goats	696935	78,05,672 kg	11-13 kg/sheep/year
Pigs					
		<i>Crossbred</i>	-	-	-
		<i>Indigenous</i>	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
		<i>Desi</i>	2156106	19,83,61,752 eggs	90 – 110 eggs/year/bird
		<i>Improved</i>	-	-	-
		Ducks	1058706	7,67,56,185 eggs	140 – 160 eggs/yr/bird
		Turkey and others	75897	6,22,355 kg	6 – 9 kg/year/bird
8.	(Source: Department of Fisheries, Directorate of Fisheries, Govt. of West Bengal)	Production of fish and prawn 2017-18			
		Marine Fish		102133M.T.	
		Marine Prawn		233 M.T.	
		Inland Fish		157857 M.T.	
		Fish Seed		1194 million	
		Inland Prawn		627 M.T.	

2.b. Details of operational area / villages (2017-18)

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

2.(c) Details of village adoption programme:

Name of the villages adopted by PC and SMS in 2017-18 for its development and action plan

Name of village	Block	Action taken for development
Adibasipara	Gosaba	TSP programme in collaboration with West Bengal University of Animal and Fishery Sciences, Kolkata-37 in animal husbandry sector
Bonshyamnagar	Patharpratima	Overall development of animal husbandry through mobile veterinary clinic and fodder development programme through ARD, GoWB
Heromogopalpur	Patharpratima	Overall development of the rural youth through promotion of pekin duck farming, vanaraja farming and creating marketing linkage with Livestock Development Corporation Limited, Govt of West Bengal as convergence programme of ARYA project.
Debimathurapur, Dhaspara, Gobindapur, Kaylapara, Mahendraganj, Nagendraganj, Mrityunjoynagar, Sumatinagar, Chemagari, Dhablat, Gangasagar, Ghoramara, Muri Ganga, Rudranagar	Sagar	Enhancement of production and productivity of animal resources through Mobile veterinary Clinic and awareness generation.
Bantra, Karabeg, Sastitala, Bahru, Chaltaberia, Gabberia, Dhosa	Joynagar-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Bakultala, Sonatikari, Nalgora, Taltala, Baishata, Ghoserchak, Gopalnagar, Sahajadapur, Mollarchak, Hanarbati, Manirtat, Dosra Bhagabanpur, Thakurchak	Joynagar-II	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Nalua, Nayabad Rajpur, Sarat Nagar, Purba Ranaghata	Mathurapur-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Baribhanga abad, Choddorashmi, Kashinagar, Chapla, Pakurtala, Jata Jagendrapu, Paschim Jata	Mathurapur-II	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Manipulation in plant physiological behavior through hormonal application
Kaorakhali, Jalaberia, Purba Gabtala, Jamtala, Kripakhali, Kirtankhola, Gopalgunj, Koabati	Kultali	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in vegetable cultivation Manipulation in plant physiological behavior through hormonal application

Name of village	Block	Action taken for development
Uttar Ballavpur, Gabberia, Ramlochanpur	Mandirbazar	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Haripur, Lakshmikantapur	Magrahat-I	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Tangrachor, Harin khola	Kulpi	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables
Herambagopalpur, Bhagabatpur, Bahirchak, Kamdebpur, Lakshmi Janardhanpur, Kuyemuri, Achintanagar	Pathar Pratima	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in betel vine cultivation
Dakshin Haradhanpur, Khansaheb abad, Rudranagar, Kirttankhali	Sagar	IFS through Land Shaping & Rain water harvesting Land Embankment Cultivation of vegetables Betel vine cultivation in climate smart boroz Micro-irrigation in betel vine cultivation
Andinagar, Ramtanunagar, Chakdulalpur, Belpukur, Khasmahal, Sitarampur, Shivkalinagar, Mayahauri, Debipur, Bhubaneswari, Purba & Madhya Gurguria, Kishorimonpur, Baikunthapur, Binodpur, Moipith, Kaikhali, Gopalgang, Dakshin Garankati, Sankijahan, Kantamari, Madhavpur, Deulbari, Dakshin Durgapur, Madhusudanpur	Kulpi, Kakdwip, Joynagar-II & Kultali	Conducted Cluster Front Line Demonstration on oilseed and Pulses; IWMP project work to the SHG & UG members.
Bongheri	Kultali	Demonstration of climate resilient agro technologies, plant protection measures, composting, livestock development, custom hiring centre, biopesticide preparation, micro irrigation.

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 & nutrition security at household level
10	Post harvest management of crops
11	Development of marketing channel
12	Introduction of poly house concept for off season vegetable cultivation
13	Improvement of backyard system performance
14	Proper feed supplementation for fish & animal farming
15	Alternative livelihood generation through Animal husbandry activity
16	Promotion of Artificial insemination
17	Providing animal health care service
18	Attracting and retaining youth in agriculture and allied activities
19	Promotion of Climate Resilient Agricultural Practices
20	Promotion of Insecticide Resistance Management
21	Promotion of Integrated Pest Management
22	Promotion of Biological control of pest and diseases
23	Promotion of on-farm mass production of <i>Trichoderma</i>
24	Promotion of Beekeeping as alternate livelihood opportunity
25	Development of marketing channel
26	Improvement of backyard system performance
27	Proper feed supplementation for animal farming

28	Attracting and retaining youth in agriculture and allied activities
29	Awareness generation of the farmers associated with animal husbandry practices
30	Doubling farmers income through animal husbandry activities
31	Augmentation of milk production through good animal husbandry practices
32	Promotion of fodder cultivation
33	Augmenting agricultural productivity through creation of irrigation facility
34	Augmenting horticultural production through creation of upland by Land Shaping & Land Embankment
35	Risk minimization in horticultural production system through adoption of climate smart technologies & perennial crops
36	Augmenting agricultural production through adoption of soil test based correctional interventions and fertilizer application

3. TECHNICAL ACHIEVEMENTS

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

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

OFT						FLD					
No. of technologies:						No. of technologies:					
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
2	2	20	17	13	30	3	3	80	42	48	90
2	2	14	15	3	3	325	340	2	2	14	15
2	2	20	3	17	20	2	4	30	144	262	406
2	2	22	22	1	1	25	58	2	2	22	22
2	2	14	5	9	14	1	1	20	20	30	50
2	2	80	24	60	84	2	2	400	165	254	419
12	12	170	86	103	152	358	408	534	375	630	1002

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
38	49	1130	1107	1308	2415						
28	29	815	1004	189	70	468	1942	28	29	815	1004
26	26	784	302	545	847						
9	17	525	594	89	95	8432	12345	9	17	525	594
33	29	1038	362	584	946		71				2401
27	31	480	831	808	254	52	64	1500	545	842	1387
161	181	4772	4200	3523	4627	8952	14422	1537	591	2182	5386

* Outsourcing of fund to conduct FLD from NHM, RKVY and DOR, Hyderabad, FHFI, WHH, Delhi

*No. of farmer increase in FLD due to inclusion of beneficiaries from ARYA project

Seed production (q)		Planting material (in Lakh)	
Target	Achievement	Target	Achievement
1 q (0.55 ha)	18.7 q	1.50 lakh	1.75310 lakh

Livestock strains and fish fingerlings produced (in lakh)*		Soil, water, plant, manures samples tested (in lakh)	
Target	Achievement	Target	Achievement
	Carp spawn – 40.0 Carp fry & fingerlings – 1.13 Asian cat fish fry – 1.875 Stinging catfish fry – 0.03 Climbing perch fry – 0.083 Butter fish fry – 0.0072 Ornamental fish fry – 0.1124 Freshwater prawn juvenile – 0.0362	1000	1193

* Give no. only in case of fish fingerlings

Publication by KVKs		
Item	Number	No. circulated
Research paper	4	-
Seminar/conference/ symposia papers	-	-
Books	2	-
Bulletins	-	-
News letter	-	-
Popular Articles	7	-
Book Chapter	1	-
Extension Pamphlets/ literature	11	-
Technical reports	22 (IWMP 6 & 7) + 72 (MVC) + 1(RKVY)	-
Electronic Publication (CD/DVD etc)	1(NICRA)+3	-
TOTAL	124	-

Achievements on technologies assessed and refined

OFT - 1 (2016-17) – Continuing (Agronomy)

1.	Title of On farm Trial	Assessment of Chlormequat (Chlorocholine Chloride 50%) on Production potential and economic feasibility of cotton (var.Suravi) during rabi-summer season in South 24 Parganas
2.	Problem diagnose	In South 24 Parganas district, cotton is cultivated with var. Suravi during rabi-summer season with 1 to 2 irrigations. Before onset of monsoon, the whole boll is not harvested. In this situation, the application of chlormequat may get earliness in boll maturity.
3.	Details of technologies selected for assessment/refinement	Farmers' practice: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P ₂ O ₅ : K ₂ O @ 80:40:40 kg/ha along with 2 irrigation Technology-1 to be assessed: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P ₂ O ₅ : K ₂ O @ 80:40:40 kg/ha and one spray with 50 ppm Chlorocholine Chloride 50% at pre flowering (60-65 DAS) along with 2 irrigation Technology-2 to be assessed: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P ₂ O ₅ : K ₂ O @ 80:40:40 kg/ha and two time spray with 50 ppm Chlorocholine Chloride 50% at pre flowering (60-65 DAS) and 15 days after 1st spray along with 2 irrigation
4.	Source of Technology	Source: i) Lone, N.A., Khan, N.A., Bhat, M.A., Mir, M.R., Razvi, S.M., Baht, K.A., Rather, G.H., Effect of Chlorocholine Chloride (CCC) on plant growth and development, <i>International Journal of Current Research</i> , Vol. 6, pp.001-007, July, 2010 ii) Prakash, A.H., N. Gopalakrishnan & S.E.S.A. Khader, Hormonal manipulation to increase cotton productivity, Central Institute for Cotton Research, Regional Station, Coimbatore
5.	Production system and thematic area	Production technology
6.	Performance of the Technology with performance indicators	Parameters: Plant height, No. of branches, No. of harvested boll/plant, seed cotton wt. per boll, Seed –cotton yield, B:C ratio, disease-pest incidence, Soil Test report before and after.
7.	Final recommendation for micro level situation	OFT is in its 1 st year. The final recommendation will be given after three years of observation.
8.	Constraints identified and feedback for research	NA
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land. The field visit with the farmers has been done regularly.

Soil Testing Report: (2016-17)

Before	Organic Carbon %	pH	EC(ds/m)	Available N (kg/ha)	Available P ₂ O ₅ (kg/ha)	Available K ₂ O(kg/ha)
	0.37	7.71	0.97	227.3	34.8	410.5
After						
Farmer's practice	0.39	7.71	0.97	235.0	34.8	410.5
Technology option-1	0.39	7.71	0.97	235.0	34.8	410.5
Technology option -2	0.39	7.71	0.97	235.0	34.8	410.5

Thematic area: Hormonal manipulation

Problem definition: In South 24 Parganas district, cotton is cultivated with var. Suravi under direct sowing method during rabi-summer season providing 1 to 2 live saving irrigations. As the cotton plant is photo-insensitive, it starts to produce the reproductive parts irrespective of the environmental and physical condition by 40-45 DAS. Thus, modifying cotton growth has become an essential component of cotton production. There is potential to influence yield if they are managed properly. Applying plant growth regulators to modify early and mid season growth is similar to other management practices. Plant growth regulators have the potential to promote crop earliness, square and boll retention, higher nutrient uptake and keeping vegetative and reproductive growth in harmony to improve lint yield and quality.

Technology assessed:

Result:

Treatment	No. of trials	Date of Sowing	Date of harvesting	No. of boll/plant	No. of harvested boll/plant	Seed-cotton yield/boll	Seed – cotton yield (kg/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	7	09.01.2017	02.05.2017 to 10.06.17	17.1	13.5	2.46	1195.56	37300.00	55354.00	18054.00	1.48
Technology option-1				20.7	15.6	2.52	1415.23	40115.00	65525.00	25410.00	1.63
Technology option -2				22.4	16.3	2.60	1525.68	41426.00	70638.00	29212.00	1.70
SEm ±	-	-	-	0.59	0.48	0.037	34.65	-	-	-	-
CD(0.05)	-	-	-	1.25	1.01	NS	73.46	-	-	-	-

Results: Result reveals that the use of 50 ppm Chlorocholine Chloride 50% increases the no. of boll/plant, no. of harvested boll/plant and seed-cotton yield/boll. The spraying of Chlorocholine Chloride 50% @ i.e. 1ml/litre of water both in pre flowering (Tech. Option-1) stage and 1st spray in pre flowering and 2nd spray in 15 days later (Tech. Option-2) have recorded significantly higher yield attributes over farmers practice. However in Tech. Option-2 27.61% more seed-cotton yield/ha and Rs.11158.00/ha net return are recorded. The cost-benefit ratio is also higher (1.70) in Tech. Option-2 over Farmers Practice (1.48).



OFT - 2 (2017-18) – Continuing (Agronomy)

1.	Title of On farm Trial	Assessment of Chlormequat (Chlorocholine Chloride 50%) on Production potential and economic feasibility of cotton (var.Suravi) during rabi-summer season in South 24 Parganas
2.	Problem diagnose	In South 24 Parganas district, cotton is cultivated with var. Suravi during rabi-summer season with 1 to 2 irrigations. Before onset of monsoon, the whole boll is not harvested. In this situation, the application of chlormequat may get earliness in boll maturity.
3.	Details of technologies selected for assessment/refinement	Farmers' practice: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P2O5: K2O @ 80:40:40 kg/ha along with 2 irrigation Technology-1 to be assessed: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P2O5: K2O @ 80:40:40 kg/ha and one spray with 50 ppm Chlorocholine Chloride 50% at pre flowering (60-65 DAS) along with 2 irrigation Technology-2 to be assessed: Sowing of cotton by direct seeded method (var.Suravi) with a spacing of 60 cm X 45cm and N: P2O5: K2O @ 80:40:40 kg/ha and two time spray with 50 ppm Chlorocholine Chloride 50% at pre flowering (60-65 DAS) and 15 days after 1st spray along with 2 irrigation
4.	Source of Technology	Source: i)Lone, N.A., Khan, N.A., Bhat, M.A., Mir, M.R., Razvi, S.M., Baht, K.A., Rather,

		G.H., Effect of Chlorocholine Chloride (CCC) on plant growth and development, <i>International Journal of Current Research</i> , Vol. 6, pp.001-007, July, 2010 ii) Prakash, A.H., N. Gopalakrishnan & S.E.S.A. Khader, Hormonal manipulation to increase cotton productivity, Central Institute for Cotton Research, Regional Station, Coimbatore
5.	Production system and thematic area	Production technology
6.	Performance of the Technology with performance indicators	Parameters: Plant height, No. of branches, No. of harvested boll/plant, seed cotton wt. per boll, Seed –cotton yield, B:C ratio, disease-pest incidence, Soil Test report before and after.
7.	Final recommendation for micro level situation	OFT is in its 2nd year. The first spray was given at pre flowering stage i.e. 60-65 DAS in both Tech, Option-1 & Tech. Option-2 and the 2nd spray will be given after 15 days in Tech. Option-2. The final recommendation may be given after three years of observation.
8.	Constraints identified and feedback for research	NA
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land. The field visit with the farmers has been done regularly.



OFT - 3 (2017-18) (Agronomy)

1.	Title of On farm Trial	Assessment of nutrient management on productivity and profitability of mustard during rabi season in South 24 Parganas district
2.	Problem diagnose	In South 24 Parganas district, mustard is sown in late i.e in the 1 st week of December. Generally, the crop is cultivated with complex chemical fertilizer. The farmers are not applied sulphur containing fertilizer. Thus the seed yield as well oil seed are low. To enhance the yield of crop sulphur containing fertilizer along with NPK containing fertilizers are used.
3.	Details of technologies selected for assessment/refinement	Farmers' practice: Sowing of Mustard (var. Pusa Mahak) through broadcast method along with N:P ₂ O ₅ :K ₂ O @ 100:50:50 kg/ha through Urea, DAP and MOP and 2 irrigation Technology-1 to be assessed: Sowing of Mustard (var. Pusa Mahak) through broadcast method along with N:P ₂ O ₅ :K ₂ O @ 100:50:50 kg/ha through Urea, DAP, SSP (as a source of 15 kg S/ha and phosphorus) and MOP and 2 irrigation Technology-2 to be assessed: Sowing of Mustard (var. Pusa Mahak) through broadcast method along with N:P ₂ O ₅ :K ₂ O @ 100:50:50 kg/ha through Urea, DAP and MOP and S @15 kg/ha as a source of elemental sulphur) and 2 irrigation
4.	Source of Technology	Source: K. Ray, K. Sengupta, A.K. Pal1, H. Banerjee, Effects of sulphur fertilization on yield, S uptake and quality of Indian mustard under varied irrigation regimes, <i>Plant Soil Environ</i> , Vol. 61, 2015, No. 1: 6–10
5.	Production system and thematic area	Nutrient management
6.	Performance of the Technology with performance indicators	Parameters: Plant height, No. of branches, No. of siliqua/plant, No. of seed/siliqua, 1000 seed wt., Yield, economics & B:C ratio, Soil Test report before and after.
7.	Final recommendation for micro level situation	After three years of observation, the results indicated that the application of phosphorus as source of DAP along with 15 kg S/ha as a source of elemental sulphur gave significantly higher grain yield and maximum return.
8.	Constraints identified and feedback for research	NA
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land. The field visit with the farmers has been done regularly.

Soil Testing Report:

Before	Organic Carbon %	pH	EC(ds/m)	Available N (kg/ha)	Available P ₂ O ₅ (kg/ha)	Available K ₂ O(kg/ha)
	0.40	7.60	0.74	233.6	39.7	391.8
After						
Farmer's practice	0.40	7.60	0.74	237.1	40.2	397.3
Technology option-1	0.40	7.60	0.74	239.4	40.5	397.4
Technology option -2	0.40	7.60	0.74	239.4	40.8	397.4

Thematic area: Nutrient management

Problem definition: In South 24 Parganas district, mustard is sown in late i.e in the 1st week of December. Generally, the crop is cultivated with complex chemical fertilizer. The farmers are not applied sulphur containing fertilizer. Thus the seed yield as well oil seed are low. To enhance the yield of crop sulphur containing fertilizer along with NPK containing fertilizers are used.

Technology assessed:

Result:

Treatment	No. of trials	Date of Sowing	Date of harvesting	Plant height (ft)	No. of branch/plant	No. of siliqua/plant	No. of seed/siliqua	1000 seed wt.(g)	Seed yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	7	12.12.2017	14.03.2018	4.6	9	210.7	14	6.0	10.43	35,430.00	47,978.00	12,548.00	1.35
Technology option-1				4.8	10	217.8	16	6.5	11.64	35,766.00	53,544.00	17,778.00	1.49
Technology option -2				5.0	10	226.2	16	6.5	12.35	36,447.00	56,810.00	20,363.00	1.56
SEm ±	-	-	-	0.11	0.38	1.30	0.42	0.05	0.30	-	-	-	-
CD(0.05)	-	-	-	NS	NS	2.71	NS	NS	1.06	-	-	-	-

Results: Result reveals that the Technology Option -1 i.e. 100:50:50 kg/ha through Urea, DAP , SSP (as a source of 15 kg S/ha and phosphorus) and MOP and Technology Option -2 (100:50:50 kg/ha through Urea, DAP and MOP and Sulphur @15 kg/ha (as a source of elemental sulphur) showed better performance than Farmers practice (100:50:50 kg/ha through Urea, DAP and MOP) in respect of B:C ratio and net return. The application of sulphur through SSP and elemental sulphur in technology option -1 and in technology option-2 was recorded higher no. of yield attributing characters over Farmers practice. But, the higher grain yield and the maximum net return were recorded in Tech. Option-2.



OFT-4 (Horticulture)

1.	Title of On farm Trial	Assessment of application of non-traditional plant growth promoters on plant growth, disease resistance and yield of early Okra in the South 24 Parganas district
2.	Problem diagnosed	Summer Okra is a prominent crop in the rice fallow situation of the district South 24 Parganas, which is sown in late winter (January) and faces several biotic and abiotic stresses. It is obvious that inducing earliness and increasing self defense of the plant can increase profitability of this crop. Plant Growth retardant Cycocel (Chlormequat chloride), reported to increase yield in Cotton & Okra was used for this purpose.
3.	Details of technologies selected for assessment	<ul style="list-style-type: none"> • Farmers' Practice: Okra cultivation in conventional method (Var. JK-7315, sowing by middle of January-2017, NPK @ 100:50:50 kg/ha, Compost @ 10 t/ha, irrigation at 8-10 days interval) with use of traditional plant growth promoters like amino acid, humic acid, micro nutrients at fortnightly interval @ 1ml/lt . • Technology Option -1: Farmers' Practice + seed soaking in Cycocel 500 ppm @ for 10 hrs before sowing. • Technology Option -2: Farmers' Practice + spraying Cycocel 500 ppm @ at 20 DAS & 40 DAS.
4.	Source of Technology	<p>Y.L. Bhagure and T.B. Tambe, (2013). Effect of seed soaking and foliar sprays of plant growth regulators on germination, growth and yield of okra (<i>Abelmoschus esculentus</i> (L.) Moench) var. Parbhani Kranti. <i>The Asian Journal of Horticulture</i>. 8 (2): 399-402.</p> <p>Mehrotra, O.N. ; Garg, R. C. and Singh, I. K. 1970. Effect of CCC (2-chloroethyl trimethyl ammonium chloride) on growth and yield of okra (<i>Abelmoschus esculentus</i> (L.) Moench.). <i>Indian J. Pl. Physio</i>. 13 (2) : 173 – 174.</p>
5.	Production system and thematic area	Use of Plant Growth Regulators in Plant Health Management
6.	Performance of the Technology with performance indicators	*
7.	Final recommendation for micro level situation	After two years study, it is clear from both farmers' point of view and statistical point of view that application of Cycocel is effective in increasing yield and early yield in summer okra. It is also observed that seed soaking is a better and profitable option than spraying of the chemical, as it involves more chemical requirement, as well as labour requirement for spraying. So, it can be concluded that seed soaking of Okra seed in Cycocel is a very effective and profitable option in summer okra cultivation.
8.	Constraints identified and feedback for research	Farmers are very much interested with this chemical. They want to apply it in other vegetables like cucurbits, solanaceous vegetables. But, as this chemical (Cycocel) is not commercially available, a intervention may be taken from KVK to make it available to farmers. Again, a trial may be conducted for testing the effectiveness of Cycocel on other vegetables in Sundarban perspective.
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land. The field visit with the farmers has been done regularly.

* Performance of the Technology with performance indicators

	Plant Height (cm) (at 90 DAS)	Days to 50% Flowering	Fruit setting %	No. of pod per plant	Individual pod weight (g)	Yield (Q/ha)	B:C ratio
Farmers' Practice:	119.3	45.3	78.6	19.3	12.1	175.15	
Technology Option - 1	105.7	40.6	85.3	27.7	9.7	201.52	
Technology Option - 2	108.1	41.3	84.2	25.6	10.2	195.84	
CD (0.05)	2.6	1.66	1.34	1.78	0.81	7.84	

Thematic area:

Problem definition: Summer Okra is a prominent crop in the rice fallow situation of the district South 24 Parganas, which is sown in late winter (January) and faces several biotic and abiotic stresses. It is obvious that inducing earliness and increasing self defense of the plant can increase profitability of this crop. Plant Growth retardant Cycocel (Chlormequat chloride), reported to increase yield in Cotton & Okra was used for this purpose

Technology assessed:

- ✓ **Farmers' Practice:** Okra cultivation in conventional method (Var. JK-7315, sowing by middle of January-2017, NPK @ 100:50:50 kg/ha, Compost @ 10 t/ha, irrigation at 8-10 days interval) with use of traditional plant growth promoters like amino acid, humic acid, micro nutrients at fortnightly interval @ 1ml/lt .
- ✓ **Technology Option -1:** Farmers' Practice + seed soaking in Cycocel 500 ppm @ for 10 hrs before sowing.
- ✓ **Technology Option -2:** Farmers' Practice + spraying Cycocel 500 ppm @ at 20 DAS & 40 DAS.

Table:

Technology option	No. of trials	Plant Height (cm) (at 90 DAS)	Days to 50% Flowering	Fruit setting %	No. of pod per plant	Individual pod weight (g)	Yield (Q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	B:C ratio
Farmers' Practice:	10	119.3	45.3	78.6	19.3	12.1	175.15	50550	96331	45781	1.91
Technology Option - 1	10	105.7	40.6	85.3	27.7	9.7	201.52	48750	110835	62085	2.27
Technology Option - 2	10	108.1	41.3	84.2	25.6	10.2	195.84	49875	107712	57837	2.16
CD (0.05)	-	2.6	1.66	1.34	1.78	0.81	7.84	-	-	-	-

Result: After two years study, it is clear from both farmers' point of view and statistical point of view that application of Cycocel is effective in increasing yield and early yield in summer okra. It is also observed that seed soaking is a better and profitable option than spraying of the chemical, as it involves more chemical requirement, as well as labour requirement for spraying. So, it can be concluded that seed soaking of Okra seed in Cycocel is a very effective and profitable option in summer okra cultivation.



OFT – 5 (Horticulture)

1.	Title of On farm Trial	Assessment of different intercropping models in brinjal plot for better profitability during winter season in South 24 Parganas district
2.	Problem diagnose	Brinjal is usually cultivated as sole crop. It takes a long time (usually 80-90 days) to come in production. Also, this crop requires wide spacing, which remains fallow in the early stage of crop growth (usually upto 55 to 60 days). For optimum utilization of this land, as well as to get more return from an unit area, intercropping may be practiced.
3.	Details of technologies selected for assessment/refinement	<ul style="list-style-type: none"> • Farmers' Practice: Cultivation of sole brinjal at a spacing 90 cm x 90 cm (var. Muktakeshi, NPK @ 180: 90:90, Compost @ 20t/ha, Irrigation at 6-8 days interval, Hand weeding at 25-30 days interval, Spraying of Insecticide Flubendiamide and Spinosad alternatively at 15 days interval @ 3ml/10 lt). • Technology Option -1: Farmers' Practice + transplanting of one chilli (var: Tejaswini) seedlings in between two brinjal plants in a row at 30 cm away from brinjal seedling. • Technology Option -2: Farmers' Practice + transplanting of one cabbage (var. Rareball) seedling in between two brinjal plants in a row at 45 cm away from brinjal seedling.

4.	Source of Technology	Source of Technology: AICRP on Vegetable Crops, BCKV									
5.	Production system and thematic area	Production technology through inter cropping									
6.	Performance of the Technology with performance indicators		Plant height of brinjal at 70 DAP (cm)	No. of primary branches of brinjal	Days to 50% flowering in brinjal	No. of fruits in brinjal	Individual Fruit weight (g)	Brinjal yield (Q/ha)	Chilli yield (Q/ha)	Cabbage yield (Q/ha)	BC ratio
		FP	88.4	13.2	59.8	24.9	221.7	621.04	-	-	2.72
		T.O. 1	81.8	10.9	59.2	22.6	219.4	557.82	33.61	-	2.98
		T.O. 2	75.6	7.5	68.3	20.8	220.5	515.97	-	172.39	2.74
		CD (0.05)	2.8	0.9	2.4	2.1	7.38	26.34	-	-	-
7.	Final recommendation for micro level situation	After completion of two years study it has been concluded by the farmers that both Technology Option 1 & 2 are better than sole brinjal crop. Both the crop has separate positive side over sole brinjal crop; cabbage gives an early return, while chilli gives an return at the end of the brinjal crop.									
8.	Constraints identified and feedback for research	NA									
9.	Process of farmers participation and their reaction	The participants were identified through a group meeting followed by selection of land. The field visit with the farmers has been done regularly.									

Thematic area: OFT on Production technology through inter cropping

Problem definition: Brinjal is usually cultivated as sole crop. It takes a long time (usually 80-90 days) to come in production. Also, this crop requires wide spacing, which remains fallow in the early stage of crop growth (usually upto 55 to 60 days). For optimum utilization of this land, as well as to get more return from an unit area, intercropping may be practiced.

Technology assessed:

- **Farmers' Practice:** Cultivation of sole brinjal at a spacing 90 cm x 90 cm (var. Muktakeshi, NPK @ 180: 90:90, Compost @ 20t/ha, Irrigation at 6-8 days interval, Hand weeding at 25-30 days interval, Spraying of Insecticide Flubendiamide and Spinosad alternatively at 15 days interval @ 3ml/10 lt).
- **Technology Option -1:** Farmers' Practice + transplanting of one chilli (var: Tejaswini) seedlings in between two brinjal plants in a row at 30 cm away from brinjal seedling.
- **Technology Option -2:** Farmers' Practice + transplanting of one cabbage (var. Rareball) seedling in between two brinjal plants in a row at 45 cm away from brinjal seedling.

Technology option	No. of trials	Yield components					Gross plot yield (Q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		No. of fruit in brinjal	Individual Fruit weight (g)	Brinjal yield (Q/ha)	Chilli yield (Q/ha)	Cabbage yield (Q/ha)					
Farmers' Practice:	10	24.9	221.7	621.04	-	-	621.04	125550	341570	216020	2.72
Technology Option 1		22.6	219.4	557.82	33.61	-	591.43	141750	422303	280553	2.98
Technology Option 2		20.8	220.5	515.97	-	172.39	688.36	144375	395584	251209	2.74
CD (0.05)	-	2.1	7.38	26.34	-	-		-	-	-	-

Soil Report:

Technology option	Soil Report					
	pH	EC (dS/m)	OC (%)	N (Kg/ha)	P (Kg/ha)	K (Kg/ha)
Farmers' Practice:	6.57	0.89	0.42	361.57	35.71	641.55
Technology Option 1	6.84	0.77	0.39	352.41	33.64	672.12
Technology Option 2	6.76	0.81	0.40	358.62	29.52	702.64

Result: After completion of two years study it has been concluded by the farmers that both Technology Option 1 & 2 are better than sole brinjal crop. Both the crop has separate positive side over sole brinjal crop; cabbage gives an early return, while chilli gives an return at the end of the brinjal crop.

OFT-6 (Plant Protection)

1.	Title of On farm Trial	Assessment of profitability of Betelvine (<i>Piper betle</i>) cultivation through management of collar rot (<i>Sclerotium rolfsii</i>) disease by application of home produced <i>Trichoderma sp.</i> in the coastal South 24 Parganas						
2.	Problem diagnosed	Low productivity of Betelvine due to fungal collar rot						
3.	Details of technologies selected for refinement (Mention either Assessed or Refined)	<p>Farmer practice: Soil drenching with copper oxy-chloride @ 4g/L + Need based foliar spray of Carbendazim + Mancozeb @ 2g/L</p> <p>Technology Option 1: Soil treatment with Taglife (<i>Trichoderma harzianum</i>) (@ 10 kg/ha) + soil drench with Taglife* @ 5g/L at 30 days interval + foliar spray with Taglife* @ 5g/L at 30 days interval</p> <p>Technology Option 2: Soil treatment with home produced <i>Trichoderma harzianum</i> (@ 10 kg/ha) + soil drench with home produced <i>Trichoderma harzianum</i> @ 5g/L at 30 days interval + foliar spray with home produced <i>Trichoderma harzianum</i> @ 5g/L at 30 days interval</p>						
4.	Source of Technology	<ol style="list-style-type: none"> National Institute of Plant Health Management (NIPHM), Hyderabad: On-farm Mass Production of <i>Trichoderma</i>, <i>Plant Health News Letter</i>, Vol 4, Issue 2, April-June, 2014. RAKVK, Nimpith: Project report on “On-farm mass production of microbial pesticides”, <i>RKVY funded project</i>, 2015-16 Brahmankar, S. B., Dange, N. R. and Tathod, D. G. (2011). Integrated management of betel vine wilt in Vidarbha, <i>International Journal of Plant Protection</i>, 4(1): 146-147 						
5.	Production system and thematic area	Horticulture based production system Integrated Disease Management						
6.	Performance of the Technology with performance indicators	Technology option	Disease incidence (% of wilted plants)	Yield (lakh leaves/ha)	Cost of cultivation (Rs. in lakh/ha)	Gross return (Rs. in lakh/ha)	Net return (Rs. in lakh/ha)	BC ratio
		FP	17.4	22.23	1920000	3112200	1192200	1.62
		TO-1	7.1	27.14	1825000	3799600	1974600	2.08
		TO-2	5.7	28.4	1792000	3976000	2184000	2.22
7.	Final recommendation for micro level situation	The trial needs to be conducted for one more year for final recommendation						
8.	Constraints identified and feedback for research	<ul style="list-style-type: none"> Maintenance of the culture Use of high dose of chemical fertilizers and fungicides at close interval 						
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 the disease incidence and severity in the village, both the beneficiaries as well as the non-beneficiaries took interest in the trial. The OFT was well managed by the beneficiaries themselves.						

Thematic area: Integrated Disease Management

Problem definition: Low productivity of betelvine due to collar rot caused by *Sclerotium rolfsii*

Technology assessed: Assessment of biological and chemical approach of collar rot (*Sclerotium rolfsii*) management in betelvine (*Piper betle*) in coastal South 24 Parganas

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

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

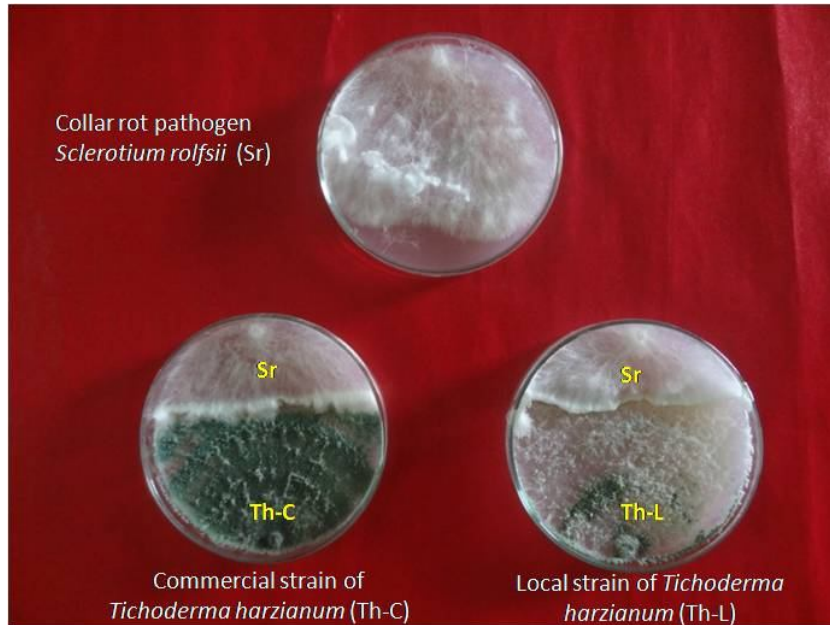
In the present trial, two source of *Trichoderma harzianum* were used to compare their relative efficacy against the farmers practice. The talc formulation of *Trichoderma harzianum* available in the local market (trade name: Taglife, Manufactured and marketed by Tropical Agrosystem India Pvt. Ltd.)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

Table:

Technology option	No. of trials	Disease incidence (% of wilted plants)	Yield (lakh leaves/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	10	17.4 (10.02)*	22.23	1920000	3112200	1192200	1.62
Technology Option – 1		7.1 (4.07)	27.14	1825000	3799600	1974600	2.08
Technology Option – 2		5.7 (3.27)	29.80	1792000	3976000	2184000	2.22
CD (0.05)		1.23	2.40				
SEM (±)		0.42	0.81				

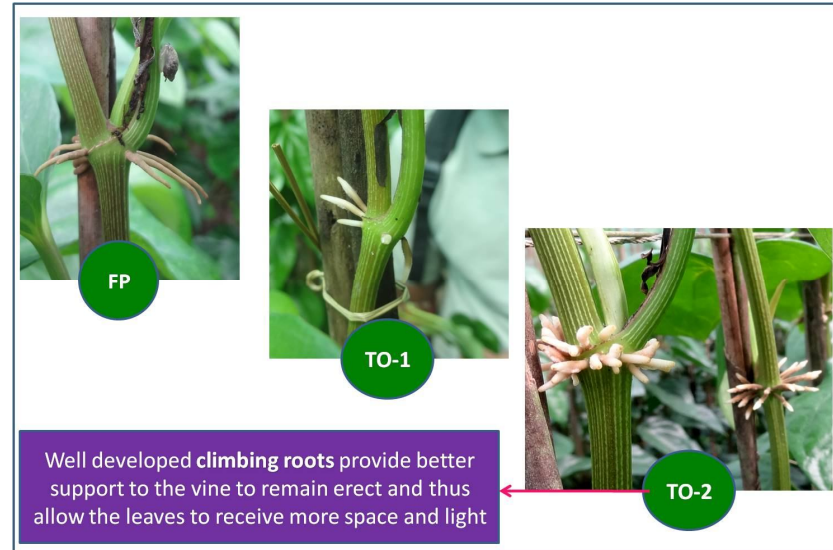
* Angular transformed value (Arcsine transformation in degrees)

Results: Treatment with *Trichoderma* in both the technological options provided better protection to the crop over the farmers practice. Interestingly, there was no statistical difference between the disease incidence (%) in technology option-1 and in technology option-2. But the yield was more in technology option-2. This may be due to some growth promoting effect of the native strain of the *Trichoderma*, used in the technology option-2. Also the cost of cultivation was less in technology option-2, as the *Trichoderma* was prepared by the farmers themselves, involving least expenditure in plant protection. The benefit-cost ratio was highest in this option (technology option-2).



Impact of use of home produced local strain of *Trichoderma harzianum*

Parameters	FP	TO-1	TO-2
Climbing root (number/node)	12.3	11.4	19.9
Inter-nodal length (cm)	7.98	8.35	8.76
Vine thickness (mm)	6.48	7.88	8.16
No. of primary branches per vine	6.8	8.9	10.2
Leaf shape index (Length/width)	1.18	1.16	1.12
Leaf thickness (mm)	0.22	0.26	0.25
Leaf weight (g)	3.53	4.33	4.29
Leaf chlorophyll content (SPAD)	37.8	38.1	41.05
Yield (lakh leaves per ha)	22.23	27.14	29.80



Well developed climbing roots provide better support to the vine to remain erect and thus allow the leaves to receive more space and light

OFT-7 (Plant Protection)

1.	Title of On farm Trial	Assessment of profitability of bottle gourd (<i>Lagenaria siceraria</i>) cultivation by managing of <i>Fusarium</i> Wilt through biofumigation approach in coastal South 24 Parganas																																								
2.	Problem diagnosed	Low productivity of bottle gourd due to fungal wilt																																								
3.	Details of technologies selected for assessment (Mention either Assessed or Refined)	<p>Farmer practice: No soil treatment + No seed treatment + Need based foliar spray of Carbendazim 50WP @ 1g/L</p> <p>Technology Option 1: Soil treatment with <i>Trichoderma viride</i> (@ 2.5 kg/ha) + Seed treatment with <i>T. viride</i> + soil drench with <i>T. viride</i> @ 5g/L at 30 days interval</p> <p>Technology Option 2: <i>Brassica juncea</i> green manuring + Seed treatment with Carbendazim 50WP@ 2g/kg of seeds + Soil drench with Carbendazim 50WP@ 1g/L at 15 days interval</p> <p>Technology Option 3: <i>Brassica juncea</i> green manuring + Soil treatment with <i>Trichoderma viride</i> @ 2.5 kg/ha + Seed treatment with <i>T. viride</i> + soil drench with <i>T. viride</i> @ 5g/L at 30 days interval (Fertilizer: 100:50:50 Kg NPK/ha, Spacing: 2m x 2m, Variety: Jora Bota, same for all treatments)</p>																																								
4.	Source of Technology	Relevante, C.A. and Cumagun, C.J.R. 2013. Control of <i>Fusarium</i> wilt in bittergourd and bottlegourd by biofumigation using mustard var. Monteverde. Archives of Phytopathology and Plant Protection, Volume 46, Issue 6, pages 747-753																																								
5.	Production system and thematic area	Horticulture based production system Integrated Disease Management																																								
6.	Performance of the Technology with performance indicators	<table border="1"> <thead> <tr> <th>Technology option</th> <th>Disease incidence (% of wilted plants)</th> <th>Yield (q/ha)</th> <th>Cost of cultivation (Rs./ha)</th> <th>Gross return (Rs./ha)</th> <th>Net return (Rs./ha)</th> <th>BC ratio</th> </tr> </thead> <tbody> <tr> <td>FP</td> <td>23.1</td> <td>230.1</td> <td>79500</td> <td>161070</td> <td>81570</td> <td>2.03</td> </tr> <tr> <td>TO-1</td> <td>10.1</td> <td>263.1</td> <td>78100</td> <td>184170</td> <td>106070</td> <td>2.36</td> </tr> <tr> <td>TO-2</td> <td>5.9</td> <td>297.8</td> <td>87300</td> <td>208460</td> <td>121160</td> <td>2.39</td> </tr> <tr> <td>TO-3</td> <td>4.2</td> <td>311.7</td> <td>85600</td> <td>218190</td> <td>132590</td> <td>2.55</td> </tr> </tbody> </table>	Technology option	Disease incidence (% of wilted plants)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs./ha)	Net return (Rs./ha)	BC ratio	FP	23.1	230.1	79500	161070	81570	2.03	TO-1	10.1	263.1	78100	184170	106070	2.36	TO-2	5.9	297.8	87300	208460	121160	2.39	TO-3	4.2	311.7	85600	218190	132590	2.55					
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TO-3	4.2	311.7	85600	218190	132590	2.55																																				
7.	Final recommendation for micro level situation	Soil bio-fumigation with mustard and use of <i>Trichoderma</i> as per the technology option-3 provides the best management of <i>Fusarium</i> wilt in Bottle Gourd in Coastal south 24 Parganas																																								
8.	Constraints identified and feedback for research	Late release of land after harvesting of <i>Kharif</i> Paddy provides limits the scope of growing Mustard for bio-fumigation in large scale.																																								
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 the disease incidence and severity in the village, both the beneficiaries as well as the non-beneficiaries took interest in the trial. The OFT was well managed by the beneficiaries themselves.																																								

Thematic area: Integrated Disease Management

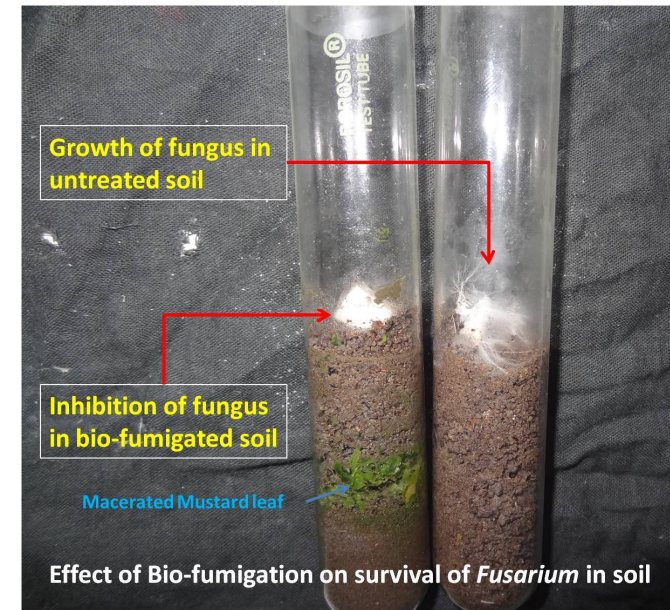
Problem definition: Low productivity of bottle gourd due to *Fusarium* Wilt

Technology assessed: Assessment of biological and chemical approach of *Fusarium* Wilt management in bottle gourd (*Lagenaria siceraria*) in coastal South 24 Parganas.

Fusarium oxysporum f. sp. lagenariae, a soil borne fungi is found to be responsible for Wilt in Bottle gourd in South 24 Parganas. The symptoms start as drooping of the green leaves and wilting of the respective vines. Often, one or two vines start wilting though the others are still live. Gradually the entire plant withers. Wilting symptom is also conjugated with golden yellow coloured gum exudation on the stem. Later, the site of gum exudation turns brownish to black and eventually dry up. Pale white mycelia growth with pinkish sporulation is observed over the dried stem. The cross section of the wilted stem show brownish discolouration of vascular bundle. *Fusarium*, being a soil borne, opportunistic fungi, is very difficult to remove from soil. The fungi infect the vascular bundle of the plant through injured root. The injury may be mechanical (during uprooting of seedlings from seedbed or during intercultural operations) or biological (due to nematode attack). There are reports of the pathogen being seed borne also. Mere chemical control neither can keep the pathogen away from the roots in soil for long term, nor can eliminate it from the soil in a cost effective manner. At the same, it is impossible to cure a plant showing wilting symptom since the damage to the vascular bundle is irreparable. So, foliar spray with chemical fungicides does not give a full proof protection against or control over the pathogen. Once the disease is established in a field, the farmer has to drop the crop for next two to three years or more. Bottle gourd is an important vegetable of the district grown during rabi-summer season. Due to inadequate knowledge about the disease, farmers spend lots of money behind indiscriminate fungicidal spray.

To address this problem, KVK, South 24 Parganas has conducted this trial with an alternative management strategy. The principle of bio-fumigation was used for eradication of the pathogen from soil. At the same time biological control was used as preventive measure.

Mustard (*Brassica juncea*) plant has been used here as source of biofumigant. Mustard was broadcasted in the field and incorporated to the soil after 30 days of sowing. The broken and decomposing tissue of mustard produces volatile isothiocyanate compounds into the soil that has



antifungal property. On the other hand, soil application, seed treatment and soil drenching of *Trichoderma viride* helps to prevent the infection of Fusarium to the seed and the roots.

Results:

Technology option	No. of trials	Disease incidence (% of wilted plants)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer's practice	10	23.10 (13.35)*	230.10	79500	161070	81570	2.03
Technology Option – 1		10.10 (5.79)	263.10	78100	184170	106070	2.36
Technology Option – 2		5.90 (3.38)	297.80	87300	208460	121160	2.39
Technology Option - 3		4.20 (2.41)	311.70	85600	218190	132590	2.55
CD (0.05)		1.72	6.46				
SEM (\pm)		0.59	2.22				

* Angular transformed value (Arcsine transformation in degrees)

The technology option -3 (*Brassica juncea* green manuring + Soil treatment, Seed treatment and soil drench with *Trichoderma viride*) gave better result over the other options. The disease incidence was least in this treatment. This helped to decrease the crop loss. The net return was highest in this option. The BC ratio was also higher.

OFT-8 (Fishery)

1.	Title of On farm Trial	Assessment of the profitability from monosex tilapia farming in South 24 Parganas district through supplementation with periphyton as natural feed and reduced feed input
2.	Problem diagnosed	Low profitability from monosex tilapia farming due to high feed cost
3.	Details of technologies selected for assessment (Mention either Assessed or Refined)	<p>Farmers practice : Culture of monosex male tilapia in freshwater ponds (Unit area: 0.065 ha) with usual package of practice including pelleted feed</p> <ul style="list-style-type: none"> i. Pond preparation: Organic manure @10,000kg/ha, lime@ 400kg/ha, mahua oil cake@250ppm ii. Stocking of monosex male tilapia @ 60,000/ha iii. Post stocking management: Monthly organic manuring with cow dung @1000kg/ha, lime@30kg/ha, daily application of pelleted feed thrice daily as per demand, monthly netting <p>Technology option 1: F.P.+ 40% coverage of the water area with nylon net for periphyton growth Technology option 2: F.P.+ 50% coverage of the water area with nylon net for periphyton growth</p>
4.	Source of Technology	<p>i) Comparison of periphyton grown on different substrates as food for organic tilapia culture, Ana Milstein, Yakov Peretz and Sheenan Harpaz, <i>The Israeli Journal of Aquaculture – Bamidgeh</i>, 60(4),2008, 243-252.</p> <p>ii) Culture of organic tilapia to market size in periphyton based ponds with reduced feed inputs, Ana Milstein, Yaacov Peretz and Sheenan Harpaz, <i>Aquaculture Research</i>, 2009, 40, 55-59.</p>
5.	Production system and thematic area	Fish based small production system / Diversified fish farming
6.	Performance of the Technology with performance indicators	<p>Performance of the technology:The main aim of this OFT was to find out the possibility of increasing profit in monosex tilapia farming because it involves huge investment towards the cost of pelleted feed available in the market. It is well established that tilapia being an omnivorous fish, was found to substantially feed on natural feed particularly periphyton. As such, in the two technology options, the quantity of feed is reduced by 40% over that applied in the farmers practice. To compensate the reduced feed ration, substratum for the growth of periphyton was provided in the two options. In technology option 1, the coverage provided for periphyton growth was equivalent to 40% of the surface area while in technology option 2 it was 50%. This was done to find out the most suitable periphyton coverage for the fish.</p> <p>It was observed that with full allowance of feed, the production was highest in the farmers practice but at the same time net return was lowest due to exceptionally high investment towards feed cost. On the other hand with a reduced feed input in the two technology options, though the production was only about 10%-13% lower than the farmers</p>

		practice, the net return and the BC ratio was much higher. Of the two technology options, option 2 gave better result because it seems that the increased coverage for periphyton growth might have a positive bearing towards the growth of fish. Performance indicators: pH, weight of fish, yield, survivality, saving from feed cost, BC ratio
7.	Final recommendation for micro level situation	50% coverage of the water area with vertical nylon net frames for periphyton growth for the omnivore fish
8.	Constraints identified and feedback for research	Cheaper but durable substratum for periphyton growth is required for mass scale adoption
9.	Process of farmers participation and their reaction	Identification of the problem by farmers followed by designing of the trial jointly by researcher and farmer and managed by farmer

Thematic area: Diversified fish farming

Problem definition: Low profitability from monosex tilapia farming due to high feed cost

Technology assessed: Assessment of the profitability from monosex tilapia farming in South 24 Parganas district through supplementation with periphyton as natural feed and reduced feed input

Farmers practice : Culture of monosex male tilapia in freshwater ponds (Unit area: 0.065 ha) with usual package of practice including pelleted feed

- i. Pond preparation: Organic manure @ 10,000kg/ha, lime@ 400kg/ha, mahua oil cake@ 250ppm
- ii. Stocking of monosex male tilapia @ 60,000/ha
- iii. Post stocking management: Monthly organic manuring with cow dung @ 1000kg/ha, lime@ 30kg/ha, daily application of pelleted feed thrice daily as per demand, monthly netting

Technology option 1: F.P. with 60% feed + 40% coverage of the water area with nylon net for periphyton growth

Technology option 2: F.P. with 60% feed + 50% coverage of the water area with nylon net for periphyton growth

Table:

Technology option	No. of trials	Unit area (ha)	Yield component				Survivality (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
			Initial length of fish (mm)	Final length of fish (mm)	Initial weight of fish (gm)	Final weight of fish (gm)						
Farmers practice	7	0.065	25	220	0.5	175	70	73.50	517200.00	808500.00	291300.00	1.56
Technology option 1		0.065	25	205	0.5	155	68	63.24	332309.00	695640.00	363331.00	2.09
Technology option 2		0.065	25	215	0.5	160	70	67.20	344664.00	739200.00	394536.00	2.14
SEM _±			-	1.07	-	1.51	-	0.74	-	-	-	-
CD (p=0.05)			-	2.26	-	3.20	-	1.56	-	-	-	-

N.B. 1. Cost of cultivation in **Farmers practice** involves the cost of pelleted feed (Rs.382200/-), monosex tilapia seed (Rs.60000/-) and pond preparation, post stocking management, etc.(75000/-)

2. Cost cultivation in **Technology option 1** involves cost of pelleted feed (Rs.197309/-), monosex tilapia seed (Rs.60000/-) and pond preparation, post stocking management, etc.(75000/-)

3. Cost cultivation in **Technology option 2** involves cost of pelleted feed (Rs.209664/-), monosex tilapia seed (Rs.60000/-) and pond preparation, post stocking management, etc.(75000/-)

4. Gross return is calculated considering the sale price as Rs.110/- per kilogram of fish



Results: The main aim of this OFT was to find out the possibility of increasing profit in monosex tilapia farming because it involves huge investment towards the cost of pelleted feed available in the market. It is well established that tilapia being an omnivorous fish, was found to substantially feed on natural feed particularly periphyton. As such, in the two technology options, the quantity of feed is reduced by 40% over that applied in the farmers practice.

To compensate the reduced feed ration, substratum for the growth of periphyton was provided in the two options. In technology option 1, the



coverage provided for periphyton growth was equivalent to 40% of the surface area while in technology option 2 it was 50%. This was done to find out the most suitable periphyton coverage for the fish.

It was observed that with full allowance of feed, the production was highest in the farmers practice (73.50q/ha) but at the same time net return and BC ratio was lowest (Rs.291300.00 & 1.56) due to exceptionally high investment towards feed cost. On the other hand with a reduced feed input in the two technology options, though the production was less by only 10.26q in option 1 and 6.30q in option 2, than the farmers practice, the net return and the BC ratio was much higher (Rs. 363331.00 & 2.09 and Rs. 394536.00 & 2.14 respectively).



Of the two technology options, option 2 gave better result because it seems that the increased coverage for periphyton growth might have a positive bearing towards the growth of fish. This fact alongwith a better survivality rate indicates that **technology option 2 may be recommended for large scale adoption.**

N.B. Studies revealed that periphyton cover of less than 40% results in insignificant periphyton growth not sufficient to compliment feeding of the fish while a coverage of over 50% will result in reduced space for fish movement & hence reduced growth and may also contribute to eutrophication of the pond.

OFT-9(Fishery)

1.	Title of On farm Trial	Assessment of the growth performance of climbing perch, <i>Anabas testudineus</i> (koi) in ponds of South 24 Parganas district by feeding with formulated homemade feed
2.	Problem diagnosed	Low profitability from koi culture due to high feed cost
3.	Details of technologies selected for assessment (Mention either Assessed or Refined)	<p>Farmers practice : Culture of climbing perch, <i>Anabas testudineus</i> (koi) in domestic ponds (Unit area: 0.065 ha) with commercial pellet feed and usual package of practice like : i)Pond preparation: Organic manure @ 10,000kg/ha, lime@ 400kg/ha, mahua oil cake@250ppm, ii) Stocking of koi @ 60,000/ha, iii)Post stocking management :Monthly organic manuring with cow dung@1000kg/ha, lime@30kg/ha, feeding with commercial feed @3% body weight, monthly netting</p> <p>Technology option 1: F.P.+ replacement of feed with HF 1 Technology option 2: F.P.+ replacement of feed with HF 2 (N.B. HF1 =Groundnut oil cake – 15%,Soyabean oil cake – 15%, Rice bran – 50%, Fish meal – 15%, Vegetable oil – 3%, Vitamin & mineral – 2% HF2 =Groundnut oil cake – 10%,Soyabean oil cake – 20%,Rice bran – 40%, Fish meal – 25%,Vegetable oil – 3%,Vitamin & mineral – 2%)</p>
4.	Source of Technology	Carp feed at farm site, S.C.Rath, Training manual on <i>Summer school on “Aquaculture diversification towards boosting pond productivity and farm income”</i> , 8-28 July, 2015, 137-145
5.	Production system and thematic area	Fish based small production system / Diversified fish farming
6.	Performance of the Technology with performance indicators	<p>Performance of the technology: The main objective of this OFT was to increase profitability in farming of climbing perch, by reducing feed cost, as it involves huge investment towards the cost of commercially available pelleted feed. In this direction, two homemade feed (HF1 and HF2), with the same ingredients but with different percentage compositions, were prepared for application in the two technology options. The cost analysis of the two feed revealed that HF1 with 28% protein costs Rs.29.55/kg while HF2 with 33% protein costs Rs.33.30/kg. In comparison, the average cost of a commercial pelleted feed (28-30% protein) for climbing perch costs Rs.45.00/kg. It is well established that the protein requirement of this fish varies from 28-45%.</p> <p>It was observed that with the commercial feed usually applied by the farmers, the production was modest in the farmers practice but the cost of cultivation was also very high mainly due to the high cost of commercial feed. On the other hand in Technology option 2, where the feed contained 33% protein, the yield was higher than the farmers practice and the net return was much more due to less cost of the homemade feed 2 in comparison to the commercial feed. The feed cost was lowest in technology option 1, but the growth and hence the yield was also found to be the lowest which may be due to low protein content in homemade feed 1.</p> <p>Parameters: Yield, length of fish, weight of fish, survivality, BC ratio</p>

7.	Final recommendation for micro level situation	HF2-33% protein comprising of Groundnut oil cake – 30%,Soyabean oil cake – 20%,Rice bran – 35%, Fish meal – 10%,Vegetable oil – 3%,Vitamin & mineral – 2%
8.	Constraints identified and feedback for research	Cheaper but durable substratum for periphyton growth is required for mass scale adoption
9.	Process of farmers participation and their reaction	Identification of the problem by farmers followed by designing of the trial jointly by researcher and farmer and managed by farmer

Thematic area: **Diversified fish farming**

Problem definition: Low profitability from koi culture due to high feed cost

Technology assessed: Assessment of the growth performance of climbing perch, *Anabas testudineus* (koi) in ponds of South 24 Parganas district by feeding with formulated homemade feed

Farmers practice : Culture of climbing perch, *Anabas testudineus* (koi) in domestic ponds (Unit area: 0.065 ha) with commercial pellet feed and usual package of practice like : i)Pond preparation: Organic manure @10,000kg/ha, lime@ 400kg/ha, mahua oil cake@250ppm, ii) Stocking of koi @ 75,0000/ha, iii)Post stocking management :Monthly organic manuring with cow dung@1000kg/ha, lime@30kg/ha, feeding with commercial feed @3% body weight, monthly netting

Technology option 1: F.P.+ replacement of feed with HF 1

Technology option 2: F.P.+ replacement of feed with HF 2

(N.B. **HF1** =Groundnut oil cake – 20%,Soyabean oil cake – 25%, Rice bran – 40%,Fish meal – 10%, Vegetable oil – 3%, Vitamin & mineral – 2%

HF2 =Groundnut oil cake – 30%,Soyabean oil cake – 20%,Rice bran – 35%, Fish meal – 10%,Vegetable oil – 3%,Vitamin & mineral – 2%)

Technology option	No. of trials	Unit area (ha)	Yield component				Survivality (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
			Initial length of fish (mm)	Final length of fish (mm)	Initial weight of fish (gm)	Final weight of fish (gm)						
Farmers practice	7	0.065	28	140	1.0	120	68	61.20	645720.00	1224000.00	578280.00	1.89
Technology option 1		0.065	28	132	0.9	100	65	48.75	538952.00	975000.00	436048.00	1.81
Technology option 2		0.065	28	138	0.9	115	70	60.37	592271.00	1207400.00	615129.00	2.04
SEm±		-	-	1.33	-	3.47	0.83	3.70	-	-	-	-
CD (p=0.05)		-	-	2.81	-	7.33	NS	7.84	-	-	-	-

N.B. 1. Cost of cultivation in **Farmers practice** involves the cost of pelleted feed (Rs.495720/-), climbing perch seed (Rs.75000/-) and pond preparation, post stocking management, etc.(75000/-)

2. Cost cultivation in **Technology option 1** involves cost of homemade feed 1 (Rs.388952/-), climbing perch seed (Rs.75000/-) and pond preparation, post stocking management, etc.(75000/-)
3. Cost cultivation in **Technology option 2** involves cost of homemade feed 2 (Rs. 442271/-), climbing perch seed (Rs.75000/-) and pond preparation, post stocking management, etc.(75000/-)
4. Gross return is calculated considering the sale price as Rs.200/- per kilogram of fish

Results: The main objective of this OFT was to increase profitability in farming of climbing perch, by reducing feed cost, as it involves huge investment towards the cost of commercially available pelleted feed. In this direction, two homemade feed (HF1 and HF2), with the same ingredients but with different percentage compositions, were prepared for application in the two technology options.



varies from 28-45%.

The cost analysis of the two feed revealed that HF1 with 28% protein costs Rs.29.55/kg while HF2 with 33% protein costs Rs.33.30/kg. In comparison, the average cost of a commercial pelleted feed (28-30% protein) for climbing perch costs Rs.45.00/kg. It is well established that the protein requirement of this fish varies from 28-45%.

It was observed that with the commercial feed usually applied by the farmers, the production was highest (61.20q/ha) in the farmers practice but the cost of cultivation was also very high (Rs.645720/-) mainly due to the high cost of commercial feed (Rs.495720/-). On the other hand in Technology option 2, where the feed contained 33% protein, although the yield was lower (60.37q/ha) than the farmers practice, the net return (Rs.615129/-) and the BC ratio (2.04) was much more due to less cost of the homemade feed 2 (Rs.442271/-) in comparison to the commercial feed. The feed cost was lowest in technology option 1 (Rs.388952/-), but the growth and hence the yield was also found to be the lowest (48.75q/ha) which may be due to low protein content in homemade feed 2.

Hence, of the two technology options, **option 2 may be recommended for large scale adoption.**



OFT-10 (2016-17) (Animal Husbandry)

1.	Title of On farm Trial	Assessment of the effect of soft music on milk production in dairy cows
2.	Problem diagnose	Milk production in the organized dairy as well as small dairy unit is not upto the mark and still there was no such NO COST technology for augmenting better milk production.
3.	Details of technologies selected for assessment/refinement	Farmers' practice: Cross breed cattle (maintained with scheduled deworming and supplementation of oral calcium and other mineral mixture @ 60 ml daily and 60 gms daily respectively every month interval during entire lactation period) milched twice daily with some noise created due to overcrowding/ sound of utensils or sound of milking machine. Technology option-1: Cross breed cattle (maintained with scheduled deworming and supplementation of oral calcium and other mineral mixture @ 60 ml daily and 60 gms daily respectively every month interval during entire lactation period) milched twice daily with soft music playing during the milking time only. Technology option-2: Cross breed cattle (maintained with scheduled deworming and supplementation of oral calcium and other mineral mixture @ 60 ml daily and 60 gms daily respectively every month interval during entire lactation period) milched twice daily with soft music playing from 15 minutes before milking upto complete milking.
4.	Source of Technology	Kıyıcı, J. M., Kocyigit, R. and Tuzemen, N. (2013). The effect of classical music on milk production, milk components and milking characteristics of Holstein Friesian. Journal of Tekirdag Agricultural Faculty 2013 Vol. 10 No. 3 pp. 74-81.
5.	Production system and thematic area	Livestock based production system, dairy farming
6.	Performance of the Technology with performance indicators	Quantity of milk produced, fat percentage of milk, time to complete milking, milking behavior of the animals and udder health.
7.	Final recommendation for micro level situation	Soft music playing from 15 minutes before milking upto complete milking will enhance the milk production.
8.	Constraints identified and feedback for research	Soft music may be defined in scientific term
9.	Process of farmers participation and their reaction	The trial has been set following problem identification by the farmers. From the exercise it is revealed that instrumental songs may be ear soothing and accordingly it was practiced.

Thematic area: Production management

Problem definition: Milk production in the organized dairy as well as small dairy unit is not upto the mark and still there was no such NO COST technology for augmenting better milk production.

Technology assessed:

Farmers' practice: Cross breed cattle (maintained with scheduled deworming and supplementation of oral calcium and other mineral mixture @ 60 ml daily and 60 gms daily respectively every month interval during entire lactation period) milched twice daily with some noise created due to overcrowding/ sound of utensils or sound of milking machine.

Technology option-1: Cross breed cattle (maintained with scheduled deworming and supplementation of oral calcium and other mineral mixture @ 60 ml daily and 60 gms daily respectively every month interval during entire lactation period) milched twice daily with soft music playing during the milking time only.

Technology option-2: Cross breed cattle (maintained with scheduled deworming and supplementation of oral calcium and other mineral mixture @ 60 ml daily and 60 gms daily respectively every month interval during entire lactation period) milched twice daily with soft music playing from 15 minutes before milking upto complete milking.

Milk production

Category	Average milk production (lit/day)	Percentage increase of milk production
FP	5.65	-
T1	6.46	14.33
T2	7.15	26.54

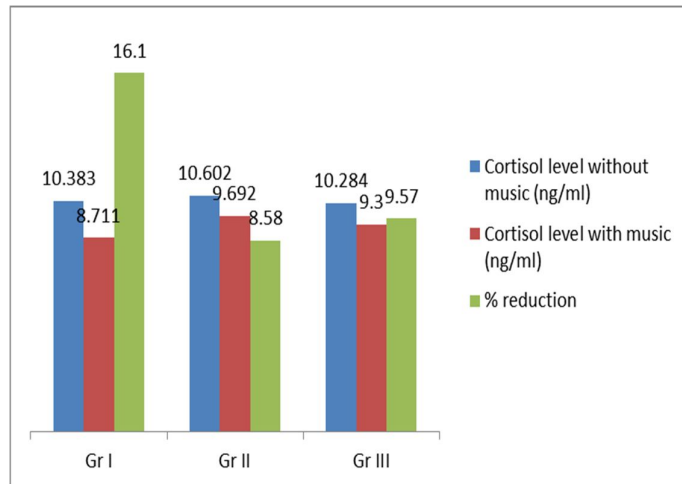
Udder health study

Parameters (over 45 days observation)- Average score (10 point)	FP	T1	T2
Udder texture (more hardness having minimum score)	6.1	7.5	7.9
Ease of milk flow (more flow more score)	6.6	8.4	8.8
Visible cast/debris/blood etc(absence of any have more score)	5.2	6.9	6.9
Udder temperature(more the temperature –lesser the score)	6.3	8.6	8.6
Perception of pain by the animals (more the pain-less the score)	5.3	9.2	9.3
50	29.5	40.6	41.5

*5 animals / treatment

Results: soft music playing from 15 minutes before milking upto complete milkin may increase the production up to 3.5% level with reduced udder disease.

Other effects of music – stress relief



OFT-11 (2016-17) (Animal Husbandry)

1.	Title of On farm Trial	Assessment of benefits of Heat Synchronization in organized dairy farm under intensive farming situation in South 24 parganas district of West Bengal.
2.	Problem diagnose	Cattle management in intensive farming situation is really an important and difficult task especially when the animals are in different productive/reproductive stages. If these animals made into same condition then management would be very easy.
3.	Details of technologies selected for assessment/refinement	<p>Farmers' practice: Dairy animals maintained (with scheduled deworming and supplementation of mineral mixture @ 60 gms daily at every month interval) and inseminated as per norms when the animals are coming to heat.</p> <p>Technology Option 1: Dairy animals maintained (with scheduled deworming and supplementation of mineral mixture @ 60 gms daily at every month interval) and heat synchronization is done by intravaginal devices and inseminated as per norms when the animals are coming to heat.</p> <p>Technology option 2: Dairy animals maintained (with scheduled deworming and supplementation of mineral mixture @ 60 gms daily at every month interval) and heat synchronization is done by oral medication and inseminated as per norms when the animals are coming to heat.</p>
4.	Source of Technology	Mary Vickers. Artificial Insemination (AI) and Oestrus Synchronization of Beef Cattle. http://beefandlamb.ahdb.org.uk/wp/wp-content/uploads/2014/07/BRP-plus-artificial-insemination090714.pdf
5.	Production system and thematic area	Livestock based production system, dairy farming
6.	Performance of the Technology with performance indicators	AI success rate, time spent in farming, Market opportunities, cost involvement and BC ratio.
7.	Final recommendation for micro level situation	Intravaginal devices are more reliable for heat synchronization programme.
8.	Constraints identified and feedback for research	Expertisation in using intravaginal dervice
9.	Process of farmers participation and their reaction	The trial has been set following problem identification by the farmers running organized dairy farms

Thematic area: Production management

Problem definition: Cattle management in intensive farming situation is really an important and difficult task especially when the animals are in different productive/reproductive stages. If these animals made into same condition then management would be very easy.

Farmers' practice: Dairy animals maintained (with scheduled deworming and supplementation of mineral mixture @ 60 gms daily at every month interval) and inseminated as per norms when the animals are coming to heat.

Technology Option 1: Dairy animals maintained (with scheduled deworming and supplementation of mineral mixture @ 60 gms daily at every month interval) and heat synchronization is done by intravaginal devices and inseminated as per norms when the animals are coming to heat.

Technology option 2: Dairy animals maintained (with scheduled deworming and supplementation of mineral mixture @ 60 gms daily at every month interval) and heat synchronization is done by oral medication and inseminated as per norms when the animals are coming to heat.

	AI success rate	Time involvement of farmer (hrs/animal)	Market opportunities (10 point scale)	Gross cost (Rs./yr.)	Gross return (Rs./yr.)	BC ratio
FP	35.2	1.3	3.7	6200	8370	1.35
TO-1	42.1	0.7	7.1	7250	15602	2.15
TO-2	38.1	1.1	6.1	6430	12622	1.96
CD (0.05)	2.01	0.42	-		-	-

Results: Heat synchronization by intravaginal devices yields maximum benefit.

OFT-12 (Home Science)

1.	Title of On farm Trial	Assessment of different methodologies for sensitization of womenfolk regarding rights and entitlements to access food and nutrition security
2.	Problem diagnosed	In south 24 pgs there is less awareness about rights and entitlements to access food and nutrition security among womenfolk. They have poor knowledge regarding the rights to food , entitlements regarding different schemes like PDS, Annapurna anatyodaya yojona, ICDS etc. due to lack of knowledge they cannot put their demands to the service providers and they are deprived from their actual privileges. Only awareness generation meeting is not effective methodology to mobilize them for demanding their own entitlements to the service provider.
3	Details of technologies selected for assessment/refinement	Traditional method - sensitization of womenfolk regarding rights and entitlements to access food and nutrition security by awareness programme for community people. Technology option-I- sensitization of womenfolk regarding rights and entitlements to access food and nutrition security through meeting and mobilization of informal mothers group. Technology option –II sensitization of womenfolk regarding rights and entitlements to access food and nutrition security through meeting and mobilization of Self help group. Meeting : Focusing the issue of rights and entitlement regarding access to fund and nutrition like PDS-entitlements, services by AWW, functioning of VHSNC (village health sanitation, nutrition committee) functioning of sub Centre of Health. Sensitization by general meeting of community score card, scoring on services available from PDS, AWW, Sub Centre, VHSNC, Interface meeting with service provider and service taker.
4.	Source of Technology	GENDER EQUALITY AND FOOD SECURITY, Women’s Empowerment as a Tool against Hunger, 2013 Asian Development Bank, https://www.wfp.org/sites/ ,
5.	Production system and thematic area	Food & nutrition security
6.	Performance of the Technology with performance indicators	Services available from ICDS, , knowledge of farm women regarding entitlements of PDS , organized meeting of VHSNC, PDS shop owner compelled to display the entitlements on board, Prepared action plan in interface meeting , follow up action plan , positive change in PDS
7.	Final recommendation for micro level situation	Technology I performs better due to the better participation of mother group than the sensitization of SHG group in Technology II. More over sensitized women groups are taking initiatives to involve shg

		groups during any problem or to take action towards any positive change. At the same time sensitized SHG groups are not so much efficient to involve the informal mother group for bringing any change in ICDS , PDS.
8.	Constraints identified and feedback for research	Service providers are reluctant to join interface meeting. Mother groups move backward due to political intervention.
9.	Process of farmers participation and their reaction	Womenfolk have organized the group meetings on their own initiatives . They have participated interface meeting actively and raised their voice against malpractices of service provider with out any intervention of male participants in case of ICDS.

Thematic area- Food and nutrition security

Problem definition: In south 24 pgs there is less awareness about rights and entitlements to access food and nutrition security among womenfolk. They have poor knowledge regarding the rights to food , entitlements regarding different schemes like PDS, Annapurna anatyodaya yojona, ICDS etc. due to lack of knowledge they cannot put their demands to the service providers and they are deprived from their actual privileges. Only awareness generation meeting is not effective methodology to mobilize them for demanding their own entitlements to the service provider.

Traditional method - sensitization of womenfolk regarding rights and entitlements to access food and nutrition security by awareness programme for community people.

Technology option-I- sensitization of womenfolk regarding rights and entitlements to access food and nutrition security through meeting and mobilization of informal mothers group.

Technology option -II sensitization of womenfolk regarding rights and entitlements to access food and nutrition security through meeting and mobilization of Self help group.

Meeting : Focusing the issue of rights and entitlement regarding access to fund and nutrition like PDS- entitlements, services by AWW, functioning of VHSNC (village health sanitation, nutrition committee) functioning of sub Centre of Health.

Sensitization by general meeting of community score card, scoring on services available from PDS, AWW, Sub Centre, VHSNC, Interface meeting with service provider and service taker.

*Extent of participation is measured by 5 point headonic scale .

Technology option	No of trial	Service available from ICDS	Service available from PDS	Extent of participation of women *					Bringing positive change	
				Conduct meeting	Preparation of action plan	Raising voice against malpractice	Community participation	Participatory monitoring	ICDS	PDS
Traditional practice	8	i)irregular Cooked food distribution ii) irregular growth monitoring	i)regular service ii)no display board	00	nil	nil	0	0	NIL	NIL
Technology 1:	8	i)regular Cooked food distribution ii) regular growth monitoring iii)informal education	i)Regular service ii)proper display of entitlements	000	0000	0000	000	000	i)regular Cooked food distribution and spot feeding i) regular growth monitoring with proper knowledge and status of children communicate to mother iii)informal education IV)meeting with mother group involving SHG and counseling of mother	i)established Extension center of PDS in remote place
Technology 2:	8	i) regular Cooked food distribution ii) regular growth monitoring	i)Regular service	00	00	000	0	00	i)regular Cooked food distribution	Nil

OFT-13 (Homer Science)

1.	Title of On farm Trial	Assessment of different tools for tracking and monitoring of malnourished children in backward villages of south 24 pgs district
2.	Problem diagnosed	Malnutrition of children is a serious problem in backward villages of south 24 pargans. Regular tracking and monitoring of malnutrition is essential to reduce the malnutrition among children. Only recording the anthropometric measurement in register with out involvement and sensitization of mother is not enough to improve their nutritional status and to track them.
3.	Details of technologies selected for assessment/refinement	Traditional method - tracking and monitoring of malnourished children in backward villages by the anganwadi worker through register and home visit Technology option –I - tracking and monitoring of malnourished children in backward villages by NGO ideas tool box and home visit Technology option –II - tracking and monitoring of malnourished children in backward villages by AKVO mobile apps and home visit NGO idea tool box is a participatory monitoring tool is modified by Nimpith KVK has been applied to track the behavioral practices of mother regarding health and nutrition. AKVO mobile apps is a new application and can be applied to collect the data regarding health and nutrition with structured questioners. It is also used to analyzed the data centrally by uploading the data in the dash board.
4.	Source of Technology	Annual review report of FHFII , WHH 2015, NGO-IDE A, Impact Toolbox Participatory Monitoring of Outcome and Impact, Bernward Causemann Eberhard Gohl, November 2009 Chakraborty, M. (2012). Development of participatory Impact assessment tool box- a new initiative of Nimpith. In Growing Agriculturally with Nimpith Kvk.Zonal Project Directorate, Zone II (ICAR), Kolkata:139-146
5.	Production system and thematic area	Food & nutrition security
6.	Performance of the Technology with performance indicators	No of children move from SAM to MAM, No of children move from SAM to normal, No of children move from MAM to normal, No of children deteriorate from MAM to SAM, Adoption of good nutritional practices by mother, Adoption of good health and hygienic practices by mother, No of Referral cases make contact with block hospitals or district hospitals, Average DDS

OFT-13 (Homer Science) Contd..

7.	Final recommendation for micro level situation	Technology I perform better than technology II as there is direct involvement of mother in the monitoring process . The knowledge index of mothers has improved through the application of NGO idea tool box in technology I which in turn helps to improve the nutritional status of children.
8.	Constraints identified and feedback for research	Children from the family of brick field labours are very irregular at ICDS centers. The children are often accompanied with their parents to the brick fields so they are unavailable during home visit at the time of data collection or monitoring.
9.	Process of farmers participation and their reaction	Mothers are actively participated in the participatory monitoring process. They are taking initiatives to motivate AWW and ASHA to conduct NGO idea tool box regularly by realizing the positive change of the malnourished children.

Thematic area- Food and nutrition security

Problem definition: Malnutrition of children is a serious problem in backward villages of south 24 pargans. Regular tracking and monitoring of malnutrition is essential to reduce the malnutrition among children. Only recording the anthropometric measurement in register with out involvement and sensitization of mother is not enough to improve their nutritional status and to track them

Traditional method - tracking and monitoring of malnourished children in backward villages by the anganwadi worker through register and home visit

Technology option -I - tracking and monitoring of malnourished children in backward villages by NGO ideas tool box and home visit

Technology option -II - tracking and monitoring of malnourished children in backward villages by AKVO mobile apps and home visit

NGO idea tool box is a participatory monitoring tool is modified by Nimpith KVK has been applied to track the behavioral practices of mother regarding health and nutrition.

AKVO mobile apps is a new application and can be applied to collect the data regarding health and nutrition with structured questioners. It is also used to analyzed the data centrally by uploading the data in the dash board.

Technology option	Trial	No of children move from SAM to MAM	No of children move from SAM to normal	No of children move from MAM to normal	No of children deteriorate from MAM to SAM	Adoption of good nutritional practices by mother (%)	Adoption of good health and hygienic practices by mother (%)	No of Referral cases make contact with block hospitals or district hospitals	Average DDS
Traditional practice	20	6	3	7	3	13%	12%	nil	2.5
Technology 1:	20	8	4	8	nil	64%	87%	3	4.8
Technology 2:	20	7	3	7	3	37%	51%	1	3.5

3.2 Achievements of Frontline Demonstrations

A. Details of FLDs conducted during the year

Details of FLDs implemented during 2016-17

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	
1.	Lentil	Enhancement of crop productivity	Varietal replacement , Rhizobium seed inoculation and use of Trichoderma &Pseudomonas during land preparation	20	20	28	77	105	Nil
2.	Greengram	Enhancement of crop productivity	Varietal replacement with PDM 84-139, Rhizobium-1.5 kg/ha (as seed treatment), Trichoderma viride & Pseudomonas fluorescense -1.5 kg/ha each along with PSB & Metarhizium – 1.5 kg/ha each applied before sowing with vermicompost	30	30	66	144	210	Nil
3.	Mustard	Enhancement of crop productivity	Variety-Pusa Mahak.Basal application of bio-fertilizer (Azotobacter) &Trichoderma and Pseudomonas with compost	20	20	43	84	127	Nil
4.	Sesame	Enhancement of crop productivity	Variety-Savitri (SWB-32-10-1) Seed: 6.0 Kg/ha , Azotobacter, PSB , Trichoderma viride & Pseudomonas fluorescense -1.5 kg/ha each along with one time boron spray	10	10	20	55	75	Nil

Details of FLDs implemented during 2017-18

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	
1.	Lentil	Enhancement of crop productivity	Varietal replacement with Moitree (WBL-77), <i>Rhizobium</i> & PSB @1.5 kg/ha each as seed inoculation and use of <i>Trichoderma viride</i> & <i>Pseudomonas fluorescence</i> @1.5 kg/ha during land preparation, one time spraying of boron @ 2 gm/lit. of water during flowering and spraying of 2% urea during pod formation	20	20	40	66	106	Nil
2.	Greengram	Enhancement of crop productivity	<i>Varietal replacement with PDM 84-139, Rhizobium & PSB @1.5 kg/ha each as seed treatment, Trichoderma viride & Pseudomonas fluorescence -1.5 kg/ha each applied before sowing with compost, use of 2% urea during pod development stage and spraying of Chlorfenapyr 10% SC @600 ml/ha</i>	30	30	77	104	181	Nil
3.	Sesame	Enhancement of crop productivity	Variety-Savitri (SWB-32-10-1) Seed: 6.0 Kg/ha, <i>Trichoderma viride</i> & <i>Pseudomonas fluorescence</i> -1.5 kg/ha each applied before sowing with compost, along with spraying of Chlorfenapyr 10% SC @600 ml/ha and one time boron spray during flowering	10	10	25	28	53	Nil

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil (Kg/ha)			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P ₂ O ₅	K ₂ O					
Lentil, 2016-17	Rabi	Rainfed	Clay Clay-loam	235.4	37.7	416.3	Kharif Paddy	2 nd week of December'16	2 nd week of March '17		
Greengram, 2016-17	Summer	Rainfed	Clay and Clay-loam	228.4	36.7	409.1	Kharif Paddy	Last wk. of January'17	2 nd week of April '17		
Mustard, 2016-17	Rabi	Irrigated	Clay-loam	241.5	33.4	427.6	Kharif Paddy	1 st wk. of December'16	2 nd wk. of March'17		
Sesame, 2016-17	Summer	Irrigated	Clay-loam	229.2	28.6	389.7	Kharif Paddy	1 st wk. of February'17	1 st wk. of May'17		
Lentil, 2017-18	Rabi	Rainfed	Clay Clay-loam	237.3	32.3	429.4	Kharif Paddy	2 nd week of January'18	1 st week of April '18		
Greengram, 2017-18	Summer	Rainfed	Clay and Clay-loam	231.5	30.4	387.7	Kharif Paddy	1 st wk. of February'18	Started by last week of April '18		
Sesame, 2017-18	Summer	Irrigated	Clay-loam	241.7	34.6	411.8	Kharif Paddy	2 nd wk. of February'18	Started by 2 nd wk. of May'18		

Performance of FLD

Oilseeds:

Frontline demonstrations on oilseed crops (CFLD), 2016-17

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
Mustard	Enhancement of crop productivity	Variety-Pusa Mahak.Basal application of bio-fertilizer (Azotobacter) &Trichoderma and Pseudomonas with compost Local chek: Variety – Bhagirathi	127	20	8.46	6.87	23.14	26865	40300	13435	1.50	24900	33480	8580	1.34
Sesame	Enhancement of crop productivity	Variety-Savitri ,Seed: 6.0 Kg/ha, <i>Trichoderma viride</i> & <i>Pseudomonas fluorescence</i> -1.2 kg/ha each, PSB & PMB- 2.0 kg/ha each Local chek: Variety – B-67	75	10	9.42	8.39	12.27	22262.00	37680.00	15418.00	1.69	19840	31120	11280	1.56

* 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

Frontline demonstrations on oilseed crops (CFLD), 2017-18

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
Sesame	Enhancement of crop productivity	Variety-Savitri (SWB-32-10-1) Seed: 6.0 Kg/ha, Trichoderma viride & Pseudomonas fluorescense -1.5 kg/ha each applied before sowing with compost, along with spraying of Chlorfenapyr 10% SC @600 ml/ha and one time boron spray during flowering Local chek: Variety – B-67	53	10	The crop is in pod development stage. Harvesting may be started by 2 nd wk. of May' 18										

Pulses:

Frontline demonstration on pulse crops(CFLD), 2016-17

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
Lentil	Enhancement of crop productivity	Varietal replacement , Rhizobium seed inoculation and use of Trichoderma & Pseudomonas during land preparation Local chek: Variety –B-77	20	105	6.47	6.15	5.20	23622	36520	12898	1.54	23040	33825	10785	1.47
Greengram	Enhancement of crop productivity	Varietal replacement with PDM 84-139, Rhizobium-1.5 kg/ha (as seed treatment), Trichoderma viride & Pseudomonas fluorescense -1.5 kg/ha each along with PSB & Metarhizium – 1.5 kg/ha each applied before sowing with vermicompost Local chek: Variety – Choiti Moong	210	30	8.77	6.47	35.54	21540.00	35080.00	13540.00	1.62	19837.00	30000.00	10243.00	1.51

Frontline demonstration on pulse crops (CFLD), 2017-18

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
Lentil	Enhancement of crop productivity	Varietal replacement with Moitree (WBL-77), <i>Rhizobium</i> & PSB @1.5 kg/ha each as seed inoculation and use of <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> @1.5 kg/ha during land preparation, one time spraying of boron @ 2 gm/lit. of water during flowering and spraying of 2% urea during pod formation Local chek: Variety -B-77	20	106	8.62	7.16	20.39	30273	49996	19723	1.65	26250	41528	14778	1.58
Greengram	Enhancement of crop productivity	Varietal replacement with PDM 84-139, <i>Rhizobium</i> & PSB @1.5 kg/ha each as seed treatment, <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> -1.5 kg/ha each applied before sowing with compost, use of 2% urea during pod development stage and spraying of Chlorfenapyr 10% SC @600 ml/ha Local chek: Variety - Choiti Moong	181	30	The crop is in maturity stage. Harvesting will be started by the end of April,2018.										

Crop	Thematic area	Name of the technology demonstrate-ed	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	Dem o	Check	Gross Cost	Gross Return	Net Return	BC R	Gross Cost	Gross Return	Net Return	BCR
Chilli	IPM	Management of Chilli leaf curl disease (Seed treatment with Thiamethoxam and <i>Trichoderma</i> , seedling dip in Imidacloprid, mosquito net covered seedbed, need based spraying with neem oil, fipronil and difenthiuron, other operations same as farmers field)	15	0.6	116.67	81.33	43%	Thrips (no./twig)	0.17	0.54	187533	583350	395817	3.11	182533	406650	224117	2.23
								Yellow mite (no./leaf)	2.6	5.1								
								Whitefly (no./leaf)	1.2	2.9								
								Leaf curl (PDI)	6.8	24.3								
Bitter gourd	Biological control	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>)	67	2.68	364.2	283.6	28%	Wiltng (PDI)	4.48	17.91	202985	728400	525415	3.59	207015	567200	360185	2.74

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					
Chilli	Rabi - Summer	Irrigated	Clay loam	175.6	44.8	481.9	Kharif paddy	Sowing: 2 nd week of September, 2017 Transplanting: 4 th week of October	February, 2017	452	38
Bittergourd	Kharif	Irrigated	Clay loam	167.8	43.2	495.2	Chilli	1 st week of May, 2017	September, 2017	1492	68



Seed bed covered with net to prevent whitefly from transmitting leafcurl virus to chilli seedlings



Gopal Naskar, S/o: Rabin Naskar earned Rs. 35000/- from 15 Cottah of his Chilli demonstration plot



FLD on Bacterial Wilt Management in Bitter Gourd

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)			
					Demonstration	Check		Para-meter	Dem o	Chec k	Gross Cost	Gross Return	Net Return	BCR	Gross Cost	Gross Return	Net Return	BCR
Kharif Onion	Introduction of new crop	Introduction of new crop Kharif Onion (Var. Agri Found dark Red) for better profitability	48 (SC 21; ST 1)	1 ha	163.8	Fallow	-	Bulb diameter	4.9 cm	-	131200	332750	201550	2.54	-	-	-	-
								% of marketable bulb	79.3									
Cassava	Introduction of new crop	Introduction of new crop Cassava in backyard system for better profitability	20 (SC 13; ST 2)	0.5 ha	432.2	Fallow	-	Root length	32.7 cm	-	39300	121400	82100	3.09	-	-	-	-
								Yield per plant	5.3 kg									
Pointed Gourd	Yield improvement through pollination management	Introduction of male plant in the conventional pointed gourd cultivation field	22 (SC 5)	1 ha	236.4	182.5	29.53	Fruit length	8.1 cm	6.5 cm								
								Fruit Weight	30.2 g	23.4 g	96300	277770	181470	2.88	95700	209875	114175	2.19

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					
Kharif Onion	Kharif	RF	Sandy Loam	286.3	39.8	496.2	Okra	02.09.17	23.12.17	624	28
Cassava	Kharif	RF	Clay Loam	238.4	38.1	596.2	Fallow	21.6.17	29.12.17	1638	71
Pointed Gourd	Rabi	Irrigated	Clay Loam	311.2	31.5	471.8	Paddy	01.02.18	28.03.18	-	-

* 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

Livestock

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

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 management	Pekin duck farming	32	32	White pekin duck	Desi poultry birds	-	-	-	21000.00 (100 bird unit)	44400.00	23400.00	2.11	13500.00	20100.00	6600.00	1.49	Poultry management
Rabbitry																	
Pigerry																	
Sheep and goat																	
Duckery																	
Others (pl.specify)																	
Total																	

** BCR= GROSS RETURN/GROSS COST

Fisheries

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of units (0.065ha)	Major parameters /Yield (kg/unit)		% change in major parameter	Other parameter			*Economics of demonstration (Rs./unit)				*Economics of check (Rs./unit)				
					Demo	Check		Items	Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR	
Common carps																			
Mussels																			
Ornamental fishes																			
Others: Non conventional fish culture	Freshwater fish culture	Introduction of bhetki, <i>Lates calcarifer</i> in carp culture ponds for additional income generation	50	50	Carp-415.0 Bhetki-28.0	Carp-372.0	22.5	Av.length (cm)	Carp-30 Bhetki-25	Carp-22	33000/-	Carp-383.6 kg X 120/- = 46032/-	21832/-	1.66	32000/-	Carp-331.9 kg X 120/- = 39828/-	7828/-	1.24	
Av.wt.(g)	Carp-682 Bhetki-1100	Carp-590	Bhetki-22.0 kg X 400/- = 8800/-	Total= 54832/-															
Girth of fish(cm)	Carp-8.7 Bhetki-10.0	Carp-8.0																	
No. stocked	Carp-750 Bhetki-20	Carp-750																	
Survivability (%)	Carp-75 Bhetki-100	Carp-75																	
Total																			

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

** BCR= GROSS RETURN/GROSS COST



Other enterprises

Category	Name of the technology demonstrated	No. of Farmer	No. of units	Major parameters		% change in major parameter	Other parameter		*Economics of demonstration (Rs.) or Rs./unit				*Economics of check (Rs.) or Rs./unit				
				Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR	
Oyster mushroom	Enterprise development																
Button mushroom																	
Vermicompost																	
Sericulture																	
Apiculture																	
Biocontrol agent	On-farm farm mass production of microbial pesticide (<i>Trichoderma</i>)	289	289	Accessibility to <i>Trichoderma</i> in remote villages: 12 (twelve) application of <i>Trichoderma</i> per year	Accessibility to <i>Trichoderma</i> in remote villages: 2 (two) application of <i>Trichoderma</i> per year	500%	CFU : 7.5 x 10 ⁹	CFU: 2.1 x 10 ⁶		Cost of production – Rs. 50/kg				Cost of purchase – Rs. 200/kg			
Bio-compost	Use of Waste Decomposer (Microbial Consortium) for quick composting	15	15	Time to composting: 53.8 days	Time to composting: 90.6 days	41%			1020	6000	4980	5.88	1000	3000	2000	3.00	
Total																	



Women empowerment

Category	Name of technology	No. of demonstrations	Observations		
			Parameters	Demonstration	Check
Farm Women	Linking Agriculture and Natural resource with Nutrition	5 backward village (194)	i) Minimum Diet diversity Score	6.5	3.4
			ii)No of malnourished children attending ICDS with the participation of mother	89	Nil
			iii)No of Moderately acute malnourished children move to normal children	74	11
			iv)promotion of nutrition garden %	87	38
			v)Family level crop planning at backyard	Leafy vegetables(5-6 types) , protein rich vegetables- bean, board bean, cow pea, other vegetables	Leafy vegetables (1-2 types) , other vegetables
			vi)other initiatives	Oyster mushroom , paddy straw mushroom cultivation , composting for household nutrition security through natural resource management.	Nil
		vi) convergence	Linking SHG with ATMA for doubling of farmers income through adoption of sustainable technology (Support with agril imput)	Nil	
			Upscaling of LANN programme in different blocks of Joynagar II through NRLM		

Contd..

Category	Name of technology	No. of demonstrations	Observations		
			Parameters	Demonstration	Check
Pregnant women	-	-	-	-	-
Adolescent Girl	-	-	-	-	-
Other women	-	-	-	-	-
Children	Special nutritional camp and community management of acute malnourished children with out infection	6 villages (225)	Maximum weight gain g	1000	380
			Minimum weight gain g	510	260
			Adoption of IYCF by mother %	86	23
			Adoption of hand wash practices %	92	38
			Adoption of proper timing and frequency of meal %	88	21
Neonatal					
Infants					

Farm implements and machinery

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

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

** BCR= GROSS RETURN/GROSS COST

Technical Feedback on the demonstrated technologies

Sl. No	Crop	Feed Back
AH	Crop	Feed Back
	Music therapy for better milk production	Minimized udder diseases
	Heat synchronization by intravaginal devices	Difficult to get the devices
	Broiler duck farming	Good market opportunity. Processing plant at village level will be beneficial.
	Fodder cultivation	Hydroponics fodder technology may be adopted
	MVC	Artificial Insemination may be introduced
PP	Chilli	Use of mosquito net in nursery bed and seed treatment, helped to reduce the no. of spraying in the crop
	Bitter gourd	Biological control of bitter gourd wilt disease is eco-friendly and most effective
	<i>Trichoderma</i>	The technology is very simple, low cost and can be prepared with easily available materials
	Waste decomposer	By using waste decomposer farmers can produce compost in half the time required for normal composting.
Horti	Kharif Onion	Kharif onion is a new crop for this high rainfall prone lower gangetic plain. The crop stand was not satisfactory till September. But, after recess of monsoon, the crop started a vigorous growth from October and become harvestable by middle of December.
	Cassava	Cassava, which is completely a new crop, was introduced in the backyard system to familiarize the crop among vegetable growers. The land used for this crop was earlier remain fallow or unutilized. The cutting was transplanted during kharif season and root become harvestable by end of December.
HS	Linking Agriculture and Natural resource with Nutrition	The technology is applied through Participatory learning cycles so it is easy to understand by the community people the underlying causes of the prioritised problems of the concern village . The skill development training in participatory mode help them to change their practices towards sustainable way. More over preparation of action plan by the community with the involvement of PRI members help them to execute plan with proper action
HS	Special nutritional camp and community management of acute malnourished children with out infection	The technology is demonstrated in collaboration with health and ICDS so it is helpful to make linkage of the target group with the department to have a better access to nutrition and health security. Department of Women and child care has taken initiatives to train Adolescent girl (future Mother) to improve their knowledge regarding health and nutrition in collaboration with KVK.

Extension and Training activities under FLD

Sl.No	Activity	Date	No. of activities organized	Number of participants	Remarks
1.	Field days				
2.	Farmers Training	16.05.17 & 17.07.18	2	68	Training on biological control of bitter gourd wilt disease
3.	Media coverage		-	-	-
4.	Training for extension functionaries		-	-	-
5.	Monitoring	23.3.2017	1	57	Monitoring of Pekinn Duck Farm at Patharpratima Village of South 24 Pgs.
		19.12.2017	2	102	Off campus training
6.	Field Visit	25.11.2017	1	28	Pekin duck farm under FLD

Performance of the demonstration under CFLD on Pulse and Oilseed Crops during Rabi & Summer 2017-18:

Crop: Lentil and greengram

A. Technical Parameters:

Sl. No.	Crop demonstrated	Existing (Farmer's) variety name	Existing yield (q/ha)	Yield gap (Kg/ha) w.r.to			Name of Variety + Technology demonstrated	Number of farmers	Area in ha	Yield obtained (q/ha)			Yield gap minimized (%)		
				District yield (D)	State yield (S)	Potential yield (P)				Max.	Min.	Av.	D	S	P
1	Lentil	B-77	7.16	612	575	1500	Varietal replacement with Moitree (WBL-77), <i>Rhizobium</i> & PSB @1.5 kg/ha each as seed inoculation and use of <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> @1.5 kg/ha during land preparation, one time spraying of boron @ 2 gm/lit. of water during flowering and spraying of 2% urea during pod formation	106	20	8.83	8.41	8.62	29.0	33.29	11.60

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	Choti Moong	-	647	580	1200	Varietal replacement with PDM 84-139, Rhizobium & PSB @1.5 kg/ha each as seed treatment, <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> -1.5 kg/ha each applied before sowing with compost, use of 2% urea during pod development stage and spraying of Chlorfenapyr 10% SC @600 ml/ha	181	30	The crop is in maturity stage. Harvesting will be started by the end of April, 2018.					

CFLD on Oilseed:**Crop:** Sesame**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

B. Economic parameters

Sl. No.	Variety demonstrated & Technology demonstrated	Farmer's Existing plot				Demonstration plot			
		Gross Cost (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs/ha)	B:C ratio	Gross Cost (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs/ha)	B:C ratio
1	Crop-Lentil Varietal replacement with Moitree (WBL-77), <i>Rhizobium</i> & PSB @1.5 kg/ha each as seed inoculation and use of <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> @1.5 kg/ha during land preparation, one time spraying of boron @ 2 gm/lit. of water during flowering and spraying of 2% urea during pod formation	26250	41528	14778	1.58	30273	49996	19723	1.65

C. Socio-economic impact parameters

Sl. No.	Crop and variety Demonstrated	Total Produce Obtained (kg)	Produce sold (Kg/household)	Selling Rate Rs/Kg)	Produce used for own sowing (Kg)	Produce distributed to other farmers (Kg)	Purpose for which income gained was utilized	Employment Generated (Mandays/house hold)
1	Lentil, Variety-WBL-77	17240	60.0	60.00	700	750	Family maintenance and invested in bank	11

D. Pulse 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	Varietal replacement with Moitree (WBL-77), <i>Rhizobium</i> & PSB @1.5 kg/ha each as seed inoculation and use of <i>Trichoderma viride</i> & <i>Pseudomonas fluorescence</i> @1.5 kg/ha during land preparation, one time spraying of boron @ 2 gm/lit. of water during flowering and spraying of 2% urea during pod formation	As it is grown during Rabi season, it is need to sow by the last week of November. In the district of South 24 Parganas, the medium land situation becomes ready for sowing in the mid of December. Thus the crop yield is less as per the potential yield	i)It is more remunerative crop ii) Used for dal iii) It also improves soil fertility	As the organic matter content in soil is very low, they are convinced to apply organic manures during land preparation	Plants are stunted in growth in few plots due to soil salinity	The productivity of this variety is better in late sown situation	Use of bio agents against root rot and other fungal diseases

E. Specific Characteristics of Technology and Performance

Specific Characteristic	Performance	Performance of Technology vis-a vis Local Check	Farmers Feedback
Variety –Moitree (WBL-77)	Better crop growth i.e. higher no. of branches & higher plant height	i) No. of pod /plant (Demo.-27.4, L. Check-20.1 ii)Bold grain iii)Test wt.(100 seed)-Demo.-20.0 g, L. Check-16.5 g	By using <i>Rhizobium</i> & PSB, the application rate of DAP or SSP & Urea have reduced. The seed of demonstrated variety is bolder than traditional variety which have more market demand By using <i>Trichoderma viride</i> & <i>Pseudomonas fluorescence</i> , the crop is not damaged by root rot disease in seedling stage
2. <i>Rhizobium</i> -1.5 kg/ha (as seed treatment)	Crop growth is better than farmers plot	Saved 10 kg chemical nitrogenous fertilizer /ha	
3. PSB-1.5 kg/ha (used before sowing with organic manure)	Crop growth is better than farmers plot	Yield of the crop was recorded better by reducing 15 kg P ₂ O ₅ /ha in medium phosphate level (45-50 kg/ha)	
4. <i>Trichoderma viride</i> & <i>Pseudomonas fluorescence</i> -1.5 kg/ha each (used before sowing with organic manure)	No appearance was found on disease infestation during crop period	Control powdery mildew disease and also root rot disease	

F. Extension activities under CFLD conducted till dates:**CFLD: Pulse****Crop: Lentil**

Sl. No.	Extension Activities organized	Date and place of activity	Number of farmer attended
1.	Training programme	10.11.2017 at RAKVK, Nimpith	58
		23.11.2017 at Ramtanunagar	60
		07.12.2017 at Shivkalinagar	45
		30.01.2017 at Shivkalinagar	30
2.	Distribution of critical inputs	07.12.2017 at Andhinagar	66
		07.12.2017 at Shivkalinagar	40
2.	Field visit	06.02.2018 at Andhinagar	42
		06.02.2018 at Shivkalinagar	36
		18.03.2018 at Shivkalinagar	31
		18.03.2018 at Andhinagar	49
3.	Field Days	22.03.2018 at Shivkalinagar	37

Crop: Greengram

Sl. No.	Extension Activities organized	Date and place of activity	Number of farmer attended
1.	Training programme	27.01.2018 at Kaikhali of kultali	49
		06.02.2018 at Sitarampur of Kakdwip	25
		06.02.2018 at Chakdulapur of Kulpi	39
		06.02.2018 at Khasmahal of Kulpi	43
		07.02.18 at Mayahauri of Joy-II	38
2.	Distribution of critical inputs	27.01.2018 at Kaikhali of kultali	49
		06.02.2018 at Sitarampur of Kakdwip	25
		06.02.2018 at Chakdulapur of Kulpi	39
		06.02.2018 at Khasmahal of Kulpi	43
		07.02.18 at Mayahauri of Joy-II	38
2.	Field visit	17.03.18 at Ramtanunaga & Belpukur of Kulpi	41
		19.03.18 at Ramtanunaga & Belpukur of Kulpi	36
		07.04.2018 at Chakdulapur & Khasmahal of Kulpi	43
		10.04.18 at Kaikhali & Mayahauri	48
3.	Field Days	28.04.2018 at Khasmahal & Chakdulapur of Kulpi	36

CFLD: Oilseed
Crop: Sesame

Sl. No.	Extension Activities organized	Date and place of activity	Number of farmer attended
1.	Training programme	08.02.18 at Dakshin Kashinagar of P. Pratima	25
		13.04.18 at Herambagopalpur of P. Pratima	21
2.	Distribution of critical inputs	08.02.2018 at Dakshin Kashinagar & Herambagopalpur of P. Pratima	53
2.	Field visit	19.03.18 at Dakshin Kashinagar of P. Pratima	24
		27.03.18 at Herambagopalpur of P. Pratima	20
		13.04.18 at Dakshin Kashinagar & Herambagopalpur of P. Pratima	37
3.	Field Days	-	-

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



Field visit at Andhinagar of Kulpi Block



Field visit at Shivkalinagar of Kakdwip Block



Field visit in harvesting stage

H. Farmers' training photographs



Training imparted at Shivkalinagar village



Distribution of critical inputs at Shivkalinagar



Distribution of critical inputs at Andhinagar

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



Field visit at seedling stage at Shivkalinagar



Field visit at crop growth stage at Andhinagar



Field visit at flowering stage at Shivkalinagar

J. Details of budget utilization

Crop (provide crop wise information)	Items	Sanctioned (Rs.)	Budget Received (Rs.)	Budget Utilization (Rs.)	Balance (Rs.)
Pulse (Lentil)	i) Critical input	1,50,000.00	35,000.00	35,000.00	(-) 1,15,000.00
	ii) TA/DA/POL etc. for monitoring				
	iii) Extension Activities (Field day)				
	iv)Publication of literature				
Total		1,50,000.00	35,000.00	35,000.00	(-) 1,15,000.00

Crop (provide crop wise information)	Items	Sanctioned (Rs.)	Budget Received (Rs.)	Budget Utilization (Rs.)	Balance (Rs.)
Pulse (Greengram)	i) Critical input	2,25,000.00	0.00	2,25,000.00	(-) 2,25,000.00
	ii) TA/DA/POL etc. for monitoring				
	iii) Extension Activities (Field day)				
	iv)Publication of literature				
Total		2,25,000.00	0.00	2,25,000.00	(-) 2,25,000.00

Crop (provide crop wise information)	Items	Sanctioned (Rs.)	Budget Received (Rs.)	Budget Utilization (Rs.)	Balance (Rs.)
Oilseed (Sesame)	i) Critical input	50,000.00	0.00	50,000.00	(-) 50,000.00
	ii) TA/DA/POL etc. for monitoring				
	iii) Extension Activities (Field day)				
	iv)Publication of literature				
Total		50,000.00	0.00	50,000.00	(-) 50,000.00

K. List of Farmer under FLD (Crop wise)
Crop1 : Lentil

Sl No	Name of Farmer	Father's name	Village	Block	Mobile No	E-mail ID	GPS Coordinates		Soil testing done (Yes / No)	Recommendations based on soil test value	Brief technology intervention	Variety	Seed quantity used	Demo. Yield (q/ha)			Yield of local check q/ha	% increase
							Lat	Long						H	L	A		
													8.83	8.41	8.62	7.16	20.39	
1	Rupa Halder	Gopal	Shibkalina gar	Kakdwip	7679917588	Nil	22°17'21" N	88°07'8.5" E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	Varietal replacement with Moitree (WBL-77), <i>Rhizobium</i> & PSB @ 1.5 kg/ha each as seed inoculation and use of <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> @ 1.5 kg/ha, spraying of boron @ 2 gm/lit. of water during flowering and spraying of 2% urea during pod formation	Moitree (WBL-77)	37.5 kg/ha	8.53				
2	Subrata Halder	Nitai	Shibkalina gar	Kakdwip	8417639384	Nil	22°17'14" N	88°07'9"E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.48				
3	Brihaspati Halder	Govinda	Shibkalina-gar	Kakdwip	7063701932	Nil	22°17'20.8"N	88°07'9"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.57				
4	Palan Ch. Das	Haripada	Shibkalina gar	Kakdwip	8336914375	Nil	22°17'16" N	88°06'54" E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.41				

5	Suryakant a Giri	Bagamber	Shibkalina gar	Kakdwip	892697 3322	Nil	22°17'10.1 "N	88°07'3.1" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.49				
6	Nirapada Giri	Bagamber	Shibkalina gar	Kakdwip	743100 6694	Nil	22°17'15.8 "N	88°07'10" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.65				
7	Subarna Giri	Bagamber	Shibkalina gar	Kakdwip	960923 1135	Nil	22°17'10" N	88°07'5.3" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.60				
8	Sava Halser	Sahadeb	Shibkalina gar	Kakdwip	964116 9789	Nil	22°17'50" N	88°06'51. 9"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.47				
9	Nimai Sardar	Maharaj	Shibkalina gar	Kakdwip	835006 4002	Nil	22°17'21" N	88°07'7"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.64				
10	Gautam Das	Lt. Dhiren	Shibkalina gar	Kakdwip	707496 5510	Nil	22°17'3.3" N	88°06'52. 2"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.42				
11	Gouranga Giri	Gurupada	Shibkalina gar	Kakdwip	740784 5723	Nil	22°17'10.6 "N	88°06'56" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.51				
12	Sukdev Maity	Aghar	Shibkalina gar	Kakdwip	815892 8142	Nil	22°17'11.6 "N	88°06'4.6" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.55				
13	Uttam Das	Dhiren	Shibkalina gar	Kakdwip	894587 2110	Nil	22°17'10.4 "N	88°06'56. 8"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.46				
14	Arabinda Bhandari	Manmatha	Shibkalina gar	Kakdwip	964741 6940	Nil	22°17'9.7" N	88°07'6.4" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.66				
15	Biswajit Giri	Gurupada	Shibkalina gar	Kakdwip	894492 3277	Nil	22°17'19.6 "N	88°07'8.9" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.44				
16	Haradhan khuntiya	Rampada	Shibkalina gar	Kakdwip	850974 8215	Nil	22°17'14.7 "N	88°07'8"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.57				
17	Jagai Khuntiya	Rampada	Shibkalina gar	Kakdwip	900240 1425	Nil	22°17'14.3 "N	88°07'3"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.46				
18	Sushil Bhandari	Debendra	Shibkalina gar	Kakdwip	834859 0075	Nil	22°17'15" N	88°07'8"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.50				
19	Kabita Halder	Pulin	Shibkalina gar	Kakdwip	973547 2030	Nil	22°17'4"N	88°6'55"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.63				
20	Amal Kr. Das	Abhiram	Shibkalina gar	Kakdwip	892714 0277	Nil	22°17'12" N	88°07'07" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.47				
21	Naim Sekh	Dudali	Shibkalina gar	Kakdwip	915354 9549	Nil	22°17'16" N	88°07'9.5" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.59				
22	Goutam Kamar	Sudhir	Shibkalina gar	Kakdwip	834824 0622	Nil	22°17'13.3 "N	88°07'7"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.65				
23	Bankim Singh	Abhimann a	Shibkalina gar	Kakdwip	900283 5084	Nil	22°17'16" N	88°06'55" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.50				
24	Madhabi Singh	Bankim	Shibkalina gar	Kakdwip	900283 5084	Nil	22°17'3.1" N	88°06'52. 5"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.43				
25	Namita Halder	Mahadeb	Shibkalina gar	Kakdwip	738403 5281	Nil	22°17'13" N	88°07'6.4" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.46				
26	Mani Dalui	Rabindran ath	Shibkalina gar	Kakdwip	960933 2792	Nil	22°17'4.3" N	88°06'50. 8"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.49				
27	Barun Halder	Sudhir	Shibkalina gar	Kakdwip	961498 2694	Nil	22°17'5.1" N	88°06'48. 3"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.57				
28	Sunanda	Krishna	Shibkalina	Kakdwip	768684	Nil	22°17'9.2"	88°07'6.0"	Yes	30:50:20 kg	do	do	do	8.42				

	Dauli		gar		4388		N	E		N:P ₂ O ₅ :K ₂ O/ha								
29	Dibakar Bhandari	Manmatha	Shibkalina gar	Kakdwip	800171 1641	Nil	22°17'7.9" N	88°06'49.7" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.54				
30	Parimal Mondal	Kanai	Shibkalina gar	Kakdwip	731929 3712	Nil	22°17'3.8" N	88°06'48" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.44				
31	Champa Halder	Natai	Shibkalina gar	Kakdwip	983125 9425	Nil	22°17'8"N	88°06'50.4" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.69				
32	Mantu Mondal	Nilkantha	Shibkalina gar	Kakdwip	867076 5606	Nil	22°17'18.8" N	88°07'76" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.51				
33	Uttam Kamar	Sudhir	Shibkalina gar	Kakdwip	863757 2682	Nil	22°17'8.2" N	88°06'45.7" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.62				
34	Amiya Das	Palan	Shibkalina gar	Kakdwip	861758 9553	Nil	22°17'8.4" N	88°6'45.8" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.41				
35	Badal Bar	Kshudiram	Shibkalina gar	Kakdwip	973366 4074	Nil	22°17'20" N	88°07'63" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.65				
36	Sudhangs hu Maity	Santosh	Shibkalina gar	Kakdwip	900269 3954	Nil	22°17'14.3" N	88°07'3.0" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.46				
37	Manik Halder	Jyotish	Shibkalina gar	Kakdwip	973295 1126	Nil	22°17'5.5" N	88°06'42.3" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.55				
38	Kartik Mondal	Kanai	Shibkalina gar	Kakdwip	956403 0324	Nil	22°17'6.4" N	88°06'50.2" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.60				
39	Nandiram Dolui	Ananda	Shibkalina gar	Kakdwip	961983 0526	Nil	22°17'21" N	88°07'02" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.47				
40	Paresh Mondal	Kanai	Shibkalina gar	Kakdwip	790865 8291	Nil	22°17'8.8" N	88°07'6.7" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.67				
41	Mahadev Singh	Radheshyam	Shibkalina gar	Kakdwip	993285 7082	Nil	22°17'12.9" N	88°06'58.9" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.50				
42	Anjana Pramanik	Kartik	Ramtanuna gar	Kulpi		Nil	22°01'.16" N	88°13'59" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.80				
43	Sabita Pramanil	Sushil Modak	Ramtanuna gar	Kulpi		Nil	22°01'.16" N	88°13'49" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.77				
44	Susama Pramanik	Kashinath	Ramtanuna gar	Kulpi		Nil	22°01'.16" N	88°13'57" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.81				
45	Tutu Naskar	Arun	Andinagar	Kulpi		Nil	22°01'.16" N	88°13'51" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.64				
46	Susmita Pramanik	Gopal	Ramtanuna gar	Kulpi		Nil	22°01'.16" N	88°13'51" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.59				
47	Biswanath Halder	Kishorimohan	Sukdebpur	Kulpi	964713 9944	Nil	22°01'.17" N	88°13'55" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.71				
48	Dinaband hu Naiya	Swaraj	Gopinathpur	Kulpi	897241 7571	Nil	22°01'.17" N	88°13'55" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.80				
49	Kartik Ch. Naiya	Swaraj	Gopinathpur	Kulpi	973269 9255	Nil	22°01'.16" N	88°13'59" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.57				
50	Sanjay Tanti	Manimohan	Gopinathpur	Kulpi		Nil	22°02'.7" N	88°13'49" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.72				
51	Ajit Tanti	Dulal	Gopinathpur	Kulpi	993207 6172	Nil	22°02'.7" N	88°13'51" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.64				

52	Nanda Bairagi	Kartik	Ramtanunagar	Kulpi		Nil	22°02'.7" N	88°13'50" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.71				
53	Minati Bairagi	Monoranjan	Ramtanunagar	Kulpi		Nil	22°01'.16" N	88°13'59" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.59				
54	Shefali Pramanik	Anukul	Ramtanunagar	Kulpi		Nil	22°01'.16" N	88°13'57" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.63				
55	Mithu Pramanik	Prabir	Ramtanunagar	Kulpi		Nil	22°01'.16" N	88°13'59" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.72				
56	Jharna Naskar	Gobinda	Andinagar	Kulpi	8392018683	Nil	22°01'.16" N	88°13'53" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.69				
57	Kumkum Pramanik	Monimohan	Ramtanunagar	Kulpi		Nil	22°01'.16" N	88°13'57" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.65				
58	Haripada Midde	Rajani	Andinagar	Kulpi		Nil	22°01'.16" N	88°13'54" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.76				
59	Shakuntala Palta	Shricharan	Andinagar	Kulpi		Nil	22°01'.16" N	88°13'54" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.81				
60	Shriptra Halder	Shyamapada	Andinagar	Kulpi		Nil	22°01'.57" N	88°13'46" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.74				
61	Shankari Bairagi	Ramkrishna	Ramtanunagar	Kulpi		Nil	22°01'.56" N	88°13'49" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.61				
62	Arati Halder	Ajit	Andinagar	Kulpi		Nil	22°01'.56" N	88°13'50" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.75				
63	Samir Halder	Sudhanya	Andinagar	Kulpi		Nil	22°01'.57" N	88°13'49" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.80				
64	Gopiballabh Bairagi	Ghanashyam	Ramtanunagar	Kulpi		Nil	22°01'.57" N	88°13'58" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.68				
65	Sanjit Halder	Bharat	Andinagar	Kulpi		Nil	22°01'.57" N	88°13'46" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.59				
66	Jadab Halder	Srimanta	Andinagar	Kulpi		Nil	22°01'.56" N	88°13'39" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.71				
67	Mamata Halder	Madan	Andinagar	Kulpi		Nil	22°01'.56" N	88°13'41" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.74				
68	Gouri Pramanik	Sudam	Ramtanunagar	Kulpi		Nil	22°01'.57" N	88°13'45" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.52				
69	Kanika Bijali	Nabani	Ramtanunagar	Kulpi		Nil	22°01'.57" N	88°13'43" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.53				
70	Sanaka Raut	Madhab Ch.	Ramtanunagar	Kulpi		Nil	22°01'.57" N	88°13'50" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.61				
71	Jharna Naskar	Prasanta	Andinagar	Kulpi		Nil	22°01'.57" N	88°13'48" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.52				
72	Sujata Bijali	Kalipada	Ramtanunagar	Kulpi		Nil	22°03'.53" N	88°13'58" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.76				
73	Indrajit Pramanik	Shrikrishna	Ramtanunagar	Kulpi	9647915339	Nil	22°03'.53" N	88°13'58" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.56				
74	Prabanshu Pramanik	Srimanta	Ramtanunagar	Kulpi	9933841595	Nil	22°03'.53" N	88°13'58" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.74				

75	Gouranga Halder	Ananda	Ramtanunagar	Kulpi	8918884014	Nil	22°03'.54" N	88°13'59" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.68				
76	Kanso Pramanik	Srimanta	Ramtanunagar	Kulpi	9800804848	Nil	22°03'.53" N	88°13'50" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.52				
77	Dhurjati Majumder	Kalipada	Chakdulapur	Kulpi	8514926344	Nil	22°01'.57" N	88°13'46" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.59				
78	Kanailal Halder	Ananta	Andinagar	Kulpi	7076808509	Nil	22°01'.53" N	88°13'25" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.61				
79	Goutam Bagani	Gurupada	Andinagar	Kulpi	8293451096	Nil	22°2'7"N	88°13'48" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.68				
80	Rabin Kr. Bagani	Gurupada	Andinagar	Kulpi	8944847970	Nil	22°01'.51" N	88°13'44" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.64				
81	Sundari Bera	Lt. Sudannya	Ramtanunagar	Kulpi	7699176978	Nil	22°01'.55" N	88°13'30" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.61				
82	Tultul Kandar	Joydeb	Andinagar	Kulpi	7074832006	Nil	22°2'7"N	88°13'50" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.72				
83	Suchitra Bijali	Shyamal	Ramtanunagar	Kulpi	8537061039	Nil	22°2'7"N	88°13'48" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.75				
84	Modhumita Halder	Madhab Ch.	Andinagar	Kulpi	8670057525	Nil	22°2'5"N	88°13'20" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.53				
85	Namanita Polta	Nityananda	Andinagar	Kulpi	8972141651	Nil	22°2'7"N	88°13'42" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.76				
86	Prasanta Pramanik	Gobinda	Ramtanunagar	Kulpi	9093522867	Nil	22°2'7"N	88°13'46" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.49				
87	Kalpna Polta	Gouranga	Andinagar	Kulpi	9933887701	Nil	22°2'7"N	88°13'50" E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.61				
88	Sushama Polta	Jyotindranath	Andinagar	Kulpi	NIL	Nil	22°2'7"N	88°13'49" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.68				
89	Mampi Halder	Nikunja	Andinagar	Kulpi	8079827530	Nil	22°2'6"N	88°13'37" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.56				
90	Mayarani Halder	Ghanashyam	Andinagar	Kulpi	8116954444	Nil	22°01'.57" N	88°13'46" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha & 5-6 qt/ha Cao	do	do	do	8.58				
91	Sabita Bhandari	Animesh	Andinagar	Kulpi	9903045867	Nil	22°02'11" N	88°13'33" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha & 4qt/ha Cao	do	do	do	8.67				
92	Jhuma Mukherjee	Pradip	Andinagar	Kulpi	9679150048	Nil	22°01'.57" N	88°13'46" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.74				
93	Bibha Pramanik	Upananda	Ramtanunagar	Kulpi	NIL	Nil	22°02'6"N	88°13'25" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.57				
94	Bidhan Halder	Lt. Anadi	Andinagar	Kulpi	9560307022	Nil	22°02'.7" N	88°13'50" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.63				

95	Tuktuki Halder	Bapi	Andinagar	Kulpi		Nil	22°02'.9" N	88°13'25" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha &4qt/ha Cao	do	do	do	8.70				
96	Tapan Kr. Ghosh	Panchanan	D. Rajarampur	Kulpi	973377 0306	Nil	22°02'.9" N	88°13'25" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.62				
97	Haridasi Bairagi	Haradhan	Andinagar	Kulpi	909343 2230	Nil	22°01'.53" N	88°13'46" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.80				
98	Sheelu Bairagi	Krishnadar	Andinagar	Kulpi	967964 6871	Nil	22°01'.57" N	88°13'44" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha & 4qt/ha Cao	do	do	do	8.75				
99	Arati Chakraborti	Bapi	Ramtanunagar	Kulpi	760289 0707	Nil	22°01'.56" N	88°13'42" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.69				
100	Brihaspati Bairagi	Arjun	Andinagar	Kulpi	815982 8010	Nil	22°01'.55" N	88°13'29" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.62				
101	Lakshmi Haldar	Kamalesh	Andinagar	Kulpi	837301 7135	Nil	22°02'.7" N	88°13'50" E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha &4qt/ha Cao	do	do	do	8.63				
102	Choitali Sardar	Gurucharan	Andinagar	Kulpi	973373 2539	Nil	22°01'.58" N	88°13'49" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.74				
103	Srikanta Patra	Raicharan	Andinagar	Kulpi	897282 4432	Nil	22°01'.52" N	88°13'26" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha & 5qt/ha Cao	do	do	do	8.79				
104	Tapan Kr. Halder	Rabindranath	Andinagar	Kulpi	900274 5300	Nil	22°01'.37" N	88°13'26" E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.71				
105	Madhab Ch. Halder	Srimanta	Andinagar	Kulpi	867005 7525		22°02'.2" N	88°13'30" E		30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.63				
106	Gopal Bairagi	Balai	Ramtanunagar	Kulpi	NIL		22°02'.8" N	88°13'47" E		30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do	8.79				

Crop 2: Greengram

Sl No.	Name of Farmer	Father's name	Village	Block	Mobile No	Email ID	GPS Coordinates		Soil testing done (Yes/No)	Recommendations based on soil test value	Brief technology intervention	Variety	Seed quantity used	Demo. Yield (q/ha)			Yield of local check q/ha	% increase
							Lat	Long						H	L	A		
1	Hrishikesh Roy	Maharaj	Mayahauri	Joynagar-II	9732858912	Nil	22°10'33.6"N	88°29'10.0"E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	Varietal replacement with PDM 84-139, Rhizobium & PSB @1.5 kg/ha each as seed treatment, <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> - 1.5 kg/ha each applied before sowing with compost, use of 2% urea during pod development stage and spraying of Chlorfenapyr 10% SC @600 ml/ha	PDM 84-139	20.0 kg/ha	Harvesting is going on				
2	Ranjit Sardar	Sanjoy	Dewanerchak	Joynagar-II	9563127716	Nil	22°10'33.5"N	88°29'9.3"E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
3	Sanjoy Sardar	Suren	Mayahauri	Joynagar-II	9563127716	Nil	22°10'33.8"N	88°29'8.6"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
4	Basudeb Mandal	Sarbeswar	Mayahauri	Joynagar-II	9563127732	Nil	22°10'35.2"N	88°29'9.3"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
5	Sujan Sardar	Sanjoy	Dewanerchak	Joynagar-II	9563127716	Nil	22°10'36.2"N	88°29'9.7"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
6	Rofik Sekh	Arshed	Taltala	Joynagar-II	9647374492	Nil	22°10'38.6"N	88°29'10.0"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
7	Ismail Mallik	Kachimaddin	Taltala	Joynagar-II	7797339061	Nil	22°10'31.5"N	88°29'12.5"E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
8	Sabdulla Mallik	Naji	Taltala	Joynagar-II	7890527802	Nil	22°10'32.1"N	88°29'12.1"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
9	Chhaleman Gazi	Chanda	Taltala	Joynagar-II	9093122584	Nil	22°10'33.8"N	88°29'10.9"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

10	Ramnath Mondal	Sudarshan	Dewarnerchak	Joynagar-II	7278008652	Nil	22°10'33.3"N	88°29'10.6"E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
11	Kartik Mandal	Sharat	Dewarnerchak	Joynagar-II		Nil	22°10'38.4"N	88°29'42.2"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
12	Bholanath Mandal	Sharat	Mayahauri	Joynagar-II	8609862992	Nil	22°10'37.5"N	88°29'50.0"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
13	Sukhdeb Mandal	Sarbeshwar	Mayahauri	Joynagar-II	9091860618	Nil	22°10'37.8"N	88°29'41.1"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
14	Tapasi Mondal	Sudha	Dewarnerchak	Joynagar-II	9563127732	Nil	22°10'38.6"N	88°29'25.5"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
15	Sudarshan Mandal	Makham	Dewarnerchak	Joynagar-II		Nil	22°10'37.4"N	88°29'20.0"E	Yes	20:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
16	Gour Mandal	Nirapada	Mayahauri	Joynagar-II		Nil	22°10'36.2"N	88°29'08.8"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
17	Eliyachh Mondal	Alembari	Dewarnerchak	Joynagar-II	9733623854	Nil	22°10'34.9"N	88°29'03.3"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
18	Rahamatullah Laskar	Apchar	Dewarnerchak	Joynagar-II	8001957681	Nil	22°10'32.9"N	88°29'22.0"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
19	Abul Hossain Sardar	Aahmajit	Taltala	Joynagar-II	8372853302	Nil	22°10'34.3"N	88°29'14.8"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
20	Abdulla Molla	Arjed	Taltala	Joynagar-II	7797173225	Nil	22°10'32.4"N	88°29'14.1"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
21	Sahabuddin Molla	Ziadali	Taltala	Joynagar-II		Nil	22°10'32.0"N	88°29'14.4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
22	Miyabar Gazi	Muntri	Taltala	Joynagar-II	8768615146	Nil	22°10'30.9"N	88°29'23.6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
23	Eyarab Gazi	Muntri	Taltala	Joynagar-II	9804023958	Nil	22°10'32.9"N	88°29'17.7"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
24	Ujir Sardar	Khajim	Taltala	Joynagar-II	8372924022	Nil	22°10'33.5"N	88°29'16.6"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

25	Harun Molla	Kachimaddi	Dewamerchak	Joynagar-II	8348811394	Nil	22°10'30.9"N	88°29'13.8"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
26	Ayub Laskar	Rahimbaks	Taltala	Joynagar-II	8944011812	Nil	22°10'31.0"N	88°29'13.0"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
27	Sahajamal Laskar	Alam Bari	Taltala	Joynagar-II	8145074713	Nil	22°10'34.7"N	88°29'15.1"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
28	Sahalam Laskar	Naymaddi	Dewamerchak	Joynagar-II	8514880304	Nil	22°10'35.0"N	88°28'59.5"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
29	Laili Molla	Monirul	Taltala	Joynagar-II		Nil	22°10'33.9"N	88°28'59.3"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
30	Kudduch Gazi	Chhadimani	Taltala	Joynagar-II	8001539886	Nil	22°10'36.1"N	88°29'17.8"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
31	Akkachh Molla	Achad	Taltala	Joynagar-II	8282845857	Nil	22°10'35.7"N	88°29'11.4"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
32	Sirajul Laskar	Fulol	Taltala	Joynagar-II	9331959816	Nil	22°10'33.1"N	88°29'21.6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
33	Rahamatulla Mallik	Nasim	Taltala	Joynagar-II	7797834508	Nil	22°10'33.6"N	88°29'21.2"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
34	Akkachh Laskar	Chakmaddi	Taltala	Joynagar-II	7363912435	Nil	22°10'36.3"N	88°29'10.8"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
35	Nasiruddin Laskar	Taharali	Taltala	Joynagar-II	9563954005	Nil	22°10'36.7"N	88°29'11.7"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
36	Taharali Molla	Amirali	Dewamerchak	Joynagar-II	7059847284	Nil	22°10'31.9"N	88°29'17.2"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
37	Rafik Molla	Faijaddi	Taltala	Joynagar-II	8436885293	Nil	22°10'32.1"N	88°29'16.8"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
38	Mafijuddin Mondal	Babujan	Mayahauri	Joynagar-II	74329406181	Nil	22°0'3"N	88°14'2"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
39	Sundar Panja	Jhantulal	Belpukur	Kulpi	9593105064	Nil	22°0'3"N	88°14'5"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

40	Himanshu Panja	Bhaku	Belpukur	Kulpi	9735465605	Nil	22°0'2" N	88°14'6" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
41	Prashanta Mondal	Ram	Belpukur	Kulpi	9647039525	Nil	22°0'2" N	88°14'5" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
42	Birat Bhuniya	Nadebasi	Belpukur	Kulpi	9800768129	Nil	22°0'6" N	88°14'2" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
43	Kubir Bhuniya	Renupada	Belpukur	Kulpi	8820736445	Nil	22°0'9" N	88°14'7" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
44	Bapi Panja	Taran	Belpukur	Kulpi	8116753222	Nil	22°0'9" N	88°14'6" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
45	Ranajit Bhuniya	Renupada	Belpukur	Kulpi	7063121344	Nil	22°0'8" N	88°13'40" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
46	Gobinda Mondal	Amulya	Belpukur	Kulpi	9734260035	Nil	22°0'5" N	88°13'36" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
47	Bireswarananda Panja	Pushkalana	Belpukur	Kulpi	7718734789	Nil	21°59'.48"N	88°13'49"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
48	Sukesh Panja	Sadananda	Belpukur	Kulpi	7602683909	Nil	22°0'3" N	88°14'8" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
49	Arati Mondal	Anadi	Belpukur	Kulpi	7501811879	Nil	21°59'.47.1"N	88°13'42.9"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
50	Sushanta Panja	Sadananda	Belpukur	Kulpi	9679765640	Nil	22°0'9" N	88°14'5" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
51	Ramesh Panja	Taran	Belpukur	Kulpi	8348401381	Nil	21°59'.45.1"N	88°13'39.2"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
52	Mahendra Mondal	Nalini	Belpukur	Kulpi	9002883244	Nil	22°0'2" N	88°14'8" E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
53	Swapan Bhuniya	Renupada	Belpukur	Kulpi	8016102724	Nil	22°0'9" N	88°14'6" E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
54	Jagadish Gayen	Motilal	Khas mahal	Kulpi	8348747695	Nil	21°59'.49"N	88°13'37"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
55	Bishwajit Bhuniya	Kalipada	Belpukur	Kulpi	8001177583	Nil	21°59'.43.8"N	88°13'31.2"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

56	Bablu Mondal	Pulin	Belpukur	Kulpi	7076478811	Nil	22°0'3" N	88°13'37"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
57	Asit Samanta	Judhishthir	Khas mahal	Kulpi	9564574436	Nil	21°59'.44"N	88°13'37"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
58	Shyamal Mondal	Sadhan	Belpukur	Kulpi	9635776519	Nil	22°0'9" N	88°14'2"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
59	Dulal Samanta	Tailakya	Khas mahal	Kulpi	7699350230	Nil	22°59'.44.1"N	88°13'38.5"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
60	Prabir Bag	Birendranath	Belpukur	Kulpi	7797494610	Nil	22°59'.44.3"N	88°13'39"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
61	Joydeb Mondal	Abimanya	Belpukur	Kulpi	9732905716	Nil	21°59'.58"N	88°13'43"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
62	Ananta Mondal	Dharain	Belpukur	Kulpi	9126943604	Nil	21°59'.55"N	88°13'41"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
63	Bishwanath Gayen	Motilal	Khas mahal	Kulpi	7501155536	Nil	21°59'.45.6"N	88°13'41.3"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
64	Bholanath Sardar	Palan	Belpukur	Kulpi	8512951591	Nil	22°0'9" N	88°14'5"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
65	Usha Rani Gayen	Shyamapada	Khas mahal	Kulpi	7059426929	Nil	22°0'9" N	88°14'6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
66	Gobinda Sardar	Bijoy	Belpukur	Kulpi	7063153728	Nil	22°01'.56"N	88°13'35.4"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
67	Sobita Gayen	Bishnupada	Khas mahal	Kulpi	8609475247	Nil	21°59'.46.7"N	88°13'43.9"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
68	Niyati Giri	Haradhan	Khas mahal	Kulpi	9393321942	Nil	21°59'.46"N	88°13'34"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
69	Manas Maity	Bikash	Jamtala	Kulpi	9732705271	Nil	22°01'.56"N	88°13'37.5"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
70	Palan Maity	Biswanath	Jamtala	Kulpi	9734457769	Nil	22°01'.56"N	88°13'33.7"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

71	Saroj Maity	Gobinda	Jamtal a	Kulpi	97335817 73	Nil	22°01'. 56"N	88°13'2 8.6"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
72	Prasanta Bhowmik	Sankar	Jamtal a	Kulpi	97344577 69	Nil	22°01'. 56"N	88°13'2 8.1"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
73	Rajkishor Bera	Chittaranja n	Jamtal a	Kulpi	89260933 68	Nil	21°59'. 46.7"N	88°13'4 4.0"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
74	Swapan Nayek	Lakshikant a	Jamtal a	Kulpi	97346919 87	Nil	21°59'. 46.5"N	88°13'4 3.2"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
75	Pradip Das	Paritosh	Kashi pur	Kulpi	97335539 30	Nil	21°59'. 47.6"N	88°13'4 5.7"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
76	Debabrata Nayek	Chitty	Jamtal a	Kulpi	80010540 16	Nil	22°03'. 53"N	88°13'5 0"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
77	Sair Kr. Maity	Gobinda	Jamtal a	Kulpi	97336319 07	Nil	22°01'. 57"N	88°13'4 6"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
78	Ranjit Makal	Manik	Belpu kur	Kulpi	81599485 66	Nil	22°0'1" N	88°13'3 7"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
79	Madharjya Mondal	Krishnapad a	Belpu kur	Kulpi	97336672 09	Nil	21°0'6" N	88°13'3 8"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
80	Santosh Panja	Srinibash	Belpu kur	Kulpi	96470966 50	Nil	22°59'. 44.6"N	88°13'3 1.8"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
81	Anjali Mondal	Joydeb	Belpu kur	Kulpi	97329057 16	Nil	21°59'. 46"N	88°13'4 7"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
82	Anil Das	Dayamoy	Belpu kur	Kulpi		Nil	21°59'. 48"N	88°13'3 7"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
83	Pintu Panja	Ardhendu	Belpu kur	Kulpi		Nil	21°59'. 49"N	88°13'5 1"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
84	Balai Bhuniya	Kalipada	Belpu kur	Kulpi		Nil	21°56'. 56"N	88°14'0 1"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
85	Bablu Bairagi	Ananda	Belpu kur	Kulpi		Nil	21°59'. 54"N	88°14'0 4"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					

86	Sadhan Mondal	Sankar	Belpukur	Kulpi		Nil	21°59'.55"N	88°14'3"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
87	Sunil Patra	Lt. Naren	Belpukur	Kulpi		Nil	21°59'.57"N	88°14'01"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
88	Basudeb Naskar	Bhupal	Kaikhali	Kultali		Nil	22°2'13"N	88°36'19"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
89	Kamal Mondal	Arjun	Kaikhali	Kultali		Nil	22°2'7"N	88°36'20"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
90	Joydeb Mondal	Harananda	Kaikhali	Kultali		Nil	22°2'9"N	88°36'19"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
91	Gopal Sardar	Nandaram	Kaikhali	Kultali		Nil	22°2'11"N	88°36'18"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
92	Jiten Naskar	Haripada	Kaikhali	Kultali		Nil	22°2'13"N	88°36'19"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
93	Sudhamay Naskar	Haripada	Kaikhali	Kultali		Nil	22°2'8"N	88°36'19"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
94	Ramesh Sardar	Sambhunath	Kaikhali	Kultali		Nil	22°2'12"N	88°36'20"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
95	Jayadrata Naskar	Santabash	Kaikhali	Kultali		Nil	22°2'12"N	88°36'30"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
96	Manmatha Sardar	Bhakta	Kaikhali	Kultali		Nil	22°2'12"N	88°36'27"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
97	Ruhitosh Naskar	Adhir	Kaikhali	Kultali		Nil	22°2'7"N	88°36'30"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
98	Prasenjit Sardar	Mukta	Kaikhali	Kultali		Nil	22°2'.5"N	88°36'28"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
99	Tanmay Mondal	Aditya	Kaikhali	Kultali		Nil	22°2'.5"N	88°36'21"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
100	Tarabandhu Mondal	Pulin	Kaikhali	Kultali		Nil	22°2'.6"N	88°36'15"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

101	Ranjit Ruidas	Sannyasi	Kaikh ali	Kultali		Nil	22°02'. 7"N	88°36'3 1"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
102	Jugal Sardar	Nakul	Kaikh ali	Kultali		Nil	22°02'. 7"N	88°36'3 2"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
103	Mahim Naskar	Surat	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'2 0"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
104	Samar Halder	Arun	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'1 6"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
105	Sushanta Naskar	Satish	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'2 9"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
106	Subal Halder	Arun	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'3 9"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
107	Nimai Naskar	Surya	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'3 4"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
108	Aditya Mondal	Panchu	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'2 7"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
109	Sibani Mondal	Ajoy	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'2 6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
110	Chinibas Naskar	Surya	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'2 2"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
111	Prabhas Naskar	Surya	Kaikh ali	Kultali		Nil	22°02'. 4"N	88°36'2 8"E	Yes	20:4 0:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
112	Srimanta Mandal	Dulal	Kaikh ali	Kultali		Nil	22°02'. 4"N	88°36'3 0"E	Yes	30:50:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
113	Santosh Mandal	Bani	Kaikh ali	Kultali		Nil	22°02'. 4"N	88°36'3 3"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
114	Nimai Halder	Arun	Kaikh ali	Kultali		Nil	22°02'. 4"N	88°36'3 0"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
115	Prabodh Naiya	Gayaram	Kaikh ali	Kultali		Nil	22°02'. 3"N	88°36'2 5"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

116	Bhishwade b Naiya	Prabodh	Kaikh ali	Kultali		Nil	22°02'. 3"N	88°36'1 2"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
117	Ajoy Mandal	Harananda	Kaikh ali	Kultali		Nil	22°02'. 3"N	88°36'1 4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
118	Basudeb Sardar	Rabin	Kaikh ali	Kultali		Nil	22°02'. 3"N	88°36'2 1"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
119	Jayanti Das	Prasenjit	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'2 6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
120	Krishna Naskar	Dinesh	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'3 0"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
121	Sudhamay Naskar	Haripada	Kaikh ali	Kultali		Nil	22°02'. 5"N	88°36'1 7"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
122	Bhagirath Naskar	Haripada	Kaikh ali	Kultali		Nil	22°02'. 3"N	88°36'2 5"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
123	Manmatha Sardar	Bhakta	Kaikh ali	Kultali		Nil	22°02'. 4"N	88°36'3 8"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
124	Bhadra Sardar	Anil	Kaikh ali	Kultali		Nil	22°02'. 4"N	88°36'3 9"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
125	Kiran Bala Sardar	Ganesh	Kaikh ali	Kultali		Nil	22°02'. 4"N	88°36'3 7"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
126	Moslem Mondal	Makched	Kaikh ali	Kultali		Nil	22°02'. 3"N	88°36'2 6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
127	Nirmal Naskar	Surya	Kaikh ali	Kultali		Nil	22°02'. 6"N	88°36'2 4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
128	Shankar Naskar	Surath	Kaikh ali	Kultali		Nil	22°02'. 7"N	88°36'1 9"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
129	Santabas Naskar	Suryakanta	Kaikh ali	Kultali		Nil	22°02'. 7"N	88°36'2 0"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
130	Arati Naskar	Bimal	Kaikh ali	Kultali		Nil	22°02'. 8"N	88°36'2 3"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					
131	Basanti Mandal	Bhagirath	Kaikh ali	Kultali		Nil	22°02'. 8.4"N	88°36'2 2.6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ ha	do	do	do					

132	Mahadeb Mandal	Basudeb	Kaikhali	Kultali		Nil	22°02'.10"N	88°36'22"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
133	Asit Ruidas	Sannyashi	Kaikhali	Kultali		Nil	22°02'.14"N	88°36'32"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
134	Sushanta Naskar	Satish	Kaikhali	Kultali		Nil	22°02'.12"N	88°36'20"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
135	Nirmal Mandal	Arjun	Kaikhali	Kultali		Nil	22°02'.14"N	88°36'25"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
136	Sipra Sardar	Kartik	Kaikhali	Kultali		Nil	22°02'.16"N	88°36'33"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
137	Kundupada Ghosh	Satish Ch Ghosh	Chakdulapur	Kulpi	8016483874	Nil	22°02'.35"N	88°14'23"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
138	Bikash Halder	Natabar Halder	Chakdulapur	Kulpi		Nil	22°02'.36"N	88°14'27"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
139	Sukumar Mondal	Upen Mondal	Chakdulapur	Kulpi		Nil	22°02'.36"N	88°14'27.8"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
140	Bidhan Naskar	Rabindrath	Chakdulapur	Kulpi		Nil	22°02'.33.6"N	88°14'15.1"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
141	Dhananjay Halder	Tulshi Ch Halder	Chakdulapur	Kulpi	9735476463	Nil	22°02'.35"N	88°14'22"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
142	Satyen Halder	Beren Halder	Chakdulapur	Kulpi		Nil	22°02'.34"N	88°14'18"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
143	Prasanta Halder	Gopal Halder	Chakdulapur	Kulpi		Nil	22°02'.34.5"N	88°14'21.4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
144	Biswanath Halder	Dulal Halder	Chakdulapur	Kulpi		Nil	22°02'.35"N	88°14'23"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
145	Bhim Ch Naskar	Satish Naskar	Chakdulapur	Kulpi		Nil	22°02'.36.2"N	88°14'26.1"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
146	Pranballav Halder	Bholanath	Chakdulapur	Kulpi		Nil	22°02'.29"N	88°14'22"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

147	Jaladhar Mondal	Prankrishna	Chakdulapur	Kulpi	9091540743	Nil	22°02'.29"N	88°14'12"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
148	Nilratan Naskar	Gurupada	Chakdulapur	Kulpi		Nil	22°02'.28"N	88°14'15"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
149	Panchu Naskar	Nilranat Naskar	Chakdulapur	Kulpi		Nil	22°02'.34"N	88°14'20"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
150	Astadeb Palta	Anulya Palta	Chakdulapur	Kulpi		Nil	22°02'.39"N	88°13'49"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
151	Basudeb Palta	Anulya Palta	Chakdulapur	Kulpi		Nil	22°02'.41"N	88°13'50"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
152	Dipali Palta	Mohan Kr Palta	Chakdulapur	Kulpi	7699814064	Nil	22°02'.38"N	88°13'49"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
153	Sujata Palta	Asish Palta	Chakdulapur	Kulpi	7699175011	Nil	22°02'.37"N	88°13'50"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
154	Shaibya Palta	Mohan Palta	Chakdulapur	Kulpi	9800856599	Nil	22°02'.38"N	88°13'53"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
155	Purabi Palta	Bhupati Palta	Chakdulapur	Kulpi	9687076215	Nil	22°02'.37"N	88°13'42"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
156	Rinku Bhandari	Bapi Bhandari	Chakdulapur	Kulpi	9732699255	Nil	22°02'.37"N	88°13'46"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
157	Subhadra Bajkhan	Gopal Bajkhan	Chakdulapur	Kulpi	8116674025	Nil	22°02'.37"N	88°13'51"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
158	Madhabi Bhandari	Sukumar	Chakdulapur	Kulpi	8609829899	Nil	22°02'.37.6"N	88°13'50"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
159	Maduri Palta	Jagannath Palta	Chakdulapur	Kulpi	9932177788	Nil	22°02'.38"N	88°13'50.1"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
160	Probhati Palta	Milan Palta	Chakdulapur	Kulpi	9647121993	Nil	22°02'.41"N	88°13'50"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
161	Suparna Palta	Madhai Palta	Chakdulapur	Kulpi	3392000041	Nil	22°02'.38"N	88°13'54"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
162	Golapi Palta	Janardan Palta	Chakdulapur	Kulpi	9933418832	Nil	22°02'.38"N	88°13'53"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

163	Kamala Halder	Biswanath	D. Sukdevpur	Kulpi		Nil	22°02'. 27"N	88°14'4 "E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
164	Lakshi Halder	Sukesh Halder	D. Sukdevpur	Kulpi		Nil	22°02'. 26.6"N	88°13'4 5.7"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
165	Prafulla Halder	Beren Halder	Chakdulapur	Kulpi		Nil	22°02'. 30.4"N	88°13'5 0.8"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
166	Gosta Bihary Ghosh	Sanatan Ghosh	Chakdulapur	Kulpi		Nil	22°02'. 30.5"N	88°13'5 1.9"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
167	Sudam Mondal	Panchu Mondal	D. Sukdevpur	Kulpi		Nil	22°02'. 26.7"N	88°13'4 6.5"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
168	Reboti Halder	Tapan Halder	D. Sukdevpur	Kulpi		Nil	22°02'. 36.6"N	88°13'4 6.8"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
169	Sumitra Halder	Swapan Halder	D. Sukdevpur	Kulpi		Nil	22°02'. 27.1"N	88°13'4 2.4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
170	Chittaranjan Halder	Sunil Halder	D. Sukdevpur	Kulpi		Nil	22°02'. 25"N	88°14'1 4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
171	Satyaranjan Halder	Sunil Halder	D. Sukdevpur	Kulpi		Nil	22°02'. 25"N	88°14'1 4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
172	Dipankar Halder	Harisadhan	D. Sukdevpur	Kulpi		Nil	22°02'. 53.4"N	88°13'5 3.4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
173	Bablu Ranjan Mandal	Lalit	Bhairabinagar	Kulpi		Nil	22°02'. 35"N	88°14'2 1"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
174	Dinesh Halder	Shrimanta	Tangrarchar	Kulpi	9933307780	Nil	22°02'. 39.3"N	88°13'5 1.5"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
175	Mritunjay Halder	Bhupati	Tangrarchar	Kulpi	7029423335	Nil	22°02'. 37.9"N	88°13'4 8.8"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
176	Ranjit Tanti	Moni	Gopinathpur	Kulpi	9932898074	Nil	22°02'. 37.2"N	88°13'5 3.2"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					
177	Milan Kanti Moule	Radhakanta	Karanjali	Kulpi	9093105611	Nil	22°02'. 37.0"N	88°13'5 0.4"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

178	Prabhat Sardar	Bijoy	Shyam nagar	Kulpi	9830907939	Nil	22°02'.39.0"N	88°13'58.0"E	Yes	30:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do				
179	Dinabandhu Naiya	Swaraj	Gopinathpur	Kulpi	8972417571	Nil	22°02'.38.9"N	88°13'50.6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do				
180	Rakhal Majumder	Deben	Chakdualapur	Kulpi	9564429143	Nil	22°02'.39.5"N	88°13'50.5"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do				
181	Susmita Pramanik	Dinabandhu	Ramtanunagar	Kulpi	9800298103	Nil	22°02'.39.8"N	88°13'48.6"E	Yes	20:40:20 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do				

CFLD- Oilseed
Crop 3: Sesame

Sl No.	Name of Farmer	Father's name	Village	Block	Mobile No	Email ID	GPS Coordinates		Soil testing done (Yes/No)	Recommendations based on soil test value	Brief technology intervention	Variety	Seed quantity used	Demo. Yield (q/ha)			Yield of local check q/ha	% increase
							Lat	Long						H	L	A		
1	Dinesh Pramanik	Nishikanta	Dakshin Kashinagar	Pathar Pratima	9733853028	Nil	21°50'41"N	88°28'18"E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	Varietal replacement with Variety-Savitri (SWB-32-10-1) Seed: 6.0 Kg/ha, <i>Trichoderma viride</i> & <i>Pseudomonas fluorescense</i> @ 1.5 kg/ha during land preparation, one time spraying of boron @ 2 gm/lit. of water during flowering and spraying of Chlorfenapyr 10% SC @ 600 ml/ha 10% SC @ 600 ml/ha	Savitri (SWB-32-10-1)	6.0 kg/ha	The crop is in pod development stage.				
2	Dipak Pramanik	Nishikanta	Dakshin Kashinagar	Pathar Pratima	9775147162	Nil	21°50'37"N	88°28'17"E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do					

3	Dwijen Pramanik	Nishikanta	Dakshin Kashinagar	Pathar Pratima	9609147319	Nil	21°50'41" N	88°28'21" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
4	Radha Rani Jana	Sukdeb	Dakshin Kashinagar	Pathar Pratima	8348977221	Nil	21°50'39" N	88°28'18" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
5	Achinta Chanda	Bibhuti	Dakshin Kashinagar	Pathar Pratima	8371054098	Nil	21°50'35" N	88°28'15" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
6	Haradhan Santra	Mahadeb	Dakshin Kashinagar	Pathar Pratima	8768184142	Nil	20°50'30" N	88°28'15" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
7	Narayan Baichar	Jagadish	Dakshin Kashinagar	Pathar Pratima	7547926195	Nil	20°50'28" N	88°28'14" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
8	Rina Chanda	Anup	Dakshin Kashinagar	Pathar Pratima	8768183570	Nil	20°50'30" N	88°28'16" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
9	Satyajit Pramanik	Bishnupada	Dakshin Kashinagar	Pathar Pratima	9564734525	Nil	20°50'30" N	88°28'15" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
10	Mamata Chanda	Suresh	Dakshin Kashinagar	Pathar Pratima	9593515160	Nil	22°50'30" N	88°28'14" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
11	Jyotsna Patra	Benimadhab	Dakshin Kashinagar	Pathar Pratima	7872930543	Nil	22°50'29" N	88°28'13" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
12	Kalipada Pramanik	Sripati	Dakshin Kashinagar	Pathar Pratima	7479279625	Nil	22°50'30" N	88°28'15" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
13	Ranjan Pramanik	Paresh	Dakshin Kashinagar	Pathar Pratima	8436080917	Nil	22°50'30" N	88°28'14" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
14	Sujit Chanda	Subal	Dakshin Kashinagar	Pathar Pratima	9933643644	Nil	22°50'33" N	88°28'19" E	Yes	60:30:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
15	Kanak Doloi	Rabin	Dakshin Kashinagar	Pathar Pratima	9003505991	Nil	22°50'33" N	88°28'20" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
16	Sunanda Doloi	Susanta	Dakshin Kashinagar	Pathar Pratima	9003505991	Nil	22°50'32" N	88°28'17" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
17	Sandhya Jana	Satish	Dakshin Kashinagar	Pathar Pratima	7872436518	Nil	22°50'33" N	88°28'19" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
18	Sulata Das	Sekhar	Dakshin Kashinagar	Pathar Pratima		Nil	22°50'39" N	88°28'22" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
19	Kajal Doloi	Umakanta	Dakshin Kashinagar	Pathar Pratima		Nil	22°50'40" N	88°28'22" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
20	Lata Das	Narayan	Dakshin Kashinagar	Pathar Pratima		Nil	22°50'39" N	88°28'16" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do

21	Purni ma Mondal	Balai	Dakshin Kashinagar	Pathar Prati ma	622026013193	Nil	22°50'39" N	88°28'17" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
22	Priyanka Giri	Gopal	Surendranagar	Pathar Prati ma		Nil	22°50'40" N	88°28'26" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
23	Tapati Pramanik	Shaktipada	Dakshin Kashinagar	Pathar Prati ma	9732819047	Nil	22°50'38" N	88°28'19" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
24	Uttam Giri	Basanta	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'33" N	88°28'35" E	Yes	60:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
25	Sankar Bar	Sudhir	Heramba-gopalpur	Pathar Prati ma		Nil	22°50'33" N	88°28'33" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
26	Alpana Ghoroi	Lt. Sudam	Heramba-gopalpur	Pathar Prati ma		Nil	22°50'32" N	88°28'30" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
27	Susanta Roy	Lt. Hridoy	Heramba-gopalpur	Pathar Prati ma		Nil	22°50'33" N	88°28'36" E	Yes	60:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
28	Gurupada Sashmal	Prasannya	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'32" N	88°26'31" E	Yes	60:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
29	Ananda Sashmal	Isha	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'32" N	88°26'37" E	Yes	60:30:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
30	Mangal Sardar	Kamal	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'33" N	88°26'35" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
31	Anup Kr. Das	Chittyanjan	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'32" N	88°26'31" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
32	Srikanta Barik	Lt. Parameswar	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'32" N	88°26'32" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
33	Madhusudan Das	Lt. Jatindra	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'26" N	88°26'38" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
34	Bablu Kamila	Achinta	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'27" N	88°26'55" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
35	Anil Maity	Kunja	Heramba-gopalpur	Pathar Prati ma		Nil	22°51'33" N	88°26'34" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do
36	Sukumar Gayen	Nanikanta	Dakshin Kashinagar	Pathar Prati ma		Nil	22°50'26" N	88°28'20" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/h a	do	do	do

37	Lakshman Chauliya	Gobardhan	Herambagopalpur	Pathar Pratima	Nil	22°50'26" N	88°28'18" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
38	Pritam Kala	Haradhan	Herambagopalpur	Pathar Pratima	Nil	22°50'26" N	88°28'23" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
39	Poltu Roy	Ramesh	Dakshin Kashinagar	Pathar Pratima	Nil	22°50'26" N	88°28'16" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
40	Himangshu Chanda	Sripati	Dakshin Kashinagar	Pathar Pratima	Nil	20°50'25" N	88°28'15" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
41	Soumitra Jana	Shukdeb	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'21" N	88°28'21" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
42	Satyabrata Jana	Gunadhar	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'22" N	88°28'19" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
43	Shukdeb Jana	Baren	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'25" N	88°28'15" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
44	Ambika Pramanik	Kalipada	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'22" N	88°28'35" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
45	Subal Chanda	Bibhuti	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'22" N	88°28'31" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
46	Haradhan Santra	Mahadeb	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'22" N	88°28'36" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
47	Kalipada Maji	BankumarSaroj	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'22" N	88°28'29" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
48	Anakul Maity	Ratan	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'22" N	88°28'39" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
49	Narayan Das	Krishnapada	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'22" N	88°28'28" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
50	Swapan Maity	Bhagyadhar	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'25" N	88°28'17" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
51	Sandhya Sit	Pratap	Dakshin Kashinagar	Pathar Pratima	Nil	21°50'25" N	88°28'20" E	Yes	50:25:25 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
52	Ashok Mollik	Saroj	Herambagopalpur	Pathar Pratima	Nil	22°50'32" N	88°28'33" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do
53	Prasenjit Das	Madhusudan	Herambagopalpur	Pathar Pratima	Nil	22°50'32" N	88°28'37" E	Yes	60:30:30 kg N:P ₂ O ₅ :K ₂ O/ha	do	do	do

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				
Planting material production														
Bio-agents production														
Bio-pesticides production														
Bio-fertilizer production														
Vermi-compost production														
Organic manures production														
Production of fry and fingerlings														
Production of Bee-colonies and wax sheets														
Small tools and implements														
Production of livestock feed and fodder														
Production of Fish feed														
Others, if any														
X. Capacity Building and Group Dynamics														
Leadership development														
Group dynamics														
Formation and Management of SHGs														
Mobilization of social capital														
Entrepreneurial development of farmers/youths														
WTO and IPR issues														
Others, if any														
XI Agro-forestry														
Production technologies														
Nursery management														
Integrated Farming Systems														
XII. Others (Pl. Specify)														
TOTAL	101	1226	684	1910	755	487	1229	46	97	143	2027	1268	3295	

B) Rural Youth (on campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total			
		Other			SC			ST			M	F	T	
		M	F	T	M	F	T	M	F	T				
Mushroom Production														
Bee-keeping	2	27	7	34	5	5	10	0	1	1	32	13	45	
Integrated farming														
Seed production														
Production of organic inputs														
Integrated Farming														
Planting material production														
Vermi-culture														
Sericulture														
Protected cultivation of vegetable crops														
Commercial fruit production	1	17	0	17	23	0	23	0	0	0	40	0	40	
Repair and maintenance of farm machinery and implements														
Nursery Management of Horticulture crops	1	16	0	16	24	0	24	0	0	0	40	0	40	
Training and pruning of orchards														
Value addition														
Production of quality animal products														
Dairying	1	6	0	6	5	0	5	0	0	0	11	0	11	
Sheep and goat rearing	1	21	10	31	11	1	12	0	0	0	32	11	43	
Duck rearing	1	18	0	18	12	0	12	0	0	0	30	0	30	
Quail farming														
Piggery														
Rabbit farming														
Backyard poultry farming	1	4	0	4	13	0	13	0	0	0	17	0	17	
Poultry production	1	3	19	22	1	7	8	0	0	0	4	26	30	
Ornamental bird rearing	1	10	1	11	6	1	7	0	0	0	16	2	18	

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			
Ornamental fisheries	1	13	0	13	8	0	8	0	0	0	21	0	21
Enterprise development													
Para vets													
Para extension workers													
Composite fish culture	1	18	19	37	3	0	3	0	0	0	21	19	40
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	6	3	9	17	3	20	0	0	0	23	6	29
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts	1		21	21								21	21
TOTAL	14	159	80	239	128	17	145	0	1	1	287	98	385

C) Extension Personnel (on campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total			
		Other			SC			ST			M	F	T	
		M	F	T	M	F	T	M	F	T				
Productivity enhancement in field crops														
Value addition														
Integrated Pest Management	2	27	3	30	9	1	10	0	0	0	36	4	40	
Diploma in Agriculture Extension for Input Dealers	2	63	1	64	16	0	16	0	0	0	79	1	80	
Integrated Nutrient management														
Rejuvenation of old orchards														
Protected cultivation technology														
Formation and Management of SHGs														
Group Dynamics and farmers organization														
Information networking among farmers														
Capacity building for ICT application														
Care and maintenance of farm machinery and implements														
WTO and IPR issues														
Breeding of endangered indigenous fish	2	11	0	11	2	0	2	0	0	0	13	0	13	
Composite fish culture	1	10	0	10	2	0	2	0	0	0	12	0	12	
Management in farm animals	1	2	0	2	2	1	3	0	0	0	4	1	5	
Artificial insemination	1	44	0	42	1	0	1	0	0	0	45	0	45	
Primary veterinary service provider	1	3	0	0	2	0	2	0	0	0	5	0	5	
Diagnostic imaging	1	19	0	19	0	0	0	0	0	0	19	0	19	
Prani bandhu (45days)	1	3	1	4	3	0	3	2	1	3	8	2	10	
Livestock feed and fodder production														
Household food security	4		90	90		30	30					120	120	
Women and Child care														
Low cost and nutrient efficient diet designing														
Production and use of organic inputs														
Gender mainstreaming through SHGs														
Krishi Prayukti Sahayak of Dept. of Ag., GoWB	1	16	0	16	11	0	11	4	0	4	31	0	31	
Friends of Coconut Tree of CDB, GOI	3	72	0	72	48	0	48	1	0	1	121	0	121	
Hitech Horticulture	1	18	0	18	17	0	17	0	0	0	35	0	35	
TOTAL	21	288	95	378	113	32	145	7	1	8	408	128	536	

D) Farmers and farm women (off campus)

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST			M	F	T
		M	F	T	M	F	T	M	F	T			
I. Crop Production													
Weed Management													
Resource Conservation Technologies													
Cropping Systems													
Crop Diversification													
Integrated Farming													
Water management													
Seed production	1	41	13	54	4	0	4	0	0	0	45	13	58
Nursery management													
Integrated Crop Management	5	64	16	80	108	34	142	0	0	0	172	50	222
Fodder production													
Production of organic inputs													
Others, (cultivation of crops)													
II. Horticulture													
a) Vegetable Crops													
Integrated nutrient management	2	12	5	17	46	12	58	13	18	31	71	35	106
Water management													
Enterprise development													
Skill development													
Yield increment													
Production of low volume and high value crops													
Off-season vegetables	3	131	1	132	51	3	54	0	0	0	182	4	186
Nursery raising													
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others, if any (Cultivation of Vegetable)													
Weed Management	1	25	0	25	0	0	0	0	0	0	25	0	25
Training and Pruning													
b) Fruits													
Layout and Management of Orchards													
Cultivation of Fruit	1	103	36	139	151	19	170	14	13	27	268	68	336

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				
Training and pruning of orchards														
Value addition														
Production of quality animal products														
Dairying														
Sheep and goat rearing														
Quail farming														
Piggery														
Rabbit farming														
Poultry production														
Ornamental fisheries														
Para vets														
Para extension workers														
Composite fish culture														
Freshwater prawn culture														
Shrimp farming														
Pearl culture														
Cold water fisheries														
Fish harvest and processing technology														
Fry and fingerling rearing														
Small scale processing														
Post Harvest Technology														
Tailoring and Stitching														
Rural Crafts														
Others, if any														
TOTAL	1	46	2	48	6	0	6	0	0	0	52	2	54	

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST			M	F	T
		M	F	T	M	F	T	M	F	T			
Rabbit farming													
Poultry production	1	3	19	22	1	7	8	0	0	0	4	26	30
Backyard poultry farming	1	4	0	4	13	0	13	0	0	0	17	0	17
Ornamental fisheries	1	13	0	13	8	0	8	0	0	0	21	0	21
Para vets													
Para extension workers													
Composite fish culture	1	18	19	37	3	0	3	0	0	0	21	19	40
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	6	3	9	17	3	20	0	0	0	23	6	29
Small scale processing													
Post Harvest Technology													
Tailoring and Stitching													
Rural Crafts													
Enterprise development													
Others if any (ICT application in agriculture)													
TOTAL	14	205	61	266	134	17	151	0	1	1	339	79	418

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	27	3	30	9	1	10	0	0	0	36	4	40
Diploma in Agriculture Extension for Input Dealers	2	63	1	64	16	0	16	0	0	0	79	1	80

Integrated Nutrient management													
Rejuvenation of old orchards													
Value addition													
Protected cultivation technology													
Formation and Management of SHGs													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Breeding of endangered indigenous fish	2	11	0	11	2	0	2	0	0	0	13	0	13
Composite fish culture	1	10	0	10	2	0	2	0	0	0	12	0	12
Management in farm animals	1	2	0	2	2	1	3	0	0	0	4	1	5
Artificial Insemination	1	44	0	42	1	0	1	0	0	0	45	0	45
Primary veterinary service provider	1	3	0	0	2	0	2	0	0	0	5	0	5
Diagnostic imaging	1	19	0	19	0	0	0	0	0	0	19	0	19
Prani bandhu (45 days)	1	3	1	4	3	0	3	2	1	3	8	2	10

Livestock feed and fodder production													
Household food security	4		90	90		30	30					120	120
Women and Child care													
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs													
Crop intensification													
Others if any													
Krishi Prayukti Sahayak of Dept. of Ag., GoWB	1	16	0	16	11	0	11	4	0	4	31	0	31
Friends of Coconut Tree of CDB, GOI	3	72	0	72	48	0	48	1	0	1	121	0	121
Hitech Horticulture	1	18	0	18	17	0	17	0	0	0	35	0	35
TOTAL	21	288	95	378	113	32	145	7	1	8	408	128	536

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	PF	Integrated Nutrient management in different crops	3	On	29	2	31	29	2	31
	PF	Integrated Farming	4	On	14	0	14	4	0	4
	PF	Integrated Nutrient management in different crops	4	On	28	13	41	17	11	28
	PF	Techniques of paddy seed production	1	Off	45	13	58	4	-	4
	PF	Selection of rice varieties as per land situation, seed treatment and nursery management	2	On	3	28	31	0	9	9
	PF	Integrated Farming	4	On	21	0	21	0	0	0
	PF	Integrated Nutrient management in different crops	4	On	9	35	44	1	5	6
	PF	Integrated Farming	5	On	25	1	26	6	0	6
	PF	Account maintenance and record keeping of SHGs	2	On	6	19	25	0	5	5
	PF	Modern techniques of pulse(Lentil) cultivation	1	On	34	24	58	11	7	18
	PF	Integrated Farming	5	On	23	0	23	13	0	13
	PF	Modern techniques of pulse(Lentil) cultivation	1	Off	17	32	49	3	21	24
	PF	Crop diversification through landshaping & water harvesting along with land embankment cultivation	5	On	36	4	40	13	3	16

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	PF	Crop diversification through landshaping & water harvesting along with land embankment cultivation	5	On	40	0	40	15	0	15
	PF	Integration of INM, IDPM in cereals, pulse and oilseed crops	4	On	12	0	12	9	0	9
	PF	Modern techniques of pulse(Lentil) cultivation	1	Off	39	6	45	17	1	18
	PF	Crop diversification through landshaping & water harvesting along with land embankment cultivation	5	On	38	2	40	18	2	20
	PF	Crop diversification through landshaping & water harvesting along with land embankment cultivation	5	On	28	4	32	11	1	12
	PF	Integration of INM, IDPM in cereals, pulse and oilseed crops	4	On	8	18	26	2	1	3
	PF	Integrated Farming	6	On	14	9	23	13	9	22
	PF	Suitable cropping pattern for Rabi-Summer season in land shaping plot	6	On	13	11	24	12	8	20
	PF	Modern techniques of pulse(Greengram) cultivation	1	Off	41	6	47	40	6	46
	PF	Boro paddy cultivation through SRI	4	On	20	0	20	3	0	3
	PF	Modern techniques on oilseed and pulse cultivation	4	On	51	0	51	16	0	16

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	PF	Modern techniques of pulse(Greengram) cultivation	1	Off	38	5	43	38	5	43
	PF	Modern techniques of pulse(Greengram) cultivation	1	Off	37	1	38	10	1	11
	PF	Integrated Farming	4	On	29	0	29	3	0	3
	PF	Integrated Farming	5	On	0	30	30	0	30	30
	PF	Integrated Farming	5	On	38	5	43	19	5	24
Fishery	F&FW	Culture of air breathing fishes in freshwater ponds & ditches	5	On	0	45	45	0	31	31
	F&FW	Culture of air breathing fishes in freshwater ponds & ditches	5	On	0	45	45	0	3	3
	F&FW	Culture of air breathing fishes in freshwater ponds & ditches	5	On	0	39	39	0	24	24
	F&FW	Culture of air breathing fishes in freshwater ponds & ditches	5	On	0	47	47	0	28	28
	F&FW	Culture of air breathing fishes in freshwater ponds & ditches	5	On	0	32	32	0	26	26
	EP	Best aquaculture practices in freshwater fish & prawn farming	4	On	12	0	12	2	0	2
	F&FW	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	4	On	25	0	25	3	0	3
	F&FW	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	4	On	0	30	30	0	26	26
	F&FW	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	4	On	3	27	30	0	6	6

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	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	4	On	30	0	30	12	0	12
	F&FW	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	4	On	0	24	24	0	5	5
	F&FW	Breeding, hatchery construction & operation for air breathing fishes	5	On	0	38	38	0	22	22
	EP	Breeding, hatchery construction & operation for air breathing fishes	5	On	2	0	2	2	0	2
	F&FW	Breeding, hatchery construction & operation for air breathing fishes	5	On	0	34	34	0	15	15
	EP	Breeding, hatchery construction & operation for air breathing fishes	5	On	11	0	11	2	0	2
	F&FW	Backyard system of breeding & culture of Asian catfish in Sundarbans	4	On	0	29	29	0	5	5
	F&FW	Backyard system of breeding & culture of Asian catfish in Sundarbans	4	On	0	26	26	0	4	4
	RY	Commercial production of carp fry & fingerlings in freshwater ponds	4	On	23	6	29	17	3	20
	F&FW	Good aquaculture practices in freshwater fish & prawn farming	4	On	30	0	30	6	0	6
F&FW	Ornamental fish breeding & farming as an avenue for self employment generation	4	On	23	7	30	7	0	7	

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Fishery	F&FW	Good aquaculture practices in freshwater fish & prawn farming	4	On	13	14	27	3	0	3
	F&FW	Mixed fish & prawn farming	1	Off	39	7	46	7	2	9
	F&FW	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	4	On	24	0	24	16	0	16
	F&FW	Diversification in freshwater fish farming	1	Off	46	4	50	18	2	20
	RY	Best aquaculture practices in freshwater fish & prawn farming	5	On	21	19	40	3	0	3
	F&FW	Agri Fisheries training to the marginal fishermen of Sundarban regions	4	On	49	1	50	23	0	23
	RY	Ornamental fish farming	4	On	21	0	21	8	0	8
	F&FW	Agri Fisheries training to the marginal fishermen of Sundarban regions	4	On	49	1	50	28	1	29
	F&FW	Agri Fisheries training to the marginal fishermen of Sundarban regions	4	On	50	0	50	16	0	16
Horticulture	F & FW	Nutrient management in vegetable farming with special emphasis to Sundarban Soil	1	Off	32	34	66	20	29	49
	F & FW	Identification of different physiological disorders of vegetables & their management	1	Off	22	10	32	10	0	10

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	F & FW	Production of enriched vermicompost	1	Off	23	0	23	0	0	0
	F & FW	Nutrient management in vegetable farming with special emphasis to Sundarban Soil	4	On	25	6	31	8	4	12
	F & FW	Scientific methods of kharif & late kharif onion cultivation	4	On	28	2	30	11	2	13
	F & FW	Soil Health Management	1	Off	33	16	49	20	2	22
	F & FW	Soil Health Management	1	Off	38	16	54	17	6	23
	F & FW	Soil Health Management	1	Off	37	14	51	21	1	22
	F & FW	Soil Health Management	1	Off	42	16	58	21	5	26
	F & FW	Soil Health Management	1	Off	35	22	57	16	9	25
	F & FW	Improved method of early winter veg cultivation	4	On	37	10	47	19	5	24
	F & FW	Beetle vine cultivation in Climate smart hi-tech boroz for quality leaf production	4	On	20	13	33	4	0	4
	F & FW	Innovative technique of vegetable production during kharif & rabi season with special emphasis to Ail cultivation	4	On	13	22	35	12	17	29
	F & FW	Improved method of profitable fruit cultivation in the Sundarban region	1	Off	268	68	336	165	32	197
	F & FW	Scientific methods of kharif onion and rabi onion cultivation	1	Off	41	1	42	1	0	1
	F & FW	Improved methods of Late winter & early summer Vegetable cultivation	1	Off	102	0	102	11	0	11

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	F & FW	Beetle vine cultivation in Climate smart hi-tech boroz for quality leaf production	4	On	37	6	43	17	5	22
	F & FW	Soil Health Management	1	Off	11	0	11	0	0	0
	F & FW	Soil Health Management	1	Off	0	31	31	0	9	9
	F & FW	Soil Health Management	1	Off	16	1	17	16	0	16
	F & FW	Scientific methods of non-conventional vegetable cultivation for better profitability	5	On	40	8	48	17	3	20
	F & FW	Importance, utility and mechanism of micro-irrigation in cultivation of fruits and vegetables	5	On	31	20	51	13	9	22
	F & FW	Market oriented and high value vegetable cultivation in the peri-urban area	5	On	51	5	56	21	2	23
	F & FW	Production of enriched vermicompost	5	On	41	13	54	11	4	15
	F & FW	Improved method of profitable fruit cultivation in sundarban agro-climate (01.01.18 -05.01.18)	5	On	35	3	38	25	1	26
	F & FW	Nutrient management in vegetable farming with special emphasis to Sundarban Soil	1	Off	39	1	40	39	1	40
	F & FW	Improved methods of Late winter & early summer Vegetable cultivation	1	Off	39	3	42	39	3	42
	F & FW	Establishment & management of fruit orchard for better climatic resilience	6	On	40	0	40	22	0	22

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	Management of salinity through cultivation of salt tolerant crops	1	Off	40	1	41	40	1	41
	F & FW	Soil Health Management	1	Off	40	0	40	11	0	11
	F & FW	Soil Health Management	1	Off	40	0	40	19	0	19
	F & FW	Soil Health Management	1	Off	40	0	40	2	0	2
	F & FW	Soil Health Management	1	Off	40	0	40	6	0	6
	F & FW	Soil Health Management	1	Off	40	0	40	17	0	17
	F & FW	Weed management practices in onion crop	1	Off	25	0	25	0	0	0
	F & FW	Soil Health Management	1	Off	40	0	40	24	0	24
	F & FW	Soil Health Management	1	Off	60	2	62	55	2	57
	F & FW	Soil Health Management	1	Off	34	1	35	13	1	14
	F & FW	Soil Health Management	1	Off	68	11	79	30	3	33
	F & FW	Soil Health Management	1	Off	47	5	52	15	3	18
	RY	Beetle vine cultivation in Climate smart hi-tech boroz for quality leaf production	1	Off	52	2	54	6	0	6
	RY	Self employment generation through Coconut & Areacanut Farming	6	On	40	0	40	23	0	23
	RY	Self-employment generation through establishment, maintenance and management of horticultural nursery	6	On	40	0	40	24	0	24
	EP	Krishi Prayukti Sahayak of Dept. of Ag., GoWB	180	On	31	0	31	15	0	15
	EP	Friends of Coconut Tree of CDB, GOI	6	On	41	0	41	14	0	14
EP	Friends of Coconut Tree	6	On	40	0	40	18	0	18	
EP	Friends of Coconut Tree	6	On	40	0	40	17	0	17	

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Horticulture	EP	Technological advancement in Hitech Horticulture	4	On	35	0	35	17	0	17
Plant Protection	F & FW	Integrated Pest Management in Major Agricultural & Horticultural Crops	4	On	12	42	54	3	7	10
	F & FW	Management of Bacterial wilt in Bitter Gourd	1	Off	17	0	17	10	0	10
	F & FW	Farm level production of bio-control agent <i>Trichoderma spp.</i>	4	On	14	7	21	4	0	4
	F & FW	On-farm mass production of Trichoderma	4	On	38	0	38	37	0	37
	F & FW	Management of bacterial wilt in bitter gourd	1	Off	47	4	51	26	3	29
	F & FW	Beekeeping - for improving crop production and additional income generation for marginal farmers	4	On	32	5	37	2	2	4
	F & FW	Biological control of important pests and diseases in Vegetables	4	On	16	4	20	0	0	0
	F & FW	Scientific beekeeping in <i>Apis cerana</i> and <i>Apis mellifera</i>	4	On	16	0	16	14	0	14
	F & FW	Integrated Pest & Disease Management in Kharif Paddy & Kharif Vegetables	4	On	25	0	25	4	0	4
	F & FW	Integrated farming with special emphasis on plant protection measures in Rabi season vegetables	4	On	34	0	34	30	0	30
	F & FW	Plant protection measures in vegetable seedbed preparation to counter climate change induced pest infestation	1	Off	26	7	33	26	7	33

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Plant Protection	EP	Diploma in Agriculture Extension Service for Input Dealers (DAESI)	365	On	79	1	80	16	0	16
	F & FW	Integrated Farming System	3	On	31	0	31	10	0	10
	RY	Entrepreneurship development through honey production and better crop production through improved pollination	4	On	23	8	31	5	5	10
	F & FW	On-farm Mass Production of Microbial Pesticides	4	On	34	1	35	18	0	18
	F & FW	Integrated Farming with special emphasis on Plant Protection	5	On	16	0	16	0	0	0
	F & FW	On-farm Mass Production of Microbial Pesticides	4	On	36	0	36	5	0	5
	F & FW	On-farm Mass Production of Microbial Pesticides	4	On	40	0	40	3	0	3
	F & FW	On-farm Mass Production of Microbial Pesticides	4	On	33	4	37	13	1	14
	F & FW	On-farm Mass Production of Microbial Pesticides	4	On	37	1	38	10	0	10
	F & FW	On-farm Mass Production of Microbial Pesticides	4	On	78	1	79	19	0	19
	F & FW	On-farm Mass Production of Microbial Pesticides	4	On	24	0	24	11	0	11
	EP	Officers training under NMOOP	2	On	18	2	20	6	0	6
	EP	Officers training under TRFA (Oil seeds)	2	On	18	2	20	3	1	4

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Plant Protection	RY	Entrepreneurship development through Beekeeping and better crop production through improved pollination	4	On	9	5	14	0	1	1
Animal Husbandry	PF	Scientific Transport Of Milk And Clean Milk Production	1	OFF	15	20	35	5	3	8
	PF	Backyard poultry farming	4	On	0	29	29	0	18	18
	PF	Practical and complete feeding for backyard poultry farming	4	On	10	21	31	0	5	5
	PF	Dairy farming	4	On	11	0	11	5	0	5
	PF	Scientific goat rearing	4	On	32	11	43	11	1	12
	PF	Scientific management of backyard poultry and duck	4	On	21	1	22	14	1	15
	PF	Ornamental bird rearing	1	On	16	2	18	6	1	7
	PF	Disease management of small ruminants	4	On	0	30	30	0	28	28
	PF	Poultry production	4	On	4	26	30	1	7	8
	PF	Duck rearing	4	On	30	0	30	12	0	12
	PF	Ornamental bird rearing	4	On	25	0	25	2	0	2
	PF	Integrated Farming-poultry and duckery	4	On	52	5	57	23	3	26
	PF	Dairy farming	6	On	43	3	46	10	3	13
	PF	Poultry farming	4	On	26	29	55	16	9	25
	PF	Poultry farming	4	On	20	13	33	2	0	2
	RY	Poultry farming	4	On	17	0	17	13	0	13
	EF	Management of farm animals	4	On	4	1	5	2	1	3
	PF	Management of diseases of backyard poultry	4	On	24	0	24	9	0	9
	EF	Artificial Insemination	30	On	45	0	45	1	0	1
	EF	PraniBandhu	45	On	8	2	10	5	1	6
EF	Primary veterinary service provider	135	On	5	0	5	2	0	2	
EF	Diagnostic imaging	1	On	19	0	19	0	0	0	

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	Food Processing	4	On		4	4		11	11
	F & FW	Food Processing	4	On		8	8		7	7
	F & FW	Ornamental Bird (Follow up: Examination & Evaluation)	1	On	6	4	10	5	5	10
	F & FW	Backyard small ruminant and poultry training(Follow up, Evaluation & Examination)	1	On	6	4	10	5	5	10
	F & FW	House hold food security by nutrition gardening	4	On		30	30			
	F & FW	Preparation of nutrient dense diet from locally available food	4	On		8	8	0	7	7
	F & FW	Gender mainstreaming through SHG	4	On	6	19	25	6	19	25
	F & FW	Income generation of SHG women through ornamental bird rearing	4	On	6	4	10	16	16	32
	RY	Income generation activities of rural youths through soft toys making	4	On	0	21	21			
	F & FW	Income generation activities of rural youths through soft toys making	6	On	0	3	3	0	34	34
	F & FW	Gender mainstreaming through SHG	4	On	0	2	2	0	22	
	EF	Upscaling of LANN programme through sangha member	4	On	0	22	22	0	8	8
	EF	Upscaling of LANN programme through sangha member	4	On	0	28	28	0	2	2

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home Science	F & FW	Food preservation of locally available fruits and vegetables to minimization of storage loss	4	On	2	4	6	0	9	9
	F & FW	Food preservation of locally available fruits and vegetables to minimization of storage loss	4	On	1	4	5	5	4	9
	F & FW	Skill development of farm women for involving in income generating activities	4	On	0	20	20	0	10	10
	F & FW	Skill development of farm women for involving in income generating activities	4	On	0	20	20	0	10	10
	F & FW	Maintenance of nutrition garden to attain food security at house hold level during rabi season	1	OFF	1	18	19	2	22	24
	F & FW	Maintenance of nutrition garden to attain food security at house hold level during rabi season	1	OFF	3	15	18	0	3	3
	F & FW	Maintenance of nutrition garden to attain food security at house hold level during rabi season	1	OFF	2	13	15	0	6	6
	F & FW	Crop planning of nutrition garden and preparation of compost for attaining food and nutrition security at house hold level	1	OFF	5	3	8	6	16	22

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	Crop planning of nutrition garden and preparation of composed for attaining food and nutrition security at house hold level	1	OFF	2	15	17	0	3	3
	F & FW	Crop planning of nutrition garden and preparation of composed for attaining food and nutrition security at house hold level	1	OFF	3	16	19	2	9	11
	F & FW	Crop planning of nutrition garden and preparation of composed for attaining food and nutrition security at house hold level	1	OFF	3	14	17	1	2	3
	F & FW	Maintenance of nutrition garden to attain food security at house hold level during rabi season	1	OFF	5	3	8	6	16	22
	F & FW	Maintenance of nutrition garden to attain food security at house hold level during rabi season	1	OFF	5	3	8	4	16	20
	F & FW	Crop planning of nutrition garden and preparation of composed for attaining food and nutrition security at house hold level	1	OFF	3	14	17	1	2	3
	F & FW	Crop planning of nutrition garden and preparation of composed for attaining food and nutrition security at house hold level	1	OFF	0	2	2	2	15	17
	F & FW	Preparation of nutrient rich diet for weaning baby	1	OFF	3	14	17	8	0	8

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home Science	F & FW	Preparation of nutrient rich diet for weaning baby	1	OFF	1	16	17	4	6	10
	F & FW	Preparation of nutrient rich diet for weaning baby	1	OFF	4	21	25	3	5	8
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	6	5	11	4	17	21
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	3	16	19	0	5	5
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	6	12	18	3	9	12
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	5	6	11	6	7	12
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	7	7	14	9	5	14
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	9	11	20	4	8	12
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	4	12	16	4	4	8
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	4	12	16	4	4	8
	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	8	15	23	4	4	8

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home Science	F & FW	Capacity building of womenfolk towards organic farming at homestead land	1	OFF	6	5	11	8	4	12
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	5	10	15	4	12	16
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	6	7	12	5	9	14
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	9	4	13	5	4	9
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	4	13	17	5	4	9
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	6	5	11	5	8	13
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	5	10	15	4	12	16
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	6	7	12	5	9	14
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	4	13	17	5	7	12
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	6	5	11	5	8	13
F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	5	9	14	4	11	15	

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home Science	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	6	8	14	5	7	12
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	9	4	13	5	7	12
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	2	10	12	5	9	14
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	2	10	12	5	9	14
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	8	5	13	5	6	11
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	5	9	14	4	11	15
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	15	5	20	15	4	19
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	5	914	5	4	11	15
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	6	8	14	5	7	12
	F & FW	Linking agriculture and allied agriculture with nutrition and natural resources	1	OFF	9	4	13	5	4	9
	F & FW	Preparation of nutrient rich balance diet for pregnant and lactating mother	1	OFF	5	9	14	4	11	15

Discipline	Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants			Number of SC/ST		
					Male	Female	Total	Male	Female	Total
Home Science	F & FW	Preparation of nutrient rich balance diet for pregnant and lactating mother	1	OFF	7	8	15	5	4	9
	F & FW	Preparation of nutrient rich balance diet for pregnant and lactating mother	1	OFF	5	12	17	4	9	13
	F & FW	Preparation of nutrient rich balance diet for pregnant and lactating mother	1	OFF	9	9	18	20	8	28
	F & FW	Preparation of nutrient rich balance diet for pregnant and lactating mother	1	OFF	5	12	17	4	9	13
	F & FW	Preparation of nutrient rich balance diet for pregnant and lactating mother	1	OFF	9	9	18	2	8	10

H) Vocational training programmes for Rural Youth

Details of training programmes for Rural Youth

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed elsewhere
				Male	Female	Total	Type of units	Number of units	Number of persons employed	
Fish	Fry & fingerling rearing	Commercial production of carp fry & fingerlings in freshwater ponds	4	23	6	29	Medium and big ponds	10	13	5
Fish	Ornamental fish farming	Ornamental fish farming	4	21	-	21	Small and medium ponds	9	11	1
Coconut & Arecanut	Production and Management technology	Self employment generation through Coconut & Arecanut Farming	6	40	0	40	Individual service provider	29	29	11
Horticulture Nursery	Nursery Management of Horticulture crops	Self-employment generation through establishment, maintenance and management of horticultural nursery	6	40	0	40	Commercial Horticulture Nursery	6	11	32

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed elsewhere
				Male	Female	Total	Type of units	Number of units	Number of persons employed	
Beekeeping	Scientific apiary management	Entrepreneurship development through honey production and better crop production through improved pollination	4	32	13	45	Individual	21	21	-
Craft	Rural craft	Income generation of rural youths through soft toys making	6	-	21	21	Small group 12 member	-	12	-

*training title should specify the major technology /skill transferred

D) Sponsored Training Programmes

Sl.No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants										Sponsoring Agency
							Male			Female			Total				
							Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
1.	Modern technologies in cereal, pulse and vegetable cultivation	Integrated Farming	September	2 days	PF	1	3			19	9	0	22	9	0	31	IWMP
2.	Modern technologies in cereal, pulse and vegetable cultivating	Integrated Farming	October	5 days	PF	1	21	0	0	0	0	0	21	0	0	21	Green College, RD Wing, Ramkrishna Ashram, Nimpith
3.	Modern technologies in cereal, pulse and vegetable cultivation	Integrated Farming System	October	4 days	PF	1	19	6	0	1	0	0	20	6	0	26	ATMA, Khargram, Murshidabad
4	Account maintenance and book keeping	Group Dynamics	November	2 days	PF	1	6	0	0	14	5	0	20	5	0	25	IWMP-7
5	Modern technologies in cereal, pulse and vegetable cultivation	Integrated Farming	November	5 days	PF	1	10	11	2	0	0	0	10	11	2	23	ATMA, Alipurduar
6	Modern technologies in cereal, pulse and vegetable cultivation	Integrated Farming	January	6 days	PF	2	2	24	1	3	17	1	5	41	1	47	Directorate of Forest, W.B.
7	Boro paddy cultivation through SRI	Resource conservation	January	4 days	PF	1	17	1	2	0	0	0	17	1	2	20	ATMA, Samserganj, Murshidabad
8	Modern technologies on Oilseed and Pulse cultivation	Integrated nutrient and disease-pest management	January	4 days	PF	1	35	16	0	0	0	0	35	16	0	51	ARMA, Santipur, Nadia
9	Modern technologies in cereal, pulse and vegetable cultivatin	Integrated Farming	February	4 days	PF	1	26	2	1	0	0	0	26	2	1	29	IFFCO, Kalyani, Nadia
10	Integrated Farming	Integrated Farming System	February	5 days	PF	1	0	0	0	0	0	30	0	0	30	30	ATC, Narendrapur
11	Integrated Farming and poultry management	Integrated Farming System	March	5 days	PF	1	19	0	19	0	0	5	19	0	24	43	ATMA, East Singbhum, Jharkhand
12	Culture of air breathing fishes in freshwater ponds & ditches	Culture of endangered fish species	April'17	5	F&FW	3	0	0	0	71	44	14	71	44	14	129	WBADMIP
13	Culture of air breathing fishes in freshwater ponds & ditches	Culture of endangered fish species	May'17	5	F&FW	2	0	0	0	37	17	25	37	17	25	79	WBADMIP

14	Best aquaculture practices in freshwater fish & prawn farming	Composite fish culture	May'17	4	EP	1	10	2	0	0	0	0	10	2	0	12	IFB
15	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	Composite fish culture	June'17	4	F&FW	5	43	15	0	44	37	0	87	52	0	139	Dept. of Forest, GOWB
16	Breeding, hatchery construction & operation for air breathing fishes	Breeding of endangered fish species	June'17	5	F&FW	1	0	0	0	16	11	11	16	11	11	38	WBADMIP
17	Breeding, hatchery construction & operation for air breathing fishes	Breeding of endangered fish species	June'17	5	EP	1	2	0	0	0	0	0	2	0	0	2	WBADMIP
18	Breeding, hatchery construction & operation for air breathing fishes	Breeding of endangered fish species	July'17	5	F&FW	1	0	0	0	19	9	6	19	9	6	34	WBADMIP
19	Breeding, hatchery construction & operation for air breathing fishes	Breeding of endangered fish species	July'17	5	EP	1	9	2	0	0	0	0	9	2	0	11	WBADMIP
20	Backyard system of breeding & culture of Asian catfish in Sundarbans	Breeding and culture of endangered fish species	July'17	4	F&FW	2	0	0	0	46	9	0	46	9	0	55	Dept. of Forest, GOWB
21	Commercial production of carp fry & fingerlings in freshwater ponds	Carp fry & fingerling rearing	July'17	4	RY	1	6	17	0	3	3	0	9	20	0	29	Green College
22	Good aquaculture practices in freshwater fish & prawn farming	Composite fish culture	August'17	4	F&FW	2	34	9	0	14	0	0	48	9	0	57	Dept. of Forest, GOWB
23	Ornamental fish breeding & farming as an avenue for self employment generation	Ornamental fish farming	August'17	4	F&FW	1	16	7	0	7	0	0	23	7	0	30	Dept. of Forest, GOWB
24	Mixed fish & prawn farming	Composite fish culture	October'17	1	F&FW	1	32	7	0	5	2	0	37	9	0	46	-
25	Diverse fish & prawn culture in domestic freshwater ponds of Sundarbans	Composite fish culture	November'17	4	F&FW	1	8	16	0	0	0	0	8	16	0	24	-
26	Diversification in freshwater fish farming	Composite fish culture	November'17	1	F&FW	1	28	0	18	2	0	2	30	0	20	50	-
27	Best aquaculture practices in freshwater fish & prawn farming	Composite fish culture	January'18	5	RY	1	18	3	0	19	0	0	37	3	0	40	Calcutta University

28	Agri Fisheries training to the marginal fishermen of Sundarban regions	Integrated fish farming	February'18	4	F&FW	2	47	51	0	1	1	0	48	52	0	100	Sundarban Development Board, GOWB
29	Ornamental fish farming	Ornamental fish farming	February'18	4	RY	1	13	8	0	0	0	0	13	8	0	21	
30	Agri Fisheries training to the marginal fishermen of Sundarban regions	Integrated fish farming	March'18	4	F&FW	1	34	16	0	0	0	0	34	16	0	50	Sundarban Development Board, GOWB
31	Krishi Prayukti Sahayak of Dept. of Ag., GoWB	Basic Agriculture	March, 17 to September, 17	180	EP	1	16	11	4	0	0	0	16	11	4	31	Dept. of Ag., GoWB
32	Friends of Coconut Tree of	Coconut Palm Doctor	Oct, 17; Nov., 17; Dec., 17	6	EP	3	72	48	1	0	0	0	72	48	1	131	Coconut Development Board, GOI
33	On-farm mass production of Trichoderma	Production of bio control agents and bio pesticides	July	4	PF	1	1	37	0	0	0	0	1	37	0	38	PKVY-ATMA
34	Beekeeping - for improving crop production and additional income generation for marginal farmers	Beekeeping	July	4	PF	1	30	2	0	3	2	0	33	4	0	37	AICRP (HB & P)
35	Scientific beekeeping in <i>Apis cerana</i> and <i>Apis mellifera</i>	Beekeeping	August	4	PF	1	2	12	2	0	0	0	2	12	2	16	AICRP (HB & P)
36	Plant protection measures in vegetable seedbed preperation to counter climate change induced pest infestation	IPM	October	1	PF	1	0	26	0	0	7	0	0	33	0	33	NICRA

37	Diploma in Agriculture Extension System for Input Dealers (DAESI)	IPM	November	365	EP	2	63	16	0	1	0	0	64	16	0	80	Self sponsored
38	Integrated Farming System	IPM	November	3	PF	1	21	8	2	0	0	0	21	8	2	31	DEE, UBKV
39	Entrepreneurship development through honey production and better crop production through improved pollination	Beekeeping	November	4	RY	1	18	5	0	3	5	0	21	10	0	31	AICRP (HB & P)
40	On-farm Mass Production of Microbial Pesticides	Production of bio control agents and bio pesticides	December	4	PF	1	16	18	0	1	0	0	17	18	0	35	RKVY
41	On-farm Mass Production of Microbial Pesticides	Production of bio control agents and bio pesticides	January	4	PF	1	31	5	0	0	0	0	31	5	0	36	RKVY
42	On-farm Mass Production of Microbial Pesticides	Production of bio control agents and bio pesticides	January	4	PF	1	37	3	0	0	0	0	37	3	0	40	RKVY
43	On-farm Mass Production of Microbial Pesticides	Production of bio control agents and bio pesticides	January	4	PF	1	20	13	0	3	1	0	23	14	0	37	RKVY

44	On-farm Mass Production of Microbial Pesticides	Production of bio control agents and bio pesticides	February	4	PF	1	27	10	0	1	0	0	28	10	0	38	RKVY
45	On-farm Mass Production of Microbial Pesticides	Production of bio control agents and bio pesticides	February	4	PF	1	59	19	0	1	0	0	60	19	0	79	RKVY
46	On-farm Mass Production of Microbial Pesticides	Production of bio control agents and bio pesticides	February	4	PF	1	13	11	0	0	0	0	13	11	0	24	RKVY
47	Officers training under NMOOP	IPM	February	2	EP	1	12	6	0	2	0	0	14	6	0	20	NMOOP
48	Officers training under TRFA (Oil seeds)	IPM	February	2	EP	1	15	3	0	1	1	0	16	4	0	20	TRFA
49	Entrepreneurship development through Beekeeping and better crop production through improved pollination	Beekeeping	March	4	RY	1	9	0	0	4	0	1	13	0	1	14	AICRP (HB & P)
50	Backyard poultry farming	Poultry management	May	4 days	PF	1	0	0	0	11	18	0	11	18	0	29	SBR, Forest Dept.
51	Practical and complete feeding for backyard poultry farming	Poultry management	June	4 days	PF	1	10	0	0	16	5	0	26	5	0	31	SBR, Forest Dept.
52	Disease management of small ruminants	Goat management	July	4 days	PF	1	0	0	0	2	28	0	2	28	0	30	Dept of Forest, Govt of WB.
53	Scientific management of backyard poultry	Poultry production	July	4 days	RY	1	3	1	0	19	7	0	22	8	0	30	Dept of Forest, Govt of WB.

54	Scientific management of duck	Poultry production	July	4 days	RY	1	18	12	0	0	0	0	18	12	0	30	Dept of Forest, Govt of WB.			
55	Ornamental bird rearing	Alternative livelihood	August	4 days	PF	1	23	2	0	0	0	0	23	2	0	25	Division of forest, Purbamedinipur GOWB			
56	Poultry-duckery and ornamental bird	Integrated farming	August	4 days	PF	1	29	23	0	2	3	0	31	26	0	57	Division of forest, Purbamedinipur GOWB			
57	Dairy farming	Dairy farming	August	6 days	PF	1	33	7	3	0	0	3	33	7	6	46	Jharkhand State			
58	Poultry farming	Poultry Management	September	4 days	PF	1	10	15	1	20	9	0	30	24	1	55	Division of forest, Purbamedinipur GOWB			
59	Poultry farming	Poultry Management	October	4 days	PF	1	18	2	0	13	0	0	31	2	33	33	Division of forest, Purbamedinipur GOWB			
60	Artificial insemination	Dairy management	November	30 days	EF	1	44	1	0	0	0	0	44	1	0	45	Bihar Milk Copperative			
61	PraniBandhu	Dairy management	November	45 days	EF	1	3	3	2	1	0	1	4	3	3	10	ARD dept, A&N administration			
62	Primary veterinary service provider	Dairy management	December	135 days	EF	1	3	2	0	0	0	0	3	2	0	5	Self financed			
63	Diagnostic imaging	Disease management	December	1 day	EF	1	19	0	0	0	0	0	19	0	0	19	Dept of ARD, GOWB			
64	Income generation of rural youth through soft toys making	Rural craft	August	6 days	PF	3							12	80	92	12	80	-	92	IWMP -7

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	15	387	129	516	28.2	15	5	20	120	9	210
KisanMela	11	5947	2103	8050	34.4	574	389	963	6521	2492	9013
KisanGhoshi	-	-	-	-	-	-	-	-	-	-	-
Exhibition	5	510	217	727	21.3	319	175	494	829	392	1221
Film Show	21	587	259	846	13.8	157	101	258	744	360	1104
Method Demonstrations	21	201	642	843	20.8	105	211	316	306	853	1159
Farmers Seminar	6	490	122	612	26.9	12	8	20	502	130	632
Workshop	4	57	145	202	23.3	43	22	65	100	167	267
	1	0	0	0	0	43	8	51	43	8	51
Group meetings	18	647	222	869	38.9	36	28	64	650	250	900
Lectures delivered as resource persons	75	1894	411	2305	23.8	368	56	424	2262	467	2734
Advisory Services	451	1342	213	1555	34.3	248	72	320	1590	285	1875
Scientific visit to farmers field	212	921	305	1226	23.7	37	12	39	958	317	1275
Farmers visit to KVK	703	1288	295	1583	36.2	81	30	111	1369	325	1694
Diagnostic visits	74	126	12	138	24.14	26	5	31	152	17	169
Exposure visits	48	1655	601	2265	25.31	122	9	131	1777	610	2387
Ex-trainees Sammelan	4	587	191	778	31.2	141	69	210	728	260	988
Soil health Camp	12	213	63	276	21.2	19	8	27	232	71	303
Animal Health Camp	1152	4945	1601	6546		0	0	0	4945	1601	6546
Agri mobile clinic	5	123	46	169	18.9	13	6	19	136	52	188
Soil test campaigns	8	478	68	546	26.5	33	16	49	511	84	595
Farm Science Club Conveners meet	28	442	36	478	19.6	56	9	65	478	41	519
Self Help Group Conveners meetings	6	-	-	-	38.2	23	189	212	23	189	212
MahilaMandals Conveners meetings	6	-	-	-	38.2	23	189	212	23	189	212
Celebration of important days (specify)	-	-	-	-	-	-	-	-	-	-	-
World Soil day -05.12.2017	1	928	197	1125	32.3	17	4	21	945	201	1146
National fish farmers day-10.07.17	1	34	13	47	12.8	7	2	9	41	15	56
World Fisheries Day – 21.11.17	1	52	6	58	15.4	13	5	18	65	11	76
Sankalp Se Siddhi	1	257	64	321	29.3	22	13	35	279	77	374

Swatchta Hi Sewa	7	358	172	530	32.6	38	16	54	396	188	584
MahilaKisan Divas	1	-	142	142	12.6	5	10	15	5	152	157
Any Other (Specify)											
Animal show(10.2.18)	1	29	21	50	26.2	2	0	2	31	2	33
Surgical cases (operations done)	37	21	13	34	13.2	3	0	3	24	13	37
RRA & FGD	4	97	34	180	43	11	7	18	108	41	149
Total	2940	24616	8343	33017	786.25	2612	1674	4276	26893	9869	36866

B. Other Extension activities

Nature of Extension Activity	No. of activities
Newspaper coverage	5
Radio talks	2
TV talks	3
Popular articles	4
Extension Literature	5
Other, if any	4

3.5 a. Production and supply of Technological products

Village seed

NA

Crop	Variety	Quantity of seed (q)	Value (Rs)	No. of farmers involved in village seed production	Number of farmers to whom seed provided
-	-	-	-	-	-
Total					

KVK farm

Crop	Variety	Quantity of seed (q)	Value (Rs)	Number of farmers to whom seed provided
<i>Paddy</i>	NC-492 (F)	5.55 q	19425.00	47
	NC-492 (TL)	25.80 q	39990.00	92
	Pratikshya (F)	7.61 q	26635.00	65
	Pratikshya (C)	9.12 q	27360.00	61
	Pratikshya (TL)	22.53 q	34921.00	-
	Dudshwar (TL)	6.0 q	10800.00	30
	WGL-20471(TL)	9.32 q	14912.00	-
	Swarna Sub-1(TL)	3.50 q	7000.00	30
	Varshadhan (TL)	35.53 q	55071.00	-
Greengram	PDM-84-139	1.70 q	6800.00	68
Grand Total		126.66 q	242914.00	393

Crop	Variety	Quantity of seed (q)	Value (Rs)	Number of farmers to whom seed provided
Amorphophallus	Gajendra	18.20	36400	5
Okra	Pankaj (OP)	0.50	40000	19
Dual prupose poultry chicks	RIR	280	5660.00	14
Dual prupose poultry chicks	Vanaraja	100	2500.00	4
Dual prupose poultry chicks	Hitkari	120	3000.00	12
Dual prupose poultry chicks	Kaveri	50	1500.00	2
Fodder (cutting)	HY Napier	2315 nos	2315.00	25
Goat	Black Bengal	45 nos	58500.00	5
Total	-	-	73475.00	86

Production of planting materials by the KVKs

Crop	Variety	No. of planting materials	Value (Rs)	Number of farmers to whom planting material provided
Vegetable seedlings				
Cauliflower	Dawn (F ₁)	15260	12200	132
Cabbage	Rare Ball (F ₁)	15800	12640	241
Tomato	SG-To1458 (F ₁)	39460	33600	162
Brinjal	Muktajhuri	14950	8600	113
Chilli	Tejaswini (F ₁)	27150	19350	218
Onion	Bhima Super & Bhima Red	45680	13700	67
Others				
Knolkhol	Winner (F ₁)	8200	6160	29
Beet	Crimson Globe	1740	1740	12
Cassava	Sree Jaya	14610	73050	54
Pointed gourd	Raidighi	2500	12500	20
Fruits				
Mango	Amrapali, Himsagar	810	52650	37
Guava	Baruipur	3690	73800	169
Lime	Pati, Kagji	790	15800	93
Papaya	Ranchi, Honeydew	760	2280	147
Banana				
Others				

Ornamental plants				
Medicinal and Aromatic				
Plantation				
Spices				
Turmeric				
Tuber				
Elephant yams				
Fodder crop saplings				
Forest Species				
Others, pl.specify				
Sapota	Cricket Ball	690	48300	23
Ber	BAU	1500	60000	14
Ornamental plants	Inca, Chrysanthemum, Dahlia	7600	7600	156
Medicinal and Aromatic (Betel vine)	MithaPata	17800	569600	9
Plantation (Coconut)	East Coast Tall	2000	80000	218
Total	-	220990	1103570	1914

Production of Bio-Products

Name of product	Quantity	Value (Rs.)	No. of Farmers benefitted	
	Kg			
Bio-fertilizers				
Bio-pesticide				
	<i>Metarhizium anisopliae</i>	137	20550.00	44
Bio-fungicide				
	<i>Trichoderma harzianum</i>	690	93150.00	356
	<i>Pseudomonas fluorescens</i>	700	94500.00	375
Bio-agents				
Others, please specify.				
Vermicompost	11472	114720	1463	

Production of livestock materials

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	No. of Farmers benefitted
Dairy animals				
Cows	J.C, HF. C, GIR Sahiwal C. Red Suindhi C	60	2165550.00	-
Buffaloes				
Calves	-	7	95,000.00	-
Others (Pl. specify)				
Small ruminants				
Sheep				
Goat	Black Bengal	80 nos	2,10,000.00	5
Rabbit	White New Zealand	25	4500.00	
Guinea pig	-	11	13200.00	-
Other, please specify				
Poultry				
	RIR	280	5660.00	14
	Vanaraja	100	2500.00	4
	Hitkari	120	3000.00	12
	Kaveri	50	1500.00	2
Broilers	Hygrow	200 (4 cycle)	178500.00	
Layers				
Ornamental bird	Budgerigar, Cockatail	180	29700.00	29
Duals (broiler and layer)				
Japanese Quail				
Turkey		6	7,000.00	
Quali		80	2500.00	
Emu				
Ducks	Peking duck	30	6,000.00	
Others (Pl. specify)				
Piggery				
Piglet				
Others (Pl. specify)				
Total			27,24,610.00	66
Fisheries				
Indian carp				
Exotic carp				

Mixed carp	Catla, rohu, mrigal, calbasu, bata, siver carp, java punti, common carp	0.01304	625640.00	
Fish fingerlings	Catla, rohu, mrigal, calbasu, bata,Silver carp, java punti, common carp			62
Spawn	Catla, rohu, mrigal, calbasu, bata			6
Others (Pl. specify)	Asian cat fish fry	1.875		480
	Stinging catfish fry	0.03		7
	Climbing perch fry	0.083		8
	Butter fish fry	0.0072		
	Ornamental fish fry	0.1124		22
	Freshwater prawn juvenile	0.0362		13
Total				598
Grand Total			33,50,250.00	664

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

i) Name of Seed Hub Centre: - NA

Name of Nodal Officer :	
Address :	
e-mail :	
Phone No. : Mobile :	

ii) Quality Seed Production Reports -NA

Season	Crop	Variety	Production (q)			
			Target	Area sown (ha)	Production	Category of Seed (F/S, C/S)
Kharif 2017						
Rabi 2017-18						
Summer/Spring 2018						

iii) Financial Progress -NA

Fund received (2016-17 and 2017-18)	Expenditure (Rs. in lakhs)		Unspent balance (Rs. in lakhs)	Remarks
	Infrastructure	Revolving fund		
2016-17				
2017-18				

iv) Infrastructure Development -NA

Item	Progress
Seed processing unit	
Seed storage structure	

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

Item	Title	Author's name	Number	Circulation
Research paper	Music-a non chemical method of milk production enhancement in dairy cattle	Subhasis Roy, A. Halder, N.J.Maitra, F.H. Rahman and S.S.Singh.	1	-
	<i>Hyblaea puera</i> (Cramer, 1777) [Lepidoptera : Hyblaeidae] Infestation on <i>Avicennia alba</i> Blume in Sunderban Biosphere Reserve, West Bengal, India. Proceedings of Zoological Society, Springer, ISSN 0373-5893, DOI 10.1007/s12595-017-0216-0	O. Biswas, B. Panja, P. K. Garain, S. K. Shah, B. K. Modak & B. Mitra (2017).	-	-
Seminar/conference/symposia papers		-	-	-
Books	Section profile	S.Roy	1	23
	The Green Grains of <i>Trichoderma</i>	P. K. Garain	-	-
Bulletins			-	-
News letter			-	-
Popular Articles	Article on Beekeeping published in News Paper "Ei Samay"	P. K. Garain	-	-
Book Chapter	Chapter-31: 'Growing Sapota in Low-lying Areas of Sundarbans: A Successful Alternative to Revive Rural Economy in Coastal India' in Book – "Fruits for Livelihood: Production Technology and Management Practices" published by Agrobios	C.K. Mondal & N.J. Maitra	-	-
Extension Pamphlets/ literature	Amra jakhan Byosandhi khane – 2 nd edition	M.Chakraborty	-	-
Technical reports	Monthly reports of KVK	All Section	-	-
	Quarterly reports of KVK	All Section	-	-
	Annual Report of KVK	All Section	-	-
	Report on Doubling Farmers' Income	All Section	-	-
	Annual Report of RKVY funded Project on Land shaping and Rainwater harvesting	C.K. Mondal & N.J. Maitra	-	-
	Monthly reports of MVC projects	S.Roy	72	-
	Status Report of RKVY funded Project: Establishment of Meat processing unit	S.Roy	1	-
	Annual Report of RKVY funded Project: On-farm mass production of microbial pesticides	P. K. Garain	1	-
	Annual Report of CRIDA, Hyderabad funded Project: NICRA	P. K. Garain	1	-
	Periodic reports of NICRA	P. K. Garain	10	-
	Annual report of AICRP on Honeybees and Pollinators	P. K. Garain	1	-
	Weekly report of Diploma Course (DAESI)	P. K. Garain	96	-
Electronic Publication (CD/DVD etc)	Climate Resilient Agriculture - An Endeavour of KVK Nimpith	P. K. Garain	1	-
TOTAL			185	23

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 on CMAM	Workshop on CMAM	Dr. Manasi Chakraborty, SMS (Home Science)	28.04.2017 -29.04.2017	WHH, Kolkata
2	Training programme on Diagnostic imaging	Training programme on Diagnostic imaging	Subhasis Roy, (SMS, Animal Husbandry)	17.4.17-21.4.17(5 days)	WBUAFSC
3	Guest speaker in FADU sponsored training programme	Livelihood options in Sundarbans	P.Chatterjee, SMS, Fishery	05.05.17	ICAR-CSSRI, Canning
	Guest speaker on CMAM	Workshokp on CMAM	Dr. Manasi Chakraborty, SMS (Home Science)	22.05.2017	DRCSC, Kolkata
4	Two days training porgramme on PFMS & Geo tagging under IWMP	Two days training porgramme on PFMS & Geo tagging under IWMP	Dr. Dipak Kr. Roy (Programme Assistant (Agronomy)	22 nd -23 rd June, 2017	Organized by WCDC, Alipore
5	Guest speaker on CMAM	Workshokp on CMAM	Dr. Manasi Chakraborty, SMS (Home Science)	23.06.2017	DRCSC, Kolkata
6	Guest speaker in training programme	Advances in brackishwater aquaculture	P.Chatterjee, SMS, Fishery	22.07.17	ICAR-CIBA, Kakdwip
7	Review meeting on Oilseed and Pulses		Dr. Dipak Kumar Roy, Programme Assistant (Agronomy)	11 th July,2017 (1day)	ATARI, Kolkata
8	Programme on conservation of indisease small ruminants in their motive	Programme on conservation of indisease small ruminants in their motive	Dr. S. Roy, SMS (Animal Husbandry)	18.07.2017-27.07.2017	Organized by WBUAFS, Kolkata
9	Sharing experiences on diet diversity of West Bengal of develop apps regarding food choice	Sharing experiences on diet diversity of West Bengal of develop apps regarding food choice	Dr. Manasi Chakraborty, SMS (Home Science)	21.07.2017	Organized by IRRI
10	Meeting Cum Training on MIS data entry under IWMP		Dr. Dipak Kumar Roy, Programme Assistant (Agronomy)	2 nd August,2017 (1 day)	SLNA, Kolkata
11	Sharing of experience of KVK, Nimpith with the farmers of Bali, Arunachal Pradesh through Roing KVK	Sharing of experience of KVK, Nimpith with the farmers of Bali, Arunachal Pradesh through Roing KVK	Dr. N.J. Maitra Senior Scientist & Head	06.08.2017 -08.08.2017	KKV, Arunachal Pradesh, Roing Lower Dibang valley Bale
12	Three day training on Integrated Farming	Three day training on Integrated Farming	Mr. Prabir Kumar Garain Mr. Utpal Maity SMS (Plant Protection) Farm Manager	22.08.2017-24.08.2017	Organized by FACC, Kalyani, DoE, BCKV
13	Workshop on progress of IWMP activities		Dr. Dipak Kumar Roy, Programme Assistant (Agronomy)	15 th September,2017 (1 day)	SLNA, Kolkata
14	General meeting of Rural Programme Advisory Committee		P.Chatterjee, SMS, Fishery	25.10.17	All India Radio, Kolkata

15	Farmers Meet		P.Chatterjee, SMS, Fishery	03.11.17	ICAR-CSSRI, Canning
16	Business incubation & entrepreneurship	IIM, Joka	All Faculty	21.12.17	RAKVK, Nimpith
17	Hands-on training on AI in goats	Hands-on training on AI in goats	Subhasis Roy, SMS, (Animal Husbandry)	28.12.2017 (1 day)	ICAR-NDRI, Kalyani
18	Field Day	Climate Smart Panchayat	P.Chatterjee, SMS, Fishery	04.01.18	WWF,India
19	Zonal workshop	NICRA	P.Chatterjee, SMS, Fishery	13.01.18-15.01.18	RAKVK, Nimpith
	Review meeting on PMKSY	Review meeting on PMKSY	Dr. Dipak Kumar Roy, Programme Assistant (Agronomy)	16 th January,2018 (1 day)	WCDC, Govt. of W.B., Alipur, South 24 Parganas
20	Training Cum Refreshment course for KVK personnel	Training Cum Refreshment course for KVK personnel	Dr. Dipak Kumar Roy, Programme Assistant (Agronomy)	30 th January,2018 (1 day)	ATARI, Kolkata
21	Training cum Refresher Course	Refresher Course for KVK Personnel of Zone V	P. K. Garain, SMS (Plant Protection) & C. K. Mondal, SMS (Horticulture)	01-02-2018 (1 day)	ICAR-ATARI, Kolkata and WBU&AFS, Belgachia
22	Orientation training cum refresher course	Orientation training cum refresher course	Subhasis Roy, (SMS, Animal Husbandry)	03.02.2018 (1day)	ICAR-ATARI, Kolkata
23	Participated & Resource Person in Orientation - cum - Refresher Course for KVK Personnel of Zone V	Orientation training cum refresher course	P.Chatterjee, SMS, Fishery	03.02.2018 (1day)	ICAR-ATARI, Kolkata
24	Participated & Resource Person in Orientation - cum - Refresher Course for KVK Personnel of Zone V	Orientation training cum refresher course	Dr. Manasi Chakraborty (SMS, Home Science)	05.02.2018	ICAR-ATARI, Kolkata
25	Presented achievements in Workshop	Experience sharing workshop - Innovation & Good Practices	P.Chatterjee, SMS, Fishery	16.02.18	WBADMIP, Water Resources Investigation & Development Dept., GOWB
26	One day Workshop on Scaling out Climate Resilient Agriculture	One day Workshop on Scaling out Climate Resilient Agriculture	Mr. Prabir Kumar Garain, SMS (Plant Protection)	20.03.2018	Organized by ICAR-CGAIR

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

3.7.1.

Name of farmer	Anup Chhatui, Rajesh Chhatui, Pranab Kr. Naskar, Debkumar Karmakar
Address	Vill – Paschim Kultali, Block – Mathurapur II, Dist. – South 24 Parganas, West Bengal
Contact details (Phone, mobile, email Id)	6295134561, anupchhatui420@gmail.com
Landholding (in ha.)	0.66 ha

Name and description of the farm/ enterprise



Carp Hatchery

The small concrete carp hatchery is established on a 2 cottah land with adjoining freshwater ponds and impoundments spread over an

area of 0.66 ha.

The hatchery comprises of a water reservoir of 10000lts. capacity, a circular breeding pool with water sprinkling arrangement, a circular double walled hatching pool and a rectangular spawn collection chamber. All the units have interconnected pipelines.

Water is lifted from the adjoining pond into the reservoir from where it passes to the breeding pool and then to the hatching pool through a central outlet. From the hatching pool, the water passes to the spawn collection chamber.



Hormone injected male and female brood fish are released into the breeding pool where they breed after about 5-6 hrs. and the fertilised eggs passes into the hatching pool where the eggs hatch after about 12-15 hrs. The eggs transform into spawn in the hatching pool after about 48-52 hrs. when they are collected in the spawn collection chamber for either selling to customers or are released in nursery ponds for culture.



Economic impact	<ul style="list-style-type: none"> ➤ The modified small scale carp hatchery was set up in the village at an estimated cost of Rs. 1,60,000.00. ➤ The following production was achieved by the group in the first year till March, 2018 : Spawn – 150 bati (1,20,00,000 no.), Fry – 225 kg (11,25,000 no.), Fingerling – 1150 kg (57,500 no.) and table fish – 810 kg. The economical viability is also exemplified by the handsome net return of about Rs. 2,67,105.00.
Social impact	<ul style="list-style-type: none"> ➤ Already this year they have already started producing early spawns and have already sold over 24,00,000 carp spawn to fellow farmers. ➤ Even big farmers, who used to procure the seeds from hatcheries at faraway places, are now placing orders to this group. ➤ In the first year of hatchery establishment already 100 local farmers have benefited. ➤ The enterprise has given several employment opportunities such as netting for collection of brood fish, transportation of fish seed, fish seed vendors, daily labours, farming of spawn, fry and fingerling, etc.
Environmental impact	<ul style="list-style-type: none"> ➤ The hatchery, by using harvested rain water from ponds, is reducing pressure on underground water
Horizontal/ Vertical spread	<ul style="list-style-type: none"> ➤ 25 farmers from other villages have benefited by procuring spawn, fry and fingerling ➤ Availability of quality fish seed at reasonable rate is attracting farmers from faraway places ➤ Almost door step availability of fish seed is encouraging more people to take up fish culture ➤ Free counselling regarding growing of seeds from the group is also helping in spreading of fish culture

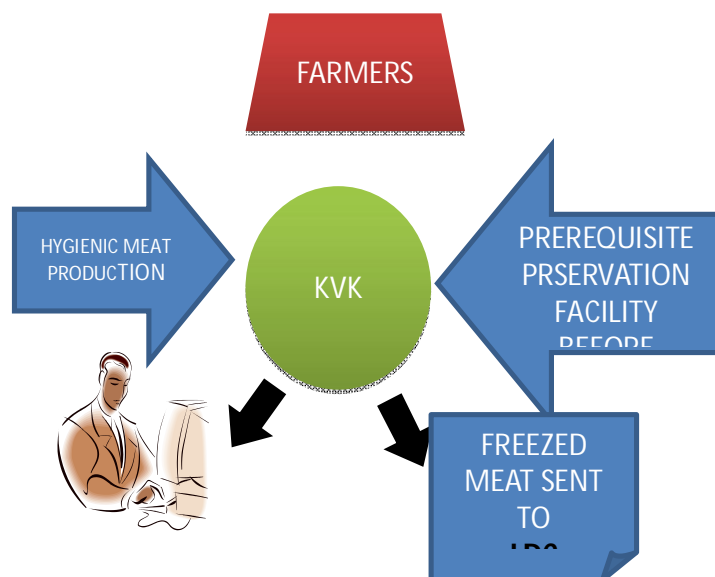
3.7.2.

Name of farmer	Sri BikashGiri
Address	Herombogopalpur, Patharpratima, South 24 Parganas.
Contact details (Phone, mobile, email Id)	7074621484
Landholding (in ha.)	1.5
Name and description of the farm/ enterprise	<p>Nabanita Feed centre and Meat processing Unit</p> <p>Animal husbandry and its allied activities have the potential to revolutionize the rural economy. These sectors have capacity to provide opportunities for livelihood to people at a large. However, promoting small units in poultry, goatery, sheep farming and dairy for rural families below the poverty line may be the key for poverty alleviation. Besides, ornamental husbandry practices of birds, guinea pig, rabbit is also in gaining interest for its effective money fetching opportunities.</p> <p>Poverty reduction is an imperative for the millions of rural poor. The possibilities for improving living conditions of the poor people through innovative livelihood options are high. Alternative livelihoods continue to be based primarily on animal husbandry, and the extraction of natural resources.</p> <p>Rearing of garole sheep and black Bengal goat is one of the important activities taken up by the rural farmers of Sundarbans since long back being the advantage of higher fecundity, lower disease resistance and foraging behavior even in water logged condition. The cost of farming is also significantly low. The market price of these meats is high; still the farmers are not getting the proper value due to middle man. Here in this junction, KVK has taken a new venture in a collaborative way with Livestock Development Corporation of West Bengal, Govt. of West Bengal for assured marketing of the produce because creation of marketing opportunity may play a pivotal role for promoting different animal husbandry activities by the rural farmers.</p> <p>KVK has initiated the prescheduled and assured marketing for the enlisted farmers who are directly selling the live animals to LDC. The said Corporation is also paying the amount to the farmers' account directly.</p>

Economic impact


The problem of transportation of live animals to far distance is difficult and risky. If any processing unit is established in KVK, then this problem will be overcome and the farmers will get additional benefit along with production of hygienic meat.

Backyard poultry farming, broiler duck farming, Garole sheep and black Bengal goat rearing is one of the important activities taken up by the rural farmers of Sundarbans since long back being the advantage of higher fecundity, lower disease resistance and foraging behavior. The cost of farming is also significantly low vis-a-vis market price of these meats are high; still the farmers are not getting the proper value due to middle man. Here in this junction, KVK has taken a new venture in a collaborative way with Livestock Development Corporation of West Bengal, Govt. of West Bengal for assured marketing of the produce by establishing one semi-automatic meat processing plant funded by Project Director, ATMA, and South 24 Parganas.




Social impact

KVK is now working on a prescheduled slaughter calendar and the produced meat is marketed through LDC and the Corporation is also paying the amount to the farmers' account directly. Till now 10200 numbers of poultry birds (Vanaraja, Kaberi), 11400 numbers of White pekin duck (broiler Duck), 190 numbers of Garole sheep and 220 numbers of black Bengal goat have been processed hygienically in this meat processing plant.

Environmental impact	Through this unit, hygienic meat production has been possible and probable contamination and thereby bacterial load has been greatly reduced. Additionally, from the consumers point of view, the visual effect of slaughter has been omitted.
Horizontal/ Vertical spread	<p>A total number of 285 farmers are engaged with this venture and are getting the benefit of this plant.</p> 

3.7.3.

Name of farmer	Sanat Naskar	
Address	Bongheri, Kultali, South 24 Parganas, West Bengal	
Contact details	Mob: 9647159390	
Landholding (in ha.)	1 ha	
Name and description of the farm/ enterprise	<p>Climate Resilient Agriculture:</p> <p>Sri Sanat Naskar is a well-educated (graduate), young and energetic rural youth who used to help his father in farming operation after his college hours. However the inherent land characteristics and changing climatic vagaries forced him to move out of the village for seeking some petty jobs. After the devastating cyclone in 2009, when the farming of the entire village (Bongheri) stood still for next three years, he thought of leaving the village permanently in search of job. However, the introduction of the NICRA project in Bongheri village in 2011, motivated many farmers and rural youths like Sanat to stick to the farming with a new zeal. He was moved by seeing the land Shaping demonstration unit at the KVK Farm and immediately convinced his father to implement it in their land. After successfully implementing and harvesting the benefits of land shaping, he adopted sprinkler irrigation for judicious use of irrigation water. Now he has 2 acres of cultivated land and 0.5 acre of pond.</p> <p>(a) Land shaping 7 Ail cultivation (b) Use of sprinkler irrigation for water saving irrigation</p>	

- (c) Use of farm machineries from village Custom Hiring Centre for timely land preparation
- (d) Use of improved varieties ((Paddy - Swarna Sub 1 and hybrid vegetables)
- (e) On-farm mass production of microbial bio-pesticides for minimizing chemical pesticide usage
- (f) Periodic soil testing and soil test based fertilizer application

Land shaping and Ail cultivation: 20% of his land was dug out to create a farm pond. The dug out soil was used for raising the height of the remaining land by 1.5 ft. The land and pond embankments were strengthened to give a top width of 3 ft and height of 3 ft. He introduced submergence tolerant paddy variety (Swarna sub-1) to combat prolonged submergence. Along with paddy, he could now also grow bitter gourd, brinjal and chilli on the Ail (broad embankments). The pond water ensured irrigation during dry spell. After the rainy season, the pond water was used for taking up second and third crop of vegetables like Hybrid Tomato, chilli and brinjal. The fish in pond assured added income to the family.

Micro irrigation: The use of sprinkler irrigation helped in judicious use of the rainwater harvested in the pond. Before installation of the sprinkler system, he could use the pond water upto the month of January to sustain the fish in the pond. After using sprinkler irrigation, he is now able to irrigate his vegetable plot upto May, without hampering fish production. The frequent watering of the soil during winter & summer and continuous crop cover throughout the year, helped to reduce the soil salinity of his land.



Economic impact

Increase in cropping intensity to **220%**
Annual family income (Net) from farming: **Rs. 1.60 lakh**

Crops grown:	Area (acres)	Productivity (kg/acre)	Net income (Rs.)
Paddy (Swarna sub-1)	1.67	1680	16,250.00
Green gram ((PDM-84-139)	0.30	390	3,000.00
Bitter gourd (US-6207)	0.17	16000	50,000.00
Brinjal	0.20	8000	24,400.00
Chilli (Bullet)	0.08	3750	36,600.00
Chilli (Tejaswini)	0.10	4480	
Tomato (SG-1458)	0.08	39375	20,200.00
Fishery			10,000.00
Livestock			5,500.00
Total			1,65,950.00

Social impact	Many farmers from within and outside of the state comes to visit Bongheri village to see the impact of the NICRA project. Sanat leads them to show the transformation of his farming and his life due to adoption of the climate resilient agricultural practices. He is also very much interested in biological control of pest and diseases.
Environmental impact	<ul style="list-style-type: none"> (a) Increase in soil organic carbon from 0.29% in 2011 to 0.41% in 2017. (b) Reduction in soil salinity from 5.5 ds/m in 2011 to 1.17 ds/m in 2017 in winter season (c) Use of paddy stubbles as mulching in vegetables (d) Alternate irrigation and drying in rainy season is possible due to assured irrigation and improved drying (e) Improve in soil microbial activity due to use of home produced microbial bio-pesticides and organic manure
Horizontal/ Vertical spread	By seeing the climate resilient agricultural practices and thereby increasing farm income, all the friends of Sanat adopted the same in their plot and are now reaping the benefits. They have now stopped migrating out of their village. More than 15 crores of rupees has been invested to replicate the climate resilient agriculture model of NICRA project in South 24 Parganas district in the past 5 years by the Krishi Vigyan Kendra, through convergence of various Government sponsored schemes, like RKVY, IWMP, BGREI, NWDpra, ATMA, etc.

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

3.8.1. Use of Transparent Beehive for Hands on Training on Beekeeping

The most widely used honey bees in India for beekeeping are *Apis mellifera* (Italian bee) and *Apis cerana indica* (Indian bee). These bees are very calm and prefer to build hives in dark areas like crevices of big trees, inside abandoned old houses, etc. By using this nature, these bees are domesticated and cultured inside bamboo basket, mud pots, hollow wooden logs, etc, in ancient period. More recently, wooden boxes of scientific structures are introduced to create homely atmosphere for these bees. The first of its kinds was invented by Langstroth in 1851 and since known as Langstroth Beehive. Since then many modification have come regarding the size of the hive but the basic principal remains the same – a dark & cool atmosphere for the development of honey bees and use of movable frames for easy monitoring and harvesting of bee products.

KVK Nimpith organizes skill development training on beekeeping for rural youths as well as maintains an apiary for public demonstration through its Plant Protection Section. While demonstrating the hive structure and bee life cycle, the bee boxes (beehives) are opened and exposed several times. During peak season of training and exposure visit, it has been observed that the bee boxes were opened as many as 5 times a day for satisfaction to the visitors. This sometimes disturbs the normal functioning of a beehive and lead to absconding of the colony.

To overcome the situation, the Plant Protection Specialist of the KVK modified a beehive into an innovative structure that allows the visitors visualize the inner details of a hive without totally exposing it to the open nature. The modified structure proved to be very useful, especially during demonstration to kids and students, as they could observe the movement of the bees through a transparent wall, safely.

The transparent beehive is a modification of “A”-type ISI beehive that has a glass made inner wall covered by a removable wooden wall on the outside. During a demonstration, the outer wooden wall can easily be detached. Now the movement of the bees become visible through the fixed glass walls. The inner temperature of the beehive is not compromised. The extra glass wall gives better insulation to heat exchange with the outer environment.



Transparent Beehive – developed by Plant Protection section for better demonstration

3.8.2. Engagement of Input Dealers as Para Extension Workers in Agriculture

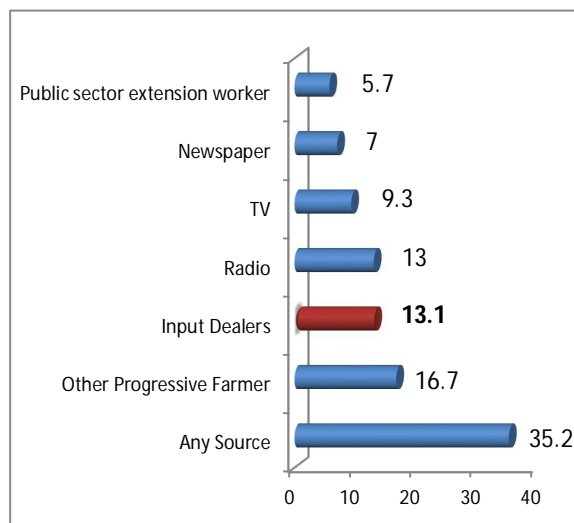
There are around 3 lakh Input Dealers in our country playing an unparalleled function in extending agricultural information to the farming community apart from supplying agri inputs. A recent survey of 500 farmers from different blocks of South 24 Parganas district revealed that farmers' dependency on the Input Dealers for agricultural knowledge and information account upto 13.1%, being the highest sole sector contributor. But this service is seldom acknowledged by the formal sector of agriculture extension system in India, comprising of education & research institutions, public sector extension, mass media, progressive farmers, etc. Most conspicuous criticism they receive is obviously related to their limited knowledge on the subject as well as their miss-selling tendency. But if we see their better accessibility to the farmers than the formal sector, we may like to utilize this work force for the betterment of the farmers.

As 90% of the input dealers lack any formal agricultural education, they seldom realize the laws related to handling of agricultural inputs and their implications. They basically act as businessman guided by the market forces and profit making attitude.

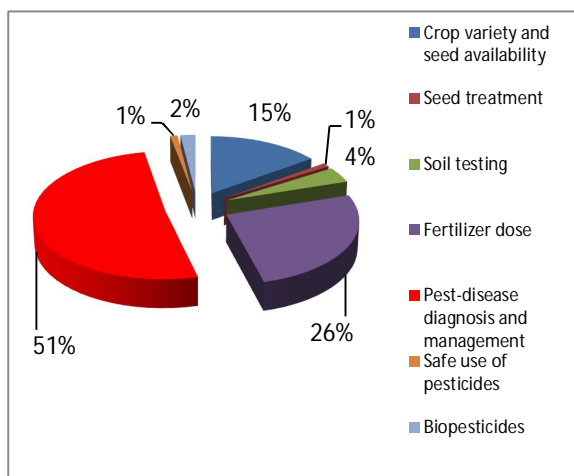
Diploma in Agricultural Extension Services for Input Dealers:

MANAGE started a 50 weeks long Diploma course "DAESI" (Diploma in Agricultural Extension Services for Input Dealers) for the Input dealers with a view to educate them and to include them in the formal agricultural extension system. This DAESI programme has been started in the Eastern India as a pilot basis from September, 2013 in the South 24 Parganas district. Ramkrishna Ashram KVK is one of the centers to host this programme, which, so far has trained 200 number of Input dealers from the remote island blocks of Sundarbans. Presently, another two batches, including 80 dealers, are being pursued.

The present study was undertaken to find out effectiveness of this programme towards farmers benefit and overall agricultural development. The study was conducted with such input dealers completing the DAESI course at KVK-Nimpith center up to 2017. 50 dealers holding DAESI certificate and 50 dealers, without any formal education were surveyed through structured interview schedule. 200 farmers were also surveyed for their opinion.



Contribution of various source of agricultural information to farmers

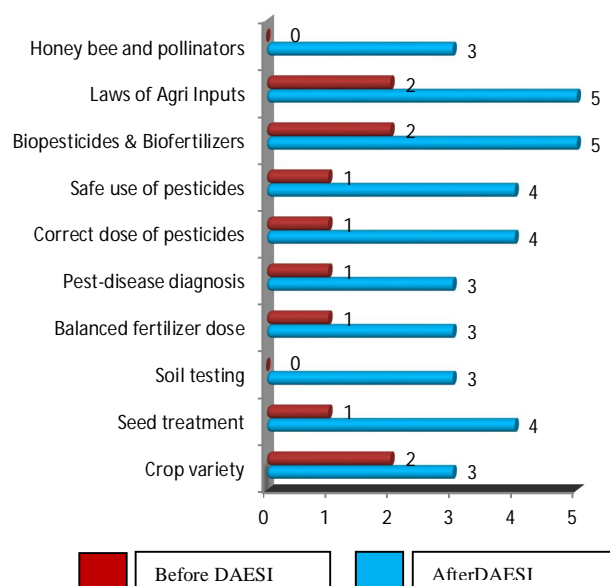


Agricultural information sought by the farmers from the input dealers



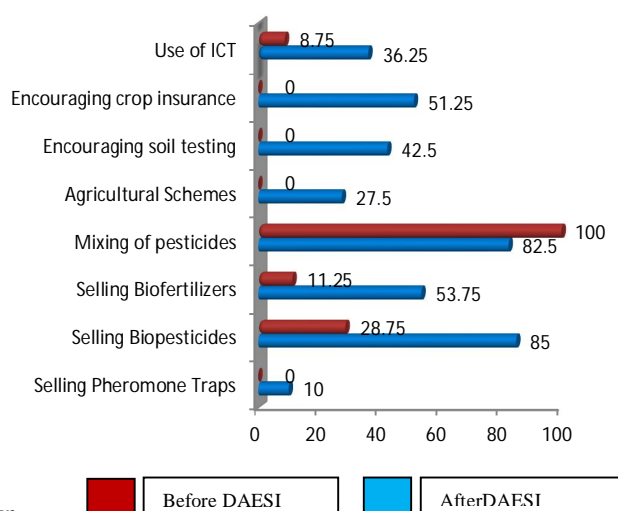
Change in knowledge among Input Dealers:

Before the start of the DAESI course, the Dealers had no knowledge on the importance of soil testing and the role of pollinators in crop production. They also had very poor knowledge in safe use of pesticides, correct dose of pesticides, pest-disease diagnosis, balanced fertilizer dose and seed treatment. After the DAESI course the dealers improved their knowledge in all these aspects. Now they are well aware about the role of soil testing and seed treatment. They know when to apply pesticides to minimize their impacts on honeybees and pollinators. All the trained dealers are now promoting biopesticides and biofertilizers. The correct knowledge of the laws of agri inputs has transformed them more responsible to the farming community.



Behavioral change among Input Dealers:

The DAESI course brought tremendous impact among the dealers regarding their behavior and attitude for overall development of the farming community. Earlier, they paid no interest in disseminating information nonrelated to their business interest. Now they are encouraging farmers for crop insurance and soil testing. They are also providing information on various agricultural schemes available to the farmers. The trained dealers are now more favourable to organic inputs. The most important change is regarding use of ICT in pest-disease diagnosis. Many dealers are referring field photos to the KVK scientist to have proper diagnosis and advisory to minimize miss selling of their product. Farmers also are happy with this service as the cost of plant protection measure is going down.



DAESI dealers acting as a linkage between Farmers and KVK:

The trained dealers have taken this opportunity to bridge the gap between farmers and the KrishiVigyan Kendra. The number of farmers visiting the KVK for plant protection advisory has increased after the introduction of this course. The nearby trained dealers send the farmers to the KVK scientist for proper diagnosis of any pest and disease. The farmers also realize the benefit of visiting the KVK as they can access all information of farming (agriculture, fishery, dairy, poultry, etc) in one place. There has been a reduction of pesticide spray in chilli crops from 14.5 to 5.5 numbers as informed by the farmers.

Conclusion:

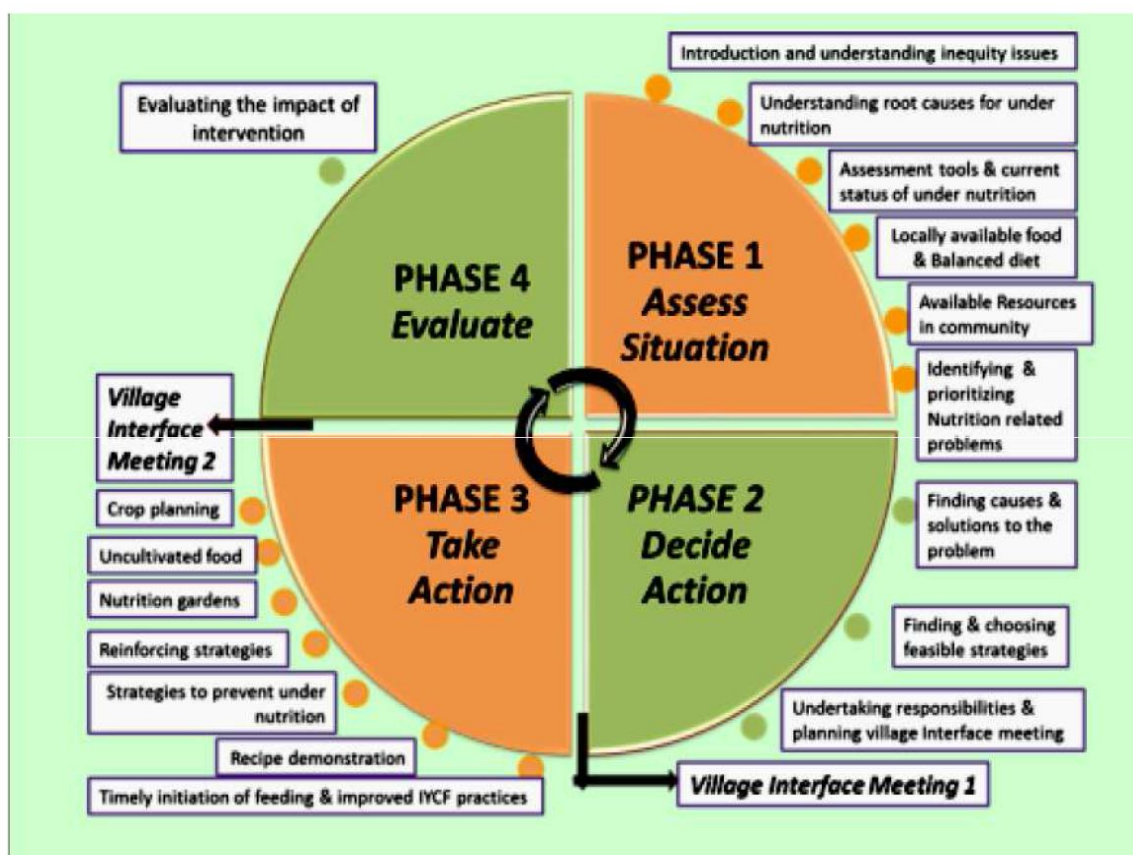
So, it can be concluded that scientific agricultural training of Agri-Input Dealers and inclusion of them in Mainstream Agri-Extension System as Para Extension Worker would be helpful in overall Agricultural development of the country.

3.8.3. LAAN: LANN is Community-based, multi-sectoral training approach and “toolbox” for nutrition education Developed in Laos in 2010 for a consortium of 7 INGOs.

Objective of LANN:

- Overall Objective: Create higher convergence between agriculture, natural resource management, income generation, hygiene and food consumption to reduce House hold level malnutrition through a participatory process
- Specific objective: Improve Knowledge and practices related to good nutrition through a community based training approach

Steps of LANN Cycle



Outcome of LAAN

- Family understand the nutritional problem in practical term
- The family can take appropriate steps to
 - Change the way of cooking
 - Plan appropriate crop pattern
 - Change care and hygiene practice
 - Plan proper utilization of natural resource

LANN sectoral context

- LANN trainings focus on “green nutrition” (family food consumption and food acquisition from own production, wild collection or purchase)
- It links “*what to eat*” with “*where foods should come from*”
- LANN trainings complement with more health focused nutrition activities provided by Government and other organizations
- LANN promotes good nutrition as a *life skill*

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
	Potato	<p>Zero tillage Potato cultivation: Here, potato is cultivated in rice fallow situation before the land attains <i>Joe</i> condition (optimum moisture condition for tillage). The steps are given below:</p> <ul style="list-style-type: none"> ✓ Selection of land; After harvesting of Aman paddy, when the land is still wet, but one can walk over it steadily. ✓ Cutting of the seed potato as per standard norm (i.e. 20 – 25 g each) ✓ Placing of the seed potato over the land surface as per spacing (20 cm x 40 cm). Don't press the seed tuber inside mud, just place over muddy surface. ✓ Application of fertilizer (mostly 10:26:26 @ 3 kg / cottah) over the entire land. ✓ Covering of the seed tuber with well rotton farm compost upto a depth of atleast 3inch to 4inch. ✓ Covering of the entire land with paddy straw with a thickness of 5” to 6”. ✓ Irrigating the crop in the form of sprinkling at 7 – 10 days interval. ✓ Spraying of micronutrient fertilizers and NPK fertilizers (if required) at 15 days interval. ✓ Harvesting, when the haulm starts yellowing / drying. 	<p>The agro-climatic situation of this district (South 24 Parganas) does not support Potato cultivation due to the following reasons –</p> <ul style="list-style-type: none"> ❖ Long duration and deep water <i>Aman</i> paddy in the predominant low laying lands of the district ❖ Harvesting of <i>Aman</i> paddy completed between 15th November to 15th December. ❖ After harvesting of <i>Aman</i> paddy, the land still remain too wet to tillage. ❖ Land come to tillage condition only after 15th January, which is too late for Traditional Potato cultivation. <p>In this backdrop, as potato is an important food item in daily dish, farmers tried to find out an alternative method of Potato cultivation, and thus this Innovation method of Zero tillage Potato cultivation developed. In this method potato planting is done by middle of December, immediately after harvesting of <i>Aman</i> paddy.</p>





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

- Identification of courses for farmers/farm women
- Rural Youth
- In-service personnel

Applications are invited from the interested people through the farm science club or may be collected directly from the KVK. On receiving the application, structure questionnaires are given to the prospective trainees to fill up and submit the same to KVK.

The applications are scrutinize by the respective disciplines and called for to appear in a semi-structure interview for final selection. Participants are also selected by conducting PRA in villages where basing on their needs and problems, the interventions are made which quiet often points to training. Subsequently schedules of training programme are set according to seasonality and included in the KVK action plan for the particular year.

In addition to the above mentioned procedures for selecting participants for a training programme, persons are also open to apply through website or by contacting respective experts over mobile phone, the number of which is generally obtained from KVK web site, ZPD web site, Kisan Call Center, ETV Annadata, Doordarshan Agricultural programme and other sources.

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

Sl. No	Name of the Equipment	Qty.
1	Atomic Absorption Spectrophotometer PerkinElmer PinAAcleTM 900F AAS	1
2	Kel Plus Automatic Nitrogen Estimation System (Model KES 06L R; Model Distyl EM VA)	1
3	Digital UV-Vis Spectrophotometer (‘Systronics’ Make; Model 117)	2
4	Micro Controller Based Digital Flame	1

	Photometer('Systronics' Make; Model 128)	
5	Colorimeter ('Systronics' Make; Model 115)	1
6	Turbidity Meter ('Systronics' Make; Model 135)	1
7	Digital pH Meter ('Systronics' Make; Model 335)	1
8	Digital Conductivity Meter ('Systronics' Make; Model 307)	1
9	Bouyoucos Hydrometer (ASTM 152H; Range 5 – 60 g/lit)	1
10	Brass Sieve (2mm; 1mm; 0.5mm; 0.25mm; 0.1mm; 0.02mm)	1
11	Double Distillation Unit (Borosil; All Glass; Horizontal; Output 2.5 lt/hr)	1
12	Single Distillation Unit (SS) (Barnsted Type; 3Kw; 5 lt/hr)	1
13	Refrigerator (LG make, Model – GL Q2925DSRBOSZEBN)	1
14	Digital Balance ('K. Roy' Make; Model DJ – 302A)	1
15	Hot Air oven (3' x 2' x 2')	1
16	Water Bath (6 hole)	1
17	Hot plate	1
18	Mechanical Shaker (2 hp motor, 3' x 2' x 2')	1
19	Muffel Furnace (2' x 1.5' x 1.5')	1
20	Conductivity meter	1
21	Eutech pH-Conductivity meter	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			
0	1212	1212	1135	119	263600

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	On 5 th December, 2017, the Nimpith KVK observed the “ World Soil Day-2017 ”. A seminar on the topic of “ Healthy Soil for Healthy Future ” was organized where more than 1000 number of farmers attended the programme. A total of 200 numbers of Soil Health Card were distributed to the farmers in this occasion	1125	7	1. Dr.B. .Maji, Principal Scientist, CSSRI, Canning 2. Mr. Ashis Sarkar, DDA, FC & FPO, Govt. of W.B 3. Prof. P. Mani, BCKV, Nadia 4. Mrs. Mousumi Chattapadhaya, Assistant Director, All India Radio 5. Dr. B. K. Dutta, Director, VIB, Nimpith 6.Mrs. Antima Halder, ADA, Joynagar – II Block	200	1075

3.12. Activities of rain water harvesting structure and micro irrigation system Outsourced from RKVY, GoWB

No of training programme	No of demonstrations	No of plant material produced	Visit by the farmers	Visit by the officials
11	711	45680	24	14



3.13. Technology week celebration

Type of activities	No. of activities	Number of participants	Related crop/livestock technology
Seminar, Demonstration, Exhibition, Crop and animal show -cum-competition, quiz competition on Agriculture , Tarja Gaan on topic of “ Krishi Katha , prize distribution and cultural programmes.	12	More than 20,0000	Doubling Farmers’ Income by 2022’ . <ol style="list-style-type: none"> 1. Landshaping and Rainwater Harvesting, Land Embankment Cultivation, crop diversification, crop intensification 2. Production of <i>Trichodermaviride</i> at household level by the farmers 3. Research and Development of beekeeping and pollination services in South 24 Parganas 4. Strategies to enhance adaptive capacity to climate change in vulnerable regions of district

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

NA

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/ZilaSabhadipati/Other Head of Organization/Foreigners)

Date	Name of the person	Purpose of visit
08.06.2017	Dr. C.H. Srinivasa Rao Director, NAARM	Visit to observe KVK activities and NICRA Village
12.07.2017	ADM, South 24 Parganas	Visit to observe KVK activities
22.08.17	GM, COTTON CCI	Seed cotton purchase and ginning purpose at Nimpith Centre
26.08.2017	Smt. Pratima Mondal, Member of Parliament, Joynagar Constituency	Sankalp Se Siddhi Programme
	Mr. Biswanath Das, MLA, Joynagar Assembly	Do
	Dr. P.P. Pal Principal Scientist, ATARI, Kolkata	Do
	Sri Kajal Chakraborty Deputy Director of Agriculture, Govt. of W.B.	Do

15.11.2018	Smt. Pratima Mondal, Member of Parliament, Joynagar Constituency	Meeting for establishment of cold storage and Moa Hub at Nimpith
18. 11.2017	Mr. Biswanath Das, MLA, Joynagar Assembly	SAC Meeting
18-20 November, 2017	Dr. S. S. Singh, Director, ATARI	Monitoring of KVK activities
05.12.2017	Dr. B.Maji, Principal Scientist & Former Head, CSSRI, Canning,,	World Soil Day Programme
	Mr, Ashis Sarkar, DDA, FC & FPO, Govt. of W.B	
	Prof. P. Mani, BCKV	
	Mrs. Mousumi Chattapadhaya, Assistant Director, All India Radio	
January 13-15, 2018	Hon'ble DDG (AE), ICAR, New Delhi, Dr. A.K. Singh	Review workshop of NICRA-TDC of ICAR-ATARI, Kolkata, Zone-V
	Dr. S. S. Singh, Director, ATARI, Kolkata	Do
	Dr. A.K. Singh, Director, ICAR- ATARI Patna	Do
	Dr. Roul, DEE, OUAT	Do
	Dr. J.V.N.S Prasad, NICRA Co- ordinator, Hyderabad	Do
	Dr. Prabhat Pal, DEE, UBKV,	Do
	Dr. B. Sahi, DrRPCAU, Pusa	Do
	Dr. F. H. Rahama, Principal Scientist, ATARI, Kolkata	Do
	Dr. A. Halder, Principal Scientist, ATARI, Kolkata	Do
03.02.2018	Smt. Pratima Mondal, Member of Parliament, Joynagar Constituency	Meeting for establishment of cold storage at Nimpith
14.03.2018	Sri Asish Kr. Lahiri Additional Director of Agriculture (CC) Department of Agriculture, GoWB Jessop Building, 1 st Floor, 63, N.S. Road, Kolkata-700 001	Seminar on "On-farm mass production of microbial pesticides" Field Inspection of RKVY funded Land Shaping & Rain water harvesting project.
	Sri Sajal Kumar Ghosh Joint Director (Planning) Department of Agriculture, Govt. of West Bengal, Jessop Building, 1 st Floor, 63, N.S. Road, Kolkata-700 001	Seminar on "On-farm mass production of microbial pesticides" Field Inspection of RKVY funded Land Shaping & Rain water harvesting project.
16.03.2018	Dr. Sampad Ranjan Patra, Director, Dept. of Agriculture, GoWB	Oilseed Kisan Mela on " Sunflower

	Dr. I.Y.L.N Murthy, PS & Head, Crop Production, ICAR-IIOR, Hyderabad	Do
	Dr. S. S. Kagi, Assistant Director, DOD, Hyderabad, Govt. of India	Do
	Dr. A. Roy, Project Coordinator & Ex-Officio, Additional Director of Agriculture, GoWB	Do
	Dr. M. Sujata PS & Head, Crop Improvement, ICAR-IIOR, Hyderabad	Do
	Dr. K. Manoharan, Director, DJD, DAC&FW, Kolkata	Do
	Dr. K. Manoharan, Director, DJD, DAC&FW, Kolkata	Monitoring of CFLD- Oilseeds & pulses

4. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
PEKIN farming	74	90	-	20000.00 (in 200 batch strength)
Vanaraja farming	89	80	-	9000.00/(in 200 batch strength)
Use of soft music 30 minutes before milking	230	89%	23000/year/3 dairy unit	27000/year/3 dairy unit
On-farm mass production of <i>Trichoderma</i> and its use in betelvine cultivation	289	82%	Rs. 2.87 lakh per ha	Rs. 3.66 lakh per ha
Integrated disease management in bacterial wilt management in Tomato and Bitter gourd	100	67%	Rs. 3.60 lakh per ha	Rs. 5.25 lakh per ha

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
Hi-Tech Pan Boroz : A new vista in	Since 2011-12, KVK has demonstrated nearly 650 numbers of units in collaboration with Department of Horticulture, Govt. of W.B.,

Betel vine cultivation

Betel leaf is one of the important commercial crops of the district South 24 Parganas. Out of total cultivable area of 368197 ha of the district, betel leaf occupies 2685 ha area covering around 35000 number of households from six coastal



Weather affected traditional Boroz

blocks (Sagar, Namkhana, Kakdwip, Pathar pratima, Mathurapur II and Kulpi). This crop has become mainstay of occupation for three blocks namely Sagar, Namkhana and Pathar Pratima.

Betel vine is a shade loving crop usually grown in artificial shade structure, called *Boroz*, made up of bamboo, paddy straw and other related bio-degradable items. Growing betel vine within this structure are prone to numerous diseases and



New plantation in Hi-Tech Boroz

insect pests. Also, in the coastal area these structures are frequently affected by storms and cyclones.

Considering these aspects Ramkrishna Ashram KVK conceptualized a durable *boroz* structure using GI pipes on concrete basement fitted with green shade net, 75% on the top and 50% on the

South 24-Parganas through National Horticulture Mission programme. To construct a Hi-Tech boroz of 500 sqmt size, the costing is Rs 3,00,000/- (Rupees Three Lakh). Farmer need to bear 50% of the total cost and the rest half is assisted by State Dept. of Horticulture through NHM scheme. KVK has made an arrangement of getting bank loan of the farmers' contribution amount (50% of the total cost) through a tying-up programme with Axis Bank, Joynagar Branch. For the ease of the farmers, door step bank account opening was done at village level. At present around 2000 farmers approached KVK for getting this type of hi-tech boroz in lieu of their traditional one.



side walls. Unlike traditional *boroz*, this new *boroz* is made up of non-degradable items and there by chances of pest and disease attack is very less. Also, this modern *boroz* is fitted with micro-sprinkler irrigation facility, which not-only reduces irrigation cost, but maintains temperature and humidity within the *boroz* during the hot summer and dry winter. Another advantage of this hi-tech *boroz* is the uniformity in shading, there by uniform coloration of leaf is achieved.

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

Land Shaping and Rain Water Harvesting Technology including Land Embankment Cultivation for Augmentation of Agricultural Production:

The Sundarbans falls under the complex-diverse-risk prone (CDR) agro-ecosystem. Although, agriculture is the mainstay of occupation for majority of the people, about 68% of the total cultivable lands is low lying, mostly mono-cropped and low yielding because of excessive rainfall resulting in water-logging due to impeded drainage system in monsoon. Again, scarcity of irrigation water accentuated by high salinity in soil & water, inundation of brackish water in cultivable land and non-availability of area specific technology for effective utilization of natural resources aggravate the problem to raise second crop in Sundarbans.

Here, farmers face a unique problem of almost six months of surplus water due to heavy rain (1700-1800 mm/year) most of which are unutilized and mixes with saline estuarine as run-off water in one hand and six months of dry spell with huge scarcity of sweet water on the other hand.

In this backdrop, Ramkrishna Ashram KrishiVigyan Kendra, Nimpith, West Bengal, has conceptualized and developed the Land Shaping and rainwater harvesting technology to address the twin problems of raising the level of the cultivable land and harvesting the rain water for second and third crops without altering the ground water level. Over the years, the said technology has under gone modifications and fine tuning through collaborative participation of the farmers and KVK scientists.


This technology has been well accepted & demonstrated by different Govt. projects. For augmenting agri-horticultural production in the Sundarban area, Dept of Ag, GoWB established 1117 number of L.S. & R.H. Model in North 24 Parganas and South 24 Parganas district in the year 2017-18 through IWMP, RKVY and many other projects.

<p>This is a multi-faceted method by which HYV paddy replaces low yielding indigenous ones in rainy season and makes growing of high value vegetable crops possible during winter season. At the same time, pisciculture with duck rearing in pond and growing of fruit plants is also possible on the embankment developed by the dug up soil.</p> <p>The following points may be attributed to the technology –</p> <ol style="list-style-type: none"> 1. Engineering solution for productive use of low land 2. Three dimensional (land, water and air) cropping options 3. Diversified cropping possibilities with integrated approach 4. Introduction of double and triple crops 5. Additional crops in pond and land embankment 6. Off seasonal cropping fetching higher market price 7. Water and energy saving module <p><u>Principle of Land shaping</u></p> <ul style="list-style-type: none"> ✓ Excavation of 1/5th area of the low land to a depth of 9' ✓ Adjoining low land raised upto 1.5 feet ✓ Pond embankment – 5 feet wide and 4 feet height ✓ Land embankment around the area – 3' wide and 3' height ✓ 6 – 9 acre inch of rain water can be harvested and stored in the pond 	
<p>Use of biocontrol agents (<i>Trichoderma harzianum</i>, <i>Pseudomonas fluorescens</i>, <i>Metarhizium anisopliae</i>) in pest disease management</p>	<p>More than 1000 farmers come and collect biocontrol agents from the KVK laboratory</p>
<p>On-farm mass production of microbial bio-pesticide</p>	<p>More than 500 rural youths adopted the technology through the training cum demonstration project organized under RKVY scheme supported by the State Agriculture department of Govt. of West Bengal</p>

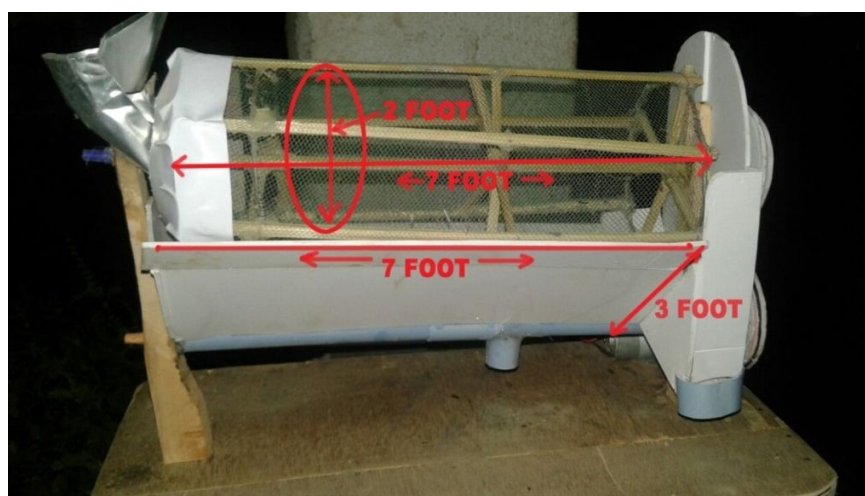
4.3. Details of impact analysis of KVK activities carried out during the reporting period

Impact assessment has been done on Food and Nutrition Security programme on 12th to 14th February, 2018 by WHH Germany. The result has been awaited.

4.4. Details of innovations recorded by the KVK

Thematic area	Production of Organic Input	
Name of the Innovation	Yeaser Molla	
Details of Innovator	C/O- Ibrahim Molla, Vill- Sherhangampur, P.O.- Nimpith Ashram, P.S.- Jaynagar, Dist.- South 24 Parganas, Pin - 743338, State- West Bengal, India, Mobile- 9609087685, email- yeaser9@gmail.com	
Back ground of innovation	As per Instruction of Nabaranjan Halder	
Technology details	*	
Practical utility of innovation	<ul style="list-style-type: none"> ✓ This Innovation helps in sieving Vermicompost very easily. ✓ Saves labour cost to the extent of 2 Labour per qn of Vermicompost. 	

Sl no.	*Technology Details
1	2 inch ball bearing 4 pcs.
2	7 foot 1.5 inch galvanized iron pipe 2 pcs.
3	Puli : 2 pcs.
4	Galvanized tin sheet 30mm 50 sqft.
5	Steel Net 42 sqft.
6	3 jo angel/ 3 jo pati/ 1.5 inch galvanized iron total 70kg @60 per kg
7	Rubber belt 2 pcs
9	0.5 HP motor





Thematic area	Beekeeping
Name of the Innovation	Division of Bee colony
Details of Innovator	Moyazzem Mondal Age: 45 Contact: 9547689102
Back ground of innovation	<p>Beekeeping with <i>Apis mellifera</i> (Italian honey bee) is a remunerative profession in South 24 Parganas fetching upto a net profit of Rs. 5 lakh per annum to the hardworking beekeepers. However, beekeeping requires tedious involvement of the beekeeper throughout the year to maintain the bee colonies as per the seasonal requirement. The important seasonal management involves care during (a) colony build up period, (b) honey flow period and (c) dearth period.</p> <p>A good beekeeper wishes to have maximum number of colonies with optimum colony strength during the honey flow period. Then only he can harvest maximum amount of honey from his apiary. For this, he has to work hard for increasing the number of bee colonies. This is known as colony division.</p> <p>There are some standard protocol for colony division, like, use of colony divider, queen cell grafting, etc. But for a successful colony division, the hive should have at least 8-10 frame strength.</p>
Technology details	<p>Mr. Moyazzem uses his own innovative technique by which he uses 5-frame colonies to create one new 5-frame colony. He removes 1-frame bee, each from 5 hives and unites them to create a new 5-frame colony. The new hive is taken away to at least 5-km distance in the evening and fed with sugar-syrup to keep them busy and stop fighting in between themselves. New queen is produced within two weeks and the normal colony functions are restored.</p> <p>So, from hundred number of 5-frame colony he produces 25 new 5-frame colonies at every two week interval.</p>
Practical utility of innovation	<p>Mr. Moyazzem trades on bee colonies rather than on honey, primarily. So it is more important for him to multiply the bee colonies in the shortest period of time than waiting for colonies attaining proper strength. With this technology he produces 300 colonies in a year from 100 colonies. He is one of the major bee colony supplier from west Bengal to the beekeepers of Behar and UP. He Earns around Rs. 4.00 lakh per annum only by selling bee colonies to other beekeepers. The income from honey and beeswax is extra.</p>



Documentation of quick method of colony division in *Apis mellifera*

4.5. Details of entrepreneurship development

Entrepreneurship development	
Name of the enterprise	Shib Shakti Vermicompost
Name & complete address of the entrepreneur	Sri Nabaranjan Halder, Vill Kultali, P.O. West Kultali, Block – Mathurapur – II, Dist. South 24 Parganas, West Bengal
Role of KVK with quantitative data support:	Sri Nabaranjan Halder was provided with two unit of vermicompost permanent structure (each of 30' x 8' x 2.5') from Ramkrishna Ashram Krishi Vigyan, Nimpith in the year 2015-16 under RKVY Scheme of Dept. of FPI & H, GoWB. He was provided with formal training on vermicomposting at KVK as well as regular technical support by Horticulture Section of KVK.
Timeline of the entrepreneurship development	2015-16: Establishment of two (each of 30' x 8' x 2.5') vermicompost permanent structure 2016-17: Initiative by KVK on Market linkage of the produce. Establishment of another vermicompost permanent structure by his own. Branding of the produce with good packaging and logo. 2017-18: Establishment of small dairy (with 5 animals) for steady supply of cowdung in the vermicomposting unit. Linkage with Dept. of Agriculture, GoWB for regular supply of vermicompost in the ATMA Scheme.

Technical Components of the Enterprise	Concrete vermicomposting structure with shade (720 sqft area) Dairy shade with cattle strength of 5 milch cow and 2 calf Cowdung collection structure (20' x 15' x 4') Vermicompost quality is very good Moisture content – 31% Nitrogen content – 1.3 % Physical impurity – 4.7%
Status of entrepreneur before and after the enterprise	Before starting the vermicomposting unit he used to work in their agriculture field alongwith his family members. At that time his annual family income was Rs. 1,65,000/- . After starting his vermicomposting enterprise, apart from his previous family income, he additionally earns an amount of Rs. 87,000/- annually, which is likely to be increased in the next few years.
Present working condition of enterprise in terms of raw materials availability, labour availability, consumer preference, marketing the product etc. (Economic viability of the enterprise):	Annual production capacity – 20 ton per year Present production status – 9 ton per year Source of raw material – cowdung from his own dairy Water hyacinth from nearby ponds Labour source – family members (father, uncle, brother and occasionally mother) Consumer – mostly institutional like Office of the Assistant Director of Agriculture, Krishi Vigyan Kendra, ATMA etc. Individual farmers like betel vine farmers, guava farmers and vegetable farmers used to take vermicompost from Mr. Halder because of its quality and cordial behavior of the entrepreneur.
Horizontal spread of enterprise	Vermicomposting is a well known and established technological intervention in agriculture. Production of quality vermicompost is always a key factor in any entrepreneurship development in this sector. Looking the success of Mr. Nabaranjan Halder, 7 youths from different region of South 24 Parganas have started vermicomposting to establish themselves upon this enterprise.



4.6. Any other initiative taken by the KVK

4.6.1. NATIONAL FISH FARMERS' DAY

Nimpith KVK has celebrated the National Fish Farmers Day on 10.07.2017 through various programmes attended by 55 members of different SHGs located in the fringe areas of Sundarbans. The celebration was inaugurated by the Chairman of the KVK, Swami Sadanandaji Maharaj in presence of the Beet Officers of Namkhana Range and Bakkhali Range under the Dept. of Forest, Govt. of West Bengal. The SMS, Fishery explained the importance of the day while the Beet Officers stressed on the need of adopting different fish culture methodologies to reduce the stress on forests. The participants were demonstrated the induced breeding technique in the eco- hatchery of the KVK and explained how this technology is important to the state and country from the fisheries point of view. The participants were also given an exposure to the induced breeding being done to produce seeds of Asian catfish and climbing perch in the KVK demonstration farm.



4.6. 2. Observance of “World Soil Day-2017” at Nimpith KVK

Today, the 5th December, 2017, the Nimpith KVK observed the “World Soil Day-2017”. A seminar on the topic of “Healthy Soil for Healthy Future” was organized where more than 1000 number of farmers attended the programme. A total of 200 numbers of Soil Health Card were distributed to the farmers in this occasion. The programme was inaugurated by Swami Sadanandaji Maharaj, Chairman, Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith at 11.30 a.m. by lightening the lamp in presence of Shri Biswanath Das, Hon’ble Member of Legislative Assembly, (MLA Joynagar) and Chief Guest of the programme, Dr. B.Maji, Principal Scientist & Former Head, CSSRI, Canning, Mr, Ashis Sarkar, DDA, FC & FPO, Govt. of W.B., Prof. P. Mani, BCKV, Nadia, Dr. B. K. Dutta, Director, VIB, Nimpith, Mrs. Mousumi Chattapadhaya, Assistant Director, All India Radio and Mrs. Antima Halder, ADA, Joynagar – II Block.

The objective of the programme was narrated by Dr. N.J. Maitra, Senior Scientist & Head of the KVK followed by the address from different dignitaries.

Dr. B.Maji, Principal Scientist & Former Head, CSSRI, Canning, Mr, Ashis Sarkar, DDA, FC & FPO, Govt. of W.B. and Prof. P. Mani, BCKV, Nadia delivered their speech regarding the importance of soil test, role of different macro & micro nutrients for plant growths, rational use of chemical and organic fertilizers to augment agricultural production etc.

Mrs. Mousumi Chattapadhaya, Assistant Director, All India Radio shared her views regarding the role of women farmers to maintain the Soil Health.

Dr. B. K. Dutta, Director, VIB, Nimpith and Mrs. Antima Halder, ADA, Joynagar – II Block described the importance of organic manure to maintain the Soil Health.

A farmers –Scientists interaction was also held. After completion of the programme all the farmers visited the different demonstration units of the KVK.

The total programme has been covered by different mass media like All India Radio, 24 Ghanta, Doordarshan, Times Bangla, well circulated Newspaper etc. The programme was concluded with vote of thanks to the Chair.



4.6. 3. HYDROPONICS FODDER CULTIVATION – A NEW PRIMISING ALTERNATIVE OF GREEN FODDER

HYDROPONICS FODDER PRODUCTION

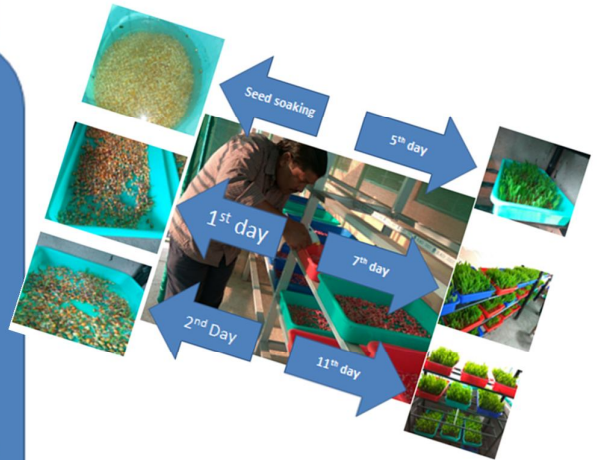
WHAT?

- Growing plant without soil
- Growing seeds in water and nutrient rich solution

Attributes	Conventional fodder	Hydroponics fodder
Land fertility	Essential	Not essential
Fertilizer	Required	Not required
Water and electricity	Very high	Very low
Labour	More	less
Growth period	45-60 days	9-12 days
Climatic dependence	Not climate resilient	Climate resilient

Why?

- No requirement of land
- Year round cultivation regardless of climate
- 25% higher production than field crops
- Very minimum water requirement
- Less time for production
- Reduced labour
- High nutritional value
- No soil borne disease
- Fodder having anti-oxidant property
- Contains more folic acids, omega 3 fatty acids, chlorophylls and mixed carotenoids



A low-cost house can be fabricated with bamboo or wood or GI pipes or brick masonry. The wall of the house can be covered with iron mesh net. The inside of the house should have sufficient light and air.

5-6 stored bamboo or wood or iron made racks may be used to place plastic trays on them in a row.

Maize/wheat/ oats/ barley seeds can be used

Few simple steps for production of hydroponic green fodder are

- Soaking of seeds for 12h
- Rapping of soaked seeds in gunny bag followed by covering with paddy straw to generate temperature inside the bag for 24h in summer and 36h in winter
- Spreading of about 90- 100g sprouted seeds in plastic tray (1.5 ft x 1 ft).
- Spraying of water on sprouted seeds using hand sprayer every 1h interval from 8 am till 6 pm in summer and every 2h interval for the same time period during other seasons for 9- 10 days.
- Additionally/ optionally using of neem based plant growth promoter may be helpful for better growth of hydroponic plants.
- Production of about 10 kg hydroponic green fodder from 1 kg seeds within a period of 12 days.
- Collection of hydroponic green fodder and feeding to the cows, buffaloes, goats, rabbits etc.

1kg hydroponic green fodder can replace 7- 8 kg traditional green fodder or 1kg concentrate feeds.

Since the cost of 1kg hydroponic green fodder comes around Rs 9- 10/-, Rs 20- 25/- may be saved by replacing 1 kg of concentrate feeds

Hydroponic green fodders have high nutritive value with anti-oxidant property containing high folic acid, omega 3 fatty acid, carotenoid etc



The technology has been propagated through different on campus training and in collaboration with ARD Department. The scientist from different attended training programme on hydroponics organized by West Bengal University of Animal and Fishery Sciences.

4.6. 4.

IMPART HANDS-ON TRAINING TO THE SCIENTIST AND VENETERINARIAN FROM DIFFERENT PARTS OF INDIA ORGANIZED BY IVRI-ERS.

IVRI-ERS regularly organize exposure visit cum hands on training for the scientist and field veterinarians from different parts of Indian RAKVK, Nimpith. Different developed technologies have been demonstrated to the participants along with field visit for the large scale demonstrated technologies in adopted villages. The training composed of training need analysis and feedback from the participants. Interactive session with the farmers is also organized.



4.6. 5.

CONDUCTING FOCUSED GROUP DISCUSSION IN FRINGE AREAS OF SUNDARBANS IN COLLABORATION WITH DEPT OF FOREST, GOWB FOR PLANNING ALTERNATIVE LIVELIHOOD OPTION

Summary of findings and Recommendations for AH activity:

Dhanchi Beat of Rāmgangā Range:

1. Goatery is preferred as most of the family have average 4 goats
2. One or two female members of the forest committee may be trained on artificial insemination in goats. They will serve the total villages. As a result, farming expenditure for maintaining buck will be reduced and thereby profit will be more. Additionally, in the village, self-employment will be achieved.
3. Health camp is to be done at least thrice in a year of the selected villages including vaccination coverage.
4. Few support for construction of scientific houses in G-plot may be considered.
5. Animal insurance should be done
6. Training of selected persons is to be imparted
7. The farmers who are maintaining cross breed cattle, fodder seed may be provided for fodder cultivation.
8. Anthrax vaccination must be done for all the cattle of the GP as it is prevalent in this area
9. The quack (village level primary service provider) of this GP are to be refreshed with modern concept of treatment and primary services through 15 days on campus training



Bhagabatpur Range complex:

1. Strengthening of group activity of the existing SHGs
2. Goatery is the choice of farming
3. As the incidence of diseases is more, strict vaccination is to be followed.
4. LDC should be tied up for goat meat marketing, as there is so many middlemen.
5. Animal Insurance is to be done.
6. Vanaraja farming may be promoted as the farmers are already practicing Koiler bird.
7. Some of the attending participants like Rina Das, 9647902090; Alpana Das-9734419760 have no land or any resources and hence may be strengthened with goatery and/or poultry
8. Few participants of Pashim Darokapur like Yoshomoti Sasmol is interested for duck farming and hence Khaki Campbell may be considered.
9. In paschim Darokapur many of the participants are interested in **Pan Boroz**.
10. Training to be imparted on fishery, goatery, poultry and pan boroz mainly
11. In kishorinagar, Pan Boroz should be the main focus apart from fishery and Poultry.
12. Two days off campus training in kishorinagar may be conducted- one day full on Pan Boroz and another day of fishery and animal husbandry.

Namkhana Range Complex:

In Mousuni

1. Training on dairy and Goatery
2. As there is many participants interested in cross breed cow rearing, making provisions for AI along with providing initial critical support like fodder demonstration, medicines may be attempted.
3. One animal health camp and one vaccination camp must be done



In Buroburirtat

1. Training and support on poultry, goatery, Fishery



Bakkhali Range complex:

1. Goatery is mostly preferred
2. No vaccination done in animals and hence huge mortality occurs. Thus, immediate health cum vaccination camp must be organized.
3. There are so many community bulls for mating purpose of the cows; this should be immediate stopped through awareness generation. Artificial insemination must be introduced.
4. There is a practice of feeding water hyacinth following a special method by the farmers. First they boil water hyacinth for 3-4 hours and then with 10 kg of boiled water hyacinth, 500-700 gms of concentrate mixture is added for feeding. This practice may be validated and proximate analysis of water hyacinth may be done after such boiling.
5. Also the method of feeding wheat (1 lit water and 200 gms of wheat), according to the farmers, gave better result for goats body weight gain. This may also be validated and promoted to other areas.

4.6. 6.

SPECIAL PROGRAMME UNDER TSPIN COLLABORATION WITH WBUAFSC

The programme was undertaken in collaboration with West Bengal University of Animal and Fishery Sciences, Belgachia, Kolkata for livelihood planning of tribal farmers of Bali-II GP of Gosaba Block in South 24 Parganas district. The detailed information regarding the farming practices, problems associated with the production and marketing along with availability of quality inputs were taken into consideration. SWOT analysis was done to chalk out micro planning for implementation of the livelihood programme. The farmers were divided into three groups- poultry, small ruminants and piggery and accordingly inputs were given after imparting proper training both on campus as well as Off campus.



4.6. 7.

COLLABORATIVE WORK WITH GREEN COLLEGE, RD WING OF SRAN

Different collaborative training programme on animal husbandry activities were performed in association with Green college of RDW, SRAN, Nimpith.



4.6. 8.

VISIT OF DDG, EXTENSION ICAR TO AH SECTION:

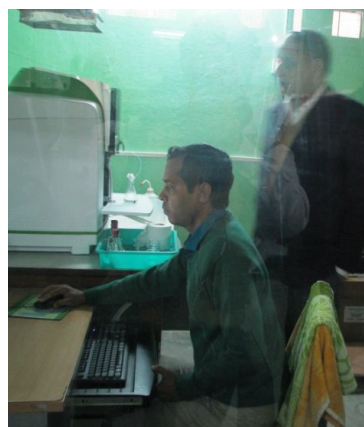
It was a moment of pride that Honorable DDG Sir visited our AH section and interacted with the Scientist on 14.01.2018. Different developmental activities, training modules, record keeping system and technological display was demonstrated to him with great praise. Respected Director, ATARI-Kolkata was also put his valuable suggestions for further development of the unit which has been already implemented.



4.6. 9.

INAUGURATION OF ATOMIC ABSORPTION SPECTROPHOTOMETER AT THE KVK SOIL TESTING LABORATORY BY HONORABLE DEPUTY DIRECTOR GENERAL, AGRIL EXTENSION, ICAR IN PRESENCE OF DIRECTOR, ICAR-ATARI, KOLKATA:

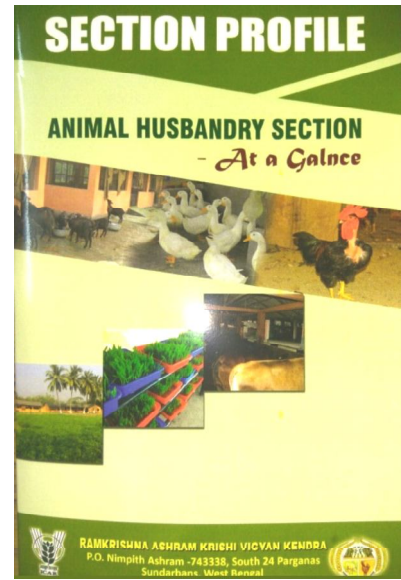
In the year 2017-18, RAKVK, Nimpith was provided with RKVY funded project on Strengthening of Soil Testing Laboratory by Dept. of Ag., GoWB. Under this project one ATOMIC ABSORPTION SPECTROPHOTOMETER has been established for better analysis of soil micronutrients like Zn, Mn, Cu and Fe. On the very occasion of NICRA Zonal workshop at Nimpith KVK on 14.01.18, Hon'ble DDG, AE, ICAR, Dr. A.K. Singh visited Ramkrishna Ashram KVK, Nimpith and inaugurated the ATOMIC ABSORPTION SPECTROPHOTOMETER unit of the KVK Soil Testing Laboratory. Hon'ble Director, ICAR-ATARI, Kolkata, Dr. S.S. Singh was present at the programme and grace the occasion.



4.6. 10.

RELEASE OF SMALL BOOK ON SECTION PROFILE ON THE OCCASION OF NICRA WORKSHOP.

Animal Husbandry Section has published one document on different activities of the section. This book includes the topic of training as well as scope of different technologies related with the animal rearing with marketing opportunities. Importance has been paid on entrepreneurs for selecting their enterprise.



4.6. 11.

INTEGRATED DEVELOPMENT OF FOREST FRINGE AREAS THROUGH ANIMAL HUSBANDRY ACTIVITY:

The peoples of coastal areas of sundarbans mainly depend on fishing and honey collection. There is always a life risk vis-à-vis some illegal entry to the forest area is also noted. With this background, Department of Forest, GOWB have decided to train the farmers of these areas and distributed critical inputs for establishment of animal husbandry units with a view to self employment generation and thereby reducing the risk associated with livelihood. KVK have trained 357 farmers and mediated the process of unit establishment along with constant monitoring.



4.6. 12.

INTRODUCTION OF QUALI FARMING:

RAKVK, Nimpith has started a new venture for the small holder farmers of this agro-climatic zone. This farming is well suited for integrated farming model. The disease incidence of this farming is also less and the farmers may procure the chicks from KVK as the unit is hatching the eggs and distributing the chicks at reasonable price. Quail farming is very profitable like other farming ventures, such as chicken, turkey or duck farming business. Almost all types of weather conditions are suitable for starting quail farming business. Meat and eggs of quail are very tasty and nutritious. Quail eggs are very nutritious than other poultry eggs. Because quail eggs contain comparatively more protein, phosphorus, iron, vitamin A, B1 and B2. Quail farming can play a vital role to meet up the demand of food and nutrition. Quail farming business require small capital and labor. Quails can be raised along with your other poultry birds for meat or eggs production.



4.6. 13.

PROVIDING TECHNICAL EXPERTISE TO SARISHA RAMKRISHNA ASHRAM:

Sarisha Ramkrishna Ashram is having 10 numbers of dairy cows and KVK Nimpith on a regular basis provides technical backup as and when required. The sample testing, culture and sensitivity test along with disease screening is provided besides regular vaccination and management. The overall quality control of the produced milk is also examines at a regular interval.



4.6. 14.

SWACHHA BHARAT ABHIYAN:

Swachh Bharat Abhiyan is a campaign launched by the Prime Minister, Narendra Modi as a nationwide cleanliness campaign. It is implemented to fulfill the vision and mission of clean India a day. It was launched especially on the birth anniversary of the Mahatma Gandhi as he was dreamed and very keen to make this country a clean country. As a part of the programme, cleaning of the Island dairy was performed on 18th August 2017.



4.6. 15.

STARTING OF USG UNIT AT KVK:

One small animal ultrasonography unit has been established in KVK and started functioning especially for the small ruminants and the benefit of this service are enabling the farmers to get their pet's disease diagnosed earlier and hence the prognosis became favorable. Besides, with the machine standardization of super ovulation in small ruminants are under trail.



Dairy training
DUMKA,
Jharkhand



Ornamental Bird
Paschim Medinipur



Poultry and Duck
Paschim Medinipur



Duck meat processing
Gosaba, 24 pgs (S)



Dairy training
24 pgs (S)

GLIMPSE OF SOME TRAINING

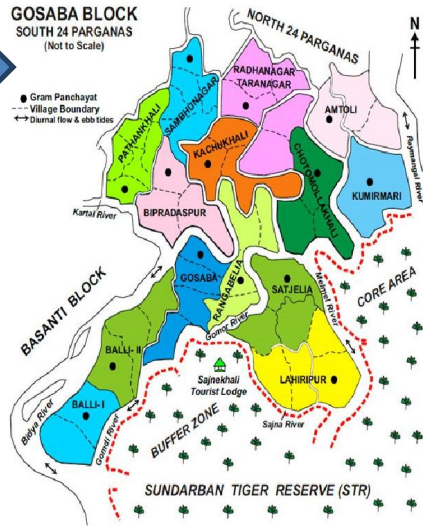
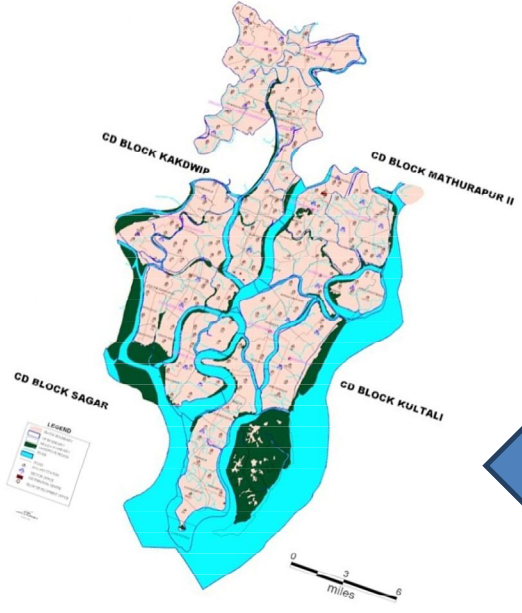
EXTENSION OF ANIMAL HEALTH CARE

SERVICES IN REMOTE AREAS IN WEST BENGAL THROUGH MOBILE VETERINARY CLINIC (MVC)



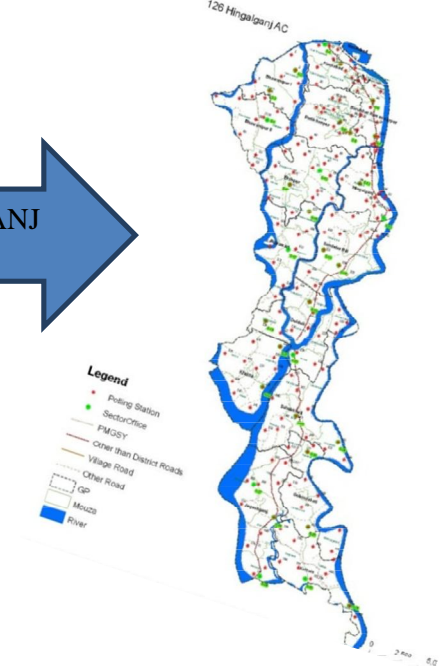
Target area: 3 blocks of South 24 Parganas (Gosaba, Sagar and Patharpratima)
 3 blocks of North 24 Parganas (Hingalganj, Sandeshkhai-I, Sasdeskhali-II)

GOSABA

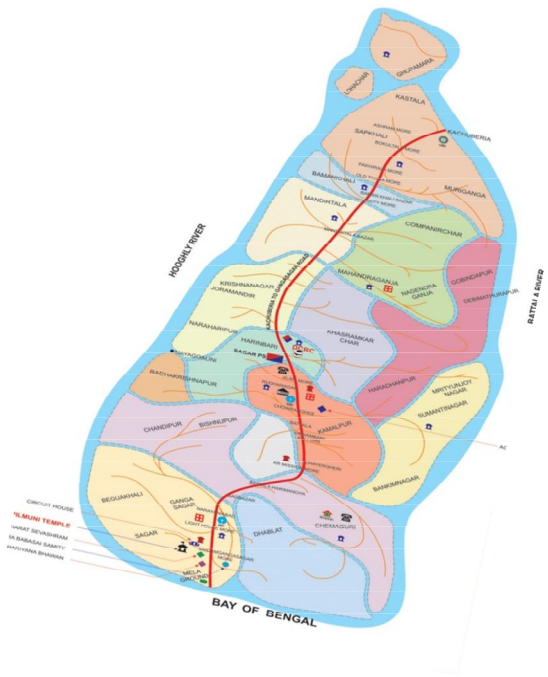


PATHARPRATIMA

HINGALGANJ



SAGAR



In West Bengal Animal husbandry contributes a major portion in the growth of the state where services to the livestock sector is mainly provided by the Animal Resource Development Department. The livestock sector comprises mostly of dairy, goater, piggery and backyard farming of poultry and duckery. As most of the agricultural land in the state is fragmented and of small holding in nature, the importance of this sector is paramount in respect of alternative income generation for livelihood.

West Bengal comprises of different agroclimatic zones where some of the areas are ill communicated and challenged in terms of transportation and services. Some hilly areas & red laterite zones (Purulia, Bankura etc) and Sunderbans (North & South 24 Parganas) are the major constrained areas where the average animal rearer faces the problem of poor veterinary services, lack of primary veterinary aids vis-à-vis distant and difficult communication to avail animal husbandry services rendered by the ARD department through different block hospitals, additional block hospitals etc. Among all these, Sunderbans is the most complex area where a number of blocks are island based and the local farmers face the problem of availing health care from the block health centers or additional block health centers as they are situated in mainland situation and access to these areas is difficult, risky and depends on high tide and time bound.



In this background, Directorate of Animal Resource and Animal Health with financial assistance from RKVY scheme and in collaboration with Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith have conceptualized the idea of mobile veterinary clinic in South 24 PGS to cater the needs of the animal rearer of this challenged area. The mobile veterinary clinic or MVC is being implemented in selected blocks of the district with a dedicated team comprising of one veterinary doctor, one paravet and one Livestock Development Assistant. The programme has created havoc enthusiasm amongst the farmers especially the animal rearers of these disadvantaged areas. Services like door step diagnosis along with treatment, modern practices of wound dressing and management, auscultations to arrive at a differential diagnosis, recording of temperature to pave a foot

for initial treatment are also provided with a positive outcome in terms of productivity and sustainability. Besides, scientific methods for body weight gain in farm animals through application of Burdizo Castrator are being regularly done in mobile health camps. Besides, imparting awareness on different scientific aspects of modern animal husbandry practices through off campus training especially on fodder cultivation, disease prevention, formulation of alternative locally available cheaper feed and overall management aspects. Large coverage of animals under the umbrella of vaccination has been successfully undertaken through this programme. More emphasis is being paid to the women farmer to instigate their participation in farming.

The farmers are now even getting the facility of fluid therapy to augment the recovery process. Moreover, emphasis is also given to improve the reproductive health with pregnancy diagnosis to take proper care to their animals. On spot stool examination is done for detecting worm burden as well as to prepare parasitological map of the locality.

Hence, the mobile veterinary clinic is a very innovative approach to reach the vast exposure of animal rearers of the state in general and district in particular. However, certain areas of the project need to be addressed for fulfillment of additional requirement of the stakeholders. Swami Vivekananda once said that arise, awake and stop not till the goal is reached. Similarly the objective of the MVC project will only be achieved when all the stakeholders will gain from the fruits of this unique project.

To put strong pavement and identity amongst the farmers, specific dress code along with umbrella shed encrypted with the name of the project is being provided so that wide circulation and awareness may be generated.



Area of work

NAME OF THE BLOCK	TOTAL NO OF GP	NAME OF THE GP	GP COVERED UNDER MVC	GP COVERED TILL	NOT COVERED	REASON
SAGAR	9	Dhablat, SumatinagarI, SumatinagarII, Ghoramara, Murigangall, Rudranagar.	-	-	-	-
GOSABA	14	Amtala, Bally I, BallyII, Chottomollakhali, Kachuakhali, Laharipur, Radhanagar, Rangabelia, Sambhunagar	14	-	-	-
PATHARPRATIMA	14	Herembogopalpur, lakshijanardanpur, Srinayanpur, Dakshin, Brajaballavpur, Banashyamnagar, G-plot, Durbachati, Dakshin Roypur, Gopalnagar	9	Patharpratima, Durbachati, Dakshin Roypur, Digambarpur, Gopalnagar	-	Nearby BHC or ABHC
HINGALGANJ	9	Bishpur, Sadelerbill, Jogesgganj, Kalitala	9	-	-	-
SANDESKHAL I-I	8	Agarhati, hatgachi, Boyermari-2, Radhanagar, Kalinagar, Nazat-1, Nazat-2	7	Nazat-2	-	BLDO office is at Nazat-2
SANDESKHAL I-II	8	Bermajur 1, Jeliakhali, Durgamandop, Sandeskhali	8	-	-	-

4.6. 17.

SPECIAL CAMP CONDUCTED:

A special camp in the flood affected areas of Pukuria village, Sahebkhali G.P of Hingalganj block, North 24 Parganas was organized on 12.09.2016 by Mobile Veterinary Clinic Hingalganj block in collaboration with BLDO, Hingalganj, ARD Department, and Government of West Bengal. Total 156 numbers of cattle, 188 numbers of sheep and goat and 573 numbers of poultry and duck was treated and covered under the umbrella of vaccination with



FMD, PPR, R₂B, duck plague to prevent the incidence of disease in face of flood situation. Proper dose of deworming was provided along with supplementation of vitamins and minerals. Ailing cases were treated and required medicines were given with a scheduled follow-up. **Respected Mr. Debesh Mondal, MLA of Hingalganj** constituency was present in the camp and interacted with respective doctors and affected farmers.



Respected Mr. DebeshMondal, MLA of Hingalganj constituency interacting with doctor and affected farmers

WOMEN EMPOWERMENT:

Women contribute 65-70% labour in agriculture in the Sundarban region. Most of them are illiterate and as having less scope for receiving training courses with huge domestic responsibilities, rural women fail to adopt new technologies and become unable to take the advantage of modern scientific know-how. Women are the most disadvantages group who suffers more



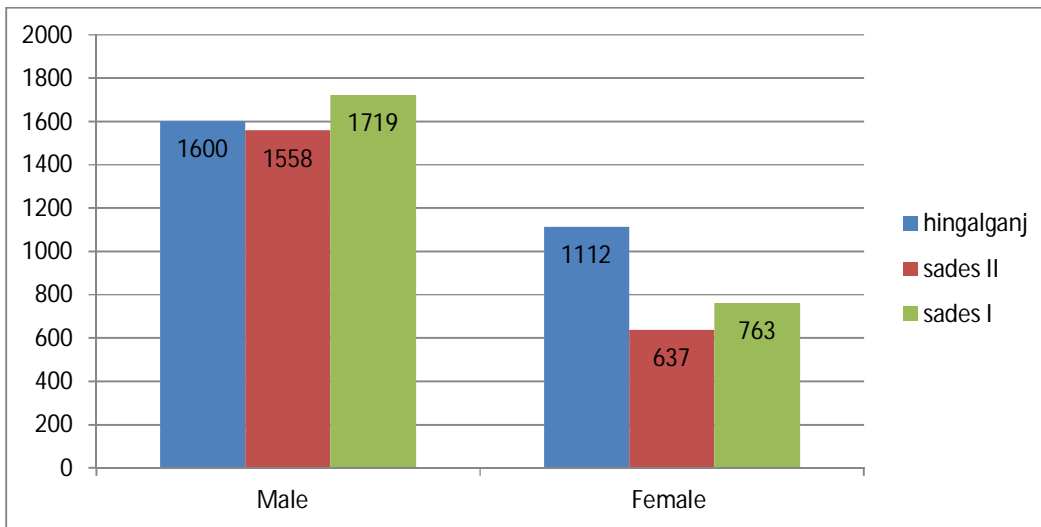
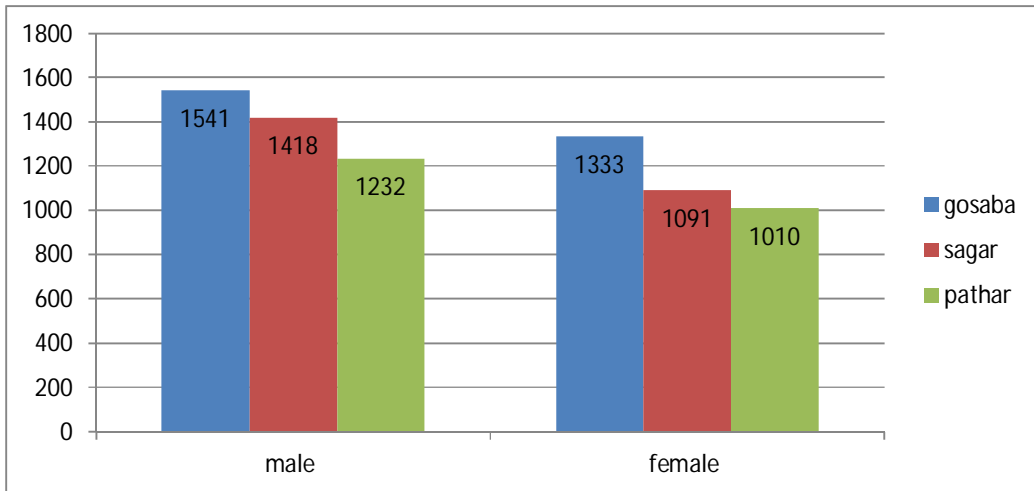
in this serious system due to overburden that arise out of men migration for search of livelihood. They have less control over the lands and other properties. Naturally, they are recognized only as a labour, even though they are working from dusk to dawn for farm production and as well as a home manager. But unfortunately they take last and least throughout their lives even when pregnant and lactation

period. Gender sensitization, gender mainstreaming are the main pre condition for the empowerment of the women to become an economic partner of a family in this adverse situation. Economic empowerment with sustainable approach for farming is the only key action point. the MVC programme, through its knowledge imparting techniques by awareness camps, demonstrations and counseling have been able to strengthen the women folk of rural sundarbans in terms of increased productivity, infusing the knowledge of modern scientific concept of disease prevention through vaccination and highlighting the different lucrative aspect of marketing. Over the last three years **5946** nos of farm women have been trained on different aspects of AH practices.

AWARENESS GENERATION:

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





DEMONSTRATIONS CONDUCTED:

Demonstration of different proven technologies like urea molasses mixture, vanaraja farming, pekin duck farming, turkey farming, fodder cultivation, deworming, vaccination have been demonstrated in different block of north and south 24 Parganas. The



farmers which are selected for the purpose are mostly progressive and the adoption of these technologies by the fellow farmers are about 78%. Besides, demonstration on ornamental bird rearing for the coastal fringe area of Sundarbans has also been conducted as alternative livelihood option. The total demonstrations have been conducted in participatory manner.

4.6. 18.

CELEBRATION OF PRANI SAMPAD BIKAS SAPTAHO, GOVT. OF WEST BENGAL:

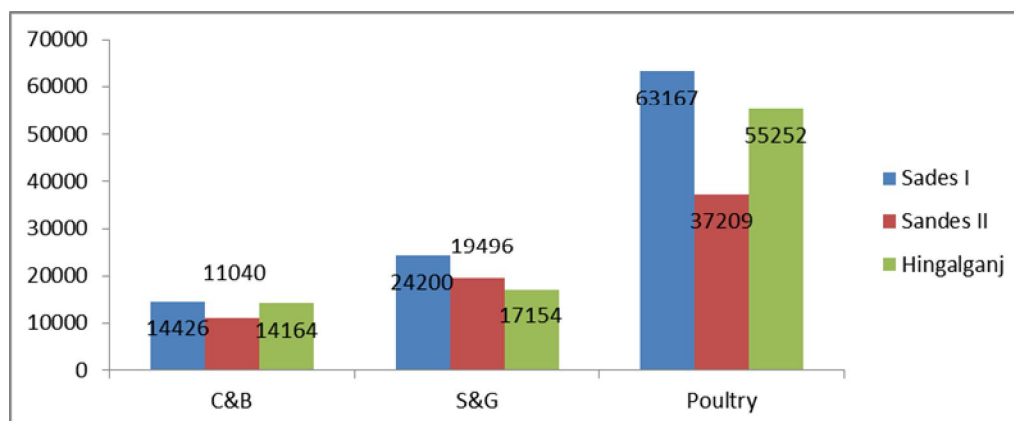
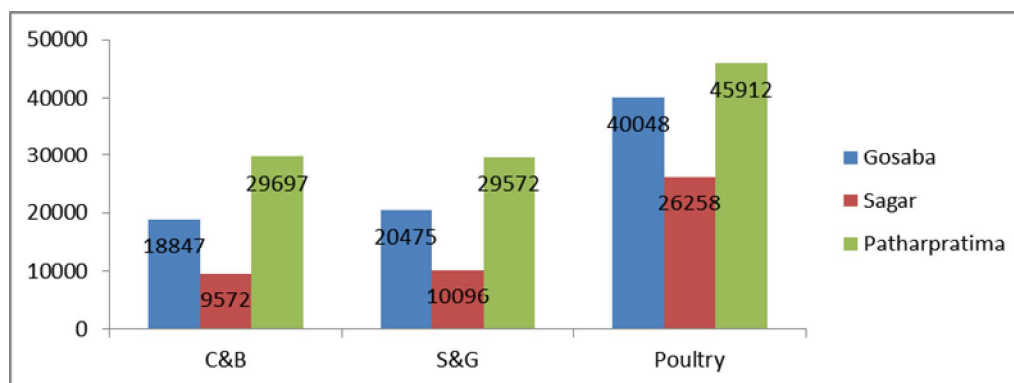


ANIMAL COVERAGE:

Vaccination coverage

Block	C&B	S&G	Poultry
Sadeskhali I	14426	24200	63167
Sandeskhali II	11040	19496	37209
Hingalganj	14164	17154	55252
Gosaba	18847	20475	40048
Sagar	9572	10096	26258
Patharpratima	29697	29572	45912





District	Castration	Surgical cases	Gynecological	Parasitic
North 24 Pgs	1124	1430	34128	115263
South 24 pgs	1781	2248	20660	111059

TREATMENT COVERAGE:

Block	C&B	S&G	Poultry	others
Gosaba	21784	28219	66442	1165
Sagar	22026	18459	53018	246
Patharpratima	28296	27570	90455	4893
Total South 24 PGS	72106	74248	209915	6304
Sades I	11032	17167	32537	1169
Sandes II	14287	18001	66813	65
Hingaljanj	30345	32934	105377	184
Total North 24 PGS	55664	68102	204727	1418

Sample testing laboratory:

RAKVK has set up one Sample testing laboratory for testing different samples from MVC units as well as clinical cases. Confirmatory diagnosis and culture and sensitivity of antibiotics and accordingly proper antibiotics are being advocated to the farmers.



Documentation: One Compact Disc highlighting the activities of RKVY sponsored scheme MVC.

4.6. 19.

ESTABLISHMENT OF VILLAGE LEVEL MEAT PROCESSING UNIT AT PATHARPRATIMA BLOCK FOR CREATING MARKETING FACILITY IN PPP MODE WITH LDC, GOWB:

MVC is operating in different blocks of north and south 24 parganas district of West Bengal since last three years. During the work period, it has been observed that there is a potential for backyard farming if the market linkage is established. Rearing of garole sheep and black Bengal goat is one of the important activities taken up by the rural farmers of Sundarbans since long back being the advantage of higher fecundity, lower disease resistance and foraging behavior even in water logged condition. The cost of farming is also significantly low. Besides the backyard rearing of poultry and duck is very much promising being the cost of farming is substantially low. The market price of these meats is high; still the farmers are not getting the proper value due to middle man. Here in this junction, KVK has taken a new venture in a collaborative way with Livestock Development Corporation of West Bengal, Govt. of West Bengal and in collaboration with ARYA programme, ICAR, for assured marketing of the produce by setting up one semi-automatic meat processing unit at the village level. Now the farmers of that particular block are getting facility of door step marketing of the animal produce. Venture is also in tunnel for setting up such unit in other blocks under MVC

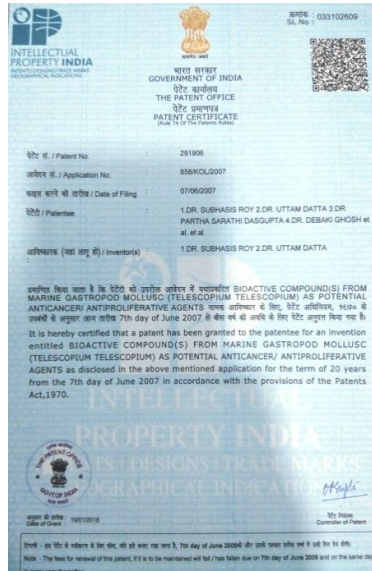


ESTABLISHMENT OF ONE HATCHERY UNIT 2000 CAPACITY AT THE VILLAGE LEVEL:

For ease of steady supply of good quality input at comparatively lower price, one hatchery unit has been established at ARYA village at Mollarchalk village of Joynagar II block. The unit will be operating soon and expected to provide benefit of not only 200 numbers of ARYA farmers but also will cater the demands of the other fellow farmers. The unit has been targeted with hatching of RIR, Vanaraja, Kaberi, Hitkari eggs, Duck eggs and Quail eggs.



PATENTING OF TECHNOLOGY FOR TREATING CANCERS FROM MARINE MOLLUSK *Telescopium telescopium*:



Bortaman news paper 31.3.2018 patent certificate Ei Samay News Paper 13.3.18

The present work relates to bioactive molecules isolated from the glandular extract of the spermatheca and/or ovotestis from the marine gastropod mollusk, *Telescopium telescopium* that shows a promising and significant result as potential anticancer agent in experimental tumor bearing mice. This study also relates to identification of glands of the marine gastropod mollusk, isolation of the bioactive compound(s) from the glandular extract of the spermatheca and/or ovotestis and partial characterization of the bioactive compound(s) present in the extract herein referred as TBC. The work has got patent from Government of India. The work is also published on 13th March in PRATIDIN newspaper.

AUGMENTATION OF MORE MILK PRODUCTION PROGRAMME AT RADHAKANTAPUR VILLAGE:

The programme was conducted in collaboration with West Bengal University of Animal and Fishery Sciences at Radhakantapur Village. The village already has one milk cooperative with production of 100 lit capacity milk collections per day. KVK has taken intensive development programme including scheduled deworming and vaccination along with supplementation. As a result of it, the milk production has increased upto 220-250 liter per day. The farmers or the cooperative was facing marketing problem of the produce. In this juncture KVK in collaboration with Dept of Dairy Sciences, WBUAFSc has taken one programme for better store of the milk along with establishment of linkage with **Sundarban Milk Union** for marketing of the milk. Now the cooperative are functioning in better way with per day marketing of 240 liter of milk with average price of milk Rs. 38/liter.

Dr. Pradip Kumar Roy of Dairy Science faculty of WBUAFSc collaborated the whole programme for marketing of the produce.



4.6. 22.

ATTENDING ANTICORRUPTION POSTER COMPETITION AS CHIEF GUEST AND JUDGE THE COMPETITION ORGANIZED BY AIEM, HOOGHLY:



Abacus Institute of Engineering and Management, Mogra, Hooghly organized one workshop cum poster competition on 3.11.2017 on anticorruption campaigning as a part of Prime Minister's Programme-CORRUPTION FREE INDIA. Senior scientist and Head, RAKVK, Dr. N J Maitra judged the programme and gave his deliberations as chief guest.



4.6. 23.

CELEBRATION OF KISHAN DIVAS ON 07.11.2017:

KISHAN DIVAS 2017 was celebrated by KVK in collaboration with CSSRI, Canning on 07.11.2017. The programme included farmers-scientist interface meeting, enlightenment on entrepreneurship development through Animal Husbandry activities and issue-to-issue discussion. Total 245 farmers participated in the programme.



MEMBER OF INSTITUTIONAL ANIMAL ETHICAL COMMITTEE:

Attended Institutional Animal Ethical Committee Meeting as member in the capacity of veterinary doctor at Chittaranjan National Cancer Institute, Kolkata and take part in logical designing of the research modules, maintenance and observation on stress free animal maintenance and care at the Institute. Emphasis is also paid on bio-security measures in the animal house and working room.



PARTICIPATION AS RESOURCE PERSON IN SPECIAL PROGRAMMES.



**In CSSRI, Canning-
Entrepreneurship in
Animal husbandry
activity on 05.5.2017
For farmers**



**In SSKVK-
Pig farming- piglet
mortality on 22.9.2017
For Farmers**



**In Deulbari Village of
Kultali with WWF-
General Management
of farm animals in our
native condition on
04.01.2018
For Farmers**



**In Narendrapur
Mission- Imaging
techniques for small
animal practice on
03.9.2017
For VetDoctors**



SPECIAL TRAINING OBTAINED:

1. On 21.12.2017- at NDRI on artificial insemination in goats. In field condition, rearing and maintaining of buck is costly and sometimes not available. Thus inbreeding frequently occurs resulting to depression of production performances. Thus introduction of artificial insemination will prevent this in-breeding vis-à-vis will reduce the farming cost. After obtaining training and successful trail in KVK instructional farm, the technology is now under the testing through OFT.



2. On conservation of small ruminants in their native tracts at WBUAFSc, Belgachia- 18.07.2017- 27.07.2017.

Goats are an integral part of rural India's symbiotic system of crop and livestock production and make up a significant part of the livestock wealth of the country. Over the past 25 years or so, the Indian livestock industry has progressed from a situation of scarcity to one of plenty. Although the share of agriculture in India's gross domestic product had been declining since the country's independence in 1947, there was an increasing trend in the value of output from livestock as a share of GDP (GOI 1998). Goats are among the main meat-producing animals in India, and goat meat (chevon) faces huge domestic demand, with no social, cultural, and religious restrictions. Despite the popularity of goat meat, goat rearing has not been conducted as either a large- or a small-scale industry in the state of West Bengal or in India as a whole. Among the 20 well-defined breeds of goats in India, the black Bengal is a dwarf breed, highly prolific, and famous for its superior-quality meat and skin. In West Bengal, it is commonly known as the "poor man's cow." This programme was aimed to train on different aspects of Black Bengal Goat conservation.



4.6. 26.

3. On USG for animals- 17.04.2017-21.04.2017.

Modern diagnostic tools now a day became one integral part of the diagnosis and small animal practice. These tools not only aids diagnosis but also reduces the treatment cost.



4.6. 27.

Programme of NICRA-IARI at LGP by Nimpith KVK

In the NICRA programme at Ramkrishna Ashram Krishi Vigyan Kendra as a collaborative unit with IARI, New Delhi, three village clusters was selected for testing **four climate change adaptation modules against farmers practice as control**. One of the three villages was Kaikhali-2 under Kultali block in the bank of Matla River, where there is a chance of saline water ingression. Other two villages were Bongheri under Kultali block and Nimpith / Bamuner Chak village of Joynagar – II blocks. The location of the villages are -

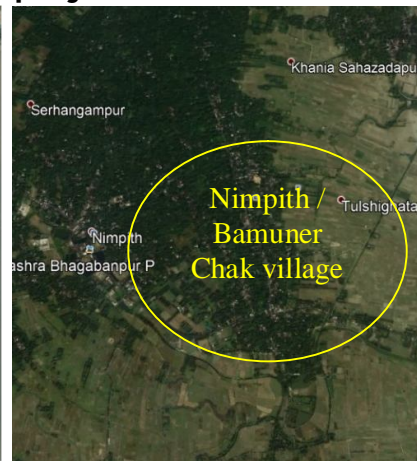
Three Villages taken in the project



22°02'03"N 88°36'15"E



22°01'56"N 88°37'26"E



22°09'20"N 88°27'44"E

1. Village information:

Name of the villages with climatic vulnerability index	<ol style="list-style-type: none"> 1. Kaikhali-2, Kultali Block, South 24 Parganas, West Bengal Island village on the bank of river Nimanian; Cropping intensity is only 110%; Problems of salinity in both soil and water; Village not included in any Govt. / institutional project. 2. Bongheri, Kultali Block, South 24 Parganas, West Bengal Island village on the bank of river Matla; Cropping intensity is around 135%; Problems of salinity in both soil and water; Village included in few Govt. / institutional project. 3. Nimpith, Joynagar-II Block, South 24 Parganas, West Bengal Mainland village with all sorts of communication; Cropping intensity is 148%; Problems of salinity in both soil and water; Village included in Govt. / institutional project.
Major soil type	Clay and silty clay
Major Cropping systems	<ul style="list-style-type: none"> ❖ Paddy – Fallow (in saline situations) ❖ Paddy – Lathyrus (in semi-saline situations) ❖ Paddy – green gram (in non-saline situations)
Agro-climatic Situation along with Climatic vulnerability	<ul style="list-style-type: none"> ✓ Heavy rainfall in short span of time during rainy season (about 100 cm – 140 cm rainfall in a span of 2 – 3 days) ✓ About 80% of Annual rainfall in 4 months (June – Sept.) ✓ Late release of monsoon with 10 – 15 % of annual rainfall (i.e. 150 – 200 cm) in October – November ✓ 80% of cultivable land are low-lying; Only possibility is long duration deep water aman paddy (water stagnation upto 2.5 – 3 ft during monsoon months) ✓ Land remains muddy till Mid of December for poor sub-surface drainage and horizontal drainage due to low elevation above MSL ✓ Late release of land for rabi crop after Aman paddy (usually land become ready for tillage from Mid of December) ✓ Soil salinity during rabi-summer, which usually rises as the soil get dried (particularly during April – May) ✓ Inadequate irrigation water as ground water is saline; Irrigation is possible from only the rain water harvested in village ponds. ✓ Very limited option for rabi crop ✓ Chances of climatic hazards like cyclone & breaching of river embankment, thereby ingress of saline water ✓ Frequent breaching of brackish water river embankment during high tide of August – September.

2. Rainfall received:

Month	Normal (Avg. of 10 Years)	Actual-2015	Actual 2016	Actual 2017
in mm (rainy days)				
January	10.80	20 (3)	3 (1)	-
February	24.40	-	107 (3)	-
March	34.20	34 (4)	-	145.75 (5)
April	52.80	37 (6)	-	24.0 (3)
May	122.70	30 (3)	80 (6)	35.5 (4)
June	309.70	416 (10)	192 (10)	288.25 (16)
July	386.90	731 (29)	294 (26)	698.5 (23)
August	400.30	465 (22)	397 (21)	316.0 (20)
September	340.00	159 (9)	161 (17)	205.0 (10)
October	135.00	22 (4)	44 (7)	322.0 (12)
November	42.40	-	28 (4)	60.0 (3)
December	10.90	12 (2)	-	37.0 (3)
Total	1876.10	1926 (92)	1306 (94)	2132.0 (99)

3. Technological interventions taken in each village:

In this programme five interventions have been taken as climate change adaptation module. Each intervention was replicated in three farmers' field in each of three villages. The interventions are

Intervention One: Land shaping & rain water harvesting in existing low-lands – 20% of land area is excavated upto a depth of 8 ft and the harvested earth is used to raise the main land to become it a medium land and to create land embankment (upland) of 3ft wide along the main land.

Intervention Two: Land modification/Embankment strengthening to make it 3 ft high and 3 ft wide – by taking soil from main land (low land) or making a small ditch with the main land

Intervention three: Crop diversification in Medium Land by irrigating rabi crop through perched water harvested from shallow GW using Low cost-pump

Intervention Four: Crop diversification in Low Land without having irrigation option

Intervention Five: Farmers' practice - Single crop of traditional paddy then fallow

Each intervention was replicated in three farmer's field in each of the villages. Thus fifteen number of farmers have been selected from each village for collecting data for the above five interventions.

4. Intervention wise Cost Benefit analysis

Intervention		Location 1: Kaikhali-2		Location 2: Bongheri		Location 3: Nimpith	
		Gross Cost*	Gross Return	Gross Cost	Gross Return	Gross Cost	Gross Return
I: Land shaping & rain water harvesting in existing low-lands	Paddy	5200.00	6950.00	4860.00	6820.00	5100.00	6890.00
	Veg.	26800.00	89690.00	30250.00	88500.00	25900.00	85630.00
	Others (fish)	28700.00	64240.00	25200.00	62300.00	30100.00	65720.00
II: Land modification / Embankment strengthening	Paddy	4950.00	6570.00	4720.00	6450.00	4830.00	6550.00
	Veg.	19670.00	52480.00	18800.00	50640.00	16900.00	50130.00
	Others (fish)	5400.00	12950.00	5050.00	11380.00	5160.00	13400.00
III: Crop diversification in Medium Land by irrigating rabi crop	Paddy	5160.00	6680.00	4930.00	6580.00	5140.00	6620.00
	Veg. / pulse / oilseed	12300.00	32750.00	11800.00	30240.00	10960.00	31360.00
	Others	-	-	-	-	-	-
IV: Crop diversification in Low Land without having irrigation	Paddy	4820.00	6410.00	4620.00	6340.00	4700.00	6380.00
	Pulse	5900.00	10800.00	5460.00	11050.00	5730.00	10300.00
	Others	-	-	-	-	-	-
V: Farmers' practice - Single crop of traditional paddy then fallow	Paddy	4590.00	6360.00	4510.00	6350.00	4480.00	6400.00
	Veg.	-	-	-	-	-	-
	Others	-	-	-	-	-	-

*cost in Rs./acre of land (Total land area for the Intervention)

5. Parameters measured -

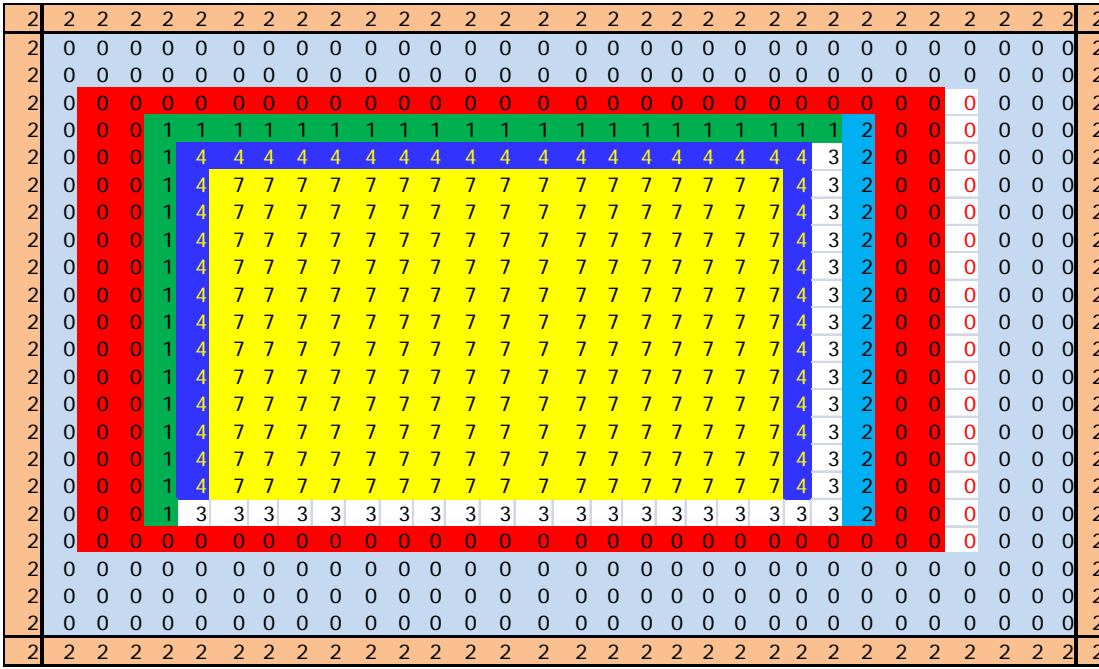
5.1 Measurement of ground water table through pizometer – 7 number of pizometers have been installed during 2015-16 in each village;

- Three no. of pizometer beside rainwater harvesting ponds,
- Three at 100 ft away of rainwater harvesting pond
- One at the middle of village (no water reservoir within 200 mt radius of pizometer). Data is being collected at 15 days interval.

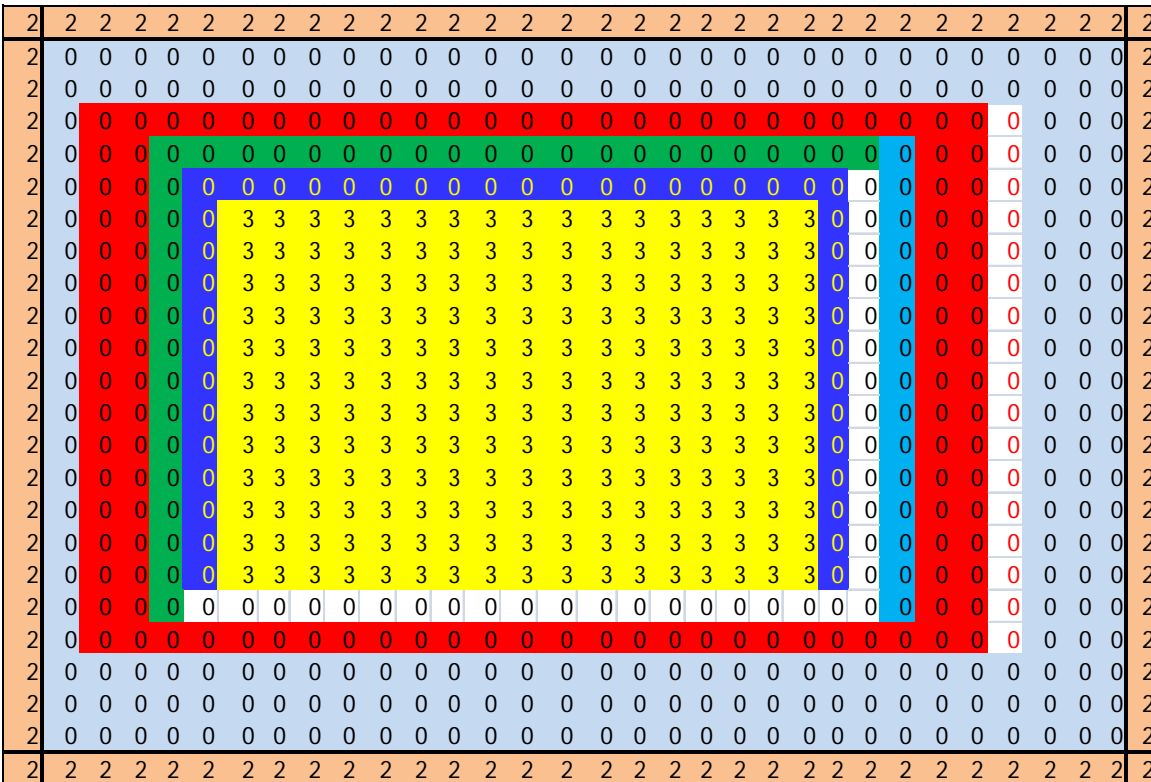


Date	Shyampada Sardar	Rabindranath Sardar		Ramdeb Mondal		Middle of Village
	Beside Pond	Beside Pond	100 ft from Pond	Beside Pond	100 ft from Pond	Open land
	3'5"	3'4"	3'1"	3'4"	3'	3'7"
31.07.16	6'4"	5'8"	5'9"	6'4"	6'8"	6'6"
14.08.16	6'2"	5'4"	5'7"	6'6"	6'4"	6'2"
20.08.16	5'7"	4'11"	5'	6'	5'8"	5'9"
11.09.16	4'3"	4'	4'2"	5'1"	5'2"	4'7"
25.09.16	4'1"	3'10"	3'8"	4'10"	4'8"	4'5"
02.12.16	5'4"	5'2"	4'8"	5'9"	5'7"	5'11"
13.12.16	5'8"	5'7"	5'2"	6'5"	6'3"	6'4"
25.12.16	6'2"	5'11"	5'9"	6'8"	6'10"	6'9"
12.01.17	6'10"	6'2"	6'2"	7'4"	7'1"	7'1"
04.02.17	6'10"	6'4"	6'3"	7'5"	7'4"	7'1"
20.02.17	7'01"	6'4"	6'5"	7'8"	7'4"	7'5"
06.03.17	7'7"	6'10"	6'10"	8'1"	7'8"	7'11"
20.03.17*	7'10"	7'1"	7'5"	7'6"	7'3"	7'5"
07.04.17	8'0"	7'3"	7'6"	7'8"	7'5"	7'9"
24.04.17	8'2"	7'6"	7'8"	7'11"	7'8"	7'11"
20.10.17	5'1"	5'0"	4'11"	5'3"	4'10"	5'1"
09.11.17	5'3"	5'2"	5'1"	5'7"	5'1"	5'3"
24.11.17	5'3"	5'2"	5'1"	5'6"	5'3"	5'5"
07.12.17	5'3"	5'3"	5'2"	5'7"	5'5"	5'6"
19.12.17	5'3"	5'4"	5'3"	5'6"	5'9"	5'7"

*Heavy rain from 09 – 12 March, 17 (143.75 mm)



Rain water storage in Land shaping pond of Intervention-I during **January, 2018** was **16660 cft.**



Rain water storage in Land shaping pond of Intervention-I during **May, 2018** was **6500 cft.** (after completion of rabi crop.)

- **Measurement of GHG from paddy field**–Greenhouse gas has been collected periodically from two type of paddy field, medium land of Intervention I, III & V and low land of Intervention II & IV. The gas samples have been sent to IARI through speed post for its analysis.
- **Supporting farmer beneficiaries by providing seed of rabi crop during rabi, 2017-2018**– The 45 beneficiary farmers under this programme have been provided with certified seed of Green gram (var. PDM-84139), Sunflower (DRSH-1), Cotton (Surabhi), Okra (Arka Anamika), Bitter Gourd (US-6214) etc.
- **Supporting farmer beneficiaries by providing paddy seed during kharif, 2017**– All the 45 beneficiary farmers under this programme have been provided with certified seed of paddy according to their land situation. Some of the varieties are IET-1017, IET-1036, NC-492, IET-5656, Pratikha.
- **Training of beneficiary farmer and other farmers** – Continuous technical backstopping and periodical training is used to carried out for the beneficiary farmers as well as other farmers of the project village. Training is imparted on agri-horticulture and fishery practices.



Farmers' Scientist Interaction at IARI village with IARI Scientists & Village representatives



IARI Scientists & KVK Horticulturist observing technological intervention at IARI village

4.6. 28.

EXPOSURE VISIT CUM EXCHANGE OF VIEW WITH THE GOVERNMENT OFFICIALS OF ANDAMAN AND NICOBAR ISLAND AND OFFICIALS OF KVK OF WEST BENGAL UNIVERSITY OF ANIMAL AND FISHERY SCIENCES

KVK regularly organized exposure visit from different corners of the state. Technological knowhow and practical do how is being demonstrated to the participants. But, exposure from outside the state is always became important and exchange of vies with the participants hold an integral part of the programme. Different government officials from Andaman and Nicobar Island came to our KVK from 23.03.2018-24.03.2018. SMS and other staff of KVK of West Bengal University of animal fishery sciences had the exposure on 29th June 2017.



4.6.29. Celebration of World Honey Bee Day 2017

Department of Food Processing Industries & Horticulture, Government of West Bengal, organized a Seminar and exhibition on 19th and 20th August 2017 to celebrate “World Honey Bee Day 2017”, first time in the State. The programme was graced by Sri Abdur Rejjak Molla, Hon’ble Minister-in-charge, Dept. of Food Processing Industries & Horticulture and Sri Subrata Mukherjee, Hon’ble Minister-in-charge, Dept. of Panchayat & Rural Development.

This is an event targeting to promote and to create awareness about Beekeeping as an alternate livelihood option for rural Bengal. Honorable Minister in charge of the department, Mr. Abdur Rejjak Molla, inaugurated the celebration. While Mr. Subrata Mukherjee, Honorable Minister in charge of PHE & Panchayat was the chief guest of the function. Ms. Nandini Chakraborty, Hon. Secretary of the department also graced the function.



Prabir Kumar Garain, Scientist (Plant Protection) & Principal Investigator, AICRP (HB &P) Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith, set the mood of the morning by an in depth presentation on importance of Honey Bee in life cycle of the nature.

Mr. Subrata Mukherjee extended his department support for Beekeeping and assured all kind of help to the Department of Food Processing and Horticulture. Mr. Abdur Rejjak Mollah was prompt to say yes for this association. In his lecture he showed why people call him son of the soil in Sunderban area.

This is the first time World Honey Bee Day celebrated in West Bengal.

Mr. Prabir Kumar Garain, SMS (Plant Protection) and PI, AICRP (HB &P), RAKVK, Nimpith started the programme with his Technical speech on the importance of Honey Bees in Crop Production and Rural Livelihood. The efforts of the KVK in Beekeeping and Pollination management were highly appreciated by the Department.

The programme was covered by leading newspapers, online news agencies, TV and All India Radio.

A similar kind of celebration was also organized at the KVK premises in Nimpith, on 19th August, attended by the local beekeepers and farmers.



4.6.30. On-farm mass production of microbial bio-pesticide (*Trichoderma sp.*)

Background:

The chemical intensive pest control has led to intensified pest and disease incidence, resurgence, pesticide resistance and residue problems. In the district of South 24 Parganas, a growing intensity of soil borne fungal pathogens causing root rots, stem rots and vascular wilts and of several pests like *Spodoptera sp.*, *Leucinodes orbonalis*, thrips, jassids and mealy bugs, are being noticed. Chemical pesticides are used as sole weapon against these pest and diseases, thus affecting the farmers' economy and the consumers' health and hygiene. Added to these are the environmental issues like selection pressure on pests and pathogens due to indiscriminate use of chemical pesticides. This artificial selection pressure helps the pests and pathogens to develop pesticide resistance more often than developing any new pesticide molecules by us.

But there are some proven Biopesticides that can manage the above pest-disease problems along with taking care of the issues faced both by the growers, consumers and environment. Biopesticides are either microbial in nature, like *Trichoderma sp.*, *Pseudomonas fluorescens*, *Metarhizium anisopliae*, *NPV*, *Bt*, etc. or may be some beneficial insects, like *Trichogramma*, or any botanical products like Neem oil.



Initiative by Ramkrishna Ashram Krishi Vigyan Kendra:

Under such circumstances RAKVK, Nimpith came out with a novel idea of empowering the rural farmers in producing certain bio-control agents at homestead level. The protocols standardized by National Institute of Plant Health Management (NIPHM), Hyderabad, were followed for this purpose. Accordingly, a project, named “On-farm mass production of microbial pesticides” was prepared by RAKVK, Nimpith and sanctioned by the Department of Agriculture, Govt. of West Bengal, under Rashtriya Krishi Vikas Yojana (RKVY) for 2015-16, 2016-17 & 2017-18.

The objective of the 2-year project was to isolate local strains of fungal bio-control agent (*Trichoderma sp.*) and mass production of the promising strain by the farmers for their own use.

As production of bio-control agents for own consumption does not warrant registration, larger number of agro-ecological zones can be covered with zone specific strains without waiting for their registration and commercial production eternally. Isolation of local strains was done in the bio-control laboratory of the KVK. Such strains with better adaptability to the edapho-climatic situation of the South 24 Parganas District were selected.

Project beneficiaries: 289 Farmers, engaged in vegetable and betelvine cultivation were selected from South 24 Parganas, Nadia, Burdwan, Hooghly and Midnapore. Progressive farmers and rural youths, familiar with the use of *Trichoderma* and other biocontrol methods were given priority for successful implementation of the project.

Demonstration Training: Four-day long residential trainings were organized to impart skill in production of microbial bio-pesticides.

Refresher training and review: A one-day seminar cum refresher training was conducted for all the beneficiaries for sharing of experiences and to undertake any further refinement of the technology if required at field level.

Isolation and identification:

- Different fungal species were isolated from the rhizosphere of different field situation of this South 24 Parganas, following standard laboratory protocol.
- *Trichoderma harzianum* was identified after consultation with veteran Mycologists from Bidhan Chandra Krishi Viswavidyalaya, Mohanpur.
- The fungal cultures are maintained at the Biocontrol Laboratory of KVK, Nimpith.

Screening of *Trichoderma*

- Soil borne pathogens like *Fusarium*, *Rhizoctonia*, *Sclerotium* and *Sclerotinia*, were also isolated
- The local strain of *Trichoderma harzianum* was screened against the pathogens by dual culture test.
- The best performing strains were selected for mass multiplication.



Distribution of inputs:

All the trained farmers (289 in 2017-18) were given the training kit containing inputs for *Trichoderma* production. The beneficiaries were given a pressure cooker, a specially designed wooden box, trays, cotton, polypropylene bags, spirit lamp, spirit and mother culture.

Production of *Trichoderma* and use:

The trained farmers started production of *Trichoderma viride* at their premises with active guidance and monitoring by the KVK scientists. All of the 289 beneficiaries produced *Trichoderma* and applied to their field.

From 20 kg grains, 10 kg bio-pesticides are prepared. The beneficiaries produced around 100 quintal of *Trichoderma* during the reporting period (2017-18). At a nominal cost of Rs. 100/- per kg, there were an annual turnover of Rs. 10 lakh during 2017-18.

- Farmers now don't depend upon pesticide shops mercy for timely supply of quality *Trichoderma*.
- Some of the beneficiaries are disseminating the technology as master trainer
- Farmers became enthusiastic in adoption of low cost on-farm mass production of other available bio-control agents like – Entomopathogenic fungi (*Metarhizium anisopliae*)

Parameters	Market available <i>Trichoderma</i> (popular Talc formulations)	<i>Trichoderma</i> produced by the trained farmers at their own farm
Accessibility to use of <i>Trichoderma</i> in remote villages	2.5 times per year	12 times per year
Cost of <i>Trichoderma</i>	Rs. 200 per kg	Rs. 50 per kg
Incidence of root rot, collar rot and fungal wilt diseases	20-30%	5-8%

The way forward:

Considering the paucity and timely un-availability of quality bio-control agents in the markets of remote areas in Sundarbans, this project will certainly bring smile to the farmers who are already aware of the malady of chemical farming. And hope this small effort help to take a little step towards sustainability of soil health and production of Green Food in collaboration with the Department of Agriculture, GoWB.

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

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

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

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



Objectives of the Course:

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

Initiative taken by RAKVK, Nimpith:

This course has been popularized since 2004-05, but mostly in South Indian States like, Andhra Pradesh, Tamilnadu, etc. It is the first time that any States from the Eastern part of the country has thought off such programme in 2013-14. Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith and SAMETI, Narendrapur are the two pioneer Institutes that have taken initiative to implement this diploma course for the benefit of the farmers of South 24 Parganas District. 40 Agricultural Input Dealers from different Blocks of the District are selected for each batch per center. The course started with the 1st batch in 2013-14. During this financial year 2 batches of the diploma course is being run by this KVK.

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

Methodology:

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

Content and coverage:

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

Till date three batches (121 dealers) have been completed at KVK Nimpith center. The 2016-17 course has been started with 2 batches (Total 80 candidates) from November 2016. More and more numbers of Agri-Input Dealers are enquiring for enrollment for the next session. Hope this novel approach will bring enormous changes in the mind of the Input Dealers towards a sustainable production system with minimal exploitation of ecological resources.

4.6.32. 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.

Two species of Bees, *Apis cerana* (Indian honeybee) and *Apis mellifera* (Italian honeybee) are being maintained in the farm. 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.



4.6.33. Study on the effect of pesticides on Giant Honeybee (*Apis dorsata*)

Increased use of insecticides in crop protection exercises has severely affected the survival of giant honey bee (*Apis dorsata*) which is a very good pollinator of various entomophilous crops like bittergourd, cucumber, cotton, Sunflower, Guava, etc, in this region. The role played by honey bees in increasing the crop yield is 10-20 times greater than their values in honey production. Unfortunately this useful aspect of honey bee is being ignored as the crops are heavily and injudiciously flooded with pesticides to combat various pest problems. This results in drop of pollinator population during the flowering period of the crops resulting in 10-20% reduction of seed setting and crop yield.

The 19 insecticides studied were: Chlorpyrifos, Cypermethrin, Triazophos, Profenophos, Dimethoate, Acephate, Imidacloprid, Thiamethoxam, Fipronil, Buprofezin, Oberon, Spiromesifen, Flubendiamide, Novaluron, Emamectin benzoate, Spinosad, Flonicamid, Difenthiuron and Azadiractin.



Glass beakers covered by muslin cloth were used for the experiment to allow adequate aeration for the bees. Filter papers wetted with 1ml of different concentration of the insecticides were placed inside the container and then allowed to dry. Honey bees were kept at 4°C for ten minutes prior to test so as to calm them for easy handling. They were transferred at the rate of 10 per container. After exposure for an hour, the bees were transferred to polythene bags and cotton wool dipped in 40 per cent sucrose solution was provided as food. The bee mortality was observed after 12 hours of treatment and corrected per cent mortality worked out using Abbot's formula (Abbot, 1925).

Imidacloprid was found to be most toxic where as Azadirachtin (Neem Oil) was least toxic to giant honeybees at field recommended doses.

4.6.34. Effect of Pollination Service by Indian Honeybee (*Apis cerana*) on yield of Sesame

Seed setting in oilseeds is an important factor for increasing its yield. Sesame is a cross pollinated crop that is highly dependent upon insect pollination (bee and non-bee insects). A comparative study was undertaken between pollination exclusion, open pollination and bee pollination situation.

2m x 2m area of sesame field was covered by fine mesh nylon cage for exclusion of insect pollination service. Another plot of same area (2m x 2m) was covered by same kind cage where a 2-frame beehive (*Apis cerana*) was placed inside it for pollination service. Pollination service was engaged 35 days after sowing when the plants attained 5% flowering stage.

Yield parameters	Pollination exclusion	Open pollination	Bee Pollination
Number of Capsule/plant	40.3	52.2	47.9
No. of Seed/Capsule	41.4	48.9	45.3
Test weight of seed (g/1000 seed)	2.81	3.06	2.95
Yield (q/ha)	7.03	11.66	9.60

The results show that maximum number of capsule per plant, number of seed per capsule and total yield was higher under open pollination than other treatments. The test weight of seed was statistically same under open pollination and bee pollination but both were higher than pollination exclusion treatment. The yield in open pollinated plot was 65.9% more than pollination exclusion plot.



4.6.35. Effect of Pollination Service by Indian Honeybee (*Apis cerana*) on yield of Cotton (Suravi)

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

2m x 2m area of sesame field was covered by fine mesh nylon cage for exclusion of insect pollination service. Another plot of same area (2m x 2m) was covered by same kind of cage where a 2-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
No. of Bolls/Plant	20.2	21.1	22.3
Average boll weight (g)	3.96	4.01	4.11
Seed cotton yield (g)/plant	80.05	84.67	91.65
Seed cotton yield (q/ha)	13.07	13.80	14.62

Bee pollination (*Apis cerana* hive inside nylon cage) resulted in increase in no. of bolls per plant, average boll weight and seed cotton yield. Keeping 4-6 *Apis cerana* hives per ha cotton field can fetch 12% increase in productivity.



4.6.36. Effect of Pollination Service by Indian Honeybee (*Apis cerana*) on yield of Pumpkin

Pumpkin (*Cucurbita moschata*) 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 situation.

3m x 3m area of sesame field was covered by fine mesh nylon cage where a 4-frame beehive (*Apis cerana*) was placed inside it for pollination service. Pollination service was engaged 30 days after sowing when the plants attained 5% flowering stage. For pollination exclusion (without insect pollination), a branch in 10 plants were covered with fine mesh cage.



Yield Parameter	Pollination exclusion	Open pollination	Bee Pollination
Fruit set (%)	0	76.5	60.5
Fruit weight (kg)	0	2.065	1.655
No. of seed/fruit	0	309.4	260.6
Seed test weight (g)	0	82.6	81.1
Yield (t/ha)	0	17.14	13.13

The results show that there is fruit formation when all insect pollinators are excluded. Open pollination as well as bee pollination (*Apis cerana*) is very much necessary for good productivity.

4.6.37.

JOINT PROGRAMME WITH ICAR-ATARI, KOLKATA, ICAR-IIHR, HESSARGHATA AND RAKVK, NIMPITH

As a follow-up programme of the meeting held between Director, ICAR-IIHR, Hessarghata and Director, ICAR-ATARI, Kolkata, RAKVK, Nimpith was provided with breeder seed of Dolichos been variety 'Arka Sambhram' for its seed production at the KVK Instructional farm for its further distribution among different KVKs of Zone –V. The crop was sown during August, 2017 and flowering started from early October, but fruiting only started after mid November when night temperature reaches below 20⁰C. The fruiting was very good till mid February but it was a crop of only about 50 % fruit setting. Again pod length and weight was not very satisfactory from farmers' point of view. A good quantity seed has been produced and store in desiccators which would be distributed among different KVKs of Zone –V.



As per technical guidance and recommendation of the ICAR-IIHR scientists, received in the ICAR-ATARI organized Refresher Course for KVK Personnel of Zone V, Horticulture Section of RAKVK has started producing few Plant Growth Regulators for its distribution among farmers of the districts. Few of the products are –

Plant Plus – a Auxin hormone based plant growth promoter containing IAA, micronutrients and n-triacontanol. It promotes plant growth & yield of horticultural crops, reduces fruit drop and increases fruit setting.

Plant Guard – a plant growth retardant in nature, containing Chlormequat Chloride, increases plant tolerance to biotic and abiotic stresses and increases yield of vegetable crops by 10 – 20%.



5. LINKAGES

5.1. Functional linkage with different organizations

Sl. No.	Name of organization	Nature of linkage
1	SREEDURGA CLUB Vill- Gilarchat Kultali, P.O- Gilarchat, P.S- Raidighi, Block – Mathurapur II, Dist- South 24 Parganas	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management ✓ Partner in PMFBY Campaign
2	SUNDARBAN KAIKHALI SRIKRISHNA SMRITI SANGHA P.O – Kaikhali Ashram, P.S- Kultali, Pin- 743338, Dist- South 24 Parganas	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management ✓ Partner in PMFBY Campaign
3	SREEPUR NETAJI SEVA KENDRA O SISHU UDDYAN Vill –Sreepur , P.O- Kashimpur, P.S-Joynagar, Dist- South 24 Parganas	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management
4	NALGORA VIVEKANANDA WELFARE SOCIETY Vill –Nalgora, P.O- Sonatikari, P.S- Kultali, Dist- South 24 Parganas, Pin- 743349	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management
5	KANTAMARI SANKIJAHAN DWIPSHIKA FISHERMAN WELFARE SOCIETY Vill & P.O –Kantamari, P.S-Kultali, Dist- South 24 Parganas, Pin- 743349	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management ✓ Partner in PMFBY Campaign
6	HERAMBAGOPALPUR SEBABRATI SANGHA Vill & P.O- Heramba Gopalpur, Dist- South 24 Parganas,	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management
7	BIJOYNAGAR AROBINDA PANCHANAN SMRITI SANGHA Vill & P.O- Dakshin Bijjoynagar, P.S-Joynagar, Dist- South 24 Parganas Pin- 743338,	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management

8	RAIDIGHI NEW MAKALI SEVA SAMITY Vill & Post & P.S – Raidighi, Block – Mathurapur II, Dist- South 24 Parganas Pin : 743383	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting ✓ Partner in organizing training on Soil Health Management
9	DAKSHIN AKHRATALA SWAMI VIVEKANANDA KRISAK SANGHA Vill.- Dakshin Akhratala; Post.- Nazat Hatkhola; P.S – Sandeshkhali, Dist- North 24 Parganas, Pin : 743442	<ul style="list-style-type: none"> ✓ Partner in executing the Demonstrations under RKVY sponsored project on IFS through Land Shaping and Rain Water Harvesting
10	SOCIETY FOR DURBACHATI SOCIAL ACTION AND TRANSFORMATION, Vill. & P.O. Durbachati; Block – Pathar Pratima, Dist- South 24 Parganas	<ul style="list-style-type: none"> ✓ Conservation of indigenous vegetable varieties ✓ PPV & FRA campaign ✓ PMFBY campaign ✓ Campaign on Soil Health Management & Soil Testing ✓ Promotion of Organic vegetable farming
11	MANAB SEBA FARMERS' CLUB P.O – Kaikhali Ashram, P.S- Kultali, Pin- 743338, Dist- South 24 Parganas	Testing & Demonstration of different technologies under NICRA – IARI programme
12	WBLDC	Marketing of goat, sheep and broiler duck meat from the farmers production, Marketing of peking duck meat, and ARYA farmers produce
13	Dept of Forest, Govt of West Bengal	Training on poultry, goatery, and duckery as alternative livelihood option.
14	West Bengal university of animal and fishery sciences	Different on farm research, conduction of health cum vaccination camp, organizing exposure visit for veterinarians of different states of West Bengal
15	Animal Resource development department, South 24 Pgs. district	Implementing Prani Mitra programme, Mobile veterinary Clinic programme
16	Institute of Animal Health and Veterinary Biologicals, Kolkata, West Bengal	Joint diagnostic survey
17	SIPRD, West Bengal	Research and Extension
18	Central Glass and Ceramic Research Institute	
19	Central Institute of Fisheries Education, Salt Lake, Kolkata	Training and Extension
20	DAC & NMOOP Programme, Dept. of Agriculture, Govt. of West Bengal	
21	Coconut Development Board, State Centre, Kolkata	
22	University of Calcutta, West Bengal	
23	University of Kalyani, Kalyani, Nadia, West Bengal	
24	West Bengal State University, Barasat	
25	District Rural Development Cell, North- 24 Parganas, WB	
26	District Rural Development Cell, South- 24 Parganas, WB	
27	SDB, GOWB	
28	Serampur College, Kolkata	
29	City College, Kolkata	
30	Vivekananda College, Kolkata	

31	ATMA, Howrah	
32	ATC & SAMETI, Narendrapur	
33	ATMA, South 24 Parganas	
34	TMC MM-II, DOCD, GOI (Cotton)	
35	SDB, GOWB (Cotton Cultivation)	
36	CICR, Nagpur (IRM)	
37	Advanta, Excel Crop Care Ltd.	
38	National Horticulture Mission, Mayukh Bhavan, Salt Lake, Kolkata, West Bengal	Demonstration
39	District Horticulture Office, Alipur, South 24 Parganas	
40	Directorate of Oilseed Research, Hyderabad	
41	National food security mission	Collaborating work
42	Directorate of Extension, BCKV, Mohanpur, Nadia	
43	Sundarban Milk Union Limited, South 24 – Parganas	Collaborative programme
44	Central Institute of Fisheries Education, Salt Lake, Kolkata & Versova, Mumbai	
45	Cotton Corporation of India (CCI), Kolkata	Marketing of farm produce
46	Rural Development Wing of Ramkrishna Ashram	Conducting flood relief animal health camp at different block of Joynagar-II and Kultali.
47	ARD Dept, Govt of West Bengal	Implementing Prani Mitra programme, Mobile veterinary Clinic programme
48	PBGSBS	Implementation of Artificial insemination technology
49	Chittaranjan National Cancer Institute	Providing expertise as veterinarian member of IAEC.
50	National dairy Research Institute, Kalyani	Technology dissemination at field level and organizing farmers meet
51	MANAGE, Hyderabad	A one-year diploma course is being implemented by the KVK in collaboration with MANAGE, Hyderabad. The name of the course is “Diploma in Agricultural Extension Services for Input Dealers”. 40 Agri input dealers from different blocks of the District are studying this course. Weekly classes (every Thursday) are arranged for this 48 week long course.
52	National Centre for Integrated Pest Management (NCIPM), New Delhi	Collaborative research project
53	AICRP (HB & P), ICAR, New Delhi	Voluntary Centre of AICRP

5.2. List of special programmes undertaken during 2017-18 by the KVK, which have been financed by ATMA/ Central Govt/ State Govt./NABARD/NHM/NFDB/Other Agencies (**information of previous years should not be provided**)

a) Programmes for infrastructure development

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.) in lakh
RKVY Funded Strengthening of Soil Testing Laboratory project	Strengthening of Soil Testing Laboratory at KVK for better Soil Health management of the District as well as to increase overall crop productivity of the District South 24 Parganas and neighbouring districts through Soil Test Based Fertilizer recommendation and Soil management programmes	June, 2017	Dept. of Agriculture through RKVY Scheme	56.00
All India Coordinated Research Project on Sunflower(AICRP)	Development of early duration Hybrids for rainfed situations and Rabi-Summer	01.04.2017	Indian Institute of Oil Seeds Research, Rajendranagar, Hyderabad	41.72
FLD on Sunflower	Demonstration on Sunflower cultivation	01.04.2017	Director of Oil Seeds Research, Rajendranagar, Hyderabad	2.08800
Tribal Sub Plan	Popularization of Sunflower cultivation in the tribal belt of West Bengal	01.04.2017	Director of Oil Seeds Research, Rajendranagar, Hyderabad	5.00
Need Based Research programme (NBR)	Need Base Research programme (NBR)	01.04.2017	Director of Oil Seeds Research, Rajendranagar, Hyderabad	0.25830
Oilseed Kisan Mela	Oilseed Kisan Mela	01.04.2017	Director of Oil Seeds Research, Rajendranagar, Hyderabad	4.00
NMOOP Training programme	Extension workers/KPS/Input dealers/etc.	01.04.2017	Directorate of Agriculture, Govt. of West Bengal	0.36000

NMOOP Training programme	Production of Raw Cotton and improve the bio mass status of the North and South 24 Pgs districts	01.04.2017	Directorate of Agriculture, Govt. of West Bengal	5.74
Cotton Development Mission (CDM)	Production of Raw Cotton and improve the bio mass status of the North and South 24-Parganas districts.	01.04.2017	Directorate of Agriculture, Govt. of West Bengal	9.00
NFSM (Commercial crops)	Intensive Cotton Development in the North and South 24-Parganas districts.	01.04.2017	Department of Agriculture, (Development Branch) Govt. of West Bengal	20.60
National Innovations in Climate Resilient Agriculture (NICRA)	Strategies to enhance adaptive capacity to climate change in vulnerable regions of district	01.04.2017	ICAR, New Delhi	11.50
National Innovations in Climate Resilient Agriculture (NICRA)	Landshaping and Retaining Rural Youth in Agriculture through Self Employment Generation programme	01.04.2017	IARI, New Delhi	5.00
IWMP-6	Integrated watershed development programme	01.04.2017	Deptt. Of Agril. Govt. W.B.	12.65
IWMP-7	Integrated watershed development programme	01.04.2017	Deptt. Of Agril. Govt. W.B.	10.00
Per Drop More Crop (PDMC)	Per Drop More Crop (PDMC) programme	28.11.2017	Deptt. Of Agril. Govt. W.B.	51.50
IFS programme through RKVY in South 24 Parganas	KVK Landshaping Programme	01.04.2017	Deptt. Of Agril. Govt. W.B.	361.00
AICRP on Honey Bees & Pollinators (Voluntary Centre)	Research and Development of beekeeping and pollination services in South 24 Parganas	01.04.2017	Division of Entomology, IARI, New Delhi	2.30
On-farm mass production of microbial pesticides	Production of <i>Trichoderma viride</i> at household level by the farmers	01.04.2017	Deptt. Of Agril., Govt. of W.B. under RKVY	33.00
Attracting and Retaining Youth in Agriculture (ARYA)	Attracting and Retaining Rural Youth in Agriculture through Self Employment Generation programme	01.04.2017	ICAR, New Delhi	47.95

MVC South	Extension of animal health care services in remot areas in west bengal through mobile veterinary clicnic	01.04.2017	ARD Department, GOWB	62.76
MVC North	Extension of animal health care services in remot areas in west bengal through mobile veterinary clicnic	01.04.2017	ARD Department, GOWB	45.96
Soil Testing Lab	Development of Soil Testing Lab	01.04.2017	Deptt. Of Agril., Govt. of W.B. under RKVY	56.00
AI Training (Bihar)	AI Training (Bihar)	27.12.2017		6.04650
AI Training (Andaman)	AI Training (Andaman)	30.08.2017		2.75600
DFO	DFO training programme	03.04.2017		23.99993
ADMI Project	ADMI Project	01.04.2017		11.20490

(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.)
Integrated Farming System through Land Shaping & Rain water harvesting	<p>To improve agricultural productivity of low lying areas through -</p> <ul style="list-style-type: none"> ✓ Creation of Water Harvesting Structure – source of irrigation water ✓ Upgradation of low land to medium low ✓ Creation of small upland which facilitates low volume & high value vegetable farming ✓ Additional income through fish cultivation in the Water Harvesting Structure (Pond) ✓ Round the year diversified cropping options 	June, 2017	Dept. of Agriculture through RKVY Scheme	336.00
Vegetable Cultivation on land embankment	<ul style="list-style-type: none"> ➤ Creation of small upland (the said land embankment) in the low lying areas, which facilitates low volume & high value vegetable farming ➤ Additional income through fish cultivation in the land enclosed by the land embankment 	June, 2017	Dept. of Agriculture through RKVY Scheme	25.00

Technology Week and Annual Agriculture Exhibition	Demonstration of Innovative technologies for large scale adoption	February, 2018	NABARD	.05
NICRA-IARI programme	<p>Training, Testing & Demonstration of different climate resilient technologies and varieties in Aila affected villages under NICRA-IARI programme Like – Testing of</p> <ul style="list-style-type: none"> ✓ Plant growth regulators in vegetables <p>Demonstration on</p> <ul style="list-style-type: none"> ▪ Rain water harvesting Structure ▪ Land embankment vegetable cultivation ▪ Hybrid cultivation in vegetables ▪ Crop diversification during rabi season like Okra, Moong, Sunflower, Tomato, Brinjal, Chilli, Sweet potato etc. <p>Training on</p> <ul style="list-style-type: none"> • Improved methods of Vegetable cultivation • Modern techniques in Pulse cultivation • Modern techniques in Oilseed cultivation 	October, 2017	ICAR-IARI, New Delhi	5.6

6. PERFORMANCE OF INFRASTRUCTURE IN KVK

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

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

6.2. Performance of Instructional Farm (Crops)

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.(q)	Cost of inputs	Gross income	
Cereals									
Paddy	15.06.17	06.11.17	0.30	Pratikshya	Foundation	7.61	2825	26635	
	15.06.17	06.11.17	0.30	Pratikshya	Certified	9.12	2770	27360	
	15.06.17	06.11.17	1.0	Pratikshya	TL	22.53	7875	34921	
	12.06.17	22.11.17	0.20	NC-492	Foundation	5.55	1730	19425	
	12.06.17	23.11.17	1.33	NC-492	TL	25.80	8977	39990	
	10.06.17	15.11.17	0.40	Dudshwar	TL	6.0	1580	10800	
	13.07.17	14.11.17	0.52	WGL-20471	TL	9.32	5040	14912	
	17.06.17	08.11.17	0.13	Swarna Sub-I	TL	3.50	1050	7000	
09.06.17	23.11.17	1.86	Varshadhan	TL	35.53	9904	55071		
Pulses-Greengram	06.02.17	30.04.17	0.52	PDM-84-139	TL	1.70	2000	6800	
Oilseed-Sesame	07.02.17	03.05.17	0.13	Savitri (SWB-32-10-1)	TL	1.0	1050	4000	
Sunflower	13.01.17	10.04.17	1.40	DRSH-1 & KBSH-44	Hybrid	6.0	4790	24000	
Brinjal	14.02.17	20.04.17 to 16.06.17	0.20	Muktajhuri	Immature Fruit	58 q	12460	37830	Brinjal
Cabbage	18.09.17	12.01.18	0.26	Rare ball	Fresh Head	63 q	18970	32890	Cabbage
Tomato	23.09.17	02.12.17 to 21.03.18	0.13	SG 1458	Ripe fruit	47 q	13760	26270	Tomato
Cauliflower	18.09.17	05.01.18	0.13	Dawn	Fresh Curd	25 q	9740	17860	Cauliflower
Capsicum	23.09.17	12.11.17 to 20.02.18	0.13	Indra	Mature green Fruit	8.7 q	7360	16710	Capsicum
Bottle Gourd	01.02.17	14.04.17 to 13.07.17	0.13	Nabin	Immature Fruit	33	11480	24600	Bottle Gourd

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	
	Trichoderma harzianum	690	69000.00	87750.00	
	Pseudomonas fluorescens	700	70000.00	90450.00	
	Metarhizium anisopliae	137	13700.00	19500.00	
1.	Vermicompost	11472	47500	114720	Distributed among 1463 number of farmers

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

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1.	Fish - Indian major carps	Catla, rohu, mrigal, calbasu, bata	Spawn	4million			
2.	Fish - Indian major carps	Catla, rohu, mrigal, calbasu, bata	Fry & fingerlings	1000kg			
3.	Fish - Exotic carps	Silver carp, java punti, common carp	Fry & fingerlings	130kg			
4	Fish - Indian major carps & exotic carps	Catla, rohu, mrigal, calbasu, bata, siver carp, java punti, common carp	Tablefish	652kg	472499	625640	
5	Asian cat fish	<i>Clarias batrachus</i>	Fry	187500 no.			
6	Stinging catfish	<i>Heteropneustes fossilis</i>	Fry	3000 no.			
7	Climbing perch	<i>Anabas testudineus</i>	Fry	8300 no.			
8	Butter fish	<i>Ompok pabda</i>	Fry	720 no.			
9	Ornamental fish	Egg bearers - goldfish, angel, koi carp, tiger barb	Fry	5640 no.			
10	Ornamental fish	Live bearers - Guppy, molly, swordtail	Fry	5600 no.			
11	Freshwater prawn	Macrobrachium rosenbergii	Juvenile	3620 no.			
12	Poultry	Vanaraja	Meat	185	33000.00	49000.00	
		Kaberi	Meat	120	27000.00	38500.00	
13	Broilers	Hygrow	Meat	200 (4 cycle)	41000.00	47000.00	
14	Duals (broiler and layer)	RIR, Nirvik, Hitkari, Upkari	Meat, egg	250	28000.00	31000.00	
15	Goat	Black Bengal	Meat, kid	60	59000.00	105000.00	
16	Ducks	Pekin duck	Meat	4000	100000.00	120000.00	

6.5. Utilization of hostel facilities

Accommodation available (No. of beds)

Months	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
April, 2017	280	1010	-
May,2017	175	800	-
June,2017	390	1510	-
July,2017	298	1054	-
August,2017	297	1095	-
September,2017	336	1238	-
October, 2017	322	1515	-
November,2017	680	3671	-
December,2017	405	2815	-
January,2018	438	1680	-
February,2018	269	1006	-
March, 2018	263	820	-
Total	4153	18214	

(For whole of the year)

6.6. Utilization of staff quarters

Whether staff quarters has been completed:

No. of staffquarters:

Date of completion:

Occupancy details:

Months	Q I	QII	Q III	QIV	Q V	QVI
April, 2017	Full	Full	Full	Full	Full	Full
May,2017	Full	Full	Full	Full	Full	Full
June,2017	Full	Full	Full	Full	Full	Full
July,2017	Full	Full	Full	Full	Full	Full
August,2017	Full	Full	Full	Full	Full	Full
September,2017	Full	Full	Full	Full	Full	Full
October, 2017	Full	Full	Full	Full	Full	Full
November,2017	Full	Full	Full	Full	Full	Full
December,2017	Full	Full	Full	Full	Full	Full
January,2018	Full	Full	Full	Full	Full	Full
February,2018	Full	Full	Full	Full	Full	Full
March, 2018	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
With Host Institute	-	-	-
With KVK	State Bank of India	Nimpith	11259497721

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

Item	Released by ICAR		Expenditure		Unspent balance as on -
	Khharif	Rabi/Summer	Khharif	Rabi/Summer	
Sesame		0.00		50,000.00	Nil

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

Item	Released by ICAR		Expenditure		Unspent balance as on 1 st April 2018
	Khharif	Rabi/Summer	Khharif	Rabi	
Lentil		35,000.00		1,50,000.00	Nil
Greengram		0.00		2,25,000.00	Nil

7.4. Utilization of KVK funds during the year 2017-18(Not audited)

Sl. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	12880000.00	12880000.00	12778702.00
2	Traveling allowances	100000.00	100000.00	99134.00
3	Contingencies			
A	Stationery, Stamp and other expenditure			
B	POL, repair of vehicles, tractors and equipment & hiring of vehicle etc	740000.00	740000.00	739947.75
C	Training of farmers			
D	Training materials			
E	Training of Extension Functionaries			
F	Training of Rural Youths	450000.00	450000.00	449749.00
G	Frontline Demonstration	300000.00	300000.00	299700.00
H	On Farm Testing	150000.00	150000.00	149491.00
I	Maintenance of Building	100000.00	100000.00	100000.00
J	Swatchta Expenditure	25,000.00	25,000.00	25,000.00
TOTAL (A)		14745000.00	14745000.00	14641723.75
B. Non-Recurring Contingencies				
1	Office Equipments, Furniture & Furnishing	300000.00	300000.00	300000.00
2				
3				
4				
TOTAL (B)		300000.00	300000.00	300000.00
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		15045000.00	15045000.00	14941723.75

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)
2015-16	54.37398	170.70322	83.02449	162.97449
2016-17	162.97449	167.32879	114.0300357	216.2732
2017-18	216.2732	209.26554	175.16529	250.37345

7.6. (i) Number of SHGs formed by KVKs

– No. 56

(ii) Association of KVKs with SHGs formed by other organizations indicating the area of SHG activities ATMA and NRLM for agricultural activities, gotary and duckery

(iii) Details of marketing channels created for the SHGs

Development of marketing channel through ARYA Project

7.7. Joint activity carried out with line departments and ATMA

Name of activity	Season	With line department	With ATMA	Both
Expousre vist of farmer of ATMA	2017-18		ATMA	
Training cum Exposure visit	2017-18		ATMA	
Large Scale Cotton Demonstration	Rabi-Summer 2017-18	Deptt. of Agril, GOWB	-	-
AICRP on Sunflower	Kharif & Rabi -summer	DOR, Hyderabad	-	-
IARI, NICRA	Throughout the year	NICRA, New Delhi	-	-
IWMP	2011-18	Deptt. Of Agril, GOWB	-	
Conducting FOCT training programme	2017-18	Coconut Development Board, (Ministry of Agriculture, GOI), BJ-108, Sector-II, Salt Lke, Kolkata-700 091	-	-
Diploma in Agricultural Extension Service for Impute Dealers (DEASI)	2017-18	- National Institute for Agricultural Extension Management (MANAGE) Hyderabad	ATMA	
On-farm mass production of microbial pesticides	2017-18	Department of Agriculture, GoWB and RKVY	-	
AICRP on Honeybees and Pollinators	2017-18	Division of Entomology, IARI, New Delhi	-	
NICRA	2017-18	CRIDA, Hyderabad	-	

8. Other information

8.1. Prevalent diseases in Crops

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

8.2. Prevalent diseases in Livestock/Fishery

Name of the disease	Species affected	Date of outbreak	Number of death/ Morbidity rate (%)	Number of animals vaccinated	Preventive measures taken in pond (in ha)
Goat pox	goat	-	28%	69785	

9.1. Nehru YuvaKendra(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	27	34199
Livestock	3	2132
Fishery	11	6058
Weather	1	548
Marketing	1	1428
Awareness	1	1327
Training information	1	1325
Other	1	1327
Total	46	48344

9.4. KVK Portal and Mobile App – Under Process

Sl. No.	Particulars	Description
1.	No. of visitors visited the portal	NA
2.	No. of farmers registered in the portal	92
3.	Mobile Apps developed by KVK	In process
4.	Name of the App	NA
5.	Language of the App	NA
6.	Meant for crop/ livestock/ fishery/ others	178
7.	No. of times downloaded	NA

N.B.

1. Toll free Number Call received through Expert – 41
2. Dial Out Audio Conference Attend – 2
3. VMS Send through Nimpith Ashram Advisory – 10,000 farmers
4. Video module production for JioKisanportal .



9.5. a. Observation of Swacha Bharat Programme

Date of Observation	Activities undertaken
16 th September, 2017	The SwachhataAbhiyan programme has been initiated by RAKVK, Nimpith on 16th September with Sapath taking by all officials and trainee farmers from Sundarban area. All officials of KVK engaged themselves for cleaning the Jamtala Road and took part in the plantation activity beside the road.
16.09.17	Yoga Camp at Kaikhali Village of South 24 Parganas of South 24- Parganas district
17 th September, 2017	Officials of KVK devoted themselves for cleaning and sweeping of the KVK campus and its instructional farm, dairy farm on 17 th September.
24 th September, 2017	All the KVK officials took part in the construction of the toilet facility in backward village- Taltala of Mayahouri Panchayatunder Joynagar-II Block of South 24 Parganas district. Competition on Sanitation and hygiene was organized by RAKVK, Nimpith as a part of Swachhata Abhiyan. Students from different schools of South 24 Parganas district participated the competition with their posters on sanitation and hygiene.

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

Date of Observation	Activities undertaken
25 th September, 2017	KVK staff actively participated in the cleaning of Rural Hospital at Nimpith under Joynagar-II Block of South 2 Parganas district as a part of Swachhata Abhiyan.
1 st October, 2017	All the staff of KVK devoted themselves for cleaning and sweeping of the road beside the Kaikhali Tourist Lodge, Khaikhali under Kultali Block of South 24-Parganas as a part of Swachhata Abhiyan.
2 nd October, 2017	A public function and award ceremony was organized by RAKVK, Nimpith to felicitate the outstanding performers of the “Swachhata Abhiyan” celebrated by the KVK from 15 th September - 2 nd October, 2017
Tuesday and Sunday of every week	Cleaning of farm and cleaning of KVK campus
15.11.2017	Awareness camp in school on hand washing, health & hygiene
23.11.2017	
30.11.2017	
06.12.2017	
19.12.2017	
27.12.2017	
10.01.2018	
19.01.2018	
30.01.2018	
14.02.2018	
28.02.2018	
13.03.2018	
28.03.2018	

b. Details of Swachhta activities with expenditure

Activities	Number	Expenditure (in Rs.)
1. Digitization of office records/ e-office	14	2500.00
2. Basic maintenance	33	37500.00
3. Sanitation and SBM	32	5500.00
4. Cleaning and beautification of surrounding areas	11	25000.00
5. Vermicomposting/ Composting of biodegradable waste management & other activities on generate of wealth for waste	24	30000.00
6. Used water for agriculture/ horticulture application	3	20000.00
7. Swachhta Awareness at local level	24	24000.00
8. Swachhta Workshops	2	7000.00
9. Swachhta Pledge	3	3000.00
10. Display and Banner	18	3500.00
11. Foster healthy competition	2	6500.00
12. Involvement of print and electronic media	2	2500.00
13. Involving the farmers, farm women and village youth in the adopted villages (no of adopted village)	10	20000.00
14. No of Staff members involved in the activities	32	-
15. No of VIP/VVIPs involved in the activities	8	5000.00
16. Any other specific activity (in details) Yoga camp, drawing competition, poster competition, Debate	5	16000.00
Total		208000.00

9.6. Observation of National Science day

Date of Observation	Activities undertaken
28 th February, 2018	Extempore, Debate, Farmers-Scientists interaction

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
Kholakhali F.P. School Vill-Jogigora Block – Joynagar II	21.06.2017	Nutrition garden, vermicomposting, mushroom cultivation	Visual aids- Flash card on food groups , picture card, food value chart, books,pamplets Audio visual aids- Flim, PPT, Drama
Pachim Tetulberia F.P School	22.06.2017	Use of locally available herbs to prevent diseases	Visual aids- Flash card on health and hygiene & food groups , picture card, food value chart, books ,Pamplets Audio visual aids- Flim, PPT
Patnighata Girls High School Vill- Ranaghata Block- Joynagar II	23.06.2017	Preparation and management of nutrition garden in school campus and backyard to attain nutrition security	Visual aids- Flash card on health and hygiene & food groups , picture card, food value chart, books ,Pamplets Audio visual aids- Flim, PPT
Bele Durganagar Iswan F.P. School Vill - Bele Durganagar, Block – Joynagar II	16.11.2017	Maintenance of Nutritional status by using local less familiar foods	Visual aids- Flash card on food groups , picture card on symptoms of disease , food value chart Audio visual aids- Flim, PPT
Taranagar S.S.K. School Vill- Taranagar Block- Joynagar II	05.12.2017	Use of locally available herbs to prevent diseases	Visual aids- Flash card on health and hygiene & food groups , picture card, food value chart, books ,Pamplets Audio visual aids - Flim, PPT

Give good quality 1-2 photograph(s)



9.9. Details of 'Sankalp Se Siddhi' Programme

Date of programme	No. of Union Ministers attended the programme	No. of Hon'ble MPs (Loksabha/Rajyasabha) participated	No. of State Govt. Ministers	Participants (No.)							Coverage by Door Darshan (Yes/No)	Coverage by other channels (Number)
				MLAs Attended the programme	Chairman ZilaPanchayat	Distt. Collector/ DM	Bank Officials	Farmers	Govt. Officials, PRI members etc.	Total		
26.08.2017	-	Hon'ble Member of Parliament of Lok Sabha, Smt. Pratima Mondal, Joynagar Constituency	-	Shri Biswanath Das, Hon'ble Member of Legislative Assembly, Joynagar	-	-	5	280	2	288	-	5

9.10. Details of Swachhta Hi Sewa programme organized

Sl. No.	Activity	No. of villages Involved	No. of Participants	No. of VIPs	Name (s) of VIP(s)
1	Cleaning of Rural Hospital	3	33	-	-
2	Cleaning and sweeping of the road beside the Tourist place	4	35	1	Mr. Arup Pal
4	Construction of the toilet facility in backward village	3	15	1	Mr. Lakshminarayan Banerjee
5	Yoga Camp	5	150	2	Mr. Tarun Kanti Das, Mr. Bhaskar Mukherjee
6	Cleaning and sweeping of the KVK campus and its instructional farm, dairy farm	1	22	1	Dr. Binyak Purkaistha
7	Public function and award ceremony	10	352	2	Dr. Binyak Purkaistha Mrs Antima Halder

9.11. Details of Mahila Kisan Divas programme organized

Sl. No.	Activity	No. of villages Involved	No. of Participants	No. of VIPs	Name (s) of VIP(s)
1	On 15 th October, 2017	5	55	1	Mr. Ratul Saha, coordinator, WWF

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

Sl. No.	Name of Farmer	Address of the farmer with contact no.	Innovation/ Leading in enterprise
1	Kanak Sardar	C/o – Abhay Sardar, Vill. & P.O. Kaikhali, P.S. Kultali, South 24 Parganas	Multi-tier Vegetable Farming in Land Embankment
2	Avijit Halder	Vill. Jatar Deul, P.O. Purba Jata, Block- Mathurapur – II, South 24 Parganas, West Bengal Contact: 9609096043	Leading Coconut Farmer & Coconut Nursery Grower
3	Mrinal Sardar	C/o - Bholanath Sardar, Vill. Bangshi Battala, Sashan, P.O. Baruipur, South 24 Parganas, West Bengal; Contact: 8420928551	Leading Fruit Farmer (Guava, Litchi, Water apple) & Vermicompost producer
4	Nabaranjan Halder	C/O – Bibekananda Halder, Vill. Kultali, P.O. Paschim Kultali, Block- Mathurapur – II, South 24 Parganas, West Bengal; Contact: 9153090350	Leading Organic vegetable grower (Tomato, Snake gourd, pointed gourd) & Vermicompost producer
5	Sanat Naskar	Bongheri, Kultali, South 24 Parganas, West Bengal Mob: 9647159390	Leading progressive farmer following Climate Resilient Agriculture practices

9.13.HRD programmes organized by KVK

Training programme/ Seminar/ Symposia/ Workshop etc attended	Duration	Name of the participants	Designation	Organizer of the training Programme
NICRA Review Workshop	January 13-15, 2018	All Senior Scientist & Head of KVK – (Implementing NICRA) under Zone –IV & V	Senior Scientist & Head	ICAR -ATARI, Kolkata & Nimpith KVK
Training programme of Programme Coordinator- Manipur	18- 20 May, 2017	Dr. Lal Muanjoni	Senior Scientist & Head	Nimpith KVK
Training programme of SMS of different KVK of WBUAFs	29 to 30 June, 2017	All SMS and PA of KVK of WBUAFs	SMS, PA	Nimpith KVK
Training of SMS and PA	14 to 15 May, 2017	Dr. Haribhusan, Dr. T. Ratan Singh, Dr. K. Homen Singh	SMS, Soil Science, SMS, PBG,PA	Nimpith KVK

1.13.HRD programmes organized by KVK (Contd..)

Training programme/ Seminar/ Symposia/ Workshop etc attended	Duration	Name of the participants	Designation	Organizer of the training Programme
Training programme on Integrated Farming System for SMSs under UBKV KVK	14-16 November 2017	SMSs of Darjeeling, Coochbehar, Dakshin Dinajpur KVK	SMS and PA	Nimpith KVK
Officers training under NMOOP	21 – 22 February 2018	ADAs, KPSs of Diamond Harbour Subdivision	ADA and KPS	Nimpith KVK
Officers training under TRFA (Oil seeds)	27-28 February 2018	ADAs, KPSs of Diamond Harbour Subdivision	ADA and KPS	Nimpith KVK

9.14. Revenue generation

Sl.No.	Name of Head	Income(Rs.)	Sponsoring agency
1.	Contingencies & outsourcing of contractual services	5,88,00	NFSM, CDM
2.		47,52,000	MVC, South & North 24 Parganas, Dept. of ARD, GoWB
3.		1094400	IWMP (6&7), Dept. of Agriculture, GoWB
4.		192000	NICRA (ICAR)
5.		50.000	NICRA (IARI)
6.		120000	AICRP Honey Bees
7.		981600	ARYA
8.		23,40,000	Landshaping South
9.		156,000	Onfarm mas production on microbial pesticide
10.		6,24,000	Soil Testing Laboratory

9.15. Resource Generation:

Sl.No.	Name of the programme	Purpose of the programme	Sources of fund	Amount (Rs. lakhs)	Infrastructure created
	Strengthening of Soil Testing Laboratory	Strengthening of Soil Testing Laboratory	RKVY, Dept. of Agriculture, GoWB	41.70630	Laboratory instrument

9.16. Performance of Automatic Weather Station in KVK : NA

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

9.17. 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	6	143	<ol style="list-style-type: none"> 1. Vegetable cultivation in land embankment 2. Seedling raising in pot tray / plug tray 3. Use of liquid fertilizers 4. Application of <i>Tricoderama viridi</i> in vegetable seedling to prevent root rot. 5. Hydroponic fodder cultivation

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

- a) Year:
b) Introduction / General Information:

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

11. Details of TSP

- a. Achievements of physical output under TSP during 2017-18

Programmes	Physical achievements
Asset creation (Number; Sprayer, ridge maker, pump set, weeder etc.)	NO
On-farm trials (Number)	-
Frontline demonstrations (Number)	100
Farmers training (in lakh)	0.50
Extension personnel training (in lakh)	-
Participants in extension activities (in lakh)	-
Seed production (in tonnes)	-
Planting material production (in lakh)	-
Livestock strains and fingerlings production (in lakh)	-
Soil, water, plant, manures samples testing (in lakh)	-
Provision of mobile agro – advisory to farmers (in lakh)	-
No. of other programmes (Swachha Bharat Abhiyaan, Agriculture knowledge in rural school, Planting material distribution, Vaccination camp etc.)	17

b. Fund received under TSP in 2017-18 (Rs. In lakh):

c. Achievements of physical outcome under TSP during 2017-18

Sl. No.	Description	Unit	Achievements
1	Change in family income	%	31.27%
2	Change in family consumption level	%	18.76 %
3	Change in availability of agricultural implements/ tools etc.	No. per household	NA

d. Location and Beneficiary Details during 2017-18

District	Sub-district	No. of Village covered	Name of village(s) covered	ST population benefitted (No.)		
				M	F	T
Bankura	Bankura-BLOCK-Chhatna	4	PirolGaria, Mahisana - Saotalpara, Haribandhi, Gopalpur	34	51	75
Purulia,	Raghunathpur-II,	6	GP-Nildhi, Vill-Narendrapur, GP-Nildhi, Vill-Muchkunda, GP-Nildhi, Vill-Keoabathan, Vill: Mahulbari, Vill: Joradihi, Vill: Hurrah	11	43	54
Purulia.	Bl-Kashipur	1	Vill:Guagara	18	5	23

Details of the Activities Undertaken

- Creating awareness among the farmers for growing the sunflower through different farmer's meeting and interactions and through power point presentation.
- Organising Farmers Training programme before sowing the crop and different critical growth stages of the crop.
- Organising the Farmers Field Day at critical Crop Growth stage like before sowing, pre flowering stage.
- Invitation of different resource persons in the Farmer's Field Day and other Farmer's Meeting from the KVK and other line department, both State and Central Government.
- Developed marketing channels for assured selling of the produce seed, oil & oilcake.
- Trainings were organized for the tribal farmers, first one before sowing the crop and second one was (21-21DAS) before 1st irrigation before thinning, weeding, plant protection measures, fertilizer application, irrigation rest trainings were at different crop growth stage.
- Third one was at pre-flowering to flowering stage (Training on application of boron on Ray floret stages of Sunflower).
- Forth one was before harvesting, drying and marketing.

Different inputs such as seed, fertilizer, weedicides, pesticides etc. were given/distributed among the farmers.

Seed (Hy.KBSH-53: 2.0 kg/acre), bio inoculants (*Trichoderma viride* & *Pseudomonas fluorescens* -100g/kg of seed and bio fertilizers (Azatobactor & PSB-100g/kg of seed), Chemical fertilizer (NPK)-80:40:40 kg/hectare, Plant protection chemicals (IPM based): Prubandamide (Fame) - 60ml/acre and Boron(micronutrient)-100g/acre.

A. Impact of the TSP programme (Sunflower) indicating the following:

- The farmers were grown paddy *khariff* and mustard in *rabi* season in their field before implementation of Tribal Sub-Plan programme (Sunflower).
- The Net return of the farmers/year before starting of TSP(Sunflower Cultivation) was Rs.13,800.00/acre(approx).The Annual income (Gross return) of the farmers before starting of TSP was Rs. 47,500.00/acre.

The avg. seed yield was 950kg/acre(38% oil content).The Net return of the farmers/year after starting of sunflower through Tribal Sub-Plan programme is now Rs.23,000.00/ acre (approx) through cultivation of sunflower only.The additional net return of the farmers/year after starting of sunflower through Tribal Sub-Plan programme is now Rs.12,800.00/ acre (approx) Or Rs.32,00,000.00/ ha, (Rs.31,000.00-32000.00/ha).The Annual income (Gross return) of the farmers after starting of sunflower through Tribal Sub-Plan programme is now Rs. 71,100.00/acre. The oilcake was utilized in their cattle feed and will be utilized forthcoming *kharif* season as organic manure. The "Thalamus" was used as cattle feed (caws and buffaloes) and the sticks were utilized as the fuel. The oil also they used as their own consumption and shell the local market @ Rs.90/kg and oilcake @ Rs. 18/kg.

The economic condition of the farmers was improved through cultivation of Sunflower under TSP. The additional net return of the farmers/year after starting of sunflower through Tribal Sub-Plan programme is now Rs.12,800.00/ acre (approx).



They are planning to cultivate the Sunflower in their own plots in next *rabi* season after the TSP is over.

Vill-Karanch Beria,Block-Kashipur, Dist-Purulia,West Bengal

Tribal Sub-Plan programme on Sunflower-2016-17

Crop 2017-18	Technology Demonstrated	Hybrid	Demo. Yield (kg/ha)	Yield of local Check (kg/ha)	Variety used in local check	Increase in yield (%)	Yield (q/ha)	
							Potential (kg/ha)	District average (kg/ha)
Sunflower	Hybrid with Full package of practices.	KBSH-53	2375	1550	Ganga-Kaveri, Jk-Chitra	53.26%	3000	1650(Bankura) & 1450(Purulia)

Year	Mean seed yield (Kg/ha)		Yield gap (kg/ha)	Cost of cultivation		Gross Return		Net return		Additional Net return (Rs/ha)	Benefit: Cost ratio	
	IP	FP		IP	FP	IP	FP	IP	FP		IP	FP
2016-17	2375	1550	825	58300	49650	116730	75950	58330	26300	32,030	2.00	1.53



Vill-Keobathan,Block-Kashipur, Dist-Purulia,West Bengal

Tribal Sub-Plan programme on Sunflower-2017-18



Vill-Pirolgoria,Block-Chhatna, Dist-Bankura,West Bengal

Tribal Sub-Plan programme on Sunflower-2017-18.

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

Natural Resource Management

Name of intervention undertaken	Numbers under taken	No of units	Area (ha)	No of farmers covered / benefitted	Remarks																																											
Sprinkler Irrigation	17	17	20.4	51	<p>Portable sprinkler irrigation system (1 acre model) has been provided to 17 farmers. As these systems are movable, the same were used by another 34 farmers neighbouring to the direct beneficiaries.</p> <p>Farmers used sprinkler irrigation in Greengram, Chilli, Brinjal, Leafy vegetable (Poi), Okra, Cucumber and in Pumpkin.</p> <ul style="list-style-type: none"> As per the information provided by the farmers, they could double their vegetable cultivable area due to this intervention. In all the crops, the infestation of Mite was reduced. During the month of April, there used to be crop loss in Greengram due to increase in soil salinity. The use of sprinkler irrigation with the rainwater harvested in the pond, checked the soil salinity upto the tolerable limit <p>Economics of Demonstration</p> <table border="1"> <thead> <tr> <th rowspan="2">Crop</th> <th rowspan="2">Yield (q/ha)</th> <th colspan="3">Economics (Rs/ha)</th> </tr> <tr> <th>Gross Cost</th> <th>Net Return</th> <th>BCR</th> </tr> </thead> <tbody> <tr> <td>Brinjal</td> <td>525</td> <td>152000</td> <td>635500</td> <td>5.18</td> </tr> <tr> <td>Chilli</td> <td>272</td> <td>187500</td> <td>900500</td> <td>5.80</td> </tr> <tr> <td>Greengram</td> <td>8.1</td> <td>7500</td> <td>24900</td> <td>4.32</td> </tr> <tr> <td>Poi (Basella)</td> <td>226</td> <td>49500</td> <td>176500</td> <td>4.57</td> </tr> <tr> <td>Okra</td> <td>198</td> <td>67000</td> <td>131000</td> <td>2.96</td> </tr> <tr> <td>Cucumber</td> <td>142</td> <td>53000</td> <td>160000</td> <td>4.02</td> </tr> <tr> <td>Pumpkin</td> <td>146</td> <td>57000</td> <td>118200</td> <td>3.07</td> </tr> </tbody> </table>	Crop	Yield (q/ha)	Economics (Rs/ha)			Gross Cost	Net Return	BCR	Brinjal	525	152000	635500	5.18	Chilli	272	187500	900500	5.80	Greengram	8.1	7500	24900	4.32	Poi (Basella)	226	49500	176500	4.57	Okra	198	67000	131000	2.96	Cucumber	142	53000	160000	4.02	Pumpkin	146	57000	118200	3.07
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Paddy straw mulching	22	22	0.72	22	<p>Use paddy straw mulch in Cucumber</p> <ul style="list-style-type: none"> Yield: 117 q/ha Net return: Rs. 1.67 lakh/ha BC ratio: 3.47 <p>Use paddy straw mulch in Poi (Basella)</p> <ul style="list-style-type: none"> Yield: 221 q/ha Net return: Rs. 1.69 lakh/ha BC ratio: 4.21 <p>Advantage:</p> <ul style="list-style-type: none"> Conservation of soil moisture (27% reduction in irrigation requirement) Reduction in soil salinity 																																											

Crop Management

Name of intervention undertaken	Area (ha)	No of farmers covered / benefitted	Remarks															
Salt tolerant Paddy var. Jarava Medium land (1'-1.5' water stagnation) Check var. Dudheswar	2.67	10	66.79 % yield increase over check variety															
Temporary submergence tolerant rice variety Swarna Sub-1 Medium land (1'-1.5' water stagnation) Check var. Dudheswar	4	15	65.87 % yield increase over check variety The demonstration plots could withstand 13 days continuous submergence															
Integrated disease management in Chilli	0.6	15	43% yield increase over farmers practice <table border="1" data-bbox="889 632 1414 905"> <thead> <tr> <th>Parameters</th> <th>Demo</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>Thrips (no./twig)</td> <td>0.17</td> <td>0.54</td> </tr> <tr> <td>Yellow mite (no./leaf)</td> <td>2.6</td> <td>5.1</td> </tr> <tr> <td>Whitefly (no./leaf)</td> <td>1.2</td> <td>2.9</td> </tr> <tr> <td>Leafcurl (PDI)</td> <td>6.8</td> <td>24.3</td> </tr> </tbody> </table>	Parameters	Demo	Check	Thrips (no./twig)	0.17	0.54	Yellow mite (no./leaf)	2.6	5.1	Whitefly (no./leaf)	1.2	2.9	Leafcurl (PDI)	6.8	24.3
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Livestock and fisheries

Name of intervention undertaken	Number of animal covered	Number of units	Area (ha)	No of farmers covered / benefitted	Remarks
Animal Health camp	Cattle: 238, Goat: 97, Sheep: 66, Poultry: 380	-	-	114 farmers	Vaccination against HS+BQ+FMD in Cattle & PPR against goat, Deworming & providing Mineral mixture
Composite fish culture with Tilapia (Salinity tolerant) and common carp			0.67	5	Tilapia Length (mm)- 183 Weight(g)- 145 Survivability (%)- 83 Yield(q/ha)- 17.80 Carp Length (mm) -235 Weight(g)- 490 Survivability (%)-81 Yield(q/ha)- 30.50 Yield increase: 47.03%

Institutional interventions

Name of intervention undertaken	No of units	Area (ha)	No of farmers covered / benefitted	Remarks
Custom hiring centre	1	75	162	Use of power tiller, Paddy reaper, Paddy thresher, Pumpset and sprayer
Climate literacy through a village level weather station	1	-	All	Manual reading of the weather parameters are taken and maintained by the VCRMC members. A collaborative venture is going on with Bidhan Chandra Krishi Viswavidyalaya, Kalyani in providing weekly weather forecast for the NICRA village along with recommendations as per the forecasting. The forecast from BCKV is passed on to the NICRA village either by the KVK or directly through SMS. On receiving the forecast and recommendations, the VCRMC members write the same on the display board put up in the RTC from where the villagers become aware of the weeks climate.

Capacity building

Thematic area	No. of Courses	No. of beneficiaries		
		Males	Females	Total
Climate Change	3	114	78	192
Crop Management	3	44	15	59
Pest and Disease management	3	38	16	54
Fodder and feed management	1	16	0	16

Extension activities

Thematic area	No. of activities	No. of beneficiaries		
		Males	Females	Total
Agro advisory Services	15	36	9	45
Awareness	1	39	16	55
Diagnostic visit	8	56	14	70
Group Discussion	4	122	21	143
KMAS Services	5	124	11	135
NICRA Review Workshop at KVK Nimpith	1	43	8	51

Detailed report should be provided in the circulated Performa



13. Awards/Recognition received by the KVK

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

Award received by Farmers from the KVK district

Sl. No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose
1.	Best Innovative Farmer Award 2018	Sanat Naskar	2018	ICAR-CRIDA, Hyderabad	-	For implementation of climate resilient agriculture
2	Krishak Ratna	Surajit Baidya	2018	Government of West Bengal	-	Best progressive farmer at Mathurapur-2 Block

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

14.1. Zonal Level Review Workshop of NICRA-TDC of ICAR-ATARI Kolkata & Patna held at Nimpith KVK on January 13-15, 2018

The Review Workshop of National Innovations in Climate Resilient Agriculture (Technology Demonstration Component) of ICAR-ATARI Kolkata and ICAR-ATARI Patna was held at Ramkrishna Ashram Nimpith KVK during January 13-15, 2018. Dr. A. K. Singh, Deputy Director General (Agricultural Extension), ICAR New Delhi was the Chief Guest of the programme. The workshop was attended by Swami Sadanand Maharaj, Secretary, Ramkrishna Ashram Nimpith, Dr. S. S. Singh, Director, ICAR-ATARI Kolkata, Dr. Anjani Kumar, Director, ICAR-ATARI Patna, Dr. J V N S Prasad, Coordinator, NICRA-TDC, CRIDA, Hyderabad, Dr. Prabhat Pal, DEE, UBKV, Dr. P. K. Roul, DEE, OUAT, Dr. B. Sahi, Dr RPCAU, Pusa, Dr. F. H. Rahman, Principal Scientist-cum- NICRA Nodal Officer, ICAR-ATARI Kolkata, Dr A. Halder, Pr. Scientist, ICAR-ATARI Kolkata and all the Programme Coordinators of NICRA implementing KVKs of Zone IV and V.

Few publications like - CD on '*Climate Resilient Agriculture- an Endeavour of KVK Nimpith*', Bulletins – *ATARI Kolkata News*, *Purbi Kiran*, *Kheti bari*, Flood tolerant rice varieties, Insect Pest of Vegetable Crop *etc.* were released during the workshop.

The workshop started with the Vedic Chanting and welcome address by Swami Sadanand Maharaj, Secretary, Ramkrishna



NICRA Review Workshop of Zone IV & V

Ashram Nimpith.

Dr. F. H. Rahman, Principal Scientist-cum- NICRA Nodal Officer, ICAR-ATARI Kolkata presented the highlights of the salient achievements carried out by the 22 NICRA- KVKs of the zone IV and Zone V.

Dr. A. K. Singh, Deputy Director General (Agricultural Extension), ICAR New Delhi, Chief Guest of the programme, while addressing the inaugural speech he mentioned that the KVKs should give emphasize on documentation on the various climate resilient activities and transfer to the block and district administration for further dissemination. KVKs need to organize for validation of research on local technology to address the climate vulnerability issues. Integrated Farming System models must be emphasized in the KVKs and farmers field.

Dr. S. S. Singh, Director, ICAR-ATARI Kolkata mentioned that the intervention under NICRA should read vulnerability with existing cropping practices and preventing this vulnerability through NICRA intervention is to be a priority. Agriculture Scientists have to frame resilience technologies by considering climatic condition like (temperature, CO₂ concentration, sea level, dry spell etc.)

Dr. Anjani Kumar, Director, ICAR-ATARI Patna asked all the NICRA-KVKs to prepare case studies/success stories based on the most successful and scalable technologies and those should be replicated in nearby areas.

Dr. J V N S Prasad, Coordinator, NICRA-TDC, CRIDA, Hyderabad KVKs emphasized that intervention should be taken on farmers' field based on the variability of environmental condition and extent of climatic variability should be available in each of the NICRA-KVKs and NICRA village should be model for R.W.H, I.F.S and doubling farmers income, zonal monitoring committees has been formed.

In the technical session all the Programme Coordinators/Pis of the KVKs have presented one by one their salient achievements of out scaled technologies during the last six years and also placed the next plan of work.

General recommendation of the workshop:

- Vulnerability index should be measured and accordingly intervention to be executed
- Large scale dissemination of successful technologies to be undertaken
- After saturation of farmers in present NICRA village with technology then those should be replicated in neighbouring villages
- Farmers wise and intervention wise data to be provided by every KVK
- Performance of CHC and VCRM need to be improved particularly in Odisha KVKs
- Contingency planning may be prepared to respond in time
- Detail of proven technology needs to be documented
- NICRA activities should not clubbed with KVKs normal activities
- Topography situation of village data (Up, Mid & Low land) should be kept in each NICRA village
- Socio-economic impact of the successful technology demonstration should be analysed
- Intervention on livestock/fishery should be taken on proper climate resilient basis
- Well performing NICRA KVKs exchange their knowledge with other NICRA KVKs
- Documentation of the successful intervention to be prepared
- Creation of water resources should be more in Odisha KVKs
- Crop diversification intervention need to be undertaken in more numbers in Odisha KVKs particularly
- Extension activities or training programme to be conducted on climate related issues
- All the KVKs should prioritize their required equipments based on the budgetary provision.
- The titles of the training under NICRA should be innovative with thrust on climate resilience.
- Conducting Impact evaluation of KVK by ATARI and other external agency.

- Effective utilization of fund must be followed
- Emphasis must be given for convergence with different ongoing programmes in the district particularly for KVKs of Odisha
- Demonstration of different units in KVK to showcase different technology
- Identification of technology according to land pattern must be followed
- Identify different climate resilient varieties and inclusion of those in the district plan in collaboration with district authority for horizontal spread.

Hon'ble DDG, has mentioned in his concluding remarks that the workshop is the platform to have vivid knowledge of different modules of technologies suitable to address climatic aberration. He solicited the effort made by different KVKs to cover all the population of the villages and to have better access to effective technologies to the people of the areas. He mentioned the PM's idea about "Journey of Transforming India" within 2020 and responsibilities of KVK to address poor education, health, food and nutrition security to achieve the goal of the said programme. He appealed to the authority of ATARI to organize farm innovator meet once in a year. Hon'ble DDG also suggested validating different farm innovations from different zones. He has given thrust on the follows points.

The session was concluded by vote of thanks to the chair by Mr. Prabir Kumar Garain, SMS (Plant Protection). The workshop ended with a Field Trip to Sundarbans on 15.01.2018.

14.2. Organizing Seminar on Microbial Bio-pesticide

A one-day seminar as organized by the Plant Protection Section of KVK on Mass Production of Microbial Biopesticides. Discussion was held on increasing mass awareness on use of bio-pesticides by the farmers. Rural youths should be identified and trained on the KVK developed On-farm Mass Production technology of microbial pesticides. This will help to meet up the local demand of bio-pesticides and facilitate in fruitful use of local strains of biocontrol agents. The programme was inaugurated by the Chairman Swamiji of RAKVK, Nimpith. More than 300 participants gathered on the occasion. Joint Director (Planning), Dept. of Agriculture, Govt. of West Bengal, Deputy Director of Agriculture (Admin), South 24 Parganas, Govt. of West Bengal, ADA, Joynagar-II and Agricultural officers from the state graced the occasion and placed their valuable comments.



Seminar on Mass Production of Microbial Biopesticides

14.3. Participating at Workshop on Scaling out Climate Resilient Agriculture

A one day workshop on Scaling out Climate Resilient Agriculture was organized jointly by ICAR and CGIAR on 20th March, 2018, at NASC, New Delhi. CGIAR is a global partnership that unites organizations engaged in research for a food secured future. Some of the important partners of CGIAR are CIMMYT, ICRISAT, IWM, IITA, etc. CCAFS (Climate Change , Agriculture and Food Security) is a Research Programme of CGIAR, taken up in several countries for working on climate change related projects. The CCAF partners gathered under the Chairmanship of DG, ICAR, to understand the Climate Change related programmes carried out in India. One of the objectives of the workshop was on possible collaboration between CGIAR and ICAR for showcasing the Indian efforts on Climate Change Mitigation and Adaptation activities before the International forum.



DDG-Extension and ADG-NRM of ICAR, Directors of CRIDA, ATARIs and four KVKs participated in the workshop. KVK Nimpith represented the Eastern Zone NICRA KVKs. SMS Plant Protection of KVK, Nimpith, participated in the programme from the Eastern region and presented the NICRA activities before the house receiving hearty appreciation from all section, especially from our Honorable DDG (Extension), ICAR, DR. A. K. Singh and our respected Director, ATARI Kolkata, Dr. S. S. Singh.



14.4. Collaboration with BIS at FAD-3

SMS Plant Protection of KVK, Nimpith, participated in the 12th meeting of Apiary Industry Sectional Committee, FAD 3, organized by Bureau of Indian Standard (BIS), at Manak Bhawan, New Delhi, on 28th March 2018. The meeting was chaired by Honourable ADG, Plant Protection, ICAR, Dr. P. K. Chakraborty.

KVK Nimpith has been incorporated as core member to this prestigious Committee that is supposed to fix standards of various Apiary related products & instruments in India.



14.5. Promotion of Beekeeping for the Honey Hunters (Moule) of Sundarbans

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



14.6. Action Research Study on Community based Management of under five children Malnourished Children in the Sundarbans region

BACKGROUND

Nutritional problems exist all over the world and not exceptionally noticeable among Sundarban regions, particularly in South 24-Parganas. Among under five children, 13.6% children were found to be less than 2.5 kg and around 65 percent of children were found to be stunted, out of which 44.5 percent were severely stunted in Joynagar-II block, while the State average as per NFHS III is 33 percent. In Joynagar-II, 23 percent of the children had muscle wasting, out of which 13.7% children were found to be severely wasted; and 10.9 percent children have MUAC below the WHO recommended cut for SAM.

The survey finding also revealed main cause of malnutrition is non availability of sufficient food. The other important factors contributing to nutrition insecurity is the delayed weaning, faulty feeding practices, improper health care and taboos. To address the aforesaid factors it is imperative to impart proper Nutrition and Health education to the mother and guardians of those malnourished children. Otherwise, the supplementary food being distributed by the ICDS will not properly utilized. Moreover, Among 15 % of severe wasted are found to be suffering from acute or chronic illness like diarrhea, dehydration , prolonged fever , respiratory infection etc. The treatment of these type of illness can not possible to be done in the community as it needs special nutrition care unit in Nutrition Rehabilitation Center(NRC). But, the facility of NRC is not present in the Joynagar-II block Hospital (BPNC). Though in Patharpratima block , there is an NGO funded NRC but they only treat the children who come from Patharpratima block, the SAM children from other blocks are not allowed to take admission. The Government undertaking NRC of South 24 Parganas district is situated in Basanti Block that is far of 65km from Joynagar-II block hospital which takes almost 6 hours journey by road and river path, and the BC ROY hospital is also too far from the proposed remote villages.

On the other hand, SAM children with complication need specific treatment at NRC close to community. As majority of the community are BPL, it is being very difficult to bear the transport cost of the long distance break journey. So, this is very hectic for a rural parent to travel such long distance for the sake of treatment of their children. On the other hand, if a child is admitted in NRC his/her mother also have to stay with him/her and to motivate the mothers to stay with their children in a far away place is also a very challenging issue.

Considering this background factors, Rural Development Wings, Sri Ramkrishna Ashram Nimpith (SRAN) in collaboration with RAKVK Nimpith, has planned to undertake a one day **Special Nutrition Camp** to treat the *SAM children with complication* with collaboration of BMOH of Joynagar II Block

Hospital following with continuous 15 days long integrated **Nutrition Camp** programmes for the *SAM children without complication and MAM children* in collaboration with ICDS staffs and Govt. Health staffs.

OVERALL OBJECTIVE

To assess the effectiveness of community based interventions like Nutrition camp, special camps & Home visits in improving the status of <-3SD & <-2SD weight /Height among 6-59m children

OBJECTIVE

The objectives of the research study are as follows:

- To encourage local communities to find out solutions to many of the malnutrition related problems.
- Community based management of MAM and SAM without complications
- To improve community participation for management of MAM and SAM children
- Treatment and cure of SAM children with medical complication
- To encourage full community participation and peer learning of mothers
- To give hands on skill development on cooking methods
- To maintaining regular attendance through preparation of Mascot.
- To build up capacity of community people in collaboration with ICDS & H&FW

HYPOTHESIS

The deficiency of protein-energy malnutrition is the cause of poor nutrition and is the major problem of marasmus, kwashiorkor and anaemia in addition with chronic diarrhea, fever, respiratory and skin infections etc.

ASSUMPTIONS

It is assumed that the majority of young children under the age of five in study areas suffer from malnutrition is not only due to non-availability of sufficient food but the other important factors contributing to nutrition insecurity is the delayed weaning, faulty feeding practices, improper health care and taboos. The children who suffer from diarrhea and skin problems arise mainly due to lack of hygiene and sanitary practices which causes improper use and utilization of food.

RESEARCH METHODOLOGY ,DESIGN & PROCEDURE

The research design is formulated by the multidisciplinary team of Rural Development Wings, Sri Ramkrishna Ashram Nimpith (SRAN), with the technical guidance of KVK Nimpith, South 24 Pgs., West Bengal based on a sampling frame under the Fight Hunger First Initiative Project funded by Welthungerhilfe, Germany. This sampling frame allowed identification of selection of SAM and MAM children

Method of sampling

A. Sampling Area

Table 1

BLOCK	LOCATION	GRAM PANCHAYET	TOTAL Under 5 children	TOTAL Identified malnourished Children taken under Nutrition camp (GAM)	TOTAL MAM children taken under Nutrition camp	Total SAM Children taken under Nutrition camp	Total SAM Children with complication taken under Special camp
Jaynagar	Sundarban	Baishata	3905	696	458	167	73
II block	region	Beledurganagar					

B. Selection of the Sample

B.1. Screening of Malnourished children

Nutritional status of under five children is measured by anthropometric measurements. It can be assessed weight for age (underweight), height for age (stunting) and weight for height (wasting) indicators. Growth rate identification of Severe Acute Malnourished (SAM) and Moderate Acute Malnourished (MAM) children are done by Growth Chart (WHO), MUAC tape and measuring scale with the help of Anganwadi workers and ASHA workers.

B.2. Identification of SAM with complication

After identification of Severe Acute malnourished children (SAM), individual clinical symptoms like Severe dehydration and diarrhea, fever, presence of respiratory and other infections, Lethargy, drowsiness, Severe wasting, Presence of odema, Continually irritable and restless, Palmor pallor in feet and hand if anemic, Poor appetite etc are identified with the mothers to find out the malnourished children with complications.

C. Participation of mothers

C.1. Selection of Place of Nutrition Camp

Mostly, the 15 days Nutrition Camp is conducted in the ICDS center premises or the households where the ICDS is running in collaboration with the ICDS worker and ICDS helper but if the place is not suitable for all the mothers of malnourished children to come then the place may be changed according to the suggestion of the mothers of malnourished children and ICDS worker.

C.2. Timing of the nutrition camp

The Nutrition camp is implemented during the morning time at breakfast hours of the children. Mothers come to the camp after completing the morning household duties and stay in the camp for about 1.30hr to 2hr.



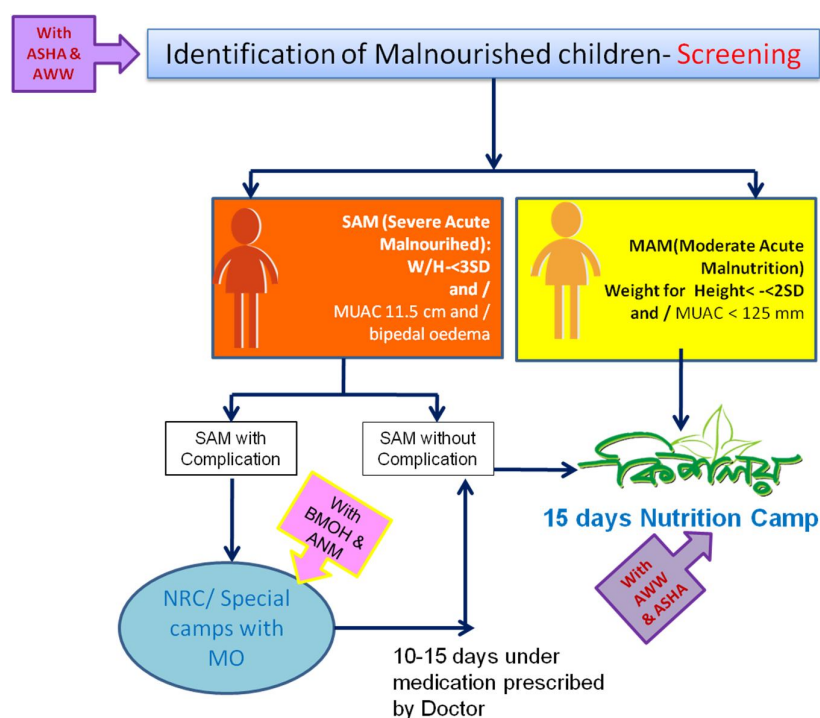
C.3. Contribution of food the mothers

Mothers of malnourished children are first aware about the nutritive value of locally available low cost nutrient rich food and then they are motivated to contributed some of the food item in the breakfast complementary food cooking preparation. Mothers also actively participate in the cooking method and cleaning of the cooking utensils after completing the cooking.

D. Research design and Procedure

As a complete plan of action the research design involved "thinking, imagining and thinking some more" on the strategies of how to handle the research problem so as to, develop accurate objectives systematically collected under controlled conditions.

SRAN-RD Wing has planned to undertake 15 days long integrated **Nutrition Camp** programmes following the proposed plan of programme of Snehasibir under ICDS mission in collaboration with ICDS staffs and Govt. Health staffs and a one day **Special Nutrition Camp** has been established to treat the SAM children with complication. This is also planned with collaboration of BMOH of Joynagar II Block Hospital.



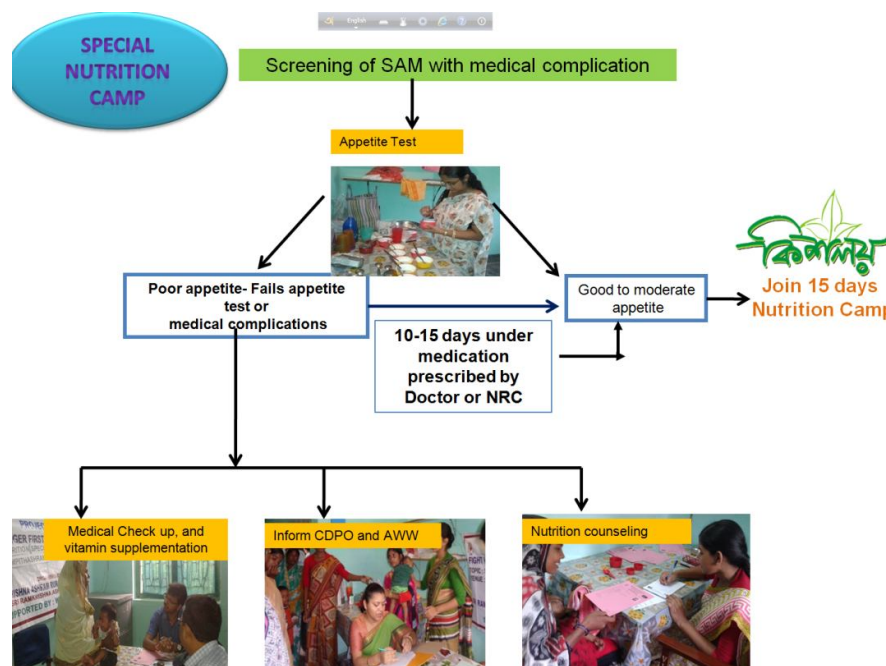
C.1. SPECIAL NUTRITION CAMP

Identified SAM children with medical complication are taken to the Special Nutrition Camp which organized in the SRAN premises where :

- SAM children were weighed and the appetite test were first done as the complications in malnutrition lead to loss of appetite. Appetite test helps in identifying SAM children with medical complications who will need hospitalization. Children who have good appetite can get in the

fifteen (15) days Nutrition Camp. But the those who fail in appetite test need the consultation of doctor in the special camp.

- Check up of those SAM children with complication was done by the BMOH of Block hospital & MBBS doctors. Medicines were distributed as required by the block hospital and Vitamin-mineral supplementation along with 1 kg of Nutrimix (prepared by SRAN) were distributed by SRAN.
- Nutritional counselling was done by the Nutrition counsellor on the timing of food, frequency and consistency of meal, amount of each meal and composition of food according to individual dietary need of the children and maintenance of hygiene practices.



C.2. NUTRITION CAMP (15 DAYS)

The continuous fifteen(15) days long Nutrition Camp is organized with the identified Moderate Acute Malnourished(MAM) and Severe Acute Malnourished Children (SAM) without complication merging two or three ICDS centers in one camp. The activities of Nutrition camp thus includes:

- Demonstration of different low cost nutrient rich supplementary food (like chirwa polau, Vegetable egg pancake, Bread with milk and banana, Lauki Payasam, Parched Rice with curd, mango etc.) for SAM children with the active participation of mothers of SAM children.
- Proper hand washing of mother and child with spot feeding of supplementary food .
- Regular MASCOT preparation to maintain the attendance of the mother of the malnourished children.
- As the camp is taken place in the ICDS centre so Nutrition Counsellor keep monitoring to enrich the diet of ICDS (Kichdi) with more green and yellow vegetables and also encouraged the mothers to contribute some of their produced vegetables to the food.
- Awareness on health , nutrition, immunization, ORS therapy, family planning, nutrition garden , balanced diet was done continuously by the Nutrition counsellor .

Day	Food For Breakfast	Activity or Issue discussed
Day1	Chirwa , milk & Banana	Tracking before beginning of camp. General discussion about SAM & MAM
Day2	Vegetable egg pancake	Monitoring for Malnourished children for Tracking through Participatory Impact Assessment with the mothers of those children
Day3	Semolina pulav	Discussion on Immunization Schedule of Mother& Child to prevent fatal diseases
Day4	Puffed rice ,milk & banana	Individual counseling & special nutritional counseling through IYCF cards
Day5	Chirwa upma	Discussion on Personal health & Hygiene practices on daily life
Day6	Lauki payasam	Discussion on Prenatal and postnatal nutritional and health care practices to identify the good practices among the community
Day7	Semolina pulav	Demonstration on New Born care Practices
Day8	Puffed rice ,milk & banana	Family planning methods involving officials from Govt. health departments
Day9	Vegetable egg pancake	Balance Diet and food group for family
Day10	Chirwa , milk & Banana	Concept on Nutrition Garden
Day11	Chirwa upma	Discussion on nutrient rich preparation from locally available low cost less familiar foods
Day12	Lauki payasam	Homemade and Commercial ORS Preparation and its need
Day13	Puffed rice ,milk & banana	Tracking of nutritional status of malnourished children
Day14	Vegetable egg pancake	2 nd phase monitoring for behavioral practices regarding nutritional care of SAM children
Day15	Semolina pulav	Showcasing case studies

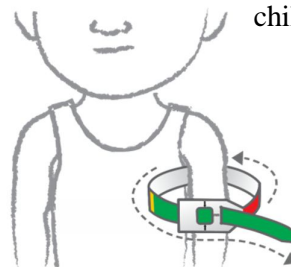


Techniques used for Data Collection

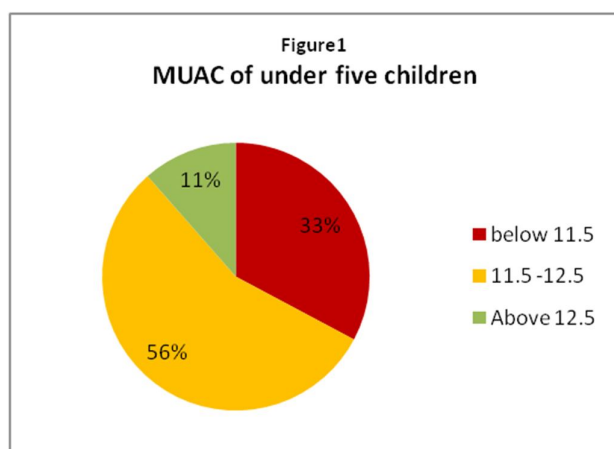
Anthropometric Method: Anthropometry refers to the measurement of the human individual. The basic information and body measurements needed to assess malnutrition in children 6-59 months are weight for age (underweight), weight for height (wasting) and Mid upper Arm circumference (MUAC) are taken in the initiation period of the 15 days Nutrition camp and at the end of the camp to compare the nutritional status of the malnourished children.

MUAC

MUAC is determined in the mid-point between the elbow and the shoulder (acromion and olecranon) as shown on the next slide. The tape is placed to measure around the LEFT arm (the arm should be relaxed and hang down the side of the body). MUAC is measured while ensuring that the tape neither pinches the arm nor is left loose. According to WHO, MUAC <11.5cm are indicative of **severe wasting** of children, MUAC 11.5-12.5cm are indicative of **moderate wasting** of children.



In this study, total 3905 number of under five children were measured. Among which figure 1, represents that 33.1% of the children severely malnourished /severely wasted and 56.3% children have MUAC between 11.5 to 12.5 cm which means they are moderately malnourished /moderately wasted.

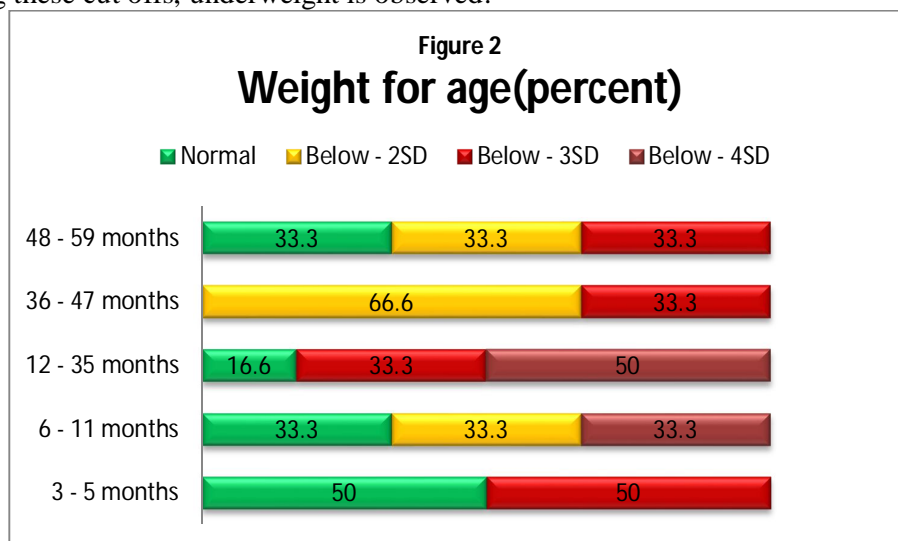


Underweight

Underweight is a composite measure which measures chronic and acute malnutrition. These indicators are expressed as standard deviation units (z-scores) from the median using the new WHO growth standards. Children who fall more than -2 standard deviation (sd) below reference median are malnourished and those -3SD below reference median are severely malnourished.

Indicator	Cut off
Severely underweight	<-3SD
Underweight	<-2SD

So, considering these cut offs, underweight is observed:



In the figure 2, it has been shown that 50% children in the age group of 3-5 months and 33.3% the age group of 12-35 months, 36-47 months and 48 – 59 months are severely malnourished. Whereas, 66.6% children in the age group of 36-47 are underweight.



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WASTING

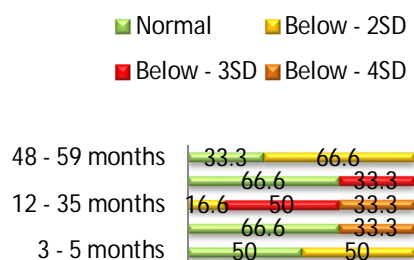
Wasting, the weight for height measure, is an index reflecting body mass in relation to body length. Wasting is used to detect cases of severe acute malnutrition (SAM) –children with $-3SD$ of the median being SAM cases According to WHO growth standards, weight for height (wasting) indicators is expressed as standard deviation units (z-scores) from the median in under 5 children.

Indicator	Cut off
Severely malnourished	$<-3SD$
Malnourished	$<-2SD$

So, considering these cut offs, wasting in both mainland and island is observed:



Figure 3
Weight for Height(Percent)



This figure 27 shows that 50% children in the group of 3 to 5 months and 66.6% children in the age group of 48 to 59 months are malnourished. On the other hand, children 50% in the age group of 12 to 35 months and 33.3% in the age group of 36 to 47 months are severely malnourished.

Observation Method: The observation method is the most commonly used method especially in research studies relating to behavioral sciences. Here, behaviour of the mother on child care practices, amount of food consumption of child at a time, hygiene practice before and during eating food, health status can be closely observed and some correction of faulty practices, cross-checking and some adjustments had to be made.

Interviewed Method :The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses. This method is used through individual counseling of the mothers of malnourished children.

Behavioural practice monitoring method : Through this methods, some behavioural practices concerning child care is monitored while the initiation period of the 15 days Nutrition camp and at the end of the camp to compare the change in behavioural practices.

Table 2

Materials used for data collection

Indicator	What it measures/What it is used for
Low weight-for-height / Mid upper Arm circumference (MUAC) (WHO Child Growth Standard,2006)	WASTING(acute malnutrition).
Low weight-for-age (WHO Child Growth Standard,2006)	UNDERWEIGHT (acute or chronic malnutrition, or both).
Diet diversity Score (FAO,2007 & Rathnayake .M,2012 August 29)	It is calculated by a minimum consumption of respective food groups like cereals/roots, vegetables, fruits, legumes/lentils, meat/fish/egg & milk/dairy products. If an individual eat any quantity of any food group at least once per day, was taken into count. Maximum dietary diversity score is 16.
NGO IDEAs “Impact Tool toolbox”, version1.1,2007	Participatory monitoring tool have applied to identify behavior and practices of the guardians of Malnourished children. Use of colour codes to understand easily ,the extent of present status of health condition & behavioural practices in respect of that indicators by the guardians and contribute to awareness creation and empowerment among the guardians.

Statistical analysis

After collecting the data it needed to be analyzed carefully to find out the result so that they have been tabulated according to their categories and statistical analysis should be done for better result. Firstly, have to find out the *Mean* and *Standard deviation* of the samples.

A. Definition of Mean

Mean is a set of observation which is defined as their sum, divided by the number of observation.

B. Formula of Mean

$$\bar{x} = \frac{x_1 + x_2 + x_3 + \dots + x_n}{n}$$

C. Definition of Standard Deviation

Standard deviation is the square root of the arithmetic mean of squares of deviation of arithmetic mean.

D. Statistical Diagram

Statistical diagram represents the nature of a large number of statistical data only by simple observations. By observing it, even general public can understand the nature of the data.

- **Bar diagram**

Bar charts another most frequently employed diagrammatic representation of statistical data. They are particularly useful for comprising the values of a variable classified quantitatively.

- **Pie diagram**

Pie diagram is a circle whose area is divided proportionately among the different components by straight line drawn from the centre to circumference of the circle. When statistical data are given for a number of categories, we are interested in the comparison of various categories or in between a part and whole, such a diagram is helpful in effectively displaying the data.

RESULTS & DISCUSSIONS

A. Nutritional Status outcomes

Measuring the growth of children is an important indicator of the health and nutritional status of a population (WHO 2010). Nutritional status is usually quantified by anthropometric measurements, most commonly wasting and underweight. The tables below shows the nutritional status of children before camp and change in nutritional status in respect to weight for age (underweight), MUAC and weight for height (wasting) :

Table A: weight for age (underweight)

Children	Before Camp(%)	After camp(%)
SAM	33.47	8.04
MAM	62.06	11.78
GAM	17.82	4.40

Table B: weight for height (wasting)

Children	Before Camp(%)	After camp(%)
- 4SD	44.4	31.2
- 3SD	41.6	23.2
- 2SD	33.3	11.6

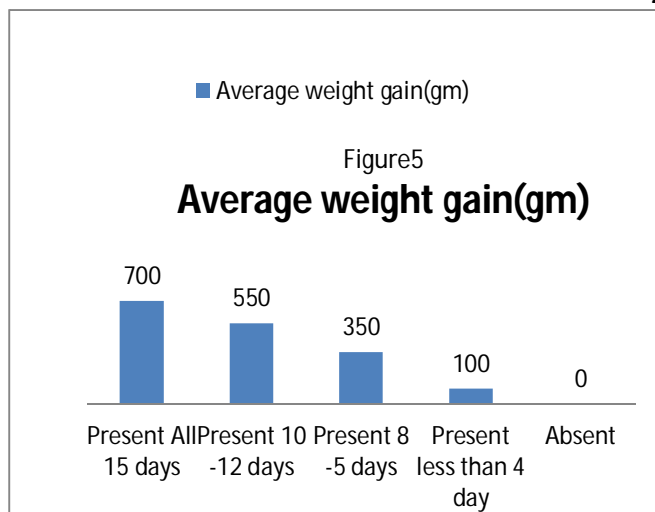
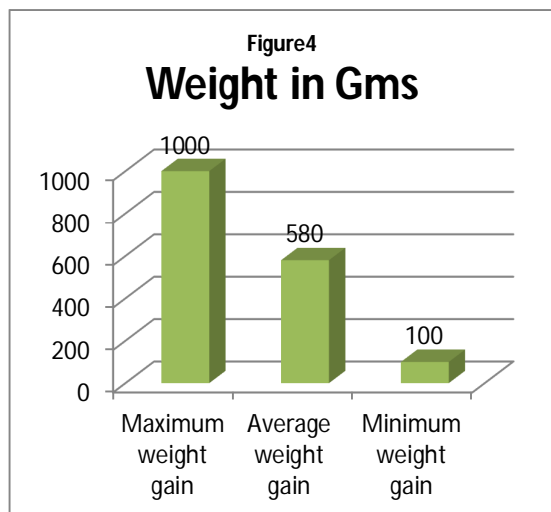
Table C:

MUAC (cm)	Before Camp (%)	After camp (%)
Less than 11.5	56.0	23.8
11.5-12.5	33.3	9.1
Above 12.5	11.4	67.3

Changes in anthropometry as an outcome of 15 days Nutrition camp can be attributed to two physical growth indicators: weight gain and increased MUAC due to increased caloric intake. Improving the amount and frequency of food intake of children further adds to the growth, promotes increased muscle mass, and improves immunity to infections that may hurt growth.

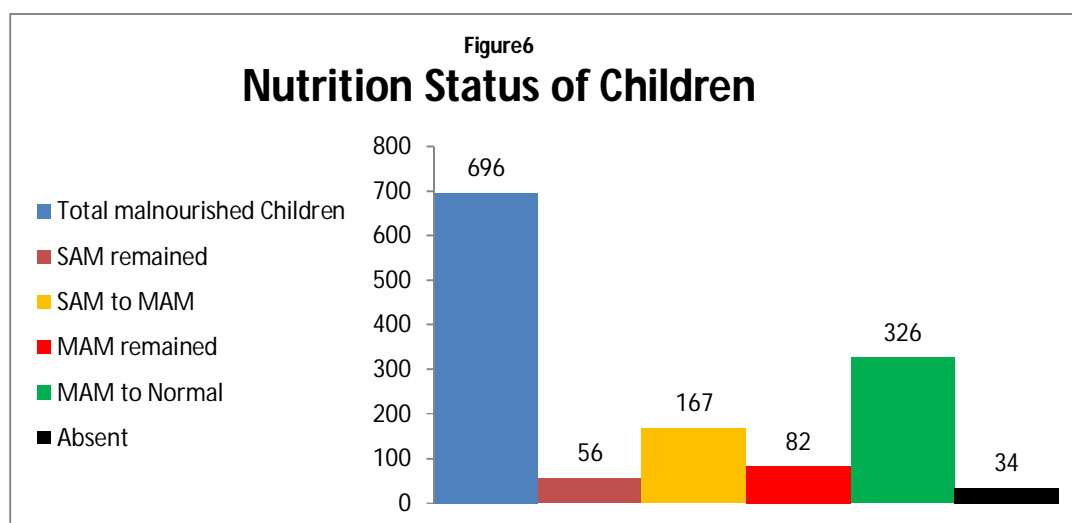
It has been observed in figure 4 that after continuous 15 Nutrition camp, the average weight gain of the malnourished children is about 600gm and maximum weight gain is 1000gm or 1kg. Those malnourished children who did not attend the camp regularly have a minimum 100 gm weight gain after completion of the Nutrition camp. Figure 5 also shows that the malnourished children who present all the 15 days in nutrition camp regularly have an average 700 gm weight gain. The rate of weight gain is gradually decreased due to the irregular participation in the camp days.

In the project period of FHFII up scaling best practices from April'2015 to June'2017, total 484 malnourished children are treated in the 15 days



Nutrition camp where 352 number children are Moderate Acute Malnourished (MAM) and 132 number children are Severe Acute Malnourished (SAM).

Outcome on Nutritional status : It is revealed from the figure 6 that 73% (n=97) Severe Acute Malnourished (SAM) children are achieved to their nutritional status and became moderately malnourished and 71.59% (n=252) Moderate Acute Malnourished (MAM) converted to Normal grade. But 56 children within 132 SAM children cannot transfer to better nutritional status due to severe and repeated infection, febrile condition and low intake of food during nutrition camp. On the other side, 12.78% MAM children also remained to same nutritional status due to sudden attack of any communicable diseases. 34 numbers of malnourished children do not attain the camp due to negligence of child care practices through counseled through home visit.



B. Behavioural outcomes

Behavioural practice change regarding child care practices can be monitored through **Participatory monitoring tool** which analyse the individual situation in respect to the attitude to achieve good nutritional status of the malnourished children. Participatory monitoring tool is helpful to influence guardian to adopt healthy practices, healthy competition among mother and gaining self confidence among rural women. The Process documentation of Behavioral Practice Assessment through NGO idea tool box consists of following steps-

1. Situation analysis (e.g. Health and Nutritional status of the child)
2. Goal fixation (e.g. To improve nutritional status of the child)
3. Activities to be done to achieve the goal
4. Analysis of individual situation in respect to the activities to achieve the goal (e.g. Indications fixation to improve the nutritional status)
5. Use of colour to understand the extent of achievement in respect of that indicator
6. Documentation
7. Counselling

Table 3 : Change in BCC of mother before & after camp

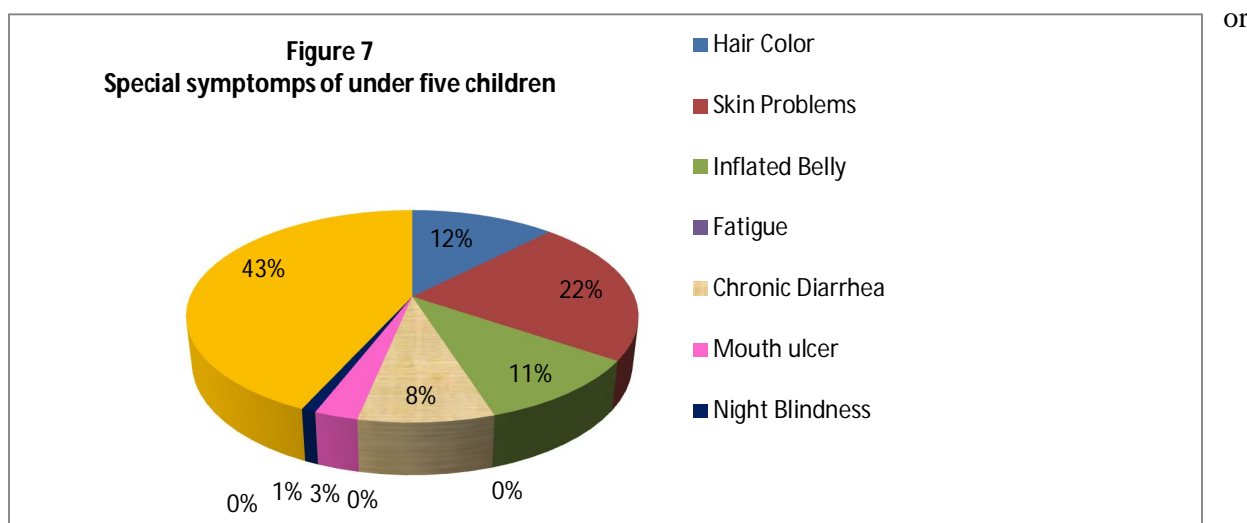
Indicators	Behaviour of mother before Nutrition Camp(%)				Outcome change in behaviour after Nutrition Camp(%)			
	No	I known but don't practice	sometimes	regularly	No	I known but don't practice	sometimes	regularly
Do the child intake the supplementary food from ICDS? a.half of small bowl b.small bowl c.half of the bigbowl d. full bowl(big)	41	32	19	8	25	17	37	21
Do the mother wash hands properly while feeding the child or after using toilet? a.No b.I known but don't practice c.sometimes d.regularly	13.1	36	39.3	12.3	2	9.7	8.2	71.3
Do the child take weaning food? a.No b. b.I known but don't practice c.sometimes d.regularly	11.0	23.6	45.1	21.6	0	7.0	25.3	68.4
Do warm infestation prevention medicine given in timely? a.No b.I known but don't practice c.sometimes d.regularly	9.0	21.2	33.3	33.3	0	9.1	6.06	51.5
Do full and proper immunization is done ? a.No b.I known but don't practice c.sometimes d.regularly	0	13.6	2.3	84.1	0	1.1	0	98.9

Behavioural practices of the mothers of the malnourished children concerning child care is monitored while the initiation period of the 15 days Nutrition camp and at the end of the camp to compare the change in positive behavioural practices. From table 3, it can be observed that during nutrition camp due to generation of awareness about child care and feeding practices, the mothers develop a positive behavioural change. During Nutrition camp, spot feeding of complementary food is done and due to this regular practice mothers give time to feed their baby with care and 21% children intake right amount of food at a time than before (8%). 71.3% mother wash hands properly while feeding the child or after using toilet and only 9.7% mothers do not practice and 8.2% mother practice hand washing irregularly. 46.8% children increase intake of weaning food as due to continuation of nutrition camp, appetite of the children improves and the habit of intake of variety of food enhances the taste of the malnourished children. 51.5% mothers give worm infestation medicine and 98.9% mothers immunized their children than before which are 33.3% and 84.1% respectively.

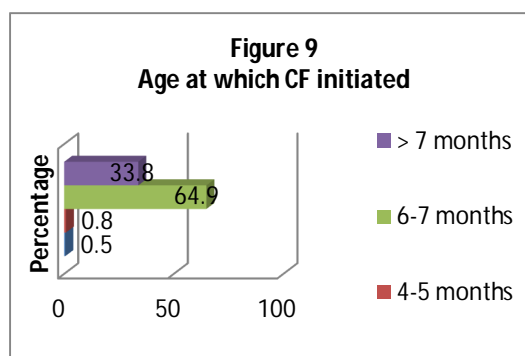
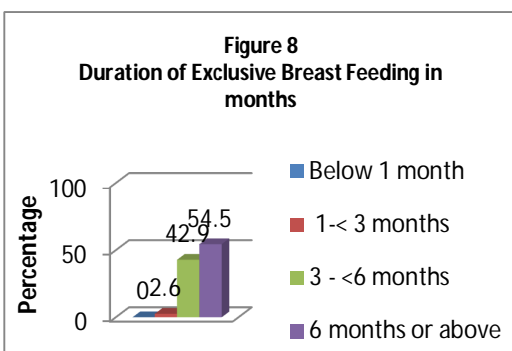
C. Health & Nutrition outcomes

C.1. Health Status of Children

Along with the malnutrition of the Severe Acute Malnourished (SAM) children, manifestation of some specific infections and related symptoms are also found which may be the prevalence of infective, chronic



deficiency disease occurrence. Findings express that 43% children suffer from prolonged fever, dysentery and skin scar, 8% children from diarrhea and 22% due to skin problems. Those problems arise mainly due to lack of hygiene and sanitary practices which causes improper use and utilization of food. The cases of inflated belly and brown hair colour are found in among 11% and 12% of children.



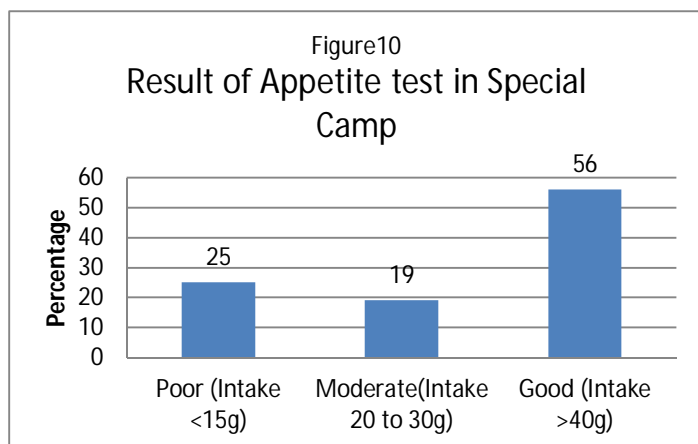
These are the underlying manifestation of Protein Energy Malnutrition which occurs mainly due to too early or too late weaning and improper technique of weaning. It is found in figure 8 that in 2.6% cases

breastfeeding has been stopped at the one to three month of age and 42.9% cases breastfeeding has been stopped in three to five month of age of children and complementary feeding has started which have the high risk of faulty nutrition status of children due to early initiation of complementary feeding. On the other hand, in figure 9, it can be observed that 33.8 % of cases too late initiation of weaning after seven month age of the children.

Due to lack of deficiency of micronutrients, some symptoms like Night blindness, Angular stomatitis (mouth scar) and Bitots spot are found among the children of coastal vulnerable zone. It was found that 36.5% children consume green leafy vegetables, and 9% children consume fruits. So, due to lack of green leafy vegetables and fruits micronutrient deficiency occurs

C.2.Appetite test

The complications in malnutrition lead to loss of appetite. Appetite test helps in identifying SAM children



with medical complications who will need treatment under special nutrition camp. Children who have good appetite but arise under SAM category are taken up for 15 days long nutrition camp. It is observed in figure 10 that within the identified SAM children 25% have poor appetite as they intake less than 15gm food at a time and 19% have moderate appetite which means they can not take more than 30gm food at a time. Those SAM children who have poor and moderate appetite are treated by doctor in the special camp, Zincovit supplementation is given and the Nutritionist done individual dietary counseling

to the mothers of the SAM children. After 15 days ,if the appetite and dietary consumption of the SAM child is increased then he/she will participate in the 15 days Nutrition Camp.

C.3.Weaning food Dietary Diversity Score

The onset of malnutrition mostly takes place during the period of weaning when a child really needs a balanced diet, of which the main component is milk. Since breast milk changes and has less protein at a later stage of breast-feeding, weaning does not mean stopping breastfeeding but accustoms the infant to food other than milk. This means that it is vital to continue breast-feeding while new foods are being introduced into the child's diet.

The type of food that a child has at a given stage is very important, as it is this type of food that builds up and nourishes the child. For us to assess good nutrition, this has to be based on the types of food that the child is being fed.

The **Dietary Diversity questionnaire** is a tool providing a rapid, user-friendly and cost effective approach to measure changes in dietary quality at the individual level. **Dietary diversity scores** are created by summing either the number of individual foods or food groups consumed over a reference period. (FAO 2007).

The method of Diet Diversity Score by FAO is 24 hour recall method. But, people of target area occasionally stay in starvation due to some ritual reason. So, if DDS is taken for last day consumption that will show incorrect result as this is not his/her daily trend of diet. SRAN's intervention is to recall last **3 days diet and average of it**. The mothers were also asked about types of food to be given to children in last 3 days and put those on the Dietary diversity Score chart average DDS is taken. In figure 11, it is shown that due to consumption of low cost nutrient rich complimentary breakfast ,ICDS foods enriched

with vitamin A rich vegetables and green leafy vegetables and variety through the use of Nutrition Garden, the DDS is increased among the malnourished children. Out of 16 food groups mentioned by FAO, change in DDS is observed average 7 and highest DDS among children is 12. It is also seen in

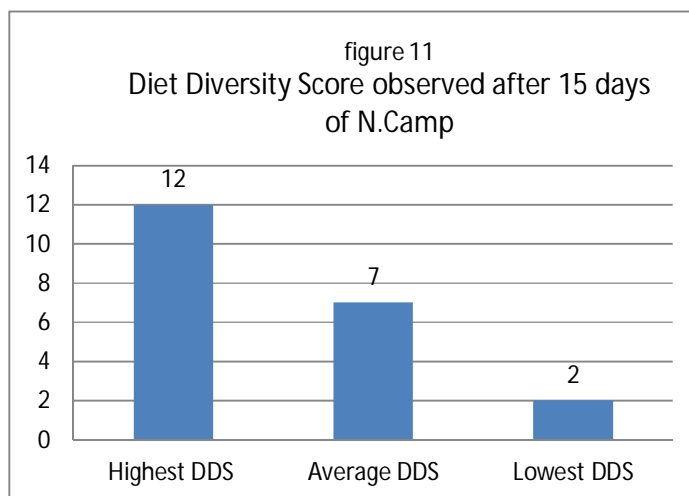
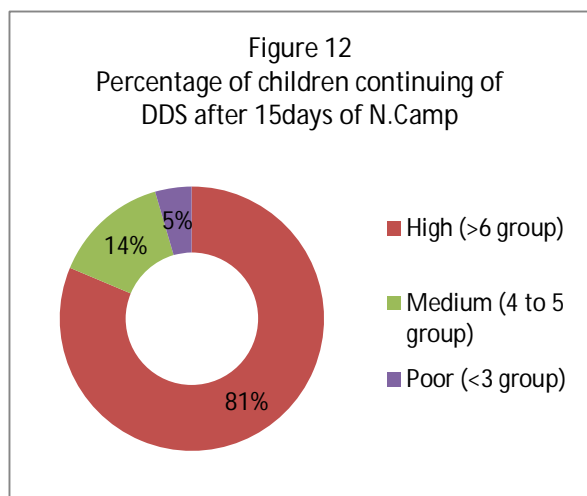


figure 12 that 81% of malnourished children after attending 15 days nutrition camp have increased high DDS and only 5% have poor DDS.

CONCLUSION

This is the conclusion of the whole study and recommendations are made. This study has indicated that children in under 5 ages have been affected by malnutrition. The results show that problems that contribute to the creation of the malnutrition in rural areas is as a result of improper composition and consistency food, insufficient intake of food, food related social taboos and the absence of proper hygiene practices. Though poverty is a cause of malnutrition but absence of knowledge of child care practice plays a major role in the malnutrition of under 5 children .

FINDINGS OF THE ACTION RESEARCH STUDY

The following conclusions are drawn on the basis of the findings on nutritional assessment of children under five years of age:

- The nutritional status of the malnourished children had improved as underweight children came to the normal weight and same like for wasting.
- The medical examination revealed a large evidence of malnutrition. Due to the medical treatment, the complications of infectious diseases are reduced among the SAM children and Zincovit supplementation improves the appetite of the malnourished children.
- Mothers realized the importance of balanced diet on infant and young feeding practices for their children. Although they perceived it to be important that their children should benefit from improved nutrition but they are unable in practice due to poverty.
- Mothers were encouraged to breast-feed as long as possible and they also made aware about the risks of early weaning. Mothers were aware about the weaning problems frequently arising from infection associated with poor hygiene, especially with respect to artificial bottle feeding preparation.
- About fifteen (15) varieties of low cost nutrient rich weaning food preparation without losing nutrients that are necessary in the food were demonstrated involving the mothers which they were practicing at their respective home. So, the dietary diversity of the complementary feeding of the malnourished children had improved during and after camp.

- f) Mothers were educated on the nutritional value of different types of foods. They made aware of the fact that, under normal circumstances, skimmed milk should not be used for the feeding of infants younger than 6 months. It is explained to them that it does not supply essential fatty acids and vitamins or enough energy for the infant.
- g) They acquired knowledge on simple methods of Nutrition gardening in the backyard of the house ; composting and growing of acceptable crops that contribute significantly to a balanced diet throughout the year .
- h) It is also well known to them that fast food or any other junk foods should not be given to the malnourished children.
- i) Peer learning in the nutrition camp motivated the mother to know more IYCF practices and improve child care practices whose result was vivid in the **Participatory monitoring tool**.

LIMITATION OF THE ACTION RESEARCH STUDY

The limitations of the present study are:

- The children who are suffering from chronic health problems like thalassemia and genetic problem like Cerebral Palsy could not be improved by the treatment of Nutrition Camp.
 - After completion of the Nutrition camp, if the monitoring of the status of malnourished children and child care and hygiene practices of the mothers is poor then the child again come back to the malnourished status.
 - In the recall method of **Participatory monitoring tool**, mothers give insufficient data due to loss of memory and exaggeration by which ultimate result may vary from the actual.
 - Continuous fifteen(15) days Nutrition survey camp are long and time consuming method. So, mothers do not able to co-operate after carrying out the entire family burden.

RECOMMENDATION OF THE ACTION RESEARCH STUDY

The present study revealed a positive impact on improving the knowledge of mothers about food consumption, nutrient intake, hygiene practices and especially nutritional status of under five children of the households of Sundarbans region. Taking into consideration, it can be recommend that :

- To sustain the 15 days Nutrition camp with a view to improving the malnourished children and reducing incidence of SAM and MAM children, it should be up scaled by the ICDS system .
- Regular home visit is essential to monitor the status of malnourished children and look after the child care and hygiene practices of the mothers which may be carried out either by ICDS staff or mother groups/SHG
- To reduce the medical complication of SAM children, mothers should be made aware by the Health Sub centres for regular check up their child and referred to the Primary Health Centers as and when required.

Upscaling of LANN programme through NRLM :

KVK has conducted FLD on LANN from 2016-2017. The experience has shared with the department of Agriculture, Govt. of West Bengal and other Line department.



Department of Agriculture has initiated the upscaling of LANN programme in collaboration with KVK through NRLM in Joynagar II block from November 2017.

LANN meeting with Sangha member



Diet diversity meeting with Sangha



Initial meeting with Sangha member in presence of NRLM officials

Conducting Food processing training on Cake making for income generation activities of SHG members

Training on Cake Making for 46 SHG members is a new venture in KVK with the sponsorship from ADA, Joynagar II. The SHG members will be supported by startup fund for this income generating activity through ATMA.



Act as Resource Person :

Home scientist of KVK act as resource person in the training programme on Food and Nutrition Security at Small household- Role of Womenfolk organized by MANAGE – Hyderabad and SAMETI , WB

Home scientist of KVK act as resource person in the orientation training programme of Home scientist ,organized by ATARI , Kolkata



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



Sl. No.	Name of the organization/ Society	Trust Deed No.& date	Date of Trust Registration Address	Proposed Activity	Commodity Identified	No. of Members	Financial position (Rupees in lakh)	Success indicator
1	Joynagar FPC	NVIUC (National Vegetable Initiative for Urban Clusters)	29th September, 2015 (Regn. No. U01403WB2012PTC186588)	Joynagar Farmers Producer Company Limited were formed by Access Development Services (ADS), financial support from Dept. of FPI & H, GOWB and technical help from RAKVK, Nimpith.	<ul style="list-style-type: none"> ✓ Organise farmers in commodity interest group for better production and marketing of their produce. ✓ Marketing of the produce of member farmers in organized way, through the marketing outlet of Mother Diary, 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 	1046	Financial support from Dept. of FPI & H, GOWB	<ul style="list-style-type: none"> ✓ Technical backstopping through training and capacity building of farmers. ✓ 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 ✓ Soil testing facility for member farmers ✓ Development of master trainer for mobilization of women farmer
	Bhangor FPC		28th September, 2012 (Regn. No. U01403WB2012PTC186588).	Bhangor Vegetable Producer Company Limited financial support from Dept. of FPI & H, GOWB and technical help from RAKVK, Nimpith.		1751	Financial support from Dept. of FPI & H, GOWB	Do




16. Integrated Farming System (IFS)



Details of KVK Demo. Unit



Sl. No.	Module details (Component wise)	Area under IFS (ha)	Production (Commodity wise)	Cost of production in Rs. (Component wise)	Value realized in Rs. (Commodity wise)	No. of farmer adopted practicing IFS	% Change in adoption during the year		
	Sapota Orchard	0.10	25 q	13900	38800	413			
	Vegetables	0.35	106 q	33700	64200				
	Mushroom	0.001	2.1 q	8600	20760				
	Fish	0.12	00.0	00.0	00.0				
	Vermicompost		114.7 q	114720	31200				
	Duckery		00.0	00.0	00.0				
	Honey Bee		00.0	00.0	00.0				

17. Technologies for Doubling Farmers' Income

Sl. No.	Name of the Technology	Brief Details of Technology (3- 5 bullet points)	Net Return to the farmer (Rs.) per ha per year due to the technology	No. of farmers adopted the technology in the district	One high resolution 'Photo' in 'jpg' format for each technology
1	KVK developed Land shaping and rain water harvesting technology	<p>Technology for augmenting diversified production per unit area by converting mono-cropped low lying areas into multi-cropped with assured irrigation</p> <p>This technology ensures year round crop coverage thereby reducing soil erosion and loss of soil moisture.</p> <p>It facilitates accumulation of more plant bio mass in the soil thus increasing soil fertility</p> <p>Exploitation of ground water for irrigation purpose in rabi-summer season is greatly reduced through the application of this technology thereby reducing the use of fossil fuels which in turn helps in reducing the production of GHG</p>	It is observed that the net income of Rs.56,500.00 have been obtained from such Land Shaping plots while the income was only Rs.4500.00 before adoption of the technology.	More than 45000 number of farmers	<p style="text-align: center;">Before</p>  <p style="text-align: center;">After</p> 

<p>2</p>	<p>Ail(Land embankment) and Aerial Cultivation – the sustainable technology for increasing vegetable production in low lying areas of Sundarbans</p>	<p>→Diversified vegetable cultivation technology throughout the year leading to nutrition & income security for small and marginal farmers</p> <p>→Rising of the land embankment ensures reclamation of degraded land by reducing soil salinity through hindering the capillary movement of the salt ions from beneath.</p> <p>→This technology ensures year round crop coverage and reducing soil erosion as the raised embankment can be utilised for year round crop production.</p>	<p>An unique model of integration with fish culture fetching additional Rs.30000/- per ha of low land against Rs.12000/- in traditional cultivation.</p>	<p>1.5 to 2 lakh farmers of the district</p>	<p style="text-align: center;">Before</p>  <p style="text-align: center;">After</p> 
<p>3</p>	<p>Seed Production of Asian Catfish at farmers level to improve income and livelihood security of Rural Youths</p>	<p>→Helps to revive the age old practice of paddy cum fish culture for cat fish rearing</p> <p>→Doorstep supply of the indigenous catfish seeds increase the farming of catfish to a large extent.</p> <p>→Conservation of natural biodiversity</p>	<p>The unemployed rural youths who are now engaged in breeding and rearing of the catfish could make net profit of atleast Rs.2.50 lakh per cycle of 4 months from this entrepreneurial activity (500 sqft area), which is almost or more than double of the present day income from any fishery enterprise</p> <p>Before the intervention, lowland paddy cultivation could only give a meagre income of about Rs.15,000/-/ha/year. Introduction of catfish fingerlings in these paddy fields could give an</p>	<p>Breeding programme – 35 numbers of farmers</p> <p>Rearing- 6050 numbers of farmers</p>	

			<p>additional yield of about 290kg of marketable catfish which amounts to an income of at least Rs.1,00,000/-.</p> <p>Similarly, introduction of catfish along with carps in freshwater ponds has resulted in an additional income of Rs.17,500/- per 0.13 ha water area.</p>		
4	<p>Cotton cultivation - a viable alternative towards effective utilization of rice fallows of Sundarbans</p>	<p>➔It is observed that earlier, only low land paddy was cultivated and the land remained fallow during rabi-summer. However, paddy-cotton sequence gave more than three times income in rice fallow situation by utilization of residual moisture.</p> <p>➔Being a deep rooted and low water demanding crop, cotton is grown in the extreme months of water scarcity particularly in the rain fed rice fallow saline situation. This results in increased cropping intensity with year round crop coverage which helps in reducing soil salinity as well as enhances soil health through more crop bio mass.</p> <p>➔Dried cotton stalks provide enough fuel, during rainy season, for a family of 5 heads for a period of 3-4 months from 0.13 ha of cotton cultivation hence checking deforestation activities for which pressure on forests are greatly reduced.</p>	<p>From 1 ha of low land a net profit of Rs.54100/- is obtained through this technology against only Rs.15400/- in traditional method.</p>	<p>3080 numbers of farmers</p>	<p style="text-align: center;">Before</p>  <p style="text-align: center;">After</p> 

		<p>→Through cotton cultivation, the KVK generated an additional employment of about 3.5 lakh mandays thus reducing seasonal migration.</p>			
5	Climate Smart Hi-Tech Pan Boroz for production of quality betel vine leaves	<p>The boroz is made up of GI poles and non-degradable shade-net that gives it more longevity (10-15 year) in cyclone prone coastal areas.</p> <p>→This modern boroz is fitted with micro-sprinkler irrigation facility, which not-only reduces irrigation cost, but maintains temperature and humidity within the boroz during the hot summer and dry winter.</p> <p>→The green shade net provides uniform shade, there improving the quality of the betel leaves across the boroz. These leaves fetch better market price due to their round shape, uniform green colour, texture and luster. So the overall productivity and net profit is more.</p> <p>→Incidence of pest and disease is very less.</p> <p>→The cost of maintenance is also less than traditional boroz.</p>	Net profit through this technology is realized by the farmer to the tune of 1.5 lakh /year against only Rs.60000/- in traditional method.	2771 numbers of farmers	<p>Before</p>  <p>After</p> 

<p>6</p>	<p>On-farm mass production of microbial pesticides to explore the organic farming at village level</p>	<p>Empowering the rural farmers in producing certain bio-control agents at homestead level.</p> <p>→ Isolate local strains of fungal bio-control agents (<i>Trichoderma sp.</i> and <i>Metarhizium sp.</i>) and mass production of the promising strains by the farmers for their own use.</p> <p>→ Identified strains of bio-control agent adapt well to the local situation and give a better protection under field condition.</p> <p>→ The production process requires low cost materials like paddy grain, pressure cooker, wooden inoculation box, etc. that are locally available.</p> <p>→ Farmers can now easily prepare beneficial fungal bio-control agents at their home</p>	<p>→ Reduction in cost of cultivation by cutting down cost of chemical fungicides by 50%.</p> <p>→ Production of healthy, chemical pesticide free food.</p> <p>→ Environment friendly farming.</p> <p>→ Increase in net profit by Rs. 25000 per ha.</p>	<p>More than 400 farmers from South 24 Parganas and neighbouring districts have adopted the technology</p>	
<p>7</p>	<p>Introduction of Peking Duck to augment better and sustainable profit by the rural youth of Sundarbans</p>	<p>Broiler ducks (pekin) having more tolerance potential to climatic aberrations and is now a days recognized as a good profitable venture for the unemployed youths of Sundarban.</p> <p>→ The scientific rearing, management and feeding practices of pekin duck farming have been inculcated to the farmers</p> <p>→ Village level semi meet processing unit has been established in collaboration with the Live Stock Development Corporation Ltd. (LDC), a Govt. of W.B. under taking organization through PPP mode for better marketing of the produce.</p>	<p>A net profit of Rs. 23650/- per 200 numbers of duck is obtained against Rs. 12000/- through traditional boiler farming within the span of 65 days of cycle.</p>	<p>220 numbers of farmers</p>	

<p>8</p>	<p>Ornamental fish farming in net enclosures- a new vista for augmenting profit in fish farming</p>	<p>→The farming of these ornamental fish are mostly done in nylon net enclosures known as “hapa” fixed in the ponds by tying to bamboo poles or by suspending from iron wires tied over the ponds on two opposite dykes. There are 60 “hapa” of 7’ X 12’ dimension and 20 “hapa” of 7’ X 5’. Apart from “hapa”, these ornamental fish are also reared in 10 cement cisterns of 4’ X 8’ dimension and 15 glass aquaria.</p> <p>→The following fish Species are introduced:-</p> <p>Cichlids-Banana cichlid, Strawberry cichlid, Ice blue cichlid, Powder blue cichlid, Blue auratus, Yellow auratus, Sharks-Rainbow shark, Albino rainbow shark, Redtail black shark, Silver shark, Angel, Sarpae tetra, Sebaram, Spotted molly</p> <p>→Capacity of the farm is 15000-16000 ornamental fish in peak season and 8000-9000 during off season (winter).</p>	<p>A total net profit of Rs.55000/- per 0.13 ha of pond area is achieved against only Rs.25000/- in traditional system throughout the year.</p>	<p>1021 numbers of farmers</p>
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18. Report on Digital Farming Initiatives in Agriculture/ Digital Ag. Extension Service



Phase	Database prepared / covered for		KVK level Committee		Various activity conducted for farmers
	Total no. of villages	Total no. of farmers	Date of formation	Name of members	
Phase I (up-to 15.03.2018)	678	7294	05.02.2018	Dr. Narayan Chandra Sahu, Dr.Nilendu Jyoti Maitra, Mr. Kajal Chakraborty, Murari Mohan Barkandaj, Biswajit Chowdhury, Sayandeep Biswas, Partha Banik, Tarak Nath Halder, Bapan Karmakar, Chardrasekhar Halder, Tapan Maiti	✓ Primary meeting was held at KVK with farm science clubs, village volunteers and progressive farmers from different villages of South 24 Parganas district on 30.01.18
Phase II (up-to 24.04.218)	475	9968			✓ Separate meeting was conducted with about 100 Agri Input Dealers at KVK on 31.01.18 about the DFI. Data was collected directly from villages. No secondary data was taken into consideration.
Total		17262			✓ First phase DFI data in MS-Excel was sent to ICAR-ATARI, Kolkata on 10.02.18. ✓ Second phase data was sent to ICAR-ATARI Kolkata on 23.04.18


(DFI: Digital Farming Initiative)

Detail of KVK level committee:

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| a) Senior Scientist and Head, SSKVK, RKMVERI
Presently, Dr. Narayan Chandra Sahu | - Chairman |
| b) Senior Scientist and Head, RAKVK
Presently, Dr.Nilendu J. Moitra | - Vice-Chairman |
| c) Dy. Director of Agriculture (Admn.), South 24 Parganas
Presently, Mr. Kajal Chakraborty | - Member-Secretary |
| d) Project Director, ATMA, South 24 Parganas
Presently, Mr. Murari Mohan Barkandaj | - Member |
| e) Assistant Director of Agriculture (Training), South 24 Parganas
Presently, Mr. Biswajit Chowdhury | - Member |
| f) Programme Assistant (Computer), SSKVK, RKMVERI
Presently, Mr. Sayandeep Biswas | - Member |
| g) Programme Assistant (Computer), RAKVK, Nimpith
Presently, Mr. ParthaBanik | - Member |
| h) Progressive farmer nominated by RAKVK - Mr. Tarak Nath Halder, 27 No. Lot, P.O. PaschimKultali, Block: Mathurapur II, South 24 Prgns. | - Member |
| i) Progressive farmer nominated by RAKVK - Mr. Bapan Karmakar, GillerChhat, P.O. GillerChhat, Block: Mathurapur II, South 24 Parganas | - Member |
| j) Progressive farmer nominated by SSKVK - Mr. Chardrasekhar Halder, Basudevpur, P.O. Pairachali, Block: Falta, South 24 Parganas | - Member |
| k) Progressive farmer nominated by SSKVK - Mr. TapanMaiti, Birinchibari, P.O. Nafarganj, Block: Basanti, South 24 Parganas | - Member |

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

Sl. No.	Name of the programme	Date of the programme	Venue	Purpose	No. of participants
1	<p>Joint visit in Guava Farmers' fields in Baruipur region by Dr. S. Rajan, Director, CISH Lucknow, along with Dr. Chandan K. Mondal, SMS (Hort.), RAKVK, Nimpith & Dr. Dipak K. Nayek, Scientist, CISH, RRS-Malda & I/c CISH-Malda KVK</p> 	21.12.17	Farmers' Fields, Baruipur, South 24 Parganas	<ul style="list-style-type: none"> ✓ Joint Inspection on problems in Guava Cultivation in Baruipur region. ✓ Promotion of wilt tolerant root stock by grafting technology to control Guava Wilt, a severe malady in guava farming in the Baruipur region ✓ Promotion of pink fleshed guava varieties in Baruipur region ✓ Survey on present marketing system of the fresh fruits and ways of better marketing. 	31
2	<p>Live Phone-In Programme at Door Darshan in the 'Krishi Darshan'</p> 	14.08.17	Door Darshan Kendra, Kolkata	<ul style="list-style-type: none"> ✓ Programme was conducted on Rainy season vegetable cultivation ✓ Main highlight was to promote scientific management aspects for rainy season vegetable farming ✓ Interaction was done directly with farmers from different parts of West Bengal as well as from Bangladesh also. 	

3	<p>Field Programme with Door Darshan</p> 	16.05.18	Farmers' Field, Baruipur	<ul style="list-style-type: none"> ➤ To inculcate scientific Litchi farming in Lower Gangetic Plains ➤ Major highlights was on management aspects, both for off season orchard management as well for crop management during crop period. 	
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