Annual Report

2013

Submitted to

Zonal Project Directorate - Zone-II, ICAR
Kolkata – 700 097

Submitted by

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Annual Report of 2012-13

(April, 2012 – March, 2013)

Compiled

By

S.K.Samui, P.Chatterjee, M.Chakraborty,

C.K.Mondal, S.Roy, P.K.Garain & D.K.Roy

Edited

By

Dr. N. J. Maitra

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&
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REVISED PROFORMA FOR ANNUAL REPORT 2013
(April 2012 to March 2013)

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone		e- mail
P.O.Nimpith Ashram South 24-Parganas, West Bengal, Pin-743338	Office 03218- 226002	FAX 03218- 226636	kvknimp@cal2.vsnl.net.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	kvknimp@cal2.vsnl.net.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, 2013)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale with present basic	Date of joining/ if vacant since when	Permanent /Temporary	Category (SC/ST/ OBC/ Others)
1	Programme Coordinator	Dr. Nilendu Jyoti Maitra	Programme Coordinator	Administra-tive & Animal Husbandry	15600-39100 (GP- 8000) (33,580)	01.06.2010	Permanent	Others
2	Subject Matter Specialist	Sri Swapan Kumar Samui	SMS (Agronomy)	Agronomy	15600-39100 (GP-7000) (31,850)	01.04.1997	Permanent	Others
3	Subject Matter Specialist	Sri Prasanta Chatterjee	SMS (Fishery)	Fishery	15600-39100 (GP 7000) (31,850)	28.10.1997	Permanent	Others
4	Subject Matter Specialist	Dr. Manasi Chakraborty	SMS (Home Science)	Home Science	15600-39100 (GP 7000) (32,580)	08.12.2000	Permanent	Others
5	Subject Matter Specialist	Sri Chandan Kumar Mondal	SMS (Horticulture)	Horticulture	15600-39100 (GP 6000) (25,810)	16.05.2005	Permanent	Others
6	Subject Matter Specialist	Dr. Subhasis Roy	SMS (Animal Husbandry)	Animal Husbandry	15600-39100 (GP 6000) (25,810)	01.07.2010	Permanent	Others
7	Subject Matter Specialist	Sri Prabir Kumar Garain	SMS (Plant Protection)	Plant Protection	15600-39100 (GP 6000)	17.10.2012	Temporary	OBC
8	Programme Assistant	Dr. Dipak Kumar Roy	Programme Assistant (Agronomy)	Agronomy	9300-34800 (GP 4200) (19,810)	12.06.2001	Permanent	Others
9	Computer Programmer	Sri Partha Banik	Programme Assistant (Computer)	Office	9300-34800 (GP 4200) (18,060)	09.06.2003	Permanent	Others
10	Farm Manager	Utpal Maity	Farm Manager	Fishery	9300-34800 (GP 4200) (13,500)	02.12.2011	Permanent	Others
11	Accountant / Superintendent	Sri Aditya Guchhait	Assistant	Office	9300-34800 (GP 4200) (14,870)	01.06.2010	Permanent	Others
12	Stenographer	Sri Debjyoti Maitra	Stenographer Grade-III	Office	5200-20200 (GP 2400) (9,910)	04.01.2011	Permanent	Others
13	Driver	Sri Madhab Chandra Kayet	Driver –cum-Mechanic	Office	5200-20200 (GP 2400) (11,390)	01.06.1995	Permanent	Others
14	Driver	Sri Birendra Nath Das	Driver –cum-Mechanic	Office	5200-20200 (GP 2000) (10,090)	01.09.2003	Permanent	Others
15	Supporting staff	Sri Nemai Chand Mondal	Storekeeper-cum-Clerk	Office	5200-20200 (GP 2800) (15,550)	01.02.1982	Permanent	SC
16	Supporting staff	Sri Sailen Das	Cook	Office	5200-20200 (GP 4200) (17,470)	01.07.1979	Permanent	Others

1.6. Total land with KVK (in ha) :

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

Total area should be matched with breakup

1.7. Infrastructure Development:

A) Buildings

S. No.	Name of building	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
	Administrative Building	-	-	-	-	Totally completed	777.545	Use	ICAR
2.	Farmers Hostel	-	-	-	-	-do-	359.639	Use	ICAR
3.	Staff Quarters (6)	-	-	-	-	-do-	411.680	Use	ICAR
4.	Demonstration Units (2)	-	-	-	-	-do-	675.750	Use	ICAR
5	Fencing	-	-	-	-	-do-	770.00 (mt.)	Use	ICAR
6	Rain Water harvesting structure	-	-	-	-	-do-	17500	Use	ICAR
7	Threshing floor	-	-	-	-	-do-	371.720	Use	CAPART
8	Farm godown	-	-	-	-	-do-	378.790	Use	SDB, GOWB
9.	Others	-	-	-	-	-do-	397.300	Use	ICAR

* If not in 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	99,164	Running condition

C) Equipment & AV aids

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
Computer (2 no.) with computer room decoration	1996-97	4,44,000.00	Working condition	ICAR
Computer air conditioner	2001-02	27,650.00	Working condition	ICAR
Camera TRV	2003-04	36,900.00	Working condition	NWDPRA
RS 350	2003-04	4,000.00	Working condition	Nutrition project, SDB
Computer (2 nos)	2003-04	76,899.00	Working condition	ICAR
Copier HP 3330	2003-04	36,500.00	Working condition	ICAR
Copier (MFP)	2006-07	75,000.00	Working condition	ICAR
LCD projector	2006-07	1,00,000.00	Working condition	ICAR
Digital Camera	2008-09	25,000.00	Working condition	ICAR

D) Farm implements

Name of equipment	Year of purchase	Cost (Rs.)	Present status	Source of fund
Public address system	2010-11	30,481.00	Working condition	ICAR
Fax Machine	2010-11	52,870.00	Working condition	ICAR
Photocopier	2010-11	1,25,208.00	Working condition	ICAR
V-SAT with e-KVK linkage (5 Computer & printer with Server)	2009-10	-	Working condition	ICAR
OPTOMA projector with 3M Digital annotation sensor with Aver-Media digital document visualizer (AF 300)	2009-10	1,70,000.00	Working condition	RKVY
Micro-metos MCR-300 automatic weather station with disease forecasting system (software GENEVA E2C)	2009-10	4,00,000.00	Working condition	NHM
Lenovo Laptop	2008-09	48,000.00	Working condition	NHM
Samsung Notebook	2009-10	22,000.00	Working condition	TMC
Perkin-elmer UV-Vis Spectrophotomètre (Lamda 25)	2010-11	4,10,000.00	Working condition	ICAR
Perkin-elmer Atomic Absorption Spectrophotometer (AA-200)	2010-11	9,99,272.00		ICAR
pH meter	2010-11	4,000.00	Working condition	ICAR
Conductivity meter	2010-11	6,500.00	Working condition	ICAR
Eutech pH-Conductivity meter	2009-10	13,500.00		ICAR
Rescholar Laminar Air-flow	2008-09	49,500.00	Working condition	ICAR
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
Chrlorophyll meter (SPAD 502 plus)	2010-11	2,25,000.00	Working condition	ICAR
Refrigerator (GFE 25/2010)	2010-11	19,560.00	Working condition	NAIP
Rotary shaker	2010-11	32,500.00	Working condition	ICAR
BOD incubator (Simeco)	2010-11	31,650.00	Working condition	ICAR
Autoclave	20080-09	25,365.00	Working condition	ICAR
Double distillation unit	2010-11	33,250.00	Working condition	ICAR
Afcoset Electronic Balance(Model EK1200G)	2008-09		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
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
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

1.8. A). Details SAC meeting* conducted in the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
1.	**18.9.2012**	33	Toll free help line may be tried by approaching other private telephone operators.	Minimum cost for Toll Free No. is Rs.31,672/- per year and we can get 600 nos. of calls per month. Cost per call is Rs.1.50/minute, so it is very costly.	
			TV programme on ornamental fish and ornamental bird should be carried out more.	TV programme on ornamental bird already done in ETV & Newspaper coverage in Sambad Pratidin.	
			NICRA project village farmers and farmers of other project villages of KVK may be taken to VIB operated bio-village for exposure visit and date is asked from VIB representative to organise it in coming *rabi* season.	Action taken in the *rabi* season.	
			10 minutes video on project activities and success stories should be prepared within December, 2012.	NICRA video has been prepared.	
			The CDs of success stories and 'BOOK' to be published from KVK should be provided to line departments and district administration.	Binding of the book is going on and hopefully in the 1st week of April, it will be sent to line department.	
			To improve quality of vermicompost and other compost manures, *Azotobactor* and PSB should be mixed with the compost @ 10 g each per kg compost.	The practice has been started. The same has been applied in sunflower & vegetable cultivation.	
			Recast the OFT on Paddy – Weed Management (*Chara fragilis*), if possible, after consulting with Prof. A.C. Pradhan, Advocacy Consultant, RDW.	Discussion held with Dr. A. C. Pradhan and the re-casted OFT will be conducted in *kharif* 2013.	

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
			In the OFT on poultry (MBC), the recommendation on MBC should be informed to Private Poultry Feed Manufacturer for the commercial use of MBC and same letter should be issued to ZPD (AE) and ZPD.	Letter issued on 05.10.2012 vide letter no. KVK-G/10/25795 to DDG(AE), ZPD, CARI, DE, BCKV, DE, UBKV, Director ARD, Govt. of West Bengal, Deputy ARD, South & 5 companies.	
			In the OFT on feed management in Ornamental Bird as well as it's huge vibration nation-wide to DDG (AE) and ZPD.	Already sent and a success story has been published in ICAR Website.	
			In the OFT on feed management in Ornamental Bird, add another treatment – 'T.O. 2 + *Azolla'*.	3% level of replacement tried, but anorectic problems arise.	
			Breeder seed of '*Amalmona'* variety of Paddy should be collected from CSSRI, Canning for foundation and certified seed production.	Foundation seed of variety '*Amalmona'* will be collected from CSSRI, Canning for *kharif* seed production.	
			A seed bank of paddy varieties '*SwarnaSub*-1' and '*Amalmona'* may be prepared at NICRA village.	Seed production programme taken at NICRA village.	
			SMS (Home Science) should publish a paper on nutritional status in the coastal region based on house hold survey and livelihood zoning of the coastal block.	A paper has been prepared and sent to 'The International Journal of Applied and Basic Nutritional Sciences, Elsevier'.	
			In AICRP–Sunflower, trial should be set up on head damage due to attack to birds	The trial has been set up. Result is awaited.	
			In the green gram trial, detail nodule study should be carried out.	The trial has been set up & study will be carried out in proper time.	

Sl. No.	**Date**	**Number of Participants**	**Salient Recommendations**	**Action taken**	**If not conducted, state reason**
2.	**22.3.2013**	**43**	Residual effect of $CuSO_4$ in OFT on weed management should be studied	Soil test will be done to evaluate the copper toxicity	
			Fodder cultivation should be introduced in the NAIP and NICRA villages	It will be started in next *kharif* season	
			The durability of iron structure in hi-tech *pan boroz* should be observed	At least three years observation will be made to arrive at a conclusion	
			To study the effects of milk machine on cows	It will be studied both in terms of productivity and on physiological aspect	
			Low cost milking machine may be tried at KVK dairy farm	Information will be obtained from the ZPD for further correspondence	
			To develop a suitable coastal belt specific hybrid variety of sunflower	Effective 6-7 years trial is required to develop a suitable variety. Already 2 year trial has been conducted.	
			To produce hybrid or specific variety of sunflower seed with good quantity for distribution to the coastal farmers	Off season seed production programme will be taken in draught belt of West Bengal like Bankura district or Paschim Medinipore District.	

**** Salient recommendation of SAC in bullet form***

Copy of SAC proceedings along with list of participants

(True copy)

Meeting No. 22 **Date : 18.09.2013**
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 September, 2012 at 10.30 a.m. in the KVK premises with the following members:

Members Present:

1. Swami Sadananda, Chairman, KVK Nimpith
2. Dr. B.K.Mahapatra, Principal Scientist & OIC, CIFE, Kolkata
3. Dr. S.K.Sarangi, Sr. Scientist, CSSRI, RSS, Canning Town
4. Dr. Binayak Purkayastha, Asst. Director, SDPF Nimith
5. Dr. A.C.Pradhan, Advocacy Coordinator, NRKARWD
6. Dr. Ajit Kumar Poddar, Advisor, VIB
7. Sudipta Das, Doordarshan, Kolkata
8. Dr. N.J.Maitra., Programme Coordinator, KVK, Nimpith
9. Swapan Kumar Samui, SMS(Agronomy), RAKVK
10. Dr. Manasi Chakraborty, SMS(Home Sc.), RAKVK
11. Prasanta Chatterjee, SMS(Fishery), RAKVK
12. Dr. Subhasis Roy, SMS (A.H.), RAKVK
13. Dr. Dipak Kr. Roy, Programme Assistant (Agronomy)
14. Chandan Kumar Mondal, SMS(Hort.), RAKVK
15. Shyam Sundar Lakshman, Junior Breeder, AICRP-Sunflower
16. Dr. Avijit Roy, Agronomist, AICRP on Sunflower
17. Arun Kumar Jana, SRF, NAIP
18. Bhaskar Mukherjee, Technical Assistant
19. Atit Maji, SRF, NICRA
20. Debasish Haldar, Technical Assistant, AICRP
21. Tarapada Ghosh, SRAN, RDW
22. Brihaspati Naskar, Padmapukur Swami Vivekananda SHG
23. Kakali Pramanik, Shib Durga Milan Sangha SHG
24. Sahanur Rahaman, SRF – NAIP
25. Arabinda Samanta, Office Superintendent KVK, Nimpith
26. Utpal Maity, Farm Manager, KVK, Nimpith
27. Tarak Nath Halder, Secretary, Radhakantapur Watershed Project
28. Gobinda Naiya, President, Dongajora Watershed Project
29. Deb Jyoti Maitra, Stenographer Gr.-III
30. Tapas Kumar Sahana, SRF, NICRA
31. Aditya Guchhait, Assistant, RAKVK
32. Partha Banik, Programme Assistant (Computer)
33. Subal Chandra Das, KVK Volunteer

Resolutions:
1) The minutes of the last meeting are read and confirmed.

2) The Programme Coordinator of KVK presented the progress of work of KVK for the period from April, 2012 to September, 2012 before the members present in the meeting. Thereafter, Programme Coordinator 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.

a. Toll free help line may be tried by approaching other private telephone operators.
b. TV programme on ornamental fish and ornamental bird should be carried out more.
c. NICRA project village farmers and farmers of other project villages of KVK may be taken to VIB operated bio-village for exposure visit and date is asked from VIB representative to organise it in coming *rabi* season.
d. 10 minutes video on project activities and success stories should be prepared within December, 2012.
e. The CDs of success stories and 'BOOK' to be published from KVK should be provided to line departments and district administration.
f. To improve quality of vermicompost and other compost manures, *Azotobactor* and PSB should be mixed with the compost @ 10 g each per kg compost.
g. Recast the OFT on Paddy – Weed Management (*Chara fragilis*), if possible, after consulting with Prof. A.C. Pradhan, Advocacy Consultant, RDW.
h. In the OFT on Poultry (MBC), the recommendation on MBC should be informed to Private Poultry Feed Manufacturer for the commercial use of MBC and same letter should be issued to DDG (AE) and ZPD.
i. In the OFT on feed management in Ornamental Bird as well as it's huge vibration nation-wide to DDG (AE) and ZPD.
j. In the OFT on feed management in Ornamental Bird, add another treatment – 'T.O. 2 + *Azolla'*.
k. Breeder seed of '*Amalmona'* variety of Paddy should be collected from CSSRI, Canning for foundation and certified seed production.
l. A seed bank of paddy varieties '*Swarna Sub-1*' and '*Amalmona'* may be prepared at NICRA village.
m. SMS (Home Science) should publish a paper on nutritional status in the coastal region based on house hold survey and livelihood zoning of the coastal block.
n. In AICRP –Sunflower, trial should be set up on head damage due to attack to birds.
o. In the green gram trial, detail nodule study should be carried out.

3) The progress of work of the projects like, IRM, SDB, NICRA, ATMA, NAIP, NWDPRA, AICRP, IWMP & MGNREGA for the year 2012-13 have been discussed in the meeting and the Committee expresses its satisfaction for the work done during the period under review.

With a vote of thanks to and from the Chair the meeting dissolves.

Sd/- Swami Sadananda
Chairman 18/09/2012

(True copy)

Meeting No. 23 **Date : 22.03.2013**
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 22nd March, 2013 at 10.30 a.m. in the KVK premises with the following members :

Members Present:

1. Swami Sadananda, Chairman, KVK Nimpith
2. Dr.S.K.Roy, principal Scientist, ZPD-II
3. Dr. B.K.Mahapatra, Principal Scientist & OIC, CIFE, Kolkata
4. Dr. Buddheswar Maji, Head, CSSRI, RSS, Canning Town
5. Dr,Joydip Mukhapadhyay, ADA, Joynagar-II
6. Dr.Biswanath Kar, ASL, Nimpith Poultry & Duck Farm
7. Sri Samir Pal, Asst. DFO, South 24 Parganas
8. Dr.Mridul Das, Geneticist & P.S. to Dr.Tarun Mondal,M.P.
9. Sri Sudipta Das, Doordarshan, Kolkata
10. Dr. A.C.Pradhan, Advocacy Coordinator, RKARDW
11. Dr. Manimoy Chattopadhyay, VIB
12. Dr. Ajit Kumar Poddar, VIB
13. Dr. N.J.Maitra., Programme Coordinator, KVK, Nimpith
14. Swapan Kumar Samui, SMS(Agronomy), RAKVK
15. Prasanta Chatterjee, SMS(Fishery), RAKVK
16. Dr. Manasi Chakraborty, SMS(Home Sc.), RAKVK
17. Chandan Kumar Mondal, SMS(Hort.), RAKVK
18. Dr. Subhasis Roy, SMS (A.H.), RAKVK
19. Prabir Kr. Garain, SMS (Plant Protection), RAKVK
20. Shyam Sundar Lakshman, Junior Breeder, AICRP-Sunflower
21. Dr. Avijit Roy, Agronomist, AICRP on Sunflower
22. Dr. Dipak Kr. Roy, Programme Assistant (Agronomy)
23. Arun Kumar Jana, SRF, NAIP
24. Utpal Maity, Farm Manager, KVK, Nimpith
25. Arabinda Samanta Project officer, BGREI, RAKVK
26. Aditya Guchhait, Assistant, RAKVK
27. Atit Maji, SRF, NICRA
28. Tapas Kumar Sahana, SRF, NICRA
29. Tarapada Ghosh, SRAN, RDW
30. Sahanur Rahaman, SRF – NAIP
31. Gobinda Naiya, President, NWDPRA, Dongajora
32. Bapan Karmakar, Secretary, Sree Durga Club
33. Tarak Nath Halder, Secretary, NWDPRA, Radhakantapur
34. Bhaskar Mukherjee, Technical Assistant
35. Kakali Pramanik, SHG, Shib Durga Milan Sangha
36. Brihaspati Naskar, Padmapukur Swami Vivekananda SHG
37. Deb Jyoti Maitra, Stenographer Gr.-III
38. Mousumi Halder, SDB, Home Science
39. Sulagna Sarkar, RDW, SRAN
40. Amrita Halder, RDW, SRAN
41. Lakshmi Ghosh, Home Science, RAKVK
42. Sibnath Mandal, Project Assistant, Farm
43. Subal Chandra Das, KVK Volunteer

Resolutions:

1). The minutes of the last meeting are read and confirmed

2). The Programme Coordinator of KVK presented the progress of work of KVK for the period from September,2012 to March,2013 before the members present in the meeting. Thereafter, Programme Coordinator 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.

a. Residual effect of $CuSO_4$ in OFT on weed management should be studied.
b. Fodder cultivation should be introduced in the NAIP and NICRA villages.
c. The durability of iron structure in hi-tech pan boroz should be observed.
d. To study the effects of milk machine on cows.
e. To develop a suitable coastal belt specific hybrid variety of sunflower.
f. To produce hybrid or specific variety of sunflower seed with good quantity for distribution to the coastal farmers.
g. The seeds of *Ompok pabda* and *Notopterus chitala* should be assured for the farmers to run the OFT smoothly.

3) The performance of Front Line Demonstration on cotton, oilseeds and pulses during rabi-summer have been discussed in the meeting and the members present in the meeting satisfied with the progress of work on FLDs for the period under review.

4) The progress of work of the projects like, IRM, SDB, NICRA, ATMA, NAIP, NWDPRA, AICRP, IWMP, MGNREGA and BGREI for 2012-2013 have been discussed in the meeting and the Committee expresses its satisfaction for the work done during the period under review.

With a vote of thanks to and from the Chair the meeting dissolves.

Sd/- Swami Sadananda
Chairman. 22/03/2013

2. DETAILS OF DISTRICT (2012-13) : Source of information must be indicated

2.1 Major farming systems/enterprises (based on the analysis made by the KVK)

S. No	Farming system/enterprise
1.	Agro based farming system – Paddy (monocropped)
2.	Agro based farming system – Paddy-Moong/ Cotton /Sunflower
3.	Agro based farming system – Paddy – Khesari (paira crop)
4.	Agro-horti based farming system- Paddy- Chilli/ Tomato/ okra
5.	Ail-bundh (land embankment) farming system – Okra/ Bitter Gourd- Tomato/ French bean
6.	Agri-horti-fishery – Paddy- Chilli/ Tomato/ Okra-IMC
7.	Agri-poultry (backyard)- Paddy- Moong/ Khesari/ Indigenous poultry

Source: Annual Action Plan on Agriculture (2011-12), South 24 Parganas, West Bengal

2.2 Description of Agro-climatic Zone & major agro ecological situations (based on soil and topography)

S. No	Agro-climatic Zone	Characteristics
1.	Coastal saline zone	Rainfall:1750-1850 mm Temp.: 10.24^0 – 36.42^0 C Humidity : 35.00% - 94.28% Soil type : Clay, clay-loam Soil pH : 5.5 – 8.7, Soil EC : 0.2 – 4.6 mmhos/cm

2.2 Description of Agro ecological situation (based on soil and topography)

S. No	Agro ecological situation	Characteristics
1.	Gangetic Alluvial	Below 20cm water stagnation during monsoon, pH 6.5 – 7.5 EC 0.2 –0.45 mmhos/cm
2.	Coastal Alluvial	pH 5.6 – 8.2 EC 0.5 – 3.0 mmhos/cm
3.	Coastal Saline	pH 6.0 – 8.5 EC 0.28 – 5.4 mmhos/cm

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1.	Clay, clay loam, sandy loam	Soil pH : 5.5 – 8.7 Soil EC : 0.2 – 4.6 mmhos/cm	3,94,553

2.4. Area, Production and Productivity of major crops cultivated in the district

S. No	Crop	Area (ha)	Production (MT)	Productivity (kg/ha)
1.	Paddy (*Aus*)	4520	11963.55	2647.0
2.	Paddy (*Aman*)	90569 (HYV) 47724 (Local)	221608.0 (HYV) 88542 .0(Local)	2446.84 (HYV) 1855.24 (Local)
3.	Paddy (*Boro*)	70493	231133.0	3278.0
4.	Khesari	21573	22146.68	1026.59
5.	Greengram	36610	17693.77	483.30
6.	Sunflower	4253	4116.82	967.98
7.	Groundnut	148	164.28	1110.01
8.	Cotton	442	1879.9(bales)	4.25(bales)
9.	Green chilli	749	2650.85	3339.18

Source: Annual Action Plan on Agriculture (2011-12), South 24 Parganas, West Bengal

2.5. Weather data

Month	Rainfall (mm)	Temperature ^{0} C		Relative Humidity (%)	
		Maximum	Minimum	Maximum	Minimum
April,12	27.8	38.6	20.5	87.5	55.5
May, 12	-	40	20	86.5	53
June,12	116.7	40.2	25	98	44
July,12	279.6	36	25	98	56
August,12	508.2	33.6	25	100	64
September,12	327.6	34	24	100	67
October,12	114.6	34	19	98	52
November,12	20.6	32	14	93	41
December,12	61	29.2	9.5	100	31
Jan,13	3	30	8	86.5	44.5
Feb,13	5	31.8	11.4	85	46.5
March,13	3.2	34.1	19.9	89	33

Source: KVK meteorological observatory

2.6. Production and productivity of livestock, poultry, fisheries etc. in the district (previous year data, new census report is awaiting from the State Department)

Category	Population	Production	Productivity
Cattle			
Crossbred	32550	2,65,8,750 lit	1800-2100 lit/lactation
Indigenous	968986	19,37,97,200 lit	400-500 lit/lactation
Buffalo	15604	56,71,300 lit	600-700 lit/lactation
Sheep			
Crossbred	-	-	-
Indigenous	212589	22,10,925 kg	10-12 kg/sheep/year
Goats	696935	78,05,672 kg	11-13 kg/sheep/year
Pigs			
Crossbred	-	-	-
Indigenous	32584	12,05,608 kg	35-40kg/pig/year
Rabbits	-	-	-
Poultry	2869243		
Hens (improved)	713137	12,47,98,975 eggs	170 – 180 eggs/yr/bird
Desi	2156106	19,83,61,752 eggs	90 – 110 eggs/year/bird
Improved	-	-	-
Ducks	1058706	7,67,56,185 eggs	140 – 160 eggs/yr/bird
Turkey and others	75897	6,22,355 kg	6 – 9 kg/year/bird

Source: Annual Action Plan on ARD(2011-12), South 24 Parganas, West Bengal

Category	Area	*Production*	Productivity
Fish			
Marine	i) 158 km coast line ii) 777 sq.km. inshore (upto 10 fathom) iii) 1813 sq.km offshore (upto 10-40 fathom) iv) 17049 sq.km. continental shelf (upto 100 fathom)	1.81 lakh MT	-
Inland	i)Pond/tank-2.76 lakh ha (under culture-2.2 lakh ha)	10.21lakh MT	4450 kg/ha/year
	ii)Beel/baor-0.41 lakh ha (under culture-0.21lakh ha)	0.525lakh MT	2100 kg/ha/year (for cooperatives) 400 kg/ha/year(for non cooperatives)
	iii)Reservoirs-0.16lakh ha (under culture-0.03 lakh ha)	0.016 lakh MT	60 kg/ha/year
	iv)Rivers-1.72 lakh ha	0.043 lakh MT	25 kg/ha/year
	v)Canal-0.80 lakh ha	0.020 lakh MT	25 kg/ha/year
	vi)Sewage fed fishery-0.04 lakh ha (under culture-0.04 lakh ha)	0.252 lakh MT	6000 kg/ha/year
	vii)Brackishwater fisheries-2.10 lakh ha (under culture-0.48 lakh ha)	1.333	2260 kg/ha/year
	viii) Others- Small ditches, water bodies, etc.	0.511 lakh MT	-
	viii)Fish seed production	13846 million	-
Prawn (scampi /shrimp)			
Inland	i)Penaeid	71346 MT	-
	ii)Non-penaeid	23695 MT	-
Marine	i)Penaeid	8449 MT	-
	ii)Non-penaeid	3396 MT	-
Export of fish & prawn	61709 MT worth Rs.1734.32 crores		

Source: Annual report 2011-12, Dept. of Fisheries, Aquaculture, Aquatic resources and Fishing harbours, Govt. of West Bengal.

2.6 Details of operational area / villages (2012-13)

Sl. No	Taluk	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified thrust areas
1.	Baruipur Sub-division Diamond Harbour Sub-Division	Kultali Mathurapur-I Mathurapur-II Joynagar –II Joynagar- I Magrahat - II Patharprotima Kakdwip Namkhana	Dongajora, Shyamnagar, Madhabpur, Bongheri, Kaikhali, Sankijahan Lakshmikantapur Radhakantapur, Gilarchat, Bairagirchak, Dumkal, Ateswartala, Kayeler chawk, Bhadrapara, 27 no. Lat, Mandalpara Nimpith, Tulsighata, Hanarbati, Kasthamahal, Jouthia, Baishata, Sahajadapur, Hatchapuri, Bottala, Uttarpara, Dakshin Barasat, Baharu Amratala, Sherpur Achintanagar, Herambagopalpur, Kuyemuri, Banashyamnagar, Kamdebpur Kamarhat, Takipur Abad, Shibkali Nagar, Madhabnagar Shibnagar, Chandanpiri	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

2.7 Priority thrust areas

Sl. 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.	Post harvest management of crops
10.	Development of marketing channel
11.	Introduction of poly house concept for off season vegetable cultivation
12	Proper feed supplementation for fish & animal farming
13	Providing animal health care service
14.	Modernization of traditional Pan boroz

3. TECHNICAL ACHIEVEMENTS

3. A. Details of target and achievement of mandatory activities by KVK during 2012-13

OFT				FLD			
1				2			
Number of OFTs		Number of farmers		Number of FLDs		Number of farmers	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
12	9	123	108	10	8	347	270

Training				Extension activities			
3				4			
Number of Courses		Number of Participants		Number of activities		Number of participants	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
152	243	4944	7928	25	36	50000	100000

Seed production (q)		Planting material (Nos.)	
5		6	
Target	Achievement	Target	Achievement
55	72	8000	16435

3.1. A Achievements on technologies assessed and refined

OFT-1

1. Title of on-farm trials: Assessment of sustainability on production of *boro* paddy through integrated use of organic manures with chemical fertilizers in South 24-Parganas district.

2. Problem diagnosed: Low productivity of *boro* paddy due to injudicious use of fertilizers.

3. Details of technologies selected for assessment

Farmers' practice: Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O @ 80:40:40 kg/ha & two times manual weeding.

Technology-1 to be assessed: Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O as per soil test based recommendation(70 % N through chemical fertilizers and 30% N through cowdung @ 9.0 t/ha) & two times manual weeding.

Technology-2 to be assessed: Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O as per soil test based recommendation (70% N through chemical fertilisers & 30 %N through poultry manures @ 3.0 t/ha) & two times manual weeding.

Technology-3 to be assessed : Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O as per soil test based recommendation (70 % N through chemical fertilizers and 30%N through Vermicompost @ 3.0 t/ha) & two times manual weeding.

4. Source of technology: M.E. ALI,M.R.ISLAM AND M. JAHIRUDDIN: Effect of integrated use of organic manures with chemical fertilizers in the rice-rice cropping system and its impact on soil health. Bangladesh J. Agril. Res.,34(1):81-90, March, 2009.

5. Production system and thematic area

Rice based production/Integrated nutrient management

6. Performance of the technology with performance indicators

Treatments	No. of trials	Plant height (cm)	No. of panicle /hill	Length of panicle (cm)	No. of spikelet /panicle	No. of filled grains /panicle	Disease incidence (sheath blight)*	Test wt. (gm)	No. of unfilled grains /panicle	Grain yield (qt/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	Benefit-cost ratio
Farmers' Practice	7	93.2	12.2	23.9	7.8	126.2	3.50	13.5	48.8	54.20	40140	56700	16560	1.41
Tech.-1		94.0	13.0	24.9	8.6	151.4	1.50	14.4	52.2	60.90	43818	63400	19582	1.44
Tech.-2		96.4	14.4	25.5	8.8	163.4	1.00	15.2	52.8	63.38	43068	65880	22812	1.52
Tech.-3		95.2	13.6	25.3	8.8	156.6	1.50	14.9	52.4	61.53	54518	64030	9512	1.17
SEm±		0.42	0.37	0.55	0.26	4.31	0.30	0.13	0.44	0.40	-	-	-	-
CD (P=0.05)		0.86	0.76	NS	NS	8.76	0.62	NS	NS	0.82	-	-	-	-

*** Measured in 5 point scale**

Soil test report - before & after trial

	Organic carbon (%)	pH	EC (ds/m)	Available N (kg/ha)	Available P_2O_5 (kg/ha)	Available K_2O (kg/ha)
Before	0.28 (L)	6.08	0.27	155.3(L)	23.0(L)	846.1(H)

	Treatment	Organic carbon (%)	pH	EC(ds/m)	Available N (kg/ha)	Available P_2O_5 (kg/ha)	Available K_2O (kg/ha)
After	Farmers Practice	0.35	5.87	0.26	159.4	25.7	853.4
	Tech.-1	0.40	5.94	0.23	188.2	32.5	857.1
	Tech.-2	0.51	5.98	0.26	201.7	36.0	868.2
	Tech.-3	0.46	5.96	0.24	193.5	34.9	864.4

7. Final recommendation for micro level situation

OFT is in its 2nd year and the final recommendation will be given after another one year.

8. Constraints identified and feedback for research: NA

9. Process of farmers participation and their reaction

The same set of farmers as that of the previous year were considered for the 2nd year who were all selected in a participatory manner.

OFT-2

1.Title of on-farm trials: Assessment of the efficacy of external application of some synthetic plant hormones for induction of femaleness in papaya.

2. Problem diagnosed: One of the major problem in papaya cultivation is the higher male plant population when small and marginal farmers cultivate papaya in the South 24 Parganas district using open pollinated seeds.

3. Details of technologies selected for assessment

Farmers' Practice: Use of bold, black seed for seedling raising. No other treatment.

Technology Option 1: Spraying of GA3 @ 25 ppm twice at 45 and 75 days after transplanting.

Technology Option 2: Spraying of NAA@ 100 ppm twice at 45 and 75 days after transplanting.

Technology Option 3: Spraying of Ethrel @ 500 ppm twice at 45 and 75 days after transplanting.

4. Source of technology: Mitra, S.K. and Ghanta, P.K. (2000). Modification of sex expression in Papaya *(Carica papaya)*, CV, Ranchi. *Acta Horticulture*, **515**: 281-286

5. Production system and thematic area: Orchard based production system - Management of young plants/orchards

6. Performance of the technology with performance indicators

Crop is in vegetative growth stage. Result will be available by July, 2013.

Technology option	No. of trials	Parameters			Yield (t/ha/ year)	Cost of cultivation (Rs./ ha)	Gross return (Rs./ ha)	Yield (t/ha/ year)	BC ratio
		Days to 50% flowering	% female plant	% male plant					
Farmers' Practice	10	1st year results will be available by September, 2013							
Technological Option 1									
Technological Option 2									
Technological Option 3									
CD (p=0.05)									

OFT-3

1. Title of on-farm trials: Assessment of the performance of ginger and turmeric under Sapota orchard for better profitability from orchard based production system

2. Problem diagnosed: Low profitability from the Sapota orchard due to non utilization of orchard floor.

3. Details of technologies selected for assessment/refinement

Farmers' Practice: Sapota orchard floor remain fallow without cultivation (Sapota plants at 25ft X 25ft spacing, without any fertilizer application and irrigation)

Technological Option 1: Cultivation of turmeric (var. Surama, at 10cm x 25cm spacing, need based irrigation and cow dung manure @ 5t/ha) underneath the Sapota orchard

Technological Option 2: Cultivation of Ginger (var. Gorubathan, at 10cm x 25cm spacing, need based irrigation and cow dung manure @ 5t/ha) underneath the Sapota orchard

3. Source of technology: Dept. of Spices & plantation crops, BCKV

4. Production system and thematic area: Orchard based production system/Intercropping in orchard

5. Performance of the technology with performance indicators

Technology option	No. of trials	Data related to problem addressed			Yield of sapota (t/ha)	Cost of cultivation (Rs./ ha)	Gross return (Rs./ ha)	Net return (Rs./ ha)	BC ratio
		Sapota fruit size (g)	Yield of ginger (q/ha)	Yield of turmeric(q/ha)					
Farmers' Practice	7	120.36	-	-	23.73	69432.00	159875.00	90443.00	2.30
Technological Option 1		131.87	-	37.92	27.11	102347.00	256476.00	154129.00	2.51
Technological Option 2		130.93	13.32	-	26.29	103755.00	236287.00	132532.00	2.28
CD (p=0.05)		9.04	-	-	0.67	-	-	-	-

6. Final recommendation for micro level situation

Result shows that turmeric is the best option as shown in technological option I. Growing turmeric produces higher yield as compared to ginger. Disease like rhizome rot in ginger (13.7%) was higher than turmeric (8.4%). Also, ginger uptakes higher nutrient from soil than turmeric thereby affecting production of sapota in technology option 2. Considering this aspect, growing turmeric in the sapota orchards of South 24 Parganas district is recommended.

7. Constraints identified and feedback for research: N.A.

8. Process of farmers participation and their reaction

Designed jointly by researcher and farmer and managed by farmers.

OFT-4

1. Title of on-farm trials: Assessment of production of sunflower in low land situation of coastal saline belt of South-24-Parganas by effective control measures against fungal wilt disease

2. Problem diagnosed: Cultivation of sunflower in the rice fallow, low land situation of coastal saline belt of South 24-Parganas during *rabi* season is rapidly getting popularized. However, the incidence of fungal wilt disease with increased severity, year after year, has become one of the major limiting factor to its productivity as well as net return. *Sclerotium rolfsi,* a soil borne fungal pathogen and the causal agent of the disease, is difficult to manage once it has established in the field. Considering its nature of survivality, infestation and spread, the following chemical as well as bio-control based management practices were exercised at the farmers' plot to study their comparative performances in respect of disease severity, crop yield and B:C ratio.

3. Details of technologies selected for assessment

Farmers' Practice: Variety – DRSH 1, spacing of 60 cm x 30 cm, fertilizer @ 60:30:20 kg/ha NPK, no seed treatment and no other control measures

Technology-1 to be assessed: Farmers practice + Seed treatment with (Carboxin + Thiram) @ 3 g/kg seed and need based spray with (Metalaxyl 8% + Mancozeb 64%) 72 WP @ 2.5 g / L water

Technology-2 to be assessed: Farmers practice + Seed treatment with *Trichoderma viride+Pseudomonas fluorescens* @ 5g each/kg seed

Technology-3 to be assessed: Farmers practice + Seed treatment with (*Trichoderma viride+Pseudomonas fluorescens*) @ 5 g each per kg seed and need based spray with (*Trichoderma viride* + *Pseudomonas fluorescens*) @ 5g each per L water

4. Source of technology: Govindappa, M., Rai, V. R. and Lokesh, S. 2011. In vitro and in vivo responses of different seed treating agents against wilt disease of safflower. Journal of cereals and oilseeds. 2(1): 16-25, available online at http://www.academicjournals.org.jco

5. Production system and thematic area: Rice based production system with Integrated Pest Management

6. Performance of the technology with performance indicators

Treatments	No. of trials	Disease severity (%)*	Yield	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	BC ratio
Farmers' practice:	10	10.2	The OFT is ongoing, hence final result is awaiting.				
Technology-1 to be assessed		8.3					
Technology-2 to be assessed		7.0					
Technology-3 to be assessed		6.1					
SEm ±		0.188					
CD (p=0.05)		0.544					

* The disease severity data is taken upto the crop age of 60 DAS.

7. Final recommendation for micro level situation: The OFT is ongoing, hence final result is awaiting.

8. Constraints identified and feedback for research: Due to untimely rainfall, the sowing of Sunflower was delayed.

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 is 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 are taking keen interest in the trial. The OFT is well managed by the beneficiaries themselves.

OFT-5

1. Title of on-farm trials: Refinement of the stocking density of goldfish reared in net enclosures fixed in small domestic ponds of South 24 Parganas

2. Problem diagnosed: Low profitability of goldfish reared in net enclosures

3. Details of technologies selected for assessment

Farmers practice: Rearing of gold fish fry (10mm) in net enclosure of varying size with a stocking density of about 2500-3000 no.

Technology-1 refined: Rearing of gold fish fry (10mm) in net enclosure of 6'X3'x3' at stocking density of 1 cm fish/20 cm^2, *viz*. 810 no.

Technology-2 refined: Rearing of gold fish fry (10mm) in net enclosure 6'X3'x3' at stocking density of 1 cm fish/15cm^2, viz. 1080 no.

4. Source of technology: Central Institute of Freshwater Aquaculture, Bhubaneswar

5. Production system and thematic area: Fish based production system/ Ornamental fisheries

6. Performance of the technology with performance indicators

Treatments	No. of trials	Length of fish (cm)	Girth of fish (cm)	Survivability (%)	Disease incidence	Colour of fish	Yield (No.)	Cost of cultivation (Rs./unit)	Gross return (Rs.)	Net return (Rs.)	BC ratio
Farmers' practice	7	3.5	1.8	42	Malnutrition, dropsy	Pale	1050	980.00	1600.00	300.00	1.63
Technology-1 to be assessed		6.2	3.4	70	Nil	Bright	567	460.00	2268.00	1808.00	4.93
Technology-2 to be assessed		5.0	2.3	64	Nil	Bright	691	490.00	2764.00	2274.00	5.64
SEm+	-	0.43	0.09	6.28	-	-	108.9	-	-	-	-
CD (p=0.05)	-	1.10	0.22	15.7	-	-	272.4	-	-	-	-

7. Final recommendation for micro level situation: To maximize profitability from ornamental fish culture, it is recommended that Technological Option 2 may be adopted. In spite of the higher stocking density in Technological Option 2 leading to lowered survivability and growth of the fish than in Technological Option 1, the effect is not felt in the ultimate profit because the colour and shape of fish do not have any effect on the market price, viz. Rs. 4.00 per piece. Hence, a little bit of higher stocking density than the recommended level by CIFA (Technological Option 1) is advocated for better profit.

8. Constraints identified and feedback for research: Timely availability of more high value ornamental fish seeds is needed. It is often observed that some ornamental fish seed, produced from quality parents, do not develop bright colour even after reaching marketable size which needs to be addressed to maximize profit of the ornamental fish farmers. Apart from this, continuous nibbling of the nets by the stocked fish in the pond leads to their damage. Hence, a more durable quality of nets is desirable for long term benefit.

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.

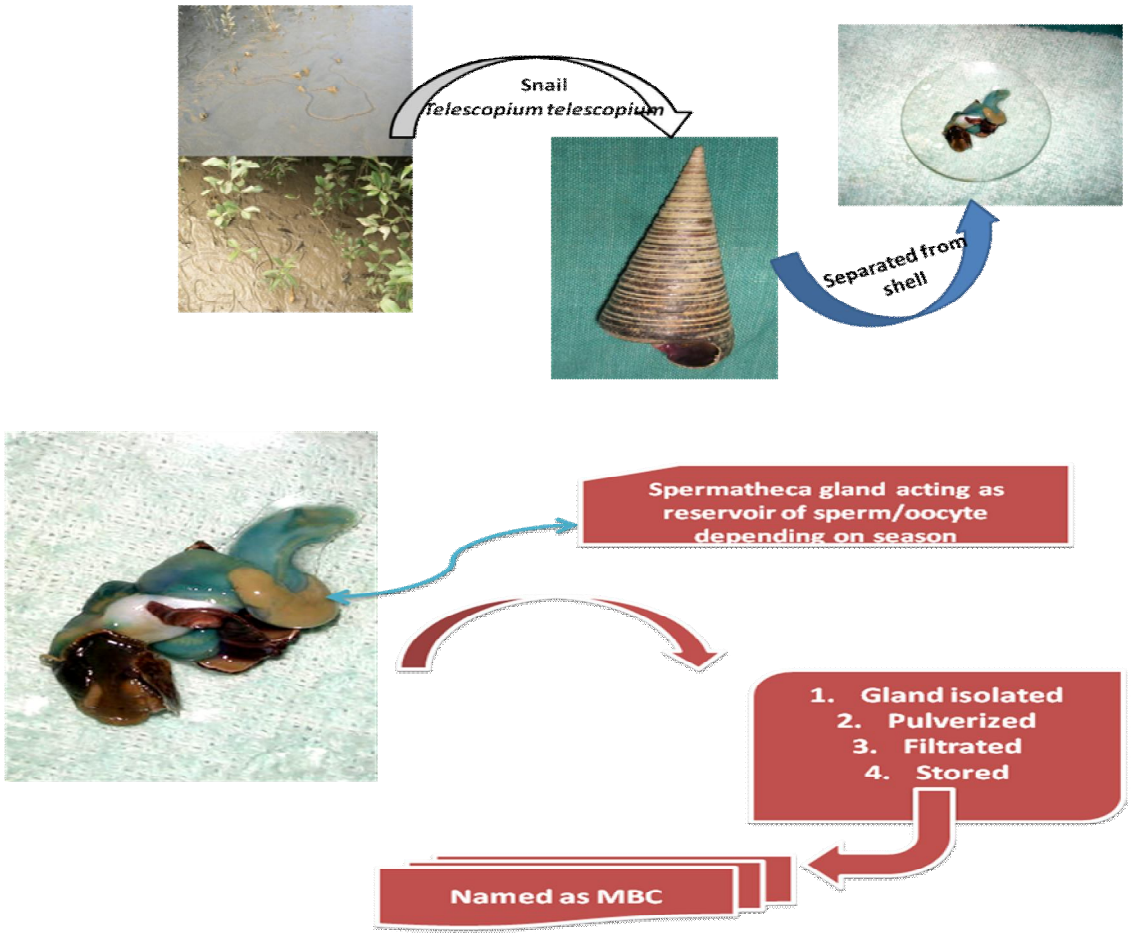
OFT-6

1. Title of on-farm trials: Assessment of a non conventional immuno-stimulant of marine origin (MBC) in goats for prevention of infectious diseases.

2. Problem diagnosed: Non availability of low cost medicines and vaccines for prevention and treatment of goat diseases

3. Details of technologies selected for assessment/refinement:

Procedure for preparation of MBC:



Chemical composition of MBC:

Inorganic phosphorus 0.96 mg/dL, Iron 212 ìg/dL, Magnesium 10.6 mEq/L, Copper 55 ppm, Lithium 0.4 mEq/L, Non-Protein Nitrogen 1.7 mg/dL, Urea 12 mg/dL, Creatinine 0.2 mg/dL, Cholesterol 38 mg/dL, Triglycerides 34 mg/dL, HDL 8 mg/dL, Total protein 286 mg/dL, Albumin 180 mg/dL, Globulin 106 mg/dL, Sodium 82 mEq/L, Potassium 4.5 mEq/L, Bicarbonate 12 mEq/L, Glucose 25 mg/dL, 19 Insulin 6.2 ìIU/mL, GGT 16.0 U/L, CPK 2.0 IU/L, TSH 0.05 ìIU/mL, SGPT 148 U/L, SGOT 352 U/L, LDH 17 IU/L, AP 10 U/L, ALP 179 U/L, Testosterone 1.75 ng/mL, Progesterone 5.0 ng/mL, Estradiol 201 pg/mL, Amylase 2.0 IU/L, Lipase 29.0 IU/L, Vitamin B12 1504.0 pg/mL, CPK 2.0IU/L

BACKGROUND FOR DESIGNING OFT:

Immunodeficiency (or immune deficiency) is a state in which the ability of immune system to fight against infectious disease is compromised or is entirely absent. Most cases of immunodeficiency are acquired. An animal having immunodeficiency of any kind is said to be immunocompromised. An immunocompromised animal may be particularly vulnerable to opportunistic infections, in addition to the normal infections that affect animals.

Most of the presently available drugs used in immunosuppressive or compromised conditions, are either immunostimulant or immunomodulator of synthetic origin and hence required to be applied many times to achieve optimum efficacy for longer period. Besides, their chemical properties, heavy cost and cytotoxicity limit the use of such synthetic immunostimulant drugs. The pharmacologically active biomolecules obtained from the glandular extract of the spermatheca and/or ovotestis of marine cone snail *Telescopium telescopium* possess novel properties to potentiate or able to enhance the immune system of the body is from a natural biological source, possess no/minimal cytotoxicity to normal body cells.

Immuno-stimulants or immuno-potentiators lead to a nonspecific stimulation of the immunological defense system. Nonspecific immuno-stimulants do not affect memory cells. Recent studies suggest that biogenic compounds isolated from marine organisms/ animals such as from microbes, sponges, coelenterates, gorgonians, soft and hard corals, algae, fungi, mollusks, or protochordates, have been shown to exhibit antibacterial, antiviral, antiparasitic, antifertility, antitumor, and many other potent pharmacological activities most of which initiate and act by immunostimulation or by immunomodulation of the bodies' defense mechanism. Thus, marine ecosystem represents vast important and untapped sources and resources for novel biogenic compounds for welfare of the society and for animal kingdom.

KVK has intervened to develop a technology which can boost up the immunity as a whole thus any kind of infectious diseases can be prevented. The present invention relates to biogenic molecules isolated from the glandular extract of the spermatheca and/or ovotestis from the marine gastropod mollusk, *Telescopium telescopium* that shows promising and significant results as potent immunostimulator in higher vertebrate like goat (*Capra hircus*) and also effective to obtain the optimum FCR in broiler as revealed from OFT conducted by the KVK.

- **Breed selected:** Black Bengal Goat
- **Unit size:** 5 numbers of goat per technology option
- **Total number of unit:** 15
- Repeated each year for successive two years

Farmers practice: Deworming (Albendazole @ 7mg/kg body weight, repeated after 21 days, then every three months interval).

Technology option-1: Farmers practice + MBC @ 3 mg/Kg b. wt -IM, single dose 10 days after 2nd dose of deworming.

Technology option -2: Farmers practice + Goat pox vaccination after 10days of 2nd deworming

Technology option -3: Farmers practice + MBC @ 3 mg/Kg b. wt -IM, single dose 10 days after 2nd dose of deworming.+ Goat pox vaccination (after 3 wks of MBC injection)

4. Source of technology: *Roy et al.,* Potential Future Applications of Spermatheca Extract from Marine Snail Telescopium telescopium. Turkish Journal of Veterinary and Animal Sciences. 34, (2010), 533-5405.

5. Production system and thematic area

Livestock based production system/Animal health management

6.Performance of the technology with performance indicators

1st year:

Category	No. of trials	FP (40 animals)	Technology option 1 (40 animals)	Technology option 2 (40 animals)	Technology option 3 (40 animals)
Percentage of ailing animals due to goat pox	15	47.5 (19)	22.5 (9)	25.0 (10)	7.5 (3)
Percentage of death/year		22.5 (9)	12.5 (5)	15.0 (6)	2.5 (1)
Average body weight (Kg)		8.9	10.2	9.8	12.1
Involution period (Days)		118	105	112	102
Percentage Increase in stock strength/year		30.0 (12)	75.0 (30)	42.5 (17)	95.0 (38)
Percentage in Body weight gain		11.4	15	11.5	15.2

2nd year:

Category	No. of trials	FP (40 animals)	Technology option 1 (40 animals)	Technology option 2 (40 animals)	Technology option 3 (40 animals)
Percentage of ailing animals	15	45.0 (18)	17.5 (7)	15.0 (6)	0.0 (0)
Percentage of death/year		20.0 (8)	7.5 (3)	10.0 (4)	0.0 (0)
Average body weight (Kg)		8.7	11.5	11.2	13.5
Involution period (Days)		116	99	101	95
Increase in stock strength/year		32.5 (13)	102.5 (41)	45.0 (18)	155.0 (62)
Percentage in Body weight gain		11.5	14.8	11.4	15.5

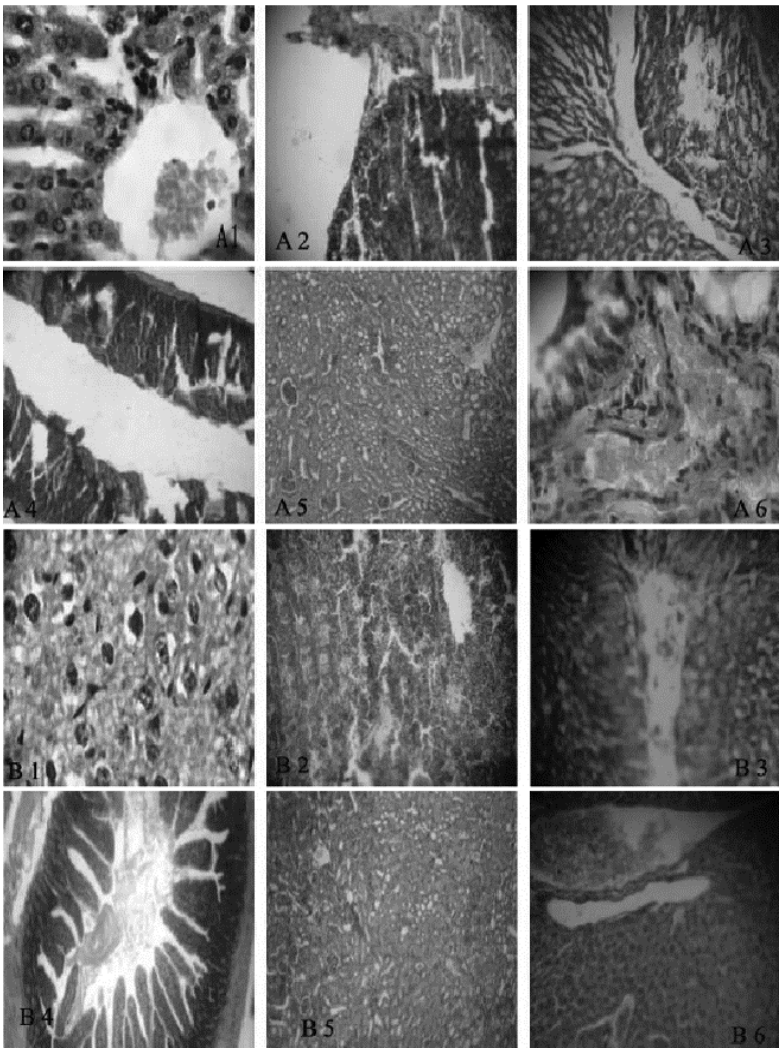
7. Final recommendation for micro level situation

From the above study, it is revealed that Technology option 3 (Deworming -Albendazole @ 7mg/kg body weight, repeated after 21 days, then every three months interval + MBC @ 3 mg/kg b. wt -IM, single dose 10 days after 2nd dose of deworming + Goat pox vaccination after 3 wks of MBC injection) gave the best result in respect to minimize the pox disease incidence as well as improve production and reproduction traits resulting to more income generation. So this may be recommended for large scale adoption in the routine animal husbandry practices.

OTHER INVESTIGATION:

Toxicological investigation

Toxic effect is one of the limitations of currently available synthetic chemotherapeutic drugs. Since 3-mg/Kg body weight intramuscularly is the most effective dose of the biogenic compound (MBC), toxicological effect was evaluated with this dose following standard toxicological parameters.



1. Hematological parameters: Showed no toxic effect.

2. Serological examination: No significant toxicological consequences were found.

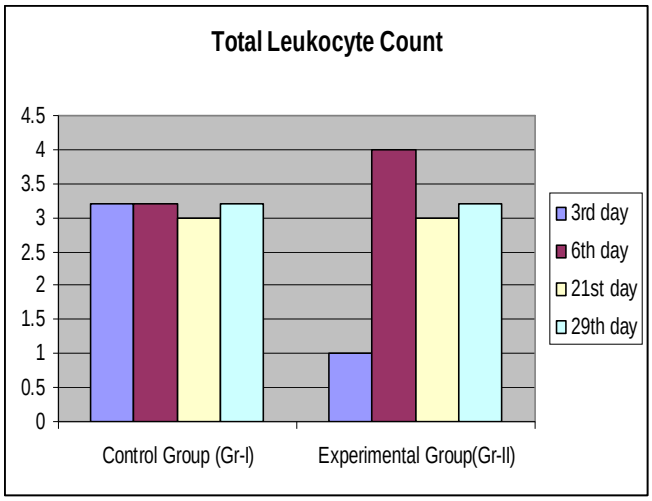
3. Physiological parameters: All the physiological parameters including appetite, water intake etc were not altered due to treatment with the compound.

4. Histopathological examination: No major toxicity at the cellular level has been noticed.

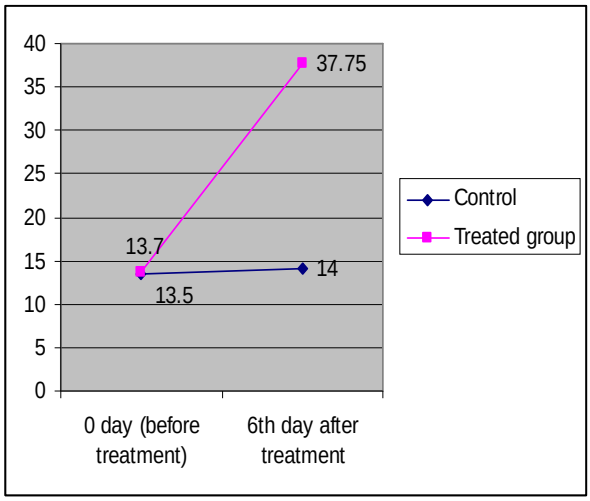
3rd Day:
No evidence of degeneration or necrosis of liver tissue (A1).
Spleenic tissue with corticomedullary differentiation. Partly congested Medalla with fair number of macrophages (A2).
Well arranged Muscle layer, mucous and submucous membrane of abomasum. Mucosal glands normal (A3).
Normal intestinal villi lined by columnar epithelium (A4).
Glomeruli appeared normal with moderate congestion of blood vessel (A5).
Mild dilated Peribrochiolar alveoli with a few rupture of their wall. Mild congested intercommunication vessels (A6)

B. 21st Day:
Mild fatty changes in few hepatocytes Lobular architecture maintained (B1).
Spleenic tissue with corticomedullary differentiation (B2).
Well identified muscle coat, mucous and submucous membrane of abomasum. Superficial mucosa was lined by columnar epithelium (B3).
Intestinal wall showed normal muscle, mucous coat, and mucous membrane with villi formation (B4).
Renal parenchyma including glomeruli, tubules, blood vessels and interstitial tissues were identified (B5).
Alveolar architecture of lung parenchyma, bronchi, and bronchiole were well identified. (B6).

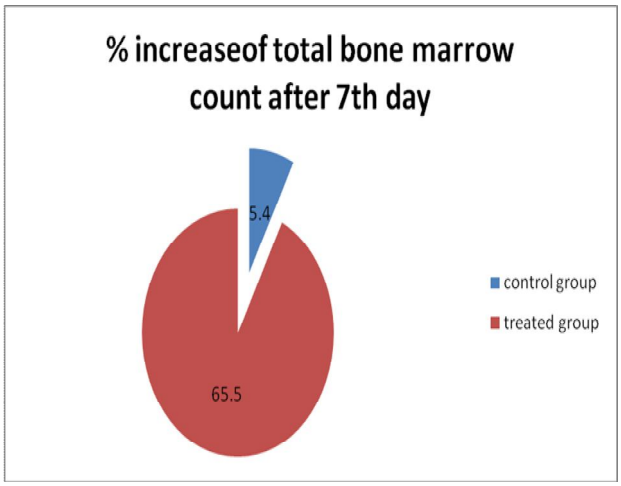
The present intervention has revealed that the compound/glandular extract (MBC) has shown its efficacy to increase the total leukocytic count maintaining the differential leukocytic count as same. At the same time, this extract was able to stimulate the total bone marrow count tremendously collected under light sedation and femoral bone marrow aspiration.

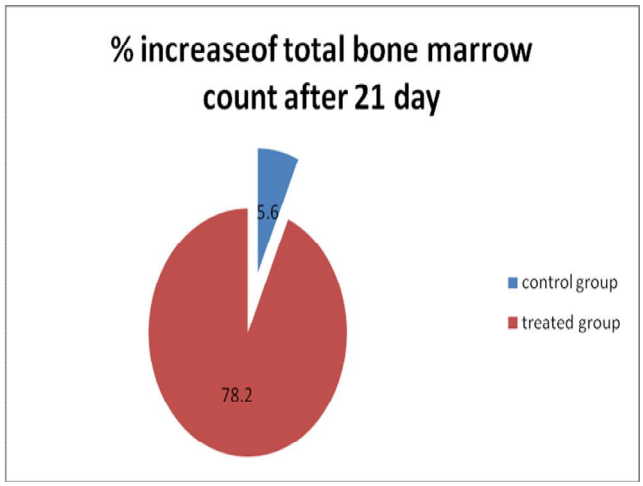


Graph showing the effect of the bioactive compound on Total leukocyte count in goats. (Gr-I- Farmers Practice, Gr-II- Technology option 3)



Graph Showing the effect of the bioactive compound on Bone Marrow Count in goats. (Control- Farmers Practice, Treated Group- Technology option 3)





Control group- Farmers Practice, Treated Group- Technology option 3)

8. Constraints identified and feedback for research: NA

9. Process of farmers participation and their reaction:

The trial has been set following problem identification by the farmers during a PRA exercise conducted in the village. The goat farmers expressed that a low cost easily available preventive for goats is urgently required for successful adoption of goat farming in the villages.

Patent: Application No. 1399/KOL/2010 dated 13.12.2010

OFT-7

1. Title of on-farm trials: Assessment of the efficacy of non conventional bird feed on production attributes of ornamental birds (Budgeriger) reared by the farm women of South 24 Parganas

2. Problem diagnosed

The commercial production of ornamental bird is a profitable business now a days especially for the women folk in Sundarban region of South 24 Parganas. But due to heavy price hike of the concentrate feed, the profit margin is becoming less and the farmers are often loosing their interest in this farming system. The availability of other non conventional nutrient rich feed (locally available) and their actual dosing may solve the problem.

3. Details of technologies selected for assessment

Farmers practice : Concentrate feed @ 1kg/ day for 100 birds+ *tulsi* leaves

Tech.Option-1 : Commercial layer feed @1kg/ day for 100 birds+ *tulsi* leaves & liver tonic 5 ml/100 bird for 5 consecutive days with a pause of 15 days and repeat

Tech. Option -2 : Broken cereal mix (75% broken rice+ 25% broken wheat) @ 1.3kg /day for 100birds+ *tulsi* leaves

Tech. Option -3 : Broken cereal mix (75% broken rice+ 25% broken wheat)@ 1.3kg/dayfor100birds+leafy vegetables (*hinche, kulekhara, thankuni*) @ 200gm /week distributed in 2 days for 100 birds+ *tulsi* leaves + liver tonic 5 ml/100 bird for 5 consecutive days with a pause of 15 days and repeat

4. Source of technology: OST conducted in KVK, Nimpith

5. Production system and thematic area: Livestock based production system, feed management

6. Performance of the technology with performance indicators (8 months study data)

Treatments	No. of trials	No. of egg laid/pair/cycle	Hatchability (%)	Chick mortality (%)	Disease incidence(% ill)	Colour intensity (visual point scale)	Diversity in diet during hunger time	Hunger time burrowing	BC ratio
Farmers' practice	22	4.6	78.0	12.5	13.0	+	Rice, potato, veg (2Day)	+++	-
Technology-1 to be assessed		5.1	70.0	15.5	18.5*	+	Rice, potato, veg (2Day)	+++	-
Technology-2 to be assessed		5.2	76.5	12.0	13.0	+	Rice, potato, veg (3Day)	+++	-
Technology-3 to be assessed		5.5	72.5	10.5	22.5*	++	Rice, potato, veg (2Day), Small fish (1day)	++	-

*** Feeding of commercial layer feed, green leaves may cause digestion problems, thus the model is modified and liver tonic is added with T1 and T3.**

(The experiment will be conducted for 2 years as the birds will be in profitable and sustainable production for two years only)

7. Final recommendation for micro level situation: OFT is ongoing, hence final result is awaiting.

8. Constraints identified and feedback for research

- ✓ Feeding of commercial layer feed, green leaves causes digestion problems
- ✓ Liver tonic is added with T1 and T3.
- ✓ Marketing hazards due to ignorance of the concerned authority and resultant heckling
- ✓ Non issuing of trade license

9. Process of farmers participation and their reaction

The trial has been set following problem identification by the farmers during PRA exercise conducted in the village. From the exercise it is revealed that some leafy vegetables and unfamiliar leafy vegetables are used occasionally in their diet and these are easily available in huge quantity in these areas.

Besides, the farmers opined that due to heckling during marketing of the produce they are facing a problem which should be solved.

OFT-8

1. Title of on-farm trials: Assessment of different techno-management aspect on incidence of mastitis in dairy animals of South 24 Parganas district

2. Problem diagnosed: high incidence of mastitis hampering the production of milk.

3. Details of technologies selected for assessment:

Farmers practice : Milking of cows by stripping with uneven pressure

Tech. Option -1 : FP +half an hour standing posture of animal

Tech. Option -2 : Full hand method of milking

Tech. Option -3 : Full hand method along with standing posture of animal

4. Source of technology: http://www.omafra.gov.on.ca/english/ livestock/dairy/facts/90-104.htm

5. Production system and thematic area: livestock based production system, Dairy Management

6. Performance of the technology with performance indicators

Treatments	No. of trials	Udder & teat injury (%)	Incidence of Mastitis	Presence of flakes and blood in milk (visual point scale)	% increase in Production of milk	Ergonomic parameter (Heart rate)	Angle of deviation (Neck)
Farmers' practice	15	32.5	Under study	+++	(-)2.5	Peak : 128 Average : 107	55^0
Technology-1 to be assessed		29.0		++	(-)0.5	Peak : 114 Average : 106	55^0
Technology-2 to be assessed		19.0		++	0.5	Peak : 107 Average : 99	15^0
Technology-3 to be assessed		10.5		+	1.5	Peak : 92 Average : 83	15^0

7. Final recommendation for micro level situation: NA

8. Constraints identified and feedback for research: None

9. Process of farmer's 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.

OFT-9

1.Title of on-farm trials: Assessment of the different food preservatives to increase the keeping quality of Joynagarer Moya in Sundarban region

2.Problem diagnosed: Joynagarer Moya is a special type of sweet which is prepared in South 24 Parganas particularly in Joynagar I & Joynagar II block during winter season . It is very famous due to the special taste but it can be preserved only for 3 days .So it will be beneficial if the shelf life of the sweet can be increased by adding some good preservatives to minimize the storage loss.

3.Details of technologies selected for assessment:

Farmers' Practice: Preparation of molasses from date palm juice and mixing with puffed paddy , Kheer for making moya, having 3 days shelf life.

Technological Option 1: Preparation of molasses from date palm juice with 0.1% Potassium meta bi sulphite and mixing with puffed paddy, kheer for making moya

Technological Option 2: Preparation of molasses from date palm juice with sodium benzoate 0.2% after adjustment of acidic pH with Citric acid and mixing with puffed paddy, kheer for making moya

4.Source of technology:

1. http://en.wikipedia.org/wiki/Potassium_metabisulfite. 2. http://en.wikipedia.org/wiki/Sodium benzoate

5.Production system and thematic area: Homestead based production system/ Storage loss minimization techniques

6. Performance of the technology with performance indicators:

Treatment	**No. of trials**	**Taste* (after 3 days)**					**Off flavor* (after 3 days)**					**Overall acceptability* (after 3 days)**				
		Days														
		1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Farmers Practice	15	6	4	2	0	0	5	3	0	0	0	3	0	0	0	0
Technology option 1		7	5	4	0	0	6	4	3	2	0	8	5	4	0	0
Technology option 2		9	7	6	2	0	9	7	6	3	0	9	8	7	3	0

*Measured in 9 point hedonic scale with 15 panelist

7. Final recommendation for micro level situation:

Hence it is recommended for the small industry of "Joynagarer Moya " to add sodium benzoate 0.2% after adjustment of acidic pH with citric acid and mixing with puffed paddy, kheer for making moya which is a suitable method for increasing the shelf life upto 5 days.

8.Constraints identified and feedback for research: NA

9. Process of farmers participation and their reaction: Designed by researcher and managed by rural youths

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

INTEGRATED NUTRIENT MANAGEMENT

Problem definition: Low productivity of *boro* paddy due to injudicious use of fertilizers

Technology to be assessed: Assessment of sustainability on production of *boro* paddy through integrated use of organic manures with chemical fertilizers in South 24-Parganas district. Injudicious application of fertilisers in *boro* paddy is widespread in the district of South 24 Parganas which results in decline in the productivity and soil health status. This also increases the cost of cultivation due to an increased use of pesticides. Hence, KVK, South 24 Parganas initiated a trial to assess the efficacy of an integrated use of organic manures with chemical fertilizers in *boro* paddy. From the first year's trial it was observed that the technology option 2 i.e. transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O as per soil test based recommendation (70% N through chemical fertilisers & 30 %N through poultry manures @ 3.0 t/ha) & two times manual weeding has given 16.74% higher yield than the farmers practice. An increase in the net income of Rs.6252.00/ha was observed over farmers practice with a BC ratio of 1.52. The OFT is in its 2nd year and the final recommendation will be given after another one year.

Table: Evaluation of cultivation of transplanted rice through integrated nutrient management

Technology option	Avg yield (q/ha)	Plant height (cm)	No. of panicle /hill	Length of panicle (cm)	No. of spikelet /panicle	No. of filled grains /panicle	Disease incidence (sheath blight)*	Test wt. (gm)	No. of unfilled grains /panicle	Cost of cultivation (Rs / ha)	Gross return (Rs/ ha)	Net return (Rs/ ha)	BC ratio
Farmers' practice: Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O @ 80:40:40 kg/ha & two times manual weeding	54.20	93.2	12.2	23.9	7.8	126.2	3.50	13.5	48.8	40140	56700	16560	1.41
Technology assessed 1: Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O as per soil test based recommendation(70 % N through chemical fertilizers and 30% N through cowdung @ 9.0 t/ha) & two times manual weeding	60.90	94.0	13.0	24.9	8.6	151.4	1.50	14.4	52.2	43818	63400	19582	1.44
Technology assessed 2: Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O as per soil test based recommendation (70% N through chemical fertilisers & 30 %N through poultry manures @ 3.0 t/ha) & two times manual weeding	63.38	96.4	14.4	25.5	8.8	163.4	1.00	15.2	52.8	43068	65880	22812	1.52
Technology assessed 3: Transplanting of 25 days old seedlings of var. WGL-20471 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O as per soil test based recommendation (70 % N through chemical fertilizers and 30%N through Vermicompost @ 3.0 t/ha) & two times manual weeding	61.53	95.2	13.6	25.3	8.8	156.6	1.50	14.9	52.4	54518	64030	9512	1.17
SEm±	0.40	0.42	0.37	0.55	0.26	4.31	0.30	0.13	0.44	-	-	-	-
CD (P=0.05)	0.82	0.86	0.76	NS	NS	8.76	0.62	NS	NS	-	-	-	-

*** Measured in 5 point scale**

Soil test report - before & after trial

Before	Organic carbon (%)	pH	EC (ds/m)	Available N (kg/ha)	Available P_2O_5 (kg/ha)	Available K_2O (kg/ha)
	0.28 (L)	6.08	0.27	155.3(L)	23.0(L)	846.1(H)

After	Treatment	Organic carbon (%)	pH	EC (ds/m)	Available N (kg/ha)	Available P_2O_5 (kg/ha)	Available K_2O (kg/ha)
	Farmers Practice	0.35	5.87	0.26	159.4	25.7	853.4
	Tech.-1	0.40	5.94	0.23	188.2	32.5	857.1
	Tech.-2	0.51	5.98	0.26	201.7	36.0	868.2
	Tech.-3	0.46	5.96	0.24	193.5	34.9	864.4

MANAGEMENT OF YOUNG PLANTS/ORCHARDS

Problem definition: Low profitability in papaya cultivation due to higher male plant population in the papaya plantation using OP seeds by the small and marginal farmers

Technology assessed: Assessment of the efficacy of external application of some synthetic plant hormones for induction of femaleness in Papaya

Papaya cultivation is a profitable venture by the small and marginal farmers. But normal OP seeds produce higher male plant population in the main field, which in turn makes the venture cost intensive and less profitable. In the present OFT, some synthetic plant hormones would be applied to young seedlings, as reported in earlier works, to study induction of femaleness in the South 24 Parganas agro-climatic condition and to make papaya farming profitable.

Table: Evaluation of different synthetic plant hormones in inducing femaleness in papaya

Technology option	Avg yield (q/ha)	% increase	Days to 50% flowering	% female plant	% male plant	Cost of cultiva-tion (Rs / ha)	Gross return (Rs/ ha)	Net return (Rs/ ha)	BC ratio
Farmers' Practice: Use of bold, black seed for seedling raising. No other treatment	The plants are in vegetative growth stage.								
Technology Option 1: Spraying of GA3 @ 25 ppm twice at 45 and 75 days after transplanting									
Technology Option 2: Spraying of NAA@ 100 ppm twice at 45 and 75 days after transplanting									
Technology Option 3: Spraying of Ethrel @ 500 ppm twice at 45 and 75 days after transplanting									

MANAGEMENT OF OLD SAPOTA ORCHARDS

Problem diagnosed: Low profitability from the sapota orchard due to non utilization of orchard floor

Technology assessed: Assessment of the performance of ginger and turmeric under the sapota orchard for better profitability from orchard based production system

Result shows that turmeric is the best option as shown in technological option I. Growing turmeric produces higher yield as compared to ginger. Disease incidence in ginger was higher than turmeric which hampered yield of ginger. Also, ginger may uptakes higher nutrient than turmeric which affects production of sapota. So, growing turmeric in the sapota orchards of South 24 Parganas district is recommended.

Table: Performance of the technology with performance indicators

Technology option	No. of trials	Data related to problem addressed			Yield of sapota (t/ha)	Cost of cultivation (Rs./ ha)	Gross return (Rs./ ha)	Net return (Rs./ ha)	BC ratio
		Sapota fruit size (g)	Yield of ginger (q/ha)	Yield of turmeric (q/ha)					
Farmers' Practice: Sapota orchard floor remain fallow without cultivation (Sapota plants at 25ft X 25ft spacing, without any fertilizer application and irrigation)	7	120.36	-	-	23.73	69432.00	159875.00	90443.00	2.30
Technological Option 1: Cultivation of turmeric (var. Surama, at 10cm x 25cm spacing, need based irrigation and cow dung manure @ 5t/ha) underneath the Sapota orchard		131.87	-	37.92	27.11	102347.00	256476.00	154129.00	2.51
Technological Option 2: Cultivation of Ginger (var. Gorubathan, at 10cm x 25cm spacing, need based irrigation and cow dung manure @ 5t/ha) underneath the Sapota orchard		130.93	13.32	-	26.29	103755.00	236287.00	132532.00	2.28
CD (p=0.05)		9.04	-	-	0.67	-	-	-	-

INTEGRATED PEST MANAGEMENT

Problem definition: Low productivity of sunflower due to severe infestation of fungal wilt disease

Technology to be assessed: Assessment of production of Sunflower in low land situation of coastal saline belt of South-24-Parganas by effective control measures against fungal wilt disease

Cultivation of sunflower in the fallow low land situation of coastal saline belt of South-24-Parganas during *rabi* season is rapidly getting popularized. However, the incidence of fungal wilt disease with increased severity, year after year, has become one of the major limiting factor to its productivity as well as net return. *Sclerotium rolfsi*, a soilborne fungal pathogen and the causal agent of the disease, is difficult to manage once it has established in the field.

To address this problem, KVK, South 24 Parganas, is conducting a trial in Bongheri village, to assess the efficacy of chemical fungicides as well as bio-control agent based management practices against the conventional practices where no control measures are taken up by the farmers.

Table: Efficacy of different fungicides & bio-pesticides on *Sclerotium* wilt of sunflower

Treatments	No. of trials	Disease severity (%)*	Yield	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	BC ratio
Farmers' practice: Variety – DRSH 1, spacing of 60cm X 30 cm, fertiliser @ 60:30:20 kg/ha NPK, no seed treatment and other control measures	10	10.2	The OFT is ongoing, hence final result is awaiting.				
Technology-1 to be assessed: Seed treatment with (Carboxin + Thiram) @ 3 g/Kg seed and Need based spray with (Metalaxyl 8% + Mancozeb 64%) 72 WP @ 2.5 g / L water		8.3					
Technology-2 to be assessed: Seed treatment with *Trichoderma viride+Pseudomonas fluorescens* @ 5g each/Kg seed		7.0					
Technology-3 to be assessed: Seed treatment with (*Trichoderma viride+Pseudomonas fluorescens*) @ 5 g each per Kg seed and need based spray with (*Trichoderma viride + Pseudomonas fluorescens*) @ 5g each per L water		6.1					
SEm±		0.188					
CD (P=0.05)		0.544					

* The disease severity data is taken upto the crop age of 60 DAS.

DIVERSIFIED FISH FARMING

Problem definition: Low profitability of goldfish reared in net enclosures

Technology refined: Refinement of the stocking density of goldfish reared in net enclosures fixed in small domestic ponds of South 24 Parganas Bongheri village of Kultali block, South 24 Parganas was selected for Refinement of the stocking density of goldfish reared in net enclosures fixed in small domestic ponds. The result showed that the inspite of higher stocking density (1 cm fish/15cm^2) than the recommended level (1 cm fish/20cm^2) by CIFA, the net profit was more in the refined practices as the number of fish production was more maintaining the same colour as practiced by CIFA recommendation. Thus it may be advised to the farmers for adoption of this refined technology (Technology option 2) with maximum profit.

Table: Refinement of the stocking density of goldfish reared in net enclosures fixed in small domestic ponds of South 24 Parganas

Technology option	No. of trials	Length of fish (cm)	Girth of fish (cm)	Survivability (%)	Disease incidence	Colour of fish	Yield (No.)	Cost of cultivation (Rs./unit)	Gross return (Rs.)	Net return (Rs.)	BC ratio
Farmers' Practice: Rearing of gold fish fry (10mm) in net enclosure of varying size with a stocking density of about 2500-3000 no.	7	3.5	1.8	42	Malnutrition, dropsy	Pale	1050	980.00	1600.00	300.00	1.63
Technology-1 refined: Rearing of gold fish fry (10mm) in net enclosure of 6'X3'x3' at stocking density of 1 cm fish/20 cm^2, *viz*. 810 no.		6.2	3.4	70	Nil	Bright	567	460.00	2268.00	1808.00	4.93
Technology -2 refined: Rearing of gold fish fry (10mm) in net enclosure 6'X3'x3' at stocking density of 1 cm fish/15cm^2, viz. 1080 no.		5.0	2.3	64	Nil	Bright	691	490.00	2764.00	2274.00	5.64
SEm+	-	0.43	0.09	6.28	-	-	108.9	-	-	-	-
CD (p=0.05)	-	1.10	0.22	15.7	-	-	272.4	-	-	-	-

DISEASE MANAGEMENT

Problem definition: Lack of low cost medicines for prevention and treatment of goat diseases

Technology assessed: Assessment of a non conventional immuno-stimulant of marine origin (MBC) in goats for prevention of infectious diseases

Black Bengal goat farming is one of the most important livelihood options for the rural people of Sundarbans. Goat husbandry practice is often affected by the attack of different diseases, most of which is due to poor nutrition, and culminates in immunodeficiency in the animals. Thus KVK South 24 Parganas conducted one OFT at Damkal village of Mathurapur-II block to assess the efficacy of MBC in goats for prevention of infectious diseases.

- **Breed selected:** Black Bengal Goat **Unit size:** 5 numbers of goat per technology option
- **Total number of unit:** 15 Repeated each year for successive two years

From the study, it is revealed that Technology option 3 (Deworming -Albendazole @ 7mg/kg body weight, repeated after 21 days, then every three months interval + MBC @ 3 mg/Kg b. wt -IM, single dose 10 days after 2nd dose of deworming + Goat pox vaccination after 3 wks of MBC injection) gave the best result in respect to minimize the pox disease incidence as well as improve production and reproduction traits resulting to more income generation. So this may be recommended for large scale adoption in the routine animal husbandry practices.

Farmers practice: Deworming (Albendazole @ 7mg/kg body weight, repeated after 21 days, then every three months interval).

Technology option-1: Farmers practice + MBC @ 3 mg/Kg b. wt -IM, single dose 10 days after 2nd dose of deworming.

Technology option -2: Farmers practice + Goat pox vaccination after 10days of 2nd deworming

Technology option -3: Farmers practice + MBC @ 3 mg/Kg b. wt -IM, single dose 10 days after 2nd dose of deworming.+ Goat pox vaccination (after 3 wks of MBC injection)

4.Source of technology

Roy et al., Potential Future Applications of Spermatheca Extract from Marine Snail *Telescopium telescopium*. Turkish Journal of Veterinary and Animal Sciences. 34, (2010), 533-5405.

5.Production system and thematic area

Livestock based production system/Animal health management

6. Performance of the technology with performance indicators

1st year:

Category	No. of trials	FP (40 animals)	Technology option 1 (40 animals)	Technology option 2 (40 animals)	Technology option 3 (40 animals)
Percentage of ailing animals due to goat pox	15	47.5 (19)	22.5 (9)	25.0 (10)	7.5 (3)
Percentage of death/year		22.5 (9)	12.5 (5)	15.0 (6)	2.5 (1)
Average body weight (Kg)		8.9	10.2	9.8	12.1
Involution period (Days)		118	105	112	102
Percentage Increase in stock strength/year		30.0 (12)	75.0 (30)	42.5 (17)	95.0 (38)
Percentage in Body weight gain		11.4	15	11.5	15.2

2nd year:

Category	No. of trials	FP (40 animals)	Technology option 1 (40 animals)	Technology option 2 (40 animals)	Technology option 3 (40 animals)
Percentage of ailing animals	15	45.0 (18)	17.5 (7)	15.0 (6)	0.0 (0)
Percentage of death/year		20.0 (8)	7.5 (3)	10.0 (4)	0.0 (0)
Average body weight (Kg)		8.7	11.5	11.2	13.5
Involution period (Days)		116	99	101	95
Increase in stock strength/year		32.5 (13)	102.5 (41)	45.0 (18)	155.0 (62)
Percentage in Body weight gain		11.5	14.8	11.4	15.5

FEED MANAGEMENT

Problem definition: Assessment of efficacy of bird feed on production attributes of ornamental birds (Budgeriger) reared by the farm women of South 24 Parganas

Technology assessed: The commercial production of ornamental bird is a profitable business now a days especially for the women folk in Sundarban region under South 24 Parganas District. But due to heavy price hike of the concentrate feed, the margin becoming less and the farmers are often loosing their interest in this farming system. The availability of other non conventional nutrient rich feed feeding and their actual dosing may solve the problem. Moreover, the farmers of this system are mostly women folk and hence they are facing reduction of expenditure for their family which is hampering their livelihood. KVK conducted one OST on low cost feeding for ornamental bird using unconventional feed like different leafy vegetables which are abundant in this region. Based on this OST result and considering the above problem, KVK conducted area specific assessment of the technology of using nonconventional feed.

Considering the above facts KVK, Nimpith conducted one OFT on alternative feed that can be given to the birds. The usual farmers practice was to feed Concentrate feed @ 1kg/ day for 100 birds along with *tulsi* leaves. KVK assessed three different technology viz. Tech 1. Commercial layer feed @1kg/ day for 100 birds+ *tulsi* leaves & liver tonic 5 ml/100 bird for 5 consecutive days with a pause of 15 days and repeat, Tech 2. Cereal mix (75% broken rice+ 25%broken wheat) @ 1.3kg /day for 100birds+ *tulsi* leaves, Tech 3. Broken cereal mix (75% broken rice+ 25%broken wheat)@ 1.3kg/dayfor100birds+leafy vegetables (*hinche, kulekhara,thankuni,*) @ 200gm /week distributed in 2 days for 100 birds+ *tulsi* leaves + liver tonic 5 ml/100 bird for 5 consecutive days with a pause of 15 days and repeat

Table: Assessment of efficacy of bird feed on production attributes of ornamental birds (Budgeriger) reared by the farm women of South 24 Parganas (8 months study data)

Treatments	No. of trials	No. of egg laid/pair/cycle	Hatchability (%)	Chick mortality (%)	Disease incidence (% ill)	Colour intensity (visual point scale)	Diversity in diet during hunger time	Hunger time borrowing	BC ratio
Farmers' practice: Concentrate feed @ 1kg/ day for 100 birds along with *tulsi* leaves	22	4.6	78.0	12.5	13.0	+	Rice, veg, potato, (2Day)	+++	-
Technology-1: Commercial layer feed @1kg/ day for 100 birds+ *tulsi* leaves & liver tonic 5 ml/100 bird for 5 consecutive days with a pause of 15 days and repeat		5.1	70.0	15.5	18.5*	+	Rice, potato, veg (2Day)	+++	-
Technology-2: Cereal mix (75% broken rice+ 25%broken wheat) @ 1.3kg /day for 100birds+ *tulsi* leaves		5.2	76.5	12.0	13.0	+	Rice, veg potato (3Day)	+++	-
Technology-3. Broken cereal mix (75% broken rice+ 25%broken wheat) @ 1.3kg/day for 100birds + leafy vegetables (*hinche, thankuni, kulekhara*) @ 200gm /week distributed in 2 days for 100 birds+ *tulsi* leaves + liver tonic 5 ml/100 bird for 5 consecutive days with a pause of 15 days and repeat		5.5	72.5	10.5	22.5*	++	Rice, potato, veg (2Day), Small fish (1day)	++	-
CD (p=0.05)		0.26	2.73	1.54	2.54	-	-	-	-

DISEASE MANAGEMENT

Problem definition: Assessment of different techno-management aspect on incidence of mastitis in dairy animals of South 24 Parganas district

Technology assessed: High incidence of mastitis hampers the production of milk in the village level and thus the farmers doest not getting the actual out put from the farming. Besides, few managemental practices if followed, the more milk may be obtained with lesser incidence of mastitis. Moreover, the usual prctices of milking usually impose physical stress to the farm women. Thus KVK, Nimpith conducted one OFT so that incidence of mastitis can be reduced along with alleviation of stress to the women.

The usual Farmers practice is Milking of cows by stripping with uneven pressure. Tech.-1 is FP +half an hour standing posture of animal, Tech.-2 is Full hand method of milking, Tech.-3 is Full hand method along with standing posture of animal.

Table: Assessment of different techno-management aspect on incidence of mastitis in dairy animals of South 24 Parganas district

Treatments	No. of trials	Udder & teat injury (%)	Incidence of mastitis	Presence of flakes and blood in milk (visual point scale)	% increase in production of milk	Ergonomic parameter (Heart rate)	Angle of deviation (Neck)
Farmers' practice: Milking of cows by stripping with uneven pressure	18	32.5	Under study	+++	(-)2.5	Peak : 128 Average : 107	55^0
Technology-1. FP +half an hour standing posture of animal		29.0		++	(-)0.5	Peak : 114 Average : 106	55^0
Technology-2. Full hand method of milking		19.0		++	0.5	Peak : 107 Average : 99	15^0
Technology-3. Full hand method along with standing posture of animal		10.5		+	1.5	Peak : 92 Average : 83	15^0
CD (p=0.05)		1.37	-	-	-	-	-

STORAGE LOSS MINIMIZATION TECHNIQUES

Problem definition: Joynagarer Moya is a special type of sweet which is prepared in South 24 Parganas particularly in Joynagar I &Joynagar II block during winter season. It is very famous due to the special taste but it can be preserved only for 3 days. So it will be beneficial if the shelf life of the sweet can be increased by adding some good preservatives to minimize the storage loss.

Title of on-farm trials: Assessment of the different food preservatives to increase the keeping quality of Joynagarer Moya in Sundarban region

3.Details of technologies selected for assessment:

Farmers' Practice: Preparation of molasses from date palm juice and mixing with puffed paddy , kheer for making moya, having 3 days shelf life.

Technological Option 1: Preparation of molasses from date palm juice with 0.1% potassium meta bi sulphite and mixing with puffed paddy ,kheer for making moya

Technological Option 2: Preparation of molasses from date palm juice with sodium benzoate 0.2% after adjustment of acidic pH with citric acid and mixing with puffed paddy ,kheer for making moya

Treatment	**No. of beneficiaries**	**Taste* (after 3 days)**					**Off flavor* (after 3 days)**					**Overall acceptability* (after 3 days)**				
		Days														
		1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Farmers Practice	15	6	4	2	0	0	5	3	0	0	0	3	0	0	0	0
Technology option 1		7	5	4	0	0	6	4	3	2	0	8	5	4	0	0
Technology option 2		9	7	6	2	0	9	7	6	3	0	9	8	7	3	0

*Measured in 9 point hedonic scale with 15 panelist

3.2 Achievements of Frontline Demonstrations

A. Details of FLDs implemented during 2012-13 (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops**.)

Sl. No.	Crop	Thematic area	Technology Demonstrated@	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1	Kharif paddy	Integrated nutrient management	**Component demo**: in Kharif paddy - transplanting of 25 days old seedlings of var. IET-5656 with a spacing of 20 cm X 15cm, application of fertilizer N:P_2O5:K_2O @ 80:40:30 kg/ha and bio-fertilizer *Azospirillum* @ 1.5 kg/ha + PSB @ 5.0 kg /ha at the time of puddling & two times manual.weeding	*Kharif* ,2012	1.0	1.0	2	3	5	-
2	Sunflower*	Crop diversification	**Full Package**- i) Seed-Var.KBSH-44, ii) Seed treatment with *Trichoderma viride* & *Pseudomonas fluorescens* iii) Compost @ 8t/ha and RDF @ 80:40:40 kg NPK/ha iv) foliar application of boron @ 2g/lt at flowering stage	*Summer*, 2012	16.0	16.0	28	12	40	-
3	Maize	Crop diversification	**Component demo:** Variety -All rounder NPK @ 100:50:50 kg/ha	February 2013	1.3	1.3	6	4	10	-
4	Betel vine	Protected cultivation	**Component demo:** Hi-tech *boroz* structure made-up of GI structure and shade net along with micro-irrigation system in Betel vine (var. Meetha Pata) cultivation	April,2012	1.6	1.6	13	11	24	-
5	Ornamental fish	Ornamental fisheries	**Component demo:** Culture of ornamental fish (barbs & mollies) in small domestic ponds of 0.02ha @ 3lakhs/ha	July – December 2012	0.1	0.1	5	-	5	-
6	Goat farming	Disease management	**Component demo:** Spermatheca glandular extract of *Telescopium telescopium* (MBC) in injectable form (SC) for goats to boost up the immunity	October, 2012	-	-	15	15	30	-
7	Oyster mushroom	Mushroom cultivation	**Component demo:** Innovative (Iron frame of 10'' height and 12'' diameter having 4ft long perforated plastic pipe (4'' dia) inserted into the centre stand of iron frame) production technique of oyster mushroom	*Rabi*, 2012	50	52	34	42	76	-
8	Complementary food for moderately acute malnourished (MAM) children (7-59months)	Food & Nutrition	**Full package:** Complementary food - Kichri (Rice:pulse ::7:3) with vegetable daily (50g per children) , soyabean 2days (30 g per children)	September,2012	-	-	45	35	80	-

*FLD made under AICRP on Sunflower, RAKVK-Nimpith Center, under financial support of DOR, Hyderabad

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Kharif paddy	*Kharif*, 2012	RF	Clay	160.2	27.2	543.8	Fallow	July'12	November'12	1230.0	59
Sunflower	*Summer*, 2012	Irrigated	Clay	212.8	26.5	480.7	*Kharif* paddy	2nd week of January'12	Last week of April'12	131.8	9
Maize	February, 2013	Irrigated	Clay	159.9	27.5	482.2	*Kharif* paddy	February'13	May'13	5.0	3
Betel vine	April, 2012	Irrigated	Clay	210.1	45.7	533.6	Fallow	April'12	Year round	1464.1	70
Ornamental fish	July- Dec., 2012	Homestead	-	-	-	-	Weed fish	July – December'12	Sept.'12 & Dec.'12	1311.6	62
Goat farming	October, 2012	Homestead	-	-	-	-	Unvaccinated/ immunocompromised	October'12	December'12, March'12	-	-
Oyster mushroom	*Rabi*, 2012	Homestead	-	-	-	-	Oyster mushroom cultivated in plastic bags	September'12	1st harvest- October'12	-	-
Complementary food for MAM children	September, 2012	Homestead	-	-	-	-	Rice, potato curry, veg. curry (occasional) , biscuit, commercial milk (diluted), wheat flour (boiled)	September'12	1month interval	-	-

Performance of FLD

Oilseeds:

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
Sunflower	Crop diversification	i) Seed-Var.KBSH-44, ii) Seed treatment with *Trichoderma viride* & *Pseudomonas fluorescens* iii) Compost @ 8t/ha and RDF @ 80:40:40 kg NPK/ha iv) foliar application of boron @ 2g/lt at flowering stage	40	16	16.65	12.62	31.93	41644.00	19518.00	22126.00	2.13	31557.00	18484.00	13103.00	1.70

*Var – PAC-334; no seed treatment; only chemical fertilizer @ 40:30:20, no compost application; and no boron application.

Pulses : NA

Maize, cotton and lentil as special programme

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
Maize	Crop diversification	Variety - All rounder NPK @ 100:50:50 kg/ha	10	1.3	-	Fallow	Yet to be harvested								
Total			**10**	**1.3**											

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

** BCR= GROSS RETURN/GROSS COST

Other crops

Category and Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	Area (ha)	Yield (q/ha)		% change in yield	Other parameters		*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Cereals																	
Kharif paddy (Var: IET-5656)	Integrated nutrient management	Transplanting of 25 days old seedlings of var. IET-5656 with a spacing of 20 cm X 15cm, N:P_2O_5:K_2O @ 80:40:30 kg/ha alongwith *Azospirillum* @ 1.5 kg/ha + PSB @ 5.0 kg /ha at the time of puddling & two times manual weeding	5	1	52.5	45 (**check practice**: Var. MTU-7029, spacing of 20 cm X 15cm, N:P_2O_5:K_2O @ 40:30:20 kg/ha, no bio fertilizer)	16.67	Sheath blight infestation has occurred at the tillering stage and it has been managed by spraying of *Trichoderma viride* and *Pseudomonas fluorescence* @ 5 gm each per 10 litre of water	Incidence of sheath blight infestation at tillering stage	34125	52500	18375	1.53	32300	45000	12700	1.39
Millets																	
Vegetable crops																	
Flower crops																	
Ornamental crops																	
Fruit crops																	
Spices and condiments																	
Commercial crops																	
Medicinal and aromatic plants																	
Fodder crops																	

Plantation crops	Thematic area	Name of the technology demonstrated	No. of Farmer	Yield (q/ha)			% change in yield	Data on parameters			*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
				Area (ha)	Demo	Check		Data	Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Betel vine	Protected cultivation	Betelvine (Var- Meetha pata,) Cultivation in Hi-tech Boroz made up of GI structure and shade net	24	1.6	3020000 no./ha	2070000 no./ha **Traditional practice -** Boroz made up of Bamboo structure and paddy straw as shading material	1.4 %	Temp (^{0}C) at 12.05 pm, on 28.02.13; (environ-mental temp-29.3)	28.08	30.05	1425000	2970000	1545000	2.08	1820000	2850000	1030000	1.57
								RH (%) (environ-mental RH-41)	49	38								
								Light intensity (Lux) (Outside – 1,08,500)	30700	5400 - 95300								
								Leaf colour	Uniformly green	Scorching discolour-ation in some leaves								
								Chlorophyll (SPAD) 3rd leaf from top mature leaf	41.5 55.7	37.8 48.1								
								Leaf shape (length/width)	1.12	1.18								
								Avg. leaf weight (g)	4.29	3.52								
								Leaf thickness (mm)	0.25	0.22								
								Plant internodal length (cm)	9.45	7.86								
								Disease severity (5 point scale)	3.5	3.5								
Fibre crops																		
Others (pl.specify)																		

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

Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of units	Major parameters			% change in major parameter	Other parameter		*Economics of demonstration (Rs/yr./unit)				*Economics of check (Rs/yr./unit)			
						Demo	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Goat Farming	Disease manage-ment	Spermatheca glandular extract of *Telescopium telescopium* (MBC) in injectable form (IM @3mg/kg body wt. 10 days after deworming) for goats to boost up the immunity	30	30 (5 goats comprise one unit)	Av. body weight gain/year (kg)	4.2	2.8	66.7	-	-	1435.00 (total farmers share)	7350.00	5915.00	5.12	2485.00	4900.00	2415.00	1.97
					Mortality %	11	23.5	213.6										
					Disease occurrence (%)	13	38.2	293.8										

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

N.B. Demonstration- MBC (no cost) + treatment cost of ailing animals+ cost of deworming (every 3 months interval) ; Check- treatment cost of ailing animals + cost of deworming (maximum 1-2 times a year)

Fisheries

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters				% change in major parameter	Other parameter		*Economics of demonstration (Rs./0.02ha)				*Economics of check (Rs./0.02ha)			
					Demonstration			Check		Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Common carps																			
Mussels																			
Ornamental fishes	Ornamental Fisheries	Culture of ornamental fish (barbs & mollies) in small domestic ponds (0.02ha)	5	5	Parameters	Barbs	Mollies	**Traditional practice-** Ornamental fish culture non existent 18 kg (small carps, *Puntius*, *Chela*, *Colisa*, *Chanda*, *Channa* etc.)	-	-	-	6210.00	13200.00	6990.00	2.12	1200	1800	600	1.5
					Length of fish (cm)	5.4	4.2												
					Girth of fish(cm)	2.8	1.8												
					Survivability (%)	62	64												
					Colouration	Bright	Bright												
					Yield	1860 no.	1920 no.												
Others (pl.specify)																			
	Total																		

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

** BCR= GROSS RETURN/GROSS COST

NB. Duration of culture is 6 months, Stocking density of fish is 3,00,000/ ha, Cost of seed @ Rs.300.00/1000 pcs (Rs.1800.00 for about 6000 seeds), input cost for feed and management for a period of 6 months is Rs. 4410.00, cost of barbs @ Rs. 4.00/pc and cost of mollies @ Rs. 3.00/pc

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			
				Demo	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Oyster mushroom	Innovative (Iron frame of 10'' height and 12'' diameter having 4ft long perforated plastic pipe (4'' dia) inserted into the centre stand of iron frame) production technique of oyster mushroom	76	52	1.25kg/kg straw	Traditional practice: Small plastic bag placed upon bamboo rack 1.0 kg/kg straw	20	-	-	15110.00	33450.00	18340.00	2.21	10176.00	11340.00	1164.00	1.11
Button mushroom																
Vermicompost																
Sericulture																
Apiculture																
Others (pl.specify)																
Total																

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

Traditional

Demonstration

Women empowerment

Category	Name of technology	No. of KVKs	No. of demonstrations	Name of observations	Demonstration	Check
Women						
Pregnant women						
Adolescent Girl						
Other women						
Children						
Neonatal						
Infants						
Children	Complementary food for management of MAM children (7- 59month)	-	80	Composition of daily diet	Kichri with vegetable (daily) , soyabean (2days)	Rice, potato curry, veg.curry (occasional) , biscuit, commercial milk (diluted), maida (boiled)
				Cost	Rs 5.00/meal	Rs 5.30/meal
				Mid upper arm circumference(MUAC)	>12.5 cm	<11.5 cm
				Weight/ Length (Z score)	>-1	<-1

Farm implements and machinery

Name of the implement	Crop	Name of the technology demonstrated	No. of KVKs	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 ect.)			
						Demonstration	Check									

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

Demonstration details on crop hybrids

Crop	Name of the Hybrid	No. of farmers	Area (ha)	Yield (kg/ha) / major parameter			Economics (Rs./ha)			
				Demo	Local check	% change	Gross Cost	Gross Return	Net Return	BCR
Cereals										
Bajra										
Maize										
Paddy										
Sorghum										
Wheat										
Others (pl.specify)										
Total										
Oilseeds										
Castor										
Mustard										
Safflower										
Sesame										
Sunflower	KBSH-44	100	40	2100.0	-	-	15204.00	23520.00	8316.00	1.55
Groundnut										
Soybean										
Others (pl.specify)										
Total	-	**100**	**40**	**2100.0**	-	-	**15204.00**	**23520.00**	**8316.00**	**1.55**
Pulses										
Greengram										
Blackgram										
Bengalgram										
Redgram										
Others (pl.specify)										
Total										
Vegetable crops										
Bottle gourd										
Capsicum										
Cucumber										
Tomato										
Brinjal										
Okra										
Onion										
Potato										
Field bean										
Others (pl.specify)										
Total										
Commercial crops										
Cotton										
Coconut										
Others (pl.specify)										
Total										
Fodder crops										
Napier (Fodder)										
Maize (Fodder)										
Sorghum (Fodder)										
Others (pl.specify)										
Total										

NB: Attach a few good action photographs with title at the back with pencil

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Analytical Review of component demonstrations (details of each component for rainfed / irrigated situations to be given separately for each season).

Crop	Season	Component	Farming situation	Average yield (q/ha)	Local check (q/ha)	Percentage increase in productivity over local check
1.Maize	Summer	1. Seed/Variety-All Rounder	Irrigated	Result awaited		
		2. Fertilizer management-100:50:50 kg/ha				
2.Paddy	*Kharif*	1.*Azospirillum* 2.PSB	Rainfed	52.5	45.0	16.67
3.Betel vine	Year round	1. Seed/Variety- Meetha pata	Upland irrigated	3020000 no./ha	2070000 no./ha	1.4 %
4.Ornamental fish	July-December, 2012	1.Seed/Variety- Barbs, mollies	Homestead	1890no./0.02ha	-	-
5.Goat	Year round	Spermatheca glandular extract of *Telescopium telescopium* (MBC) in injectable form (SC) for goats to boost up the immunity	Homestead	Result awaited		
6.Nutrition garden (nutrient rich vegetables)	Year round	1.Seeds / plantlets in *kharif* -*Ipomoea*, sweet potato, *Colocasia*, bottle gourd, cow pea, ash gourd 2.Seeds / plantlets in *rabi* –Fenugreek, Bengal gram, pea, French bean, broccoli, red cabbage, carrot	Homestead	**1.**Daily availability(g) in *kharif* – 1280 **2.**Daily availability(g) in *rabi* - 1710	**1.**Daily availability(g) in *kharif* – 400 **2.**Daily availability(g) in *rabi* - 430	220 297

Technical Feedback on the demonstrated technologies

Sl. No	Feed Back
1	Not applicable – result awaited
2	Use of biofertilisers leads to 9% reduction in cost of cultivation
3	Cost intensive, not bearable by the marginal farmers if govt. subsidy is not available
4	Increase in the number of live bearer, mollies calls for periodical harvest of these fish
5	Chance of damage of active ingredient of MBC in rumen, needs to be investigated
6.	Increased hemoglobin level of womenfolk through more intake of iron rich vegetables in daily diet

Farmers' reactions on specific technologies

Sl. No	Feed Back
1	Not applicable – result awaited
2	Reduction in cost of cultivation, incidence of diseases
3	Disease and pest incidence is very low, quality of leaf is very good with uniform shape and coloration
4	Retarded growth of mollies
5	Peroral feeding over injectable form is more convenient
6.	Diversification in dietary pattern has led to more relishing of daily meals

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	8	08.08.12, 22.08.12, 29.08.12, 12.09.12 08.11.12, 13.02.13 14.02.13, 18.03.13	329	
2	Farmers Training	13	-	526	
3	Media coverage	6	17.08.12, 08.11.12, 10.01.13, 11.02.13, 12.02.13, 30.03.13	-	
4	Training for extension functionaries	2	21.09.12 26.11.12 – 27.01.12	26	-

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

A) 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
(A) Farmers & Farm Women													
I Crop Production													
Weed Management													
Resource Conservation Technologies													
Cropping Systems	1	14	4	18	10	-	10	-	-	-	**24**	**4**	**28**
Crop Diversification	3	17	-	17	56	11	67	-	-	-	**73**	**11**	**84**
Integrated Farming	1	16	2	18	5	2	7	-	-	-	**21**	**4**	**25**
Water management	1	10	-	10	12	-	12	-	-	-	**22**	**-**	**22**
Seed production													
Nursery management													
Integrated Crop Management													
Fodder production													
Production of organic inputs													
Others/ Maize cultivation	1	5	-	5	10	-	10	-	-	-	**15**	**-**	**15**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
II Horticulture													
a) Vegetable Crops													
Production of low volume and high value crops	1	8	2	10	13	3	16	-	-	-	**21**	**5**	**26**
Off-season vegetables	1	9	3	12	18	2	20	-	-	-	**27**	**5**	**32**
Nursery raising													
Exotic vegetables like Broccoli													
Export potential vegetables	1	11	11	22	-	2	2	-	-	-	**11**	**13**	**24**
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)	1	23	1	24	1	-	1	-	-	-	**24**	**1**	**25**
Others/ Cultivation of Vegetable on land-shaping plots	1	13	4	17	5	-	5	-	-	-	**18**	**4**	**22**
Others/ Integrated nutrient management in vegetable	2	52	14	66	11	7	18	-	-	-	**63**	**21**	**84**
Training and Pruning													
b) Fruits													
Layout and Management of Orchards													
Cultivation of Fruit													
Management of young plants/orchards	1	9	2	11	23	5	28	-	-	-	**32**	**7**	**39**
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards													
Plant propagation techniques													
Others/ Quality management of Guava	1	23	5	28	15	1	16	-	-	-	**38**	**6**	**44**
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others, if any													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
d) Plantation crops													
Production and Management technology													
Processing and value addition													
Others/ Betel vine cultivation	1	9	15	24	5	2	7	-	-	-	**14**	**17**	**31**
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others, if any													
f) Spices													
Production and Management technology													
Processing and value addition													
Others, if any													
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others, if any													
III Soil Health and Fertility Management													
Soil fertility management	1	15	2	17	5	-	5	-	-	-	**20**	**2**	**22**
Soil and Water Conservation	1	20	-	20	3	-	3	-	-	-	**23**	**-**	**23**
Integrated Nutrient Management	1	-	10	10	10	-	10	-	-	-	**10**	**10**	**20**
Production and use of organic inputs	1	7	3	10	8	2	10	-	-	-	**15**	**5**	**20**
Management of Problematic soils	1	12	-	12	14	-	14	-	-	-	**26**	**-**	**26**
Micro nutrient deficiency in crops													
Nutrient Use Efficiency	1	9	-	9	9	-	9	-	-	-	**18**	**-**	**18**
Soil and Water Testing													
Others, if any													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
IV Livestock Production and Management													
Dairy Management													
Poultry Management	3	34	52	86	22	36	58	-	-	-	**56**	**88**	**144**
Piggery Management													
Rabbit Management													
Disease Management	1	32	5	37	3	8	11	-	-	-	**35**	**13**	**48**
Feed management	2	23	26	49	10	18	28	-	-	-	**33**	**44**	**77**
Production of quality animal products													
Others/ Goat farming	1	10	23	33	11	8	19	-	-	-	**21**	**31**	**52**
Others/ Livelihood through animal husbandry	5	49	112	161	15	73	88	-	-	-	**64**	**185**	**249**
V Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening	3	-	1	1	-	29	29	-	-	-	**-**	**30**	**30**
Design and development of low/minimum cost diet													
Designing and development for high nutrient efficiency diet	1	-	12	12	-	4	4	-	-	-	**-**	**16**	**16**
Minimization of nutrient loss in processing													
Gender mainstreaming through SHGs	3	-	22	22	-	38	38	-	-	-	**-**	**60**	**60**
Storage loss minimization techniques													
Value addition													
Income generation activities for empowerment of rural Women													
Location specific drudgery reduction technologies	2	-	13	13	-	50	50	-	-	-	**-**	**63**	**63**
Rural Crafts													
Women and child care	1	-	6	6	-	18	18	-	-	-	**-**	**24**	**24**
Others/ Mushroom	6	-	82	82	-	71	71	-	-	-	**-**	**153**	**153**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
VI Agril. Engineering													
Installation and maintenance of micro irrigation systems													
Use of Plastics in farming practices													
Production of small tools and implements													
Repair and maintenance of farm machinery and implements													
Small scale processing and value addition													
Post Harvest Technology													
Others, if any													
VII Plant Protection													
Integrated Pest Management	1	**1**	**-**	**1**	**5**	**-**	**5**	**-**	**-**	**-**	**6**	**-**	**6**
Integrated Disease Management													
Bio-control of pests and diseases	2	21	2	23	13	2	15	-	-	-	**34**	**4**	**38**
Production of bio control agents and bio pesticides													
Others, if any													
VIII Fisheries													
Integrated fish farming													
Carp breeding and hatchery management	1	9	3	12	-	-	-	-	-	-	9	3	**12**
Carp fry and fingerling rearing													
Composite fish culture	8	59	51	110	141	60	201	-	-	-	200	111	**311**
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes													
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others, if any													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
IX Production of Inputs at site													
Seed Production													
Planting material production													
Bio-agents production													
Bio-pesticides production													
Bio-fertilizer production													
Vermi-compost production	4	8	20	28	31	17	48	-	-	-	39	37	**76**
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	1	8	-	8	6	-	6	-	-	-	14	-	**14**
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	68	**536**	**508**	**1044**	**490**	**469**	**959**	**0**	**0**	**0**	**1026**	**977**	**2003**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
(B) RURAL YOUTH													
Mushroom Production													
Bee-keeping	2	20	-	20	9	-	9	-	-	-	29	-	**29**
Integrated farming													
Seed production													
Production of organic inputs	1	17	2	19	4	2	6	-	-	-	21	4	**25**
Integrated Farming	3	17	6	23	24	3	27				41	9	**50**
Planting material production													
Vermi-culture													
Sericulture													
Protected cultivation of vegetable crops													
Commercial fruit production													
Repair and maintenance of farm machinery and implements	1	17	-	17	13	-	13	-	-	-	30	-	**30**
Nursery Management of Horticulture crops	3	57	4	61	16	2	18	-	-	-	73	6	**79**
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	2	18	-	18	10	-	10	-	-	-	28	-	**28**
Para vets													
Para extension workers													
Composite fish culture	8	89	38	127	24	1	25	-	-	-	113	39	**152**
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	4	20	24	5	-	5	-	-	-	9	20	**29**
Small scale processing													
Post Harvest Technology	1	-	15	15	-	-	-	-	-	-	-	15	**15**
Tailoring and Stitching													

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
Rural Crafts	3	-	3	3	-	34	34	-	-	-	-	37	**37**
Others/ Application of extension methodology	1	13	-	13	15	-	15	-	-	-	28	-	**28**
Others/ Breeding and culture of indigenous fish	1	14	-	14	27	-	27	-	-	-	41	-	**41**
Others/ Disease management in fish	2	19	30	49	14	-	14	-	-	-	33	30	**63**
Others/ Goat farming	1	11	11	22	7	9	16	-	-	-	18	20	**38**
Others/ Household survey	2	22	12	44	55	10	65	-	-	-	87	22	**109**
Others/ Livelihood through animal husbandry	5	39	88	127	33	97	130	-	-	-	72	185	**257**
Others/ Nutritional security	1	-	2	2	-	14	14	-	-	-	-	16	**16**
Others/ Production of bio control agents and bio pesticides	1	17	2	19	7	1	8	2	-	2	26	3	**29**
TOTAL	39	**374**	**233**	**617**	**263**	**173**	**436**	**2**	**0**	**2**	**649**	**406**	**1055**
(C) Extension Personnel													
Productivity enhancement in field crops													
Integrated Pest Management													
Integrated Nutrient management	1	18	-	18	13	-	13	-	-	-	31	-	**31**
Rejuvenation of old orchards													
Protected cultivation technology													
Formation and Management of SHGs													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Management in farm animals													
Livestock feed and fodder production													
Household food security													
Women and Child care	3	-	18	18	-	30	30	-	1	1	-	49	**49**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs	1	-	-	-	-	35	35	-	-	-	-	35	**35**
Others/ Composite fish culture	7	104	19	123	31	3	34	-	-	-	135	22	**157**
Others/ Fish breeding and hatchery management	2	30	1	31	3	1	4	-	-	-	33	2	**35**
Others/ IFS	1	20	-	20	13	-	13	-	-	-	33	-	**33**
TOTAL	15	**172**	**38**	**210**	**60**	**69**	**129**	**0**	**1**	**1**	**232**	**108**	**340**

B) 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
(A) Farmers & Farm Women													
I Crop Production													
Weed Management	**1**	3	-	3	32	1	33	-	-	-	**35**	**1**	**36**
Resource Conservation Technologies	**1**	22	3	25	3	-	3	-	-	-	**25**	**3**	**28**
Cropping Systems													
Crop Diversification	**3**	46	-	46	71	19	90	-	-	-	**117**	**19**	**136**
Integrated Farming													
Water management	**2**	19	1	20	27	12	39	-	-	-	**46**	**13**	**59**
Seed production	**1**	1	-	1	19	-	19	-	-	-	**20**	**-**	**20**
Nursery management													
Integrated Crop Management	**2**	51	10	61	11	2	13	-	-	-	**62**	**12**	**74**
Fodder production													
Production of organic inputs													
Others, (cultivation of crops)													
II Horticulture													
a) Vegetable Crops													
Production of low volume and high value crops													
Off-season vegetables													
Nursery raising													
Exotic vegetables like Broccoli													

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
Export potential vegetables													
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)													
Others/ Integrated nutrient management in vegetable	2	33	4	37	10	2	12	-	-	-	**43**	**6**	**49**
Others/ Micro irrigation systems in Vegetable	1	35	-	35	32	4	36	-	-	-	**67**	**4**	**71**
Others/ Pollination problem in cucurbits	1	8	22	30	4	5	9	-	-	-	**12**	**27**	**39**
Training and Pruning													
b) Fruits													
Layout and Management of Orchards													
Cultivation of Fruit													
Management of young plants/orchards	1	20	2	22	4	5	9	-	-	-	**24**	**7**	**31**
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards	1	11	5	16	6	2	8	-	-	-	**17**	**7**	**24**
Plant propagation techniques													
Others, if any													
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others, if any													
d) Plantation crops													
Production and Management technology													
Processing and value addition													
Others/ Betel vine cultivation	3	37	13	50	32	2	34	-	-	-	**69**	**15**	**84**
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others, if any													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
f) Spices													
Production and Management technology													
Processing and value addition													
Others, if any													
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others, if any													
III Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation													
Integrated Nutrient Management													
Production and use of organic inputs													
Management of Problematic soils													
Micro nutrient deficiency in crops													
Nutrient Use Efficiency	1	13	17	30	-	-	-	-	-	-	**13**	**17**	**30**
Soil and Water Testing													
Others, if any													
IV Livestock Production and Management													
Dairy Management													
Poultry Management	1	3	34	37	-	28	28	-	-	-	**3**	**62**	**65**
Piggery Management													
Rabbit Management													
Disease Management	2	48	46	94	23	24	47	-	-	-	**71**	**70**	**141**
Feed management	1	14	12	26	13	18	31	-	-	-	**27**	**30**	**57**
Production of quality animal products	2	7	53	60	1	55	56	-	-	-	**8**	**108**	**116**
Others, if any Goat farming													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
V Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening	8	-	94	94	-	200	200	-	-	-	-	**294**	**294**
Design and development of low/minimum cost diet	4	-	24	24	-	50	50	-	-	-	-	**74**	**74**
Designing and development for high nutrient efficiency diet	4	-	41	41	-	20	20	-	-	-	-	**61**	**61**
Minimization of nutrient loss in processing													
Gender mainstreaming through SHGs													
Storage loss minimization techniques	2	-	37	37	-	52	52	-	-	-	-	**89**	**89**
Value addition													
Income generation activities for empowerment of rural Women													
Location specific drudgery reduction technologies													
Rural Crafts													
Women and child care	13	-	182	182	-	374	374	-	-	-	-	**556**	**556**
Others/ Mushroom	3	-	27	27	-	72	72	-	-	-	-	**99**	**99**
VI Agril. Engineering													
Installation and maintenance of micro irrigation systems													
Use of Plastics in farming practices													
Production of small tools and implements													
Repair and maintenance of farm machinery and implements													
Small scale processing and value addition													
Post Harvest Technology													
Others, if any													

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
VII Plant Protection													
Integrated Pest Management	**1**	**43**	**-**	**43**	**5**	**-**	**5**	**-**	**-**	**-**	**48**	**-**	**48**
Integrated Disease Management	2	17	3	20	19	6	25	-	-	-	**36**	**9**	**45**
Bio-control of pests and diseases	1	16	3	19	12	3	15				**28**	**6**	**34**
Production of bio control agents and bio pesticides													
Others, if any													
VIII Fisheries													
Integrated fish farming	2	24	11	35	41	-	41	-	-	-	65	11	**76**
Carp breeding and hatchery management													
Carp fry and fingerling rearing													
Composite fish culture	1	-	-	-	23	-	23	-	-	-	23	-	**23**
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes													
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others, if any													
IX Production of Inputs at site													
Seed Production													
Planting material production													
Bio-agents production													
Bio-pesticides production													
Bio-fertilizer production													
Vermi-compost production													
Organic manures production													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Production of 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	2	21	13	34	22	5	27	-	-	-	43	18	**61**
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	**69**	**492**	**657**	**1149**	**410**	**961**	**1371**	**0**	**0**	**0**	**902**	**1618**	**2520**
(B) RURAL YOUTH													
Mushroom Production													
Bee-keeping													
Integrated farming	1	4	-	4	22	-	22	-	-	-	26	-	**26**
Seed production													
Production of organic inputs													
Integrated Farming													
Planting material production													
Vermi-culture													
Sericulture													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Protected cultivation of vegetable crops	1	18	2	20	8	0	8	-	-	-	26	2	**28**
Commercial fruit production	2	20	9	29	24	2	26	-	-	-	44	11	**55**
Repair and maintenance of farm machinery and implements													
Nursery Management of Horticulture crops													
Training and pruning of orchards													
Value addition													
Production of quality animal products													
Dairying													
Sheep and goat rearing													
Quail farming													
Piggery													
Rabbit farming													
Poultry production	1	24	10	34	16	13	29	-	-	-	40	23	**63**
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/ Disease Management in animal husbandry	1	25	19	44	6	28	34	-	-	-	31	47	**78**
Others/ Health & Nutrition Management	28	-	489	489	-	804	804	-	-	-	-	1293	**1293**
TOTAL	**34**	**91**	**529**	**620**	**76**	**847**	**923**	**0**	**0**	**0**	**167**	**1376**	**1543**

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
(C) Extension Personnel													
Productivity enhancement in field crops													
Integrated Pest Management													
Integrated Nutrient management													
Rejuvenation of old orchards													
Protected cultivation technology													
Formation and Management of SHGs													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Management in farm animals													
Livestock feed and fodder production													
Household food security	7	10	71	81	12	111	123	-	-	-	22	182	**204**
Women and Child care	12	27	76	103	28	132	160	-	-	-	55	208	**263**
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs													
Others, if any													
TOTAL	**19**	**37**	**147**	**184**	**40**	**243**	**283**	**0**	**0**	**0**	**77**	**390**	**467**

C) Consolidated table (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
(A) Farmers & Farm Women													
I Crop Production													
Weed Management	**1**	3	-	3	32	1	33	-	-	-	**35**	**1**	**36**
Resource Conservation Technologies	**1**	22	3	25	3	-	3	-	-	-	**25**	**3**	**28**
Cropping Systems	**1**	14	4	18	10	-	10	-	-	-	**24**	**4**	**28**
Crop Diversification	**6**	63	-	63	127	30	157	-	-	-	**190**	**30**	**220**
Integrated Farming	**1**	16	2	18	5	2	7	-	-	-	**21**	**4**	**25**
Water management	**3**	29	1	30	39	12	51	-	-	-	**68**	**13**	**81**
Seed production	**1**	1	-	1	19	-	19	-	-	-	**20**	**-**	**20**
Nursery management													
Integrated Crop Management	**2**	51	10	61	11	2	13	-	-	-	**62**	**12**	**74**
Fodder production													
Production of organic inputs													
Others/ Maize cultivation	**1**	5	-	5	10	-	10	-	-	-	**15**	**-**	**15**
II Horticulture													
a) Vegetable Crops													
Production of low volume and high value crops	**1**	8	2	10	13	3	16	-	-	-	**21**	**5**	**26**
Off-season vegetables	**1**	9	3	12	18	2	20	-	-	-	**27**	**5**	**32**
Nursery raising													
Exotic vegetables like Broccoli													
Export potential vegetables	1	11	11	22	-	2	2	-	-	-	**11**	**13**	**24**
Grading and standardization													
Protective cultivation (Green Houses, Shade Net etc.)	1	23	1	24	1	-	1	-	-	-	**24**	**1**	**25**
Others/ Cultivation of Vegetable on land-shaping plots	1	13	4	17	5	-	5	-	-	-	**18**	**4**	**22**
Others/ Integrated nutrient management in vegetable	4	85	18	103	21	9	30	-	-	-	**106**	**27**	**133**
Others/ Micro irrigation systems in Vegetable	1	35	-	35	32	4	36	-	-	-	**67**	**4**	**71**
Others/ Pollination problem in cucurbits	1	8	22	30	4	5	9	-	-	-	**12**	**27**	**39**
Training and Pruning													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
b) Fruits													
Layout and Management of Orchards													
Cultivation of Fruit													
Management of young plants/orchards	2	29	4	33	27	10	37	-	-	-	**56**	**14**	**70**
Rejuvenation of old orchards													
Export potential fruits													
Micro irrigation systems of orchards	1	11	5	16	6	2	8	-	-	-	**17**	**7**	**24**
Plant propagation techniques													
Others/ Quality management of Guava	1	23	5	28	15	1	16	-	-	-	**38**	**6**	**44**
c) Ornamental Plants													
Nursery Management													
Management of potted plants													
Export potential of ornamental plants													
Propagation techniques of Ornamental Plants													
Others, if any													
d) Plantation crops													
Production and Management technology													
Processing and value addition													
Others/ Betel vine cultivation	4	46	28	74	37	4	41	-	-	-	**83**	**32**	**115**
e) Tuber crops													
Production and Management technology													
Processing and value addition													
Others, if any													
f) Spices													
Production and Management technology													
Processing and value addition													
Others, if any													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
g) Medicinal and Aromatic Plants													
Nursery management													
Production and management technology													
Post harvest technology and value addition													
Others, if any													
III Soil Health and Fertility Management													
Soil fertility management	1	15	2	17	5	-	5	-	-	-	**20**	**2**	**22**
Soil and Water Conservation	1	20	-	20	3	-	3	-	-	-	**23**	**-**	**23**
Integrated Nutrient Management	1	-	10	10	10	-	10	-	-	-	**10**	**10**	**20**
Production and use of organic inputs	1	7	3	10	8	2	10	-	-	-	**15**	**5**	**20**
Management of Problematic soils	1	12	-	12	14	-	14	-	-	-	**26**	**-**	**26**
Micro nutrient deficiency in crops													
Nutrient Use Efficiency	2	22	17	39	9	-	9	-	-	-	**31**	**17**	**48**
Soil and Water Testing													
Others, if any													
IV Livestock Production and Management													
Dairy Management													
Poultry Management	4	37	86	123	22	64	86	-	-	-	**59**	**150**	**209**
Piggery Management													
Rabbit Management													
Disease Management	3	80	51	131	26	32	58	-	-	-	**106**	**83**	**189**
Feed management	3	37	38	75	23	36	59	-	-	-	**60**	**74**	**134**
Production of quality animal products	2	7	53	60	1	55	56	-	-	-	**8**	**108**	**116**
Others/ Goat farming	1	10	23	33	11	8	19	-	-	-	**21**	**31**	**52**
Others/ Livelihood through animal husbandry	5	49	112	161	15	73	88	-	-	-	**64**	**185**	**249**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
V Home Science/Women empowerment													
Household food security by kitchen gardening and nutrition gardening	11	-	95	95	-	229	229	-	-	-	-	**324**	**324**
Design and development of low/minimum cost diet	4	-	24	24	-	50	50	-	-	-	-	**74**	**74**
Designing and development for high nutrient efficiency diet	4	-	53	53	-	24	24	-	-	-	-	**77**	**77**
Minimization of nutrient loss in processing													
Gender mainstreaming through SHGs	3	-	22	22	-	38	38	-	-	-	-	**60**	**60**
Storage loss minimization techniques	2	-	37	37	-	52	52	-	-	-	-	**89**	**89**
Value addition													
Income generation activities for empowerment of rural Women													
Location specific drudgery reduction technologies	2	-	13	13	-	50	50	-	-	-	-	**63**	**63**
Rural Crafts													
Women and child care	14	-	188	188	-	392	392	-	-	-	-	**580**	**580**
Others/ Mushroom	9	-	109	109	-	143	143	-	-	-	-	**252**	**252**
VI Agril. Engineering													
Installation and maintenance of micro irrigation systems													
Use of Plastics in farming practices													
Production of small tools and implements													
Repair and maintenance of farm machinery and implements													
Small scale processing and value addition													
Post Harvest Technology													
Others, if any													

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
VII Plant Protection													
Integrated Pest Management	**2**	**44**	**-**	**44**	**10**	**-**	**10**	**-**	**-**	**-**	**54**	**-**	**54**
Integrated Disease Management	2	17	3	20	19	6	25	-	-	-	**36**	**9**	**45**
Bio-control of pests and diseases	3	37	5	42	25	5	30	-	-	-	**62**	**10**	**72**
Production of bio control agents and bio pesticides													
Others, if any													
VIII Fisheries													
Integrated fish farming	2	24	11	35	41	-	41	-	-	-	65	11	**76**
Carp breeding and hatchery management	1	9	3	12	-	-	-	-	-	-	9	3	**12**
Carp fry and fingerling rearing													
Composite fish culture	9	59	51	110	164	60	224	-	-	-	223	111	**334**
Hatchery management and culture of freshwater prawn													
Breeding and culture of ornamental fishes													
Portable plastic carp hatchery													
Pen culture of fish and prawn													
Shrimp farming													
Edible oyster farming													
Pearl culture													
Fish processing and value addition													
Others, if any													
IX Production of Inputs at site													
Seed Production													
Planting material production													
Bio-agents production													
Bio-pesticides production													
Bio-fertilizer production													
Vermi-compost production	4	8	20	28	31	17	48	-	-	-	39	37	**76**
Organic manures production													

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
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	3	29	13	42	28	5	33	-	-	-	57	18	**75**
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	**136**	**1028**	**1165**	**2193**	**900**	**1430**	**2330**	**0**	**0**	**0**	**1928**	**2595**	**4523**
(B) RURAL YOUTH													
Mushroom Production													
Bee-keeping	2	20	-	20	9	-	9	-	-	-	29	-	**29**
Integrated farming	4	21	6	27	46	3	49	-	-	-	67	9	**76**
Seed production													
Production of organic inputs	1	17	2	19	4	2	6	-	-	-	21	4	**25**
Planting material production													
Vermi-culture													
Sericulture													
Protected cultivation of vegetable crops	1	18	2	20	8	0	8	-	-	-	26	2	**28**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Commercial fruit production	2	20	9	29	24	2	26	-	-	-	44	11	**55**
Repair and maintenance of farm machinery and implements	1	17	-	17	13	-	13	1	1	1	30	-	**30**
Nursery Management of Horticulture crops	3	57	4	61	16	2	18	-	-	-	73	6	**79**
Training and pruning of orchards													
Value addition													
Production of quality animal products													
Dairying													
Sheep and goat rearing													
Quail farming													
Piggery													
Rabbit farming													
Poultry production	1	24	10	34	16	13	29	-	-	-	40	23	**63**
Ornamental fisheries	2	18	-	18	10	-	10	-	-	-	28	-	**28**
Para vets													
Para extension workers													
Composite fish culture	8	89	38	127	24	1	25	-	-	-	113	39	**152**
Freshwater prawn culture													
Shrimp farming													
Pearl culture													
Cold water fisheries													
Fish harvest and processing technology													
Fry and fingerling rearing	1	4	20	24	5	-	5	-	-	-	9	20	**29**
Small scale processing													
Post Harvest Technology	1	-	15	15	-	-	-	-	-	-	-	15	**15**
Tailoring and Stitching													
Rural Crafts	3	-	3	3	-	34	34	-	-	-	-	37	**37**
Others/ Application of extension methodology	1	13	-	13	15	-	15	-	-	-	28	-	**28**
Others/ Breeding and culture of indigenous fish	1	14	-	14	27	-	27	-	-	-	41	-	**41**
Others/ Disease management in fish	2	19	30	49	14	-	14	-	-	-	33	30	**63**

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
Others/ Disease Management in animal husbandry	1	25	19	44	6	28	34	-	-	-	31	47	**78**
Others/ Goat farming	1	11	11	22	7	9	16	-	-	-	18	20	**38**
Others/ Household survey	2	22	12	44	55	10	65	-	-	-	87	22	**109**
Others/ Livelihood through animal husbandry	5	39	88	127	33	97	130	-	-	-	72	185	**257**
Others/ Nutritional security	1	-	2	2	-	14	14	-	-	-	-	16	**16**
Others/ Health & Nutrition Management	28	-	489	489	-	804	804	-	-	-	-	1293	**1293**
Others/ Production of bio control agents and bio pesticides	1	17	2	19	7	1	8	2	-	2	26	3	**29**
TOTAL	**73**	**465**	**762**	**1237**	**339**	**1020**	**1359**	**3**	**1**	**3**	**816**	**1782**	**2598**
(C) Extension Personnel													
Productivity enhancement in field crops													
Integrated Pest Management													
Integrated Nutrient management	1	18	-	18	13	-	13	-	-	-	31	-	**31**
Rejuvenation of old orchards													
Protected cultivation technology													
Formation and Management of SHGs													
Group Dynamics and farmers organization													
Information networking among farmers													
Capacity building for ICT application													
Care and maintenance of farm machinery and implements													
WTO and IPR issues													
Management in farm animals													
Livestock feed and fodder production													
Household food security	7	10	71	81	12	111	123	-	-	-	22	182	**204**
Women and Child care	15	27	94	121	28	162	190	-	1	1	55	257	**312**

Thematic Area	No. of Courses	No. of Participants									Grand Total		
		Other			SC			ST					
		M	F	T	M	F	T	M	F	T	M	F	T
Low cost and nutrient efficient diet designing													
Production and use of organic inputs													
Gender mainstreaming through SHGs	1	-	-	-	-	35	35	-	-	-	-	35	**35**
Others/ Composite fish culture	7	104	19	123	31	3	34	-	-	-	135	22	**157**
Others/ Fish breeding and hatchery management	2	30	1	31	3	1	4	-	-	-	33	2	**35**
Others/ IFS	1	20	-	20	13	-	13	-	-	-	33	-	**33**
TOTAL	**34**	**209**	**185**	**394**	**100**	**312**	**412**	**0**	**1**	**1**	**309**	**498**	**807**

Details of training programmes (date wise):

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
2.4.12 – 5.4.12	RY	Technological options for judicious resource utilization by fish and prawn farming in fresh water impoundments	4	On	17	8	25	2	1	3
5.4.12- 7.4.12	F & FW	Preparation & management of nutrition garden to maintain food & nutritional security	3	On	-	18	18	-	10	10
7.4.12	F & FW	Nutritional management of SAM & MAM children at community level	1	Off	-	12	12	-	8	8
9.4.12	F & FW	Nutritional management of SAM & MAM children at community level	1	Off	-	15	15	-	3	3
9.4.12 – 11.4.12	F & FW	Intensive vegetable production in *ail* land	3	On	21	5	26	13	3	16
9.4.12- 13.4.12	F & FW	Alternative livelihood option through animal husbandry	5	On	24	26	50	2	10	12
10.4.12- 12.4.12	F & FW	Preparation & management of nutrition garden to maintain food & nutritional security	3	On	-	21	21	-	11	11
12.4.12	F & FW	Zoonotic disease	1	On	35	13	48	3	8	11
16.4.12- 21.4.12	RY	Rearing poultry, duck and ornamental birds	6	On	3	47	50	-	23	23
17.4.12 – 19.4.12	EP	Fresh water fish and prawn farming	3	On	15	-	15	12	-	12
18.4.12	F & FW	Nutritional management of SAM & MAM children at community level	1	Off	-	20	20	-	-	-

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
23.4.12	EP	Convergence of different government project to have better access to food & nutrition security	1	Off	10	8	18	5	7	12
23.4.12-28.4.12	F & FW	Alternative livelihood through animal husbandry	6	On	6	46	52	1	19	20
28.4.12	EP	Convergence of different government project to have better access to food & nutrition security	1	Off	12	6	18	7	3	10
2.5.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	25	25	-	22	22
2.5.12-4.5.12	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	3	On	-	17	17	-	3	3
3.5.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	32	32	-	26	26
4.5.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	59	59	-	36	36
7.5.12	EP	Skill involved in carp and prawn culture	1	On	11	6	17	6	3	9
7.5.12-9.5.12	F & FW	Hatchery technology for carp breeding and freshwater fish farming	3	On	9	3	12	-	-	-
7.5.12-11.5.12	F & FW	Alternative livelihood through animal husbandry	5	On	12	37	49	3	11	14
8.5.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	57	57	-	33	33
9.5.12	F & FW	Preparation of balance diet for anabolic stage of women & children	1	Off	-	28	28	-	12	12
9.5.12-11.5.12	RY	Mixed fish and prawn farming in domestic ponds	3	On	5	1	6	-	-	-
10.5.12	F & FW	Micro-irrigation system suitable for vegetable crop cultivation	1	Off	67	4	71	32	4	36
10.5.12	EP	Improvement of quality of mid-day meal through nutrition garden at school campus	1	Off	10	11	21	6	3	9
11.5.12	EP	Improvement of quality of mid-day meal through nutrition garden at school campus	1	Off	6	6	12	7	3	10
14.5.12 – 2.6.12	RY	Operation, management of agricultural machineries	20	On	30	-	30	13	-	13
15.5.12	RY	Rearing of poultry	1	Off	40	23	63	16	13	29

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
17.5.12	F & FW	Selection of rice varieties as per land situation, seed treatment and nursery management	1	Off	34	-	34	8	-	8
18.5.12	F & FW	Quality management of cotton	1	On	21	10	31	21	10	31
19.5.12	EP	Improvement of quality of mid-day meal through nutrition garden at school campus	1	Off	6	5	11	4	2	6
22.5.12	EP	Exposure visit cum training of the farm school headmaster under ATMA project	1	On	31	-	31	13	-	13
23.5.12 – 24.5.12	F & FW	Integrated nutrient management in vegetable cultivation	2	On	52	1	53	9	1	10
24.5.12	EP	Convergence of different government project to have better access to food & nutrition security	1	Off	-	15	15	-	9	9
4.6.12	F & FW	Training on personal health & hygiene	1	Off	-	38	38	-	23	23
5.6.12	F & FW	Training on personal health & hygiene	1	Off	-	22	22	-	22	22
6.6.12	F & FW	Training on personal health & hygiene	1	Off	-	42	42	-	20	20
5.6.12 – 7.6.12	F & FW	Export oriented vegetable cultivation techniques suitable to coastal Bengal	3	On	11	13	24	-	2	2
11.6.12	F & FW	Management of *aila* affected soil and selection of salt tolerant *Kharif* paddy varieties	1	On	26	-	26	14	-	14
13.6.12	RY	Introduction to new orchard crop - *Ber*	1	Off	23	2	25	13	-	13
15.6.12	F & FW	Preparation & management of household mushroom cultivation to maintain food & nutritional security	1	On	-	18	18	-	7	7
18.6.12 – 19.6.12	F & FW	Bio-oriented management practices for sustainable betel vine cultivation	2	On	14	17	31	5	2	7
19.6.12	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	1	Off	-	15	15	-	12	12
21.6.12- 23.6.12	EP	Strengthening of SHG		On		35	35		35	35
22.6.12	F & FW	Scientific management practices in a Hi-tech shade net betel vine *boroz*	1	Off	17	5	22	7	1	8
24.6.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	43	43	-	22	22
25.6.12	F & FW	Management of micro-nutrient problems in vegetable crops	1	Off	22	1	23	3	-	3
25.6.12- 27.6.12	F & FW	Scientific method of *Kharif* paddy cultivation according to the land situation	3	On	22	-	22	12	-	12

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
26.6.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	23	23	-	20	20
27.6.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	24	24	-	20	20
28.6.12 – 29.6.12	RY	Establishment of horticulture nursery as an income generating activity	2	On	32	-	32	6	-	6
30.6.12	F & FW	Group formation and group dynamics	1	On	14	-	14	6	-	6
2.7.12	F & FW	Techniques of *Kharif* paddy seed production	1	Off	20	-	20	19	-	19
3.7.12 – 4.7.12	F & FW	Skill involved in carp and prawn culture	2	On	34	-	34	32	-	32
3.7.12- 4.7.12	RY	Goat rearing as income generation activity by SHGs	2	On	18	20	38	7	9	16
11.7.12	F & FW	Poly culture of carp and prawn	1	Off	23	-	23	23	-	23
11.7.12 - 12.7.12	F & FW	Fresh water fish and prawn culture in rural ponds	2	On	71	4	75	61	3	64
12.7.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	60	60	-	32	32
12.7.12	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	1	Off	-	19	19	-	9	9
13.7.12	F & FW	Immunization of animals	1	Off	51	36	87	15	13	28
16.7.12 – 18.7.12	RY	Small scale ornamental fish farming for additional income generation	3	On	17	-	17	8	-	8
16.7.12 – 20.7.12	F & FW	Planning and management of vegetable crop cultivation in land-shaping plots	5	On	18	4	22	5	-	5
17.7.12	F & FW	Possibilities of multiple cropping in landshaping plots	1	Off	50	-	50	4	-	4
18.7.12	F & FW	Fish production under Home stead farming system with special reference to integrated cultivation of rice and fish	1	Off	20	-	20	17	-	17
19.7.12- 20.7.12	F & FW	Household mushroom cultivation to maintain nutritional security	2	On	-	22	22	-	13	13
19.7.12- 21.7.12	RY	Breeding of Asian catfish and its farming with carp and prawn in fresh water ponds	3	On	41	-	41	27	-	27
20.7.12	RY	Immunization of animals	1	Off	31	47	78	6	28	34
23.7.12	F & FW	Group formation and group dynamics	1	Off	18	-	18	11	-	11
23.7.12 – 28.7.12	F & FW	Fresh water fish and prawn culture in domestic ponds	6	On	1	59	60	1	57	58

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
23.7.12 – 28.7.12	EP	Breeding, hatching and farming of fresh water fishes with special reference to carp, catfish and ornamental fish	6	On	7	2	9	2	1	3
24.7.12-30.7.12	RY	Clay ornaments making	7	On		12	12		12	12
25.7.12	F & FW	Convergence of different government project to have better access to food & nutrition security	1	Off	-	27	27	-	12	12
25.7.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	57	57	-	32	32
26.7.12	F & FW	Group formation and group dynamics	1	Off	25	18	43	11	5	16
26.7.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	53	53	-	38	38
30.7.12-4.8.12	RY	Animal husbandry for income generating activity	6	On	29	22	51	20	11	31
30.7.12-5.8.12	RY	Clay ornaments making	7	On		17	17		17	17
4.8.12-10.8.12	RY	Clay ornaments making	1	On	-	8	8	-	5	5
7.8.12	F & FW	Immunization of animals	1	Off	20	34	54	8	11	19
9.8.12-11.812	F & FW	Exposure visit of different units of modern agricultural technologies	3	On	21	4	25	5	2	7
13.8.12	F & FW	Household mushroom cultivation to maintain nutritional security	2	On	-	31	31	-	9	9
16.8.12 – 17.8.12	F & FW	Establishment, maintenance and management of *Ber* orchard as new employment generating avenue	2	On	32	7	39	23	5	28
16.8.12 – 17.8.12	EP	Fresh water fish and prawn culture	2	On	21	5	26	3	-	3
21.8.12	F & FW	Fertilizer application and disease pest management	1	Off	28	12	40	3	2	5
22.8.12	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	1	Off	-	30	30	-	21	21
23.8.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	22	22	-	11	11
24.8.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	30	30	-	18	18

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
27.8.12 – 1.9.12	F & FW	Fresh water fish and prawn culture in domestic ponds	6	On	-	48	48	-	-	-
31.8.12	F & FW	Fertilizer management in *kharif* vegetable cultivation	1	On	11	20	31	2	6	8
3.9.12	F & FW	Preparation of low cost weaning feed	2	On	-	16	16	-	4	4
3.9.12-7.9.12	RY	Alternative livelihood option through animal husbandry practices	5	On	9	48	57	3	29	32
4.9.12 – 6.9.12	F & FW	Mixed fish and prawn farming	3	On	24	-	24	7	-	7
4.9.12-6.9.12	F & FW	Ornamental bird rearing	3	On	23	30	53	13	12	25
6.9.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	25	25	-	18	18
7.9.12	EP	Improvement of quality of mid-day meal through nutrition garden at school campus	1	Off	6	4	10	5	3	8
9.9.12	F & FW	Use of locally available herbs for preventive & curative properties	2	On	-	12	12	-	8	8
10.9.12-11.9.12	F & FW	Landshaping an unique model for Sundarban	2	On	23	-	23	3	-	3
12.9.12	F & FW	Pollination problem in cucurbit vegetables and its management with special emphasis to Bee-keeping	1	Off	12	27	39	4	5	9
17.9.12	F & FW	Nutritional management of SAM & MAM children at community level	1	Off	-	14	14	-	9	9
19.9.12 – 21.9.12	RY	Ornamental fish culture for additional income generation	3	On	11	-	11	2	-	2
19.9.12-21.9.12	RY	Soil testing and fertilizer management in different crops	3	On	8	-	8	2	-	2
20.9.12 – 21.9.12	F & FW	Nutrient management and fruit quality management in guava orchard	2	On	38	6	44	15	1	16
21.9.12	F & FW	Use of locally available herbs for preventive & curative properties	1	Off	-	23	23	-	11	11
21.9.12	EP	Integrated farming system	1	On	33	-	33	13	-	13
22.9.12	F & FW	Preparation of nutrient efficient diet for anabolic stage of women & children	1	Off	-	45	45	-	30	30
24.9.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	46	46	-	26	26
24.9.12-26.9.12	F & FW	Methods of fertilizer application in low land rice	2	On	18	-	18	9	-	9
24.9.12-29.9.12	F & FW	Alternative livelihood option through animal husbandry practices	6	On	10	39	49	7	13	20

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
27.9.12	F & FW	Methods of fertilizer application in low land rice	1	Off	13	17	30	-	-	-
28.9.12	F & FW	Weed management practices on medium and low land paddy	1	Off	35	1	36	32	1	33
5.10.12	RY	Weed management and rouging	1	Off	26	-	26	22	-	22
5.10.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	51	51	-	29	29
7.10 .12	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	1	Off	-	37	37	-	25	25
8.10.12	F & FW	Training on personal health & hygiene	1	Off	-	47	47	-	47	47
8.10.12	F & FW	Refresher course on ornamental bird rearing	1	Off	27	30	57	13	18	31
8.10.12-9.10.12	F & FW	Use of gender friendly agricultural implements to reduce drudgery	1	On	-	26	26	-	25	25
8.10.12-12.10.12	RY	Alternative livelihood option through animal husbandry practices	5	On	10	37	47	7	13	20
9.10.11	F & FW	Training on personal health & hygiene	1	Off	-	45	45	-	10	10
10.10.12	F & FW	Training on personal health & hygiene	1	Off	-	35	35	-	30	30
11.10.12	F & FW	Preparation of nutrient efficient diet for anabolic stage of women & children	1	Off	-	45	45	-	33	33
11.10.12-12.10.12	F & FW	Suitable cropping pattern for *rabi* and summer season in landshaping plots	2	On	24	4	28	10	-	10
12.10.12	F & FW	Household mushroom cultivation to maintain nutritional security	2	On	-	14	14	-	9	9
16.10.12	F & FW	Use of low cost zero energy cool chamber for storage loss minimization	1	Off	-	44	44	-	25	25
16.10.12	F & FW	Post monsoon management practices in betel vine plantations	1	Off	33	-	33	17	-	17
16.10.12 – 17.10.12	F & FW	Mixed fish and prawn farming	2	On	25	-	25	1	-	1
17.10.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	46	46	-	26	26
18.10.12	FW	Use of low cost zero energy cool chamber for storage loss minimization	1	Off	-	45	45	-	27	27
18.10.12-19.10.12	F & FW	Production technology on vermicompost	2	On	15	5	20	8	2	10
30.10. 12	F & FW	Disease management in plant nursery	1	Off	21	6	27	8	4	12
30.10.12-3.11.12	F & FW	Alternative livelihood option through animal husbandry practices	5	On	12	37	49	2	20	22

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
31.10.12	F & FW	Foliar nutrient management and other approaches to quality improvement in guava orchard	1	Off	24	7	31	4	5	9
3.11.12	F & FW	Nutritional management of SAM & MAM children at community level	1	Off	-	20	20	-	2	2
5.11.12	EP	Convergence of different government project to have better access to food & nutrition security	1	Off	-	50	50	-	29	29
6.11.12	EP	Convergence of different government project to have better access to food & nutrition security	1	Off	-	26	26	-	21	21
5.11.12-9.11.12	RY	Alternative livelihood option through animal husbandry practices	5	On	21	31	51	3	21	24
6.11.12 – 8.11.12	RY	Establishment and management of ornamental plant nursery in a short term business approach	3	On	24	-	24	6	-	6
7.11.12	F & FW	Preparation of low cost weaning feed	1	Off	-	42	42	-	25	25
8.11.12	F & FW	Use of locally available herbs for preventive & curative properties	1	Off	-	28	28	-	15	15
9.11.12	F & FW	Preparation & management of household mushroom cultivation to maintain food & nutritional security	1	Off	-	48	48	-	28	28
16.11.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	58	58	-	32	32
19.11.12	F & FW	Advance technology on second crop cultivation in Sundarbans	1	Off	25	3	28	3		3
19.11.12-21.11.12	F & FW	Use of gender friendly agricultural implements to reduce drudgery	1	On	-	37	37	-	25	25
20.11.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	41	41	-	23	23
21.11.12	F & FW	Management of fungal wilt in Sunflower	1	Off	15	3	18	11	2	13
21.11.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	46	46	-	25	25
23.11.12	F & FW	Preparation & management of household mushroom cultivation to maintain food & nutritional security	1	On	-	52	52	-	30	30
24.11.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	49	49	-	26	26

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
26.11.12	F & FW	Preparation & management of nutrition garden to maintain food & nutritional security	1	Off	-	45	45	-	27	27
26.11.12	F & FW	*Boro* paddy cultivation through SRI	1	Off	26	-	26	12	-	12
26.11.12	F & FW	Preparation & management of nutrition garden to maintain food & nutritional security	1	Off	-	49	49	-	30	30
26.11.12 – 27.11.12	EP	Fresh water fish and prawn culture	2	On	11	10	21	7	-	7
26.11.12 - 28.11.12	F & FW	Vermicomposting – Technique & management	3	On	17	-	17	15	-	15
27.11.12	F & FW	Household mushroom cultivation to maintain nutritional security	1	Off	-	29	29	-	22	22
27.11 .12	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	1	Off	-	41	41	-	29	29
29.11.12	EP	Convergence of different government project to have better access to food & nutrition security	1	Off	-	50	50	-	30	30
29.11.12-01.12.12	RY	Post harvest processing & value addition of vegetables & fruits	3	On	-	15	15	-	-	-
4.12.12-6.12.12	F & FW	Ornamental bird, poultry and duck rearing	3	On	19	29	48	6	13	19
4.12.12-6.12.12	F & FW	Household mushroom cultivation to maintain nutritional security	3	On	-	13	13	-	3	3
10.12.12-11.12.12	F & FW	Use of farm & household waste for production of organic manure (vermi compost)	2	On	-	20	20	-	15	15
10.12.12 – 12.12.12	RY	Utilization of fresh water ponds for rearing of carp fingerlings	3	On	9	20	29	5	-	5
12.12.12	EP	Improvement of quality of mid-day meal through nutrition garden at school campus	1	Off	9	2	11	2	4	6
10.12.12 – 14.12.12	F & FW	Improved method of high value vegetable cultivation techniques in open system *vis-a-vis* controlled system (Green house)	5	On	24	1	25	1	-	1
12.12.12-13.12.12	F & FW	Ornamental bird rearing	2	On	12	31	43	2	16	18
13.12.12	F & FW	*Boro* paddy cultivation through SRI	1	Off	20	13	33	15	12	27
13.12.12	F & FW	Preparation & management of nutrition garden to maintain food & nutritional security	1	Off	-	30	30	-	10	10

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
14.12.12	F & FW	Modern technology on sunflower cultivation	1	Off	25	17	42	25	17	42
17.12.12 - 21.12.12	RY	Hands-on training on bee keeping	5	On	10	-	10	9	-	9
18.12.12	F & FW	Household mushroom cultivation to maintain nutritional security	1	Off	-	22	22	-	22	22
18.12.12 – 20.12.12	RY	Technologies involved in the farming of carps, prawn and catfish in fresh water ponds	3	On	14	2	16	3	-	3
19.12.12	F & FW	Nutritional management of SAM & MAM children at community level	1	Off	-	23	23	-	14	14
19.12.12- 20.12.12	F & FW	Ornamental bird rearing	2	On	21	13	34	8	2	10
20.12.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	49	49	-	28	28
20.12.12 – 22.12.12	RY	Mixed culture of fish and prawn in fresh water ponds	3	On	21	6	27	3	-	3
21.12.12	RY	Training to the rural youths for household survey in the different mouzas of Shankizahan and Bionodpur	1	On	36	11	47	22	3	25
21.12.12 - 22.12.12	EP	Skills involved in the farming of fresh water fishes	2	On	28	1	29	1	-	1
22.12.12	RY	Training to the rural youths for household survey in the different mouzas of Shankizahan and Binodpur	1	On	51	11	62	33	7	40
22.12.12- 23.12.12	F & FW	Modern technology on sunflower cultivation	2	On	28	1	29	11	1	13
27.12.12	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	53	53	-	30	30
27.12.12 – 29.12.12	RY	Hazards in fresh water fish and prawn farming and their control	3	On	17	13	30	8	-	8
29.12.12	F & FW	Cotton cultivation under residual moisture	1	Off	42	2	44	42	2	44
27.12.12	F & FW	Use of Bio-pesticides in plant protection	1	Off	28	6	34	12	3	15
28.12.12 -29.12.12	F & FW	Organic Farming in Oil Seed Cultivation	2	On	19	1	20	1	-	1
31.12.12	F & FW	Preparation of nutrient efficient diet for anabolic stage of women & children	1	Off	-	59	59	-	50	50

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
31.12.12	RY	Application of extension methodology for improvement of nutritional security at community level	1	On	-	16	16	-	14	14
2.1.13	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	1	Off	-	21	21	-	15	15
3.1.13-5.1.13	F & FW	Goat rearing	3	On	21	31	52	11	8	19
4.1.13	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	61	61	-	32	32
5.1.13	EP	Improvement of quality of mid-day meal through nutrition garden at school campus	1	Off	9	10	19	4	6	10
7.1.13	F & FW	Strengthening of SHG	2	On	-	35	35	-	21	21
7.1.13	F & FW	Strengthening of SHG	2	On	-	33	33	-	17	17
7.1.13-12.1.13	RY	Modern agro-horticulture practices	6	On	15	6	21	8	1	9
8.1.13	F & FW	Scientific method of bird rearing for income generation	1	On	-	30	30	-	-	-
8.1.13	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	57	57	-	38	38
9.1.13 – 11.1.13	F & FW	Improved method of early summer vegetable cultivation with special emphasis to okra and bitter gourd	3	On	27	5	32	18	2	20
11.1.13 – 12.1.13	RY	Fresh water fish and prawn farming, its hazards and control measures	2	On	16	17	33	6	-	6
12.1.13	F & FW	Cultivation of fish under integrated farming system in salt affected coastal areas	1	Off	45	11	56	24	-	24
13.1.13 – 14.1.13	RY	Mixed fish and prawn farming	2	On	5	4	9	1	-	1
14.1.13	EP	Skills involved in the mixed fish and prawn farming	1	On	24	-	24	-	-	-
14.1.13-19.1.13	RY	Modern agro-horticulture practices	6	On	18	3	21	14	2	16
15.1.13	F & FW	Poultry farming	1	Off	5	59	64	1	32	33
15.1.13 - 19.1.13	RY	Hands-on training on bee keeping	5	On	19	-	19	-	-	-
16.1.13	RY	Exposure visit to a Ber orchard- a new profit earning venture	1	Off	21	9	30	11	2	13
17.1.13	F & FW	Ornamental bird rearing	1	Off	3	62	65		28	28

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
17.1.13	F & FW	Use of locally available herbs for preventive & curative properties	1	Off	-	40	40	-	28	28
17.1.13	EP	Breeding of common carps and its larval rearing technologies	1	On	26	-	26	1	-	1
17.1.13	F & FW	Nutritional management of SAM & MAM children at community level	1	Off	-	14	14	-	9	9
18.1.13 – 19.1.13	RY	Fresh water fish and prawn culture in domestic ponds	2	On	24	12	36	6	-	6
19.1.13	F & FW	Preparation of nutrient efficient diet for anabolic stage of women & children	1	Off	-	46	46	-	36	36
21.1.13	F & FW	Pest & diseases of betel vine & their management	1	Off	48	-	48	5	-	5
21.1.13	RY	Water and nutrient management in coloured capsicum cultivation in hi-tech green house	1	Off	26	2	28	8	-	8
28.1.13	F & FW	Preparation & management of nutrition garden to maintain food & nutritional security	1	Off	-	29	29	-	29	29
29.1.13- 31.1.13	F & FW	Poultry and duck farming	3	On	14	29	43	3	11	14
29.1.13 – 2.2.13	RY	Horticultural nursery Management as a business venture	5	On	17	6	23	4	2	6
31.1.13 - 1.2.13	F & FW	Innovative ideas and new ways to agricultural practices	2	On	15	3	18	12	2	14
8.2.13	F & FW	Preparation of nutrient efficient diet for anabolic stage of women & children	1	On	-	24	24	-	18	18
11.2.13	F & FW	Maize cultivation	1	On	15	-	15	10	-	10
11.2.13	F & FW	Integrated crop management in Okra	1	Off	21	5	26	7	2	9
18.2.13- 19.2.13	RY	Micro planning through participatory rural appraisal	2	On	-	28	28	-	15	15
25.2.13 – 28.2.13	F & FW	Soil health management and scientific seed use for sustainable vegetable production	4	On	20	2	22	5	0	5
25.2.13 - 2.3.13	F & FW	IPM techniques in vegetable production	6	On	6	-	6	5	-	5
25.2.13	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	57	57	-	38	38
26.2.13	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	57	57	-	38	38
26.2.13- 28.2.13	F & FW	Soil health and integrated nutrient management, concept of compost, vermicompost and biofertilizer	3	On	10	10	20	10	-	10

Date	Clientele	Title of the training programme	Duration in days	Venue (Off / On)	Number of participants			Number of SC/ST		
					M	F	T	M	F	T
2.3.13	EP	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	1	On	-	20	20	-	14	14
4.3.13 - 5.3.13	RY	Agri clinic & agri business	2	On	26	3	29	9	1	10
5.3.13	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	51	51	-	37	37
7.3.13	EP	Mixed fish and prawn farming	1	On	25	-	25	2	-	2
9.3.13	F & FW	Preparation & management of nutrition garden to maintain food & nutritional security	1	Off	-	50	50	-	50	50
11.3.13	RY	Nutritional requirement for adolescent period in reference to physiological changes	1	Off	-	61	61	-	48	48
13.3.13	F & FW	Poultry farming	1	Off	3	49	52	-	23	23
13.3.13-16.3.13	EP	Capacity building of TBA for safe home delivery	4	On	-	26	26	-	14	14
14.3.13	F & FW	Preparation of nutrient efficient diet for anabolic stage of women & children	1	Off	-	31	31	-	22	22
14.3.13-15.3.13	F & FW	Scientific method of oilseed and pulse cultivation during summer season	2	On	24	-	24	24	-	24
15.3.13	F & FW	Preparation of nutrient efficient diet for anabolic stage of women & children	1	Off	-	43	43	-	31	31
15.3.13 – 16.3.13	F & FW	Mixed fish and prawn farming	2	On	21	-	21	21	-	21
18.3.13-19.3.13	F & FW	Use of farm & household waste for production of organic manure (vermi compost)	2	On	-	16	16	-	-	-
18.3.13 – 20.3.13	RY	Utilization of fresh water ponds by farming of mixed fish and prawn	3	On	12	-	12	6	-	6
19.3.13 – 21.3.13	RY	Vermicomposting as an income generating activity	3	On	21	4	25	4	2	6
21.3.13	F & FW	Resource utilization with carps and prawn	1	On	24	-	24	18	-	18
25.3.13 - 26.3.13	RY	Culture of mixed fish and prawn in domestic ponds	2	On	15	6	21	3	-	3

(D) Vocational training programmes for Rural Youth :

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
				Male	Female	Total	Type of units	Number of units	No. of persons employed	
Agricultural Mechanization	Repair and maintenance of farm machinery and implements	Operation and management of agricultural machineries	20	30	-	30	Repairing shop	3	9	27
Horticulture	Nursery Management of Horticulture crops	Horticultural nursery management as a business venture	5	17	6	23	Horticultural nursery	5	10	8
Horticulture	Nursery Management of Horticulture crops	Establishment and management of ornamental plant nursery in a short term business approach	3	24	-	24	Horticultural nursery	3	6	7
Organic manure	Production of organic inputs	Vermicomposting as an income generating activity	3	21	4	25	Vermi-compost	4	10	-
Fishery	Composite fish culture	Technological options for judicious resource utilization by fish and prawn farming in fresh water impoundments	4	17	8	25	Small pond	11	21	4

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
Fishery	Composite fish culture	Mixed fish and prawn farming in domestic ponds	3	5	1	6	Small pond	6	14	-
Fishery	Ornamental fisheries	Small scale ornamental fish farming for additional income generation	3	17	-	17	Hapa in Small pond	8	8	-
Fishery	Breeding and culture of indigenous fish	Breeding of Asian Catfish and its farming with carp and prawn in fresh water ponds	3	41	-	41	Tank	7	12	11
Fishery	Ornamental fisheries	Ornamental fish culture for additional income generation	3	11	-	11	Hapa in Small pond	10	10	-
Fishery	Fry and fingerling rearing	Utilization of fresh water ponds for rearing of carp fingerlings	3	9	20	29	Small pond	16	23	4
Fishery	Composite fish culture	Technologies involved in the farming of carps, prawn and catfish in fresh water ponds	3	14	2	16	Small pond	11	19	2
Fishery	Composite fish culture	Mixed culture of fish and prawn in fresh water ponds	3	21	6	27	Small pond	17	26	4

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
Fishery	Composite fish culture	Mixed fish and prawn farming	2	5	4	9	Small pond	6	8	3
Fishery	Composite fish culture	Fresh water fish and prawn culture in domestic ponds	2	24	12	36	Small pond	19	27	6
Fishery	Composite fish culture	Utilization of fresh water ponds by farming of mixed fish and prawn	3	12	-	12	Small pond	8	11	2
Fishery	Composite fish culture	Culture of mixed fish and prawn in domestic ponds	2	15	6	21	Small pond	11	18	6
Agronomy	Integrated Farming	Modern agri-horticulture practices	6	15	6	21	Marginal Farmer	15	42	6
Agronomy	Integrated Farming	Modern agri-horticulture practices	6	18	3	21	Marginal Farmer	13	36	8
Livestock Animal Husbandry	Livelihood through animal husbandry	Rearing poultry, duck and ornamental birds	6	3	47	50	Small units	20	32	6
Livestock	Poultry production	Rearing of poultry	1	40	23	63	Small units	28	38	9
Livestock	Others/ Goat farming	Goat rearing as income generation activity by SHGs	2	18	20	38	Small units	17	20	-

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self-employed after training			Number of persons employed else where
Livestock	Livelihood through animal husbandry	Animal husbandry for income generating activity	6	29	22	51	Small units	32	32	-
Livestock	Livelihood through animal husbandry	Alternative livelihood option through animal husbandry practices	5	9	48	57	Small units	29	33	-
Livestock	Livelihood through animal husbandry	Alternative livelihood option through animal husbandry practices	5	10	37	47	Small units	23	25	-
Livestock	Livelihood through animal husbandry	Alternative livelihood option through animal husbandry practices	5	21	31	52	Small units	27	29	-
Allied agricultural activities	Bee-keeping	Hands-on Training on Bee Keeping	5	10	-	10	Small units	3	4	-
Allied agricultural activities	Bee-keeping	Hands-on Training on Bee Keeping	5	19	-	19	Small units	5	7	-

*training title should specify the major technology /skill transferred

(E) Sponsored Training Programmes

Sl. No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants									Sponsoring Agency
					PF/RY/EF		Male			Female			Total			
							Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
1	Innovative Ideas and New ways to Agricultural Practices	Bio-control of pests and diseases	January-February	2	PF	1	2	-	13	1	-	2	3	-	15	18	Asansol Bardhaman Seva Kendra, Bardhaman, WB
2	Agri Clinics and Agri Business	Others/ Production of bio control agents and bio pesticides	March	2	RY	1	18	7	1	2	-	1	20	7	2	29	SAMETI, West Bengal
3	Horticultural nursery Management as a business venture	Nursery Management of Horticulture crops	January-February	5	RY	1	13	4	-	4	2	-	17	6	-	23	Neheru Yuva Kendra
4	Soil health management and scientific seed use for sustainable vegetable production	Soil fertility management	February	4	PF	1	15	5	-	2	-	-	17	5	-	22	Dept. of Co-operative, Govt. of West Bengal
5	Convergence of different government project to have better access to food & nutrition security	Household food security	April, November	1	EF	5	10	12	-	50	90	-	60	102	-	162	WHH, Delhi, India
6	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	Women and Child care	June, July, November, January, March	1-3	EF	5	-	-	-	23	79	-	23	79	-	102	Dalai Lama Trust, India
7	Capacity building of TBA for safe home delivery	Women and Child care	March	4	EF	1	-	-	-	12	13	1	12	13	1	26	WHH, Delhi, India
8	Operation, management of agricultural machineries	Repair and maintenance of farm machinery and implements	May-June	20	RY	1	17	13	-	-	-	-	17	13	-	30	Dept. of Agriculture, Govt of WB

Sl. No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants										Sponsoring Agency
					PF/RY/EF		Male			Female			Total				
							Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
9	Breeding, hatching and farming of fresh water fishes with special reference to carp, catfish and ornamental fish	Others/ Fish breeding and hatchery management	July	6	EF	1	5	2	-	1	1	-	6	3	-	9	CIFE, Kolkata
10	Fresh water fish and prawn culture	Others/ Composite fish culture	August	2	EF	1	18	3	-	5	-	-	23	3	-	26	CIFE, Kolkata
11	Mixed fish and prawn farming	Composite fish culture	March	2	PF	1	-	21	-	-	-	-	-	21	-	21	CIFE, Kolkata
12	Fresh water fish and prawn culture in rural ponds	Composite fish culture	July	2	PF	1	10	61	-	1	3	-	11	64	-	75	Sundarban Development Board
13	Fresh water fish and prawn culture in domestic ponds	Composite fish culture	July	6	PF	1	-	1	-	2	57	-	2	58	-	60	District Rural Development Centre, South 24 Parganas
14	Exposure visit cum training of the farm school headmaster under ATMA project	Integrated Nutrient management	May	1	EF	1	18	13	-	-	-	-	18	13	-	31	ATMA
15	Exposure visit of different units of modern agricultural technologies	Integrated Farming	August	3	PF	1	16	5	-	2	2	-	18	7	-	25	Bhutura Gram Panchayat, Birbhum
16	Modern agri-horticulture practices	Integrated Farming	January	6	RY	1	7	8	-	5	1	-	12	9	-	21	Neheru Yuva Kendra Sangathan, Diamond Harbour
17	Modern agri-horticulture practices	Integrated Farming	January	6	RY	1	4	14	-	1	2	-	5	16	-	21	Neheru Yuva Kendra Sangathan, Baruipur
18	Soil health and integrated nutrient management, concept of compost, vermicompost and bio fertilizer	Integrated Nutrient Management	February	3	PF	1	-	10	-	10	-	-	10	10	-	20	Project Management Unit, Cooperation Directorate, GoWB
19	Scientific method of oilseed and pulse cultivation during summer season	Crop Diversification	March	2	PF	1	-	24	-	-	-	-	-	24	-	24	ANWESHA Welfare society, Tufanganj, Cooch Behar

Sl. No	Title	Thematic area	Month	Duration (days)	Client	No. of courses	No. of Participants									Sponsoring Agency
					PF/RY/EF		Male			Female			Total			
							Others	SC	ST	Others	SC	ST	Others	SC	ST	Total	
20	Animal husbandry for income generating activity	Others/ Livelihood through animal husbandry	July – August	6	RY	1	9	20	-	11	11	-	20	31	-	51	DRDC, South 24 Parganas
21	Alternative livelihood option through animal husbandry practices	Others/ Livelihood through animal husbandry	September	6	PF	1	3	7	0	26	13	-	29	20	-	49	DRDC, South 24 Parganas
22	Alternative livelihood option through animal husbandry practices	Others/ Livelihood through animal husbandry	September, October, November	5	RY	4	37	15	-	70	83	-	107	98	-	205	Dept. of Forest, GoWB

3.4. Extension Activities (including activities of FLD programme)

Nature of Extension Activity	No. of activities	Farmers			Extension Officials			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Day	21	267	127	394	18	12	30	285	139	424
Kisan Mela	3	556	345	901	58	26	84	614	371	985
Kisan Ghosthi	-									
Exhibition	2	16212	5214	21426	302	112	414	16514	5326	21840
Film Show	79	825	689	1514	56	25	81	881	714	1595
Method Demonstrations	76		3040	3040	18	32	50	25	3072	3090
Farmers Seminar	-									
Workshop	4	96	49	145	13	11	25	109	54	170
Group meetings	62	70	3100	3170	9	12	21	79	3121	3191
Lectures delivered as resource persons	9									
Newspaper coverage	5									
Radio talks	3									
TV talks	4									
Popular articles	-									
Extension Literature	6									
Advisory Services	2348	1742	689	2431	-	-	-	1742	689	2431
Scientific visit to farmers field	137	952	366	1318	18	10	28	970	376	1346
Farmers visit to KVK	2130	1956	522	2478	-	-	-	1956	522	2478
Diagnostic visits	97	3248	2104	5352				3248	2104	5352
Exposure visits	6	142	31	173	-	-	-	142	31	173
Ex-trainees Sammelan	1	580	270	850	34	8	42	614	278	892
Soil health Camp	3	123	41	164	-	-	-	123	41	164
Animal Health Camp	18	5270	2360	7630	24	-	24	5294	2360	7654
Agri mobile clinic	-									
Soil test campaigns	-									
Farm Science Club Conveners meet	3	-	-	-	135	32	167	135	32	167
Self Help Group Conveners meetings	2		36	36	7	13	20	7	49	85
Mahila Mandals Conveners meetings	2		43	43	4	6	10	4	49	92
Celebration of important days (Fish Farmers Day), 10 July, 2012	1	2640	790	3430	126	41	167	2766	831	3597
Any Other (Specify)										
1. Breast feeding week (1^{st}-7^{th} September)	7		208	208		17	17		225	225
2.Nutrition week	7		278	278		12	12		290	290
3.International Womens' Day (8^{th} March)	1		52	52		5	5		57	57
4.Midterm evaluation	3	43	112	155	7	2	9	50	114	205
5.Impact assessment	1	59	212	271	20	6	26	79	232	311
Total	**5041**	**34781**	**20678**	**55459**	**849**	**382**	**1232**	**35637**	**21077**	**56503**

3.5 Production and supply of Technological products

Village seed

Crop	variety	Quantity of seed (q)	Value (Rs)	Number of farmers provided
Cereals	-	-	-	-

KVK farm

Crop	Variety	Quantity of seed (q)	Value (Rs)	Number of farmers provided
Cereals				
Paddy	IET-5656 (certified)	25.0	50000.00	250
	Pratiksha (certified)	12.2	24400.00	122
	NC-492(certified)	11.6	23280.00	110
	CR-1009 (foundation)	12.0	24000.00	120
	CR-1017(foundation)	3.5	7000.00	35
	Swarna Sub-I(foundation)	7.8	19500.00	72
	NC-492 (TL)	2.0	3200.00	22
	Swarna Sub-I(TL)	5.1	8000.00	48
	Pankaj (TL)	2.79	4185.00	25
	Amolmona (TL)	2.46	3690.00	25
	Dudshwar (TL)	1.81	3620.00	22
Pulses				
Green gram	PDM-84-139	5.20	20800.00	105
Arhar				
Oilseed				
Sunflower	PAC-334	3.50	9800.00	-
Mustard				
Fibre crops				
Cotton	Surabhi	2.3	7200.00	-
Total			**208675.00**	**956**

Production of planting materials by the KVKs

Crop	Variety	Quantity of seedling (no)	Value (Rs)	Number of farmers provided
Vegetable seedlings				
Onion seedling	N-53	11390	3417.00	46
Chilli seedling	Tejoshini	7640	7640.00	31
Brinjal seedling	Muktokeshi, Boral	5420	2710.00	27
Beet seedling	Crimson Globe	10472	3141.60	35
Sweet potato vine	Sree vardhini	24700	4940.00	62
Tomato	SG-1458	2430	2916.00	10
Fruits				
Papaya	Honey Dew, Ranchi	2765	11060.00	28

Crop	Variety	Quantity of seedling (no)	Value (Rs)	Number of farmers provided
Mango	Amrapali, Mallika, Himsagar	1265	44275.00	253
Sapota	Cricket Ball	780	27300.00	260
Guava	Baruipur Khaja	370	9250.00	62
Banana sucker	Kanthali	1120	13440.00	22
Ornamental plants				
Chrysanthemum	Pompon, Snowball	3400	5100.00	68
Marigorld	Inca	2700	8100.00	135
Dahlia	-	4100	8200.00	373
Medicinal and Aromatic				
Neem		14000	28000.00	-
Plantation				
Coconut		4600	161000.00	383
Arecanut		1800	14400.00	60
Tuber				
Amorphophallus		32 q	64000.00	27
Fodder crop saplings				
Hybrid Napier		15000 cutting	26250.00	75
Forest Species				
Sonajhuri		26800	53600.00	
Teak		6700	33500.00	
Mahagoni		5400	27000.00	
Total			**495239.60**	**1957**

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity	Value (Rs.)	No. of Farmers	No. of KVKs
Bio Fertilisers	-	-	-	-	-
Bio-pesticide	*Sl*NPV	4.5 lit	2400.00	13	-
	Metarhizium anisopliae	6 kg	600.00	6	-
Bio-fungicide	*Pseudomonas fluorescens*	210.00 kg	21,000.00	420	-
	Trichoderma viride	209.00 Kg	20,900.00	406	-
	Trichoderma harzianum	30.0 kg	3000.00	42	-
Bio Agents	*Trichogramma chilonis*	1200 trichocards (Having 72 lakh *Trichogramma* wasp)	12,000.00	100	-
	Chrysoperla carnea	56,000 grubs	5,600.00	44	-
Others					-
Total			**65500.00**	**1031**	**-**

Production of livestock materials

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	No. of Farmers	No. of KVKs
Dairy animals					
Cows	J.C, HF. C, GIR Sahiwal C.	78	18,60,000	-	-
Calves	-	12	72000	-	-
Broilers	Hygrow	200 (4 cycle)	88000	-	-
Duals (broiler and layer)	RIR, Nirvik, Hitkari, Upkari	800	47000	24	-
Goat	Black Bengal	73	124000	29	-
Rabbit	White New Zealand	24	9600	5	-
Guinea pig	-	18	15000	-	-
Ornamental bird	Budgerigar, Cockatail	210	27000	51	-
Total	-	-	**2242600**	**109**	-

Particulars of Live stock	Name of the breed	Number / amount	Value (Rs.)	No. of Farmers	No. of KVKs
Fisheries					
Table fish	Indian carp & Exotic carp	760 kg	76000.00	-	-
Indian carp fingerlings	Rahu, Katla, Mrigal, Bata, Kalbasu	617 kg	61700.00	56	-
Exotic carp fingerlings	Silver carp, Grass carp, Common carp	205 kg	20500.00	21	-
Indian carp fry	Rahu, Katla, Mrigal, Bata, Kalbasu	18 kg	2700.00	9	-
Exotic carp fry	Silver carp, Grass carp, Common carp	10 kg	1500.00	4	-
Indian carp spawn	Rahu, Katla, Mrigal, Bata, Kalbasu	2.4 million	6000.00	5	-
Exotic carp spawn	Silver carp, Grass carp, Common carp	1.2 million	4000.00	4	-
Ornamental fish	Guppy, Molly, Gold fish, Koicarp, Angel, Gourami	60,000 nos.	24,000.00	12	-
Tilapia	Red tilapia hybrid	32,000 nos.	64,000.00	-	-
Catfish	Asian catfish	7,000 nos.	21,000.00	-	-
Total	**-**	**-**	**281400.00**	**111**	**-**

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

(A) KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.)

i) Name of the News letter: KVK Barta in Bengali
ii) Date of start: October, 2010
ii) Periodicity: Quarterly
iii) Copies distributed: 570

(B) Literature developed/published

Item	Title	Authors name	Number
Research papers	Rethinking of Sundarban Mangrove through Community Participation	Chandan Kumar Mondal, Bholanath Mondal, N.C.Sarkar, R.K. Maity and H.Gonzalez	14
	Study on Genetic Diversity in Chilli (*Capsicum* sp.) Based on Multivariate Analysis and Isozyme Analysis	Chandan Kumar Mondal, Pinaki Acharyya, Uttam Saha and Pranab Hazra	
	Salinity Tolerance in Pepper in the Sundarban Region of West Bengal, India	Chandan Kumar Mondal, Uttam Saha and Pinaki Acharyya	
	Role of Phenolic Compounds in Plant Defence Mechanism for Chilli Leaf Curl Complex	Chandan Kumar Mondal, Pinaki Acharyya, Uttam Saha and Pranab Hazra	
	Management of Causal Agents of Chilli Leaf Curl Complex through biofriendly approaches	Lakshman Chandra Patel, Chandan Kumar Mondal and Pinaki Acharyya	
	Mangrove plants and traditional *Ayurvedic* practitioners in Sundarbans region of West Bengal, India	Bholanath Mondal, N.C.Sarkar, Chandan Kumar Mondal, R.K. Maity and H.Gonzalez	
	Diversity analysis of Chilli (*Capsicum* sp.) genotypes of North-Eastern region of India	Uttam Saha, Pinaki Acharyya, Chandan Kumar Mondal and Himanshu Singh	
	Epidemiological studies on *Xanthomonas campestris* pv. *campestris* caused of Black rot of cabbage under field condition in Red lateritic zone (Birbhum) of West Bengal	Atit Maji and Dr. Ranjan Nath	
	Effect of some common pesticides on the survivality of spot fin swamp barb (*Puntius sophore*)	Lakshman Chandra Patel, Chandan Kumar Mondal, Prasanta Chatterjee and Dipak Kumar Roy	
	Studies on Genetic variability and Association for yield and Yield Attributing Components in Sunflower(*H. annus* L.) in Coastal saline belts of Sundarbans	S. S Lakshman, A.Roy & D Halder	
	A Study of on Genotypic Evaluation of Greengram (*V. radiata* L.) in respect to yield for the coastal saline regions of Sundarbans. in Coastal	S. S Lakshman, B.Mukherjee and R.Nath	
	Response of Paddy varieties (*Oryza sativa L.*) cultivars to bio-inoculants to early seedling growth	S. S Lakshman and B.Mukherjee	
	Response of Bio-inoculants to early seedling growth in ash gourd and Ridge gourd	S. S Lakshman, C.K.Mondal and B.Mukherjee	
	A study on genetic evaluation of green gram (*vigna radiata L.)* in respect to yield coastal saline belts of West Bengal	S. S Lakshman and B.Mukherjee	

Item	Title	Authors name	Number
Technical reports	1) All monthly reports – Year round 2) All quarterly reports – Year round 3) One Annual Reports – April, 12 to March, 13 4) Monthly reports of Insecticide Resistance Management (IRM) project 5) Quarterly reports on progress of AICRP on Sunflower 6) Annual Report of the NICRA project 7) Quarterly reports of NICRA project 8) Annual Progress Report of the IWMP project 9) Status report of NAIP on livelihood security, 2012-13 10) Half-yearly report on SDB-Nutrition project 11) Detailed report on celebration of technology week	-	-

Item	Title	Authors name	Number
Technical bulletins	-	-	-
Popular articles	-	-	-
Extension literature	Book in Bengali - Vegetable Science	C.K.Mondal & L.C.Patel	1000
	Vegetable Science, 2nd Edition (On going)	C.K.Mondal & P.K.Garain	-
	Prasuti mayer jatna	Manasi Chakraborty	3500
	Sishur khadya O pushti	Manasi Chakraborty	3500
	Gravbati mayer khadya O pushti	Manasi Chakraborty	3500
	Bayo sandhi khane jatno o pushti (on going)	Manasi Chakraborty	3500
Others (Pl. specify)	Success story in ICAR website 'Ornamental bird rearing empowers rural women in South 24 Parganas, West Bengal'	KVK, Nimpith under NAIP sub project	1
	'Crop disease forecasting' in the KVK website	P.K.Garain	1
	KVK Book – 'Growing Agriculturally with Nimpith KVK'	S.K.Samui, P.Chatterjee, M.Chakraborty, C.K.Mondal, S.Roy, D.K.Roy and A.Roy Edited by - N.J. Maitra,	130
	KVK-NAIP book "Striving for a better tomorrow"	S.K.Samui, P.Chatterjee, M.Chakraborty, C.K.Mondal, S.Roy, P.K.Garain, D.K.Roy	100
	Important information on vegetable and fruit cultivation (Bengali)	C.K.Mondal, Nimpith KVK Barta,3rd yr.,Issue 1, Jan-Mar'12	100
	Rearing of budgeriger(Bengali)	S.Roy, Nimpith KVK Barta,3rd yr.,Issue 1, Jan-Mar'12	
	Fish culture in ponds (Bengali)	P.Chatterjee, Nimpith KVK Barta,3rd yr.,Issue 1, Jan-Mar'12	

Item	Title	Authors name	Number
	Vegetable science(Bengali)	C.K.Mondal, Nimpith KVK Barta,3rd yr.,Issue 2, Apr-Jun'12	100
	Increasing milk production in cattle(Bengali)	S.Roy, Nimpith KVK Barta,3rd yr.,Issue 2, Apr-Jun'12	
	Important informations on *aman* paddy cultivation(Bengali)	S.K.Samui, Nimpith KVK Barta,3rd yr.,Issue 3, Jul-Sept'12	100
	Agricultural advice for monsoon season(Bengali)	C.K.Mondal, Nimpith KVK Barta,3rd yr.,Issue 3, Jul-Sept'12	
	Freshwater fish culture techniques(Bengali)	P.Chatterjee, Nimpith KVK Barta,3rd yr.,Issue 4, Oct-Dec'12	100
	Crop protection measures(Bengali)	P.K.Garain, Nimpith KVK Barta,3rd yr.,Issue 4, Oct-Dec'12	
	Important informations on tomato cultivation(Bengali)	C.K.Mondal, Nimpith KVK Barta,3rd yr.,Issue 4, Oct-Dec'12	
	Livestock rearing(Bengali)	S.Roy, Nimpith KVK Barta,3rd yr.,Issue 4, Oct-Dec'12	
	Advice on fish culture, livestock and horticulture(Bengali)	P.Chatterjee,S.Roy & C.K.Mondal,Nimpith KVK Barta,4th yr.,Issue 1, Jan-Mar'13	100
	Infestation of sucking pests in vegetable cultivation and remedial measures(Bengali)	P.K.Garain,Nimpith KVK Barta,4th yr.,Issue 1, Jan-Mar'13	
	Ornamental fish culture-a new avenue in fish culture(Bengali)	P.Chatterjee, NAIP booklet, 2013	100
	Vegetable cultivation on land embankment(Bengali)	C.K.Mondal, NAIP booklet, 2013	100
	Rearing of budgeriger-an option for alternative income(Bengali)	S.Roy, NAIP booklet, 2013	100
TOTAL	-	-	**16032**

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

(C) Details of Electronic Media Produced

S. No.	Type of media (CD / VCD / DVD / Audio-Cassette)	Title of the programme	Number
1.	CD	Glimpses of initial outcomes in the NICRA Project	1
2.	DVD	Livelihood security in the coastal saline belt of South 24 Parganas - NAIP	1

(D) Details of HRD programmes undergone

S. No.	Name of programme	Date and Duration	Organized by
1	Human Resource Management for Extension Personnel	23-27 April, 2012	MANAGE, Hyderabad
2	NICRA Zonal workshop	23-24 May, 2012	CARI, Port Blair
3	Disaster preparedness	29th -30th May, 2012	WHH(Delhi)
4	Training on livelihood security	31st June – 2nd August,.2012	Lanchester, Bangor University, UK
5	Brain storming on NICRA	02 August, 2012	WBUAFS, Kolkata
6	NICRA Review workshop	13th September, 2012	BAU, Sabour
7	Zinc in crops and human health	21st September, 2012	KVK,Nimpith
8	Preparation of agromet advisory services & use of weather data	24th and 25th September, 2012	CRIDA, Hyderabad
9	NICRA Review workshop	21 - 22 September, 2012	CRIDA, Hyderabad
10	NICRA Workshop for sharing of initial outcomes	28 - 29 September,2012	NASC Complex, New Delhi
11	Participatory monitoring	28th- 30th September, 2012	WHH(Delhi)
12	7th KVK Conference	20th to 22nd November,2012	PAU, Ludhiana, Punjab
13	Project planning matrix	17-21 December, 2012	MANAGE in collaboration with SAMETI, Narendrapur, W.B.
14	100th Indian Science Congress	03-07 January,13	NICED, Kolkata
15	Planning & management of sustainable rural livelihood	07 – 09 January, 2013	SAMETI, Narendrapur
16	National Conference on 'In quest on Second Green Revolution'	26-28 January, 2013	Institute of Agricultural Science, University of Calcutta, Kolkata
17	Participatory Rural Appraisal	29th – 30th January, 2012	DE,BCKV, Kalyani
18	International conference on Bio resource and stress management	6-9 February, 2013	Science City, Kolkata
19	Training need analysis	12th February, 2013	DE,BCKV, Kalyani
20	Basic aspects of agro meteorology and weather based agromet advisory service system	25th February to 6th March,2013	FTC, BCKV, Kalyani
21	Training need assessment	2nd & 3rd March,2013	DE,BCKV, Kalyani

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

A. Land shaping and rainwater harvesting model – a climate resilient model in NICRA village

In the year 2011-12, Sri Ananta Naskar, a farmer of Bongheri village of South 24 Parganas district was supported with a rain water harvesting & land shaping programme (0.26ha) under the NICRA project. His land was low lying and highly saline with no irrigation facilities during the drier months. His average income from traditional paddy cultivation was only Rs.1250.00 per year (mono crop). When work started in the village, he applied for one unit of landshaping so that he may switch his farm from mono crop to multiple cropping. Following a training programme on Integrated Farming, where the entire technology was thoroughly discussed, he was fully convinced with the sustainable integrated approach. By following the guidelines of KVK, after upgrading his land through the landshaping technology, he cultivated HYV paddy in kharif season and okra, chilli, tomato, and brinjal in rabi season. He earned a total of Rs.5500.00 from the paddy and Rs. 37500.00 from the vegetables in the year 2011-12. Vegetable was cultivated on land and pond embankment during kharif and also on the main field during rabi.

The rain water so harvested in the newly excavated pond (1/5th of the total land with 8 ft depth) was not only used for irrigation purpose but also for fish cultivation, the fingerlings of which were procured from the KVK farm, which fetched an additional income of Rs. 8350.00.

Within the span of just 1 year, Mr. Naskar enjoyed a net profit of 32000.00 from his small piece of land following this eco- friendly land shaping technology. This success has become an eye opener for the farmers of his village as well as the entire block.

Sri Ananta Naskar participated in the annual agricultural exhibition of the KVK in February this year by taking part in the brinjal category. His crop was adjudged the best and was awarded first prize by the experts. This achievement further encouraged Sri Naskar and as such he requested to the KVK to grant him a vermicompost unit so that he may go for more organic farming.

Therefore, the success of Sri Naskar points to the fact that the technology of rainwater harvesting by landshaping programme in the coastal low lands of South 24 Parganas district, is the most appropriate technology of natural resource management to overcome the problem of salinity and acute water scarcity or water logging, as may be the case, following climatic fluctuations.

Plot of Sri Ananta Naskar before and after intervention

B. Revitalization of rural economy through women group

Background

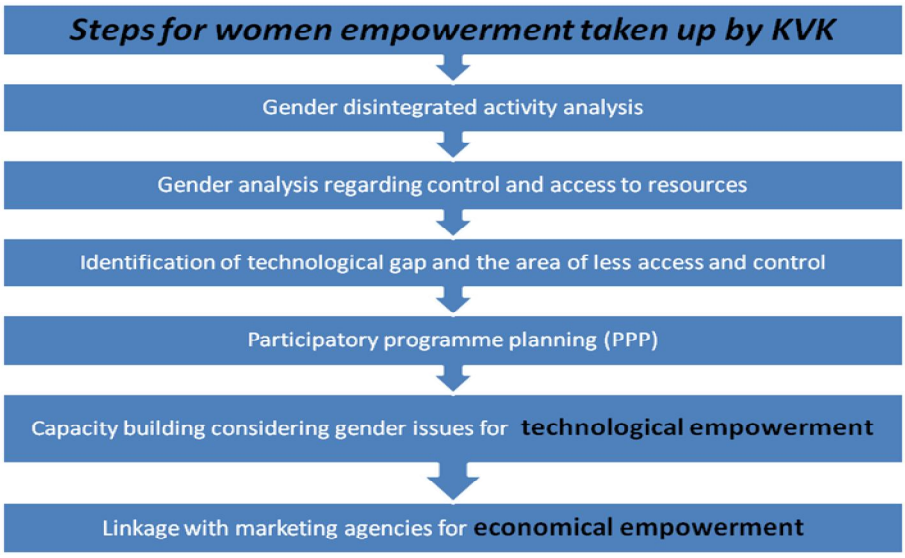
The Sundarban region is situated at the southernmost part of West Bengal and is typical for its innumerable islands, creeks, crevices, rivers, rivulets, gorges and streams. A sizeable number of the total population falls below poverty line and a majority of them migrate for 6-8 months of a year in search of livelihood. Widespread illiteracy, poor health conditions, exploitation and deprivation add to the problems of poverty and migration, especially for womenfolk.

Women contribute 65-70% labour in agriculture in the Sundarban region. Most of them are illiterate having less scope for receiving training courses with huge domestic responsibilities as such they fail to adopt new technologies and are unable to take the advantage of modern scientific know-how. Furthermore, introduction of any new programme for promoting livelihood will further add to their burden as they are already suffering from drudgery, ill health, suppression and deprivation of their basic right and status in the society.

Women are the most disadvantageous group who suffers more in this serious system due to overburden that arise out of men migrating in 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 in a family they are the ones who take their meagre meals only after serving to other members throughout their lives even during their pregnant and lactation period. Gender sensitization and gender mainstreaming are the prime pre condition for empowerment of the women to become an economic partner of a family in this adverse situation. Economic empowerment with sustainable approach along with the proper nutrition and health care can improve the quality of life of the women of Sundarban.

The technology

In this backdrop KVK, Nimpith have been addressing the gender based problems through Participatory Well being Ranking, Gender Analysis on activity, access & control, Focus Group Discussion, Problem Cause Diagram, Matrix Ranking and Seasonality Analysis.



Technological empowerment

The point of intervention was selected on the basis of problem analysis, identified need and participatory gender planning. Training methodology of Experiential Learning Cycle (ELC) module was considered for effective understanding of illiterate farm women. Front Line Demonstration (FLD) on new technologies was organized to improve their knowledge for adoption. On Farm Trials (OFT) were conducted with the participation of women farmer to find out the area specific technology.

There is a lack of initiative among the women farmers to adopt new agricultural technologies as they are less exposed to it and also for the fear of risk which may threaten their income level. So, field oriented techniques were applied for capacity building through multi-disciplinary approach.

Extension personnel of KVK adopted FFS methodology for technological empowerment and gender mainstreaming in agriculture. The other gender friendly technologies like seedling raising on egg tray, ornamental fish farming, ornamental bird rearing were considered for large scale dissemination among the farm women.

RAKVK, Nimpith 100

Economical empowerment

Group-wise activities	Development agencies
Nursery development	Tied up with the Forest Department, Govt. of West Bengal for buy back agreement
Poultry rearing	Group marketing system and linked with line department
Small animal rearing	Linked with Rashtrio Krishi Vikas Yojana Scheme for marketing outlet
Ornamental fish farming	CRM Services Ltd. and other private companies for doorstep marketing – PPP mode
Mushroom cultivation	Different NGOs, school hostels and Sundarban Development Board, GOWB
Tailoring	Uniform making for girls' and boys schools
Food preservation, jute craft making & jori making	Local market and outlet formed by SHGs
Household dairy farming	Sundarban Milk Union Ltd.
Gloves making	Marketing through M/s Rajda Sales – PPP mode
Vermicomposting & gender friendly agricultural mechanization	Local market and Sundarban Development Board, Govt. of West Bengal
Cotton cultivation	Cotton Corporation of India

The KVK organized the rural womenfolk through SHGs which gave an ample opportunity to increase family income by adopting different micro enterprises like nursery raising, fish farming, goat rearing, paddy husking, tailoring, handicrafts etc. The KVK here acted not only as a facilitator for development of skill through capacity building but also established linkages with the line departments, banks, panchayets, CBOs and other private agencies with a view to sustaining the income security.

Effects of this technology on production and economic gain

Intervention	Individual participation of farm women before intervention	Participation of farm women group after intervention	Income of each individual member before intervention(Rs)	Income of each group member after intervention(Rs)
Seedling raising	4 nos	46	1000/- for 5 months	3000/- for 5 months
Goat rearing	188	263	Could not quantify	200/- per animal
Ornamental fish rearing	-	161	-	750/- per cycle
Ornamental bird rearing	31	178	400/- per month	1200/- per month
Gloves making	-	24	-	1500/- per month
Embroidery	26	140	350/- per month	800/- per month
Handicraft	19	81	975/- per month	1500/- per month
Food processing	12	40	250/- per month	700/- per month
Tailoring	3	15	1000/- per month	1500 /- per month
Mushroom cultivation	-	24	-	800/- per month
Poultry bird rearing	55	189	Avg. Rs.850/- (per batch with a flock strength of 100 birds in 6 weeks)	Avg. Rs-3000/- (per batch with a flock strength of 200 birds in 6 weeks)

Farmers' view with respect to acceptance of this technology

I am now happy. I can contribute for children education.

Sumita Mondal, Vill-Achintanagar, Block-Patharpratima

Gita Sardar, Vill-Damkal, Block-Mathurapur II

Now I do not go to river for livelihood option, I am staying with my children at home looking after them properly.

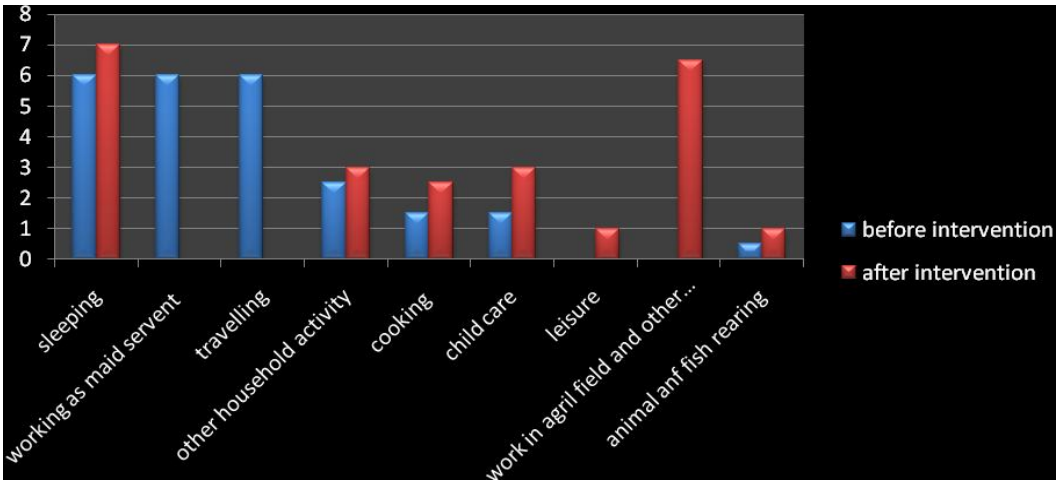
Sabina Khatun, Vill-Moyda, Block-Joynagar II

We can see our changes from previous situation. We now understand the joy of togetherness. We can afford for our own requirements.

Social impact of the technology

The impact analysis of these intervention were assessed by PWR (Poverty Wealth Ranking) and SAGE (Situation Analysis and Goal Establishment). It was revealed from the impact analysis study that after intervention of the KVK with basket of need based technologies, the livelihood pattern of farm women changed substantially towards positive direction. The livelihood analysis before and after the intervention also revealed that there was an increasing trend to adopt alternative livelihood options with sustainable approach by the womenfolk.

Sustainable approach of the KVK for mainstreaming gender issues in agriculture and allied sectors created a positive impact on the lifestyle of womenfolk. The change in livelihood status, 24 hrs work cycle and knowledge level were the indicators for the overall positive impacts of women empowerment. The changing pattern of day long activities of hitherto migrating women after implementation of multiple activities with proper natural resource management through agricultural and allied agricultural programmes is a good example of positive impact on womenfolk. Before implementation of women empowerment programmes by the KVK, the landless women and the wives of the resource-poor farmers went to city for working as maid servants by traveling 6-hours in overcrowded trains. After the intervention, the women got job opportunities to increase their meagre income by their own and they could also devote more time for cooking with more and more nutritious ingredients which provided healthy food and nutritional security for the family. On the other hand they are involved in animal rearing practices which provide an additional income for their family. Some of them are also engaged in SHGs and could generate income by alternative livelihood options through group approach. The average rural women can now spend more time towards child care and home management and drudgery was also reduced to a great extent as they get a leisure period everyday when they could devote some time for their own well being.



C. Case study on Ber Cultivation:

Ber is a popular tropical fruit crop most suitable for dry land areas. But now-a-days, a new variety, suitable for the humid climate of South-eastern Asia has been developed in Thailand. This variety has been disseminated in southern Bengal, after repeated region specific trials and evaluations at Bangladesh Agricultural University (BAU), Mymensingh. The basic features of this BAU selected variety does not match with the general features of a traditional Indian Ber variety. Unlike Umran or other traditional varieties, this variety does not possess sourness and mucilaginous substances in its taste. The size of the fruit is also very large with an average individual fruit weight of 75-120g.

This variety has gained huge popularity in the fruit markets of Southern Bengal. KVK Nimpith introduced this variety for the first time in the South 24 Parganas district in June, 2009. With time, its cultivation proved to be a profit making venture and thereby gained popularity among the farmers of South 24 Parganas. Md. Abdul Malek Molla is one such farmer.

He is an established progressive vegetable farmer from the village of Bhumru, under block - Bhangor-II of the district. He is always in touch with the KVK scientists for solving various problems related to his vocation. In October, 2011 he came to know about the BAU developed Ber cultivation – its' prospects and business opportunities, from the horticulturist of KVK. He was taken to some successful ber orchards for a practical exposure on this crop and for boosting his confidence. After gaining a good understanding about its cultivation practices, source of quality planting materials and marketing linkages, he decided to convert 0.13 ha of his vegetable land to ber orchard. During March, 2012, he collected BAU ber seedlings of about 1.5 ft height and started planting at 9 ft x 9ft spacing. In this way he planted 180 seedlings in 0.13 ha of land. Till February 2013, he has spent approximately Rs. 37000/- inclusive of all costs related to planting material collection, land preparation, stacking with bamboo poll, irrigation, intercultural operations, fertilizer and pesticides, etc. In this one year, he has harvested, on an average, 90 kg of mature fruit per plant. He has an arrangement with a marketing middleman who would collect the produce from his premises to the market. Mr. Malek gets a healthy price of Rs. 12/- to Rs. 18/- per kg at his doorstep, depending upon the market fluctuation. In one year, from his 0.13 ha of plot, he harvested 1.62 tonnes of mature marketable fruit which fetched him around Rs. 2.05 lakhs thereby giving him a net profit of about Rs. 1.65 lakh from his ber cultivation.

Mr. Malek is now a very much sought after personality among the farmers of not only his locality, but also in faraway places. Encouraged with the success of Mr. Malek, a large number of farmers at different corners of South 24 Parganas district has started this cultivation. He is often invited to share his experience of ber farming in different government training programmes. Recently, he has been invited to East Singhbhum KVK to popularise the BAU ber cultivation in their district.

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

1) **Farmers Field School** –FFS have been organized for better adoption of Technology related to cotton cultivation in IPM and IRM modules

2) **Pest and Disease forecasting** by KVK website

3) Mobile **SMS alert** for Agri and allied Agri information

4) Culture of ornamental fish in net enclosures in village carp ponds & its **marketing** through KVK

5) Snake ladder game for promotion of good nutritional practices

3.9 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)

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1.	Fish culture in domestic pond	Beating the water with 4-5' long bamboo or coconut leaf axil	To increase the dissolved oxygen content of pond water by splashing during oxygen depletion conditions as indicated by fish surfacing
2.	Catching of wild fish	Different types of indigenous trapping gears made of bamboo splits and having unidirectional entry are placed at the confluence of paddy fields & ponds or in canals.	To catch wild indigenous fish and prawn from natural water bodies like paddy fields, ditches, canals, etc.
3.			

3.10 Indicate the specific training need analysis tools/methodology followed for

- 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 Field activities

i. Number of villages adopted : 32
ii. No. of farm families selected : 780
iii. No. of survey/PRA conducted: 4
iv No of participatory evaluation and monitoring- 3

3.12. Activities of Soil and Water Testing Laboratory

Status of establishment of Lab : established

1. Year of establishment : 2004-05
2. List of equipments purchased with amount : as follows -

Sl. No	Name of the Equipment	Qty.	Cost
1	Systronics Spectrophotometer (Model 167)	1	50518.00
2	Systronics pH meter (Model 335)	1	7458.00
3	Systronics Connductivity Bridge (Model 304)	1	9382.00
4	Flame Photometer (Model 128)	1	42339.00
5	Afcoset Electronic Balance(Model EK1200G)	1	16450.00
6	Afcoset Electronic Balance(Model ER 200A)	1	57000.00
7	REMI Centrifuge (Model R 23)	1	32950.00
8	Head of the REMI Centrifuge(Cat.R236)	1	16200.00
9	REMI Magnetic Stirrer (Model 1)	1	4200.00
10	REMI Magnetic Stirrer (Model 2)	1	4450.00
11	REMI Stirrer (Model RQ 121D)	1	4600.00
12	Refrigerator LG Brand - 20 lits	1	18000.00
13	Suction Pump PRECIVAC (Model DC 101)	1	19000.00
14	Silica Crucible 100 ml.	6	7500.00
15	Scientific Calculator FX	2	1700.00
16	Rubber Cork Borer	1	125.00
17	Thermometre 360^{o}C	4	360.00
18	Moisture Box	6	120.00
19	Stop Watch	1	1250.00
20	Mortar and Pestle (Wooden)	1	1700.00
21	Mortar and Pestle (Porcelain)	6	330.00
22	Filter Paper (Whatman)	10	15000.00
23	Seive	6	2100.00
24	Hand Vaccum Pump (Terson)	1	4368.00
25	Almirah	1	27000.00
26	Double Glass Distillation Apparatus- 5 lits	3	18875.00
27	Barnstead Type Distillation – Table model	1	12000.00
28	Stokes Type Wall Hanging Distillation	1	4500.00
29	Micro Kjeldhal Digestion Apparatus	1	6000.00
30	Micro Digestion Apparatus (Mantle Heaters)	1	9500.00
31	Micro Distillation Unit – Improved-Wangner	1	7000.00
32	Micro Distillation Set (with S.S.Tank)	1	12000.00

Sl. No	Name of the Equipment	Qty.	Cost
33	Kjeldhal Flask of BOROSIL	18	8100.00
34	Kjeldhal Flask Head	6	1500.00
35	Blower for Kjeldhal Flask of BOROSIL	2	6000.00
36	Mechanical Shaker	1	17000.00
37	Over (Digital controller)	1	15600.00
38	Raymond Mill	1	19000.00
39	Muffle Furnace (Upto 1200^{o}C)	1	19000.00
40	High Precision Water Bath-12"X10"X8"	1	12000.00
41	Hot Plate 12"X10"	1	2000.00
42	C.V.T. Input – 2 KVA	1	4650.00
43	C.V.T. – 5 KVA	1	7200.00
44	Filtering Flask – 250 ml Borosil	6	1494.00
45	Filtering Flask – 500 ml Borosil	6	1872.00
46	Burette - 50 ml Borosil	6	2742.00
47	Burette – 10 ml Borosil	2	828.00
48	Rubber Cork	100	300.00
49	Weight Box – 1 set	1 set	750.00
50	Platinum Crucible - 20—25 ml	1	68146.00
Total		-	6,02,157.00

3. Details of samples analyzed so far :

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2004-05	Soil Samples	1175	872	74	23500.00
	Water Samples	240	213	41	2400.00
	Total	1415	1085	115	25900.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2005-06	Soil Samples	678	512	42	20340.00
	Water Samples	61	53	27	610.00
	Total	739	565	69	20950.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2006-07	Soil Samples	2270	1984	114	113500.00
	Water Samples	115	89	48	1150.00
	Total	2385	2073	162	114650.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2007-08	Soil Samples	1297	1158	67	64850.00
	Water Samples	148	141	54	1480.00
	Total	1445	1299	121	66330.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2008-09	Soil Samples	828	723	59	41400.00
	Water Samples	171	151	47	1710.00
	Total	999	874	106	43110.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2009-10	Soil Samples	562	450	200	28100.00
	Water Samples	125	120	67	1250.00
	Total	687	570	267	29350.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2010-11	Soil Samples	795	512	153	47700.00
	Water Samples	638	465	102	9570.00
	Total	1433	987	255	57270.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2011-12	Soil Samples	630	630	147	37800.00
	Water Samples	112	98	42	1680.00
	Total	742	728	189	39480.00

Year	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
2012-13	Soil Samples	740	682	162	44400.00
	Water Samples	117	89	51	1755.00
	Total	857	771	213	46155.00

N.B. Soil sample analysis rate – Rs. 60/- per sample
Water sample analysis rate – Rs. 15/- per sample

3.13 Activities of rain water harvesting structure and micro irrigation system

No of training programme	No of demonstrations	No of plant material produced	Visit by the farmers	Visit by the officials
6	**11**	**8970**	**53**	**4**

3.14 Technology week celebration

Type of activities	No. of activities	Number of participants	Related crop/livestock technology
Technical Seminar	3	1062	Climate change & agriculture, Fodder cultivation, Soil health management
Agricultural exhibition cum competition	58	1189	Crop, vegetable, fruit, flower & animal
Agricultural Quiz Competition	1	690	Agro-technology & bio-biotechnology
Ex-trainee Sammelon	1	730	Fishery based integrated farming system, Women empowerment
Prize distribution	-	480	-

3.15 RAWE programme: Nil

Is KVK is involved?

No of student/ARS trained	No of days stayed

3.16 NICRA Project

Programme implemented	No. of village covered	No. of beneficiary covered	Amount of fund received	Amount of fund utilized
NRM	1	28	**8,56,470.00**	**15,24,750.00**
Crop Production		53		
Animal Health Camp		92		
Biodiversity conservation(Mangrove & social forestry plantation)		Entire village road, canal side and river embankment		
Desiltation of community canal		110	**14,57,000.00**	**14,56,587.00**

3.17. List of visitors including the officials of ZPD and DEE

Sl. No.	Name of VVIP / VIP	Date of visit	Purpose of visit	Comments in the visitors' book
1	Dr. K. D. Kokata DDG, (Agril. Extension) ICAR,	13.1.2013	To observe KVK works and NICRA project work	Excellent example of KVK working as knowledge and Resource Centre Mode with unique team work of dedicated workers. Compliments is respected Swami Sadanandaji and Dr. Nilendu Maitra, PC and team for sincere efforts for resource poor farming community. All the best.
2	Dr.A.K.Singh, Zonal Project Director, Zone –II, ICAR	13.1.2013		-
		15.09.2012	Interview of SMS (Plant Protection)	-
		23.03.13	Monitoring and evaluation of NAIP project and Review Workshop	-
3	Dr. R.P. Mishra, National Coordinator, NAIP, ICAR, New Delhi	23.03.13		-
4	Dr. Tarun Kanti Mondal, MP, Joynagar Constituency	06.03.2013	To formulate programme on Mangrove conservation and restoration	-
5	Mr. Manturam Pakhira, MIC, Dept. of Sundarban Affairs, Govt. of West Bengal	20.01.2013	Workshop on 'Joynagarer Moya'	-
6	Mr. Dipankar Bhadra, Joint Director, Soil Conservation, Dept. of Agriculture, Govt. of W.B.	07.03.2013	IWMP workshop	-

Sl. No.	Name of VVIP / VIP	Date of visit	Purpose of visit	Comments in the visitors' book
7	Dr.S.N.Sudhakar Babu, Principal Scientist & P.I., AICRP on Sunflower	06-08 March, 2013	AICRP monitoring and evaluation	-
8	Prof. Tarun Kanti Naskar, MLA, Joynagar Constituency	20.01.2013	Workshop on 'Joynagarer Moya'	-
9	Sri Sukumar Hansda, MIC, Tribal Welfare Dept., GOWB	04.10.2012 & 08.02.2013	To have an idea of the programmes undertaken by the KVK for the backward communities and to attend Annual Agricultural exhibition of KVK	-
10	Srimat Swami Prabhanandaji Maharaj, Vice President, Ramakrishna Mission,Belur	22.09.2012	To observe the activities of Sri Ramkrishna Ashram and its different wings like the KVK	-
11	District Magistrate (South 24 Parganas)	30.03.13	To discuss about incorporation of Land Shaping programme in the District MGNREGA programme	-

4.0 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	
			Before (Rs./ unit)	After (Rs. / unit)
Establishment, maintenance and management of nursery (0.007 ha)	23	42	Not practiced	4780
Entrepreneurship development among womenfolk : 1. Preparation of preserved food from locally available vegetables	50	33.33	Not practiced	1200/ month
Formation and strengthening of S.H.G. : 1. Leadership development among the womenfolk of Sundarbans 2. Psychological empowerment of members of S.H.G.	21 50	85.71 50.00	- -	- -
Formation and strengthening of S.H.G. : 1. Formation of S.H.G. 2. Methodology of Formation and strengthening of S.H.G.	135 65	92.59 53.85	- -	- -
Plant protection measures against major insect pest and diseases of some vegetable crops by giving more emphasis on integrated approach (0.13 ha)	375	40	4300	6700

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in Income	
			Before (Rs./ unit)	After (Rs. / unit)
Self employment generation in agriculture by Farm Advisory Service regarding plant protection of field crops (0.13 ha)	245	53.06	Not practiced	1500
Use of bio-pesticides in agriculture (0.13 ha)	110	50.00	Not practiced	1150
Ornamental fish rearing	150	40	Not practiced	1500/Month
Ornamental bird rearing	90	30	Not practiced	2000/Month
Paddy cultivation through SRI method	60	30	Not practiced	1250/bigha
Insecticide Resistance Management of cotton pests	160	70	112	1025/ha

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

Impact of KVK in Terms of Agricultural and Animal Productivity, Socio-economic conditions in the Adopted Villages

Sl. No.	Item	Unit	2000-2005	2006-2011
1.	Change in cropping pattern	(%)		
	a. Paddy-fallow		53	35
	b. Paddy-cotton		7	9
	c. Paddy-paddy		6	5
	d. Paddy-vegetables		12	18
	e. Paddy + vegetables-vegetables		11	15
	f. Paddy- Greengram		8	12
	g. Paddy- Sunflower		3	6
	h. Carp fish+ ornamental fish		Nil	45
2.	Change in productivity of	(kg/ha)		
	(a) cereal crop (paddy)		2220	2740
	(b) pulses		710	875
	(c) oilseeds		1015	1345
	(d) rabi vegetables		15100	18500
	(e) kharif vegetables		15750	19900
	(f) milk		Av.1.25lt / animal/day	Av. 1.75lt / animal/day
	(g) egg		12 to 13/ bird / month	15 to 18/ bird / month
	(h) fish		1000 – 1500	1200 – 1800
3.	Use of HYV (high-yielding varieties)	(%)		
	Paddy		26.7	39.40
	Sunflower		82.9	94.2 (Hybrid)
	Green gram		79.3	86.5
	Vegetables		42.1	51.4
	Poultry bird		23.6	29.3
	Cross bred dairy animals		12.3	21.4
	Carp fish		36.8	42.5

Sl. No.	Item	Unit	2000-2005	2006-2011
4.	Use of fertilizers (NPK)	(kg/ha/ year)	82.5	103
5.	Use of FYM and other biofertilizers	(kg/ha)	1500	2800
6.a.	Tractor	(No.)	-	-
6.b	Power tiller	(No.)	1-2	3-4
6.c	Pumpset	(No.)	3-4	7-8
6.d	Hand sprayer	(No.)	15-16	35-40
6.e	Knapsack sprayer	(No.)	2-3	7-8
6.f	Drum seeder	(No.)	-	2
Sl. No.	**Item**	**Unit**	**2000-2005**	**2006-2011**
7.	Change in economic indicators (in adopted villages) Net return/ha/yr(by crop/enterprise)			
	(a) cereal crop (paddy)	Rs.	3540 (Cost-12000, SP- 700/qntl)	7900 (Cost-19500, SP- 1000/qntl)
	(b) pulses	Rs.	10250 (Cost-7500, SP- 2500/qntl)	20100 (Cost-15000, SP- 4000/qntl)
	(c) oilseeds	Rs.	3975 (Cost-11250, SP- 1500/qntl)	11150 (Cost-15750, SP- 2000/qntl)
	(d) *rabi* vegetables	Rs.	30450 (Cost-37500, SP- 450/qntl)	40500 (Cost-61250, SP- 550/qntl)
	(e) *kharif* vegetables	Rs.	37075 (Cost-33750, SP- 450/qntl)	52950 (Cost-56500, SP- 550/qntl)
	(f) milk	The production of milk was increased 7-15 lit./month/animal that was used for household consumption.		
	(g) egg	Rs.	20.50-22.50/ bird / month (Cost-3.50/bird/ month, SP- 2.00/egg)	39.25-48.25/ bird /month (Cost-5.75/bird/ month, SP- 3.00/egg)
	(h) fish	Rs.	40000 – 60000 (Cost-20000-30000/ha SP-60/Kg)	73000 – 117000 (Cost-35000-45000/ha SP-90/Kg)
Cost- indicates total cost of cultivation, SP- selling price				

4.2. Cases of large scale adoption

I. Agricultural diversification through land shaping (crop-livestock-fish integration module)

Since inception Nimpith KVK has been trying to develop the agricultural scenario of Sundarbans by effective utilization of land and water. Every year the Sundarban farmers experience an unique problem of almost 6 months of surplus water due to heavy rain (1700 – 1800mm) and most of the precipitation remain unutilized and mixes with the saline estuarine water as run off. During rabi season there is huge scarcity of sweet water accentuated with saline soil, the vegetable cultivation on low land was non existent. In this situation KVK Nimpith has conceptualized and developed a Resource Conserving Technology (RCT)-viz. the land shaping and water harvesting technology and by adopting this, along with the HYV paddy, a no. of high value vegetables can be grown with the irrigation facilities so created by excavating a pond on the existing low land.

Advantages of land shaping :

i. Three dimensional (land, water and air) crops
ii. Option for integration for agriculture
iii. Aquaculture with duck rearing
iv. Introduction of double and triple crops
v. Diversified cropping possibilities
vi. Additional crop in pond and land embankment
vii. Conservation of ground water
viii. Energy saving module with year round work opportunity

II. Sunflower cultivation as a programme of crop diversification:

In early 90's the sunflower cultivation was started in few patches of Sundarbans not for commercial purpose but only for homestead consumtion. KVK as a part of crop diversification programme, conducted on farm trial to find out suitable variety as well as the location specific crop management practices. It can be observed that due to non availability of appropriate technology and variety for this region, the sunflower cultivation got no popularity in that time. During the course of study with sunflower, a number of varities with its package of practices are developed by KVK and also demonstrated in FLD programme. As sunflower withstand little bit of salinity it opens the door to be a important second crop in rice fallows of Sundarbans. Observing the production potential of this crop, KVK approached to Sundarban Development Board, GOWB with the full basket of technology of sunflower cultivation to be demonstrated in rice fallows as a large scale basis. Now-a-days, it gains a good popularity and more than 10,000 ha has come under sunflower cultivation. For further observation in regards to area specific technology and varietal development, KVK has been running AICRP on sunflower with the active participation and guidance from DOR, Hyderabad.

III. Ornamental fish:

Ornamental fish farming is as an avenue for economic empowerment of the rural folk of South 24-Parganas district. In South 24-Parganas, there is a huge scope in aquaculture. The maximum farmers have one or more than one fresh water pond. In this pond, they used to practice common carp culture without following scientific method. As a result, the productivity of the carp pond is less. In this situation to increase the profitability from the pond, there is a scope by introducing ornamental fish culture. Previously, there was a taboo for ornamental fish cultivation that it will only be possible in the glass aquarium because it requires special attention. But Ramkrishna Ashram Krishi Vigyan Kendra (RAKVK) has proved that it can be done easily in the same carp culture pond without hampering the existing carp culture practice. Nevertheless, it can be practiced in monoculture & ornamental fish in net enclosure with carp in pond system by using natural food as available in the locality. After 2-3 months of rearing it is ready for market. At present, more than 600 nos. of households are practicing ornamental fish cultivation in their homestead ponds.

In the year 2009, three professional ornamental fish farmers from the village of Amratala in Mograhat I block received training on scientific ornamental fish breeding and culture from the KVK. Thereafter they got in close contact with the KVK and started frequenting the fishery expert for gathering different information and guidance on ornamental fish farming. The KVK also organized field trips for ornamental fish farmers in their farm at Amratala. The relation flourished and soon they came forward to start marketing ornamental fish produced by farmers receiving training and guidance from the KVK. Thus, a marketing channel for ornamental fish was created.

4.3 Details of impact analysis of KVK activities carried out during the reporting period- Impact assessment of KVK has been conducted by an external agency 'Prasari, Saltlake, Kolkata' but the final report is awaited. The final report will be communicated in due time.

4.4 Details of innovations recorded by the KVK:

A. Innovation on Alternative Approach of Sapota Propagation

Name of innovator : Asit Mondal

Address : Village & P.O – Srikrishnapur
P.S – Amtala
Dist. – South 24 - Parganas

Identified by: Ramkrishna Ashram KVK, Nimpith, South 24-Parganas, W.B.

Traditional method:

- Veneer grafting is usually followed, where scion (cutting of Sapota plant) is detached from mother plant and taken to the rootstock (*Khirni* (*Manilkara hexandra*) seedling), then graft union is made.
- Success in this method of grafting requires practiced hand, otherwise the graft union would not be successful.

- In another method of inarch-grafting, rootstock (*Khirni* (*Manilkara hexandra*) seedling in mudball) is taken nearer to scion (pencil thickness branch of Sapota mother plant) by tying the rootstock to the side branches of the mother plant with jute string.
- Here, the stock seedling (*Khirni* seedling in mudball) hangs from the mother plant.
- Stem of both stock and scion are longitudinally cut half upto a length of 2 inches. After that, the cut surfaces are placed side by side and they are tied tightly with cotton/jute string.
- In both the cases, after about a month, the graft union becomes completely developed.
- In the inarch-grafting, the newly developed grafted plant is separated from the mother plant by cutting the basal end of the scion.

- ► Then, by cutting the jute string tie, the plant is taken out from the mother plant and placed in the soil in a moist shady place for further nourishment.

Innovation:

- ✓ About 10 years back, after a heavy cyclone many plants including Sapota plants fallen down over the ground
- ✓ In the Srikrishnapur village of Bishnupur block, one of such fallen trees was so large that it was impossible to erect the plant again.
- ✓ At that time Sapota grafter Asit mandal thinked that, this plant will be very helpful in making grafts, as pencil thickness scion branches are nearer to the ground, so it would not need to hang the rootstock (*Khirni* seedling) upon the tree.
- ✓ This laid Sapota plant completely nullified the problems of hanging a rootstock (in mudball) on a large and high tree which was not only labour intensive, but it involves further cost for watering the mudball of the rootstock also.
- ✓ In that system he produced nearly 2500 nos. of grafts from one single plant in one season with minimum investment of labour cost.
- ✓ Observing the ease of making graft in this technology, several grafters became very enthusiastic about this method. They started felling Sapota tree artificially, mechanically by digging one side of the plant, and by cutting few roots.
- ✓ After felling the tree, *Khirni* seedlings (in mud ball) are placed within the soil, side by side to the pencil thickness branches of sapota mother plant.
- ✓ In this way, one grafter in a day can make 250 to 300 nos. of graft unions as compared to 150 nos. in the previous inarch-grafting system.
- ✓ After removal of graft unions, the mother plants are erected and good nourishment of nutritional and pesticidal management is provided. After about 3 to 4 months of nourishment, the same tree is again fallen down in the opposite side of the previous one.

Thus from a single plant, cycles of grafting is conducted round the year.

B. Innovation on seedling treatment Tomato and Dolichos bean affected by root rot disease:

Root rot disease result in havoc loss in Tomato and Dolichos bean fields after transplantation. In 20-25% cases, farmers re-transplant with fresh seedlings in the field. Spraying with fungicides check further spread of the disease but cann't help the diseased seedlings to re-establish. The tap root system of the infected seedlings gets degenerated.

However, treatment with IBA (Indole Butyric Acid) shows a remarkable result in rejuvenating the root rot affected seedlings. Spraying with IBA (100 ppm) actually promotes the growth of adventitious roots near the collar region of tomato and dolichos bean seedlings. These adventitious roots, in absence of the tap root system, help in rejuvenation and further growth of the seedlings. Thus, a spraying of IBA indirectly helps in management of root rot disease in tomato and dolichos bean.

4.6 Details of entrepreneurship development by the KVK

Cat fish breeding

No. of entrepreneurs	No. employed	Seed production capacity	No. of farmers benefited	Monthly income	
				Before	After
3	10	2.5 lakh approx.	120	Rs. 1,000/-	Rs. 5,000/-

Nursery culture of carp spawn and subsequent marketing of fry, fingerlings and table fish

No. of entrepreneurs	No. employed	Seed production capacity	No. of farmers benefited	Monthly income	
				Before	After
4	17	1500 kg fry, 2400 kg fingerlings & 4500 kg table fish	764	Rs. 2,000/-	Rs. 15,000/-

Nursery for horticultural crops and agro-forestry (including women SHG members)

No. of entrepreneurs	No. employed	Avg. seedlings and saplings Production / unit	No. of farmers benefited	Monthly income	
				Before	After
9	140	50,000	226	Rs. 2500	Rs. 7400

Broiler bird rearing

No. of entrepreneurs	No. employed	Production	Monthly income	
			Before	After
18 (including 5 women SHG groups)	125	800 birds/unit	Rs. 1400	Rs. 7,000

Dairy (having minimum 10 cows)

No. of entrepreneurs	No. employed	Production	Monthly income	
			Before	After
7	16	60 lit/day	Rs. 1700	Rs. 15,000

Integrated farming

No. of entrepreneurs	No. employed	No. of enterprise	No. of farmer benefited	Monthly income	
				Before	After
126	740	Fruit, vegetable, paddy, fish, duck, poultry, ornamental fish, goat, dairy	220 approx.	Rs. 3000	Rs. 12,000

Small Scale Cottage Industry

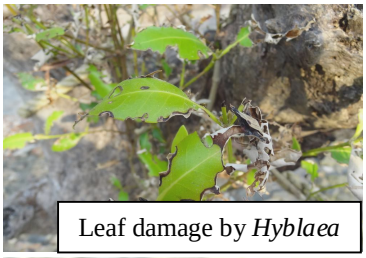
No. of entrepreneurs	No. employed	Enterprise	Monthly income	
			Before	After
2 Mahila Mondol	30	Gloves making	Nil	Avg. Rs 1800/- per head

4.7 Any other initiative taken by the KVK

A. Study of a new insect pest infestation in White Bani (*Avicennia officinalis*) plants of Sundarban Mangrove

White Bani (*Avicennia officinalis*), is a prominent Mangrove tree species abundant along the saline creeks and river sides of Sundarbans. During October, 2012, a severely scorched up appearance of this species at several location, attracted our attention for a detailed study. A systematic study revealed that a new insect pest is responsible for the defoliation of the white bani mangrove.

White Bani mangrove infested with *Hyblaea*



Leaf damage by *Hyblaea*

Pupa of *Hyblaea*

The insect pupa were collected from the infested plants and incubated in the KVK laboratory. After studying the characteristics of the adult moth, larvae and pupae, the insect was identified as *Hyblaea puera* Cramer (Order: Lepidoptera; Family: Hyblaeidae). It is a nocturnal pest. The pest is commonly known as the 'Teak defoliator' and is primarily a pest of Teak (*Tectona grandis*) plantations. There are several studies reported on the biology and management of this pest in Teak plantations. However there is very little information on these aspects from the Mangroves, where this pest is found on an alternative host in Grey Mangroves (*Avicennia sp.*) and has ingeniously adapted its life-history traits to suit the micro environmental conditions of the mangroves, which are different from that of the Teak plantations.

This *Hyblaea puera* while in the Mangrove system showed some unique adaptations different from their counterparts in Teak plantation. As example, the *Hyblaea* caterpillars pupate mostly among the leaf litter on ground in the case of Teak plantations, while it was found to pupate strictly on tree branches itself in the Mangroves. It is probably an adaptive trait acquired by the species for surviving in the hostile mangrove environment, since the pupation is not possible in the muddy and inundated soils of mangroves.

On interaction with the local people, it was known that the pest incidence started post-Monsoon season (August - September) but disappeared suddenly at the end of January, leaving the infested trees totally defoliated. However, in 90-95% cases the defoliated trees gave fresh leaves and were rejuvenated by themselves. Another interesting observation is that the pest infestation was severe in mangrove forests with homogeneous population of white bani than in areas with a heterogeneous population of different mangrove species.

It would require long term research and monitoring to objectively study the *Hyblaea* outbreaks in the mangrove ecosystem before we can decide on whether *Hyblaea* in Mangrove system is a serious pest to be controlled and to develop the management strategies in such case.

Different stages of *Hyblaea puera* being studied at laboratory

B. Saving Sundarban mangroves through alternative livelihood options in collaboration with Dept. of Forest, GOWB

The agro-ecological situation of South 24 Pargana district is characterized by critical diverse risk prone area resulting low production in monocropped agricultural land. The frequency of natural calamity in this area is 3.3 per year. The last major devastating natural calamity "*Aila*" in 2008 affected the Sundarban as a whole and island villages in particular destroying their all resources even their home. Almost all the livestock population was either died or suffered from diseases or faced forced selling and the land also become infertile due to ingression of saline water. In this situation the male have to migrate to the city for searching alternative livelihood where womenfolk have to depend on the natural resources to struggle with situation. So the womenfolk had to go either for prawn seed catching or maidservant which did not meet up their requirement of serving the family along with additional drudgery. Besides, the women also suffered from overburdening as they have to shoulder productive and reproductive role alone. Thus, they were not in position to ahead for any venture of husbandry practices. Considering the geographical situation as well as the untapped human resources KVK entered into the venture of promoting Ornamental bird rearing, rural poultry farming and goat keeping at reverine blocks of Sundarban in particular and district as a whole in general.

On campus training on goat rearing:

The climatic condition of the largest delta of the World, Sundarbans, is hot and humid having an average rainfall of 1750 mm per year. About 80% of the total precipitation being received within the 4 months during monsoon causing inundation of vast area. Temperature ranges between 14^{o}C to 40^{o}C and humidity between 60% to 90% in these coastal saline areas.

Sundarbans consist of a number of islands and interwoven by saline rivers and rivulets. So, South 24 Parganas as a whole and especially Sundarbans is the most agriculturally under developed region due to poor drainage system, lack of irrigation facilities and high soil salinity. About 80% of the people live below the poverty line and most of them become jobless in the agricultural slack period which forced them to migrate in search of livelihood. Goat is known as 'Poor man's cow' is a very important component in this type of farming system. Marginal or undulating lands unsuitable for other types of animals like cow or buffalo, goat is the best alternative. With very low investments goat rearing can be made in to a

profitable venture for small and marginal farmers. Goat rearing, Black Bengal goat or Bengal Black goat is the common name for a small breed of goat found in Bangladesh and northeastern India

Under the prevailing traditional production system, however, the productivity of goats is very low. Mortality and morbidity losses due to disease in goats have been high in traditional flocks. Unfortunately, little attention has been paid to improving the genetics and productivity of black Bengal goats. Proper marketing and the application of modern technology and advanced management systems in goat rearing could bring about a significant change in the market for goat meat. A coordinated approach initiated by **Department of forest, Govt. of West Bengal and RAKVK, Nimpith** to increase the productivity of goat production by improving management practices, enhancing nutritional inputs, and minimizing morbidity and mortality from traditional and emerging diseases (such as goat pox, pneumonia, and peste des petits ruminants [PPR]) could be very successful not only for the rearing practices but also making income generating opportunities.

As an initiation process, a 3 days (03.01.2013 to 05.01.2013) long intensive training and hands-on practical classes were conducted at RAKVK, Nimpith for the selected farm women of Sundarbans making them aware about the different corners of farming especially the points looked into to prevent the losses from this husbandry and special emphasis have already been taken for the following points:

- Training
- financial assistance

- bank loan
- breed selection
- insurance
- Veterinary assistance
- Farm management
- Fodder cultivation
- Marketing opportunities
- Linkage with Live Stock Development Corporation, West Bengal for easy and assured marketing of the product.

Training on ornamental bird rearing:

Introduction of this technology by RAKVK, Nimpith have contributed to the rural economy in general and *Aila* affected families in particular. This technology is providing the farm women a steady cash flow to sustain their livelihood. Ornamental bird rearing proves to be an alternative livelihood options for *Aila* affected zone of Sundarbans. This technology not only incorporate the womenfolk alone but also empower them by providing them a source of income with which they are able to meet up the basic need of their family in absence of their husbands due to migration. Thus this technology provides the farm women with a sustainable income vis-à-vis food security to their families.

Now this technology is percolated to the remote island of Sundarban where this option is acting as intensification of livestock farming at homestead land so that any crop failure is being balanced by this additional enterprise. The present endeavor by the **Department of Forest, Govt. Of West Bengal in collaboration with RAKVK, Nimpith** for creating an income generating opportunity for the remote island women by rearing ornamental birds is a unique attempt. The initial steps for successful farming i.e. training for the farmers were undertaken successfully.

Training on rural backyard poultry:

Though poultry development in the country has taken a quantum leap in the last three decades, the growth has been mainly restricted to commercial poultry. Rural backyard poultry, though still contributing nearly 30% to the national egg production, is the most neglected one. For the poorest of the poor and the landless, the major issues are food security and risk spreading through subsidiary income, which are not addressed by the private commercial sector. It is well known fact that a fairly significant proportion of the landless and marginal farmers generate their living from poultry and other small ruminants. Backyard poultry requiring hardly any infrastructure set-up is a potent tool for upliftment of the poorest of the poor. Besides income generation, rural backyard poultry provides nutrition supplementation in the form of valuable animal protein and empowers women.

Department of forest, Govt. of West Bengal, has taken up a joint venture in association with RAKVK, Nimpith, a targeted program, for up-gradation of low-input technology birds through intensive training and providing higher genetic inputs. The initial step was successfully completed by imparting training to the 60 farm women of the remote Sundarban.

C. Incidence of parasitic infestation in relation to climate change is being studied in convergence with PDADMS, Hebbal

- Liver fluke (*Fasciola*) infestation is related to snail population in water bodies
- Multiplication of *Fasciola* in snail is positively correlated to cadmium concentration in water bodies.
- Thus the study recommend that control of *Fasciola* should not only be done by dewormer alone but in combination with controlling the snail population in the water bodies.

4.8 Area not covered by the above or constraints or new proposal for XII plan

i) **Staff –** Increasing the no. of technical staff

ii) Infrastructure – More fund required for more accommodation as no. of training has been increasing

iii) **Non-plan –** KVK should be brought under non-planned budget

iv) **Same status for all KVK irrespective of host organization –** a general rule and claims should be followed for all KVKs

v) SMS should be treated as scientist- the Scientific staff should be designated as Scientist as per ICAR rules

vi) More strengthened linkage with ICAR institute-through various linkages.

vii) HRD support for more national & international programmes for the scientific staff of KVK**.**

5.0 LINKAGES

5.1 Functional linkage with different organizations

Sl. No.	Name of organization	Nature of linkage
1.	East Singhbhum KVK, Jharkhand	Training
2.	Indian Veterinary Research Institute, Eastern Regional Station, Kolkata	
3.	Central Institute of Fisheries Education, Salt Lake, Kolkata	
4.	University of Calcutta, West Bengal	
5.	University of Kalyani, Kalyani, Nadia, West Bengal	
6.	West Bengal State University, Barasat	
7.	Deptt. of Agril., GOWB (NWDPRA), (State level training on cotton), (Agril. Mechanization training)	
8.	District Rural Development Cell, North- 24 Parganas, WB	
9.	District Rural Development Cell, South- 24 Parganas, WB	
10.	SDB, GOWB	
11.	Vivekananda College, Kolkata	
12.	ATMA, Howrah	
13.	ATC & SAMETI, Narendrapur	
14.	ATMA, South 24 Parganas	Joint Survey
15.	Irrigation Dept., GOWB (Formation of water users association-WUA and preparation of micro plan of centrally sponsored pilot project for South 24 Parganas on repair, renovation & restoration of water bodies)	
16.	TMC MM-II, DOCD, GOI (Cotton)	Demonstration
17.	SDB, GOWB (Cotton Cultivation)	
18.	CICR, Nagpur (IRM)	
19.	Advanta, Excel Crop Care Ltd.	
20.	National Horticulture Mission, Mayukh Bhavan, Salt Lake, Kolkata, West Bengal	
21.	BGREI, GOWB	
22.	District Horticulture Office, Alipur, South 24 Parganas	
23.	Directorate of Oilseed Research, Hyderabad	
24.	Institute of Animal Health and Veterinary Biologicals, Kolkata, West Bengal	Joint diagnostic survey
25.	West Bengal University of Animal & Fishery Sciences, Kolkata, West Bengal	
26.	Indian Veterinary Research Institute, Eastern Regional Station, Kolkata	
27.	National food security mission	Participation in meeting
28.	Directorate of Extension, BCKV, Mohanpur, Nadia	
29.	Sundarban Milk Union Limited, South 24 – Parganas	Collaborative programme
30.	Central Institute of Fisheries Education, Salt Lake, Kolkata & Versova, Mumbai	
31.	Vivekananda College, Kolkata	
32.	Dept. of ARD & PO, South 24- Parganas	
33.	Cotton Corporation of India (CCI), Kolkata	Marketing of farm produce
34.	CRM Services, Kolkata	
35.	Colour Zone, Ashoknagar, North- 24 Pgs	

NB: The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

5.2 List special programmes undertaken by the KVK, which have been financed by ATMA/ Central Govt/ State Govt./NHM/NFDB/Other Agencies

Sl. No.	Name of the programme/scheme	Purpose of the programme	Date/ Month of initiation	Funding agency	Amount (2012-2013) (in lakhs.)
1	All India Coordinated Research Project on Sunflower**(AICRP)**	Development of early duration Hybrids for rainfed situations and Rabi-Summer	July,2009	Director of Oil Seeds Research, Rajendranagar, Hyderabad	25.00
2	Cotton Development Mission **(CDM)**	Production of Raw Cotton and improve the bio mass statusof the North and South 24-Parganas districts.	2007-2008	Directorate of Agriculture, Govt. of West Bengal	7.50
3	Mini Mission-II of the Technology Mission on Cotton **(TMC)**	Intensive Cotton Development in the North and South 24-Parganas districts.	Oct.,2001	Department of Agriculture, (Development Branch) Govt.of West Bengal	15.0
4	National Agricultural Innovation Project **(NAIP)**	Strategies for sustainable management of degraded coastal land and water for enhancing livelihood security of farming communities (Component-III)	Sept.,2009	National Co-ordinator, (NAIP), ICAR, Project Implementation Unit, Krishi Anusandhan Bhaban-II, New Delhi-110012	170.00
5	National Watershed Development Programme for Rainfed Areas **(NWDPRA)**	Watershed Development in Rainfed Areas	July,2007	Agriculture(Inputs) Department, Govt. of West Bengal	84.55
6	TMC-MM-II-**IRM**(Insecticide Resistance Management)	Experimentation and collection of information for the pest fron the village level cotton field and monitoring for ***Helicoverpa armigera*** etc.	December, 2004	Director of Cotton Development, Central Institute For Cotton Research, ICAR,Nagpur	10.92
7	Black Bengal Goat Farm **(RKVY)**	Establishment of a Black Bengal Goat Rearing Farm	2009-2010	Deputy Director, Animal Resource Development & Parishad Officer, Govt. of West Bengal. Through RKVY.	25.00
8	FLD on Sunflower	Frontline Demonstration on Sunflower	2011-2012	Director of Oil Seeds Research, Rajendranagar, Hyderabad	2.0
9	Collaborative Research Work in the field of Fishery	a. On station trial on the performance of Pengba, *Osteobrama belangeri* in fresh water ponds in fresh water ponds of sundarbans b. Assessment of growth performance of *Channa barca* and *Channa orantomaculatus* under Sundarban condition	July, 2012 October, 2012	Central Institute of Fishery Education(Kolkata Centre),**ICAR**	1.00

Sl. No.	Name of the programme/scheme	Purpose of the programme	Date/ Month of initiation	Funding agency	Amount (in lakhs.)
13	Rural Poultry Feed Plant **(RKVY)**	Production of low cost poultry feed with the utilization of locally available ingredients for the small poultry farmers	2010---2011	West Bengal University of Animal and Fishery Science through RKVY	51.57
14	Nutritional, social, economic empowerment of women in Sundarban areas	Identification of nutritional, socio-economic & health problems of rural women and empower them to attain food, nutritional and socio-economic security.	Dec.'2010	**SDB**, Department of Sundarban Affairs, GOWB	21.50
15	Agricultural Technology Management Agency **(ATMA)**		2010-2011	Deputy Director of Agriculture (Admn) & Project Director, ATMA, South 24-Pgs, Govt. of West Bengal.	5.00
16	National Initiative on Climate Resilient Agriculture**(NICRA)**	Strategies to enhance adaptive capacity to climate change in vulnerable regions of district	Mar., 2011	Indian Council of Agricultural Research, New Delhi.	28.30
17	Rastriya Krishi Vikash Yajona **(RKVY)**	Integrated Farming System Approach Demonstration cum Training and Allied sectors	2010-2012	Directorate of Agriculture, Govt. of West Bengal	30.00
18	AI and First Aid facilities for live stocks	Extension of animal husbandry practices in the remotest areas of Sundarbans through Prani Bandhu	2011-2012	**PBGBS**, Deptt. of ARD, Govt. of West Bengal	15.00
19	Breeding standardization *Pangasius pangasius*	To popularize the Pangasius fish in captive condition along with its market potential	April,2011	**Deptt. of Fishery**, GOWB	2.00
20	Integrated Watershed Management Programme (**IWMP)**	Watershed Development in Rainfed Areas	October, 2012	Department of Agriculture, Govt.of West Bengal	
21	Tribal Sub Plan	Popularization of Sunflower cultivation in the Tribal Belt of West Bengal	Dec., 2011	**DOR**, Hyderabad, ICAR	7.50
22	**MGNREGS**	Extrapolation of landshaping & rain water harvesting technology developed by KVK	2012-2013	District Magistrate, South 24-Pargans	10.0
23	**BGREI**	Extrapolation of landshaping & rain water harvesting technology developed by KVK	Dec., 2012	Dept of agriculture	980.30(approx)

6. PERFORMANCE OF INFRASTRUCTURE IN KVK

6.1 Performance of demonstration units (other than instructional farm)

Sl. No.	Demo Unit	Year of estt.	Area	Details of production			Amount (Rs.)		Rem-arks
				Variety	Produce	Qty.	Cost of inputs	Gross income	
1	Dairy	1984-85	455.750 sq. mt	Cross breed	Milk	144000 kg	1704000	4320000	
2	Broiler	1984-85	225.00 sq. mt.	-	Meat	4 cycle (200 bird/cycle)	62500	88000	
3	Dual purpose poultry bird			RIR, Nirvik, Hitkari, Upkari	Meat and egg	-	22000	47000	
4	Goatary	2009-10	0.13 ha	Black Bengal	Aim is to preserve the germplasm	73	93500	124000	
5	Carp hatchery	1989-90	355 sq. mt.	IMC and Exotic carps	Carp spawn	3.6 million	264630	10000	
6	Nursery and grow-out ponds	1985-86	4.276 ha	IMC and Exotic carps	Carp fry, fingerling & table fish	1620 kg		1,62,400	
7	Catfish & Ornamental fish unit	1997-98	505 sq.m	i.Asian Catfish ii.Live bearers (molly, guppy, platy, sword tail) iii.Egg bearers (goldfish, angel, barb, tetra, gourami, zebra, cichlid)	Catfish, ornamental fish and Tilapia fry & fingerling	99000 nos.		1,09,000	

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.Kg	Cost of inputs	Gross income	
Cereals									
Paddy	27.06.12	16.11.12	0.26	Swarna Sub-1	Foundation	780	2226	19500	
	17.06.12	25.11.12	0.52	NC-492	Certified	1164	1548	23280	
	03.07.12	30.10.12	0.32	Pratikha	Certified	1220	2880	24400	
	14.06.12	28.11.12	0.13	CR-1017	Foundation	350	877	7000	
	15.06.12	29.11.12	0.32	Cr-1009	Foundation	1200	2160	24000	
	20.06.12	22.11.12	0.65	IET-5656	Certified	2500	5565	50000	
	17.06.12	24.11.12	0.10	NC-492	T.L	200	675	3200	
	25.06.12	15.11.12	0.13	Swarna Sub-1	T.L	500	1113	8000	
	16.06.12	25.11.12	0.065	Pankaj	T.L	279	556	4185	
	16.06.12	24.11.12	0.13	Amal Mona	T.L	246	877	3690	
	14.06.12	20.11.12	0.10	Gitanjali	T.L	250	675	3750	
	15.06.12	25.11.12	0.065	Morishal	T.L	97	877	1940	
	17.06.12	29.11.12	0.065	Dudshwar	T.L	181	680	3620	
	14.06.12	25.11.12	0.065	Barsha	T.L	150	685	2400	
Pulses Greengram	25.01.12	07.04.12	0.65	PDM-84-139	T.L	520.0	2925.00	20,800.00	
Oilseeds									
Sunflower	10.02.12	12.05.12	0.32	PAC-334	Grain	350.0	3600.00	9,800.00	
Fibers									
cotton	12.01.11	10.06.12	0.26	Surabhi	Fiber	230.00	3500.00	7,200.00	

Production of planting materials by the KVKs

Crop	Quantity of seedling (no)	Cost of inputs (Rs.)	Value (Rs)	Number of farmers provided
Vegetable seedlings				
Onion seedling	11390	1250.00	3417.00	46
Chilli seedling	7640	1100.00	7640.00	31
Brinjal seedling	5420	460.00	2710.00	27
Beet seedling	10472	980.00	3141.60	35
Sweet potato vine	24700	2300.00	4940.00	62
Tomato	2430	1070.00	2916.00	10
Fruits				
Papaya	2765	5300.00	11060.00	28
Mango	1265	8970.00	44275.00	253
Sapota	780	7140.00	27300.00	260
Guava	370	1850.0	9250.00	62
Banana sucker	1120	460.00	13440.00	22
Ornamental plants				
Chrysanthemum	3400	2910.00	5100.00	68
Inca	2700	4390.00	8100.00	135
Dahlia	4100	4920.00	8200.00	373
Medicinal and Aromatic				
Neem	14000	1680.00	28000.00	-
Plantation				
Coconut	4600	52300.00	161000.00	383
Arecanut	1800	5700.00	14400.00	60
Tuber				
Amorphophallus	32 q	27600.00	64000.00	27
Fodder crop saplings				
Hybrid Napier	15000 cutting	6700.00	26250.00	75
Forest Species				
Sonajhuri	26800	8300.00	53600.00	
Teak	6700	7400.00	33500.00	
Mahagoni	5400	6900.00	27000.00	
Total				

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

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1	*Sl*NPV	4.5 lit	1680.00	2400.00	
2	*Metarhizium anisopliae*	6 kg	450.00	600.00	
3	*Pseudomonas fluorescens*	210.00 kg	15100.00	21,000.00	
4	*Trichoderma viride*	209.00 Kg	15800.00	20,900.00	
5	*Trichoderma harzianum*	30.0 kg	2300.00	3000.00	
6	*Trichogramma chilonis*	1200 trichocards (Having 72 lakh *Trichogramma* wasp)	9300.00	12,000.00	
7	*Chrysoperla carnea*	56,000 grubs	3900.00	5,600.00	

6.4 Performance of instructional farm (livestock and fisheries production)

Sl. No.	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remark
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1	Dairy	J.C, HF. C, GIR, Sahiwal C.	Milk	144000 kg	1704000	4320000.00	
2	Broilers	Hygrow	Meat	4 cycle (200 bird/cycle)	62500	88000	
3		RIR, Nirvik, Hitkari, Upkari	Meat and egg	800	22000	47000	
4	Goat	Black Bengal	Meat	73	93500	124000	
5	Rabbit	White New Zealand	Ornamental purpose	24	3550	9600	
6	Guinea pig	-	Ornamental purpose	18	5600	15000	
7	Ornamental bird	Budgerigar, Cockatail	Ornamental purpose	210	11550	27000	
	Fisheries						
8	Indian major carps & exotic carps	Rahu, Katla, Mrigal, Bata, Kalbasu, Silver carp, Grass carp, Common carp	Table purpose	760 kg	264630	76000.00	
9	Indian carp fingerlings	Rahu, Katla, Mrigal, Bata, Kalbasu	Seed	617 kg		61700.00	
10	Exotic carp fingerlings	Silver carp, Grass carp, Common carp	Seed	205 kg		20500.00	
11	Indian carp fry	Rahu, Katla, Mrigal, Bata, Kalbasu	Seed	18 kg		2700.00	
12	Exotic carp fry	Silver carp, Grass carp, Common carp	Seed	10 kg		1500.00	
13	Indian carp spawn	Rahu, Katla, Mrigal, Bata, Kalbasu	Seed	2.4 million		6000.00	
14	Exotic carp spawn	Silver carp, Grass carp, Common carp	Seed	1.2 million		4000.00	
15	Ornamental fish	Guppy, Molly, Gold fish, Koicarp, Angel, Gourami	Seed	60,000 nos.		24,000.00	
16	Tilapia	Red tilapia hybrid		32,000 nos.		64,000.00	
17	Catfish	Asian catfish		7,000 nos.		21,000.00	

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 2012	219	656(21)	-
May,2012	121	363(15)	-
June,2012	110	320(15)	
Juky,2012	172	502(18)	-
August,2012	100	300(15)	-
September,2012	458	1375(21)	-
October, 2012	187	561(12)	-
November,2012	138	415(15)	-
December,2012	181	543(18)	-
January,2013	147	440(18)	-
February,2013	128	385(18)	-
March 2013	117	350(18)	-

(For whole of the year)

6.5 Utilization of staff quarters

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

Months	Q I	QII	Q III	QIV	Q V	QVI
April, 2012	Full	Full	Full	Full	Full	Full
May,2012	Full	Full	Full	Full	Full	Full
June,2012	Full	Full	Full	Full	Full	Full
July,2012	Full	Full	Full	Full	Full	Full
August,2012	Full	Full	Full	Full	Full	Full
September,2012	Full	Full	Full	Full	Full	Full
October, 2012	Full	Full	Full	Full	Full	Full
November,2012	Full	Full	Full	Full	Full	Full
December,2012	Full	Full	Full	Full	Full	Full
January,2013	Full	Full	Full	Full	Full	Full
February,2013	Full	Full	Full	Full	Full	Full
March, 2013	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 FLD on Oilseed *(Rs. In Lakhs)*

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2013
	Kharif 2012	Rabi 2012 -13	Kharif 2012	Rabi 2012-13	
Inputs	-	76,755.00	-	76,755.00	-
Extension activities	-	15,424.00	-	15,424.00	-
TA/DA/POL etc.	-	7764.00	-	7764.00	-
TOTAL	-	99,943.00	-	99943.00	Nil

N.B. Fund obtained from DOR, Hyderabad for FLD under RAKVK-AICRP (Sunflower)

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

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2012
	Kharif	Rabi	Kharif	Rabi	
Inputs	-	-	-	-	-
Extension activities	-	-	-	-	-
TA/DA/POL etc.	-	-	-	-	-
TOTAL	-	-	-	-	-

7.4 Utilization of funds under FLD on Cotton *(Rs. In Lakh)*

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2012
	Kharif	Rabi	Kharif	Rabi	
Inputs	-	-	-	-	-
Extension activities	-	-	-	-	-
TA/DA/POL etc.	-	-	-	-	-
TOTAL	-	-	-	-	-

7.5 Utilization of KVK funds during the year 2012 -13

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	**Pay & Allowances**	83.50000	83.50000	83.34363
2	**Traveling allowances**	1.50000	1.50000	1.51196
3	**Contingencies**			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	5.25000	5.25000	5.61456
B	POL, repair of vehicles, tractor and equipments	2.5000	2.5000	2.44729
C	i) Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)	2.00000	2.00000	1.93820
	ii)Training of Rural Youths	0.75000	0.75000	0.71250
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	0.50000	0.50000	0.75040
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	1.50000	1.50000	1.55235
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	1.500	1.500	0.99680
G	Training of extension functionaries	0.50000	0.50000	0.59000
H	Maintenance of buildings	0.50000	0.50000	0.58080
I	Establishment of Soil, Plant & Water Testing Laboratory	-	-	-
J	Library	-	-	-
TOTAL (A)		**100.00000**	**100.00000**	**100.03849**
B. Non-Recurring Contingencies				
1	**Works**			
2	**Equipments including SWTL & Furniture**	-	-	-
3	**Vehicle** (Four wheeler/Two wheeler, please specify)	-	-	-
4	**Library** (Purchase of assets like books & journals)			
TOTAL (B)				
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)				**100.03849**

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

Year	Opening balance as on 1st April	Income during the year	Expenditure during the year	Net balance in hand as on 1st April of each year (Kind + cash)
April 2010 to March 2011	20.38819	24.81546	23.54302	21.66063
April 2011 to March 2012	21.66063	6.50500	5.86400	22.30163
April 2012 to March 2013	22.30163	13.21855	12.20310	23.31708

7.6 Any other significant achievements (provide full details with action photograph)

1. Capacity building of **Kisan Call Centre** level 1 staff in the **field of fisheries** on 4th, 6th and 8th March, 2013 at SAMETI, Narendrapur
2. Capacity building of rural youths on **fishery based Agri business and Agri clinic** on 27th February, 2013 at SAMETI, Narendrapur
3. Capacity building on **gender mainstreaming in agriculture** for the govt. and non govt. officials on 12th June, 2012 organised by MANAGE, Hyderabad at SAMETI, Narendrapur
4. Annexure-I(Project activities)

7.7 Number of SHGs formed by KVKs/associated with SHGs formed by other organizations indicating the area of SHG activities.

7.8 Details of marketing and financial opportunity created for the SHGs

7.9 Special programme on Food and Nutrition :

i) On farm trials conducted on food and nutrition: NA
Title, results, no. of beneficiaries and other information.

ii) FLD conducted on food and nutrition
Title: FLD on complementary food for management of MAM children (7- 59 month)
Results:

Category	Daily diet(FP)	complementary food
Composition of daily diet (FP)	Rice, potato curry, Veg Curry (occasional) , biscuit, commercial milk (diluted), wheat flour (boiled)	Kichri with vegetable (daily) , Soyabean (2days)
Cost	Rs 5.30/meal	Rs 5.00/meal
MUAC	<11.5 cm	>12.5 cm
Wt./ Length Z score	<-1	>-1

No. of beneficiaries: 80
Other information:

Identification of MAM children | Community participation for complementary food preparation | Spot feeding

The FLD on complementary food for management of MAM children (7- 59 month) has been conducted in coordination with ICDS supervisor and Anganwadi workers.

Families which are identified as possessing SAM and MAM children are selected as target groups and are tied with different government projects (MGNREGA, NHM) and KVK programmes like awareness building and training on food & nutritional security at household level.

iii) Awareness programme conducted on food and nutrition for Anganwadi workers and others

Sl. no.	Title of programme	Target group	No. of participants	No. of programme
1.	Different government projects on nutrition & health for mothers, adolescent girl and children	Anganwadi workers, PRI members, CBO members, SMC members and ASHA workers	174	5
2.	Water and sanitation, health(WASH)	Anganwadi workers, CBO members, SMC members and ASHA workers	185	7

iv) Total Anganwadi workers trained indicating area of training:

Sl. no.	Title of training programme	No. of participants	No. of programme
1.	Anthropometric measurement for growth monitoring of children (0-5) & pregnant mother	82	4
2.	Convergence of different government project to have better access to food & nutrition security	63	7

v) Number of exhibition, fair, workshops organized on food and nutrition:

Exhibition: One (6th to 10th February, 2013)
Workshops:

Sl. no.	Title of workshop	Level	No.	Date
1.	Village level planning seeking convergence with different Govt. programme	Panchayat	3	26.04.2012, 16.05.2012 & 12.06.2012
2.	Participatory and sharing of best practices and learning from food & nutrition projects	Block	2	28.12.2012 & 22.01.2013
3.	Sharing workshop for baseline survey on household nutrition security	State	1	21.11.2012

7.10 Community Radio Station :

i) Date of start of Community Radio Station
ii) Details of programme aired through Community Radio Station and frequency of such programme
iii) Whether any proposal is pending for establishment of CRS at KVK, if yes, date of submission of proposal

7.11 KMAS Service

Mobile Advisory								
No. of calls	No. of farmers covered	No. of messages	Type of messages					
			Crop (no.)	Livestock	Weather	Marketing	Awareness	Other enterprise

Due to some technical difficulties of KMA service provider, Nimpith KVK started the KMAS service from 11.03.13 onwards. Till date two sms on plant protectionary measures have been sent through the KMAS. However, KVK, Nimpith was the first to start the SMS alert system, in Zone II, through web service and so far 6500 sms alert has already been sent.

7.12 Performance of Automatic Weather Station/ Weather Station in KVK

i) Parameters are being recorded

Name of KVK	Year of establishment of automatic weather stn.	Parameter-wise information obtained						Provided to no. of farmers	Feedback received
		Month	Rain-fall (mm)	Temperature ^{0}C		Relative Humidity (%)			
				Max	Min	Max	Min		
KVK, Nimpith	January, 2007	April,12	27.8	38.6	20.5	87.5	55.5	943	Message incomplete, Non receiving of message due to signal failure, Message in local language preferred.
		May, 12	-	40	20	86.5	53		
		June,12	116.7	40.2	25	98	44		
		July,12	279.6	36	25	98	56		
		August,12	508.2	33.6	25	100	64		
		September,12	327.6	34	24	100	67		
		October,12	114.6	34	19	98	52		
		November,12	20.6	32	14	93	41		
		December,12	61	29.2	9.5	100	31		
		Jan,13	3	30	8	86.5	44.5		
		Feb,13	5	31.8	11.4	85	46.5		
		March,13	3.2	31.2-37	14-25.8	89	33		

ii) Advisory service based on weather data being provided to

a) Number of farmers - 943

b) Departments with name and number – Agronomy-389, Horticulture-126, Plant Protection-380, Fishery-22 Animal Husbandry-12, Home Science-6

c) Other agency with name and number – National Agromet Advisory Service Bulletin (IMD, Pune) -12, Agromet Advisory Service System, NICRA Project, BCKV, Kalyani, Nadia - 40

7.13 Joint activity carried out with line departments and ATMA

Name of activity	Season	With line department	With ATMA	Both
Training to the farmers	Throughout the year	DRDC, North and South 24-Parganas	-	-
Implementation of NWDPRA	Throughout the year	Deptt. of Agril, GOWB	-	-
Large Scale Cotton Demonstration	Rabi-Summer 2011-12	Deptt. of Agril, GOWB	-	-
IRM on Cotton	Rabi-Summer 2011-12	CICR Nagpur	-	-
AICRP on Sunflower	Kharif & Rabi -summer	DOR, Hyderabad	-	-
Nutritional Security	Throughout the year	SDB, WB	-	-
Poultry Feed Plant	Throughout the year	-	RKVY	-
Bengal Goat Conservation	Throughout the year	-	RKVY	-
Training to the headmasters of different farm schools	Throughout the year	-	ATMA, Howrah & Hoogly	-
Activities coup up with Climate Resilient	Throughout the year	NICRA, New Delhi	-	-
Livelihood Security	Throughout the year	NAIP, New Delhi	-	-
IWMP	2011-16	Deptt. Of Agril, GOWB	-	
BGREI	2012-14	Deptt. Of Agril, GOWB	-	-