1.Description of Agro Climatic Zone of the Operational Area:

Birbhum being the northern most district of the Burdwan division lies between the latitude 23^{o} 32' and 24^{o} 35' in the northern hemisphere and 80^{o} 01' 40''and 87^{o} 05'25''longitude. On the map the district (Birbhum) looks like an isosceles triangle. The apex is situated at the northern extremely not far south of the point where the Ganges and the hills of Santhal Parganas of Bihar beginning to diverge while the river Ajoy forms the base of the triangle. Birbhum is bounded on the north and west by the Santhal Parganas, by the districts Murshidabad and Burdwan on the east, and on the south by Burdwan. The Birbhum is separated from the Burdwan district by the river Ajoy. The district comprises three sub-divisions namely- Bolpur, Rampurhat and Suri. Suri is the head quarter of the district and of the Suri (*Sadar*)-Division as well.

This district (Birbhum) is enriched by various types of soil namely, *Metal* (Clay soil retentive of moisture which is best suited for growing winter paddy, sugarcane, wheat, gram and *kalai*); *Ental* (a sticky brownish clay, it is poor soil and is capable of producing paddy only if manured); *Bagha Ental* (ental having colour or tiger, it is poor soil capable of producing paddy only if manured); *Bele* (is a whitish loose and poor soil , capable of growing paddy and vegetable); *Kankure* ((it is a redish, loose laterite soil capable of growing bajra, maize, kurthi, bean and marual); *Bastu* (it is a blackish friable rich soil and is largely used for rabi crops); *Bindi* (it is a poor sandy soil which improves with continued cultivation, capable of producing paddy but can also grow rabi crops if irrigated); *Reti Rfi* (is lighter variant of *palli*, it does not grow paddy it is best suited for vegetables, wheat, barly etc ;) *Pali* (deposit of soil is bed of river or in areas subject to revering inundation, it is very rich soil and is well suited for sugarcane, wheat, gram, potato and other vegetables. It is generally reserved for more valuable crops rather than paddy).

The agro-climatic condition of the district is mainly influenced by the presence of a number of river, rivulets, dams, barrages and forests. The variation of temperature is from 10.7^{o}C to 28^{o}C in winter and from 26.5^{o}C to 39.4^{o}C in summer on an average. The average annual rainfall is 1453 mm. The predominant soil types are old alluvium to red late rite. This area is under sub-humid lateritic belt.

Soils of lateritic belt are highly coarse textured and well drained. Iron concentrations are dispersed on the surface and honeycomb structures of oxides of Fe and Al are present in the sub surface or exposed in some eroded areas. About 50-60 percent of lands are located on the higher situation, about 20-30 percent of the land on medium situation and 10-20 percent land are on lower situation. Upland soils are strongly acidic and poor in organic matter, available P and available K and lime. The lands are lower situation are slightly rich in fertility status. Annual precipitation varies between 1100 mm and 1300 mm, about 80 per cent of which are precipitated between June and September during monsoon season.

The land of the alluvial belt has flat to rolling topography. Fields are generally bunded in up and medium situations and slopes are mostly terraced. The soils are light, medium and heavy in texture. Soil reaction is acidic to neutral (pH 5 to 7). Soils in this region are low to medium in organic matter and available P and low to high in K. The average annual rainfall varies between 1300mm and 1500 mm.

Areas of light, medium and heavy soil of the district are 373.48, 85.48 and 141.0 thousand hectares respectively.

Agro EcologicalSituation of the district is as follows:

Sl. No.	Agro ecological situation	Characteristics
1	Completely eroded land	This situation predominantly occurs in some areas of Birbhum district particularly in Rajnagar block. The soil contains gravels and coarse sands. Land is very steep, eroded and stony rough. Depth of the soil is zero or negligible. There are no irrigation facilities. Land is not suitable for cultivation of annual crops. Only there is the permanent vegetation of natural forest.
2	Upland with light soil	The uplands of red and lateritic belt are locally known as *Tanrh* and *Baid*. These are composed of shallow to moderately deep soil with light surface texture and low organic matter content with low P^H. Major Crops are rice, wheat, red gram, black gram, vegetables etc. Major livestock's are cattle, buffalo, goat, poultry, pig etc.
3	Medium land with medium soils	These lands are locally known as *Kanali*. Depth of the surface layer varies from 135-160 cm. OM content and water holding capacity is to some extent higher. Acidity of these soil is lower than upland. Generally sandy loams to loamy sand soils are found. Major crops are rice, wheat, mustard, sesame, potato etc.
4	Low land with medium to heavy soil	These soils are locally known as *Sole* or *Bahal*. Soils are deep and potentially productive in nature and silty loam to clayey in texture with pale brown to dark grayish brown in colour. Soil depth is more as compare to other situation. Acidity is lower and fertility is higher to some extent than other situation. Submergence of low land during monsoon months is found every year. Rice being the main crop in *kharif*, pulse, oilseeds, wheat, potato and vegetables are also cultivated during *rabi* and *summer* under irrigated condition

Major farming systems/enterprises (based on the analysis made by the KVK followed in the district are as follows

S. No	Farming system/enterprise
1	Upland- Paddy, red gram, fruit crops
2	Medium land- Paddy, mustard, potato, sugarcane, sesame, black gram, vegetables, fruit crops, cow, goat, backyard poultry, fishery
3	Lowland- Paddy, sugarcane, wheat, potato, vegetables, backyard duckery, fishery

2. Micro-Farming Situation identified:

As per agro eco-system analysis five farming situations has been identified which are as follows:

i) Upland (*Dangamath*) which is only relatively high land;
ii) Mid Land (*Majmath*);
iii) Fertile low land (*Bhalo do bari*);
iv) Less Fertile low land (*Do bari*);
v) Deep low land (*Jala Math*);

3. Characteristics of Farming Situation:

Sl. No.	Variables	Dangamath	Majmath	Nichumath	Jalamath
1.	Land	Upland	Medium land	Lowland	Deep low land
2.	Soil fertility	Low	Low to Medium	Medium	High
3.	Water resources	Pond	River, Ponds	River	River
4.	Soil erosion	High	Less	Less	Less
5.	Soil moisture	Less	Moderate	High	Very high
6.	Water logging	No	No	No	Moderate
7.	Cropping sequence	Paddy-fallow	Paddy-Paddy Paddy-Mustard/Vegetables	Paddy-Paddy Paddy-Potato-Sesame Paddy-Mustard-Black Gram/ Green Gram	i) Paddy-potato-sesame ii) Paddy-vegetables iii) Paddy-wheat
8.	Water table	9-11 ft.	8-10 ft	7-9 ft.	5-6 ft
9.	Field crops	Paddy	Paddy, Mustard, Sesame, Black Gram	Paddy, Potato, Sesame, Mustard	Mustard, wheat, potato, Sesame

4. Thrust area identified through Agro-Eco-System Analysis.

- Crop diversification through introduction of pulses, oilseeds, major millets, horticultural crops like elephant's foot yam, drum stick and high value low volume horticultural products like capsicum, broccoli etc.
- Popularization of High Yielding Varieties (HYVs) of major crops like paddy, wheat, mustard, potato, pulses, oil seeds etc. as well as traditional varieties of those crop also.
- Cultivation of field crops which require least water in the Arid and Semi-Arid regions of the district and cultivation of suitable horticultural crops in those regions.
- Popularization of improved management practices of Animals and Fishes.
- Market led extension, Crop Insurance and institutional rural credit flow mechanism.
- Women empowerment.

Executive Summary of the training programme including FLD & Sponsored in the Action Plan 2017 - 18

Discipline	No. of courses		Total no. of participants		Trainee days											
					PF		RY		EF		FLD		Sponsored		Total	
	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off
Agronomy	16	01	480	50	660	200	525	00	50	00	900	00	00	00	**2135**	**200**
Horticulture	05	00	155	00	180	00	00	00	00	00	220	00	00	00	**400**	**00**
Plant Protection	06	11	180	550	270	1050	525	00	25	00	240	00	00	00	**1060**	**1050**
Animal Science	18	03	461	150	610	300	630	00	55	00	190	00	00	00	**1485**	**300**
Fishery	13	00	341	00	1110	00	630	00	00	00	40	00	00	00	**1780**	**00**
Home Science	06	04	145	180	565	210	300	00	00	00	30	00	00	00	**895**	**210**
Agricultural Extension	08	05	170	250	360	600	00	00	00	00	00	00	00	00	**420**	**600**
Total	**72**	**24**	**1932**	**1180**	**3755**	**2360**	**2610**	**00**	**130**	**00**	**1680**	**00**	**00**	**00**	**8175**	**2360**

5. Training Programmes.

5A. Training Programme for Practicing Farmers / Farm Women:

Discipline	Thematic Area	Title of the Programme	Course Objective	Types of Training	No. of Course	Duration	No. of Trainees /Course	Total Trainee Days	Coverage							
									SC		ST		Other		Total	
									M	F	M	F	M	F	M	F
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
April, 2017 (Quarter-I)																
Fishery	Carp Fry and Fingerling Rearing	Scientific Method of Pond Preparation for Fingerling Raising	• To trainthe method of preparation of nursery pond • To teach about plankton and p^H of water • To train the steps of fry rearing	ON	01	02	30	60	08	00	12	00	10	00	30	00
Horticulture	Production Technology	Improved Package and Practices of Pre-Kharif Seasonal Vegetables	• To make the trainees aware about the different High Yielding Improved varieties of Pre-Kharif Vegetables • To train the Cultural practices of these vegetables like plant spacing, manures, pinching, disbudding, plant protection measures etc.	ON	01	02	30	60	00	00	30	00	00	00	30	00
Home Science	Household Food Security	Nutrition Gardening	• To impart the practicing farm women knowledge and information about the concept of Nutrition Gardening • To make the farm women aware about the importance of the Nutrition Gardens	Off	01	02	30	60	00	05	00	25	00	00	00	30

Animal Science	Disease Management	Identification and Control of Disease in Poultry and Their Prophylactic Measures with Special Reference to Bird Flu	• To teach the different causes and symptoms of diseases • To make the trainees aware about the preventive measures	ON	01	02	30	60	09	00	12	00	09	00	30	00
Agricultural Extension	Group Dynamics	Concept, Formation and Functioning of Joint Liability Group	• To impart the knowledge about the procedure of formation of a joint liability group • To make the farmers and farm women aware about the various functions of a joint liability group	ON	01	03	30	90	08	02	12	04	04	00	24	06
May, 2017 (Quarter-I)																
Agronomy	Crop Diversification	Specific Agro technology for cultivation of Ekangi (*K. galanga*) in rainfed monocropped situation	• To aware the importance of *Ekangi* as medicinal plants • To provide skill of *Ekangi* plantation, drainage channel preparation and mulching • To provide skill of herbicide application, manuring and fertilizer application etc. • To impart skill on harvesting and threshing of *Ekangi*	ON	01	04	30	120	09	00	04	00	17	00	30	00

Agronomy	Soil Health and Fertility Management	Collection of Soil Sample and Preparation of Soil Sample for Soil Testing and Interpretation	• To provide skill of soil sampling in the field • To aware the importance of soil testing • To provide skill of drying, sieving, partitioning etc. • To interpret the soil testing report	Off	01	04	50	200	11	00	06	00	33	00	50	00
Plant Protection	IPM	Different Components of IPM	• To provide knowledge about bio-control and others • To provide knowledge about different method	Off	01	03	50	150	10	00	20	00	20	00	50	00
Fishery	Composite Fish Culture	Culture and Management of IMC and Exotic Carps	• To train the steps of pond preparation. • To make the trainees aware about the species compatible for culture. • To train how to measure pH and plankton density.	ON	01	04	30	120	07	00	03	00	20	00	30	00
Fishery	Portable Plastic Carp Hatchery	Carp Hatchery Management and Production of Carp Spawns	• To impart the practicing fish farmers knowledge and information about the concept of Carp Hatchery Management and Production of Carp Spawns • To make the fish farmers aware about the importance of the Carp Hatchery Management and Production of Carp Spawns	ON	01	03	30	90	08	00	12	00	10	00	30	00
Home Science	Women Health	Care and Management of Pregnant Mothers	• To reduce the mortality rate of pregnant mothers and neonatal	Off	01	01	50	50	00	15	00	05	00	30	00	50

Home Science	Post Harvest Technology	Value Addition and Preservation	• To teach the technique of fruit selection, blanching, pulp extraction etc • To train the measurement and mixing of ingredients • To train about the technique of bottling and leveling	ON	01	07	25	175	00	08	00	10	00	07	00	25
Animal Science	Disease Management	Reduction of Treatment Cost by Use of Indigenous Technology and Knowledge(ITK)	• To make the trainees aware about the traditional medical practices • To promote the conservation of medicinal plant resources • To promote the complementary use of indigenous and conventional veterinary medicine	ON	01	02	30	60	09	00	15	00	06	00	30	00
Agricultural Extension	Market led Extension	Formation of Farmers Producers Organization (FPO)	• To impart the practicing farmers the knowledge and information about the concept of Commodity Interest Group • To make the farmers aware about the importance of the CIG	ON	01	02	30	60	08	00	12	00	10	00	30	00
gricultural Extensio	Institutional Credit Supply	Mechanism and Use of Kisan Credit Card (KCC)	• To teach the mechanism of Kisan Credit Card (KCC) • To teach the various functions of KCC • To make the trainees aware about the various unique features of KCC	Off	01	03	50	150	11	00	20	00	19	00	50	00
June, 2017 (Quarter-I)																

Horticulture	Production Technology	Improved Package and Practices of Kharif Seasonal Vegetables	• To make the trainees aware about the different High Yielding Improved varieties of Kharif Vegetables • To train the Cultural practices of these vegetables like plant spacing, manures, pinching, disbudding, plant protection measures etc.	ON	01	02	30	60	00	00	30	00	00	00	30	00
Plant Protection	IPM	Integrated Pest, Disease and Weed Management in *Kharif* Paddy (Phase – I)	• To identify the pests, disease and Weed • To enable the farmers in decision making management.	Off	01	03	50	150	10	00	20	00	20	00	50	00
Fishery	Carp Breeding and Hatchery Management	Fish Breeding and Seed Production in Carp Hatchery	• To make the trainees aware about the different Carps • To train the steps involved in breeding of Carps • To make the trainees aware about their food habit and feeding schedule	ON	01	05	30	150	07	00	15	00	08	00	30	00
Home Science	Income Generation	Training Programme on Tie and Dye	• To train the technique of tieing according to design • To teach about colour combination • To train the technique of colour preparation.	ON	01	05	25	125	00	06	00	03	00	16	00	25
Animal Science	Feed and Fodder	Low Cost Feed Preparation For Poultry	• To teach the different feed ingredients and their uses in poultry feed • To train the method of balance feed formulation	ON	01	04	30	120	09	00	15	00	06	00	30	00

Agricultural Extension	Group Dynamics (Farmers' Organization)	Formation of Farmers' Club	• To orient the farmers about farmers club • To train the farmers about process of formation and functioning of farmers club • To make the farmers aware about the importance of Farmers Club	Off	01	02	50	100	12	00	20	00	18	00	50	00
July, 2017 (Quarter-II)																
Agronomy	Production of Organic Input	Preparation and Use of Vermin Compost	• To aware the farmers about importance of compost • To provide basic knowledge about vermin compost • To impart skill in preparation of vermin compost	ON	01	04	30	120	09	00	06	00	15	00	30	00
Agronomy	Seed Production	Seed Production Technologies In *Kharif* Season (Phase-I)	• To know the different types of seed • To provide basic knowledge about isolation distance and roughing off techniques • To train about the process of the conservation of seeds	ON	01	03	30	90	09	00	06	00	15	00	30	00
Plant Protection	IPM	Integrated Pest, Disease and Weed Management In *Kharif* Paddy (Phase – II)	• To identify the pests, disease and Weed • To enable the farmers in decision making management.	ON	01	03	30	90	08	00	12	00	10	00	30	00
Home Science	Health and Nutrition	Nutritional Requirement of Pre-School Children	• To reduce malnutrition of the pre-school child • To aware mothers about nutrition requirement of pre- school child	Off	01	01	50	50	00	20	00	20	00	10	00	50

Animal Science	Management in Farm Animal	Establish, Maintenance and Management of Small Scale Dairy Unit	• To make the trainees aware about the impact of dairy farming on household income • To train proper management, feeding, breeding practices and disease prevention in dairy animal	ON	01	04	25	100	05	00	10	00	10	00	25	00
Animal Science	Management in Farm Animal	Back Yard Farming Improvement with Utilization of Natural Resources	• To train scientific back yard management of animal husbandry • To impart knowledge about natural resources	ON	01	02	30	60	08	00	12	00	10	00	30	00
Agricultural Extension	Insurance	Crop Insurance	• To teach the mechanism of Crop Insurance (CI) • To teach the various functions of CI • To teach various unique features of CI	ON	01	02	30	60	10	00	12	00	08	00	30	00
August, 2017 (Quarter-II)																
Agronomy	Production of Organic Input	Multiplication of *Azolla*	• To provide knowledge on importance of use of *Azolla* • To impart skill on *Azolla* multiplication	ON	01	04	30	120	08	00	06	00	16	00	30	00
Plant Protection	IPM	Pest and Disease Management in Early *Rabi* Vegetables	• To identify the pests and diseases of early *rabi* vegetables • To enable the farmers in decision making management regarding control measures of pests and diseases of early Rabi Vegetables.	Off	01	03	50	150	10	00	20	00	20	00	50	00
Fishery	Fish Feed Preparation and Its Application to Fish Ponds like Nursery, Rearing and Stocking Pond	Fish Nutrition and Feed Management	• To identify the local source of ingredients of Fish Feeds • To teach the proper ratio of mixing the ingredients of Fish Feeds	ON	01	04	30	120	05	00	12	00	13	00	30	00

Animal Science	Rabbit Management	Rabbit Farming-Alternate Livelihood Programme	• To promote alternate farming system for income generation • To aware the farmers about scientific Rabbit farming	ON	01	01	30	30	09	00	12	00	09	00	30	00
Home Science	Awareness Generation on Nutrition	Design of Low Cost, High Nutritious Diet for Vulnerable Group	• To impart the practicing farm women knowledge and information about the concept of Low Cost, High Nutritious Diet • To make the farm women aware about the importance of the Low Cost, High Nutritious Diet	Off	01	01	50	50	00	15	00	20	00	15	00	50
Agricultural Extension	Disaster Management	Disaster Management with Special Reference to Agriculture and Related Sectors	• To make the stake holders aware about the preliminary measures to reduce the risks of disasters • To provide the information and knowledge about the measures for reducing risks and losses from disasters	ON	01	03	30	90	10	00	12	00	08	00	30	00
September, 2017 (Quarter-II)																

Agronomy	Seed Production	Seed Production Technologies in *Kharif* Season (Phase – II)	• To practice the skill of top dressing of fertilizer and spraying of micronutrients in seed production plots • To provide basic knowledge about harvesting and threshing • To train about the conservation of seeds	ON	01	03	30	90	09	00	06	00	15	00	30	00
Horticulture	Production Technology	Improved Package and Practices of Rabi Seasonal Vegetables	• To make the trainees aware about the different High Yielding Improved varieties of Rabi Seasonal Vegetables • To train the Cultural practices of these vegetables like plant spacing, manures, pinching, disbudding, plant protection measures etc.	ON	01	02	30	60	00	00	30	00	00	00	30	00
Plant Protection	IPM	Pest, Disease Management on Rabi Seasonal Oil Seeds and Pulses	• To identify the pests and diseases • To enable the farmers in decision making management.	Off	01	03	50	150	10	00	20	00	20	00	50	00
Animal Science	Duck Farming	Khaki Campbell Duck Rearing and Its Management	• To learn scientific method to increase productivity • To train about the proper management practices and preventive measures of diseases	Off	01	02	50	100	00	14	00	20	00	16	50	00
Home Science	Income Generation	Training on Batik Work	• To train the technique of drawing design with brush and wax on cloth • To teach about colour combination • To train about the technique of colour preparation. • To train about the technique of removing wax	ON	01	07	20	140	00	08	00	00	00	12	00	20

Fishery	Hatchery Management and Culture of Fresh Water Prawn	Fresh Water Giant Prawn Culture with Indian Major Carps (IMC) and Exotic Carps	• To make the trainees aware about the layout of integrated fish farming with giant prawn. • To teach about the disease and its control measures • To train about the use of balanced feed for fish and prawn	ON	01	05	30	150	09	00	12	00	09	00	30	00
Fishery	Composite Fish Culture and Fish Disease	Improved Disease Management Practices in Fresh Water Aquaculture	• To impart the practicing fish farmers knowledge and information about the identification and control measures of varied fish diseases • To make the fish farmers aware about the importance of the various Management Practices of Fish Diseases	ON	01	03	30	90	07	00	15	00	08	00	30	00
October, 2017 (Quarter-III)																
Plant Protection	IPM	IPM on Solanaceous Crops	• To identify the pests, diseases and weed • To calculate pest defender ratio • To enable the farmers in decision making management • To provide idea of different cultural practices	ON	01	03	30	90	08	00	12	00	10	00	30	00

Animal Science	Goat Farming	Scientific Black Bengal Goat Rearing	• To conserve the superior germplasm of the threatened breed • To train the proper feeding, breeding and management practices. • To make the trainees aware about the different diseases and there preventive measures in goat.	Off	01	02	50	100	14	00	20	00	16	00	50	00
Fishery	Integrated Farming System	Integrated Fish Farming	• To make the trainees aware about the compatible components • To train about the management of recycling of residuals of components	ON	01	04	30	120	08	00	12	00	10	00	30	00
Animal Science	Integrated Farming System	Role of Animal Husbandry in Integrated Farming	• To teach the scientific animal husbandry management in integrated farming system • To aware the farmers about income generation through integrated farming	ON	01	01	30	30	08	00	12	00	10	00	30	00
Agricultural Extension	WTO and TRIPS Related Issues	Protection of Plant Varieties and Farmers' Rights Act (PPV & FRA) -2001	• To teach about the Plant Varieties and Farmers' Rights Act (PPV & FRA) - 2001 • To make the farmers aware about the procedures of registration of traditional plant varieties	Off	01	02	50	100	12	00	20	00	18	00	50	00

November, 2017(Quarter-III)																
Plant Protection	IPM	IPM on Wheat, Sugarcane and High Value Vegetables like Broccoli, Capsicum etc.	• To identify the pests, diseases and weeds • To calculate pest defender ratio • To enable the farmers in decision making management • To provide idea of different cultural practices	Off	01	03	50	150	10	00	20	00	20	00	50	00
Animal Science	Piggery Management	Scientific Piggery Management with special Reference To *Ghungroo* Breed	• To make the trainees aware about the proper breeding, feeding and management practices. • To make the trainees aware about the different diseases and their preventive measures in pig.	Off	01	02	50	100	15	00	30	00	05	00	50	00
Home Science	Rural Craft	Preparation of Agar-Batti.	• To train about the technique of preparing Agar-Batti sticks. • To train about the technique of spraying perfume on the sticks and packaging.	ON	01	05	25	125	00	09	00	10	00	06	00	25
Fishery	Carp Fry and Fingerling Rearing	Scientific Method of Carp Fry and Fingerling Rearing	• To train about the process of preparation of nursery pond • To make the trainees aware about plankton and p^H of water • To train the steps of fry rearing and feed application	ON	01	04	30	120	06	00	11	00	13	00	30	00
December, 2017 (Quarter-III)																
Animal Science	Fodder Cultivation	Quality Fodder Cultivation	• To teach the importance of fodder cultivation • To train about the proper method of fodder cultivation	ON	01	01	30	30	09	00	12	00	09	00	30	00

Plant Protection	Production of Bio-Pesticides and Seed Treatment of Various Crops	Identification of Different Bio Pesticides and Seed Borne Diseases and their Treatments	• To provide the knowledge about different bio-pesticides • To provide knowledge about Importance of seed treatment • To provide knowledge about different types of techniques	ON	01	03	30	90	08	00	12	00	10	00	30	00
Agricultural Extension	Group Dynamics (Micro Finance)	Formation of SHG	• To orient the stake holders about SHG functions • To train the steps of SHG formation	Off	01	03	50	150	15	00	20	00	15	00	50	00
January, 2018 (Quarter-IV)																
Plant Protection	IPM	IPM in Summer Vegetable	• To identify the major pest diseases and weed management • To adopt different non-chemical management • To identify pest defender ratio • To minimize the pest population using different preventive methods	Off	01	03	50	150	10	00	20	00	20	00	50	00
Animal Science	Disease Management	Identification and Control of Diseases in Dairy Animals with their Prophylactic Measures	• To make the trainees aware about the different causes and symptoms of diseases • To teach the preventive measures	ON	01	02	30	60	09	00	12	00	09	00	30	00

Fishery	Composite Fish Culture and Fish Disease	Prevention and Control Method of Various Fish Diseases	• To make the trainees aware about the types of diseases. • To train how to prevent diseases. • To make the trainees aware about the different medicines used in disease control.	ON	01	03	30	90	08	00	15	00	07	00	30	00
Agricultural Extension	Management of SHG	Development of Marketing Channel for SHG Products	• To identify the marketing channels • To establish functional linkages with various organizations for marketing of the SHG products • To fix the price of products with realistic, logical and scientific methods	Off	01	02	50	100	14	00	20	00	16	00	50	00
February, 2018 (Quarter-IV)																
Agronomy	Seed Production	Seed Production Technologies of Black Gram and Green Gram in Summer Season	• To provide skill for selection for better variety and isolation distance to maintain genetic purity • To provide knowledge for increasing income by producing pure seed • To provide skill of roughing off techniques • To provide knowledge of proper harvesting and threshing • To impart skill on storing seeds	ON	01	04	30	120	08	00	05	00	17	00	30	00
Plant Protection	IPM	Pest, Disease Management on Summer Pulses and Oil Seeds and Different Fruit Crops	• To identify the pests and diseases • To enable the farmers in decision making management.	Off	01	03	50	150	10	00	20	00	20	00	50	00

Animal Science	Sheep Farming	Improvement of Sheep Husbandry	• To train the proper management, feeding and breeding practices • To make the trainees aware about the different diseases and their preventive measures	ON	01	02	30	60	09	00	12	00	09	00	30	00
Agricultural Extension	Entrepreneurship Development	Development Of Farmers Club As Business Facilitators (BF)	• To teach the formation procedure of BF • To make the farmers aware about the functioning of BF • To provide information to the farmers on the utility of BF	ON	01	02	30	60	08	00	12	00	10	00	30	00
	TOTAL				**61**	**179**	**2180**	**6034**	**452**	**102**	**738**	**107**	**645**	**196**	**1815**	**281**

5. B. Vocational Training Programme for Rural Youth

Discipline	Thematic Area	Title of the Programme	Course Objective	Types of Training	No. of Course	Duration	No. of Trainees (C	Total Trainee Days	Coverage							
									SC		ST		Other		Total	
									M	F	M	F	M	F	M	F
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
July, 2017 (Quarter-II)																
Fishery	Carp Breeding and Hatchery Management	Induced Breeding and Carp Seed Production	• To train how to select brooders • To train the steps of hormone preparation. • To train how to operate hatchery •	ON	01	30	21	630	06	00	03	00	12	00	21	00
August, 2017 (Quarter-II)																
Animal Science	Pig Farming	Improvement of Pig Husbandry	• To train the proper keeping facilities for Pigs • To train the proper management, feeding and breeding practices • To make the trainees aware about the different diseases and their preventive measures for reared Pigs • To train the Trainees on proper value addition for Pig products • To make the trainees aware about the marketing of the produce	ON	01	30	21	630	06	00	09	00	06	00	21	00

September, 2017 (Quarter-II)																
Plant Protection	Mushroom Production	Mushroom Cultivation	• To train how to produce Mushrooms • To make the trainees aware about the different types of Mushrooms • To teach what are the different food values of different types of Mushrooms • To train about different methods for processing of produced Mushrooms	ON	01	21	25	525	05	00	10	00	10	00	25	00
November, 2017 (Quarter-III)																
Home Science	Rural Craft	Jute Craft	• To teach how to select the most useful jute fibre • To train the technique of making dice from paper pulp • To train the technique of wrapping jute. • To train the technique of decoration	ON	01	15	20	300	00	06	00	08	00	06	00	20
Agronomy	Soil and Water Testing	Routine Analysis of Soil	• To provide knowledge on steps of soil testing • To impart skill on collection and preparation of soil sample • To practice methods of analyzing Org. C, P, K and pH. status of soil • To gather knowledge on interpretation of soil testing report	ON	01	21	25	525	06	00	04	00	15	00	25	00
	TOTAL				**05**	**117**	**112**	**2610**	**23**	**06**	**26**	**08**	**43**	**06**	**92**	**20**

5. C. Training Programme for Extension Functionaries

Discipline	Thematic Area	Title of the Programme	Course Objective	Types of Training	No. of Course	Duration	No. of Trainees /Course	Total Trainee Days	Coverage							
									SC		ST		Other		Total	
									M	F	M	F	M	F	M	F
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
July, 2017 (Quarter-II)																
Agronomy	Productivity Enhancement in Field Crops.	Cropping Systems and Inter-Cropping for Sustainable Agriculture	• To make the trainees aware about the better cropping systems • To provide skill for adoption of improved cultural practices • To provide knowledge in inter cropping	ON	01	01	25	25	04	00	04	00	17	00	25	00
August, 2017 (Quarter-II)																
Plant Protection	Integrated Pest Management (IPM)	IPM in Major Field Crops – An Idea	• To make the trainees aware about the importance of IPM • To teach the different components and modules involved in IPM.	ON	01	01	25	25	05	00	10	00	10	00	25	00
Animal Science	Management of Farm Animals	Refreshment Training for Existing Artificial Insemination (AI) Workers	• To upgrade and refresh the skills of the trainees to improve conception rate of the animals	ON	01	01	30	30	09	00	12	00	09	00	30	00

Agronomy	Integrated Nutrient Management (INM)	INM in Pulses and Oil Seeds	• To make the trainees aware about the importance of INM • To train the trainees on how to use organics in a better way • To provide skill for application of fertilizers and manures	ON	01	01	25	25	04	00	04	00	17	00	25	00
February, 2018 (Quarter-IV)																
Animal Science	Management of Farm Animals	Genetic Resource Conservation of Domestic Animals and Poultry	• To make the trainees aware about the importance and steps of conservation • To train about the recent breeding policies for streaming back to natural gene pool(back to the nature)	ON	01	01	25	25	05	00	10	00	10	00	25	00
	TOTAL				**05**	**05**	**130**	**130**	**27**	**00**	**30**	**00**	**63**	**00**	**105**	**00**

5. D. Front Line Demonstration Training

Discipline	Thematic Area	Title of the Programme	Course Objective	Types of Training	No. of Course	Duration	No. of Trainees /Course	Total Trainee Days	Coverage							
									SC		ST		Other		Total	
									M	F	M	F	M	F	M	F
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
May, 2017 (Quarter-I)																
Horticulture	Tuber Crop Management and Management Technology	Layout and Planting of Elephant's Foot Yam including Management of Crop Field.	• To make the trainees aware about the different HYVs • To teach the trainees on how to select the site and planting time • To train the seed treatment, seed multiplication, layout of pit preparation and filling with soil compost mixture • To train the process of manuring, use of plant protection chemicals • To train the trainees on De-suckering, top dressing, time of harvest as vegetables and time of harvest for seed production	ON	01	04	25	100	07	00	03	00	15	00	25	00

Fishery	Feed Management of Fishes	Procedures of Use of Yeast + Cobalt Chloride in Fish Feed	• To train the trainees on the ideal processes of incorporating Yeast + Cobalt Chloride in Fish Feed • To train the fishery farmers how to use the improved fish feed as mentioned earlier in Ponds • To make the trainees aware about the importance of improved fish feed in fishery sector	ON	01	04	10	40	03	00	05	00	02	00	10	00
Animal Science	Feed and Fodder	Fodder Cultivation	• To teach the importance of fodder cultivation • To train the improved methods of fodder cultivation	ON	01	02	15	30	03	00	06	00	06	00	15	00
June, 2017 (Quarter-I)																
Horticulture	Production Technology	Cultivation of Barmasia Drumstick Var. PKM - 1	• To make the trainees aware about the different types and varieties of drumstick • To make the trainees aware about availability of seeds of Baramasia Drumstick Var. PKM - 1 • To impart skill of seedling raising, pit preparation, planting etc.	ON	01	03	40	120	12	00	08	00	20	00	40	00
Agronomy	Soil Health Management	Cultural Management in *Azolla pinnata*	• To impart skill on cultural practices of *Azolla pinnata* • To study the effect of *Azolla pinnata* in succeeding crop.	ON	01	04	75	300	10	00	60	00	05	00	75	00

Animal Science	Dairy Management	Scientific Dairy Management with Especial Reference to Nutritional Aspects	• To impart knowledge and skill about scientific management of dairy	ON	01	08	10	80	03	00	04	00	03	00	10	00
Agricultural Extension	Group Dynamics (Self Help Groups)	Formation of Self Help Groups for Accumulation of Social Capital and Increasing the Family Income	• To orient the farmers and farm women about Self Help Groups • To train the farmers and Farm Women about process of formation and functioning of Self Help Groups	ON	03	01	20	60	12	08	20	10	07	03	39	21
Plant Protection	Seed Treatment With Bio-Agent	Seed Treatment of Brinjal and Potato with *Trichoderma viridae*	• To disseminate the information and knowledge about Seed Treatment of Brinjal and Potato with *Trichoderma viridae* • To develop skills regarding seed treatment with *Trichoderma viridae*	OFF	04	01	200	200	40	00	120	00	40	00	200	00
July, 2017 (Quarter-II)																
Agronomy	Crop Management	Land Preparation and Sowing of Red Gram	• To impart knowledge and skill about appropriate time of land preparation, phosphate management and sowing method	ON	01	04	25	100	08	00	03	00	14	00	25	00
August, 2017 (Quarter-II)																

Animal Science	Goatery Management	Low Cost Concentrate Preparation	• To impart knowledge and skill about low cost feed preparation	ON	01	02	15	30	03	00	06	00	06	00	15	00
September, 2017 (Quarter-II)																
Agronomy	Crop Management	Land Preparation and Sowing of Mustard	• To impart knowledge and skill about appropriate time of land preparation and sowing method	ON	01	04	25	100	08	00	03	00	14	00	25	00
Plant Protection	Integrated Weed Management (IWM)	Weed Management In Yellow Sarson	• To make the trainees aware about the importance of weed management • To train the trainees about the different components used in IWM	ON	01	01	40	40	14	00	16	00	10	00	40	00
Home Science	Nutritional Security	Establishment of Back Yard Nutrition Garden	• To disseminate the Package of Practice for Organic Production • To develop skills for establishment of Back Yard Nutrition Garden • To create awareness on importance of vegetable consumption in daily life	ON	01	01	30	30	00	05	00	20	00	05	00	30
October, 2017 (Quarter-III)																

Animal Science	Breed Up Gradation	Techniques of Breed Up Gradation of Ducks	• To make the trainees aware about the selection procedure and its importance in egg production. • To teach the feeding and vaccination schedule of Ducks	ON	01	01	30	30	08	00	12	00	10	00	30	00
November, 2017 (Quarter-III)																
Agronomy	Crop Management	Land Preparation and Sowing of Wheat	• To impart knowledge and skill about appropriate time of land preparation and sowing method	ON	01	04	25	100	08	00	03	00	14	00	25	00
December, 2018 (Quarter-III)																
Animal Science	Green Fodder Cultivation	Production Practices of different Improved Green Fodder Crops	• To teach the importance of green fodder cultivation • To train the improved methods of improved green fodder cultivation	ON	01	01	20	20	04	00	04	00	12	00	20	00
January, 2018 (Quarter-IV)																
Agronomy	Crop Management	Land Preparation and Sowing of Sesame	• To impart knowledge and skill about appropriate time of land preparation and sowing method	ON	01	04	25	100	08	00	03	00	14	00	25	00
February, 2018 (Quarter–IV)																
Agronomy	Integrated Nutrient Management (INM)	Seed Treatment and Phosphate Management of Green Gram	• To impart knowledge and skill about *Rhizobium* treatment • To impart the skill for phosphate management	ON	01	04	25	100	08	00	03	00	14	00	25	00
Agronomy	Integrated Nutrient Management (INM)	Seed Treatment and Phosphate Management of Black Gram	• To impart knowledge and skill about *Rhizobium* treatment • To impart the skill for phosphate management	ON	01	04	25	100	08	00	03	00	14	00	25	00

Fishery	Composite Fish Culture with Bhetki *(Lates calcarifer)*	Introduction of with Bhetki *(Lates calcarifer)* in Composite Fish Culture	• To train the trainees of ideal pond preparation procedures for rearing of Bhetki in Composite Fish Culture • To train the trainees on the feeding habit of Bhetki *(Lates calcarifer)* • To train the trainees on the disease management practices of Bhetki *(Lates calcarifer)* • To make the trainees aware about the Ratio of stocking with Bhetki *(Lates calcarifer)* in composite culture	ON	01	04	10	40	03	00	05	00	02	00	10	00
	TOTAL				**24**	**57**	**680**	**1680**	**167**	**13**	**282**	**30**	**220**	**08**	**669**	**51**

5. E. Sponsored Programme Training: The sponsored training programmes will be decided later through discussion with the sponsoring agencies of the training programmes.

6. Front Line Demonstration (FLD) on Oilseed:

Season	Crop	Variety	No. of Demonstrations	Area (ha)
Winter, 2017 -18	Mustard	Pusa Mahek	140	20
Summer, 2018	Sesame	Sabitri	140	20

7. Front Line Demonstration (FLD) on Pulses:

Season	Crop	Variety	No. of Demonstrations	Area (ha)
Kharif, 2017	Red Gram	ICPL-87119	37	05
Summer, 2018	Green Gram	PDM 84-139	70	10
Summer, 2018	Black Gram	WBU-109, PU-30	70	10

8. Front Line Demonstration (FLD) on Other than Oilseed and Pulses:

Season	Crop/ Enterprise	Variety	No. of Demonstrations	Area (ha/ No.)
Pre-Kharif, 2017	Green Manuring with *Azolla*	*Azolla pinnata*	75	20 ha
Pre-Kharif, 2017	Ekangi (*K galanga*)	*K galanga*	20	0.26 ha
Kharif, 2017	Elephant Foot Yam	Bidhan Kusum or Gajendra	20	0.14 ha
Kharif, 2017	Drumstick	PKM – 1	60	2000 seeds
Kharif, 2017	Indian Major Carps (IMC) and Exotic Carps	Inclusion of Yeast and Cobalt Chloride in Fish Feed (Rice Bran + Mustard Cake)	10	1.33 ha
Winter, 2017-18	Wheat	HD-2824/PBW-343	70	10 ha
Winter, 2017-18	Seed Treatment of Brinjal and Potato with *Trichoderma viridae*	Brinjal Var. Pusa Purple Long, Pusa Round etc. Potato Var. Kufri Chandramukhi, Kufri Jyoti	200	5.0 ha
Summer, 2018	Bhetki (*Lates calcarifer*)	*Lates calcarifer*	10	1.33 ha
Winter, 2017-18	Weed Management in Yellow Sarson	Herbicides: Pendimethalin as pre emergence @ 3 lt. / ha	40	5.0 ha
Winter, 2017-18	Wheat	HD – 2967 / PBW - 343	75	10 ha
Post Kharif, 2017	Low cost concentrate supplement to Black Bengal doe at 3rd Parity	Does (3rd. Parity)	10	02 Numbers of Does / Demonstration = Total 20 Numbers of Does
Kharif, 2017	Use of Supplementation of Area Specific Mineral Mixture in Cross Bred Cows	Cross Bred Cow Breeds	10	02 Numbers of Cows / Demonstration = Total 20 Number of Cows
Post Kharif, 2017-18	Breed Introduction of broiler duck (White Pekin)	White Pekin	20	20 Numbers of Birds / Demonstration = Total 400 Numbers of

				White Pekin Broiler Duck Birds
Winter, 2017-18	Establishment Of Back Yard Nutrition Garden	Improved High Yielding Varieties of Winter Vegetables	30	0.2 ha
2017-2018	Group Formation for Accumulating Social Capital and Increasing Family Incomes	Formation and functioning of Self Help Groups	03	60 numbers of members of 3 Self Help Groups (20 members from each group)

9. Seed and Planting Material Production

Seed		Planting Material	
Crop	**Area**	**Crop**	**Area/ No.**
Paddy	2.0 ha	Vegetables	15,000 nos.
Pulses (Black Gram, Red Gram, Green Gram, Lentil)	1.0 ha	-	-
Oil Seeds (Rape Seed, Mustard, Sesame)	0.9 ha	-	-
Dhaincha	0.5 ha	-	-
		Elephant's Foot Yam	5.0 Qtls

10. Extension Activities

Activities	No.	Participants
Field Days	19	731
Scientists Visit to Farmers' Fields	36	3000
Farmers' Visits to KVK	310	3100
Diagnostic Visits	415	828
Radio Talk	47	92
Kisan Mela	25	-
TV programme	1	-
Extension Literature	12	-
Awareness Camp	8	2000
SMS Service	12	12000

11. Revolving Fund

Opening Balance as on 01.04.2017	Amount to be invested	Return
Rs. 2.9977 Lakhs	Rs. 1.29 lakhs	Rs. 1.58 lakhs

12. Expected Fund Utilization

Project	Source	Amount to be received in Lakh (Rs.)
Front Line Demonstration (FLD) on Micronutrient use in Wheat and Front Line Demonstration on Iron Supplementation in New Borne Piglets and Study Its Effect on Piglet Anemia on Ghungroo Pigs	ATMA, Birbhum	1.50
Farmers-Scientists Interaction on Kharif Paddy	ATMA, Birbhum	0.20

13. On Farm Trials to be conducted

Thematic Area	Title	Treatments	No. of Farmers
Nutrient Management	**Assessment of different micronutrients on productivity of Sesame in post rainy season**	**Farmers' Practice :** NPK @ 30-15-15 kg/ha **Technology Option -** I **:** General recommendation (50-25-25 kg/ha) of NPK and spray of Zn , B and Mo **Technology Option - II**: Soil Testing based NPK and Spraying of Zn, B and Mo **Technology Option - III:** Soil Testing based NPK and soil application of Zn, B and Mo	**10**
Weed Management	**Weed Management in Transplanted *Kharif* Paddy**	**Farmers' Practice:** Hand Weeding **Technology Option -I:** Pyrazosulfuron-ethyl @2 5 g a.i /ha as pre emergence (1-3 DAT) **Technology Option -II:** Metsulfuron-methyl + Chlorimuron- ethyl @ 4 g a.i /ha at 7-12 DAT **Technology Option-III:** Pretilachlor @ 1.0 lit a.i /ha as pre emergence (1-3 DAT)	**7**
Weed Management	**Weed Management in Summer Pulse**	**Farmers' Practice:** No Weeding **Technology Option –I:** Pendimethalin @0.75 lit a.i /ha as pre- emergence (0-3 DAS) **Technology Option -II:** Quizalofos –P-ethyl @ 50 ml a.i./ha as early post emergence (15-20 DAS) **Technology Option-III:** Fenoxaprop-P-ethyl @ 60 ml a.i/ha as early post emergence (15-20 DAS)	**7**
Disease Management	**Assessment of specific medicines for the control of ulcerative disease in fish**	**Farmers' Practice:** Irregular application of lime and not in required dose **Technology Option I: Lime (@10 kg / 0.13 ha) + Terramycin (@ 5 – 7 gm. / 100 kg. of Fish Feed)** **Technology Option II: Lime (@10 kg / 0.13 ha) + $KMnO_4$ (@ 200 gm. / 0.13 ha)** **Technology Option III: Lime (@10 kg / 0.13 ha) + $CuSO_4$ (@ 1:2000 ppm)** **Fish Feed:- Rice Bran + Mustard Oil Cake (1:1)**	**5**
Integrated Farming System	**Assessment of Profitability within Components of Integrated Farming Systems under Fish Based Production System in Lateritic Soil of Birbhum District**	**Framers' Practice:** Traditional Fish Farming **Technology Option - I:** Composite Fish Culture + Duck Farming + *Azolla* + Pulses **Technology Option - II:** Composite Fish Culture + Duck Farming + *Azolla* + Vegetables	**7**
Broiler Management	**Assessment of the Effect of Different Water Sanitizer on the Performance of Broiler Chicken under Small Scale Farming System**	**Control: Farmers' Practice** **Technology Option – I: Didecyl dimethyl ammonium chloride (1 ml. / 20 litres of water)** **Technology Option – II: Chlorine dioxide (1 ml/Litre of Water)** **Technology Option – III: Iodine (1 ml/ 10 litres of Water)**	**7**
Broiler Management	**Evaluation of Efficacy of Non Antibiotic Growth Promoter in Broiler Poultry**	**Control: Farmers' Practice** **Technology Option – I: Lactobacillus + Saccharomyces (500gm/ton of Feed)** **Technology Option – II: Xylanase + Phytase + Amylase + Protease Enzyme (250 gm/ton of Feed)**	**7**

Nutrition Management	**Evaluation of performance of strategic feed supplementation to crossbreed milch cattle**	**Control: Farmer's Practice** **Technology Option - I: Farmer's Practice + Protein Supplement (MOC 500gm/cow/day)** **Technology Option - II: Farmer's Practice + Homemade feed Supplement (1.5 Kg /cow/day)**	**7**
Storage of Vegetables	**Evaluation of Shelf-Life of Vegetables Stored in A Modified Earthen Pot Cool Chamber**	**Farmers' Practice – Vegetables Stored in Room Temperature** **Technology Option – I: Vegetables Stored in Bamboo Baskets with Wet Gunny Bags** **Technology Option – II: Vegetables Stored in Modified Earthen Pot Cool Chambers**	**10**
Training Methods	**Evaluation of Efficacy of Different Training Methods for Skill Development Trainings**	**Prevalent Practice: Lecture Methods** **Technology Option – I: Group Discussion** **Technology Option – II: Case Study** **Technology Option – III: Field Visits** **Technology Option – IV: Demonstration** **Technology Option – V: Experiential Learning**	**60**

14. List of Projects to be implemented

Name of the Project	Fund expected (Rs.)
Short Term Research, ATMA	**01.00 Lakh**

15. No. of success stories to be developed

a) 2 Success stories

16. Scientific Advisory Committee

Date of SAC Meeting held during 2017-18	Proposed Date during 2017-18
30th. January, 2017	18th. January, 2018

17. Soil and Water Testing

Items	No. of Samples to be analyzed
Soil	**500**
Water	**50**

18. Staff Position

Sanctioned	In position	If vacant, since when
Programme Coordinator	Vacant	01.11.2016.
SMS (Home Science)	Filled	-
SMS (Agronomy)	Filled	-
SMS (Plant Protection)	Filled	-
SMS (Fishery)	Filled	-
SMS(Agricultural Extension)	Filled	-
SMS (Animal Science)	Filled	-
Programme Assistant (Computer Programmer)	Filled	-
Programme Assistant (Farm Manager)	Filled	-
Programme Assistant	Vacant	From inception
Senior Assistant	Vacant	01.04.2017
Jr. Stenographer-cum-Computer Operator	Filled	-
Driver	Filled	-
Driver	Filled	-
Supporting Staff	Filled	-
Supporting Staff	Filled	-

19. Status of infrastructure

Infrastructure	Complete	Under construction	Not started	Reasons, if not started
Administrative Building	550 sq. m			
Trainees' Hostel	305sq.m			
Staff Quarters	-	-	-	At present, the staff quarters are not required.
Demonstrations Units:	80 sq.m X 2nos.			

20. Fund Requirement and Expenditure

	Estimated Expenditure (From April, 2016 to March, 2017) Rs. In lakh	Anticipated Requirement as Per BE (2017-18) Rs. In lakh
Recurring		
Pay and Allowances	114.10	170.00
TA	01.08	01.50
HRD	00.04	01.00
Contingencies	12.95	20.00
TSP	03.17	05.00
TOTAL(A)	131.34	197.50
Non Recurring		
Works	-	572.25*
Vehicle	-	-
Equipment, Furniture and Furnishing	-	14.30**
Soil and Water Testing / Plant Diagnostic Lab	-	01.00
Library	-	00.50
TOTAL (B)	-	588.05
TOTAL (A + B)	**131.34**	**785.55**

N. B.

*** (i) Submersible Water Pump 5 HP for Nursery Pond and Fish Breeding Unit – Rs. 20.00 Lakhs**
*** (ii) Administrative Building 1st. Floor (550.00 Square Meters) – Rs. 275.00 Lakhs**
*** (iii) Trainees' Hostel 1st. Floor (305.00 Square Meters) – Rs. 137.25 Lakhs**
*** (iv) Construction of Processing Unit (400.00 Square Meters) – 140.00 Lakhs**

**** (i) Office Furniture, AC Machines etc. – Rs. 10.00 Lakhs and **(ii) Farm Equipments – Rs. 04.30 Lakhs**

21. Technologies of wide acceptability

(A) Large Scale adaptation of Elephants' Foot Yam:

Some technologies are getting popular in wide scale. One of these technologies is improved method of cultivation of elephant's foot yam.

Initially, KVK organized training on improved method of cultivation of this crop. Then, the high yielding var. Kavoor and Bidhan Kusum was demonstrated under FLD programme of KVK. At present through Farmers led Extension this crop is cultivated in Birbhum, Burdwan and Murshidabad districts of West Bengal. This crop is cultivated on Commercial basis. In Kharif Season, 2014 in KVK adopted villages 445 quintal Elephant Foot Yam are produced by 42 farmers.

(B). **Popularization of Kantha Stitch**:

Kantha stitch is one important technology by which rural women are earning good amount of money through the utilization of their leisure time. This Kendra organizes training on Kantha Stich in different interior villages. At present, this work has been acquired as a small scale home based industry. Training was imparted to 54 women of 7 villages. Now it has been spread in 26 villages. There are 7 units in 4 villages where 108 women and girls are working. Before training the farm women did not have any source of income. The net income with the work on kantha stitch varies from Rs. 5,000-15,000 after 3 months of investment.

22. Details of On Farm Trials (OFTs)

OFT-1

Title:	Assessment of different micronutrients on productivity of Sesame in post rainy season
Problem definition:	Low crop productivity due to low flower set and low pod filling of sesame in post rainy season
Hypothesis:	Proper micronutrient application may increase the flower set, pod filling, yield and net return of sesame cultivation in post rainy season
Micro farming situation:	In the post rainy season i.e in the month of August-September, sesame is cultivated in rainfed medium to upland situation instead of kharif rice. Soil is sandy loam in texture having P^H 5.8-6.2
Farmers practice:	Farmers are recently cultivating sesame as diversified crop in post rainy season in rainfed situation with little amount of NPK fertilizers.
Production system	Rice-fallow, sesame-fallow
Thematic area	Nutrient Management
Objective:	To study the effects of micronutrient for enhancement the yield and net return in oilseeds cultivation in post rainy season
Sowing time:	August-September, 2017
Variety to be used:	Sabitri
Details of technology assessment	**Farmers' Practice :** NPK @ 30-15-15 kg/ha
	Technology Option - I **:** General recommendation (50-25-25 kg/ha) of NPK and spray of Zn , B and Mo
	Technology Option - II: Soil Testing based NPK and Spraying of Zn, B and Mo
	Technology Option - III: Soil Testing based NPK and soil application of Zn, B and Mo
Source of Technology	M. Sc. and Ph. D. thesis of Soil Science and Agronomy Departments, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati during the period of the years of 2010-2016.
No. of replication:	10 (10 nos. of farmers)
Plot size (each replication/ farmers):	0.13 ha
Total plot size:	1.33 ha
Critical input:	a) KVK share: Seeds, fertilizers, micronutrients b) Farmers' share: Plant protection chemicals
Performance/Monitoring indicator:	Soil nutrient status at initial & at harvest, no. of flowers, Yield and net return.
Approximate cost shared by KVK for seeds, fertilizer etc.	Rs.15,000.00

OFT – 2

Title:	Weed Management in transplanted *kharif* Paddy
Problem definition:	Only hand weeding cannot control the weeds of transplanted kharif rice. Due to scarcity of labour timely hand weeding is not possible. Beside this hand weeding is expensive which ultimately increase the cost of cultivation.
Hypothesis:	Application of herbicides of low dose high efficiency may reduce the weed growth to an economic manner and increase the yield and net return of transplanted rice.
Micro farming situation:	*Kharif* Paddy is cultivated in rain-fed medium land (Lateritic Soil) to low land condition during rainy season. Soil is sandy loam in texture having P^H 5.8-6.2
Farmers practice:	Farmers cultivate transplanted rice in rain-fed medium land and low land situation with hand weeding 2-3 times.
Production system	Paddy - Rapeseed, Paddy - Fallow .
Thematic area	Weed Management
Objective:	To study the effect of weed management through low dose high efficiency herbicide for enhancement the yield and net return in *kharif* Paddy cultivation.
Sowing time:	July-August,2016
Variety to be used:	MTU-7029
Details of technology assessment	**Farmers' Practice:** Hand Weeding **Technology Option -I**: Pyrazosulfuron-ethyl @2 5 g a.i /ha as pre emergence (1-3 DAT) **Technology Option -II**: Metsulfuron-methyl + Chlorimuron- ethyl @ 4 g a.i. / ha at 7-12 DAT **Technology Option-III:** Pretilachlor @ 1.0 lit a.i. / ha as pre emergence (1-3 DAT)
Source of technology	Annual Progress Report of All India Coordinated Research Project on Weed Control (AICRP-WC) - 2000, Visva-Bharati Centre, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan, pp. 27.
No. of replication:	7 (7 nos. of farmers)
Plot size (each replication/ farmers):	0.13 ha
Total plot size:	0.91 ha
Critical input:	a)KVK share: Herbicides b) Farmers share: Seed, fertilizers etc
Performance/Monitoring indicator:	No. of weeds / M^2 at 20 DAT, 40 DAT, 60 DAT, Yield and Net Return.
Approximate cost shared by KVK for seeds, fertilizer etc.	Rs.5,000.00

OFT – 3

Title:	Weed management in summer pulse
Problem definition:	Farmers cultivate pulse with very negligence. They sow seeds by broadcasting. After few days, weeds compete the crop. No mechanical weeding is possible unless it is line sown.
Hypothesis:	Application of herbicides pre emergence or early post emergence may reduce the weed growth to an economic manner and increase the yield and net return of summer Pulse.
Micro farming situation:	Summer pulse is cultivated in irrigated medium land (Lateritic Soil). Soil is sandy loam in texture having P^H 5.8-6.2
Farmers practice:	Farmers broadcast the seeds and no weeding is adopted.
Production system	Paddy – Mustard- Green Gram/ Black Gram, Paddy – Potato- Green Gram/ Black Gram .
Thematic area	Weed Management
Objective:	To study the effect of weed management through pre and early post emergence herbicide for enhancement the yield and net return in summer pulse cultivation.
Sowing time:	February,2017
Variety to be used:	Green Gram- PDM 84-139, Black Gram- WBU-108
Details of technology assessment	**Farmers' Practice:** No Weeding **Technology Option - I:** Pendimethalin @0.75 lit a.i /ha as pre- emergence (0-3 DAS) **Technology Option -II**: Quizalofop –P-ethyl @ 50 ml a.i./ha as early post emergence (15-20 DAS) **Technology Option-III:** Fenoxaprop-P-ethyl @ 60 ml a.i/ha as early post emergence (15-20 DAS)
Source of technology	Annual Report of All India Coordinated Research Project on Weed Control (AICRP-WC) - 2005, Visva-Bharati Centre, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan, pp. 30.
No. of replication:	7 (7 nos. of farmers)
Plot size (each replication/ farmers):	0.13 ha
Total plot size:	0.91 ha
Critical input:	a)KVK share: Herbicides b) Farmers share: Seed, fertilizers etc
Performance/Monitoring indicator:	No. of weeds / M^2 at 15, 30, 45 DAT, Yield and net return.
Approximate cost shared by KVK for seeds, fertilizer etc.	Rs.5,000.00

OFT – 4

Title:	Assessment of specific medicines for the control of ulcerative disease in fish
Problem definition:	Rapid spread of ulcerative disease due to absence of right selection of medicine for the disease
Hypothesis:	Use of right medicine and curative measures for ulcer disease can save the fish to a maximum extent
Micro farming situation:	Ponds are in medium land and surrounded by village houses, cattle sheds etc.
Farmers practice:	Farmers apply lime, sometimes, irregularly to prevent fish diseases.
Production system	Extensive system
Thematic area	Disease management
Objective:	To study the effect of certain chemicals and formulations for management of ulcer diseases of fish.
Time:	Summer, 2017
Variety to be used:	Indian Major Carps (IMCs) and Exotic Carps
Details of technology assessment	**Farmers' Practice:** Irregular application of lime and not in required dose **Technology Option I: Lime (@10 kg / 0.13 ha) + Terramycin (@ 5 – 7 gm. / 100 kg. of Fish Feed)** **Technology Option II: Lime (@10 kg / 0.13 ha) + $KMnO_4$ (@ 200 gm. / 0.13 ha)** **Technology Option III: Lime (@10 kg / 0.13 ha) + $CuSO_4$ (@ 1:2000 ppm)** **Fish Feed:- Rice Bran + Mustard Oil Cake (1:1)**
Source of technology	*A Hatchery Manual for the Common Chinese and Indian Major Carps* , V. G. Jhingran and R. S. V. Pullin, Asian Development Bank and International Centre for Living Aquatic Resources Management, 191p.
No. of replication:	5 (5 nos. of farmers)
Pond size (each treatments/farmers):	0.13 ha
Total pond area:	(0.13 X 4 X 5) ha = 2.6 ha
Critical input:	a) KVK share: Lime, Medicine, Chemicals etc. b) Farmers' share: Fish feed + fish stocking
Performance/Monitoring indicator:	Survival rate and yield of fish
Approximate cost shared by KVK for seeds, fertilizer etc.	Rs.15,000.00

OFT-5

Title	Assessment of profitability within components of integrated farming systems under fish based production system in lateritic soil of Birbhum District
Problem definition	Lack of knowledge in integration of components in proper way for maximum profit.
Hypothesis	Integration of components in proper way may increase the farm profitability.
Farmers' practice	In fish based production system farmers cultivate fish only in very traditional way
Production System	Fish Based
Thematic Area	Integrated Farming System
Source	DARE/ICAR Annual Report, 2008-09, pp. 12-14 Fertilizer News, 46 (11), pp. 53-55 and 57–58.
Objective	To integrate the components in proper way and maximize the profit
Details of technology assessment	**Farmers' Practice:** Traditional Fish Farming
	Technology Option - I: Composite Fish Culture + Duck farming + *Azolla* + Pulses
	Technology Option - II: Composite Fish Culture + Duck farming + *Azolla* + Vegetables
Replication	7 nos.
Critical input	Fish finger lings, Ducklings, *Azolla*, Vegetable seeds, Pulse seeds
Performance/Monitoring indicator	Production and Economics of farming systems
Total cost of KVK share	Rs. 40,000.00

OFT-6

Title	Assessment of the effect of different water sanitizer on the performance of Broiler chicken under small scale farming system
Problem Definition	Poor drinking water quality of commercial broiler farm negatively affected performance
Hypothesis	Providing a clean and safe water supply is critical to ensuring that broilers perform at their best.
Thematic Area	Broiler Management
Objective	To comparatively study and assess the performance of the Broiler chicken under the Trial
Micro Farming Situation	Upland farming system
Production System	Deep litter farming system.
Farmers' Practice	Farmers are rearing 2000 – 2500 Broiler Chicken per Household under Deep litter farming system.
Time	June, 2016
Variety / Breed to be used	Broiler Poultry
Details of Technology Assessment	**Control:** Farmers' Practice **Technology Option – I:** Didecyl dimethyl ammonium chloride (1 ml. / 20 litres of water) **Technology Option – II:** Chlorine dioxide (1 ml / litre of water) **Technology Option – III:** Iodine (1 ml / 10 litres of water)
Source of Technology	Notes on Poultry Housing and Management, CARI, Ijatnagar.
Numbers of Replications	07 (Seven)
Numbers of Birds per Replication	2400 (600 nos. of birds under each treatment)
Total Numbers of Birds	16800
Critical Input	a. KVK Share: Water sanitizer, Medicine, Vaccine b. Farmers' Share: Feed, Medicine, Birds
Performance / Monitoring Indicators	Body Weight gain, Feed conversion Ratio, Mortality percentage.
Approximate Costs shared by the KVK	Rs. 30,000.00 (Rupees Thirty thousand) only.

OFT- 7

Title	Evaluation of efficacy of non antibiotic growth promoter in broiler poultry
Problem Definition	Potential of antibiotic resistant strains of bacteria of bacteria and transference of antibiotic resistance genes from animal to human.
Hypothesis	Administration of non antibiotic growth promoter for rapid development of healthy micro-gut-flora, increased growth performance, improved feed efficiency, stabilization of digestion.
Thematic Area	Broiler management
Objective	To assess the efficacy of the non antibiotic growth promoter
Farming Situation	Farmers are rearing 2000-2500 Broiler Birds per Household under deep litter farming situation.
Production System	Deep litter system
Farmers' Practice	Farmers are rearing 2000-2500 Broiler Birds per Household under deep litter farming situation
Time	August, 2016
Variety / Breed to be used	Broiler poultry
Details of Technology Assessment	**Control:** Farmer's practice **Technology Option – I:** Lactobacillus + Saccharomyces (500gm / ton of feed) **Technology Option – II:** Xylanase + Phytase + Amylase + Protease enzyme (250 gm/ton of feed)
Source of Technology	Deptt. of Animal Nutrition, WBUAFS
Numbers of Replications	07 (Seven)
Numbers of Birds per Replication	(1800) [600 Numbers of birds under each treatment)
Total Numbers of Birds	12,600
Critical Input	a. KVK Share: Non antibiotic growth promoter, Vaccine, Medicine b. Farmers' Share: Feed, Medicine, Birds.
Performance / Monitoring Indicators	Body Weight gain, Feed conversion Ratio, Mortality percentage.
Approximate Costs shared by the KVK	Rs.25,000.00

OFT- 8

Title	Evaluation of performance of strategic feed supplementation to crossbreed milch cattle
Problem Definition	Poor feeding practices and the low availability of quality feeds in unorganized dairy farming by small and marginal farmer.
Hypothesis	Adequate nutrition plays important role in dairy cattle productivity.
Thematic area	Nutrition management
Objective	Assess the performance of strategic feed supplementation to improve the productivity of animal
Farming situation	Upland farming system
Production system	Semi intensive system
Farmer's Practice	Small farmers keep 2-3 crossbreed milch cows under semi-intensive system.
Time	May, 2016
Variety/Breed to be used	Crossbreed cow
Details of technology Assessment	**Control:** Farmer's Practice **Technology Option - I:** Farmer's Practice + Protein Supplement (MOC 500gm/cow/day) **Technology Option - II:** Farmer's Practice + Homemade feed Supplement (1.5 Kg /cow/day)
Sources of Technology	*Effect of protein supplementation on milk production and metabolism of dairy cows grazing tropical grass,* M. A. Danes, Chagas, L. J., Pedroso, A. M. and Santos, F. A. (2013). *Effect of protein supplementation on milk production and metabolism of dairy cows grazing tropical grass, J. Dairy. Sci*., 96(1): 407-419.
Numbers of Replications	7
Number of cow per replication	3
Total number of cow	21
Critical Input	a. KKV Share: Feed ingredients, medicine b. Farmer's Share: Cow
Performance/Monitoring Indicators	Milk yield, Lactation length, Milk fat percentage and SNF
Approximate cost shared by KVK	Rs.40,000/

OFT - 9

Title	Evaluation of Shelf-Life of Vegetables stored in a modified Earthen Pot Cool Chamber
Problem Definition	In Semi-Arid Red Lateritic Zone situation of Birbhum District, extreme hot climatic conditions prevail over a large majority of time in every year and the vegetables get spoiled due to this climatic situation very quickly especially in the absence of proper storing system. In addition to this, the villagers can avail fresh vegetables once in week from the Weekly Haat held at their villages.
Hypothesis	The Earthen Pot Cool Chamber may be a good storage system to keep the vegetables comparatively in fresh condition than storage in room temperature and storage in bamboo baskets covered with wet gunny bags. The Earthen Pot Cool Chamber may be an eco-friendly, energy saving and cost effective alternative method of storage of vegetables.
Thematic Area	Storage of Vegetables
Objective	To assess the physiological weight loss, organo-leptic qualities, bacterial population and fungal population in stored vegetables after 8 days of storing.
Farming Situation	The farm women mainly grow vegetables for home consumption in back-yard kitchen garden or they procure vegetables from local "Haats".
Production System	Vegetables- Vegetables -Vegetables
Farmers' Practice	Farm women are storing Vegetables in room temperature.
Time	June, 2016
Technology to be used	Modified Earthen Pot Cool Chamber
Details of Technology Assessment	**Farmers' Practice –** Vegetables Stored in room temperature **Technology Option – I:** Vegetables Stored in Bamboo Baskets with Wet Gunny Bags **Technology Option – II:** Vegetables Stored in Modified Earthen Pot Cool Chambers
Source of Technology	Indian Journal of Traditional Knowledge, Vol. 10 (2), April 2011, pp. 375 – 379, Council of Scientific and Industrial Research (CSIR)
Numbers of Replications	10 (Ten)
Numbers of Earthen Pot Cool Chambers per Replication	01 (One)
Total Numbers of Earthen Pot Cool Chambers	10 (Ten)
Critical Input	a. KVK Share: Earthen Pot Cool Chamber b. Farmers' Share: Vegetables
Performance / Monitoring Indicators	Organoleptic Qualities, Average Weights of Vegetables, Average Bacterial Population and Average Fungal Population.
Approximate Costs shared by the KVK	Rs. 5,000.00

OFT - 10

Title	Evaluation of efficacy of different Training Methods for Skill Development Trainings
Problem Definition	The selection of appropriate Training Methods is important for an effective learning. The Training Methods refer to a combination of various instructional media used for conducting the Training to achieve the learning objective efficiently and effectively. The selection of suitable Training Methods is largely influenced by the Training Objectives, Subject Matter handled, participants' nature, resources availability such as Time, Location and Budget, Organizational considerations and Trainers' capability. The choice of the Training Method will also depend upon whether the Training is intended to develop a general or specific level of knowledge and skill. The participants learning style, their experience and size of the group are also some of the factors that are to be kept in mind while deciding upon the Training Methods.
Hypothesis	The Experiential training Method may be the most appropriate Training Method for Skill Development Training because it provides a kind of experience which may easily lead participation to reflection, draw conclusion and identify application points.
Thematic Area	Training Methods
Objective	To assess the extent of change and development of skill of Trainees going through different Training Methods in Skill Development Training Programmes organized by the Rathindra KVK.
Present Situation	Generally the Lecture Method for Skill Development Training is being employed where a "Lecture" consisting of oral presentation of the subject matter along with the help of audio-visual aids such as black board, over-head projector, slides, charts etc., so as to help the listeners understand the concept, principle and method being presented.
Training System	Mainly Theoretical
Prevalent Practice	Generally the Lecture Method for Skill Development Training is being employed.
Time	2016 - 2017
Training Methods to be used	**Lecture Methods, Group Discussion, Case Study, Field Visits, Demonstration and Experiential Learning.**
Details of Technology Assessment	**Prevalent Practice: Lecture Methods** **Technology Option – I: Group Discussion** **Technology Option – II: Case Study** **Technology Option – III: Field Visits** **Technology Option – IV: Demonstration**

	Technology Option – V: Experiential Learning
Source of Technology	Concepts, Approaches and Methodologies for Technology Application and Transfer – A Resource Book for KVKs, Zonal Project Directorate, Zone – III, Indian Council of Agricultural Research, Umiam, pp. 103 – 152.
Numbers of Replications	10 (Ten)
Numbers of Trainees per Training Method	10 (Ten)
Total Numbers of Trainees	60 (Sixty)
Critical Input	a. KVK Share: Different Types of Skill development Training Methods b. Farmers' Share: Change and Development of Skill in the Subject Matter
Performance / Monitoring Indicators	Level of participation, Level of understanding, Level of knowledge gain, Degree of decision making skill, Degree of application skill, Degree of problem solving skill and Degree of proper concluding skill.
Approximate Costs shared by the KVK	Rs. 5,000.00

ACTION PLAN

(APRIL, 2017 - MARCH, 2018)

Rathindra Krishi Vigyan Kendra

Palli Siksha Bhavana (Institute of Agriculture)

Visva-Bharati

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On April 14th. to 16th., 2017

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