Strategic Research and Extension Plan

Burdwan District

(XIIth Plan period)

Project Director,
Agriculture Technology Management Agency (ATMA)
&
Deputy Director of Agriculture (WBP), Burdwan
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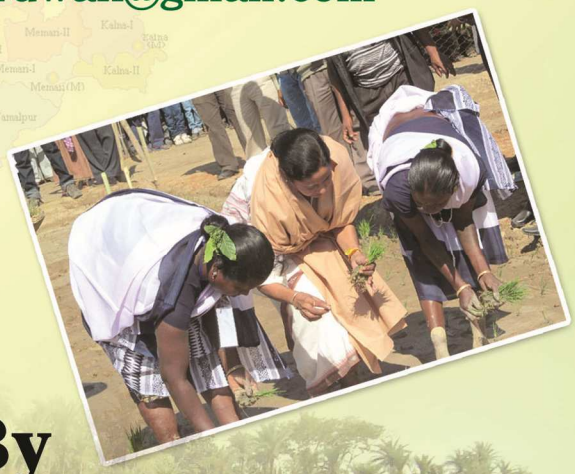

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Abbreviations

AES: Agro- Ecological Situation
AI: Artificial Insemination
ARD: Animal Resource Development
ATMA: Agriculture Technology Management Agency
BSF: Block Seed Farm
DCF: District Composite Farm
EFS: Existing Farming System
ha: Hectare
ICAR: Indian Council of Agriculture Research
ICT: Information and Communication Technology
IFS: Improved Farming System
INM: Integrated Nutrient Management
IPM: Integrated Pest Management
IWMP: Integrated Watershed Management Project
KVK: Krishi Vigyan Kendra
LN_2 : Liquid Nitrogen
MANAGE: National Institute of Agricultural Extension Management
MGNREGA: Mahatma Gandhi National Rural Employment Guarantee Acts
MT: Metric Ton
NABARD: National Bank for Agriculture & Rural Development
NFDB: National Fisheries Development Board
NGO: Non Government Organization
NHM: National Horticulture Mission
PBGSBS: Paschim Banga Go Sampad Bikash
PPP: Public Private Partnership
PRA: Participatory Rural Appraisal
q: Quintal
SAU: State Agriculture University
SDRF: State Disaster Response Fund
SHG: Self Help Group
SPF: State Poultry Farm
SREP: Strategic Research and Extension Plan
SWOT: Strength, Weakness, Opportunities and Threats
TGA: Total geographical area

C O N T E N T S

Introduction

Introduction

National Mission on Agricultural Extension and Technology, the so called Agricultural Technology Management Agency (ATMA) has main responsibility of all the technology dissemination activities at the district level. To perform this responsibility, a demand driven, situation specific, multi agency oriented plan has to be required with long term vision. Strategic Research & Extension Plan (SREP) is a comprehensive document prepared at the district level identifying research/ extension priorities for district, keeping in mind agro-ecological conditions and existing gaps in technology generation and dissemination in all agriculture and allied sectors. It suggests an appropriate strategic plan for agricultural development of the district. Burdwan district plays an important role in production of food grain, particularly the rice in West Bengal. It possesses an area of 11.30 percent of total rice area of the state and 13.34 percent of total production. It is contributing a lot of production in case of potato also. Out of the 33 blocks, 20 blocks are irrigated by DVC area and 2 blocks, Ketugram I and II are by Mayurakshi Command area. Other sources of irrigation are deep tube well, shallow tube well, river lift irrigation etc. This district has many significant achievements in the area of s**eeds/planting material production, farm mechanization, plant protection and animal production and health** under National Mission on Agricultural Extension and Technology. However, the district Burdwan is divided into three agro- ecological situations namely **Vindhya or old alluvial region**, **Gangetic or new alluvial region** and **Red lateritic region** for better analysis of farming situation. This document has been prepared at the time of launching the ATMA programme in the district in the year 2008. Now it is prepared as re-visiting of SREP incorporating new technological developments, current technology dissemination system and location specific strategies and researchable issues, suggested by farming community.

Salient features of SREP

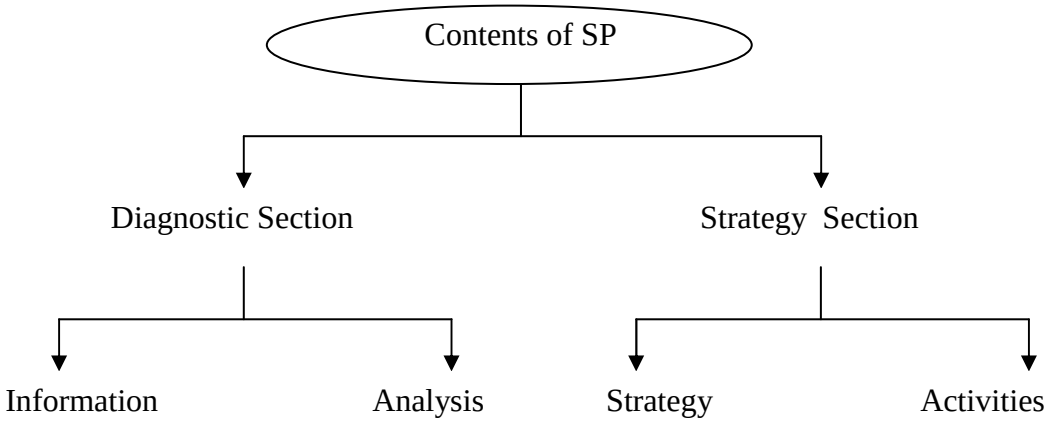
- It is a document of district level strategic research and extension priorities
- It is prepared through participatory process (PRA) involving multidisciplinary specialists and farmers of the district.
- It addresses location specific issues
- This SREP indicates gaps in the current technology dissemination systems based on SWOT analysis
- This document facilitates micro level strategies for specific agro-ecological situation
- It addresses diversification and intensification of potential crops in the different AES of the district.

The development and use of SREP would help in the following aspects -

- Get an overview of the prevailing scenario in the district.
- Explore and understand the problems and opportunities in different farming systems, preferences and priorities of the farming community.
- Facilitate long term visioning and strategic planning for agriculture development in the district in a concerted manner.

- Facilitate involvement of all sectors at different levels in the developmental process and in the long run, share the load on the public extension system.
- Facilitate integration of and redesigning the on-going developmental programme for the benefit of the farmers.
- Development of annual action plan for each block in respect of the prevailing Agro-Ecological Situation.
- Develop farmer centered market oriented extension research management system

The component of SREP is broadly divided into two sections i.e. Diagnostic section and Strategy section.



Objectives of SREP:

The basic objectives of this Strategic Research & Extension Plan (SREP) are

1. To prepare five year vision documents accommodating newly identified gaps in technology generation and dissemination in all agriculture and allied sectors.
2. To provide basic information for formulating block action plans for better productivity.
3. To formulate the low cost technologies for minimizing the gaps between technology generation and adoption.

Methodology

Methodology

Burdwan district has been declared and notified for Implementation Centrally Sponsored Scheme of "Support to State for Extension Reforms Programme" (SSER) in West Bengal. The Agricultural Technology Management Agency (ATMA) of Burdwan was registered in the district to carry out the project activities through farming system approach involving different line departments like Agriculture, Horticulture, Animal Husbandry, Fisheries, along with the local Krishi Vigyan Kendra, NGO's, and representative of various stakeholders of the agricultural production system. The **Strategic Research and Extension Plan** for Burdwan was prepared following the participatory methodology to reflect the issues, needs and expectations of farming community., The main steps are given below for preparing the Strategic Research and Extension Plan (SREP).

2.1. Selection of District Core Team:

The selection of District Core Team was done with the representatives of different government development departments like Agriculture, Horticulture, Animal Husbandry, Fishery, Agriculture marketing, Cooperative, Representative of NGO and Scientists from Krishi Vigyan Kendra working in Burdwan district. The Orientation programme for the Core Team was conducted at Burdwan district headquarter to sensitize the team to the concept of extension reforms and preparation of SREP.

2.1.1. Orientation of district and block level officers and scientists of agriculture and Allied line departments:

i) SAMETI, Narendrapur organized one training cum orientation programme entitled on "Revisiting strategic research and extension plan (SREP)" for the officers of several line departments of the district and scientists of KVK Burdwan during 9-13 December, 2013 in collaboration with MANAGE, Hyderabad.

ii) One orientation cum interface meeting was conducted by Project Director , ATMA, Burdwan at Lions Club, Burdwan in the month of April, 2014 with all Block Technology Manager (BTM) and Asst. Technology Manager (ATM)

2.1.2. Identification of Agro Ecological Situation

The State West Bengal is divided into six Agro-climatic zone namely Northern Hilly zone, Terrai & Teesta Alluvial Zone, Vindhya or old alluvial region, New Gangetic & alluvial zone, Western Red lateritic zone and Coastal Saline Zone. Burdwan district has three different agro-ecological situations namely Vindhya or old alluvial region, Gangetic & new alluvial region and Red lateritic and dry region. All three situations were taken into consideration for district SREP preparation. The details of AES were given below.

Table-1: Agro- Ecological Information

Sl. No.	Agro Ecological Situation	Name	Agricultural blocks
1.	AES-I:	Vindhya or old alluvial region	a) 9 blocks of Burdwan sadar subdivision b) 1 block of Durgapur subdivision-
2.	AES-II:	Gangetic & new alluvial region	a) 10 blocks of Katwa and Kalna sub division
3.	AES-III:	Red lateritic and dry region	a) Part of 2 blocks of Burdwan sadar subdivision b) 11 blocks of Durgapur subdivision

2.2. Selection of blocks and representative villages:

One block from each agro Ecological Situation and one village within the selected block were identified as representative of the AES for collection of data. The selection of representative village was done after thorough discussion among the team members and selection of village was done keeping in view that the village should reflect broadly the farming system and farming situation of the concerned AES. The name of the representative villages for collecting SREP data are as follows

Table-2: Representative villages

Sl. No.	Agro Ecological Situation	Sub division	Selected block	Name of the G.P.	Village name
1.	AES-I: Vindhya or old alluvial region	Burdwan	Galsi-II	Mosjidpur	Porsura
2.	AES-II: Gangetic & new alluvial region	Kanla	Monteswar	Bhagra Mulgram	Bheti
3.	AES-III: Red lateritic and dry region	Durgapur	Andal	Dakshinkhanda	Moira

2.3. Conducting field survey and collection of primary data

Multi-disciplinary field exercises were conducted in the selected representative village of each AES's of Burdwan district where whole team identified issues, collected data and visited representative villages. Before collecting data, one orientation programme was conducted with the supervision of Scientist of SAMETI to make aware all SMS and BTM of the three blocks about the overview of work. The each AES teams collected field data from 30 numbers of key persons of the representative villages in 3 days interface meeting. The teams used the participatory tools for the collection of field data. The primary data collected during field visits was crosschecked with various groups in the villages as well as verified with other sources like secondary data collected from the line departments. The AES teams adopted a procedure to present the data/information collected by them to the villagers in the village before coming out of the village for final consolidation and sharing of information with the villagers. One day interface meeting cum group discussion was organized at Krishi Vigyan Kendra Burdwan for verification and sharing of data collected from the field. The collected data was summarized and presented by each AES team in presence of senior officers from all concerning departments, district heads of all lines departments, and farmers' representatives from the district.

2.4. Collection of Secondary data

Secondary information used for preparing the SREP were collected from different governmental departments like Agriculture, Horticulture, Animal Husbandry, Fishery, Cooperative Departments, Lead Bank Office, NABARD, District Statistical Office and other published source.

2.5. Final Preparation of SREP

On the basis of the analyzed primary and secondary data, draft of SREP was prepared by team of Krishi Vigyan Kendra, officers from Deputy Directorate of Agriculture and three Asstt. Directors of Agriculture of Galsi-II, Monteswar and Andal blocks. After thorough scrutiny by the ATMA management committee, the draft of SREP was submitted for approval to the Governing Body. The suggestions given by the Governing Body were incorporated in the final version of SREP. Final version of SREP Burdwan was published after final approval of the district governing body, ATMA Burdwan.

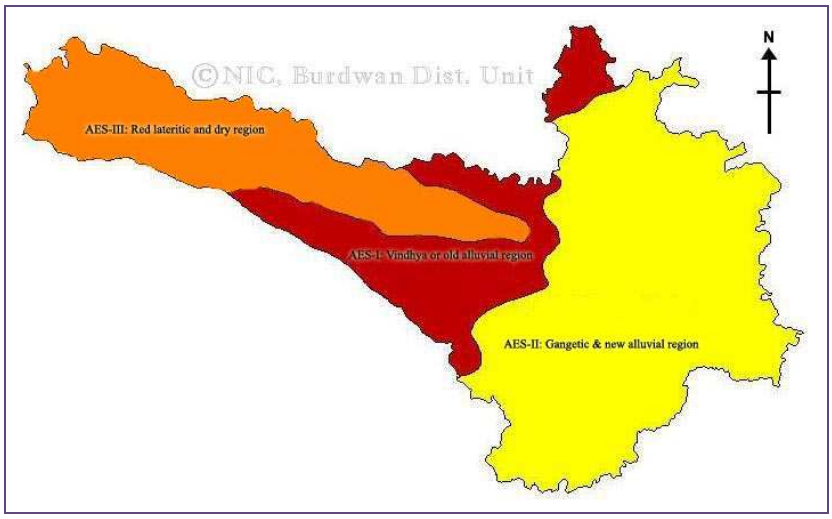


Fig. 2.1. Schematic diagram of three Agro Ecological Situations (AES)

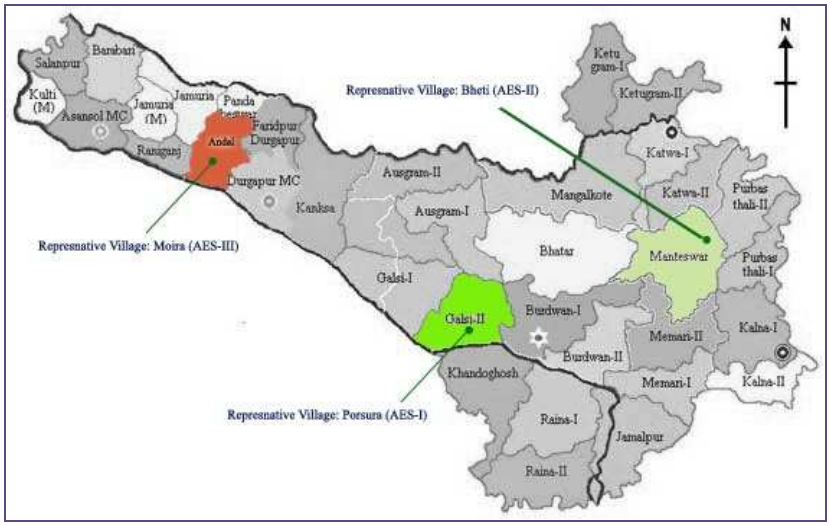


Fig. 2.2. Three representative villages of different AES

Background Information

3.1. District at a Glance

3.1.1. Location and geographical units

Burdwan district extends from 22°56' to 23°53' North latitude and from 86°48' to 88°25' East longitudes. The district is bounded on the north by Dumka (of Jharkhand), Birbhum and Murshidabad, on the east by Nadia, on the south by Hooghly, Bankura and Purulia and on the west by Dhanbad (of Jharkhand) districts.

The river Barakar forms the State boundary to the west; the Ajay separates Birbhum and Dumka to the north with exception of a portion of Katwa subdivision; the Damodar forms a southern boundary with Purulia and Bankura, while Bhagirathi forms the main eastern boundary with a few exceptions. The maximum length from east to west is 208 km while the maximum breadth from north to south is 112 km.

Table 3. Location of Burdwan

Name of the district	Latitude		Longitude	
	North	***South***	***East***	***West***
Burdwan	23º 53' N	22º 56' N	88º 25' E	86º 48' E

Present Burdwan is a well balanced district in West Bengal as it has minerals, forests, industry and agricultural lands. Durgapur and Asansol subdivisions, the red lateritic zone, are famous for industries, whereas, Katwa, Kalna and Brdhaman Sadar subdivisions are mainly agrarian. Cottage industry, small scale industries and handloom have important presence in the district.

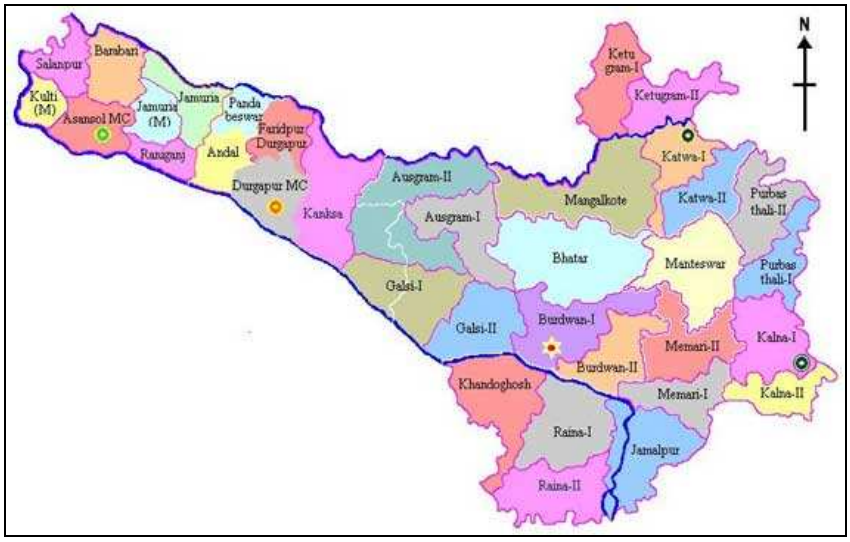


Fig. 3.1 Administrative map of Burdwan district

Total geographical area : 7024 Sq.km
District head quarter : Burdwan

Table: 4 District population at a glance:

S. No	Particulars	Value	
i)	**Population**		
	Male	3588376	
	Female	3307138	
	Total Population	**6895514**	
	Rural	2547048	
	Urban	4348466	
ii)	**Population density / Sq. km**	985	
iii)	**Literates**		
	Male (%)	78.6	
	Female (%)	61.0	
	Total (%)	70.2	
iv)	**Details on SC/ST population**		
	Male	1176724	
	Female	1125862	
	Total Population	2302586	
	Literacy rate (%)		
	Male	78.60	
	Female	61.00	
	Total	**70.20**	
v)	**Labour profile**		
a)	Total workers	2451241	
b)	Male workers	1920944	
c)	Female workers	530297	
d)	Rural workers	1686683	
e)	Urban workers	764558	
f)	Cultivators	361687	
g)	Agricultural Labourers	734022	
h)	Household industry	121271	
i)	Other workers	1234261	
j)	Marginal workers	548907	
j)	Non-workers	4444273	
k)	**Average labour wages for farm operations (Rs./manday of seven to nine hours)**	**Skilled job**	**Unskilled job**
	Peak seasons	104.00	96.00
	Male	104.00	96.00
	Female	104.00	96.00
	Lean seasons	104.00	96.00
	Male	104.00	96.00
	Female	104.00	96.00
	Average labour wages for farm operations (Rs./manday of five to six hours)	**Skilled job**	**Unskilled job**
	Peak seasons	--	--
	Male	--	--
	Female	--	--
	Lean seasons	--	--

	Male	-- --
	Female	-- --
vi)	**Major languages spoken in the district**	Bengali, Hindi, Santhali
vii)	**Details on Birth-Death Rate (per 1000 population)**	
	Birth Rate	16.4
	Death Rate	4.2
	Infant Mortality Rate	1.94
	Expectation of life in years	65
	Male	67
	Female	64

(Source: Dist. Statistical Handbook, Burdwan, Bureau of Applied Economics & Statistics, Govt. of W.B. 2007 and Dist. Information Office Burdwan)

Table-5. Geographical units

Sub-Division	**Police Station**	**C.D.Block / M.C. / M**	**Panchayat**			**Mouzas**	**Inhabited Villages**	**House-holds**	**Town**			
			Samity	**Gram**	**Gram Sansad**				**Municipal Corporation**		**Municipality**	
						(2001)	**(2001)**	**(2001)**	**No.**	**Ward**	**No.**	**Ward**
Asansol Sub-Div.	**10**	**4/1/3**	**4**	**35**	**271**	**181**	**168**	**277977**	**1**	**50**	**3**	**80**
	Chittaranjan Salanpur	Salanpur	1	11	65	74	67	31176	-	-	-	-
	Barabani	Baraboni	1	8	70	49	49	20089	-	-	-	-
	Asansol (N)-P	Raniganj	1	6	60	12	12	20239	-	-	-	-
	Raniganj	Raniganj (M)	-	-	-	-	-	20368	-	-	1	22
	Jamuria	Jamuria	1	10	76	46	40	22180	-	-	-	-
		Jamuria (M)	-	-	-	-	-	23433	-	-	1	23
	Asansol (Woman) Asansol (N) Asansol (S) Hirapur	Asansol (MC)	-	-	-	-	-	89243	1	50	-	-
	Kulti	Kulti (M)	-	-	-	-	-	51249	-	-	1	35
Durgapur Sub-Div.	**6**	**5/1/0**	**5**	**36**	**492**	**258**	**248**	**263447**	**1**	**43**	**-**	**-**
	Budbud-P Galsi-P	Galsi - I	1	9	112	87	86	35570	-	-	-	-
	Andal Pandabeswar-P Durgapur	Andal	1	8	112	14	13	34676	-	-	-	-
	Faridpur New Township-P	Faridpur-Durgapur	1	6	73	54	51	21601	-	-	-	-
	Pandabeswar Andal-P	Pandabeswar	1	6	93	17	17	31308	-	-	-	-
		Kanksa	1	7	102	86	81	30367	-	-	-	-
	Durgapur Coke Oven New Township	Durgapur (MC)	-	-	-	-	-	109925	1	43	-	-
Burdwan(N) Sub-Div.	**6**	**6/0/2**	**6**	**55**	**626**	**516**	**498**	**258186**	**-**	**-**	**2**	**50**
	Burdwan	Burdwan - I	1	9	118	80	78	36148	-	-	-	-
		Burdwan - II	1	9	89	89	84	29443	-	-	-	-

		Burdwan (M)	-	-	-	-	-	59517	-	-	1	35
	Kanksa											
	Ausgram	Ausgram - I	1	7	62	61	58	22265	-	-	-	-
		Guskara (M)	-	-	-	-	-	6589	-	-	1	15
	Ausgram-P Budbud	Ausgram - II	1	7	94	106	101	28569	-	-	-	-
	Bhatar	Bhatar	1	14	166	107	104	47551	-	-	-	-
	Galsi	Galsi - II	1	9	97	73	73	28104	-	-	-	-
Burdwan(S) Sub-Div.	**5**	**6/0/1**	**6**	**58**	**707**	**643**	**626**	**219220**	**-**	**-**	**1**	**16**
	Memari	Memari - I	1	10	126	113	112	40690	-	-	-	-
		Memari - II	1	9	100	89	88	28333	-	-	-	-
		Memari (M)	-	-	-	-	-	7520	-	-	1	16
	Jamalpur	Jamalpur	1	13	161	123	121	50381	-	-	-	-
	Raina	Raina - I	1	8	106	113	111	32007	-	-	-	-
	Madhabdihi	Raina - II	1	8	95	94	87	26690	-	-	-	-
	Khandaghosh	Khandaghosh	1	10	119	111	107	33599	-	-	-	-
Katwa Sub-Div.	**3**	**5/0/2**	**5**	**46**	**492**	**388**	**370**	**169072**	**-**	**-**	**2**	**33**
	Mongalkote	Mongalkote	1	15	156	132	129	46245	-	-	-	-
	Ketugram	Ketugram - I	1	8	93	66	62	27842	-	-	-	-
		Ketugram - II	1	7	66	56	55	21123	-	-	-	-
	Katwa	Katwa - I	1	9	93	66	63	29483	-	-	-	-
		Katwa - II	1	7	84	68	61	24591	-	-	-	-
		Katwa (M)	-	-	-	-	-	15262	-	-	1	19
		Dainhat (M)	-	-	-	-	-	4526	-	-	1	14
Kalna Sub-Div.	**3**	**5/0/1**	**5**	**47**	**584**	**543**	**528**	**202170**	**-**	**-**	**1**	**18**
	Purbasthali	Purbasthali - I	1	7	116	97	93	38186	-	-	-	-
		Purbasthali - II	1	10	116	89	87	39727	-	-	-	-
	Kalna	Kalna - I	1	9	123	100	99	40105	-	-	-	-
		Kalna - II	1	8	93	113	113	31781	-	-	-	-
		Kalna (M)	-	-	-	-	-	10895	-	-	1	18
	Monteswar	Monteswar	1	13	136	144	136	41476	-	-	-	-
6	**33**	**31/2/9**	**31**	**277**	**3172**	**2529**	**2438**	**1390072**	**2**	**93**	**9**	**197**

2.2.2. Demographic Profile

Total population of the district is 7717563 as per Census 2011 and density of population is 1098 per Sq km. Total rural population is 4639264 and urban population is 3078299. Total male population is 3966889 and female population is 3750674. Sex ratio of the district is 945. Percentage of rural population to total population is 60%. The district is an agrarian district and agricultural labourers and cultivators make 44.6 percent of the total population. In a nutshell the district has following demographic profile,

Table 6. Demographic profile in a nutshell

Population (As per Census, 2011)	
a) Total	77,17,563
b) Density (Per Sq. km)	1099
c) Male Population	39,66,889
d) Female Population	37,50,674
e) No. of Female per 1000 of Male	945
f) Urban Population	30,78,299

g) Rural Population	46,39,264
h) Percentage of Rural Population to Total Population	60.11 %
i) Schedule Caste Population -	
a) Rural	16,39,658
b) Urban	4,22,326
c)Total	20,61,984
j) Schedule Tribe Population -	
a) Rural	3,96,598
b) Urban	1,02,898 Nos.
c) Total	4,99,496 Nos.

Table 7A: Block wise population and household

Block	No of House Hold	Total Population	Total Male Population	Total Female Population
Area not under any Sub-district	484029	2276742	1176388	1100354
Ausgram - I	29197	119363	60521	58842
Ausgram - II	37011	150896	77184	73712
Barabani	25120	123598	63950	59648
Bhatar	60080	263064	134096	128968
Burdwan - I	49695	215943	109841	106102
Burdwan - II	36438	152939	77276	75663
Faridpur Durgapur	25591	115924	60478	55446
Galsi - I	44656	187588	96755	90833
Galsi - II	35615	147177	74751	72426
Jamalpur	62889	266338	134529	131809
Jamuria	26102	123176	64578	58598
Kalna - I	49302	206945	105696	101249
Kalna - II	39427	167335	84680	82655
Kanksa	40438	178125	91350	86775
Katwa - I	39425	173087	89087	84000
Katwa - II	31714	136708	70588	66120
Ketugram - I	37123	165408	84966	80442
Ketugram - II	27501	118567	61413	57154
Khandaghosh	42911	189336	97092	92244
Mangolkote	61309	263240	134693	128547
Manteswar	54082	237398	120940	116458
Memari - I	51148	218425	110712	107713
Memari - II	35059	150252	76500	73752
Ondal	39704	186915	98149	88766
Pandabeswar	34248	161891	84651	77240
Purbasthali - I	48952	206977	107022	99955
Purbasthali - II	50566	212355	109442	102913
Raina - I	40787	180952	92392	88560
Raina - II	33973	151401	77538	73863
Raniganj	21653	106441	55835	50606
Salanpur	35182	163057	83796	79261

Table -7B: Caste-wise Population (Total Population)

Block	SC Population	SC Male	SC Female	ST Population	ST Male	ST Female
Area not under any Sub-district	372073	190360	181713	69221	34758	34463
Ausgram - I	42659	21595	21064	15577	7696	7881
Ausgram - II	57141	29275	27866	21759	11002	10757
Barabani	35629	18270	17359	17574	8671	8903
Bhatar	85325	43370	41955	25626	12728	12898
Burdwan - I	65028	32895	32133	12127	5942	6185
Burdwan - II	59322	29785	29537	18242	9020	9222
Faridpur Durgapur	36641	19005	17636	8073	4037	4036
Galsi - I	67044	34233	32811	7652	3752	3900
Galsi - II	58342	29466	28876	10059	4921	5138
Jamalpur	96097	48254	47843	40432	19915	20517
Jamuria	37793	19391	18402	10272	5264	5008
Kalna - I	59242	30393	28849	20962	10404	10558
Kalna - II	61255	31174	30081	28930	14261	14669
Kanksa	62329	31830	30499	18239	9110	9129
Katwa - I	54731	28020	26711	2506	1262	1244
Katwa - II	40303	20698	19605	1963	952	1011
Ketugram - I	42660	21914	20746	1025	513	512
Ketugram - II	43442	22323	21119	692	362	330
Khandaghosh	73478	37493	35985	4345	2166	2179
Mangolkote	81950	41744	40206	7462	3700	3762
Manteswar	56862	28724	28138	6958	3363	3595
Memari - I	79976	40499	39477	34467	17217	17250
Memari - II	35933	18084	17849	27676	13877	13799
Ondal	52518	27145	25373	7628	3827	3801
Pandabeswar	49189	25314	23875	10821	5441	5380
Purbasthali - I	52705	27423	25282	7608	3795	3813
Purbasthali - II	55456	28833	26623	7920	3953	3967
Raina - I	62151	31350	30801	10503	5179	5324
Raina - II	61660	31268	30392	6062	3014	3048
Raniganj	37491	19387	18104	9982	5039	4943
Salanpur	39294	20069	19225	17084	8440	8644

3:3: Topography and Agro Climatic Characteristics

3.3.1: Topography:

Burdwan district with its varied tectonic elements and riverine features, is a transitional zone between the Jharkhand plateau which constitutes a portion of peninsular shield in the west and Ganga-Brahamaputra alluvial plain in the north and east. In general the Jharkhand plateau consists of the metasedimentary rocks of precambrian age, Gondwana sedimentary rocks, Rajmahal basalts and upper tertiary sediments. Laterite has developed on these older rocks as well as on early Quaternary sediments. Towards south, the alluvial plain merges with Damodar-kasain-Subarnarekha deltaic plains. The western half of the district resembles a promontory jutting out from the hill ranges of Chotonagpur plateau and consists of barren, rocky and rolling country with a laterite soil rising into rocky hillocks, the highest being 227 m. These diversify the otherwise monotonous landscape and lend a special charm to the skyline around Asansol subdivision. Ajoy-barakar divide is a convex plateau, the average altitude being 150 m. The gradient is westerly to the west and to the east it is northerly towards Ajay and southerly towards Damodar below the latitude. The Ajoy- Damodar inter-stream tract is made up of several stows consisting of vales and low convex spurs which run in almost all directions except north-east and thus lends a very complicated character to local relief. Different types of soil are encountered in different topographical biological and hydrological as well as geological condition within the Burdwan district. In the west coarse gritty soil blended with rock fragments is formed from the weathering of pegmatite, quartz veins and conglomeratic sandstones, where as sandy soil characteristic of granite rocks and sandstones. This soil is of reddish colour, medium to coarse in texture, acidic in reaction, low in nitrogen, calcium, phosphate and other plant nutrients. Water holding capacity of this soil increases with depth as well as with the increase of clay portions. Towards the east alluvial soil attains an enormous thickness in the low level plains to the east. This alluvial soil is formed of alluvium brought down by the Ajay, Damodar, Bhagirathi and numerous other rivers. These soils are sandy, well drained and slightly acidic in nature.

Burdwan is one of the premier districts in India in terms of value of mineral. The Raniganj coalfield was the birth place of the Indian coal industry. Besides coal, important minerals found in the district are iron ores, calcium carbonate, abrasives, silica bricks and moulding sands, glass sands, building materials, manganese, bauxite, laterite etc.

Table -8: Land classification according to location

Land classification according to location		
a	Up land	8622 ha
b	Medium land	241475 ha
c	Low land	22038 ha

3.3.2: Agro- climatic condition

The district experiences a climate which is transitional between CWg and AW types, where 'C' stands for 'warm temperate rainy climates with mild winter', 'W' for 'dry winter not compensated for by total rain in the rest of the year', 'g ' for 'eastern Ganges type of temperature trend' and 'AW ' for 'tropical savanna climates'. Average temperature in hot season is 30 C while at the cold season is 20 C. Average rainfall is 1496 mm. The cold season starts from about the middle of November and continues till the end of February. March to May is dry summer intervened by tropical cyclones and storms. June to September is wet summer while October and November is autumn.

Main crops of the district are autumn rice, winter rice, summer paddy, jute, potato, mustard and sesame, sugarcane and vegetables out of the said paddy covers about 87 percent in Kharif and winter paddy 66 percent and potato 13 percent in Rabi season. The animal resources of Burdwan is very rich and with a large variety. It rears cattle, buffalos, sheep, goats, pigs, fowls and ducks. Animal husbandry has good prospects specially in the western lateritic part of the district.

Net cropped area in the district is 66.2% of TGA with a cropping intensity of 173%. Area under Kharif, rabi and summer crops are 63%, 24% and 26% of TGA. Around 52% of TGA is under irrigation, of which 33% is canal irrigated and 19% is irrigated through ponds and other sources of irrigations. There are many tanks, wells, canals, swamps and bils are found all over the district. Within the Damodar Valley region, there are around 17000 tanks. The Durgapur barrage and Mithon dam have formed two large reservoirs at the south-western and western periphery of the district. The district has a fairly good cropping intensity of 173%.

Table 9A: Average Maximum & Minimum Temperature

Month	**Avg. Temperature 2010 (° C)**		**Avg. Temperature 2011 (° C)**		**Avg. Temperature 2012(° C)**	
	Max	Min	Max	Min	Max	Min
Jan.	23.6	9.5	24.0	10.0	23.7	12.6
Feb.	28.5	15.4	28.3	15.4	28.3	14.3
March	35.0	21.5	32.8	20.4	33.2	19.3
April	38.5	21.7	34.0	22.8	35.0	23.3
May	35.0	25.4	34.0	24.4	37.2	25.1
June	34.7	26.0	33.6	25.8	36.4	27.0
July	32.8	26.1	32.4	26.1	32.6	25.7
August	32.7	26.1	31.5	25.8	31.9	25.7
Sept.	32.0	24.9	31.3	25.3	31.6	25.1
Oct.	31.2	23.0	31.8	22.6	30.6	21.9
Nov.	30.0	18.8	29.3	16.7	26.4	16.5
Dec.	25.0	12.2	25.0	12.3	23.9	12.0

(Station: District Seed Farm, Burdwan.)

Table 9B. Average Precipitation

Month	Expected Normal Rainfall	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Avg. of last 10 yrs.
Jan.	15.00	0.25	7.98	23.25	0.00	0.00	29.4	0.04	0.00	0.50	34.20	9.56
Feb.	31.00	29.90	0.00	14.10	0.00	43.7	15.0	2.60	8.90	0.70	6.90	12.20
March	31.00	46.35	21.17	76.93	3.90	37.30	18.30	32.20	4.00	32.50	1.80	27.45
April	41.00	40.00	90.93	13.55	55.80	35.25	37.92	1.50	24.50	77.10	42.90	41.95
May	111.00	80.43	84.85	65.65	84.37	114.90	128.30	241.20	92.30	110.50	67.30	107.00
June	250.00	206.20	206.00	150.80	168.35	211.57	342.60	67.70	235.20	324.80	109.80	202.30
July	346.00	204.80	144.70	252.18	503.27	466.19	401.59	211.00	192.10	213.60	297.60	288.70
August	332.00	130.15	229.80	153.90	301.68	291.41	264.30	355.40	121.10	321.00	219.00	238.77
Sept.	215.00	113.77	246.38	134.42	268.72	458.59	250.0	246.70	180.10	216.40	141.50	225.66
Oct.	102.00	257.00	113.87	287.87	18.33	58.46	60.60	89.60	45.00	27.20	62.20	102.01
Nov.	21.00	1.08	0.00	0.00	8.75	32.50	0.00	4.90	5.00	0.20	35.00	8.72
Dec.	5.00	10.87	1.42	8.78	0.00	0.00	0.00	0.00	38.40	0.00	7.60	6.70
Total	**1500.0**	**1120.8**	**1147.1**	**1181.45**	**1413.17**	**1749.84**	**1547.97**	**1252.84**	**946.60**	**1325.00**	**1025.80**	**1270.96**

(Station: District Seed Farm, Burdwan.)

3.3.4 Land Use pattern and Land holdings

The district both being an agrarian as well as industrial one, fairly large area in the district (25.2%) is under non-agricultural use. As compare to nearly 14% of total geographical area (TGA) under forest in the state, the district has only 4.14% area under forest. Though as compare to the districts of Bankura, Birbhum, Hooghly, Nadia, Murshidabad, Malda, North dinajpur, South Dinajpur and North 24 PGs, the district has much more area under forest; but in so far as total tree cover is concerned the district of Burdwan ranks at the very bottom with a meager 30% of TGA under tree cover. In view of the fact that, ideally atleast 33% of TGA should be under tree cover and the country at present has 27% area under tree cover. The forest areas of the district are chiefly situated in the lateritic and red soil high lands in the Ausgram PS of Burdwan Sadar Subdivision and in the Asansol subdivision. In Ausgram P.S. the forest areas are interspersed with paddy fields. The Durgapur forests are continued in the Birbhum district beyond the Ajay while the forest area in the Asansol subdivision forms a part of the forest area of Dumka District of Jharkhand.

Table 9C. Land use pattern of the district

Year	Reporting Area	Forest Area	Area under Non-agricultural use	Permanent pastures & other grazing land	Culturable waste land	Fallow land other than current fallow	Current fallow	Net area sown
2006-07	698.77	21.17	200.89	0.65	6.92	1.96	7.04	458.51
2007-08	698.76	21.17	206.02	0.31	7.58	1.96	7.40	452.04
2008-09	698.76	21.17	207.77	0.32	5.92	1.14	6.95	452.39

2009-10	698.76	21.16	208.53	0.22	5.60	1.37	4.98	454.11
2010-11	698.76	21.16	211.56	0.26	4.88	1.24	4.35	452.46

(Area in thousand hectares)

3.3.5 Irrigation and Ground water

Around 52% of TGA is under irrigation, of which 33% is canal irrigated and 19% is irrigated trough ponds and other type of irrigations. There are many tanks, wells, canals, swamps and bils are found all over the district. Within the Damodar Valley region, there are around 17000 tanks. The Durgapur barrage and Mithon dam have formed two large reservoirs at the south-western and western periphery of the district.

Table 10 A: . Yearwise area under different kind of irrigation

Year	Area irrigated by						
	Govt. Canal	**HDTW**	**MDTW**	**LDTW**	**STW**	**RLI**	**Total**
2006-07	296.00	19.75	2.25	1.74	0.12	11.79	331.65
2007-08	308.51	18.37	0.79	2.76	-	11.54	341.97
2008-09	279.39	20.87	0.82	1.23	0.08	11.19	313.58
2009-10	294.46	6.70	0.75	11.59	-	11.77	325.27
2010-11	245.63	7.82	0.75	11.78	-	12.00	277.98

(Area in thousand hectares)

Table 10. B: Yearwise number of different kind of irrigation

Year	HDTW	MDTW	LDTW	STW	RLI
2006-07	431	33	342	28	282
2007-08	433	33	548	-	282
2008-09	417	31	324	28	282
2009-10	179	31	260	-	282
2010-11	177	34	267	-	281

Table 11 A. Block wise cooperative societies in the district

Name of Block	No. of Co-operative Societies	No. of Members	Working Capital ('000 Rs.)
Salanpur	40	18475	212511
Barabani	21	1799	6837
Raniganj	42	11321	237971
Jamuria	23	8245	35389
Galsi-I	80	17185	54723
Andal *	90	25769	137710
Faridpur-Durgapur	469	54800	1068475
Pandabeswar	..	..	..
Kanksa	57	9280	19315
Burdwan-I	71	12779	40518
Burdwan-II	67	18017	65786
Ausgram-I	63	14356	72914

Ausgram-II	48	15104	36991
Bhatar	65	20957	143531
Galsi-II	57	14501	48226
Memari-I	50	33548	300124
Memari-II	57	26324	475695
Jamalpur	71	30208	196775
Raina-I	76	22245	107834
Raina-II	52	22543	139876
Khandaghosh	64	18976	101434
Mongalkote	75	34468	556233
Ketugram-I	68	27452	441489
Ketugram-II	35	30458	490651
Katwa-I	97	29358	472661
Katwa-II	60	28491	456381
Purbasthali-I	44	27473	441832
Purbasthali-II	35	25557	410497
Kalna-I	70	35487	572898
Kalna-II	49	33402	444299
Monteswar	80	36408	587846

Table 11B: Block wise commercial and gramin banks in the district

	Name of Block	Number of Bank offices		Population served per Bank office(Commercial & Gramin) (No. in thousand)
		Commercial Bank	Gramin Bank	
1	Salanpur	7	2	17
2	Barabani	5	2	16
3	Raniganj	12	2	7
4	Jamuria	10	1	10
5	Galsi-I	7	4	16
6	Andal	8	-	21
7	Faridpur-Durgapur	5	2	15
8	Pandabeswar	9	-	16
9	Kanksa	9	3	13
10	Burdwan-I	12	2	13
11	Burdwan-II	9	2	13
12	Ausgram-I	6	2	13
13	Ausgram-II	6	4	14
14	Bhatar	11	5	15
15	Galsi-II	6	3	15
16	Memari-I	12	2	14
17	Memari-II	7	2	15
18	Jamalpur	7	5	20
19	Raina-I	7	1	20
20	Raina-II	6	3	15
21	Khandaghosh	9	3	14

22	Mongalkote	9	4	18
23	Ketugram-I	4	3	21
24	Ketugram-II	5	1	18
25	Katwa-I	7	3	15
26	Katwa-II	4	3	17
27	Purbasthali-I	6	2	23
28	Purbasthali-II	6	2	24
29	Kalna-I	6	2	24
30	Kalna-II	7	1	19
31	Monteswar	8	3	19

Table: 12: Basic statistics of different blocks of Burdwan (2010-2011)

Sl.No.	Name of Block	No. of Mouzas having drinking water facilities	No. of fertilizer depots	No. of seed stores	No. of fair price shops	No. of gram panchayat offices with telephone facilities
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Salanpur	74	7	3	32	11
2	Barabani	49	11	-	35	8
3	Raniganj	12	4	3	38	6
4	Jamuria	43	29	3	34	10
5	Galsi-I	87	60	6	75	9
6	Andal	14	13	6	55	8
7	Faridpur-Durgapur	54	37	6	28	6
8	Pandabeswar	17	..	..	50	6
9	Kanksa	86	44	4	36	7
10	Burdwan-I	80	80	12	55	9
11	Burdwan-II	89	71	15	41	9
12	Ausgram-I	58	59	9	33	7
13	Ausgram-II	106	39	1	36	7
14	Bhatar	107	152	25	65	14
15	Galsi-II	73	79	9	56	9
16	Memari-I	113	102	30	49	10
17	Memari-II	89	80	10	42	9
18	Jamalpur	123	146	27	66	13
19	Raina-I	113	122	15	58	8

20	Raina-II	94	85	8	39	8
21	Khandaghosh	110	103	10	56	10
22	Mongalkote	132	136	3	75	15
23	Ketugram-I	62	30	-	55	8
24	Ketugram-II	56	52	1	37	7
25	Katwa-I	66	77	14	54	9
26	Katwa-II	68	59	4	41	7
27	Purbasthali-I	97	95	14	47	7
28	Purbasthali-II	89	85	10	51	10
29	Kalna-I	100	81	14	-	9
30	Kalna-II	113	76	19	36	8
31	Monteswar	136	58	8	78	13

Source: District statistical hand book 2011

3.3.6. Major Crops and Varieties in the District

Table 13A: Prevalent cropping patterns in Burdwan district

ALLUVIAL REGION	RAINFED AREA (SUMMER – KHARIF – RABI)
(a) Upland	Fallow – Paddy/Vegetable – Mustard/Lentil/Wheat
(b) Medium Land	Fallow – Paddy – Pulse/Oilseed /Wheat
(c) Low Land	Fallow/Jute – Paddy – Pulse/Oilseed/Wheat
	IRRIGATED AREA
(a) Upland	Vegetable/Paddy/Jute – Paddy/Maize – Pulse/Oilseed/ Vegetable/Wheat/Potato/Onion
(b) Medium Land	Paddy/Sesamum/Jute – Paddy – Pulse/Oilseed/Vegetable/Wheat/Potato/Onion
(c) Low Land	Paddy/Jute – Paddy – Pulse/Oilseed/Vegetable/Wheat/Potato/Onion
LATERITIC REGION	RAINFED AREA
(a) Upland	Fallow – Paddy/Groundnut/Maize – Pulse/Mustard/ Kalai/Vegetable
(b) Medium Land	Fallow – Paddy – Mustard/Pulse/Paira Crops
© Low Land	Fallow – Paddy – Mustard/Lentil/Gram/Paira Crops
	IRRIGATED AREA
(a) Upland	Moong – Paddy/Maize/Vegetable – Mustard/Wheat/Maize/Pulse
(b) Medium Land	Moong/Vegetable/Maize – Paddy – Mustard/Wheat/Maize/Pulse/Potato
© Low Land	Moong/Vegetable – Paddy – Paddy/Vegetable/Pulse/Oilseed/Wheat

Table 13B: Major crops and their varieties are given in the following table

Crop name	**Varieties**
Autumn Rice	Khitish, Satabdi, PD12, GB-1
Winter Rice (HYV)	MTU -1010, IR -36, MTU -7029, GB -1, SS-1,Pratiksha, Gobindabhog
Summer Rice	MTU- 1010, IR- 36, Khitish, Lalat, IET- 4786
Wheat	UP -262, PBW – 343, Sonalika
Jute	JRO- 524, JRO -204
Potato	Kufri Jyoti, Kufri Chandramukhi, Kufri Pokhraj
Mustard	B-9, B- 54
Til	Tilottama, Rama , Savitri

Table 13 C. Crop coverage and production of different crops during

Sl. No.	**Name of Crop**	**2010-2011**		**2011-2012**		**2012-2013**	
		Coverage (h)	**Total Production (M.T.)**	**Coverage (h)**	**Total Production (M.T.)**	**Coverage (h)**	**Total Production (M.T.)**
1.	Aus Paddy	39525	164938	42328	184508	42000	190302
2.	Aman Paddy	337971	1472407	391755	1797759	382136	1750583
3.	Boro Paddy	118380	531408	156620	642142	141290	656726
4.	Wheat	11470	33011	8830	21431	6620	16391
5.	Maize	882	1903	1113	2503	1007	2291
6.	Potato	71295	2558849	66845	1855150	72280	2010540
7.	Fibre Crops	9108	107195 Bales	9254	114035 Bales	9117	111866 Bales
8.	Oilseed	63479	71414	69364	73525	66896	77197
9.	Pulses	10032	8276	12061	8683	11309	8436
10.	Vegetable	61495	Not available	62197	Not available	59812	Not available
11.	Others	13432	-	14481	-	13302	-
	Total:	**737069**	**-**	**834848**	**-**	**805769**	**-**
	Cropping Intensity	**158.51%**		**179.54%**		**173.28%**	

Table-13D: Production & productivity of majors crops of Burdwan district (Paddy, Wheat)

Name of Block	Aus			Aman			Boro			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Salanpur	-	-	-	1433	3.174	2215	-	-	-	-	-	-
Barabani	-	-	-	8446	23.754	2812	-	-	-	-	-	-
Raniganj	-	-	-	-	-	-	-	-	-	-	-	-
Jamuria	-	-	-	3	0.008	2648	-	-	-	-	-	-
Galsi-I	-	-	-	3229	11.260	3487	67	0.194	2899	-	-	-
Andal	-	-	-	109	0.156	1433	-	-	-	5	0.011	2133
Faridpur-Durgapur	-	-	-	9532	21.263	2231	-	-	-	42	0.086	2044
Pandabeswar	-	-	-	467	0.855	1831	-	-	-	23	0.050	2179
Kanksa	-	-	-	5779	13.319	2305	191	0.576	3014	118	0.228	1934
Burdwan-I	-	-	-	18424	52.596	2855	5799	18.909	3261	-	-	-
Burdwan-II	-	-	-	4415	12.998	2944	10861	38.054	3504	-	-	-
Ausgram-I	136	0.405	2977	16578	49.089	2961	847	2.872	3391	155	0.243	1568
Ausgram-II	-	-	-	18147	39.185	2159	562	1.727	3073	46	0.079	1708
Bhatar	-	-	-	25891	76.254	2945	26985	92.497	3428	17	0.029	1714
Galsi-II	283	0.844	2983	14797	48.724	3297	13940	44.461	3189	17	0.062	3654
Memari-I	2803	7.892	2816	10561	30.353	2874	1314	3.947	3004	1	0.002	2192
Memari-II	2697	9.082	3367	11142	30.286	2718	5397	16.595	3075	4	0.010	2546
Jamalpur	552	1.313	2379	19169	48.358	2523	197	0.565	2870	-	-	-
Raina-I	-	-	-	22059	65.831	2984	3376	13.662	4047	-	-	-
Raina-II	27	0.081	2989	18400	44.478	2417	8078	32.747	4054	28	0.072	2557
Khandaghosh	-	-	-	16671	47.136	2827	7277	25.465	3499	25	0.064	2546
Mongalkote	120	0.357	2977	29399	93.307	3174	15466	55.172	3567	59	0.159	2698
Ketugram-I	-	-	-	10867	40.841	3758	8656	23.735	2742	15	0.035	2364
Ketugram-II	-	-	-	12312	37.899	3078	10297	21.170	2056	80	0.189	2364
Katwa-I	209	0.662	2975	11033	33.615	3047	11234	38.623	3438	-	-	-
Katwa-II	-	-	-	12077	39.635	3282	9672	25.410	2627	1	0.002	2364
Purbasthali-I	24	0.057	2394	10581	32.045	3029	8957	19.050	2127	288	0.681	2364

Purbasthali-II	341	0.816	2394	4818	13.209	2742	4171	12.880	3088	135	0.319	2364
Kalna-I	519	1.242	2394	11215	36.858	3286	7067	17.631	2495	-	-	-
Kalna-II	1401	3.354	2394	10533	27.672	2627	4435	10.300	2322	-	-	-
Monteswar	173	0.412	2383	26041	79.443	3051	24597	69.620	2830	-	-	-

Conti….Table-13D Production & productivity of majors crops of Burdwan district (Maize, Jute, & pulses)

Name of Block	Maize			Jute			Musur			Maskalai			Khesari		
	Area	Prod.	Yield	Area	Prod.*	Yield**	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
(2)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
Salanpur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barabani	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raniganj	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jamuria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galsi-I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Andal	-	-	-	-	-	-	2	0.001	295	-	-	-	-	-	-
Faridpur-Durgapur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandabeswar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kanksa	-	-	-	-	-	-	71	0.043	613	-	-	-	-	-	-
Burdwan-I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burdwan-II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ausgram-I	-	-	-	-	-	-	299	0.398	1332	-	-	-	-	-	-
Ausgram-II	-	-	-	-	-	-	1	0.001	1202	-	-	-	-	-	-
Bhatar	-	-	-	-	-	-	5	0.006	1243	-	-	-	-	-	-
Galsi-II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Memari-I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Memari-II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jamalpur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raina-I	-	-	-	-	-	-	264	0.301	1141	-	-	-	-	-	-
Raina-II	-	-	-	-	-	-	43	0.073	1700	-	-	-	-	-	-
Khandaghosh	-	-	-	-	-	-	42	0.029	690	-	-	-	-	-	-
Mongalkote	-	-	-	8	0.168	21.05	36	0.023	635	-	-	-	-	-	-

Ketugram-I	-	-	-	-	-	-	41	0.030	726	-	-	-	-	-	-
Ketugram-II	-	-	-	211	4.442	21.05	104	0.075	726	-	-	-	50	0.065	1302
Katwa-I	-	-	-	489	10.253	21.05	1	0.001	726	-	-	-	-	-	-
Katwa-II	-	-	-	1347	28.354	21.05	185	0.134	726	75	0.013	173	18	0.023	1302
Purbasthali-I	-	-	-	1953	41.111	21.05	2	0.002	1128	-	-	-	-	-	-
Purbasthali-II	-	-	-	7050	148.403	21.05	1018	1.148	1128	64	0.011	173	442	0.576	1302
Kalna-I	-	-	-	554	11.662	21.05	-	-	-	-	-	-	-	-	-
Kalna-II	-	-	-	1008	21.218	21.05	-	-	-	-	-	-	-	-	-
Monteswar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Conti….Table-13D Production & productivity of majors crops of Burdwan district (Gram, Mustard, Til & Potato)

Name of Block	Gram			Mustard			Til			Potato		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
(2)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
Salanpur	-	-	-	-	-	-	-	-	-	-	-	-
Barabani	-	-	-	-	-	-	-	-	-	-	-	-
Raniganj	-	-	-	-	-	-	-	-	-	-	-	-
Jamuria	-	-	-	-	-	-	-	-	-	-	-	-
Galsi-I	-	-	-	655	0.845	1290	-	-	-	901	39.147	43448
Andal	-	-	-	18	0.017	921	-	-	-	26	1.104	42448
Faridpur-Durgapur	-	-	-	66	0.057	864	-	-	-	-	-	-
Pandabeswar				26	0.021	814	-	-	-	..	..	..
Kanksa	-	-	-	520	0.269	518	83	0.041	490	173	6.442	37239
Burdwan-I	-	-	-	775	0.849	1096	37	0.035	949	623	19.436	31197
Burdwan-II	-	-	-	275	0.267	972	-	-	-	783	25.861	33028
Ausgram-I	10	0.017	1732	446	0.478	1071	580	0.431	744	262	9.933	37911
Ausgram-II	-	-	-	316	0.329	1040	1389	1.031	742	73	2.837	38857
Bhatar	-	-	-	944	1.037	1098	65	0.053	810	700	20.347	29067
Galsi-II	-	-	-	675	0.735	1090	393	0.347	882	1077	37.981	35265
Memari-I	-	-	-	390	0.435	1116	167	0.134	800	5164	217.286	42077
Memari-II	-	-	-	420	0.402	957	216	0.087	401	3784	161.213	42604

Jamalpur	-	-	-	568	0.512	902	3469	3.185	918	13481	492.646	36544
Raina-I	-	-	-	516	0.448	867	3502	3.281	937	4707	173.949	36955
Raina-II	-	-	-	1275	1.232	966	1570	1.456	927	4718	157.411	33364
Khandaghosh	5	0.009	1732	1197	0.887	741	871	0.624	716	1622	60.621	37374
Mongalkote	18	0.031	1732	1171	1.300	1110	1155	0.657	568	4532	149.783	33050
Ketugram-I	4	0.007	1732	773	0.778	1007	166	0.094	568	105	2.857	27207
Ketugram-II	10	0.017	1732	822	0.827	1007	374	0.212	568	193	9.191	47622
Katwa-I	-	-	-	1553	1.563	1007	315	0.179	568	582	26.042	44746
Katwa-II	-	-	-	1007	1.014	1007	358	0.203	568	159	4.597	28915
Purbasthali-I	-	-	-	824	0.813	986	848	0.375	442	820	25.501	31099
Purbasthali-II	8	0.014	1732	2162	2.132	986	1092	0.483	442	598	17.593	29420
Kalna-I	-	-	-	1902	1.876	986	112	0.050	442	4408	212.357	48175
Kalna-II	-	-	-	146	0.144	986	152	0.067	442	3034	106.539	35115
Monteswar	-	-	-	836	0.824	986	20	0.009	431	524	16.380	31260

Note: Area in ha, Production in Thousand MT, Yield in Kg / ha

Source: Directorate of Agriculture, Govt. of W.B.

13E: Area and Production of Fruits and Vegetables in the district of Burdwan

Name of Fruits / Vegetables	Area (Thousand hectares)					Prouduction (Thousand tonnes)				
	2006-07	2007-08	2008-09	2009-10	2010-11	2006-07	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A. Fruits :										
Mango	3.79	3.81	3.81	3.81	3.82	15.34	15.53	15.54	16.54	17.54
Banana	0.98	0.98	1.08	1.08	1.09	15.95	16.08	16.49	16.49	16.89
Pineapple	0.06	0.05	0.05	0.05	0.05	1.55	0.95	0.96	0.96	0.96
Papaya	0.50	0.50	0.50	0.50	0.51	14.14	14.23	14.23	14.23	14.33
Guava	0.68	0.70	0.70	0.70	0.71	8.53	8.93	8.93	8.93	9.13
Jackfruit	0.58	0.58	0.58	0.58	0.58	6.98	6.99	6.99	6.99	6.99
Litchi	0.29	0.29	0.29	0.29	0.29	3.02	3.12	3.12	2.85	2.85

	Other Citrus	0.31	0.32	0.33	0.33	0.33	2.64	2.96	3.16	3.16	3.26
	Sapota	-	-	0.03	0.03	0.03	-	-	0.25	0.25	0.25
	Others	0.41	0.41	0.41	0.41	0.40	3.70	3.71	3.91	3.92	3.96
	Total	**7.60**	**7.64**	**7.78**	**7.78**	**7.81**	**71.85**	**72.50**	**73.58**	**74.32**	**76.16**
B.	**Vegetables :**										
	Tomato	2.71	2.69	2.69	2.69	2.72	36.27	36.27	36.27	47.27	47.89
	Cabbage	3.27	3.25	3.25	3.25	3.29	92.76	92.67	92.67	92.67	93.97
	Cauliflower	3.18	3.16	3.16	3.16	3.20	90.51	85.85	85.85	85.85	86.98
	Peas	1.03	1.02	1.02	1.02	1.04	6.13	6.15	6.15	6.15	6.34
	Brinjal	8.17	8.17	8.16	8.16	6.84	144.92	145.16	145.09	145.09	123.90
	Onion	0.90	0.88	0.88	0.88	0.89	9.36	15.50	15.50	16.50	16.95
	Cucurbits	12.91	13.01	9.15	13.60	13.80	125.26	126.03	139.33	153.93	159.30
	Ladies Finger	5.11	5.11	5.23	5.33	5.40	55.35	55.79	58.59	59.59	61.23
	Radish	2.03	1.95	1.95	1.95	0.33	19.03	19.87	19.87	19.87	6.13
	Others	30.78	17.88	23.02	18.67	27.33	203.86	89.17	92.67	93.07	135.25
	Total	**70.09**	**57.12**	**58.51**	**58.71**	**64.84**	**783.45**	**672.46**	**691.99**	**719.99**	**737.94**

Table 13: F: Status of production in sericulture in Burdwan

Year	Cocoons production		Value of production (thousand rupees)	
	Mulberry (MT)	Tasar (thousand kahan)	Mulberry	Tasar
(1)	(2)	(3)	(4)	(5)
2006-07	0.073	33.80	5.8	27
2007-08	0.080	156.00	6.4	124
2008-09	0.085	117.86	7.2	106
2009-10	0.060	94.00	5.4	113
2010-11	0.062	214.56	6.2	200

N.B. : 1 Kahan = 1280 No. Source : Dy. Director of Sericulture, Burdwan

Table 13. G Fertilizer use status of Burdwan district

Name of the Fertilizer (Nutrient)	**2008-2009**	**2009-10**	**2010-11**	**2011-12**	**2012-13**
Nitrogen (Kg/h)	122.5	124.1	123.5	125.4	128.6
Phosphate (Kg /h)	57.1	60.4	59.1	62.2	58.4
Potash (Kg. /h)	48.6	47.6.	52.3	46.6	44.8

Table 13 H: Agro Processing Unit in the block (including Sugar, Milk, Silk, etc., related to Agriculture only)

Block	**Type of Agro-Processing unit**	**No. of Processing units**
Andal	Small Rice dehusker	05
	Muri mill	10
Aushgram-I	Milk Packaging	1
	Rice mill	10
	Oil Crusher	10
	Dal Mills	1
Barabani	Rice Mill	01
	Small Rice dehusker	12
	Muri Mill	02
	Chira Mill	02
Bhatar	Rice mill	11
	Oil Crusher	34
Burdwan	Milk Packaging	1
	Rice mill	72
	Oil Crusher	23
	Dal Mills	1
	Rice Bran Oil Mill	1
Faridpur-Durgapur	Dal Mill	1
	Puffed Rice Mill (‘Muri’)	5
	Rice Mill	1
Galsi-I	Rice Mill	25
	Oil Mill	01
Galsi-II	Rice Mill	18
	Dal Mill	1
	Oil Mill	10
Jamalpur	Rice mill	7

	Oil Crusher	50
Jamuria – I	Rice Mill	03
	Small Rice dehusker	10
	Muri Mill	10
Jamuria – II	Rice Mill	01
	Small Rice dehusker	30
	Muri Mill	15
Kalna-I	Rice Mill	03
Kanksa	Rice Mill	3
	Small Rice dehusker	30
Katwa-I	Flattend Rice	03
	Puffed Rice	05
	Rice mill	06
Katwa-II	Sugar	5
Ketugram-I	RICE MILL	1
Khandaghosh	Milk Packaging	1
	Rice mill	20
	Oil Crusher	20
Memari-I	Milk Packaging	1
	Rice mill	10
	Oil Crusher	30
	Dal Mills	1
Memari-II	Rice mill	12
	Oil Crusher	7
Mongalkote	Rice mill	1
	Poultry feed	1
Purbasthali-I	Paddy Husking Unit	35
	Edible Oil Extraction Unit	15
Purbasthali-II	Rice Mill	2
	Pulse husking Mill	2
	Paddy husking Mill	10
	Oil Mill	5
Raina- I	Milk Packaging	1
	Rice mill	30
	Oil Crusher	10
	Dal Mills	1
Raina-II	Rice mill	40
	Oil Crusher	12
Salanpur	Rice Mill	1
Total		**709**

Table: 13 I: The Status of Horticulture in Burdwan

Area under Horticulture (Fruit, Vegetables, Flowers etc.)	39080 ha
Area under Fruits	7205 ha
Area under Vegetables	
Summer	22670 ha
Rainy	10090 ha
Winter	25590 ha
Area under Spices, Plantation crops etc.	6165 ha
Area under Flowers	80 ha
Area under Medicinal & Aromatic Plants	40 ha
Infrastructure	
a) Distillation Plants (Pvt)	3 nos.
b) Tissue Culture Laboratory (Pvt)	1
c) Poly-greenhouse (Flower)	4
(Exotic Vegetables)	2
d) Protective cultivation (high value vegetable)	25
e) Multipurpose Cold Storage (Govt) :	3
(Pvt.)	3

13 J: Infrastructure of livestock sector

Type	**Number**	**Location**	**Type of service render**
Office of the DD, ARD & PO	01	Purta Bhavan 6th floor, Sripally, Burdwan	Administrative activities of ARD dept. for whole district
Veterinary Hospital	62	All blocks and municipalities	Treatment, immunization, extension etc.
Block Livestock Development Office	31	All blocks	Extension activities including all departmental schemes implementations
Veterinary Poly clinics	01	Fagupur, Burdwan	Special care of the ailing animals mainly complicated surgery
Animal Dev. Aid Centre	198	Various GP covering whole district	AI and primary health care
Regional Disease Diagnostic Laboratory	01	Burdwan	Disease diagnostic for whole Burdwan Division
Pathological Laboratory	03	Burdwan, Durgapur and Katwa	Diagnostic services for the field units
Feed Plant (Under dairpol)	01	Durgapur	Feed processing of all kind of livestock.
Milk Union	01	Burdwan	Milk collection from the milk co-operatives and dispatch to Mother Dairy & Central dairy.
Milk co-operatives	101	Ketugram-I &I, Katwa-I&II, Memari-II, Purbasthali-I	Milk procurement from the farmers and dispatched to BMU
Chilling Plant	02	Kusumgram, Katwa	Temporary storage of milk
Bulk Milk Cooler	09 (04 no. are functional)	Galbati, Kusumgram (2) Beldanga kanchgaria, Asanpur, Rakshitpur, Kandra, Nimar, Amgaria	Temporary storage of milk
State Dairy	02	Burdwan, Durgapur	Milk collection, packaging and

			marketing
Fodder farm	02	Rasulpur, Sursurah	Production of fodder for local supply.
Input supply farm/ livestock breeding farm	03	SPF Golapbag, DCF Kalna Gate and SPF Durgapur	Supply of chick/duckling to the farmers and the govt. for implementation of schemes.
Training centers	03	Golapbag, DCF Kalna Road and Durgapur	Training to the farmers and also various governmental trainings
A.I Unit / centre	313	Throughout the district	AI activities at GP level
Liquid Nitrogen Storage Centre	01	Fagupur, Burdwan	Supply of LN_2 for FSS transport through the district.
Mobile Veterinary centre	03	Ausgram-II, Memari-II and Purbasthali-II	Animal Health Care services in remote areas of the district.
Slaughter house	01	Asansol	Slaughtering of large animals
Check post	01	Barakar	Control of transboundary diseases
Central Medical Store	01	Burdwan	Temporary storage place of medicine for the whole district.
Milk cooperative	01	Kalna and Katwa subdivision	collection of milk from producers and bulk cooling.

13 K: Livestock Census of the district Burdwan (2007-08)

Name of Block	**Total Cattle**	**Cross bred Cattle (%)**	**Total Buffalo**	**Total Sheep**	**Total Goat**	**Total Pig**	**Total Fowl**	**Total Duck**
Ausgram-I	44539	4.64	3236	3182	35282	1718	87576	43396
Ausgram-I	73841	1.63	3868	4867	58016	5824	444230	59891
Bhatar	115115	9.0	8091	19598	82034	4463	610749	133206
Burdwan-I	81837	13.35	6530	10107	73687	2896	198663	104502
Burdwan-II	45321	23.64	1672	3339	50904	1875	106670	73786
Galsi-II	41550	9.44	2471	317	34840	1848	93802	47019
Bardhaman (M)	10099	45.31	498	74	13569	761	23438	12990
Guskara (M)	4646	2.35	166	80	3485	169	5655	4609
Jamalpur	78446	22.34	1131	442	80743	5044	146717	87317
Khandaghosh	76215	4.78	3539	343	77195	375	129650	88704
Memari-I	50660	25.89	1586	640	49464	5566	108590	54467
Memari-II	45739	14.14	1666	1958	39815	1579	75828	53837
Raina-I	62638	4.53	2320	22	39003	2281	144294	69919
Raina-II	76096	7.57	4938	25	36332	1500	375775	70381
Memari (M)	1708	23.89	29	0	4598	77	7542	1605
Kalna-I	55165	31.96	3299	1239	49864	5916	79674	62214
Kalna-II	43632	18.19	1296	4766	29406	4428	64196	51397
Monteswar	80156	16.91	6025	12206	68459	2093	114074	106320
Purbasthali-I	59051	44.01	1113	3841	49600	910	104346	60810
Purbasthali-II	33707	47.85	1631	6448	56481	892	105433	50261
Kalna (M)	2362	95.64	0	0	1065	29	2117	1382
Katwa-I	48489	11.85	4229	16235	36388	5500	65502	55671
Katwa-II	39876	12.5	3383	13839	22354	434	32151	29412
Ketugram-I	51650	3.58	4906	19682	56710	2405	127455	74171
Ketugram-II	39989	8.29	4783	13425	26943	1353	41654	40190
Manglkote	99930	2.98	6396	22236	67328	1745	182902	137792
Dainhat (M)	3594	6.34	55	174	3654	40	4987	2049
Katwa (M)	2785	39.53	42	135	2354	414	5011	1534
Andal	14655	11.14	2187	367	12854	919	22292	6637
Durgapur-Faridpur	37159	6.70	1952	2341	22823	2689	534064	26214
Galsi-I	55478	4.93	3335	879	56201	3884	106381	82877

Kanksa	42996	7.60	2392	1851	26961	2516	198320	25392
Pandabeswar	12375	12.18	1512	101	7928	2334	13040	2729
Durgapur (MC)	36725	38.06	7314	390	22772	2709	42858	12383
Baraboni	39325	3.54	4096	4415	26917	6435	34501	15829
Jamuria	27554	2.65	1856	1203	15112	3196	39246	6566
Raniganj	14402	6.89	1051	0	4974	936	8578	855
Salanpur	22616	11.81	1845	1575	15628	4003	41767	4283
Asansol (MC)	18840	41.24	7974	304	14043	2051	31519	3063
Jamuria (M)	14308	6.22	989	217	12022	2510	29923	6005
Kulti (M)	18879	26.42	3407	2806	15287	1800	26718	6359
Raniganj (M)	6663	18.79	1553	0	5197	1810	6348	810
Total	**1730811**	**14.72**	**120362**	**175669**	**1408292**	**99927**	**4624236**	**1778834**

(source: Department of ARD Burdwan)

13 L: Production and productivity of milk, meat, egg and wool of the district

Species	**Produces**	**Production (2013-14) (Estimated)**
Cattle (Ind.)	Milk	358.859 Metric Tonnes
Cattle (CB)		224.825 Metric Tonnes
Buffalo		57.859 Metric Tonnes
Goat		17.983 Metric Tonnes
All species (Cumulative)	Meat	48952.1 Metric Tonnes
Desi Fowl	Egg	1946.88 Lakhs No.
Improved Fowl		643.77 Lakhs No.
Duck		2125.27 Lakhs No.
Sheep	Wool	68.885 Metric Tonnes

13 M: Information regarding milk marketed by producer

District	**Private vendors (%)**	**Avg. milk price/Lt. (Rs)**	**Co operative chain (%)**	**Avg. milk price/Lt. (Rs)**
Burdwan	>99%	26.00	<1% (Total 2500 Lt/day)	21.00

13 N : Fishery resource

Aquatic resource	Area (ha)
Impounded Water Area	31180.28
Reverine Water Area	11316.64
Canal	5951.36
Beel	1939.91
Water Logged Area	0.00
Reservoir Fishery	60.00
Total	50448.19

13 O: Fish seed production status in Burdwan

Sl No	**Resources**	**Water Area (in ha.)**	**Seed production (in million)**
1	Private Hatchery (27)	12.40	7200
2	Government hatchery under SFDC (1)	24.00	1306
3	Natural	0.00	200
	TOTAL	36.40	8706.00

13 P: Status of fishery sector

Name Of Block	No Of Govt. Scheme Operated	Expenditure in Thousand	Assistance to needy Fisherman	Net Area Available for Pisci Culture (Ha)	Net Area Under Effective Pisci Culture (Ha)	No Of Person Engaged
Salanpur	5	182	167	390.8	270	1916
Barabani	6	1238	1223	1071.1	771.71	1320
Raniganj	5	963	948	290.6	269.28	2100
Jamuria	4	92	77	704.67	560.46	1125
Galsi - i	6	1830	1815	1005	850	3690
Andal	7	1043	1028	718.67	508	2130
D.Faridpur	6	3524	3509	1533.81	1073.66	3122
Padabeswar	6	989	974	337.73	70	1002
Kanksa	7	2775	2760	1095.55	879.64	5300
Burdwan - I	7	4433	4418	956.25	930	8006
Burdwan - II	5	2685	2670	1000.25	850	4580
Ausgram - I	6	3025	3010	1624.45	1500	6750
Ausgram - II	8	3606.8	3591.8	700	600	4560
Bhatar	6	2731	2716	2376.12	2160	5040
Galsi - II	7	1094.2	1079.2	1045.43	800	4990
Memari - I	7	5973	5958	1149.4	940	7165
Memari - II	7	2689	2674	1347.38	1064.36	4483
Jamalpur	7	2054.5	2039	1318.21	1014.36	5428
Raina - I	8	3014.8	2999	820	520	4570
Raina - II	6	1920.4	1905.4	800.41	605	3842
Khandaghosh	7	2930	3065	1535.65	1237	5146
Mangolkote	6	3578	3563	2476.65	1954.95	5430
Ketugram - I	5	2657	2642	600.1	450	5134
Ketugram - II	7	2940.2	2925	659	509	5475
Katwa - I	10	3711.2	3696	605	550.74	8441
Katwa - II	7	3733.2	3718	790.02	711	7815
Purbasthali - I	10	281449.4	14943	601.6	450	5591
Purbasthali - II	8	2933.8	2918	660.04	510	4884
Kalna - I	5	3963.5	3948	904	680	8265
Kalna - II	7	2822.6	2807	800.75	737	5156
Monteswar	6	1862	1997	1261.64	728.34	5117

Table 13.Q: Storage & marketing facilities in Burdwan

Nos. of cold storage	114
Total Capacity	1600013.29 MT
Nos. Regulated Market Nos. Sub-Market	Regulated market -4 Sub market- 12
Nos. of wholesale market and Terminal market Nos.	38
Bazar/Hat	155
Kisan Mandi	25

3.4. SWOT analysis of the district

For making the SWOT analysis comprehensive, for agricultural activities the same was made blockwise to draw out the picture with greater clarity as presented below. For the allied sectors, however, these were made department wise mentioned after that.

Table 13R: Agricultural SWOT of selected blocks of the district

block	Strength	Weakness	Opportunity	Threat
Andal	1. Good Marketing facility at Durgapur. 2. Assured demand for Agricultural product.	1. Low rainfall & poor water holding capacity of soil. 2. Agricultural fields are scattered, major portion of land is under ECL/DVC/Aerocity etc. 3. Irrigation facility is very poor (only 15% of cultivable land).That irrigated area is not assured. 4. Shortage of Agricultural labours and skilled labours. 5. Poor use of farm mechanization. 6. Shortage of extension personals at village level.	1. By improving irrigation facility crop coverage can be improved .Farmers will cultivate rabi crops in a large scale as a result Cropping intensity in this block is possible to increase above 200% . 2. Scope for crop diversification and growing pulse and oilseed crops. 3. Scope for investment in Marketing and processing infrastructure of agricultural products. 4. Strengthening agricultural extension system.	1. ECL, Aerocity, DVC -Industrialization & Urbanization. 2. Declining area under agriculture due to land acquisition by ECL, Aerocity, DVC, Small industry etc. 3. As 85% of the cultivable land is under monocrop (due to lack of irrigation facilities) the farmers are losing their interest on agriculture farming . They are adopting other professions for their livelihood.
Barabani	**1.** Communication facility. **2**. Availability of more/ less sufficient water bodies. **3.** Availability of market 4. Favourable weather condition for seed production.	**1.** Decline Soil Fertility status due to non availability of organic matter. 2. Farmers are not interested in remunerative agricultural activities 3. Non availability of credit in agricultural sector 4. Very weak and under develop Irrigation facility 5. Under develop of allied activities. 6. Poor Agricultural Extension system due to shortage of field level extension personnel/ worker. 7. Undulating Land and poor water holding capacity. 8. Soil is highly acidic in nature.	1. Development of water harvesting structure 2. Soil health management and development 3. Scope for awareness the farmers regarding quality seed production and soil health management. 4. Scope for development of allied activities i.e Horticulture, fisheries, Animal husbandry etc. 5. Scope of development of Local market 6 . Scope for development of Agri-polyclinic under P.P.P mode.	**1.** Soil erosion and Land development. **2.** Crop diversification **3.** Heavy metal toxicity **4.** Use of Chemical fertilizer due to non availability of organic manure.
Faridpur-Durgapur	1. More or less satisfactory road network. 2. Presence of enough water bodies. 3. Condition	1. Depleting soil fertility status because of insufficient availability and use of Organic Manure. 2. Lack of interest among farmers for less remunerative agricultural engagement vis-à-vis industrial activities.	1. Scope of awareness and subsequent quality seed production. 2. Scope of land-grading and awareness for subsequent Farm Mechanisation. 3. Scope of creation of water-	1. Soil erosion and Land degradation. 2. Conversion of Agricultural land. 3. Dependence on chemical fertilizers because of non-

	suitable for seed production. 4. Good demand of quality agricultural produce and processed products in the urban areas.	3. Non-availability of recorded land for farmers to obtain credit facilities. 4. Non-availability of credit facilities in the agricultural sector. 5. Very weak and under-developed irrigation facilities. 6. Under-development of allied activities like livestock, sericulture, fishery, horticulture so that demand for green fodder, feed, flowers, fruits etc. develops. 7. Poor Agricultural Extension system for lack of field-level workers.	harvesting structures to harvest rain-water together with soil and water conservation activities. 4. Great scope for development of allied activities and post-harvest technologies to serve a rich market for table products. 5. Scope of development of post-harvest and food-processing industries under P.P.P. mode. 6. Scope of development of Agri-polyclinics under P.P.P. mode. 7. Use of ICT for better network and dissemination of knowledge.	availability of sufficient organic matter. 4. Heavy metal toxicity apprehended together with change in soil characteristics in pockets due to excavation work for Coal Bed Methane.
Galsi-I	1. Communication facility. 2Canal through the Block. 3. Condition suitable for seed production. 4. Good demand of quality agricultural produce and processed products in the urban areas.	1. Shortage of extension personnel. 2. Villages are scattered & Block area is very larged. 3. Under-development of allied activities like livestock, sericulture, fishery, horticulture so that demand for green fodder, feed, flowers, fruits etc. develops. 4. Poor Agricultural Extension system for lack of field-level workers.	1. Scope of awareness and subsequent quality seed production. 2. Scope of awareness for subsequent Farm Mechanisation. 3. Great scope for development of allied activities and post-harvest technologies to serve a rich market for table products. 4. Scope of development of post-harvest and food-processing industries under P.P.P. mode. 5. Scope of development of Agri-polyclinics under P.P.P. mode. 6. Use of ICT for better network and dissemination of knowledge.	1. Soil erosion and Land degradation. 2. Conversion of Agricultural land. 3. Dependence on chemical fertilizers because of non-availability of sufficient organic matter.
Kalna-I	1.Good communication facilities 2. Presence of irrigation facilities 3. Presence of Nationalized banks/SKUS 4.Presence of Regulatory market 5. Presence of trained Prani	1. Degradation of soil fertility due to insufficient use of O.M. 2. Strictly followed the same cropping sequence 3. lack of soil testing facility 4. Fragmentation of Agril. land 5.Absence of processing facilities of scented rice/sunflower/pulses 6.Unavailability of green fodder or grazing land	1.Scope for expansion of the area for scented rice 2. Scope of quality seed production 3. Scope of Farm Mechanization 4. Scope of scientific fish farming with duckery 5.Scope for P.P. partnership for processing or Post harvest structure	1.Gradual depletion of ground water 2. Fluctuating market price 3. Conversion of Agril. Land 4.Outbreak of disease and pest due to following same cropping sequence 5. Outbreak of avian influenza

	bandhu 6.Presence of large nos. of water bodies			
Kalna-II	1. Good communication facilities 2. Presence of irrigation facilities 3. Presence of Nationalized banks/SKUS 4.Presence of Regulatory market 5. Presence of trained Prani bandhu 6.Presence of large nos. of water bodies	1. Degradation of soil fertility due to insufficient use of O.M. 2. Strictly followed the same cropping sequence 3. lack of soil testing facility 4. Fragmentation of Agril. land 5.Absence of processing facilities of scented rice/sunflower/pulses 6.Unavailability of green fodder or grazing land	1.Scope for expansion of the area for scented rice 2. Scope of quality seed production 3. Scope of Mechanization 4. Scope of scientific fish farming with duckery 5.Scope for P.P. partnership for processing or Post harvest structure	1.Gradual depletion of ground water 2. Fluctuating market price 3. Conversion of Agril. Land 4.Outbreak of disease and pest due to following same cropping sequence 5. Outbreak of avian influenza
Kanksa	1.Communication facility 2. Marketing Facility 3. DVC canal through the block	1.Shortage of extension personnel 2. Villages are scattered, large area of block, major portion forest area 3. Rainfed area mostly, irrigation facility poor 4. Agril. labourers less 5. Poor use of farm mechanization	1.Three GPs are agriculturally potential	1.Industrialization 2. Declining area under agriculture due to housing, industry etc.
Katwa-I	1.Presence of irrigation facility 2. Presence of bank/DACS 3. Availability of skilled &v unskilled laboures 4. Good communications	1.Lack of variation of cropping pattern 2. Lack of soil testing facility 3. Lack of awareness among the farmers 4. Lack of marketing infrastructure 5. Deterioration of soil health	1. Scope of river lift irrigation 2. Expanding market for vegetables & kisan Mandi 3. Scope for utilization of SHG	1.Declination of ground water level 2. Fluctuating market price 3. Excessive injudicious use of chemical fertilizer 4. Increase cost of cultivation
Ketugram-I	a). Skill and unskilled labour is available. b). There are lots of resource for modern Agriculture, c) Horticulture, Pisiculture and dairy rearing. d). Raw material is available for	a). Lack of knowledge in modern Agriculture & Allied Agriculture. b). Less interest in Horticulture crops. c). Co-operation between the farmers are less. d). uncultivable land is not properly utilized.	a). Wasteland/uncultivable land has to develop by social Forestry and fruits orchard plantation. b). Excavation & Reexcavation ponds for aqua culture. c). Disseminate modern technology through demonstration, farmer's training meeting, awareness camp in different line	a) Unorganized marketing system, therefore farmers not getting actual price for their crops. b) Unavailability of oil crusher ,Maize dehusker

	producing organic farming.			
Ketugram-II	1.Presence of irrigation facility 2. Presence of bank/DACS 3. Availability of skilled &v unskilled laboures 4. Good communications	1.Lack of variation of cropping pattern 2. Lack of communications 3. Lack of awareness among the farmers 4. Lack of marketing infrastructure and storage structure 5. Deterioration of soil health	1. Scope of river lift irrigation 2. Expanding market for vegetables & kisan Mandi 3. Scope for utilization of SHG	1.Declination of ground water level 2. Fluctuating market price 3. Injudicious use of chemical fertilizer 4. Increase cost of cultivation
Kulti	1. Presence of urban market 2. More or less satisfactory of road network 3. No /or minimum disease pest infestation	1. Erratic climatic condition and agriculture depends mainly on rainfall 2. No or extremely poor irrigation facilities/potentialities 3. Non-presence of allied departments like livestock, fisheries, sericulture, horticulture etc. 4. Poor Agricultural Extension system for lack of field-level workers 5. Undulating land structure and lack of credit facilities cause hindrance to machanization	1. Scope of creation of water-harvesting structures to harvest rain-water together with soil and water conservation activities 2. Crop diversification includes horticulture, rainfed agriculture, mixed farming etc. 3. Use of ICT for better network and dissemination of knowledge	1.Soil erosion and Land degradation 2.Conversion of Agricultural land 3.Lack of life saving irrigation
Mongalkote	1.Large Block Area 2.Diversified Soil pattern	1.Shortage of K.P. S. (Field Staff) 2. Aman Paddy- Potato-Boro paddy cropping patterns	1. Diversified cropping programme. 2. Opportunity for fishery and animal resource development.	1. Farmers are interested but individually. 2. Unavailability of quality seeds. 3. Excess harvesting of ground water instead of river and canal.
Purbasthali-I	1. Good Irrigation (Ground Water & Surface Water) facility available 2. Soil Fertility Status medium to high for Crop 3. Availability of Agril. Imputes	1. Farmers less interested to crop diversification 2. Price hike of Agril Inputs 3. Fragmentation of Land holdings 4. Unavailability of Agril Labours	1. Organic Farming 2. Area expansion for horticultural crops 3. Crop Insurance 4. Integrated Farming	1. Soil health degradation 2. Arsenic Problem 3. Hampering Bio-Diversity

Salanpur	1. Presence of urban market 2. More or less satisfactory of road network 3. No /or minimum disease pest infestation	1. Lack of fulltime Officer/ Asst. Director of Agriculture since last **SIX YEARS.** Situation is extremely difficult for an officer-in- additional charge to meet the multi-dimensional developmental need of a block. 2. Poor Agricultural Extension system for lack of field-level workers 3. Erratic climatic condition and agriculture depends mainly on rainfall 4. Undulating land structure and lack of credit facilities cause hindrance to mechanization 5. No or extremely poor irrigation facilities/potentialities	1. Scope of creation of water-harvesting structures to harvest rain-water together with soil and water conservation activities 2.Crop diversification includes horticulture, rainfed agriculture, mixed farming etc. 3. Use of ICT for better network and dissemination of knowledge	1.Soil erosion and Land degradation 2.Conversion of Agricultural land 3.Lack of life saving irrigation

Horticulture

Strength

- Diversified soil condition helping different crops to be grown
- The agro-climatic condition of the district is suitable for growing variety of flowers and fruits like marigold, chrysanthemum, tuberose, mango, guava, papaya, lime, etc.
- Vast lateritic tracts suitable for orchards
- Good demand of fruits, vegetables and flowers in industrial urban areas and rural areas also
- Recently, production of some non-traditional fruit crops like pine apple, cashew nuts, etc. have been undertaken to a limited extent
- Good infrastructure of cold storages for storing vegetables
- There are 3 government nurseries at Katwa, Kalna and Ausgram-I and one District Seed Farm for fruit development

Weakness

- Un availability of high producing horticultural crop seed/planting materials
- Water stress condition in different part of district
- Lack of knowledge & technical know-how of farmers with respect to horticultural crops.
- Poor availability of good quality planting material and seeds
- Acute shortage of Staff and officer in the District, practically speaking, no Staff and only One Officer for such a large district
- Low availability of organic manures
- Inadequate market facilities

Opportunity

- Scope of producing high cost horticultural crops having good market value
- Market demand for production of high cost horticultural crops
- Farmers attitude towards diversified production

- The western lateritic zone of the district which suffers from poor agricultural productivity due to low irrigation is suitable for cultivation of flower and fruits
- Cultivation of vegetables (early and off-time) using net-house and polyhouse technology
- Floriculture and vegetable market complex based on which cultivation of flowers (open field like marigold, tuberose; protected like gerbera, rose) can be done
- Well connected to Kolkata through rail and road linkages
- National Horticultural Board extend subsidy assistance for promotion of Hi-Tech/Commercial Horticulture including nursery

Threat

- Poor marketing and cold chain facilities
- Outbreak of pest and diseases
- Inappropriate technology adoption by the farmers and entrepreneurs
- Inadequate government support
- Inadequate consultancy services

Animal Husbandry

Strength

- Huge Agricultural activities in the District yields huge amount of Agri. By-products which provides potential source of animal nutrition.
- Large number of people from minority community, SC/ST and backward classes besides others earns their livelihood through animal husbandry activities solely.
- Widespread infrastructure of ARD Department upto G.P. Level and availability of doorstep services from Pranibandhus.
- Availability of Chicks and Khaki Campbell ducklings from Govt. Poultry farms situated in the district namely State poultry Farm- Durgapur, State poultry Farm- Golapbag and District Composite Farm- Burdwan Kalna Gate.
- Easy availability of animal feed from Govt. and non-Govt. feed plants including EPIC Feed Plant at Durgapur and fodder from natural grassland and forest fringe areas.
- Presence of so many organized broiler and layer poultry farms as well as organized input and marketing chains.
- The district has huge population to consume all animal products, many markets for animals and its products, functional milk co-operatives under Burdwan Milk Union and AMUL.
- Functional unit of Mother Dairy, Kolkata,

Weakness

- Intense agricultural practices leave very small space for fodder cultivation resulting higher feeding cost.
- Rapid urbanization diminishing scope of animal rearing in some area.
- Lack of large organized cattle / goat/ pig farms.
- Breeds maintained by farmers are indigenous and their productivity is very low,
- High cost of feed ingredients like corns, oil cakes, fish meals etc. as those are procured

from other states.
- Lack of infrastructure to control the entry of animal for boundary states.

Opportunity
- Involvement of SHGs in poultry dev. Schemes is getting momentum. There is enormous scope of making non-functioning / poorly functioning Pry. Milk Co-ops active.
- With increasing number of Rice Bran Oil Industries being set up in the district, De-oiled Rice Bran , a major source of animal nutrition is getting available at a lower price,
- Large number of SC/ST and backward classes population leaves huge opportunity of pig farming,
- In addition to present infrastructure of ARD Deptt. Including PRANIBANDHU, PRANIMITRA (self employed *Kshudra Prani Palan Sahayika*) will be introduced in each G.P. to extend doorstep vaccination facility for small animals,
- Highly fertile land of this area can be used for commercial cultivation of multi-various high quality fodder crops ,
- Organized marketing channels for milk and other animal products are developing in the district
- **Modified Bishes Go Sampad Bikash Abhijan** is helping cattle farmers for potential development of high yielding cattle breeds.
- Introduction of Low Input Variety of poultry bird in rural areas boosting the egg as well as meat production.

Threat
- Young people of this area are losing interest in agriculture and animal farming as well.
- Risk of Bird Flu, Swine Fever and Encephalitis are major threats for poultry and pig farming.
- Recently developed tremendous demand of cow meat in Middle East after out break of Mad Cow Disease in beef exporting country like U.K. is a major cause of potentially productive cattle being slaughtered.
- Increasing objections from residents around animal farms in fear of pollution prohibiting willing farmers from erecting new farms and even old farmers are also losing interest.
- Trend of major portion of butchers cum meat sellers not to abide by the Rules and Regulations regarding slaughter imposing the risk of meat borne diseases.
- Imposing ban on **cage system of layer farming** may perturb the private organizations to enter into this industry.

Fishery

Strength
- Sufficient water body
- Availability of local fish feed ingredients like rice bran
- Subsidy oriented schemes Like NFDB,FFDA, RKVY etc
- Availability of quality fish seed from local hatcheries/ fish seed producers

Weakness

- Shortage of staff
- Traditional method of culture
- Insufficient knowledge of the farmer in scientific Pisciculture
- Utilization of open cast colliery (OCC) pits
- Less numbers of co-operative societies dealing fish production and marketing
- High silt and regular natural calamities restrict the fish capture from the rivers
- Non availability of good quality fish seed specially for air breathing fishes
- Absence of fish processing and preservation facilities

Opportunity

- Opportunity of Training and motivation of fish farmers on scientific Pisciculture
- Scope of fishery in abandoned open cast mines in western zone of the district
- There is an opportunity of supply of fish seed to private hatcheries
- Ample scope of inland fishery in domestic tanks, reservoirs, canals, railway ditches, etc.
- Scope for promoting polyculture and freshwater prawn culture
- Sufficient scope for ornamental fish culture

Threat

- Poaching & Poisoning
- Outbreak of diseases
- Lack of insurance in Aquaculture
- Natural calamity is a major threat to capture fishery
- High siltation in the rivers restricts fish production

Sericulture

Strength

- Agro-climatic condition of western lateritic part of the district highly favour production of Tasar
- In 2008-09 Tasar production of Burdwan was highest in the State. About 186 acre Tasar plantation was done that year with target of 100 acre
- Both mulberry and tasar can be produced in the district
- Adequate funding for sericulture programme
- Adaptation of technology by the farmers is promising
- There are 2 Technology Service Centers (TSCs) in Kanksa and Aushgram-I block

Weakness

- Inadequate infrastructure – District office and TSCs are all located in rented premises
- Shortage of vehicle for transportation of cocoon to reeling and weaving centers of Birbhum
- Delay in implementation of need based schemes due to shortage of skilled and motivated manpower
- No marketing infrastructure in Burdwan – solely depends on the purchasers of

Birbhum
- Inadequate IT infrastructure and trained manpower

Opportunity
- Potential of tasar production in Burdwan is very high
- The return from sericulture is high
- Arjun trees planted under social forestry programme in Durgapur sub-division can be used for Tasar cultivation if departmental tie up can be established at higher level
- Developing SHGs only for sericulture
- Arrangement of training, exhibition and exposure visit for SHGs
- With Tasar, the farmers can do intercropping with vegetables and other short-term crops for better financial return
- Development of Tasar cultivation in western part can prevent people from coal-stealing for livelihood

Threat
- Shortage of skilled and motivated manpower

Soil Conservation

Strength
- New and old alluvium soil in Ganga basin and Ajoy-Damodar valley respectively has high potential of agricultural production
- Clayey-loam soil of the eastern part good for paddy production
- Depth of soil is good

Weakness
- Indiscriminate and imbalanced use of fertilizers and pesticides has negative affect on soil making it acidic
- Sand deposition after flood water is a menace
- Internal drainage problem due to heavy sub-soil
- Inadequate numbers of government soil testing laboratories
- Shortage of manpower in government laboratories

Opportunity
- Establishing more soil testing laboratory in the blocks on PPP mode can be beneficial
- Mobile soil testing van can be helpful

Threat
- Slowly the soil is losing potash content due to high phosphate content
- Loss of micro and macro nutrients from soil
- pH value of the top soil is slowly turning acidic due to high use of chemical fertilizer and chemical-mixed irrigation water
- Brick kiln by the river banks is posing major threat to soil conservation
- Flood poses a major threat due to riverbank erosion

Krishi Vigyan Kendra Burdwan

Strength

- KVK has multi disciplinary experts such as Agriculture, Animal Husbandry and Veterinary Science, Horticulture, Fisheries, Agril. Extension and Home Science.
- Development, validation and dissemination of location specific technology.
- Capacity building of practicing farmers, farm women, rural youth, adolescent girls and extension functionaries.
- Entrepreneurship development through skill based training.
- Certified seed production of paddy on KVK's instructional farm.
- Production of seedlings various horticultural crop such as cabbage, cauliflower, brinjal tomato and chilli.
- Organizes trainings, vocational training and skill based training in agril and allied sectors.
- Works for better and empowerment of farm women.
- Identification and promotion of farmer's.
- Mass vaccination of animals to eradicated endemic diseases.
- Fully furnished water and soil testing laboratory
- Demonstration units on KVK instructions form.

Weakness

- Fund is limited to undertake big development programme.
- Cannot cater to undertake big development programme.
- Due to limited staff KVK's working is restricted to certain pockets of the district.

Opportunities

- KVK can contribute to R&D as well as capacity building of the farmers in development of new technology. More over they can impart training on orchard, nursery management.
- Management and rejuvenation of old orchards.
- Capacity developments.
- Seed production.
- Entrepreneurship development.
- More multi disciplinary work can be undertaken by KVK.
- Outreach can be increased with strong linkage with line department.
- A well equipped tissue culture laboratory and home science lab will be benefit.

Threat

- KVK's location is not suitable
- Inadequacy of staff for covering the entire district

Soil maps of the district

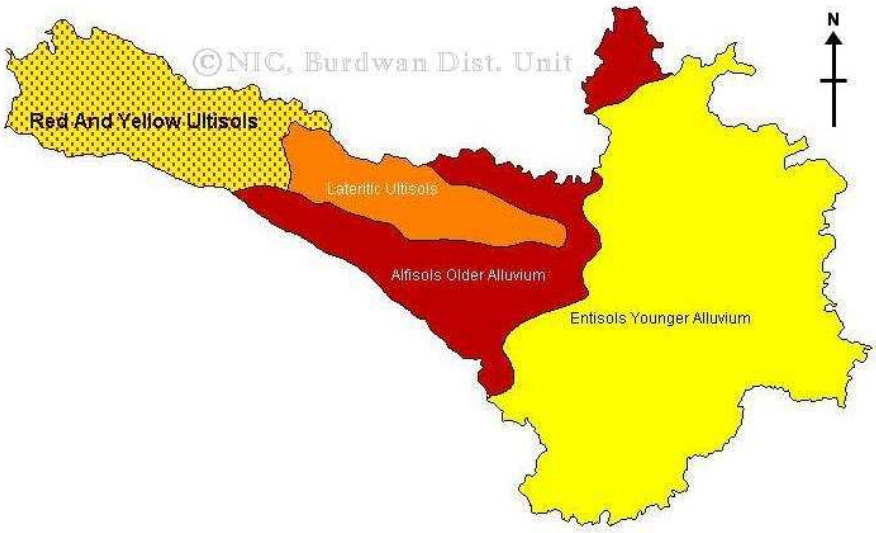


Fig. 3.3. Major soil classification in the district

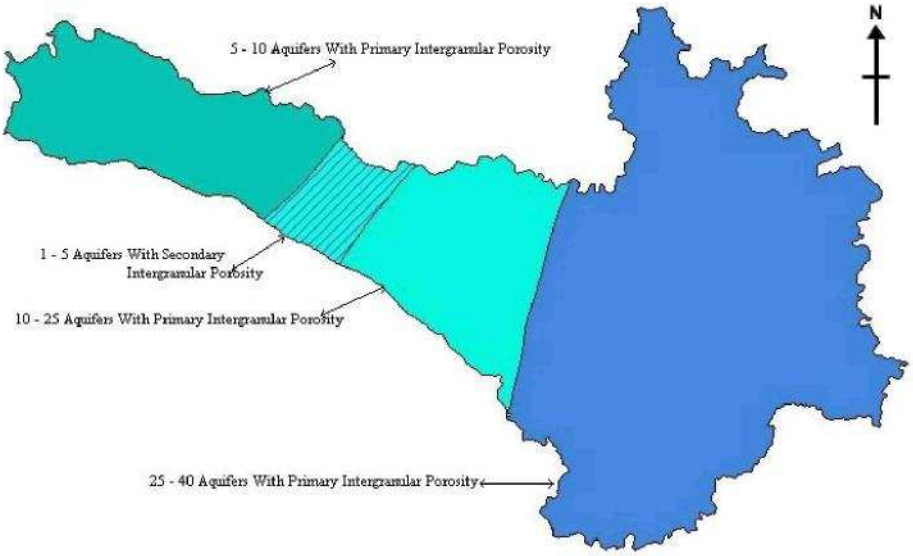


Fig. 3.4. Aquifer map of the district

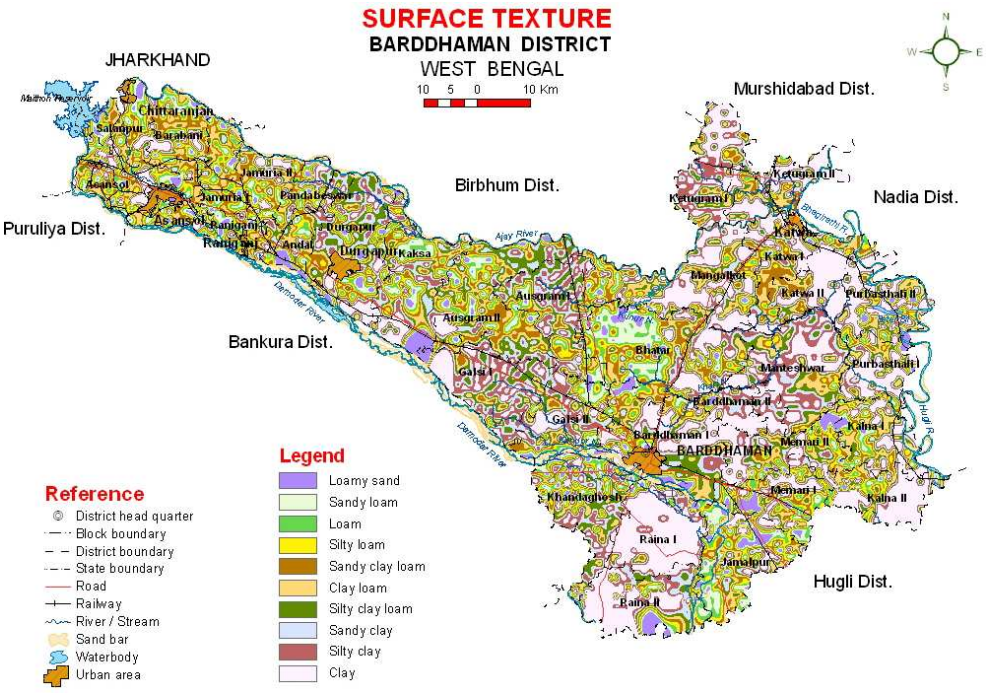


Fig. 3.5. Surface soil texture characteristics in the district

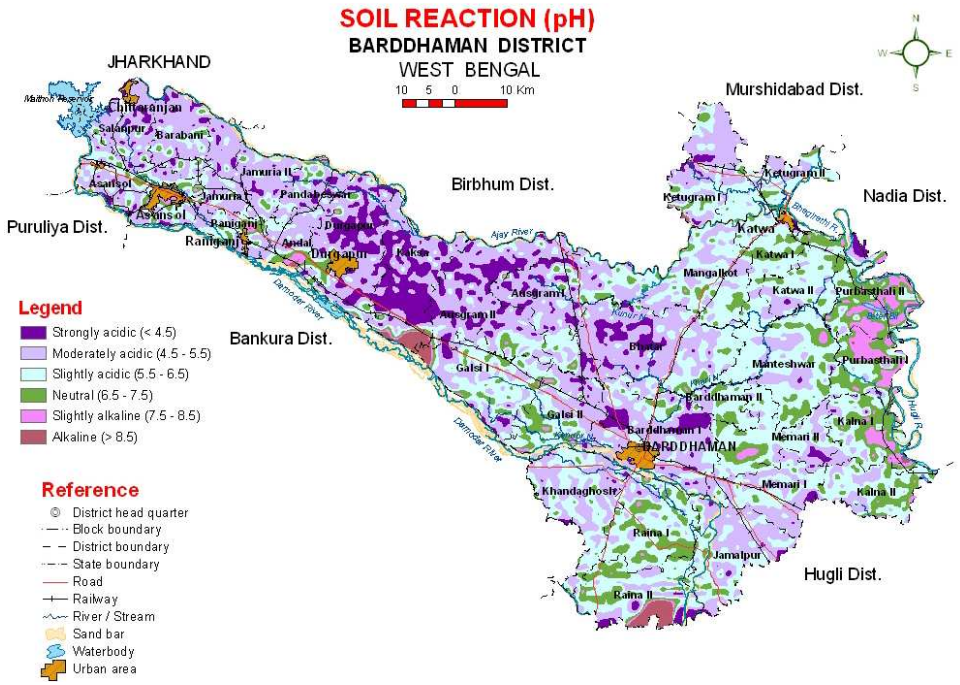


Fig. 3.6. Soil reaction map of the district

Fig. 3.7. Soil organic carbon map of the district

Fig. 3.8. Soil available nitrogen map of the district

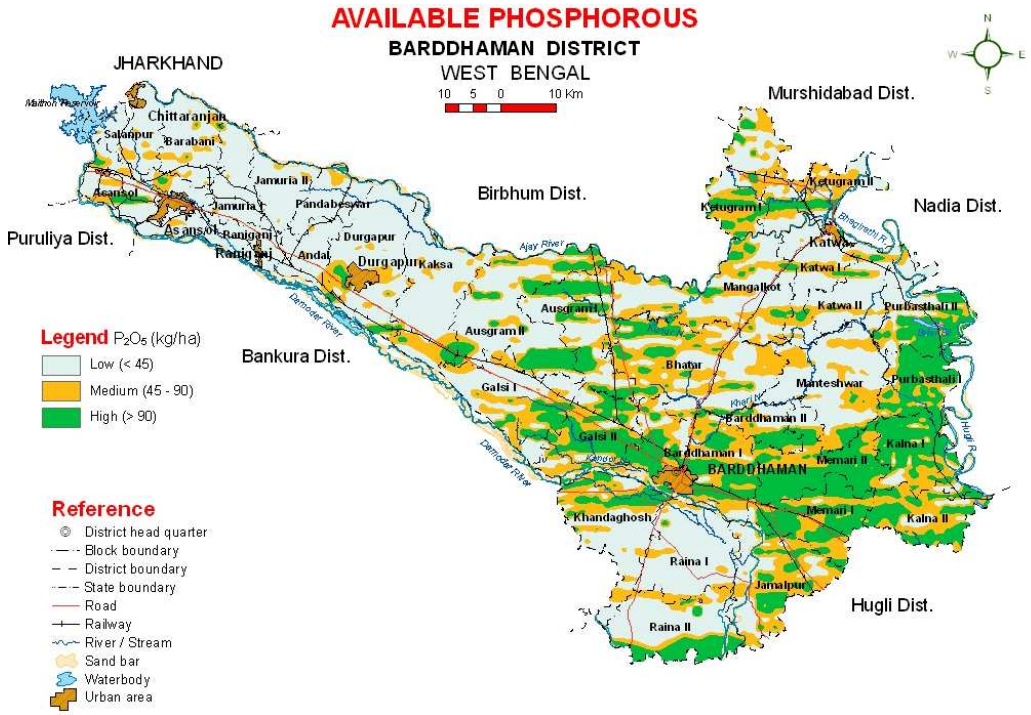


Fig. 3.9. Soil available phosphorus map of the district

Fig. 3.10. Soil available potassium map of the district

Fig. 3.11. Soil available sulfur map of the district

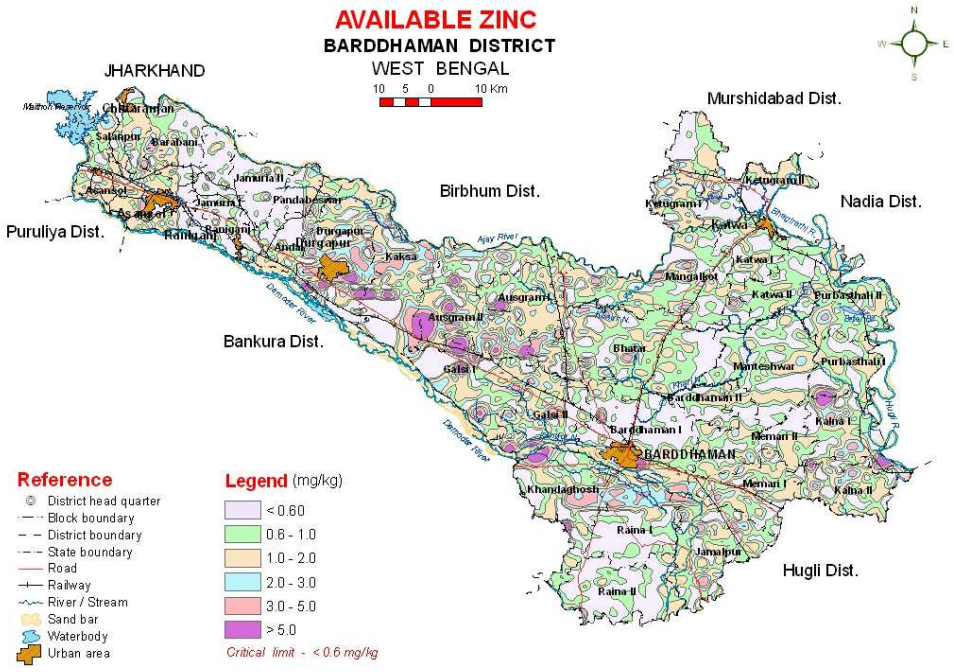


Fig. 3.12. Soil available zinc map of the district

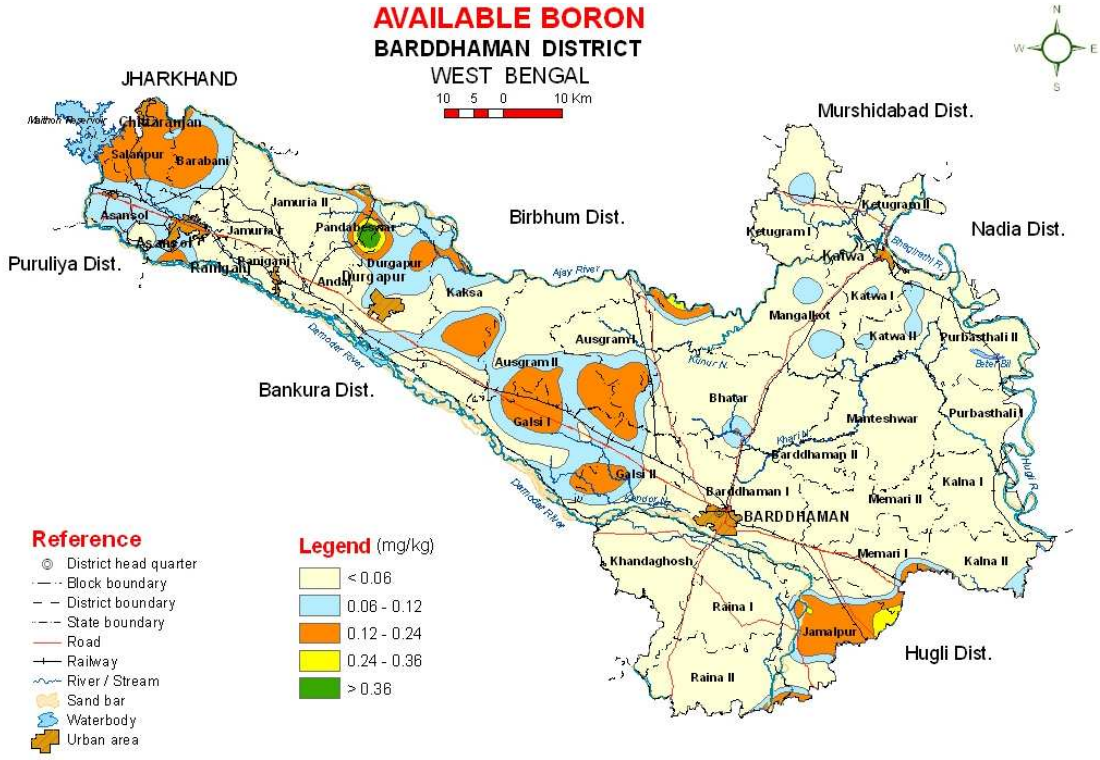


Fig. 3.13. Soil available boron map of the district

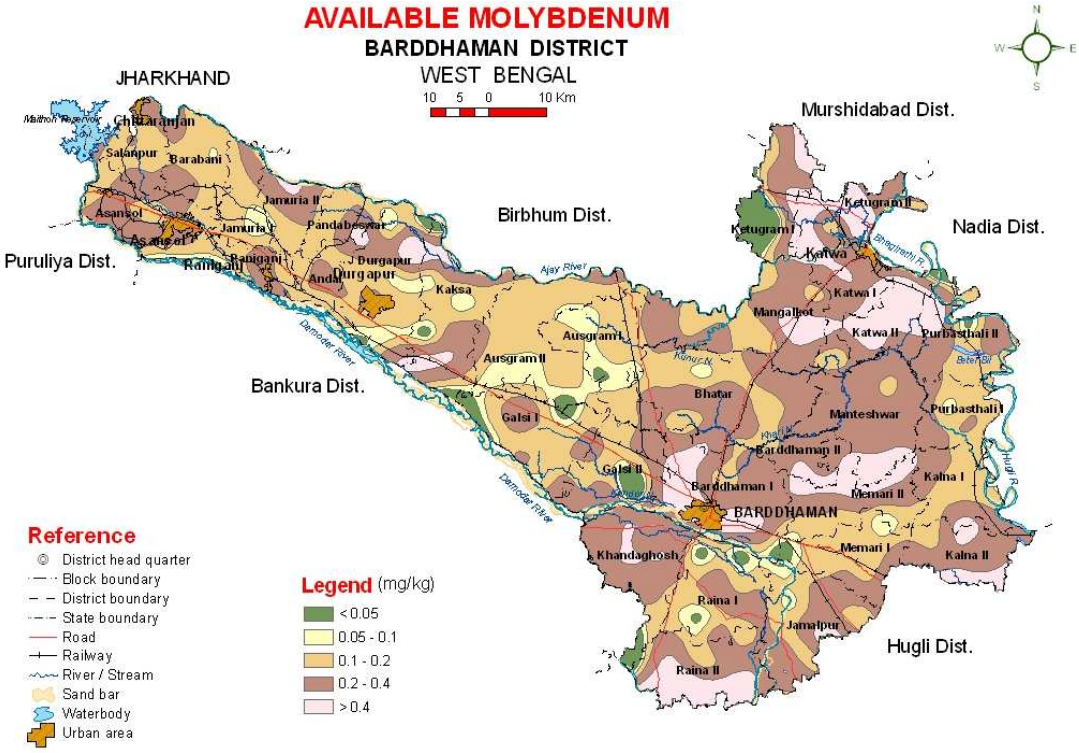


Fig. 3.14. Soil available molybdenum map of the district

Ongoing Development Activities

Description of Ongoing Development Activities in the District

4.1: Various on-going Research and Extension schemes in the district – A brief contextual gist

Department of agriculture, horticulture, animal resource development, fisheries, sericulture, agri- marketing, agri-irrigation are involved to implement new location specific technologies for betterment of farming community. Besides the line departments, Central Seed Research Institute for Jute and Allied Fibres of ICAR-Central Research Institute for Jute and Allied Fibres, Bidhan Chandra Krishi Viswavidyalaya, Krishi Vigyan Kendra, NGOs, Samabay Krishi Unnayani Samity and corporate sectors are also engaged in research and dissemination of improved technologies in the district. Various programmes are currently under way in the district sponsored by either State or Central Government for development of agriculture and allied sectors, such as,

- Bringing green revolution to eastern India (BGREI)
- NMOOP-National mission on oil seed and oil palm (previously ISOPOM)
- Area expansion and seed production of aromatic rice
- Crop Diversification Programmme under Rainfed and Dryland
- National food security mission
- FSSM- Financial support scheme for farm mechanization
- OTA- Small implements
- Agricultural Technology Management Agency (ATMA)
- Accelerated development in minor irrigation
- Soil Health Management
- Relief Fund/CRF/SDRF
- Jute Mini Mission-II
- OTA-EAP (one time assistance for electrification of agricultural pump)
- Rashtriya Krishi Vikash Yojna
- Seed village scheme
- Animal Health Camp
- Bishes Go Sampad Bikash Avijan
- Improvement of livelihood through Pig Farming and Goat Farming
- Intensive sheep/ goat production
- Distribution of chick/duckling among women SHG
- Centrally Sponsored Rural Backyard Poultry Development
- Mobile Veterinary Clinic (MVC)
- Strengthening of bio-security practices in Govt. Poultry Farms
- Assistance to State for Control of Animal Diseases (ASCAD)
- Fish culture in backyard pond and Beel fisheries
- Distribution of Hygienic insulated box
- Distribution of fingerling in large water bodies , net and handies
- Polyculture in MGNREGA pond
- Farmers' Old Age Pension Scheme
- Amar phasal amar gola
- Amar phasal amar gari
- IWNP- Integrated Watershed Management Project
- Custom hiring centre
- Zero tillage on rice and wheat
- NIFTD- National initiatives on fodder technology demonstration

- Post office-Institute -village linkage programme

4.2: Achievements of the major programmes

Financial and technical achievements of major schemes are summarized in below.

Table 14.A: Financial achievement of major special schemes

Name of the Scheme / Sub-scheme	2012-2013		2013-2014
	Fund Sanctioned / Received (Rs. in Lakh)	Fund utilized (Rs. in Lakh)	Proposed Financial Target (Rs. in Lakh)
R.K.V.Y	1527	1512	150.00
BGREI	1154.1084	1145.1084	As received from the H.Q.
OTA- EAP	216.00	41.04	174.96
FSSM	664.25	550.45	275.00
OTA- Small Implements	150.00	105.25	150.00
National Food Security Mission (NFSM)- Pulse	12.593	10.360	30.00
Natural Calamity Fund	39.6	39.6 (Liability)	-
Farmers' Old Age Pension(FOAP)	303.9975	297.0225	342.45
ISOPOM	18.6218	18.4716	30.00
Diversified Cropping Programme	17.7479	17.7479	20.00
Farmers' Son Training Programme	2.25	2.25	2.5
Field oriented Farmers Group Meeting	0.8	0.8	2.5
Agril Training Camp under Rural Mass Education	2.0	1.7	3.0
Jute Technology Mission under MM-II	8.7	6.63520	15.91

Name of the Scheme: ISOPOM, 2012-2013 in Burdwan District

Table1 4.B. Oil seed development

Name of the work component	Target		Allotment		Achievement	
	Phy.	Fin. (Rs. In Lakh)	Phy.	Fin. (Rs. In Lakh)	Phy.	Fin. (Rs. In Lakh)
2.	3.	4.	5.	6.	7.	8.
(a) Certified Seeds Production	50 q	0.5	50 q	Nil	-	-
(b) Mustard D/C	175 ha.	3.5	175 ha.	3.5	175 ha.	3.5
(c) Groundnut D/C	70 ha.	2.8	70 ha.	2.8	70 ha.	2.8
(d) Sunflower D/C	60 ha.	1.5	60 ha.	1.5	60 ha.	1.5
(e) Sesame D/C	350 ha.	5.25	350 ha.	5.25	350 ha.	5.25
(f) Farmers' Training	4 Nos.	0.6	4 Nos.	0.6	4 Nos.	0.6
(g) Officers' Training	1 No.	0.16	1 No.	0.16	1 No.	0.16
(h) IPM D.C.	1 No.	0.2268	1 No.	0.2268	1 No.	0.22664
(i) P.P. Chemicals	475 ha.	2.375	475 ha.	-	475 ha.	-
(j) P.P. Equipments	70 nos.	0.56	-	-	-	-
(k) Rhizobium / P.S.B.	600 ha.	0.6	600 ha.	-	600 ha.	-

(l) Micronutrients	150 ha.	0.75	150 ha.	-	150 ha.	-
(m) Implements (Power Driven)	10 nos.	1.5	-	-	-	-
(n) Seed Bins	100 nos.	2.0	-	-	-	-
(o) Pipe for carrying water	75 units	11.25	-	-	-	-
Modified programme:						
(a) Sunflower D/C	50	3.69	50	-	50	-
(b) Sesame(Til) D/C	75	2.92275	75	-	75	-

Table 14.C. Maize development

(a) Maize D/C	60 ha.	2.4	60 ha.	2.4	60 ha.	2.4
(b) Farmers' Training	3 Nos.	0.45	3 Nos.	0.45	2 Nos.	0.3
(c) Officers' Training	1 No.	0.16	1 No.	0.16	1 No.	0.16
(d) P.P. Chemicals	60 ha.	0.3	60 ha.	0.3	60 ha.	0.3
(e) P.P. Equipments	20 Nos.	0.16	-	-	-	-
(f) Dolomite / Pyrites	30 ha.	0.225	30 ha.	0.225	30 ha.	0.225
(g) Rhizobium / P.S.B.	200 ha.	0.2	200 ha.	0.2	200 ha.	0.2
(h) Micronutrients	50 ha.	0.25	50 ha.	-	50 ha.	-
(i) Pipe for carrying water	20 Units	3.0	-	-	-	-
Total		**47.32955**		**17.7718**		**17.62164**
Operational Cost		**0.85**		0.85		0.85
Grand Total				**18.6218**		**18.47164**

Table 14.D. Performance of Minikits supplied under the scheme- ISOPOM, 2012-2013.

Name of the crop & variety	No. of Minikits supplied	Lowest yield Kg/ha	Highest yield Kg/ha	Average yield Kg/ha
Maize Minikit Var- PEHM-5	1000 Nos. @ 2 kgs.	1940	2850	2660
Maize Minikit Var- HQPM-1	750 Nos. @ 2 kgs.	1890	2920	2750
Mustard Minikit Var- JD-6	2000 Nos. @ 2 kgs.	1140	1750	1520

Table 14.E. "Integrated Cereal Development Programme – Wheat" under Macro Management Mode Work Plan on Agriculture during the year 2012-2013.

Sl. No.	Particulars	Target		Achievement	
		Phy.	Fin. (in lakh.)	Phy.	Fin. (in lakh.)
1	Demonstration of Improved package of practice	500	10.00	500	10.00
2	Training of Farmers at FFS pattern; assistance @ Rs. 17,000/- per FFS.	**5**	0.85	5	0.84971
	Total		**10.85**		**10.84971**

Table 14.F. "Integrated Cereal Development Programme – Rice" under Macro Management Mode Work Plan on Agriculture during the year 2012-2013.

Sl. No.	Particulars	Target		Achievement	
		Phy.	**Fin.**(Rs. In lakh)	**Phy.**	**Fin.** Rs. In lakh)
1	Demonstration on HYV Rice- Normal or SRI @ Rs. 7,50,000/- per D/C (100 ha cluster)	**15**	**112.50**	**15**	**112.50**
2	Demonstration of Hybrid Rice @ Rs. 7,50,000/- per D/C (100 ha cluster)	**3**	**22.50**	**3**	**22.49999**
3	Training of Farmers at FFS pattern; Assistance @ Rs. 17,000/- per FFS.	18	3.06	14	2.2803
	Total		**138.06**		**137.28029**

Table 14.G. "Sustainable Development of Sugarcane Based Cropping System(SUBACS)-Sugarcane Development Programme" under Macro Management Mode Work Plan on Agriculture during the year 2012-2013.

Sl. No.	Particulars	Target		Achievement	
		Phy.	**Fin. (**Rs. In lakh)	**Phy.**	**Fin. (**Rs. In lakh)
1	Technology Demonstration 0.5 ha @ Rs. 7500/- per D/C	70	5.25	70	5.21548
2	Two days training for 50 farmers @ Rs. 10,000/-	**2**	**0.20**	2	0.19994
	Total		**5.45**		**5.41542**

Table 14.H. "Diversified Cropping Programme under Dry land / Rainfed Condition" during the year 2012-2013

Particulars	Target						Achievement					
	Phy.			Fin. (in Lakh)			Phy.			Fin. (in Lakh)		
	Nor	**SCP**	**TSP**	**Nor**	**SCP**	**TSP**	**Nor**	**SCP**	**TSP**	**Nor**	**SCP**	**TSP**
Hybrid Maize D.C.	4	3	1	2.253	1.68975	0.56325	4	3	1	2.253	1.68975	0.56325
Groundnut D.C.	4	4	4	2.058	2.058	2.058	4	4	4	2.058	2.058	2.058
Arhar /other pulses(Lentil) D.C.	13	8	6	2.9601	1.8216	1.3662	13	8	6	2.9601	1.8216	1.3662
a) Block level Training Meeting	3	5	2	0.18	0.3	0.12	3	5	2	0.18	0.3	0.12
b) District level Training Meeting	1	1	-	0.16	0.16		1	1	-	0.16	0.16	
Total				**7.6111**	**6.02935**	**4.10745**				**7.6111**	**6.02935**	**4.10745**

Table 14.I. Beneficiary Coverage under "Diversified Cropping Programme under Dryland/Rainfed Condition" for the year 2012-2013 in Burdwan District

Sl. No.	Name of the Component	Nos. of Beneficiary Covered				
		Gen	SC	ST	Total	Women
1	Maize DC	40	31	6	77	2
2	Ground Nut DC	38	35	23	96	3
3	Pulse DC	77	56	41	174	7
4	Block level Training Meeting	120	200	80	400	11
5	District Level Training Meeting	53	52	-	105	5

Table 14.J. "Agricultural Training Camp under Rural Mass Education @ Rs.10000.00 for each Camp" for the financial year 2012-2013.

Particulars	Target		Achievement	
	Phy. (Nos.)	**Fin. (**Rs. In lakh)	**Phy. (**Nos.)	**Fin. (**Rs. In lakh)
Agricultural Training Camp under Rural Mass Education .	20	2.00	17	1.70
Total	**20**	**2.00**	**17**	**1.70**

Table 14.K: "Field Oriented Group Meeting of One day's duration @ Rs.2000.00 for each Group Meeting" for the financial year 2012-2013

Particulars	Target		Achievement	
	Phy. (Nos.)	**Fin. (**Rs. In lakh)	**Phy.** (Nos.)	**Fin. (**Rs. In lakh)
Field Oriented Group Meeting of One day's duration	40	0.80	40 Nos.	0.80
Total	**40 Nos.**	**0.80**	**40 Nos.**	**0.80**

Table 14.L: "Farmers' Son Training Camp on Agriculture @ Rs.15000.00 for each Training Camp" for the financial year 2012-2013

Particulars	Target		Achievement	
	Physical (nos)	**Financial (**Rs. In lakh)	**Physical (nos)**	**Financial (**Rs. In lakh)
Farmers' Son Training Camp on Agriculture for 3 days duration.	15 Nos.	2.25	15 Nos.	2.25
Total	**15**	**2.25**	**15**	**2.25**

Table1 4.M. Progress report of Farmers' Old Age Pension (As on 31.03.2012) (FOAP)

Name of Sub-division	Sanctioned strength of pensioners (in No.)			Achievement (in No.)		
	General	MIC	Total	General	MIC	Total
Burdwan (Sadar)	1038	36	1074	924	36	960
Kalna	680	06	686	592	06	598

Katwa	648	05	653	609	04	613
Durgapur	1244	06	1250	1155	06	1161
District Total	**3610**	**53**	**3663**	**3280**	**52**	**3332**

Table 14.N. "Mini Mission-under the Jute Technology Mission- during, 2011-2012.

Particulars	**Target**		**Achievement**	
	Physical	**Financial** (Rs. In lakh)	**Physical**	**Financial** (Rs. In lakh)
Arrear Liabilities of previous years		4.50		2.536
Essential Nutrient Minikits	1200	2.40	1200	2.40
Kaccha Retting Tank	10	0.25	6	0.15
Farmers Training Meeting	15	0.75	15	0.75
District level Training Meeting	1	0.30	1	0.30
Contingencies		0.50		0..4992
Total		**8.70**		**6.6352**

Table 14.O: On-going project/ Scheme of Animal Resource Development Department in the district

Name of Scheme/ plan/ project	Year of initiation	Funding agent	Sanctioned Amount (Rs in Lakhs)	Status
Optimization of productive efficiency through organization of Animal Health Camp (Parasitic Control Camp & Fertility Improvement Camp).	**2010-11**	RKVY	243.4403	Continuing in 2014-15
Bishes Go Sampad Bikash Avijan (Modified)	**2009-10**	PBGSBS	1257.7656	Continuing in 2014-15
Distribution of inputs for improvement of Livelihood through Pig Farming.	**2013-14**	RKVY	24.00	Continuing in 2014-15
Distribution of inputs for improvement of Livelihood through Goat Farming.	**2013-14**	RKVY	58.196	Continuing in 2014-15
Augmentation of meat production by intensive sheep/ goat production through adoption of good husbandry practices.	**2013-14**	RKVY	101.70	Continuing in 2014-15
Distribution of Chick/Duckling among Women SHG.	**2013-14**	State Plan	162.36	Continuing in 2014-15
Centrally Sponsored Rural Backyard Poultry Development	**2011-12**	Centrally Sponsored	362.20	**Fund for received**
Extension of Animal Health Care Services in Remote areas of W. B through Mobile Veterinary Clinic	**2014-15**	RKVY	21.87	**Initiated**
Strengthening of bio-security practices in Govt. Poultry Farms	**2014-15**	RKVY	15.00	**Initiated**
Assistance to State for Control of Animal Diseases (ASCAD)	**2008-09**	Centrally Sponsored	295.138	**Fund received**

Clustered demonstration under BGREI

Lentil demonstration under ATMA

Inter-cropping under ATMA

Activities under Bio-village programme

Custom hiring centre at Bhatar Block

Exhibition of farm implements at KVK Mela

Zero-tillage paddy cultivation at Aushgram-I

Field view of mixed farming

Method demonstration of paddy transplanter

Method demonstration on jute fibre extraction

Polyhouse under RKVY at Monteswar

Drip irrigation at model village (Kanksa)

Animal health camp at Jagulipara

Improved feeding practice of cow at Memari

Mobile soil testing camp at Galsi under ATMA

Area expansion scheme on aromatic rice at Raina

Technology exhibition in MATI UTSAV

BSF visit by Hon'ble MIC, Agril., Gov. of W.B.

Pisciculture at Govt. farm

Poly-vermi pit at Kalna under RKVY

FLD on improved microbial jute retting at Kalna

Low-cost azolla production unit at Bud Bud

Secondary Data

Secondary data of representative villages

Table- 15: Information on Operational land holdings

(Representative village level information)

Name of village	Operational holding (number & area)								
	Large		Medium		Small		Marginal		Landless
	No. of holding	Area (ha)	No. of holding	Area (ha)	No. of holding	Area (ha)	No. of holding	Area (ha)	Number
Porsura	15	120	45	95	150	85	50	25.	15
Bheti	2	4	4	5	11	10	20	10	5
Moira	5	15	20	25	55	40	35	10	25

(Source: Village Panchyet)

Table- 16: Demographic information of the village

(Representative village level information)

Name of the village	Population (2001)	Male	Female	Children	% of Literacy	Workers No.		Categories No.		
						Agri.	Non. agri.	SC	ST	OBC
Porsura	1250	620	550	80	82	600	300	150	50	100
Bheti	300	150	110	40	85%	145	5	290	0	0
Moira	2507	1985	4492	NA	60.88%	250	1400	2358	668	94

(Source: Village Panchyet)

Table- 17: Information on irrigated area in the village

Name of village	Rainfed area (%)	Irrigated area (Source wise)								
		Major (canel)		Minor		Submerge		other (Coal mine water left)		Total (ha)
		Area (ha)	%	Area (ha)	%	No. of holding	Area (ha)	Area (ha)	%	
Porsura	6	200		85.1		21	8.9			294.0
Bheti	15	25	71.8	4	25	2	0.5	-	-	29.5
Moira	87.8	Nil	Nil	4*	11.7	Nil	Nil	8.14	23.94	12.14

*tank (Source: ADA, Galsi-II, Monteswar, Andal)

Table- 18: Information on irrigation projects nearing completion

Name of the	Type of the project *	Name of the project	Area irrigated (ha)	
			Projected	Actual
Porsura	Irrigation	Damodar Valley Corporation (DVC)	365	335
Bheti	STW	-	8.5	8.5
Moira	-	-	-	-

*** Project such as major, medium, minor, and projects nearing completion**

* Sources of information: Progressive Villagers

Table-19: Information on land use pattern (in ha)

Name of the village	Geographical area	Cultivable area	Cultivated Area	Cultivable waste	Current Fallow	Forest	Pasture	Waste land
Porsura	392.63	335.66	330	5.66	Nil	0.8	0.08	0.5
Bheti	50.2	29.5	26	3.5	Nil	0.16	0.17	0.5
Moira	134.42	42	34	2	6	1.42	4	12.0

Table- 20: Information on soil for the village
Classification of soil with area under problem soil (area in ha)

Village	Alluvium soil		Sandy soil		Acidic soil	
	Area	**%**	**Area**	**%**	**Area**	**%**
Porsura	335.63	84.5	**61.56**	**15.5**	**277**	**70**
Bheti	**29.5**	**100**	**-**	**-**	**14.7**	**50**
Moira	25	59.5	17	40.5	42	100

Table- 21: Production and productivity of important commodities of representative villages

Village	Commodity	2009			2010			2011		
Porsura		**Area**	**Production**	**Productivity**	**Area**	**Production**	**Productivity**	**Area**	**Production**	**Productivity**
	Paddy (Kharif)	300	13.5	45	300	13.5	45	310	13.8	44
	Paddy (Boro)	250	13.75	55	250	13.5	54	250	14.5	58
	Potato	70	189	270	72	223.2	310	75	243.75	325
Bheti	Paddy (Kharif)	25	12.5	50	25	130	52	25	13.0	52
	Paddy (Boro)	20	10.8	54	18	102	57	15	0.825	55
	Potato	0.5	22.5	450	2	92	460	4	1.80	350
	Onion	-	-	-	-	-	-	2	54	270
	Mustard	1	0.9	9	1	0.92	9.2	1	0.9	9
	Vegetables	0.5	15	300	1	32	320	1	3.6	360
Moira	Paddy (Kharif)	30	11.70	39.02	30	136.35	45.45	30	124.62	41.54
	Mustard	10	9.82	9.82	10	9.25	9.25	10	9.65	9.65
	Wheat	2	4.15	20.76	2	0.471	23.55	2	4.43	22.14

Area in ha
Production in '00' MT
Productivity in q/ha

Primary Data for Farming System Analysis

Primary data for farming system analysis

Table -22: Details about number of families under each kind of resource situation in the representative village of the AES of Burdwan

District: Burdwan **Agro-ecological situation: I/II/III**
Villages: Porsura, Bheti, Moira

Sl. No.	Categories	Porsura village AES I		Bheti village AES II		Moira village AES III	
		No. of families and their percentage		No. of families and their percentage		No. of families and their percentage	
		No	**%**	**No**	**%**	**No**	**%**
1.	Resource Rich (RR)	70	35	6	14.29	25	17.85
2.	Resource Poor (RP)	205	65	36	85.71	115	82.14

Table -23: Details about predominant existing farming systems (EFS) in the representative village of an AES of Burdwan

District: Burdwan **Agro-ecological situation: I/II/III**
Villages: Porsura, Bheti, Moira

Existing farming system	AES –I (Porsura)		AES –II (Bheti)		AES –III (Moira)	
	RR	RP	RR	RP	RR	RP
	No.	**No.**	**No.**	**No.**	**No.**	**No.**
EFS-1: **Agriculture + Animal husbandry + Fishery**	50 (71.42%)	50 (24.39%)	2 (33%)	2 (5.55%)	7 (28%)	50 (43.47%)
EFS-2: **Agriculture + Horticulture +Livestock**	20 (28.58%)	155 (75.61%)	2 (33%)	26 (72.22%)	16 (64%)	
EFS-3: **Agriculture + Horticulture + Livestock + Fishery**			2 (33%)			
EFS-4: **Agriculture + Animal husbandry**				8 (22.22%)	2 (8%)	65 (66.53%)

Table- 24A: Major enterprises associated with each existing farming system (EFS) under each resource situation in representative village

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Resource Situation: Resource Rich (RR)**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy pulse	 75 30 75 20	 75 30 75 20		
	Horticultural crops - Orchards -Vegetables - Potato - Onion	 70 50	 70 50		
	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	 70 25 30	 70 25 30		
	Fisheries	40			
	Sericulture	Nil			
	Poultry	1			
	Agriculture labour	25			
	Duckeries	15	15		
	Bee Keeping	Nil			
	Vermi-compost	5	2		
	Medicinal plant				

Table- 24B: Major enterprises associated with each existing farming system (EFS) under each resource situation in representative village

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Resource Situation: Resource Poor (RP)**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy Pulse	 75 10 75 7.5	 75 10 75 7.5		
	Horticultural crops - Orchards -Vegetables - Potato - Onion	 60 20	 60 20		
	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	 70 12 60	 70 12 60		
	Fisheries	18	Nil		
	Sericulture	Nil			
	Poultry	3	6		
	Agriculture labour	-	10		
	Duckeries	20	50		
	Bee Keeping	Nil	Nil		
	Vermi-compost	2	1		
	Medicinal plant	Nil			

Table- 24 C: Major enterprises associated with each existing farming system (EFS) under each resource situation in representative village

District: Burdwan **Agro-ecological situation: II**
Village: Bheti **Resource Situation: RR**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy	6	5		
	Horticultural crops - Orchards -Vegetables - Potato - Onion	6	8		
	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	6 4 4	5 4 4		
	Fisheries	4	4		
	Sericulture				
	Poultry				
	Agriculture labour				
	Duckeries	4	4		
	Bee Keeping				
	Vermi-compost				
	Medicinal plant				

Table- 24 D: Major enterprises associated with each existing farming system (EFS) under each resource situation in representative village

District: Burdwan **Agro-ecological situation: II**
Village: Bheti **Resource Situation: RP**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy	 30 2 4 34 10	 2 2		
	Horticultural crops - Orchards -Vegetables - Potato - Onion	 20 20			
	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	 36 2 36 34 Nil	 2		
	Fisheries	36			
	Sericulture	Nil			
	Poultry	36			
	Agriculture labour	25			
	Duckeries	36			
	Bee Keeping	Nil			
	Vermi-compost	2			
	Medicinal plant	Nil			

Table- 24 E: Major enterprises associated with each existing farming system (EFS) under each resource situation in representative village

District: Burdwan **Agro-ecological situation: III**
Village: Moira **Resource Situation: RR**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	**EFS-II**	**EFS-III**	**EFS-IV**
	Agricultural crops Irrigated -wheat -Mustard -Lentil Rainfed -Aman Paddy -Maize	 2 3 4 4			 1 4
	Horticultural crops - Orchards Mango -Vegetables - Potato - Cucumber - Onion - Brinjal	 5 5 5 4 2			
	Animal husbandry -Cows -Buffalo -sheep -Goat	 5 2 5			 2 2 2 2
	Fisheries	2			
	Sericulture				
	Poultry				
	Agriculture labour				
	Duckeries				16
	Bee Keeping				
	Vermi-compost	2			
	Medicinal plant				

Table- 24 F: Major enterprises associated with each existing farming system (EFS) under each resource situation in representative village

District: Burdwan **Agro-ecological situation: III**
Village: Moira **Resource Situation: RP**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -wheat -Mustard -Lentil -Sesame Rainfed -Aman Paddy -Maize	 30 20 20 10 50 10			 10 5
	Horticultural crops - Orchards Mango -Vegetables - Potato - Cucumber - Onion - Brinjal	 2 10 15 6 15			
	Animal husbandry -Cows -Buffalo -sheep -Goat	 15 10 10			 5 5 5 5
	Fisheries	4			
	Sericulture				
	Poultry				18
	Agriculture labour				
	Duckeries				10
	Bee Keeping				
	Vermi-compost				
	Medicinal plant				

Table -25 A: Contribution of different enterprises towards annual income under each existing farming system in Burdwan district.

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Resource Situation : RR**

Sl.No.	Type of enterprises/ commodities	Contribution of different enterprises/ commodities (P/S/T) towards annual net income in each EFS			
		EFS-I	EFS-II	EFS-III	EFS-IV
1	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy Pulse	 P S S S P			
2	Horticultural crops - Orchards -Vegetables - Potato - Onion	 P S			
3	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	 S S S			
4	Fisheries	P			
5	Sericulture				
6	Poultry	T			
7	Agriculture labour				
8	Duckeries	T			
9	Bee Keeping				
10	Vermi-compost	S			
11	Medicinal plant				

P: Annual Income Rs. 16000.00 - 30000.00, S: Annual Income Rs. 5000.00 - 15900.00, T: Annual Income Rs. 2000.00 - 4900.00

Table -25 B: Contribution of different enterprises towards annual income under each existing farming system in Burdwan district.

District: Burdwan **Agro-ecological situation: I (Porsura)**
Village: Porsura **Resource Situation: RP**

Sl.No.	Type of enterprises/ commodities	Contribution of different enterprises/ commodities (P/S/T) towards annual net income in each EFS			
		EFS-I	EFS-II	EFS-III	EFS-IV
1	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy Pulse	 P S S S P	 P P		
2	Horticultural crops - Orchards -Vegetables - Potato - Onion	 P S	 P		
3	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	 S S S			
4	Fisheries	P			
5	Sericulture				
6	Poultry	T			
7	Agriculture labour				
8	Duckeries	T			
9	Bee Keeping				
10	Vermi-compost	S			
11	Medicinal plant				

P: Annual Income Rs. 16000.00 - 30000.00, S: Annual Income Rs. 5000.00 - 15900.00, T: Annual Income Rs. 2000.00 - 4900.00

Table -25 C: Contribution of different enterprises towards annual income under each existing farming system in Burdwan district.

District: Burdwan **Agro-ecological situation: II**
Village: Bheti **Resource Situation: RR**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy	 P P			
	Horticultural crops - Orchards -Vegetables - Potato - Onion	 P			
	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	 S S S S			
	Fisheries	T			
	Sericulture				
	Poultry	T			
	Agriculture labour				
	Duckeries	T			
	Bee Keeping				
	Vermi-compost				
	Medicinal plant				

P: Annual Income Rs. 16000.00 - 30000.00, S: Annual Income Rs. 5000.00 - 15900.00, T: Annual Income Rs. 2000.00 - 4900.00

Table -25 D: Contribution of different enterprises towards annual income under each existing farming system in Burdwan district.

District: Burdwan **Agro-ecological situation: II**
Village: Bheti **Resource Situation: RP**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -Boro Paddy -Mustard -Sesame -Jute Rainfed -Aman Paddy	 P P	 P P		
	Horticultural crops - Orchards -Vegetables - Potato - Onion	 P			
	Animal husbandry -Cows -Buffalo -sheep -Goat -Pigs	 S S S S	 T		
	Fisheries	S			
	Sericulture				
	Poultry	T			
	Agriculture labour	S			
	Duckeries	T			
	Bee Keeping				
	Vermi-compost	T			
	Medicinal plant				

P: Annual Income Rs. 16000.00 - 30000.00, S: Annual Income Rs. 5000.00 - 15900.00, T: Annual Income Rs. 2000.00 - 4900.00

Table -25 E: Contribution of different enterprises towards annual income under each existing farming system in Burdwan district.

District: Burdwan **Agro-ecological situation: III**
Village: Moira **Resource Situation: RR**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -wheat -Mustard -Lentil -Sesame Rainfed -Aman Paddy -Maize	 P P P S P S			
	Horticultural crops - Orchards Mango -Vegetables - Potato - Cucumber - Onion - Brinjal	 P S S S			
	Animal husbandry -Cows -Buffalo -sheep -Goat				 P S S
	Fisheries -Composite Fish Culture -Indian Major Carp		 P P		
	Sericulture				
	Poultry				S
	Agriculture labour				
	Duckeries				S
	Bee Keeping				
	Vermi-compost				
	Medicinal plant				

P: Annual Income Rs. 16000.00 - 30000.00, S: Annual Income Rs. 5000.00 - 15900.00, T: Annual Income Rs. 2000.00 - 4900.00

Table -25 F: Contribution of different enterprises towards annual income under each existing farming system in Burdwan district.

District: Burdwan **Agro-ecological situation: III**
Village: Moira **Resource Situation: RP**

Sl.No.	Type of enterprises/ commodities	No. of families (%) associated with 2-3 dominant enterprises/ commodities in representative villages			
		EFS-I	EFS-II	EFS-III	EFS-IV
	Agricultural crops Irrigated -wheat -Mustard -Lentil -Sesame Rainfed -Aman Paddy -Maize	 P P P S P S			
	Horticultural crops - Orchards Mango -Vegetables - Potato - Cucumber - Onion - Brinjal	 P S S S			
	Animal husbandry -Cows -Buffalo -sheep -Goat				 P S S
	Fisheries -Composite Fish Culture -Indian Major Carp		 P P		
	Sericulture				
	Poultry				S
	Agriculture labour				
	Duckeries				S
	Bee Keeping				
	Vermi-compost				
	Medicinal plant	T			

P: Annual Income Rs. 16000.00 - 30000.00, S: Annual Income Rs. 5000.00 - 15900.00, T: Annual Income Rs. 2000.00 - 4900.00

Table -26 A: Type of improved farming systems (IFS*) evolved by innovative farmers or recommended by research scientists for each resource situation

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Innovative farmer Name: Shambhunath Makar**

(As adopted by Innovative Farmer)

Sl. No.	Type of enterprises/ commodities	No. of families associated and their %			
		Resource Rich		Resource Poor	
		IFS-I	IFS-II	IFS-I	IFS-II
	-Agricultural crops -Irrigated - Paddy (Boro) -Mustard -pulse (Musur) - - -Rainfed - Paddy (Amon)	 30 (42%) 5 (7%) 20 (28%) 50 (71%)		 10 (4.87%) 2 (0.97%) 10 (4.87%) 75 (36.58%)	
	-Horticultural crops - Orchards • Irrigated • Dry -Vegetables - Potatoes - Onion - Floriculture	 10 (14%) 5 (7%)		 5 (2.4%) 2 (0.97%)	
	-Animal husbandry -Cows -Buffalows -Sheep -Goat -Pigs	 50 (71%) 20 (28%)		 150 (73%) 150 (73%)	
	Fisheries	10 (14%)		5 (2.4%)	
	Sericulture				
	Poultry	20 (28%)		160 (78%)	
	Bee keeping				
	Duckeries	10 (14%)		120 (58.53%)	
	Agriculture labour				
	Vermi-compost	10 (14%)		-	

*Integrated Farming System (Field Crop-Vegetables-Fish cultivation-Animal Husbandry)

Table -26 B: Type of improved farming systems (IFS*) evolved by innovative farmers or recommended by research scientists for each resource situation

District: **Burdwan** **Agro-ecological situation: II**
Village: **Bheti** **Innovative farmer Name: Bimal Mondal**

(As adopted by Innovative Farmer)

Sl.No.	Type of enterprises/ commodities	No. of families associated and their %			
		Resource Rich		Resource Poor	
		IFS-I*	IFS-II	IFS-I**	IFS-II
	-Agricultural crops -Irrigated - -Rainfed -				
	-Horticultural crops - Orchards • Irrigated • Dry -Vegetables - - Floriculture	10 (34%)		20 (15%)	
	-Animal husbandry -Cows -Buffalows -Sheep -Goat -Pigs				
	Fisheries				
	Sericulture				
	Poultry				
	Bee keeping				
	Duckeries				
	Agriculture labour				
	Vermi-compost				
	Any other				

* Potato with Orchard Cultivation, Onion Seed production, Onion mixed crop with Clocasia
** Rainy Season leafy vegetable cultivation instead of Aman Paddy

Table -26 C: Type of improved farming systems (IFS*) evolved by innovative farmers or recommended by research scientists for each resource situation

District: Burdwan **Agro-ecological situation: III**
Village: MOIRA **Innovative farmer Name: SK BASIR**

(As adopted by Innovative Farmer)

Sl.No.	Type of enterprises/ commodities	No. of families associated and their %			
		Resource Rich		Resource Poor	
		IFS-I	IFS-II	IFS-I	IFS-II
	-Agricultural crops -Irrigated **-Wheat(PBW343)** - - -Rainfed **-Lentil** **-Mustard** -				
	-Horticultural crops - Orchards • Irrigated • Dry -Vegetables - Tomato(Early Varity) - Floriculture		2 (6%)		
	-Animal husbandry -Cows (Vaccination Camp) -Buffalows -Sheep -Goat -Pigs				
	Fisheries				
	Sericulture				
	Poultry				
	Bee keeping				
	Duckeries				
	Agriculture labour				
	Vermi-compost				
	Any other				

* Setup of Micro Irrigation using coal-mine water and Pump in dry area

Table -27: contribution of different enterprises towards annual income under each improved farming system (IFS)

District: Burdwan **Agro-ecological situation: I /II / III**

Sl.No.	Type of enterprises/ commodities	Contribution of different enterprises/commodities (P/S/T/Q) towards annual net income in each IFS					
		AES-I		AES-II		AES-III	
		IFS-I	IFS-II	IFS-I	IFS-II	IFS-I	IFS-II
1	-Agricultural crops -Irrigated - Paddy (Boro) -Mustard -pulse (Musur) -Rainfed -Paddy (Amon) -Rainfed	P P	P P				
2	-Horticultural crops - Orchards - Irrigated - Dry -Vegetables - Potatoes - Onion - Floriculture	P	P	P	S	P	T
3	-Animal husbandry -Cows -Buffalows -Sheep -Goat -Pigs	S	S	P S P			
4	Fisheries	S	S	T			
5	Sericulture						
6	Poultry	S	S				
7	Bee keeping						
8	Duckeries	S	S	S			
9	Agriculture labour						
10	Vermi-compost	T	T	T			

P (Primary): Annual Income Rs. 16000.00 - 30000.00, S (Secondary): Annual Income Rs. 5000.00 - 15900.00, T (Tertiary): Annual Income Rs. 2000.00 - 4900.00

Table -28 A: Trend about growth of existing enterprises / commodities / livestock in the representative village

District –Burdwan **Village: Porsura**

S.No	Name of enterprises / commodities / livestock	Unit	Trend about no. of units in the village					Remarks
			2013	2012	2011	2010	2009	
1	**Agriculture**							
	- Irrigated + rain fed crops							
	-Paddy		110	110	110	110	110	
	-Wheat		-	1	1	1	1	
	-pulse (musur)	ha	3	2.2	1.5	1.4	1.4	
	-Mustard		3.	2.2	1.5	1.4	1.4	
	-Potatoes		15.	13.	13	10	10	
2	Horticulture							
	- Vegetables		0.6.	0.6	0.6.	0.6	0.6	
3	**Animal husbandry**							
	-Cow		1500	1000	1000	1000	1000	
	- Goat	nos.						
	- Local		800	600	600	600	600	
	- Cross breed		200	100	90	90	70	
	- Poultry		5000	6000	6000	7000	7000	
4	Fisheries	ha	30	35	35	25	25	
5	Duckeries	nos.	4000	5000	5000	6000	6000	
6	Vermi-compost	ha	-	-	1.5	-	-	
7	Agriculture labourer	nos.	130	150	150	180	200	
8	**Non-farm enterprise**							
	- Regular service		20	20	20	20	20	
	- Daily wage earning	nos.	120	150	150	150	200	
	- Handloom etc.		10	10	10	20	20	

Table -28 B: Trend about growth of existing enterprises / commodities / livestock in the representative village

District :Burdwan **Village: Bheti**

S.No	Name of enterprises / commodities / livestock	Unit	Trend about no. of units in the village					Remarks
			2013	2012	2011	2010	2009	
1	**Agriculture**							
	- Irrigated + rainfed crops							
	-Aman Paddy	ha	7	7	5	5	5	
	-Boro Paddy		5	5	4	3	3	
2	Horticulture							
	- Orchard	ha	2.5	2	2	2	2	
3	**Animal husbandry**							
	- Cow	nos.	1300	1200	1200	1100	1100	
	- Sheep		250	210	200	200	180	
	- Goat		150	140	130	130	120	
	- Local		250	200	180	175	170	
	- Cross breed		10	7	5	0	0	
4	Fisheries	ha	15	15	12	12	12	
5	Duckeries	nos.	500	450	400	380	350	
6	Vermi-compost	nos.	8	0	0	0		
7	**Non-farm enterprise**							
	- Daily wage earning	Rs	150					

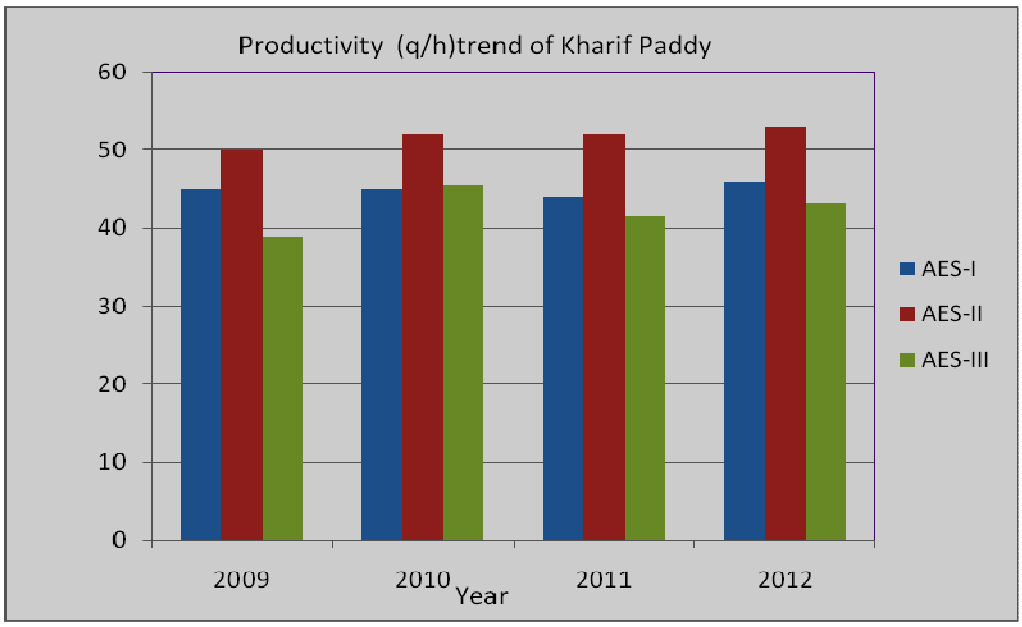
Table -28 C: Trend about growth of existing enterprises / commodities / livestock in the representative village

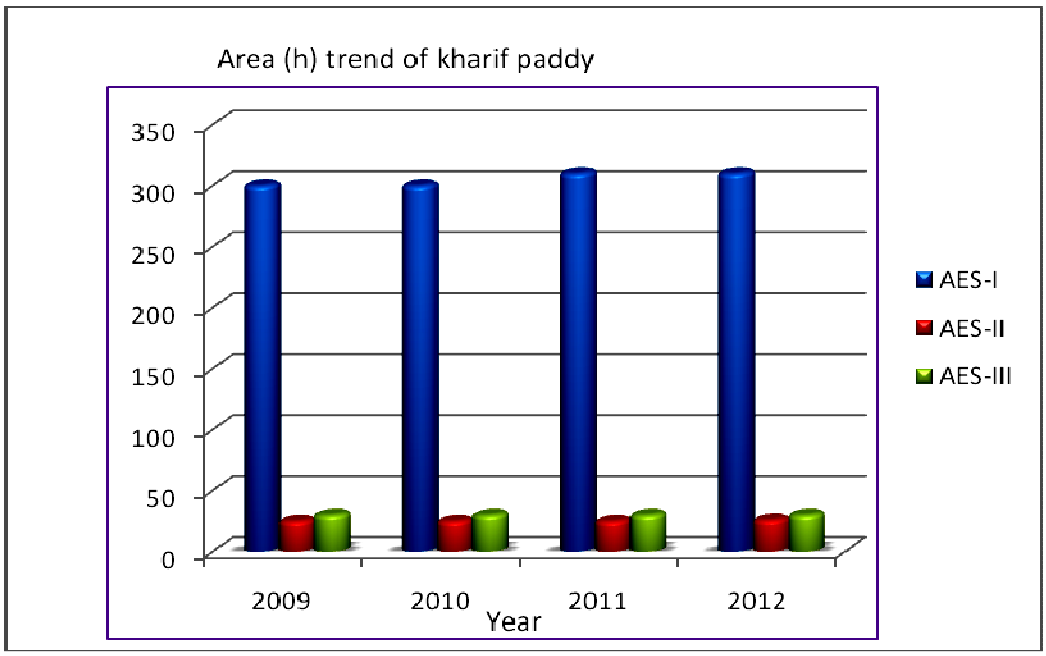
District : Burdwan **Village : MOIRA**

S.No	Name of enterprises / commodities / livestock	Unit	Trend about no. of units in the village					Remarks
			2013	2012	2011	2010	2009	
1	**Agriculture**							
	- Irrigated							
	-Wheat		2.5	2	2	2	2	
	-Mustard	ha	1	1	0	0	0	
	-Lentil		2	2	1	0	0	
	-Kharif Paddy		4	4	3	3	2	
	-Maize		1	1	0	0	0	
	-Til		1	1	1	1	1	
	- Rainfed crops only							
	-Kharif Paddy		4	4	4.5	4.5	4.5	
2	Horticulture	ha						
	- Vegetables		1	1	0	0	0	
	- Flowers							
	Marigold		.5	.5	0	0	0	
3	**Animal husbandry**							
	- Goat		60	50	40	30	25	
	- Buffalo	nos						
	- Local		80	65	40	30	25	
	- Graded							
	- Cow							
	- Local		80	65	40	30	25	
	- Cross breed							
	- Pigs							
	- Poultry	ha	50	40	40	30	30	
4	Fisheries		80	65	40	30	25	
5	Duckeries		50	40	40	30	30	
6	Vermi-compost	nos.	2	0	0	0	0	

Table- 29 A: Trend about growth of existing enterprises/ commodities/ livestock of representative village

District: Burdwan **Crop: Kharif Paddy** **AES: I/II/III**





Crop-Wise Gap Analysis

Table -30 A : Analysis of problems with regard to existing farming system

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Name of the EFS= EFS-I / EFS-II**
Resource Rich

Sl. No.	Type of enterprises/ commodities	Combi-nation of enter-prises in EFS (P/S/T)	Specific problems with each enterprise	No. of affected persons (%)	Proposed solution	Reasons for non-adoption of propose d solution	Proposed strategy
	Agricultural crops - Irrigated --Paddy (Boro) -Mustard -pulse (Lentil) -Rainfed -Paddy (Amon)	 P P P p	 L+I+H+M+S L+I+H+M+S L+I+H+M+S L+I+H+M+S	 80 80 80 80	 L1+L2+H1+M1 L1+L2+H1+M1 L1+L2+H1+M1 L1+L2+H1+M1	 LW+IL+ A1 LW+IL+ A1 LW+IL+ A1 LW+IL+ A1	i) Electrification & subsidy, ii) participatory seed production with the help of seed certification wing & companies iii) Induction training of the farmers. iv) Creation of network between input dealers & Co operatives v. Strengthening of marketing facilities
	Horticultural crops - Orchards - Vegetables - Potatoes - Onion	 S S	 D+S+M+I+L D+S+M+I+L	 20 20	 L1+L2+H1+M1 L1+L2+H1+M1	 LW+IL+ A1 LW+IL+ A1	i) Electrification & subsidy, ii) participatory seed production iii) Induction training of the farmers.
	Animal husbandry - Cows - Buffalos - Sheep - Goat - Pigs	 T T	 AV+AA+AD +AL AV+AA+AD +AL	 75 45	 AH+H1 AH+H1	 LW+IL+ A1 LW+IL+ A1	i) Skill development programme ii) awareness programme and animal health camp iii) introduction of improved breed
	Poultry	s	AD+AV+AE	5	H1+M1	LW+IL+ A1	
	Duckeries	T	AD+AV+AE	5	H1+M1	LW+IL+ A1	

	Fisheries	s	AV+AD+SF +LF	15	H1 + M1	LW+IL+ A1	i) Skill development programme ii) awareness programme and fish health camp iii) establishment of hatching unit

L=Lack of Input supply, I= Lack of irrigation Facility, H= Lack of awareness about quality certified seed, M= lack of marketing facilities ,S= poor quality seed, D=Lack of awareness and skill about plant protection . LW= Low income, IL= lack of education & knowledge, A1=Lack of Socio- economic awareness, AV= lack of vaccination , AA= lack of AI facilities, AD= Diseases problem , AL= Low milk production. SF= Poor quality fish seed, LF= lack of Fish food supply , AE= low egg production L1=increase input supply facilities, L2=Improve irrigation facilities, H1=awareness programme,M1= Improve marketing facilities ., AH= Animal health camp,

Table -30 B : Analysis of problems with regard to existing farming system

District: Burdwan **Agro-ecological situation: I**
Village: Porsura

Name of the EFS= EFS-I / EFS-II
Resource Poor

Sl. No.	Type of enterprises/ commodities	Combi-nation of enter-prises in EFS (P/S/T)	Specific problems with each enterprise	No. of affected persons (%)	Proposed solution	Reasons for non-adoption of proposed solution	Proposed strategy
	Agricultural crops - Irrigated --Paddy (Boro) -Mustard -pulse (Musur) -Rainfed -Paddy (Amon)	 P P P P	 L+I+H+M+S L+I+H+M+S L+I+H+M+S L+I+H+M+S	 70 70 70 70	 L1+L2+H1+ M1 L1+L2+H1+ M1 L1+L2+H1+ M1 L1+L2+H1+ M1 L1+L2+H1+ M1	 LW+IL+A1 LW+IL+A1 LW+IL+A1 LW+IL+A1	i) Electrification & subsidy, ii) participatory seed production iii) Training iv. Linkage with credit institutes and v. Distribution of critical inputs/ farm implements in subsidized rate
	Horticultural crops - Orchards - Vegetables - Potatoes - Onion	 T T	 D+S+M+I+L D+S+M+I+L	 20 20	 L1+L2+H1+ M1 L1+L2+H1+ M1	 LW+IL+A1 LW+IL+A1	i) Electrification & subsidy, ii) participatory seed production iii) Training

	Animal husbandry - Cows - Buffalos - Sheep - Goat - Pigs	 S S	 AV+AA+AD +AL AV+AA+AD +AL	 85 55	 AH+H1 AH+H1	 LW+IL+A1 LW+IL+A1	i) Skill development programme ii) awareness programme and animal health camp iii) introduction of improved breed
	Poultry	S	AD+AV+AE	35	H1+M1	LW+IL+A1	i) Skill development programme ii) awareness programme and fish health camp iii) establishment of hatching unit
	Duckeries	S	AD+AV+AE	35	H1+M1	LW+IL+A1	
	Fisheries	T	AV+AD+SF +LF	15	H1 + M1	LW+IL+A1	

L=Lack of input supply, I= Lack of irrigation facility, H= Lack of awareness about Hybrid seed, M= lack of marketing facilities, S= poor quality seed, D=damage for pest.
L1=increase input supply facilities, L2=Improve irrigation facilities, H1=awareness programme,M1= Improve marketing facilities . LW= Low income, IL= lack of education & knowledge, A1=Lack of Socio- economic awareness, E1= electrification & subsidy, P1= participatory seed production. AV= lack of vaccination , AA= lack of AI facilities, AD= Diseases problem, AH= Animal health camp, AL= Low milk production. SF= Poor quality fish seed, LF= lack of Fish food supply , AE= low egg production

Table -30 C : Analysis of problems with regard to existing farming system

District: Burdwan **Agro-ecological situation: II**
Village: Bheti **Name of the EFS= EFS-I / EFS-II**
Resource Rich

Sl. No.	Type of enterprises/ commodities	Combi-nation of enter-prises in EFS (P/S/T)	Specific problems with each enterprise	No. of affected persons (%)	Proposed solution	Reasons for non-adoption of proposed solution	Proposed strategy
	Agricultural crops - Irrigated - Paddy -Disease -Pest - Rainfed	P	Low seed replacement ratio, Lack of location Specific desired varieties, lack of proper knowledge with improved package of practice , shortage of quality inputs	80	Use of quality seed, Seed Treatment, IPM, Production of Organic inputs at home site Capacity building programme	lack of awareness , input supply system inadequat e	Induction training, exposure visit and demonstrati on Promotion of farmer lead extension

	Horticultural crops - Orchards - Vegetables Potato - Floriculture	S	poor productivity, poor quality seed/ planting material, disease infestation	70	Intensification with disease free good quality seed and proper scientific management practice, balanced fertilizer application.	lack of awareness, non-accessibility of hybrid/good quality seed, indiscriminate use of fertilizer and pesticide	Training & demonstration, soil health camp, IPM camp Introduction of quality seed/ planting materials
	Animal husbandry - Cows - Buffalos - Sheep - Goat - Pigs	S	poor yield, improper feed resource, poor health	80	Intensification with improved breed and scientific rearing, Awareness camp, Fodder cultivation	lack of awareness, non-accessibility of Govt. /Private extension wing, traditional belief	Training & Vaccination Camp, introduction of improved breed, strengthening of feed resource
	Poultry						
	Duckeries						
	Fisheries	S	poor fish yield, poor environment of aquatic body, lack of good quality fish seed	50	use of good quality fish seed, scientific cultivation of fish, improvement of aquatic environment	non-availability of quality seed at local area, poor skill and knowledge, climate change	training, exposure visit, establishment of low-cost hatchery unit.

Table -30 D : Analysis of problems with regard to existing farming system

District: Burdwan **Agro-ecological situation: II**
Village: Bheti **Name of the EFS= EFS-I / EFS-II**
Resource Poor

Sl. No.	Type of enterprises/ commodities	Combi-nation of enter-prises in EFS (P/S/T)	Specific problems with each enterprise	No. of affected persons (%)	Proposed solution	Reasons for non-adoption of proposed solution	Proposed strategy

	Agricultural crops - Irrigated - Paddy -Disease -Pest	P	Low seed replacement ratio, Lack of location Specific desired varieties, improper economic management practice, Deficit of inputs, labour problem, high input cost	70	use of quality seed, Seed Treatment, IPM, Production of Organic inputs at home site	lack of awareness, input supply system inadequate, lack of fund and labour crisis	Training, exposure visit and demonstration, farm mechanization and establishment of custom hiring centre Distribution of critical inputs/ farm implements in subsidized rate
	Horticultural crops - Orchards - Vegetables Potato - Floriculture	S	poor productivity, poor quality seed/ planting material, disease infestation, high cost of irrigation	80	Intensification with disease free good quality seed and proper scientific management practice, balanced fertilizer application.	lack of awareness, non-accessibility of hybrid/good quality seed, indiscriminate use of fertilizer and pesticide	Training & demonstration, soil health camp, IPM camp, strengthening of micro irrigation system by supplying of sprinkler/drib irrigation set at subsidized rate.
	Animal husbandry - Cows - Buffalos - Sheep - Goat - Pigs	S	poor yield, improper feed resource, poor health	90	Intensification with improved breed and scientific rearing, Awareness camp, Fodder cultivation	lack of awareness, non-accessibility of Govt. /Private extension wing, traditional belief	Training & Vaccination Camp, introduction of improved breed, strengthening of feed resource
	Poultry						
	Duckeries						
	Fisheries	S	poor fish yield, poor environment of aquatic body, lack of good quality fish seed	50	use of good quality fish seed, scientific cultivation, improvement of aquatic environment	non-availability of quality seed at local area, poor skill and knowledge, climate change	training, exposure visit, establishment of low-cost hatchery unit. Supply of cool chamber for transportation of fish

Table -30 E: Analysis of problems with regard to existing farming system

District: Burdwan **Agro-ecological situation: III**
Village: Moira
Name of the EFS= EFS-I / EFS-II **Resource Rich**

Sl. No.	Type of enterprises/ commodities	Combination of enterprises in EFS (P/S/T)	Specific problems with each enterprise	No. of affected person (%)	Proposed solution	Reasons for non-adoption of proposed solution	Proposed strategy
	Agricultural crops - Irrigated Wheat Mustard Rainfed Kharif paddy	P	Low productivity Irregular agricultural input supply High production cost Highly acidic soil with low water holding capacity and poor organic base	90	Introduction of upland variety, use of home generated organic inputs like vermicompost application of climate resilience technology use of soil ameliorant like lime, dolomite, gypsum	Lack of awareness, Upland and climatic harshness Fund crisis	i)Training, exposure visit and demonstration, ii) Application of climate resilience technology iii) Use of soil ameliorant like lime, dolomite, gypsum iv. Distribution of critical inputs/ farm implements in subsidized rate
	Horticultural crops - Orchards - Vegetables Potato - Floriculture	S	Poor productivity of veg and fruit, Non availability of irrigated water Poor marketing linkage	70	Crop diversification with draught tolerance plants Use of Micro-irrigation Use of mine water coming from coal mine	Poor skill and knowledge Erratic monsoon Lack of fund Less accessibility of support service	i) Capacity building programme ii)Exposure visit to different technology hubs, iii) Strengthening of micro irrigation system. iv) plantation of draught tolerance fruit/tree like drum stick, musambi/ ber/ bel/ cashew/ sisal etc.
	Animal husbandry - Cows - Buffalos - Sheep - Goat - Pigs	S	Poor productivity of milk meat and eggs Lack of feed resource, Poor health due to worm	90	Strengthening of breed up-gradation programme Cultivation of draught tolerance fodder crops	lack of awareness, non-accessibility of support services Lack of credit	Skilled development programme Animal Vaccination Camp, Cultivation of draught
	Poultry						

	Duckeries		infestation, PPR, FMD etc		Improved husbandry practices	facility	tolerance fodder crops Introduction of improved rural poultry breeds
	Fisheries	S	poor fish yield, seasonal pond, lack of good quality fish seed	50	Use of good quality fish seed, scientific cultivation of fish, Cultivation of seasonal fish	non-availability of quality seed at local area, poor skill and knowledge,	Training, exposure visit, Establishment of low-cost hatchery unit. Cultivation of seasonal fish like bata, tilapia.

Table -30 F :Analysis of problems with regard to existing farming system

District: Burdwan **Agro-ecological situation: III**
Village: Moira **Name of the EFS= EFS-I / EFS-IV**
Resource Poor

Sl. No.	Type of enterprises/ commodities	Combi-nation of enter-prises in EFS (P/S/T)	Specific problems with each enterprise	No. of affected person (%)	Proposed solution	Reasons for non-adoption of proposed solution	Proposed strategy
1	**Agricultural crops** - Irrigated Wheat Mustard Rainfed **Kharif paddy**	P	Low productivity Irregular agricultural input supply High production cost Highly acidic soil with low water holding capacity and poor organic base	70	Introduction of upland variety, use of home generated organic inputs like vermicompost application of climate resilience technology Use of soil ameliorant	Lack of awareness, upland and climatic harshness, fund crisis	i)Training, exposure visit and demonstration, ii) Application of climate resilience technology Use of soil ameliorant like lime, dolomite, gypsum
2	**Horticultural crops** - Orchards - Vegetables						
3.	**Animal husbandry** - Cows - Buffalos - Goat	S	Poor productivity of milk meat and eggs Lack of feed resource, Poor health due to worm infestation, PPR, FMD etc	80	Strengthening of breed up-gradation programme Cultivation of draught tolerance fodder crops Improved husbandry practices	lack of awareness, non-accessibility of support services, lack of credit facility	i)Skilled development programme ii)Animal vaccination camp, iii) Cultivation of draught tolerance fodder crops iii) breed upgradation
	Poultry						
	Duckeries						

Table - 31: Type of changing scenario in rural areas which is having a bearing on existing farming system

District: Burdwan **AES-I/II/III**

S.No.	Type of changing scenario	Effect of each scenario on farming System (H/M/L)			Remarks
		AES-I	AES-II	AES-III	
1	Migration of people to urban areas	M	L	L	
2	Lack of animal draught power	L	H	L	
3	Increase in farm machinery	M	L	L	
4	Shortage of labour	M	L	H	
5	Reduction in availability of fodder	M	H	M	
6	Increase in number of unemployed rural youth	H	H	M	
7	Increase in level of education	M	M	H	
8	Reduction in availability of irrigation water	L	L	H	
9	Increase in rural indebtedness	M	L	M	
10	Better transport facilities	M	H	H	
11	Milk collection centers/route	L	L	L	
12	Marketing facilities at the village level	L	M	L	
13	Slackness towards agriculture	M	L	M	
14	Low relative profitability from farming	M	L	H	
15	Absentee land lordism	L	L	L	
16	Selling land to others	L	L	H	
17	Purchasing land from others	L	L	L	
18	Any other	-	-	-	

H=High; M= Medium; L = Low

Table- 32: Type of new market opportunities in urban / rural areas which are having bearings on farming system

District: Burdwan **Type of AES: AES-I/II/III**

S.No.	Type of new market opportunities	Effect of each opportunity on farming System (H/M/L)		
		AES-I	AES-II	AES-III
1	Vegetables	H	H	H
2	Fruits	M	H	H
3	Mulberry silk	L		H
4	Oilseeds	H	L	H
5	Pulses	H	L	H
6	Mushroom	M		H
7	Flowers	L	M	M
8	Meat (goat/sheep)	M	M	H
9	Sale of Seeds to outside	M		L
10	Sale of Organic products to	H		L
11	Basmati rice	M		
12	Honey	L		
13	Handicraft	M	L	M
14	Agri-Clinic	L	L	-

H=High; M= Medium; L = Low

Table- 33 A: Diversification and intensification of farming systems

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Resource Rich**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodities in terms of net income (Rs. /ha)				Intervention (Diversification / Intensification)
		EFS	Proposed		Mutually Agreed upon OP-IV	
		OP-I	OP-II			
	Agricultural crops -Irrigated - Paddy (Boro) -Mustard -pulse (Musur) -Rainfed -Paddy (Amon) -	 10,50,000 42,000 1,40,000 14,00000	 12,00,000 60,000 1,60,000 18,00000		 11,50,000 50,000 1,50,000 15,00000	Intensification with improved management
	Horticultural crops - Orchards -Vegetables - Potatoes - Onion Floriculture	 4,90,000 2,10,000	 5,50,000 3,00,000		 5,00,000 2,50,000	Diversification with improved crop husbandry
	Animal husbandry (Rs/animal) -Cows -Goat	6,00000 3,00000	8,00000 4,00000		7,00000 3,50,000	Intensification with improved production technology
	Fisheries	5,60,000	7,00,000		6,00,000	Intensification with improved production technology
	Poultry	2,40,000	3,50,000		3,00,000	Intensification with improved production technology
	Bee keeping					
	Duckeries	3,60,000	4,50,000		4,00,000	Intensification with improved production technology
	Agriculture labour					
	Any other					

Table- 33 B: Diversification and intensification of farming systems

District: Burdwan **Agro-ecological situation: I**
Village:Porsura **Resource poor**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodities in terms of net income (Rs. /ha)				Intervention (Diversification / Intensification)
		EFS	Proposed		Mutually Agreed upon OP-IV	
		OP-I	OP-II			
	Agricultural crops -Irrigated - Paddy (Boro) -Mustard -pulse (Musur) -Rainfed -Paddy (Amon) -	 10,50,000 2,625 10,500 10,50,000	 12,00,000 4,000 18,000 12,00,000		 11,50,000 3,000 15,000 11,50,000	**Diversification**
	Horticultural crops - Orchards -Vegetables - Potatoes - Onion Floriculture	 2,45,000 10,500	 3,50,000 18,000		 3,00,000 15,000	Intensification
	Animal husbandry (Rs/animal) -Cows -Buffaloes -Sheep -Goat -Pigs	36,00,000 30,00,000	60,00,000 50,00,000		40,00,000 40,00,000	Intensification
	Fisheries	2,80,000	4,00,000		3,50,000	Intensification
	Sericulture					
	Poultry	9,60,000	15,00,000		12,00,000	Intensification
	Bee keeping					
	Duckeries	10,80,000	14,00,000		12,00,000	Intensification
	Agriculture labour	20,00,000	-		-	

Table- 33 C: Diversification and intensification of farming systems

District: Burdwan **Agro-ecological situation: III**
Village: Bheti **Resource Rich**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodities in terms of net income (Rs per Bigha)				Intervention (Diversification / Intensification)
		EFS	Proposed		Mutually Agreed upon OP-IV	
		OP-I	OP-II	OP-III		
	Agricultural crops -Irrigated -Aman Paddy -Mustad - -Rainfed -Boro Paddy, Potato - -	 900 850 1200 1800	 1200 1200 1900 2100	 1200 1200 1900 2100	 1100 1100 1700 2100	Intensification in area and productivity
	Horticultural crops - Orchards -Vegetables Onion - Floriculture	 4000	 4500	 5000	 5000	Crop diversification
	Animal husbandry (Rs/animal) -Cows -Buffaloes -Sheep -Goat -Pigs	 1200 1800 800	 1500 2000 1100	 1400 3000 1000	 1500 3000 1000	Intensification with improved breed
	Poultry	700	900	850	900	
	Bee keeping					
	Duckeries	700	850	950	950	

Table- 33 D: Diversification and intensification of farming systems

District: Burdwan **Agro-ecological situation: II**
Village: Bheti **Resource Poor**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodities in terms of net income (Rs./bigha)				Intervention (Diversification / Intensification)
		EFS	Proposed		Mutually Agreed upon	
		OP-I	OP-II	OP-III	OP-IV	
	Agricultural crops (33 Decimal)					
	-Kharif Paddy	1100	1200	1200	1200	Intensification with improved management practices
	-Boro Paddy	1900	1950	1950	1950	
	-Mustad	1300	1350	1400	1400	
	-Til	1300	1380	1400	1350	
	-Jute	1000	1050	1100	1050	
	-					
	-					
	Horticultural crops					
	-Vegetables					Intensification by area & technology with improved management practices
	Potato	2000	2050	2050	2050	
	onion	2000	3000	4000	4000	
	- Floriculture					
	Animal husbandry					
	(Rs/animal)	4500	5000	5600	6000	Intensification with technology support and disease management
	-Cows	6000	7000	8000	8000	
	-Buffalos	1500	2000	2500	2500	
	-Sheep	800	1000	1300	1300	
	-Goat					
	Fisheries	8000		10000	9000	Intensification with technology support and disease management
	Poultry	1000	1200	1300	1300	Intensification with improved management practices
	Duckeries	800	1000	950	950	Intensification with improved management practices & control of inbreeding

Table- 33 E: Diversification and intensification of farming systems

District: Burdwan **Agro-ecological situation: III**
Village: MOIRA **Resource Rich**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodities in terms of net income (Rs./bigha)				Intervention (Diversification / Intensification)
		EFS	Proposed		Mutually Agreed upon	
		OP-I	OP-II	OP-III	OP-IV	
	Agricultural crops	(/ha/year)				
	-Irrigated					
	-Wheat					Intensification in area and Productivity through technology support.
	-Mustard	700	1000	1000	1000	
	-Lentil	950	1300	1300	1300	
	--Til	800	1300	1300	1300	
	-Rainfed	800	1300	1300	1300	
	-Kharif Paddy					
	-Maize	900	1300	1300	1300	
	-Pulses	1500	1900	1900	1900	
		800	1300	1300	1300	
	Horticultural crops					
	- Orchards					
	Mango	8000	8000	8000	8000	
	-Vegetables					
	-Potato	2000	2200	2500	2500	
	-Cucumber	4500	5000	5000	5000	Intensification
	-Tomato	5000	5400	5400	5400	
	-Onion	3000	4000	4000	4000	
	- Floriculture					
	-Marigold	11000	13000	13500	13000	
	Animal husbandry (Rs/animal)					
	-Cows (Local)	3000	3400	3500	3500	Intensification
	-Buffaloes	6000	8500	9000	9000	Intensification
	-Sheep					
	-Goat	900	1300	1600	1600	Intensification
	-Pigs					
	Fisheries (EFS-II)					Diversification
	-IMC	8000	11000	11000	10000	
	-Composite Fish Culture	8000	11000	11000	10000	
	Poultry	2000	2200	2300	2300	Intensification
	Duckeries	2000	2300	2200	2200	Intensification

Table- 33 F: Diversification and intensification of farming systems

District: Burdwan **Agro-ecological situation: III**
Village: MOIRA **Resource Poor**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodities in terms of net income (Rs./bigha)				Intervention (Diversification / Intensification)
		EFS	Proposed		Mutually Agreed upon	
		OP-I	OP-II	OP-III	OP-IV	
	Agricultural crops					
	-Irrigated					
	-Wheat					Intensification with improved Production Practice
	-Mustard	700	800	900	900	
	-Lentil	950	1300	1200	1200	
	-Til	800	1300	1200	1200	
	-Rainfed	800	1100	1300	1100	
	-Kharif Paddy					
	-Maize	900	1300	1200	1200	
	-Pulses	1500	1900	1800	1800	
		800	1350	1200	1200	
	Horticultural crops					
	- Orchards					
	-Mango	6500	7000	6000	7000	Intensification by area and productivity through technological support.
	-Vegetables					
	- Potato	2000	2200	2200	2200	
	-Onion	4000	5000	5500	5000	
	-Tomato	4500	5500	6500	6000	
	-Brinjal	5000	7000	6000	7000	
	-Ladies Finger	-	-	-	-	
	-Spinach	4000	5000	4800	5000	
	-Cucurbits	4000	3500	4000	4000	
	-Cucumber	4000	3500	4000	4000	
		5500	6000	6500	6500	
	Animal husbandry					
	(Rs/animal)					Reduction Of local breed and intensification of improved breed.
	-Cows -Local	3000	3300	3500	3500	
	-Buffaloes	5500	6000	6500	6000	
	-Sheep					
	-Goat	2000	2200	2500	2500	
	-Pigs	-	-	-	-	
	Poultry	900	2000	2200	2200	Intensification
	Duckeries	900	2000	2200	2000	Intensification

Table- 34 A: Gap in adoption and proposed strategy for promoting the modified farming system

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Resource Rich**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodity in terms of net income		Gap in adoption of new enterprise (F/P/N)	Reasons for gap in Adoption **	Proposed strategy ***
		Existing farming system	Mutually agreed upon farming system			
1	**Agricultural crops (Rs/ha)** - Irrigated -- Paddy (Boro) -Mustard -pulse (Musur) -Rainfed -Paddy (Amon)	 14000 (Primary) 10,000 14,000 10,000 (primary)	 18,000 14,000 19,000 15,000	P	1,2,3,4,5,7,9	a, b, c, d, e, h,i
2	**Horticultural crops (Rs/ha)** - Orchards - Vegetables - Potatoes - Onion - Floriculture	 45,000 (primary) 30,000	 60,000 45,000	P	1,2,3,4,5,7,8	a, b, c, d, e, g, h
3	**Animal husbandry (Rs./ animal/yr)** **- Cows** - Buffaloes - Sheep **- Goat**	 6,000 3000	 12000 3500	P	1,3,4,5,7,8,9	a, c, d, f, g, i
4	Fisheries **(Rs/ha)**	1,00,000	1,30,000	P	1,3,4,7,8,9	a, c, f,g,i
5	Poultry (Rs/10 birds /yr)	1000	2000	P	1,3,4,5,7,8	a,c,d,f,g,i
6	Duckeries (Rs/10 birds /yr)	1000	2000	P	1,3,4,5,7,8,9	a,f,i

* F= Full, P= Partial and N= Nil

** Reasons for the gap in adoption	*** Proposed Strategy
1. Lack of input supply	a) Training , demonstration and exposure visit
2. Lack of irrigation facility	b) Ensure irrigation facility
3. Lack of awareness	c) Promotion of marketing linkage
4. lack of marketing facilities	d) Use of ICT for disease, climate forecasting marketing information
5. Increased pest & disease attack due to climatic changes	e) Linkage with financial institute
6. Lack of finance	f) Technology showcasing
7. Lack of skill and knowledge	g) Establishment of input supply centre
8. Less accessibility of support service	h) Farm mechanization
9. Labour crisis	i) Introduction of improved variety/breed

Table- 34 B: Gap in adoption and proposed strategy for promoting the modified farming system

District: Burdwan **Agro-ecological situation: I**
Village: Porsura **Resource Poor**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodity in terms of net income		Gap in adoption of new enterprise (F/P/N)	Reasons for gap in Adoption **	Proposed strategy ***
		Existing farming system	Mutually agreed upon farming system			
	Agricultural crops (Rs/ha)			P	1,2,3,4,5,6, 7,9, 10	a, b, c, d, e, h
	- Irrigated -- Paddy (Boro)	12000	16,000			
	- Mustard	8,000	12,000			
	-pulse (Musur)	14,000	19,000			
	-Rainfed -Paddy (Amon)	9,000	12,000			
	Horticultural crops (Rs/ha)			P	1,2,3,4,5,7,8, 10	a, b, c, d, e, g, h
	- Vegetables	40,000 (primary)	58,000 42,000			
	- Potatoes	28,000				
	- Onion					
	Animal husbandry (Rs./ animal/yr)			P	1,3,4,5,7,8,9	a,c,d, e, f,g,i
	- Cows	5,000	10000			
	- Buffaloes					
	- Sheep					
	- Goat	2500	3000			
	Fisheries **(Rs/ha)**	80,000	1,30,000	F	1,3,4,5,7,8,9	a,c,d,e, f,g,i
	Poultry (Rs/10 birds /yr)	800	2000	F	1,3,4,5,7,8	a,c,d, e,f,g,i
	Duckeries (Rs/10 birds /yr)	900	2500	F	1,3,4,5,7,8	a,f,,e, i
	Agriculture labour					

* F= Full, P= Partial and N= Nil

** Reasons for the gap in adoption	*** Proposed Strategy
1)Lack of input supply 2)Lack of irrigation facility 3)Lack of awareness 4)lack of marketing facilities 5)Increased pest & disease attack due to climatic changes 6) Lack of finance 7) Lack of skill and knowledge 8) Less accessibility of support service 9) Labour crisis 10) High input cost	a) Training , demonstration and exposure visit b) Ensure irrigation facility c) Promotion of marketing linkage d) Use of ICT for disease, climate forecasting marketing information e) Linkage with financial institute f) Technology showcasing g) Establishment of input supply centre h) Farm mechanization i) Introduction of improved variety/breed

Table- 34 C: Gap in adoption and proposed strategy for promoting the modified farming system

District: Burdwan **Agro-ecological situation: I I**
Village: Bheti **Resource Rich**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodity in terms of net income		Gap in adoption of new enterprise (F/P/N)	Reasons for gap in Adoption **	Proposed strategy ***
		Existing farming system	Mutually agreed upon farming system			
	Agricultural crops (Rs/ha) - Irrigated -- Paddy (Boro) Mustard -pulse (Musur) -Rainfed -Paddy (Amon)	 12000 (Primary) 8,000 14,000 9,000 (primary)	 16,000 12,000 19,000 12,000	P	1,2,3,4,5,6, 7,9, 10	a, b, c, d, e, h
	Horticultural crops (Rs/ha) - Vegetables - Potatoes - Onion	 40,000 (primary) 28,000	 58,000 42,000	P	1,2,3,4,5,7,8, 10	a, b, c, d, e, g, h
	Animal husbandry (Rs./ animal/yr) - Cows - Buffaloes - Sheep - Goat	 5,000 2500	 10000 3000	P	1,3,4,5,7,8,9	a,c,d, e, f,g,i
	Fisheries **(Rs/ha)**	80,000	1,30,000	F	1,3,4,5,7,8,9	a,c,d,f,g,i
	Poultry (Rs/10 birds /yr)	800	2000	F	1,3,4,5,7,8,9	a,c,d,f,g,i
	Duckeries (Rs/10 birds /yr)	900	2500	F	1,3,4,5,7,8,9	a,f,i
	Agriculture labour					

* F= Full, P= Partial and N= Nil

** Reasons for the gap in adoption	*** Proposed Strategy
1)Lack of input supply 2)Lack of irrigation facility 3)Lack of awareness 4)lack of marketing facilities 5)Increased pest & disease attack due to climatic changes 6)Lack of finance 7)Lack of skill and knowledge 8)Less accessibility of support service 9)Labour crisis 10) High input cost	a) Training , demonstration and exposure visit b)Ensure irrigation facility c)Promotion of marketing linkage d)Use of ICT for disease, climate forecasting marketing information e)Linkage with financial institute f)Technology showcasing g)Establishment of input supply centre h)Farm mechanization i)Introduction of improved variety/breed

Table- 34 D: Gap in adoption and proposed strategy for promoting the modified farming system

District: Burdwan **Agro-ecological situation: I I**
Village: Bheti **Resource Poor**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodity in terms of net income		Gap in adoption of new enterprise (F/P/N)	Reasons for gap in Adoption **	Proposed strategy ***
		Existing farming system	Mutually agreed upon farming system			
	Agricultural crops (Rs/ha) - Irrigated -- Paddy (Boro) - Mustard -pulse (Musur) -Rainfed -Paddy (Amon)	 10000 (Primary) 9,000 13,000 10,000 (primary)	 16,000 12,000 19,000 12,000	P	1,2,3,4,5,6, 7,9, 10	a, b, c,
	Horticultural crops (Rs/ha) - Vegetables - Potatoes - Onion	 42,000 (primary) 30,000	 58,000 42,000	P	1,2,3,4,5,7,8, 10	a, b, c, d, e, g, h
	Animal husbandry (Rs./ animal/yr) - Cows - Buffaloes - Sheep - Goat	 6,000 2600	 10000 3000	P	1,3,4,5,7,8,9	a,c,d, e, f,g,i
	Fisheries **(Rs/ha)**	100,000	1,30,000	F	1,3,4,5,7,8,9	a,d,i
	Poultry (Rs/10 birds /yr)	900	2000	F	1,3,4,5,7,8,9	a,c,d,f,g,i
	Duckeries (Rs/10 birds /yr)	1000	2500	F	1,3,4,5,7,8,9	a,f,i
	Agriculture labour					

* F= Full, P= Partial and N= Nil

** Reasons for the gap in adoption	*** Proposed Strategy
1)Lack of input supply 2)Lack of irrigation facility 3)Lack of awareness 4)lack of marketing facilities 5)Increased pest & disease attack due to climatic changes 6)Lack of finance 7) Lack of skill and knowledge 8) Less accessibility of support service 9) Labour crisis 10) High input cost	a) Training, demonstration and exposure visit b)Ensure irrigation facility c)Promotion of marketing linkage d)Use of ICT for disease, climate forecasting marketing information e)Linkage with financial institute f)Technology showcasing g)Establishment of input supply centre h)Farm mechanization i)Introduction of improved variety/breed

Table- 34 E: Gap in adoption and proposed strategy for promoting the modified farming system

District: Burdwan **Agro-ecological situation: III**
Village: MOIRA **Resource Rich**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodity in terms of net income		Gap in adoption of new enterprise (F/P/N)	Reasons for gap in Adoption **	Proposed strategy ***
		Existing farming system	Mutually agreed upon farming system			
	Agricultural crops (Rs./ha)				1,2,3,4,5,9 ,10	a, b, e g, h
	- Irrigated					
	-Wheat	5000	6000	P		
	-Mustard	6100	8000			
	-Lentil	4800	6000			
	--Til	5000	7000			
	- Rainfed					
	-Kharif Paddy	7000	11000			
	-Maize	9000	14000			
	Horticultural crops (Rs/ha)	8000	8000	P	1,2,3,4,5,7 ,8, 10	a, h, i
	- Orchards (Mango)					
	- Vegetables	2900	3100	F		
	Potato					
	Animal husbandry (Rs./animal/yr)				1,3,4,5,7,8 ,9	a,d,h
	- Cows	3000	3500	P		
	- Buffaloes	6000	9000			
	- Goat	1500	2600			
	Fisheries (IMC) (Rs./h)	8000	10000	F	1,3,4,5,7,8 ,9	a,h, j
	Poultry (Rs/10 birds /yr)	2000	2300	P	1,3,4,5,7,8 ,9	a,h
	Duckeries (Rs/10 birds /yr)	2000	2300	P	1,3,4,5,7,8 ,9	a,h

* F= Full, P= Partial and N= Nil

** Reasons for the gap in adoption	*** Proposed Strategy
1)Lack of input supply	a) Training, demonstration and exposure visit
2)Lack of irrigation facility	b)Ensure irrigation facility
3)Lack of awareness	c)Promotion of marketing linkage
4)lack of marketing facilities	d)Use of ICT for disease, climate forecasting marketing information
5) Climatic harshness	e) Linkage with financial institute
6)Lack of finance	f)Establishment of input supply centre
7)Lack of skill and knowledge	g)Farm mechanization
8)Less accessibility of support service	h)Introduction of improved variety/breed
9)Labour crisis due to migration	i) Introduction of draught tolerance crop
10) High input cost	j) Seasonal fish cultivation

Table- 34 F: Gap in adoption and proposed strategy for promoting the modified farming system

District: Burdwan **Agro-ecological situation: III**
Village: MOIRA **Resource Poor**

Sl. No.	Type of enterprises/ commodities	Contribution of different enterprises / commodity in terms of net income		Gap in adoption of new enterprise (F/P/N)	Reasons for gap in Adoption **	Proposed strategy ***
		Existing farming system	Mutually agreed upon farming system			
	Agricultural crops (Rs./ha)				1,2,3,4,5,9, 10	a,b,c, e,g,h, i, k
	- Irrigated			P		
	-Wheat	4000	5500			
	-Mustard	6000	7000			
	-Lentil	4500	6000			
	--Til	4500	7000			
	- Rainfed					
	-Kharif Paddy	6000	11000			
	-Maize	8500	12000			
	Horticultural crops (Rs/ha)					
	- Orchards (Mango)					
	- Vegetables					
	Potato					
	Animal husbandry (Rs./animal/yr)					a,d,h,j, k
	- Cows	2500	3500	P		
	- Buffaloes	3000	9000			
	- Goat	1200	2000			
	Poultry (Rs/10 birds /yr)	1000	1500	p		a, h,j

* F= Full, P= Partial and N= Nil

** Reasons for the gap in adoption	*** Proposed Strategy
1)Lack of input supply	a) Training, demonstration and exposure visit
2)Lack of irrigation facility	b)Ensure irrigation facility
3)Lack of awareness	c)Promotion of marketing linkage
4)lack of marketing facilities	d)Use of ICT for disease, climate forecasting marketing information
5) Climatic harshness	e)Linkage with financial institute
6)Lack of finance	f)Establishment of input supply centre
7)Lack of skill and knowledge	g)Introduction of small farm appliance
8)Less accessibility of support service	h)Introduction of improved variety/breed
9) Labour crisis due to migration	i) Introduction of draught tolerance crops
10) High input cost	j) Feed resource strengthening
	k) Soil & animal health camp

Table-35 : Identification of different farming situations in each crop in existing farming system

Name of district : Burdwan **Name of agro-ecological situation : I/II/III Representative Village: Porsura, Bheti & Moira** **Area in ha**

AES	Crop	Time of sowing	Source of irrigation				Soil type			Previous crop
			Canal	MDTW/ STW	Pond as tank	Rainfed	Loam	Sandy loam	Red laterite	
I	Paddy	Early					Loam			
		Normal	250			150				
		Late				150				
	Potato	Early						SL		
		Normal		50						
		Late		20						
	Mustard	Early		40				SL		
		Normal								
		Late								
II	Paddy	Early					L	Sandy loam		
		Normal		15		30				
		Late								
	Potato	Early								
		Normal		15						
		Late								
	Onion	Early								
		Normal		2	1					
		Late								
III	Paddy	Early							Red laterite	
		Normal				35				
		Late				7				
	Wheat	Early								
		Normal			7					
		Late								
	Mustard	Early								
		Normal			7					
		Late								

MDTW: Medium deep tube well , STW: Shallow tube well

AES-Wise Gap Analysis

Table- 36A: Type of farming situations under which important agricultural crops are cultivated

District : Burdwan **Name of agro-ecological situation : AES-I, AES-II, AES-III**

Representative village : Porsura, Bheti, Moira **Crop : *Paddy***

AES	Farming Situation	Area and % under different farming situations								Total	
		EFS-I		EFS-II		EFS-III		EFS-IV			
		Area	%	Area	%	Area	%	Area	%	Area	%
I	Rain-fed	200	60.60	100	30.30	-	-	-	-	300	90.90
	Irrigated	160	48.48	90	27.27					250	75.75
II	Rain-fed	20	67.79	9.5	32.21					29.5	100
	Irrigated	10	33.89	8	27.11	2	6.72			20	67.79
III	Rain-fed	15	44.11	5	14.70			10	29.41	30	88.22
	Irrigated	-		-				-			

Table-36B: Type of farming situations under which important agricultural crops are cultivated

District : Burdwan **Name of agro-ecological situation : AES-I, AES-II, AES-III**

Representative village : Porsura, Bheti, Moira **Crop : *Potato***

AES	Farming Situation	Area and % under different farming situations								Total	
		EFS-I		EFS-II		EFS-III		EFS-IV			
		Area	%	Area	%	Area	%	Area	%	Area	%
I	Irrigated	-	-	70	21.21					70	21.21
II	Irrigated	-		2	6.77	2		6.77		4	13.54
III	Irrigated	-		-		-		-		-	

Table- 37 A: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES1**
Representative village : Porsura **Crop :Paddy (Aman)**
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: Rain fed**

Sl. No.	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : Time Method	June-July Line sowing	Seed bed middle of June-1st week of July Transplantation: middle to end of July without line	N P	 G1	 S1
02	Varieties	IR-36, MTU-7029	MTU 7029	N	-	-
03	Seed rate (kg / ha.)	50	60.	P	G1, G2	S1, S2
04	Seed treatment	Carbo endazim 25% - 2gm/kg of seed	Traditional	F	G1, G9	S1, S2, S3
05	Organic manure (tons /ha)	5	Nil/ 2 -3	P	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	20:40:20 40:00:00 at tillering stage 20:00:20 at Panicle initiation (PI)	40:60:10 40:00:00 at tillering stage 40:00:10 at PI	P	G1	S1, S10, S11
	Total	80:40:40	120:60:20			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	ZnSo4 – 25kg/h & Borax-10 kg/h Soil application	Nil to very low amount	F	G1, G3	S1, S3
09	Pest management - -	IPM	Indiscriminate use chemical pesticides	P	G1,	S1, S3
10	Disease management - -	IPM	Indiscriminate use chemicals	P	G1, G10	S1, S9, S10
11	Post harvest management	Proper drying, storing &	Improper method of	P	G1, G4,	S1, S4

		control of pest	storing			
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding, chemical use (Pyrazosulfuran-150 g/h)	P	G1, G4	S1, S4, S7
13	Water management : - Number of irrigations - Method of irrigation	On the basis of plant needs and soil moisture content Flood	Rain fed , Submarsal, Canal Flood	N	-	-
14	Land management : - Salinity/ acidity - Water logging	Soil Testing Proper drainage	Nil/ few Proper drainage	P N	G1, G6, G11	S3, S11, S12
15	Method of harvesting	manual/harvester at 80% maturity stage	As recommended	N	-	-
16	Average Yield (Q / ha.) - Grain - Fodder (Straw)	 60-65 60-70	45-50.	P	G1, G2, G3, G4, G7,G10, G11	S1, S2, S4, S5, S7, S9, S10, S12

* F= Full, P= Partial and N= Nil

**** Specific reasons for the gap**	***** Farmer proposed extension strategy**
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctant in adoption of new technology G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality seed production at PPP mode S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 37 B: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES1**
Representative village : Porsura **Crop :*Paddy (Boro)***
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: *Irrigated***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time Method	Seed bed-mid. Nov to mid Dec. Transplanting by January In line	Seed bed mid. of Nov to mid. Dec Transplantation: Mid. Jan. to first wk of Feb. In line	P	G1	S1
02	Varieties	IR- 36, ITE-4786 (Satabdi), MTU -1010, Khitish, GB-1	MTU- 1010, ITE-4786 (Satabdi),	N	-	-
03	Seed rate (kg per ha.)	50	60.	P	G1, G2	S1, S9
04	Seed treatment	Carbondazim 50% - 2gm/lt	Traditional only 10 % followed	F	G1, G9	S1, S2
05	Organic manure (tons /ha)	5	Nil/ 2 -3	P	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	35:65:40 70:00:00 at tillering stage 35:00:25 at Panicle initiation (PI)	40:70:10 40:00:00 at tillering stage 40:00:20 at PI	P	G1	S1, S10
	Total	140:65:65	120:70:30			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	ZnSo4 – 25 kg /ha, borax 10 kg/ha at the time of land preperation Soil	Nil to very low	F	G1, G3	S1, S3
09	Pest management - -	IPM	Indiscriminant use of chemical pesticides	P	G1,	S1, S3
10	Disease management -	IPM	Indiscriminate use chemical	P	G1, G10	S1, S9, S10

	-		pesticide			
11	Post harvest management	Proper drying, storing & control of pest	Improper method of storing	P	G1, G4,	S1, S4
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding, chemical use (Pyrazosulfaran -150 g/ha)	P	G1, G4	S1, S4
13	Water management : - Number of irrigations - Method of irrigation	On the basis of plant needs and soil moisture content submerge/ alternative drying	8-10 irrigations with shallow tube well, In case of Canal flooding	P	G3, G12	S3
14	Land management : - Salinity/ acidity Water logging	Soil Testing Proper drainage	Nil to few Proper drainage	p N	G1, G6	S3, S11,S12
15	Method of harvesting	manual/harvester at 80% maturity stage	As recommended	N	-	-
16	Average Yield (Q / ha.) - Grain - Fodder (Straw)	 70-75 60-70	60-65	P	G1, G2, G3, G4, G7,G10, G11	S1, S2, S4, S5, S7, S9, S10, S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: Unpredicted water source through canel	S1: Training , demonstration and exposure visit S2: Quality seed production at PPP mode S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 37 C: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES1**
Representative village : Porsura **Crop : *Mustard***
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: *Irrigated***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	Mid. Oct to Mid Nov. Line sowing	Mid. Nov . Broadcasting /paira cropping	P P	G1 G1	S1 S1
02	Varieties	B-9, Subinoy, Jhumka, Klayan, JD-6	B9	P	G2, G3	S, S3
03	Seed rate (kg per ha.)	7	7	N	-	-
04	Seed treatment	Captan, Thiram 2 gm/kg of seed	Nil	F	G1, G9	S1, S2
05	Organic manure (tons /ha) Biofertiliser (kg /ha)	5 Azophos-15 kg	Nil to very low amount	F	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	50:50:25 50:00:25 at Branching stage	40:40:40 40:00:00	P	G1, G11	S1, S10
	Total	**100:50:50**	**80:40:40**			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	Borax 10kg Soil	Nil to very low	F	G1,	S1,
09	Pest management - -	IPM/ chemical	Indiscriminat e use of chemical pesticides	P	G1,	S1, S3
10	Disease management - -	IPM/chemic al	Indiscriminat e use of chemicals pesticides	P	G1, G10	S1, S9, S10
11	Post harvest management	Proper	Improper	P	G1, G4,	S1, S4

		drying, storage	method of storing			
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding, Nil	P	G1, G4	S1, S4
13	Water management : - Number of irrigations - Method of irrigation	2-3 controlled irrigation /check basin	3-4 irrigations flood irrigation	P P	G3, G7	S3
14	Land management : Acidity	Liming on Soil Test basis	Nil	F	G1, G6	S3, S11
15	Method of harvesting	Manual	As recommended	N	-	-
16	Average Yield (Q / ha.) - Grain - straw /Fuel	 10-12 25	7-7.5	P	G1, G2, G3, G8,G10, G11	S1, S2, S5, S6, S9, S10

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: Unpredicted water source through canel	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 37 D: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES1I**
Representative village : Bheti **Crop :Paddy (Aman)**
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: Rain fed**

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	June-July Line sowing	Seed bed middle of June-1st week of July Transplantation: Middle to end of July without line	N P	 G1	 S1
02	Varieties	IR-36, MTU-7029	MTU 7029	N	-	-
03	Seed rate (kg per ha.)	50	70	P	G1, G2	S1, S9
04	Seed treatment	Carbondazim 25% - 2gm/ha	Traditional	F	G1, G9	S1, S2
05	Organic manure (tons /ha)	5	Nil/ 2 -3	P	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	40:40:20 20:00:20 after 21 days, 20:00:00 2nd dressing	20:60:30 20:00:00 20: 00:00	P	G1	S1, S10
	Total	80:40:40	60:60:30			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	ZnSo4 – 25kg/ha and Borax 10 kg/ha at the time of land preperation Soil	Nil to very low	F	G1, G3	S1, S3
09	Pest management - -	IPM	Indiscriminate use of chemical pesticides	P	G1, G3	S1, S3
10	Disease management - -	IPM	Indiscriminate use of chemical pesticides	P	G1, G3,G4, G10,	S1, S9, S10

11	Post harvest management	Proper drying, storing & control of pest	Improper method of storing	P	G1, G4,	S1, S4
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding,	P	G1	S1
13	Water management : - Number of irrigations - Method of irrigation	On the basis of plant needs and soil moisture content flood	Rain fed , flood	N	-	-
14	Land management : - Salinity/ acidity - Water logging	Soil Testing proper drainage	Nil proper drainage	F N	G1, G6	S3, S11,S12
15	Method of harvesting	manual/harvester at 80% maturity stage	As recommended	N	-	-
16	Average Yield (Q / ha.) - Grain - Fodder (Straw)	 60-65 60-70	 40-45.	P	G1, G2, G3, G4, G7,G10, G11	S1, S2, S3, S4, S5, S7, S9, S10,S11

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality seed production at PPP mode S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 37 E: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES-I1**
Representative village : Bheti **Crop :*Paddy (Boro)***
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: *Irrigated***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	Seed bed-Mid. Nov to Mid Dec. Transplanting by January In line	Seed bed middle of Mid. Nov to Mid Dec Transplantation: Mid. Jan. to first wk of Feb. In line	P	G1	S1
02	Varieties	IR 36, IET-4786 (Satabdi), MTU 1010, Khitish, GB-1	IET-4786 , MTU 1010	N	-	-
03	Seed rate (kg per ha.)	50	70	P	G1, G2	S1, S9
04	Seed treatment	Carbondazim 50% - 2gm/kg	Traditional only 10 % followed	F	G1, G9	S1, S2
05	Organic manure (tons /ha)	5 mt/ha	Nil/ 2 -3mt/ha	F	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	40:65:30 at basal 50:0:0 at 1st top dressing 40:0:3530 at panicle initiation stage	40:80:20at basal 50 at 1st top dressing 50:0:30 at panicle initiation stage	P	G1	S1, S10
	Total	130:65:65	140:75:80.			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	ZnSo4 – 25 kg /ha Borax 10 kg/ha at Soil	Nil to very low	F	G1, G3	S1, S3,S12
09	Pest management -	IPM	Indiscriminate use	P	G1,	S1, S3

	-		pesticides			
10	Disease management - -	IPM	Indiscriminat e use chemicals	P	G1, G10	S1, S9, S10
11	Post harvest management	Proper drying, storing & control of pest	Improper method of storing	P	G1, G4,	S1, S4
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding, major chemical use (Pretilachlor - 900ml /ha)	P	G1, G4	S1, S4
13	Water management : - Number of irrigations - Method of irrigation	On the basis of plant needs and soil moisture content submerge/ alternative drying	8-10 irrigations with shallow, tube well, flooding	P	G3, G12	S3
14	Land management : - Salinity/ acidity - Water logging	Soil Testing proper drainage	few use lime proper drainage	F N	G1, G6	S3, S11
15	Method of harvesting	manual/harv ester at 80% maturity stage	As recommended	N	-	-
16	Average Yield (Q / ha.) - Grain - Fodder (Straw)	 70-75 60-70	60-65	P	G1, G2, G3, G4, G7,G10, G11	S1, S2, S4, S5, S7, S9, S10,S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: Unpredicted water source through canal	S1: Training , demonstration and exposure visit S2: Quality seed production at PPP mode S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting, marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 37 F: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES1I**
Representative village : Bheti **Crop : *Mustard***
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: *Irrigated***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	 Mid. Oct to Mid Nov. Line sowing	 Mid. Nov .to end of Nov Broadcasting /paira cropping	 P P	G1 G1	S1 S1
02	Varieties	B-9, Subinoy, Jhumka, JD-6, Kalyan	B-9,	P	G2, G3	S, S3
03	Seed rate (kg per ha.)	7	7	N	-	-
04	Seed treatment	Captan, Thiram 2 gm/kg of seed	Nil	F	G1, G9	S1, S2
05	Organic manure (tons /ha) Biofertiliser (kg /ha)	5 Azophos-15 kg	Nil	F	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	 50:50:25 50:00:25	 40:40:40 40:00:00	 P	G1, G11	S1, S10
	Total	**100:50:50**	**80:40:40**			
07	Method of fertilizer use : - Basal - Top dress	 broadcasting broadcasting	 broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	 Borax 10kg Soil	Nil to very	F	G1,	S1,
09	Pest management - -	 IPM/ chemical	Indiscriminat e use of chemicals pesticides	P	G1,	S1, S3
10	Disease management - -	 IPM/chemic al	Indiscriminat e use of chemicals pesticides	P	G1, G10	S1, S9, S10
11	Post harvest management	Proper drying, storage	Improper method of storing	P	G1, G4,	S1, S4
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding, Nil	P	G1, G4	S1, S4

13	Water management : - Number of irrigations - Method of irrigation	3-4 controlled irrigation	2-3 irrigations Flood irrigation	P	G3, G7	S3
14	Land management : Acidity	Liming on Soil Test basis	Nil	F	G1, G6	S3, S11
15	Method of harvesting	Manual	As recommended	N	-	-
16	Average Yield (Q / ha.) - Grain - straw /Fuel	 10-12 25	7.5-8.0	P	G1, G2, G3, G8,G10, G11	S1, S2, S5, S6, S9, S10,S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill	S1: Training , demonstration and exposure visit
G2: Non-availability of quality seed	S2: Quality seed production
G3: Lack of awareness	S3: Awareness camp
G4: Lack of fund,	S4: Linkage with financial institute
G5: Non-availability of organic matter	S5: Promotion of organic manure production
G6: Less accessibility of support service	S6: Technology showcasing
G7: Labour crisis	S7: Farm mechanization
G8: Lack of input supply at proper time,	S8: Establishment of input supply centre
G9: Relucancy	S9: Use of ICT for disease, climate forecasting marketing information
G10: In proper use of fertilizer, pesticide	S10: Promotion of IPM, INM
G11: Lack of soil testing facilities at block/ GP level	S11: Mobile soil testing facility
G12: Unpredicted water source through canal	S12: Establishment of soil testing lab at block level

Table- 37 G: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES1I**
Representative village : Bheti **Crop : *Jute***
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: *Irrigated***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	 Mid. April to 1st wk of May. Line sowing	 Mid. April-May Broadcasting	 P	 G1	 S1
02	Varieties	JRO 128, JRO-204, JRO-8432	JRO 524	P	G2, G3	S, S3
03	Seed rate (kg /ha.)	4	7	F	-	-

04	Seed treatment	Carbandazim 2g/ kg of seed	Nil	F	G1, G9	S1, S2
05	Organic manure (tons /ha)	5	Nil	F	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	20:30:30 20:00:00 at 21 DAS 20:00:00 at 35-42 DAS	20:00:00	P	G1, G11	S1, S10
	Total	**60:30:30**	**20:00:00**			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	$ZnSO_4$- 10 kg/h Soil	Nil to very	F	G1,	S1,
09	Pest management - -	Chemical	Indiscriminate use pesticides	P	G1,	S1, S3
10	Disease management - -	IPM/chemical	Indiscriminate use chemicals	P	G1, G10	S1, S9, S10
11	Post harvest management	Retting in good quality show flowing water/ Microbial retting at 110-120 day of crop sowing (30 kg/ ha) drying, storage	Improper method of storing	F	G1, G4,	S1, S4
12	Weed management - Mechanical - Herbicide	Mechanical using nail weeder Quizalofop ethyle (70 g/h)	Hand weeding, Nil	P	G1, G4	S1, S4
13	Water management : - Number of irrigations - Method of irrigation	2-3 within 1st 16-20 DAS Surface irrigation	2-3 irrigations Flood irrigation	P	G3, G7	S3
14	Land management : Acidity	Liming on Soil Test basis before	Nil	F	G1, G6	S3, S11

		15 days of sowing (1 in 3 yrs)				
15	Method of harvesting	Manual	As recommended	N	-	-
16	Average Yield (Q / ha.) - Fibres - Jute stick	 35 90	 26-27 90	P	G1, G2, G3, G8,G10, G11	S1, S2, S5, S6, S9, S10, S12,

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of organized marketing facility with fractuation of price, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctance in adoption G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: Unpredicted water source through canal	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Pro active role of exiting marketing of machinery of public sector

Table- 37 H: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES-1II**
Representative village : Moira **Crop :Paddy (Aman)**
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: Rain fed**

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	**Swoing**-Mid June to Mid July **Trans**-Mid July to Mid Aug. **Sowing**-Dry Seedbed **Trans**-In Line	As per recommendation ,sometimes delayed due to labour crisis & Late onset of monsoon Trans planting without line	P	G1 , G12	S1
02	Varieties	IR-36, MTU-7029	MTU 7029	N	-	-
03	Seed rate (kg per ha.)	40-45	70-75	P	G1, G2	S1, S9
04	Seed treatment		Traditional	F	G1, G9	S1, S2

		Carbondazim 25% - 2gm/kg				
05	Organic manure (tons /ha)	5	Nil/ 2 -3	F	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	 15:30:20 30:00:0 after 21 days, 15:00:10 2nd dressing	 10:25:15 20:0:0 at tillering	P	G1	S1, S10
	Total	60:30:30	30:25:15			
07	Method of fertilizer use : - Basal - Top dress	 broadcasting broadcasting	 broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	ZnSo4 – 25kg/hand Borax 10 kg /ha Soil	Nil	F	G1, G3	S1, S3
09	Pest management - -	IPM	Indiscriminate use of chemical pesticides	P	G1,	S1, S3
10	Disease management - -	IPM	Indiscriminate use of chemical chemicals	P	G1, G10	S1, S9, S10
11	Post harvest management	Proper drying, storing & control of pest	Improper method of storing	P	G1, G4,	S1, S4
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding,	P	G1	S1
13	Water management : - Number of irrigations - Method of irrigation	On the basis of plant needs and soil moisture content flood	Rain fed , flood	N	-	-
14	Land management : - Salinity/ acidity - Water logging	Soil Testing proper drainage	Nil proper drainage	F N	G1, G6	S3, S11
15	Method of harvesting	Manual/harvester at 80% maturity stage	Manual	P	G4, G6	S4, S7
16	Average Yield (Q / ha.) - Grain - Fodder (Straw)	 50-55 60-70	 30-35 40	P	G1, G2, G3, G4, G7,G10, G11, G12	S1, S2, S3, S4, S5, S6, S9, S10,S11, S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: Erratic rainfall	S1: Training , demonstration and exposure visit S2: Quality seed production at PPP mode S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Use of efficient water management techniques S7: Provision of custom hiring service S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 37 I: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES-1II**
Representative village : Moira **Crop :Wheat**
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: Irrigated**

Sl. No.	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	**Mid. Nov. to Mid Dec.** **Line Sowing**	Mid Dec to End of Jan. **Broadcasting**	P p	G1 G1	S1 S1
02	Varieties	**PBW-343,PBW-443,Rajlakshmi, UP-262**	PBW-343,UP-262	P	G1	S2, S3
03	Seed rate (kg / ha.)	**100**	120	P	G1	S2, S3
04	Seed treatment	Carboxin/Carbendazim @ 2gm/Kg of seed	Nil to very few	P	G1, G9	S1, S3
05	Organic manure (t /ha)	FYM-5 or Oil Cake - 0.5 Azophos - 15 Kg/Ha.	FYM – 1-3	P	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	60:60:60 1st –N -30 Kg/Ha at 21 DAS, 2nd – N-30 Kg/Ha at 42 DAS	15:15:15 10:0:0	P	G1, G11	S1, S11, S10

	Total	**120:60:60**	**25:15: 15**			
07	Method of fertilizer use : - Basal - Top dress	Broadcasting Broadcasting	Broadcasting Broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	Zn-EDTA-25; Borax 10; Ammonium Molybdate @0.5; Soil Application at the time of final land preparation	 Nil	F	G1, G3	S1, S3
09	Pest management - -	IPM & chemical	Nil	F	G1,	S1, S3, S9
10	Disease management - -	IPM	Improper chemical control	P	G1, G10	S1, S9, S10
11	Post harvest management	Sun drying storage	As recommended	N	-	-
12	Weed management - Mechanical - Herbicide	IWM	1-2 hand weeding	P	G1	S1
13	Water management : - Number of irrigations - Method of irrigation	4-6 Nos irrigation Checked	4-6 Nos Coaleary flooding	N P	G3,G7	S1, S3, S6
14	Land management : - Salinity/ acidity - Water logging	On the basis of soil testing and proper drainage.	Nil	F	G1, G6, G11	S1, S3, S11
15	Method of harvesting	Manual / harvester	Manual	P	G3, G4	S3, S7
16	Average Yield (Q / ha.) - Grain	**30-35**	**15-22**	P	G1, G2, G5, G7,G10, G11	S1, S2, S5, S6, S7, S10

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill	S1: Training , demonstration and exposure visit
G2: Non-availability of quality seed	S2: Quality seed production
G3: Lack of awareness	S3: Awareness camp
G4: Lack of fund,	S4: Linkage with financial institute
G5: Non-availability of organic matter	S5: Promotion of organic manure production
G6: Less accessibility of support service	S6: Use of efficient water management techniques
G7: Labour crisis	S7: Provision of custom hiring service
G8: Lack of input supply at proper time,	S8: Establishment of input supply centre
G9: Relucancy	S9: Use of ICT for disease, climate forecasting marketing information
G10: In proper use of fertilizer, pesticide	S10: Promotion of IPM, INM
G11: Lack of soil testing facilities at block/ GP level	S11: Mobile soil testing facility

Table- 37 J: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES-1II**
Representative village : Moira **Crop : Pulses (Kharif +Rabi)**
Farming system: EFS-I + EFS IV
Type of farmer : RRF & RPF **Farming situation: Rainfed upland**

Sl. No.	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	**Kh. Kalai**-Mid July to Mid Aug. **Rabi pulses**-4th wk. Of Oct. To Mid Nov. Kh. Arhar-Mid June – Mid July. **Line Sowing**	As recommended End of June – 1st wk..of Aug Broadcasting	P	G-1,G-2	S-1,S-2
02	Varieties	**Kh.Kalai** –WBU - 108 **Rabi Pulses**-Gram B-108,B-115, Lentil-Asha, Ranjan, Khesari-Nirmal, Ratan, Pea-B-22,GF-68. Kh.Arhar-Upas-120	Local Verities	F	G-1,G-3,G-6	S-1,S-3,S-5,S-8
03	Seed rate (Kg/ ha.)	**Kh.Kalai-20-25** **Rabi Pulses**-Gram-50;Lentil-20-25; Khesari-30-40; Pea-50 **Kharif Arhar**-30-35	As recommended	N	-	-
04	Seed Treatment	Chemical-Thiram, R.Culture-Specific Strain	Nil	F	G-1,G-2	S-1,S-4,
05	Organic manure (MT /ha)	5	Nil	F	G-1,G-3	S-1,S-3,S-4, S-8
06	Fertilizer / nutrient (kg/ha) Basal (N+P+K) Top Dress	Pea,Kalai,Khesari 20:40:20 Arhar,Gram,Lentil-30:60:60 . Spray 2% DAP at flowering stage	Pea,Kalai,Khesari- 10:10:5 Arhar,Gram,Lentil-10:10:5 Nil	P F	G-1,G-2,G-3,G-4	S-1,S-2, S-8
7	Method of fertilizer use :	Soil application	Soil application	P	G-1,G-3,G-	S-1 ,S-3,S-

	- Basal Topdress	Spray	Nil		4, G8	4,S-8
08	Micro nutrient (specify) : - Dose (kg/hac) - Method of Application	Zn-EDTA-0.05% at 21 DAS ,0.1% Di-Sodium Octaborate Tetrahydrate at 28 DAS; Ammonium Molybdate-0.05% at 35 Days Foilar Spray	Nil	F	G-1,G-3,G-4	S-1 ,S-3,S-4
9	Pest management	IPM	Improper chemical control	P	G-1,G-2,G-8	S-1, S-2,
10	Disease management	IPM	Improper chemical control	P	G-1,G-2,G-8	S-1, S-2,
11	Post harvest management	Proper Drying & Storage	Improper Drying & Storage	N	-	-
12	Weed management - Mechanical Herbicide	IWM	1-2 hand weeding	P	G-1,G-2,G-3	S-1,S-2,S-3, S-4
13	Water management : No of irrigation	Rainfed, Life saving irrigation at critical stage	Rainfed	P	G-1,G-2	S-1,S-2
14	Land management : Acidity	Liming on Soil Test basis.	Nil	F	G-1, G-3,G-4,G-8	S-1,S-3,S-4,S-8
15	Method of harvesting	Manual	Manual	N	-	-
16	Average Yield (Q / ha.)Grain	Kh.Kalai:9-10 Gram:20-22 Lentil-13-15; Khesari:18-20 Pea:20-22 Kh.Arhar:15-18	Kh.Kalai:4-6 Gram:11-14 Lentil-4-7 Khesari:7-12 Pea:10-14 Kh.Arhar:10-12	P	G-1,G-2,G-3,G-5,G-6,G-8	S-1,S-2,S-3,S-5,,S-6, S-7,S-8

* F= Full, P= Partial and N= Nil

** Specific reasons for gap in adoption	*** Farmer proposed extension strategy
G-1 Lack of awareness	S-1 Awareness campaign.
G-2 Lack of skill/Knowledge	S-2 Capacity building
G-3 Lack of fund	S-3 Linkage with credit institute
G4 Lack of soil testing facility at block level	S-4 Motivation
G-5 Poor resource of water	S-5 Quality seed production
G-6 Non availability of quality seeds	S-6 Promotion of IPM/INM/IWM
G-7 Labour crisis	S-7 Promotion the production of organic Manure
G-8. Less accessibility of support service	S-8 Public-private support

Table- 37 K: Gap in adoption and proposed extension strategy for improving the productivity / income from agricultural crops

District : Burdwan **Name of agro-ecological situation : AES1II**
Representative village : Moira **Crop :** ***Mustard***
Farming system: EFS-I + EFS IV
Type of farmer : RRF & RPF **Farming situation:** ***live saving Irrigated, upland***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	Mid. Oct to Mid Nov. Line sowing	Mid Nov.- Mid Dec. Broadcasting /paira cropping	 P	 G1	 S1
02	Varieties	B-9,B-54, JD-6	B-9	P	G2, G3	S, S3
03	Seed rate (kg per ha.)	7	7	N	-	-
04	Seed treatment	Mancozeb , Captan, Thiram	Nil	F	G1, G9	S1, S2
05	Organic manure (tons /ha) Biofertiliser (kg /ha)	5 Azophos- 15 kg	Nil	F	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	50:50:25 50:00:25	20:20:10 20:00:00	P	G1, G11	S1, S10
	Total	**100:50:50**	**40:20:10**			
07	Method of fertilizer use : - Basal - Top dress	 broadcasting broadcasting	 broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	0.1%Disodium Octaborate terahydrate, 0.05% Ammounium Molybdate at 3rd wk. and 6thwk. Foliar Spray	Nil	F	G1,	S1,
09	Pest management - -	IPM/ chemical	Indiscriminat e use pesticides	P	G1,	S1, S3, S9
10	Disease management - -	IPM/chemical	Indiscriminat e use chemicals	P	G1, G10	S1, S9, S10
11	Post harvest management	Proper drying, storage	Improper method of storing	P	G1, G4,	S1, S4
12	Weed management	IWM	Nil		G1, G4	S1, S4

	- Mechanical - Herbicide			F		
13	Water management : - Number of irrigations - Method of irrigation	2-3 controlled irrigation	3-4 Splash irrigation using coal mine water	P	G3, G12	S3, G6
14	Land management : Acidity	Liming on soil test basis	Nil	F	G1, G6	S3, S11
15	Method of harvesting	Manual	As recommended	N	-	-
16	Average Yield (Q / ha.) - Grain - straw /Fuel	10-12 25	4.5-5.5	P	G1, G2, G3, G8,G10, G11	S1, S2, S5, S6, S9, S10

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: lack of water resource	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Use of efficient water management techniques S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility

Table- 38: Type of farming situations under which important horticultural crops are cultivated

Name of district : Burdwan **Representative village : Porsura, Bheti, Moira**
Name of hort. crop : Vegetable **AES: I, II, III**

(Area in ha)

AES	Crop	Soil type	Number of Families (%) under different Farming Situations		Total	
			Irrigated	Rainfed	Area	(%)
I	All vegetable	Loam/ clay loam	50	30	20	8.5
	Fruit: Mango			5	5	2.1
II	All vegetable	Loam/ clay loam, Sandy loam	40	30	15	42.8
	Fruit: Mango			3	1	2.8
III	All vegetable	Red literate	10	25	5	5.5
	Fruit orchard	Red literate		2	5	5.5

Table- 39A: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan **Agro-ecological situation: AES-I**
Representative villag: Porsura **Crop : Potato**
Existing forming system – II
Farmer type: : RRF & RPF **Farming situation: Irrigated**

Sl. No	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed Extension Strategy (***)
1	Sowing : - Time -	End of Oct to Mid Nov.	Mid Nov.- 1st wk of Dec.	P	G1	S1, S3
	Method	Planting, in row	Planting , in row	N	-	-
02	Variety	Kufri Pokhraj , Kufri Jyoti (certified), Kufri Lalima Kufri Chipsona-1	Kufri Pokhraj , Kufri Jyoti (use of non certified seed tuber.)	P	G1, G2	S1, S2
03	Seed rate (Q/ha)	20-25	18-20	P	G1, G2	S1, S2
04	Seed Treatment	Metalaxyl, Mancozeb, *Trichoderma viridae*	Mancozeb-/ no seed treatment	P	G1,G3	S1, S3
05	Organic Manure (t/ha)	10	4-5	p	G1, G5	S1, S5
06	Fertilizer (kg/ha) Basal (N:P:K) Top dressing	66:150:50 134:0:100	100:200:150 130:00:00	P	G1, G10, G11	S1,S8, S11
	Total	**200:150:150**	**230:200:150**			
07	Method of application	Broadcasting	Broadcasting	N	-	-
08	Micro-nutrient - Dose (kg/plant) - Method of application	0.05 % Zn EDTA, 0.1% Boric acid Foliar spray	Nil to Few	P	G1, G11	S1, S11
09	Weed management - Around the plants - In between the rows	IWM	Hand weeding/ Metribuzine	P	G1, G3	S1, S3
10	Pest management - -	IPM	As per dealer advice	P	G1,	S1, S9, S10
11	Disease management - -	IDM	Blitox , mancozeb	P	G1, G10	S1, S9, S10
12	Water management - No. of irrigations - Method of irrigation	10-12 nos Surface irrigation	10-12 nos Surface irrigation	N	-	-

-13	Method of harvesting	Potato harvester/ Manual	Manual	P	G1, G4	S1, S7
14	Land management : Acidity	Liming on Soil Test basis	Nil	P	G1, G6, G11	S1, S11
15	Post harvest management	Pre cooling, curing, grading & proper storage	Cold storage	P	G1, G7, G9	S1, S3, S4
16	Average Yield (Q / ha.) - Tuber	300-350	250-300	P	G1, G2, G4	S1,S2, S3, S4, S9 ,S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 39B: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan
Representative villag: Bheti

Farmer type: : RRF & RPF

Agro-ecological situation: AES-II
Crop : Brinjal
Existing forming system – II/III
Farming situation: Irrigated

Sl. No	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed Extension Strategy (***)
01	Variety	Season and zone specific HYV/Hybrid	Local var. & Non specific Hybrid	P	G1, G2	S1, S2
02	Spacing (cm)	60 X 45 , 90 X 60 etc.	60 X 45 , 90 X 60 etc	N	-	-
03	Organic Manure (t/h)	10	4-5	P	G1, G4, G5	S5
04	Major nutrients : (N+P+K)	Hybrid-	Same	P	G1,G4,	S1, S4, S8

	- Dose (Kg/ h)	150:100:100 OP- 100:50:50	dose in hybrid & OP- 120:60:60		G8	
05	Micro-nutrient(Fertiliser) - Method of application	Use of ZnSo4, , Boran as per soil testing	As per dealer's advice	P	G1,G4, G8	S1, S4, S8
06	Weed management - Around the plants - In between the rows	IWM	Hand weeding/	P	G1, G3	S1, S3
07	Pest management	IPM/Chemical	As per dealer advice	P	G1,	S1, S9, S10
08	Disease management	IDM/Chemical	Blitox , mancozeb	P	G1, G10	S1, S9, S10
09	Water management - No. of irrigations - Method of irrigation	10-12/ Use of Micro irrigation	10-12	P	G1, G4	S1, S7
10	Method of harvesting	Manual	Manual	N	-	-
11	Land management : Acidity	Liming on Soil Test basis	Nil	P	G1, G6, G11	S1, S11
12	Post harvest management	Pre cooling, grading & Cold chain , processing	Nil	F	G1, G4, G9	S1, S3, S4
13	Average Yield (Q / ha.)	250-300	200-250	P	G1, G2, G4	S1,S2, S3, S4, S9

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctance in adoption G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Promotion of micro irrigation system S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 39 C: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan **Agro-ecological situation: AES-II**
Representative villag: Bheti **Crop : Tomato**
Existing forming system – II/III
Farmer type: : RRF & RPF **Farming situation: Irrigated**

Sl. No	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed Extension Strategy (***)
01	Variety	HYV/Hybrid Abhilash , Abinash-3 & Variety released from IARI & IIHR	Local var. & Non specific Hybrid	P	G1, G2	S1, S2
02	Spacing (cm)	75 X 60 , 90 X 60 etc.	75 X 60 , 90 X 60 etc	N	-	-
03	Organic Manure (t/h)	10	4-5	P	G1, G4, G5	S5
04	Major nutrients : (N+P+K) - Dose (Kg/ h)	Hybrid- 150:100:100 OP- 100:50:50	Same dose in hybrid & OP- 120:60:60	P	G1,G4, G8	S1, S4, S8
05	Micro-nutrient(Fertiliser) - Method of application	Use of ZnSo4, CuSo4, Boron & Ca as per soil testing	As per dealer's advice	P	G1,G4, G8	S1, S4, S8
06	Weed management - Around the plants - In between the rows	IWM	Hand weeding/	P	G1, G3	S1, S3
07	Pest management	IPM/Chemical	As per dealer advice	P	G1,	S1, S9, S10
08	Disease management	IDM/Chemical	Blitox , mancozeb	P	G1, G10	S1, S9, S10
09	Water management - No. of irrigations - Method of irrigation	10-12/ Use of Micro irrigation	10-12	P	G1, G4	S1, S7
10	Method of harvesting	Manual	Manual	N	-	-
11	Land management : Acidity	Liming on Soil Test basis	Nil	P	G1, G6, G11	S1, S11
12	Post harvest management	Pre cooling, grading & Cold	Nil	F	G1, G4, G9	S1, S3, S4

		chain , processing				
13	Average Yield (Q / ha.)	350-400	300-350	P	G1, G2, G4	S1,S2, S3, S4, S9

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctance in adoption G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Promotion of micro irrigation system S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility S12: Establishment of soil testing lab at block head quarter

Table- 39 D: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan **Name of agro-ecological situation : AES1I**
Representative village : Bheti **Crop : *Onion***
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: *Irrigated***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	Mid. Oct to Mid Dec. Line sowing	Mid. Nov . – Jan. Line sowing	P	G1	S1
02	Varieties	Nasik Red, Agrifound Dark Red, Agrifound Light Red	Local	P	G2, G3	S, S3
03	Seed rate (kg per ha.)	6-8	7-9	P	G1, G-2	S1, S2-
04	Seed treatment	Mancozeb	Nil	F	G1, G9	S1, S2
05	Organic manure (tons /ha)	10	4-5	P	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K)	50:60:30	40:40:40 40:00:00	P	G1, G11	S1, S10

	- Top dress (M+)	50:00:30				
	Total	**100:60:60**	**80:40:40**			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	Zn So4-7 kg or sulphur-20 kg Borax 10kg Soil	Nil to very	F	G1,	S1,
09	Pest management - -	IPM/ chemical	Indiscriminate use pesticides	P	G1,	S1, S3
10	Disease management - -	IPM/chemical	Indiscriminate use chemicals	P	G1, G10	S1, S9, S10
11	Post harvest management	Proper curing, storage	Improper method of storing	P	G1, G4,	S1, S4, S11
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding, Nil	P	G1, G4	S1, S4
13	Water management : - Number of irrigations - Method of irrigation	8-10 controlled irrigation	7-8 irrigations surface irrigation	P	G4 ,G7	S3, S4
14	Land management : Acidity	Liming on Soil test basis	Nil	F	G1, G6	S3,
15	Method of harvesting	Manual	Manual	N	-	-
16	Average Yield (Q / ha.) - Bulb	250-300	200-220	P	G1, G2, G3, G8,G10, G11	S1, S2, S5, S6, S9, S10,S12

* F= Full, P= Partial and N= Nil

**** Specific reasons for the gap**	***** Farmer proposed extension strategy**
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Creation of storage facility S12: Establishment of soil testing lab at block head quarter

Table- 39E: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan **Name of agro-ecological situation : AES1I**
Representative village : Bheti **Crop : *Cucurbits (Bitter Gourd)***
Farming system: EFS-I + EFS II
Type of farmer : RRF & RPF **Farming situation: *Irrigated***

Sl. No.	Items of package	Recommen-ded practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed extension strategy (***)
01	Sowing : - Time - Method	Jan-Feb. and Oct to Mid Dec. Line sowing	Jan-Feb. and Oct to Mid Dec. Line sowing	-	-	-
02	Varieties	Pusa Vishesh, Arka Harit, Pusa Do Mousami etc	Local	P	G2, G3	S2, S3
03	Seed rate (kg per ha.)	5-6	6-8	P	G1, G-2	S1, S2-
04	Seed treatment	Mancozeb	Nil	F	G1, G9	S1, S2
05	Organic manure (tons /ha)	10	4-5	P	G1, G4, G 5	S1, S4, S5
06	Fertilizer / nutrient (kg/ha) - Basal (N+P+K) - Top dress (M+)	50:40:40 30:00:00	40:30:30 20:00:00	P	G1, G11	S1, S10
	Total	**80:40:40**	**60:30:30**			
07	Method of fertilizer use : - Basal - Top dress	broadcasting broadcasting	broadcasting broadcasting	N	-	-
08	Micro nutrient (specify) : - Dose (kg/ha) - Method of application	Borax 10kg Soil Broadcastin g	Nil	F	G1,	S1,
09	Pest management - -	IPM/ chemical	Indiscriminat e use pesticides	P	G1,	S1, S3, S10
10	Disease management - -	IDM/chemic al	Indiscriminat e use chemicals	P	G1, G10	S1, S9, S10
11	Post harvest management	Pre-cooling, storage	Nil	F	G1, G4,	S1, S4, S11
12	Weed management - Mechanical - Herbicide	IWM	Hand weeding, Nil	P	G1, G4	S1, S4
13	Water management : - Number of irrigations -	8-10	7-8 irrigations	P	G4 ,G7	S3, S4

	Method of irrigation	surface irrigation	surface irrigation			
14	Land management : Acidity	Liming on Soil Test basis	Nil	F	G1, G6	S3,
15	Method of harvesting	Manual	Manual	N	-	-
16	Average Yield (Q / ha.) - Bulb	120-150	100-120	P	G1, G2, G3, G8,G10, G11	S1, S2, S5, S6, S9, S10,S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Relucancy in adoption G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: Farm mechanization S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Creation of storage facility S12: Establishment of soil testing lab at block head quarter

Table- 39F: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan **Agro-ecological situation: AES-III**
Representative villag: Moira **Crop : Tomato**
Existing forming system – II/III
Farmer type: : RRF & RPF **Farming situation: Irrigated**

Sl. No	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed Extension Strategy (***)
01	Variety	HYV/Hybrid Abhilash , Abinash-3 & Variety released from IARI & IIHR	Local var. & Non specific Hybrid	P	G1, G2	S1, S2
02	Spacing (cm)	75 X 60 , 90 X 60 etc.	75 X 60 , 90 X 60 etc	N	-	-

03	Organic Manure (t/h)	10	4-5	P	G1, G4, G5	S5
04	Major nutrients : (N+P+K) - Dose (Kg/ h)	Hybrid-150:100:100 OP- 100:50:50	Same dose in hybrid & OP-100:50:50	P	G1,G4, G8	S1, S4, S8
05	Micro-nutrient(Fertiliser) - Method of application	Use of ZnSo4, CuSo4, Boron & Ca as per soil testing	As per dealer's advice	P	G1,G4, G8	S1, S4, S8
06	Weed management - Around the plants - In between the rows	IWM	Hand weeding/	P	G1, G3	S1, S3
07	Pest management	IPM/Chemical	As per dealer advice	P	G1,	S1, S9, S10
08	Disease management	IDM/Chemical	Blitox , mancozeb	P	G1, G10	S1, S9, S10
09	Water management - No. of irrigations - Method of irrigation	10-12/ Use of Micro irrigation	8-9	P	G1, G 12	S1, S7
10	Method of harvesting	Manual	Manual	N	-	-
11	Land management : Acidity	Liming on Soil Test basis	Nil	P	G1, G6, G11	S1, S11
12	Post harvest management	Pre cooling, grading & Cold chain , processing	Nil	F	G1, G4, G9	S1, S3, S4
13	Average Yield (Q / ha.)	350-400	220-250	P	G1, G2, G4	S1,S2, S3, S4, S9

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality seed G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctance in adoption G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: Lack of irrigation source	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: promotion of efficient water management technology S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM S11: Mobile soil testing facility

Table- 39G: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan **Agro-ecological situation: AES-II**
Representative villag: Bheti **Crop : Mango**
Existing forming system – II
Farmer type: : RRF & RPF **Farming situation: Rainfed**

Sl. No	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed Extension Strategy (***)
01	Variety	Regular bearing variety – Mallika, Amrapally etc & Langra, Himsagar etc	Langra, Himsagar etc	P	G1, G2	S1, S2
02	Spacing (m)	5 X 5 , 3 X 3 for high density	not maintained proper distance	P	G1	S3
03	Organic Manure (kg/ plant/ yr)	20-40	-	P	G1, G4, G5	S5
04	Major nutrients : (N+P+K) - Dose (Kg/ plant/yr)	1:0.5:1	0.5:00:00	P	G1,G4, G8	S1, S4, S8
05	Micro-nutrient(Fertiliser) - Method of application	Boron & Ca as per soil testing	nil	F	G1,G4, G8	S1, S4, S8
06	Weed management - Around the plants - In between the rows	Manual & Mulching	Manual	P	G1, G3	S1, S3
07	Pest management	IPM/Chemical	As per dealer advice	P	G1,	S1, S9, S10
08	Disease management	IDM/Chemical	As per dealer's advice	P	G1, G10	S1, S9, S10
09	Water management - No. of irrigations - Method of irrigation	Use of Micro irrigation	nil	F	G1, G4	S1, S4, S7
10	Method of harvesting	Manual	Manual	N	-	-
11	Land management : Acidity	Liming on Soil Test basis	Nil	P	G1, G6, G11	S1, S11
12	Post harvest management	Pre cooling, grading & Cold chain , processing	Nil	F	G1, G4, G9	S1, S3, S4
13	Average Yield (Q / ha.)	200-300	150-180	P	G1, G2, G4	S1,S2, S3, S4, S9

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality planting material G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctance in adoption G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level	S1: Training , demonstration and exposure visit S2: Quality planting material production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: promotion of efficient water management technology S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM

Table- 39H: Gap in adoption and proposed extension strategy for improving the productivity / income from horticultural crops

District : Burdwan **Agro-ecological situation: AES-III**
Representative villag: Moira **Crop : Mango**
Existing forming system – II/III
Farmer type: : RRF & RPF **Farming situation: Rainfed**

Sl. No	Items of package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Specific reasons for the gap (**)	Farmer proposed Extension Strategy (***)
01	Variety	Regular bearing variety – Mallika, Amrapally etc & Langra, Himsagar etc	Langra, Himsagar etc	P	G1, G2	S1, S2
02	Spacing (m)	5 X 5 , 3 X 3 for high density	not maintained proper distance	P	G1	S3
03	Organic Manure (kg/ plant/ yr)	20-40	-	P	G1, G4, G5	S5
04	Major nutrients : (N+P+K) - Dose (Kg/ plant/yr)	1:0.5:1	Irregular / nil	P	G1,G4, G8	S1, S4, S8
05	Micro-nutrient(Fertiliser) - Method of application	Boron & Ca as per soil testing	nil	F	G1,G4, G8	S1, S4, S8
06	Weed management - Around the plants - In between the rows	Manual & Mulching	Manual	P	G1, G3	S1, S3
07	Pest management	IPM/Chemical	As per dealer advice	P	G1,	S1, S9, S10
08	Disease management	IDM/Chemical	As per dealer's advice	P	G1, G10	S1, S9, S10
09	Water management - No. of irrigations - Method of irrigation	Use of Micro irrigation	nil	F	G1, G 12	S1, S7

10	Method of harvesting	Manual	Manual	N	-	-
11	Land management : Acidity	Liming on Soil Test basis	Nil	P	G1, G6, G11	S1, S11
12	Post harvest management	Pre cooling, grading & Cold chain , processing	Nil	F	G1, G4, G9	S1, S3, S4
13	Average Yield (Q / ha.)	200-300	130-150	P	G1, G2, G4	S1,S2, S3, S4, S9

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality planting material G3: Lack of awareness G4: Lack of fund, G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctance in adoption G10: In proper use of fertilizer, pesticide G11: Lack of soil testing facilities at block/ GP level G12: Lack of irrigation source	S1: Training , demonstration and exposure visit S2: Quality planting material production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of organic manure production S6: Technology showcasing S7: promotion of efficient water management technology S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of IPM, INM

Table- 40: Type of farming situation under which the particular milch and meat animal is managed

Name of the District: Burdwan **Name of the AES:I, II, III**
Name of the animal: Cow **Representative village: Porsura, Bheti, Moira**
Existing farming system: EFS-I,II, III, IV

AES	Ownership of land resource	No. of families (%) under different farming situations				Total	
		Local breed		Crossbred			
		No	%	No	%	No	%
AESI	**Land owners**						
	Irrigated + Rainfed	208	75.7	52	18.9	260	94.6
	Only Rainfed						
	Landless	15	5.4			15	5.4
AES-II	**Land owners**						
	Irrigated + Rainfed	25	59.5	12	28.6		88.1
	Only Rainfed						
	Landless	5	11.9			5	11.9
AESIII	**Land owners**						
	Irrigated + Rainfed						
	Only Rainfed	95	67.8	20	14.2	115	82
	Landless	25	18			25	18

Table- 41A: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-I**
Type of animal: *Cow* **Farming situation: Semi intensive**
Representative village : Porsura
Type of farmer: RRF & RPF **Existing farming system: I, II**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed up-gradation :** * Artificial insemination: - Breed - Location * Natural insemination : - Breed - Location	100 % AI with superior germ plasm	AI- 50 % with Gir/ Jersey Nature insemination with local breed -50 % At village	P	G3, G9	S3, S7
2	**Feed management** (per animal) - Green fodder (Kg/day) - Dry fodder (Kg/day) - Concentrates (kg/day) - Minerals (gms / day) - Vitamins (ml. / day)	8 kg, 6 kg 1.5 kg as maintenance, 0.4 kg/ lt of milk production Vit & mineral mixture -40 gm	1-2 hr confined grazing, 6-8 kg paddy straw Rice bran-2-3 kg few followed EPIC concentrate ration -1-2 kg/ d/head	P	G1, G2, G5	S1, S2, S5, S6
3	**Inter calving period** (Day)	365 days	Deshi- 400-450 Crossbred- 380-400	P	G2, G11	S2, S11
4	**Health care (**per year) (+) - HS & BQ (No. of vaccinations) - FMD - Mastitis	HS & B.Q once in a year FMD- every 6 month interval	FMD vaccination – major farmers	P	G1, S3, G9	S1, S3, S8 , S9
5.	**General management :** - Washing (times / day) - Cleaning (times / day) - Housing (Paccca / Kutcha) Drinking water (lts. / day)	1 1 Paccua good quality water adlib./(25-30)	Occasionally both poor quality water adlib.	P	G1, G3, G10	S1, S3, S 10
6.	**Average milk yield** (lt/day)	Deshi- 2-4 Crossbred- 5-10	Local- 05.-2 Crossbred- 2-8	P	G1, G2,G5, G8, G11	S1, S2, S3, S6,S8 S11, S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of green fodder G3: Lack of awareness G4: Lack of fund and infrastructure G5: High production cost of milk G6: Lack of milk collection center/ transport system G7: Reluctance in adoption of new technology G8: Inadequate health care G9: Less accessibility of support service G10: Crisis of labour G11: Poor genetic resource	S1: Training , demonstration and exposure visit S2: Promotion of fodder production S3: Awareness camp S4: Linkage with financial institute S5: Establishment of input supply centre in PPP mode S6: Strengthening of milk collection, transport & cooling system S7: Motivation through technology showcasing S8: Organization of health camp. S9: Use of ICT for disease, climate forecasting, marketing information S10: Promotion of Farm mechanization S11: Promotion of breed up gradation programme S12: Mobile animal health care service

Table- 41B: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-II**
Type of animal: *Cow* **Farming situation: Semi intensive**
Representativevillage :Bheti
Type of farmer: RRF & RPF **Existing farming system: I,II,III**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed up-gradation :** * Artificial insemination: - Breed - Location * Natural insemination : - Breed - Location	100 % AI with superior germ plasm	AI- 40 % with Gir/ Jersey Nature insemination with local breed -60 % At village	P	G3, G9	S3, S7, S11
2	**Feed management** (per animal) - Green fodder (Kg/day) - Dry fodder (Kg/day) - Concentrates (kg/day) - Minerals (gms / day) - Vitamins (ml. / day)	 8 kg, 6 kg 1.5 kg as maintenance, 0.4 kg/ lt of milk production Vit & mineral mixture -40 gm	1-2 hr confined grazing, 6-8 kg paddy straw Rice bran-2-3 kg few followed EPIC concentrate ration -1-2 kg/ d/head	P	G1, G2, G5	S1, S2, S5, S7
3	**Inter calving period** (Day)	365 days	Deshi- 400-450 Crossbred-380-400	P	G2, G11	S2, S11

4	**Health care (**per year) (+) - HS & BQ (No. of vaccinations) - FMD - Mastitis - Thilaris	HS & B.Q once in a year FMD- every 6 month interval	FMD vaccination – few farmers	P	G1, S3, G9	S1, S3, S8 , S9, S12
5.	**General management :** - Washing (times / day) - Cleaning (times / day) - Housing (Paccca / Kutcha) Drinking water (lts. / day)	 1 1 Paccua good quality water adlibatum /(25-30)	 Occasionally both poor quality water adlib.	P	G1, G3, G10	S1, S3, S 10
6.	**Average milk yield (lit/day)**	Deshi- 2-4 Crossbred- 5-10	Local- 1- 2 Crossbred- 5-8	P	G1, G2,G5, G8, G11	S1, S2, S3, S6,S8 S11, S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of green fodder G3: Lack of awareness G4: Lack of fund and infrastructure G5: High production cost of milk G6: Lack of milk collection center/ transport system G7: Reluctance in adoption of new technology G8: Inadequate health care G9: Less accessibility of support service G10: Crisis of labour G11: Poor genetic resource	S1: Training , demonstration and exposure visit S2: Promotion of fodder production S3: Awareness camp S4: Linkage with financial institute S5: Establishment of input supply centre in PPP mode S6: Strengthening of milk collection, transport & cooling system S7: Motivation through technology showcasing S8: Organization of health camp. S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of Farm mechanization S11: Promotion of breed up gradation programme S12: Mobile animal health care service

Table- 41C: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-III**
Type of animal: *Cow* **Farming situation: Semi intensive**
RepresentativeVillage :Moira
Type of farmer: RRF & RPF **Existing farming system: I, IV**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed up-gradation :** * <u>Artificial insemination</u>: - Breed - Location * <u>Natural insemination</u> : - Breed -	100 % AI with superior germ plasm	 AI- 40 % with Gir/ Jersey Nature insemination with local	 P	G3, G9	S3, S7, S11

	Location		breed -60 % At village			
2	**Feed management** (per animal) - Green fodder (Kg/day) - Dry fodder (Kg/day) - Concentrates (kg/day) - Minerals (gm / day) - Vitamins (ml. / day)	 8 kg, 6 kg 1.5 kg as maintenance, 0.4 kg/ lt of milk production Vit & mineral mixture -40 g	6 hr grazing, 6-7 kg paddy straw Wheat bran1 kg	P	G1, G2, G5, G6	S1, S2, S5, S7
3	**Inter calving period** (Day)	365 days	Deshi- 450-480 Crossbred- 370-380	P	G2, G11	S2, S11
4	**Health care (**per year) (+) - HS & BQ (No. of vaccinations) - FMD - Mastitis - Thilaris	HS & B.Q once in a year FMD- every 6 month interval	FMD vaccination – few farmers	P	G1, S3, G9	S1, S3, S8 , S9, S12
5.	**General management :** - Washing (times / day) - Cleaning (times / day) - Housing (Paccca / Kutcha) Drinking water (lts. / day)	 1 1 Paccua good quality water adlibatum /(25-30)	 Occasionally both poor quality water adlib.	P	G1, G3, G10	S1, S3, S 10
6.	**Average milk yield (lit/day)**	Deshi- 2-4 Crossbred- 5-10	Local- 1-1.5 Crossbred- 5-8	P	G1, G2,G5, G8, G11	S1, S2, S3, S6,S8 S11, S12

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of green fodder G3: Lack of awareness G4: Lack of fund and infrastructure G5: High production cost of milk G6: Lack of milk collection center/ transport system G7: Reluctance in adoption of new technology G8: Inadequate health care G9: Less accessibility of support service G10: Crisis of labour G11: Poor genetic resource	S1: Training , demonstration and exposure visit S2: Promotion of fodder production S3: Awareness camp S4: Linkage with financial institute S5: Establishment of input supply centre in PPP mode S6: Strengthening of milk collection, transport & cooling system S7: Motivation through technology showcasing S8: Organization of health camp. S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of Farm mechanization S11: Promotion of breed up gradation programme S12: Mobile animal health care service

Table- 42: Type of farming situation under which the particular milch and meat animal is managed

Name of the District: Burdwan **Name of the AES: I, II, III**
Name of the animal: Goat **Representative village: Porsura, Bheti, Moira**

Existing farming system: EFS-I, II, III, IV

AES	**Ownership of land resource**	**No. of families (%) under different farming situations**				**Total**	
		Local breed		Crossbred			
		No	%	No	%	No	%
AES-I	**Land owners**						
	Irrigated + Rainfed	180	65.4			180	65.4
	Only Rainfed						
	Landless	15	5.4			15	5.4
AES-II	**Land owners**						
	Irrigated + Rainfed	25	59.5			25	59.5
	Only Rainfed						
	Landless	5	11.9			5	11.9
AES-III	**Land owners**						
	Irrigated + Rainfed						
	Only Rainfed	60	42.8	10	7.1	70	49.9
	Landless	25	18			25	18

Table- 43 A: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-I**
Type of animal: *Goat* **Farming situation: Semi intensive**
RepresentativeVillage : Porsura
Type of farmer: RRF & RPF **Existing farming system: I, II**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed up-gradation :** * Artificial insemination: - Breed - Location * Natural insemination : - Breed - Location	Natural insemination with Bengal goat / Artificial insemination	Nature insemination with Bengal goat breed - 100% At village	P	G1, G3, G9	S1, S3, S7
2	**Feed management** (per animal) - Green fodder (Kg/day) - Dry fodder (Kg/day) - Concentrates (g/day) - Minerals (gms / day) - Vitamins (ml. / day)	 4-5 0.5 150-200 as maintenance, Vit & mineral mixture -4-5 gm	4-6 hr confined grazing, vegetable waste- 0.1-2	F	G1, G2, G3	S1, S2, S3
3	**Kidding interval** (Day)	180-200	180-200	N	-	-
4	**Health care (**per year) (+) - HS & BQ (No. of vaccinations) - PPR vaccination -Goat pox vaccination - Parasitic infestation	HS & B.Q once in a year PPR- 1 yr interval Goat pox vaccination- 3 yr interval Deworming on the basis of stool examination / every 3-4 month interval	PPr & Goat pox vaccination – major farmers	P	G1, S3, G6, G7	S1, S3, S5, S6, S7

5.	**General management :** - Washing (times / day) - floor cleaning (times / day) - Housing (Paccca / Kutcha) - Drinking water (lts. / day)	 1 1 Paccua good quality water adlib.	 Occasionally Poor night shelter poor quality water adlib.	 P	G1, G4, G5	S1, S3, S 4
6.	**Average life wt at selling** Selling age (month) Life body wt (kg**)**	 8-10 Male -14-16	 10-12 Male- 10-14	P	G1, G2,G5, G6	S1, S2, S3, S6

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality feed & green fodder G3: Lack of awareness G4: Lack of fund & infrastructure G5: Reluctance in adoption of new technology G6: Inadequate health care G7: Less accessibility of support service	S1: Training , demonstration and exposure visit S2: Promotion of fodder production & use of home made concentrate feed S3: Awareness camp & motivation through technology showcasing S4: Linkage with financial institute S5 : Organization of health camp S 6: Use of ICT for disease, climate forecasting marketing information S7: Mobile animal health care service

Table- 43 B: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-II**
Type of animal: *Goat* **Farming situation: Semi intensive**
RepresentativeVillage :Bheti
Type of farmer: RRF & RPF **Existing farming system: I,II,III**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed up-gradation :** * Artificial insemination: - Breed - Location * Natural insemination : - Breed - Location	Natural insemination with Bengal goat / Artificial insemination	Nature insemination with Bengal goat breed - 100% At village	P	G1, G3, G9	S1, S3, S7
2	**Feed management** (per		4-6 hr	F	G1, G2,	S1, S2, S3

	animal) - Green fodder (Kg/day) - Dry fodder (Kg/day) - Concentrates (g/day) - Minerals & vitamins mixture (g / day)	 4-5 0.5 150-200 as maintenance, 4-5	confined grazing, vegetable waste- 0.1-2		G3	
3	**Kidding interval** (Day)	180-200	180-200	N	-	-
4	**Health care (**per year) (+) - HS & BQ (No. of vaccinations) - PPR vaccination -Goat pox vaccination - Parasitic infestation	HS & B.Q once in a year PPR- 1 yr interval goat pox vaccination- 3 yr interval Deworming on the basis of stool examination / every 3-4 month interval	PPR vaccination – major farmers	P	G1, S3, G6, G7	S1, S3, S5, S6, S7
5.	**General management :** - Washing (times / day) - floor cleaning (times / day) - Housing (Paccca / Kutcha) - Drinking water (lts. / day)	 1 1 Paccua good quality water adlib.	 Occasionally Poor night shelter poor quality water adlib.	 P	G1, G4, G5	S1, S3, S 4
6.	**Average life wt at selling** Selling age (month) Life body wt (kg)	 8-10 Male -14-16	 10-12 Male- 11-15	P	G1, G2,G5, G6	S1, S2, S3, S6

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality feed & green fodder G3: Lack of awareness G4: Lack of fund & infrastructure G5: Reluctance in adoption of new technology G6: Inadequate health care G7: Less accessibility of support service	S1: Training , demonstration and exposure visit S2: Promotion of fodder production & use of home made concentrate feed S3: Awareness camp & motivation through technology showcasing S4: Linkage with financial institute S5 : Organization of health camp S 6: Use of ICT for disease, climate forecasting marketing information S7: Mobile animal health care service

Table- 43 C: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-III**
Type of animal: *Goat* **Farming situation: Semi intensive, rainfed**
Representative village :Moira
Type of farmer: RRF & RPF **Existing farming system: I, IV**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed up-gradation :** * Artificial insemination: - Breed - Location * Natural insemination : - Breed - Location	Natural insemination with Bengal goat / Artificial insemination	Nature insemination with Bengal goat breed - 90% Cross breeding with heavy meat breed - 10 % At village	P	G1, G3, G9	S1, S3, S7
2	**Feed management** (per animal) - Green fodder (Kg/day) - Dry fodder (Kg/day) - Concentrates (g/day) - Minerals (gms / day) - Vitamins (ml. / day)	4-5 0.5 150-200 as maintenance, Vit & mineral mixture -4-5 gm	8-10 hr grazing,	F	G1, G2, G3, G4	S1, S2, S3, G4
3	**Kidding interval** (Day)	180-200	200-240	P	G2	S2
4	**Health care (**per year) (+) - HS & BQ (No. of vaccinations) - PPR vaccination -Goat pox vaccination - Parasitic infestation	HS & B.Q once in a year PPR- 1 yr interval Goat pox vaccination- 3 yr interval Deworming	PPR vaccination – major farmers Goat pox few farmers	P	G1, S3, G6, G7	S1, S3, S5, S6, S7

		on the basis of stool examination / every 3-4 month interval				
5.	**General management :** - Washing (times / day) - floor cleaning (times / day) - Housing (Paccca / Kutcha) - Drinking water (lts. / day)	1 1 Paccua good quality water adlibatum	Occasionally Poor night shelter poor quality water adlib.	 P	G1, G4, G5	S1, S3, S 4
6.	**Average life wt at selling** **Selling age (month)** **Life body wt (kg)**	8-10 Male -14-16	12-15 Male- 12-15 Crossbred-15-18 (at 1yr)	P	G1, G2,G5, G6	S1, S2, S3, S6

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality feed & green fodder G3: Lack of awareness G4: Lack of fund & infrastructure G5: Reluctance in adoption of new technology G6: Inadequate health care G7: Less accessibility of support service	S1: Training , demonstration and exposure visit S2: Promotion of fodder production & use of home made concentrate feed S3: Awareness camp & motivation through technology showcasing S4: Linkage with financial institute S5 : Organization of health camp S 6: Use of ICT for disease, climate forecasting marketing information S7: Mobile animal health care service

Table- 44: Type of farming situation under which the particular egg/ meat poultry is managed

Name of the District: Burdwan **Name of the AES:I, II, III**
Name of the animal: Poultry **Representative village: Porsura, Bheti, Moira**
Existing farming system: EFS-I,II, III, IV

AES	Ownership of land resource	No. of families (%) under different farming situations				Total	
		Local breed		Crossbred			
		No	%	No	%	No	%
AESI	**Land owners**						
	Irrigated + Rainfed	150	54.5	10	3.6	160	58.1
	Only Rainfed						
	Landless	15	5.4			15	5.4
AES-II	**Land owners**						
	Irrigated + Rainfed	10	23.8	10	23.8	20	47.4
	Only Rainfed						
	Landless	5	11.9			5	11.9
AESIII	**Land owners**						
	Irrigated + Rainfed						
	Only Rainfed	60	42.8	20	14.2	80	57.0
	Landless	20	14.2	5	3.5	25	17.7

Table-45 A: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-I**
Type of Enterprise: *Poultry* **Farming situation: (Backyard)/ free range**
RepresentativeVillage : Porsura
Type of farmer: RRF& RPF **Existing farming system: I,II**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed**	Improved Rural poultry breed (RIR, Haringhata Black Vanaraja),	Local and few RIR	F	G1, G3, G8	S1, S3, S8
2	**Feed management** (per bird) - Concentrates (g/day) - Minerals (gms / day) - Vitamins (ml. / day)	for laying birds -120-130 Vit & mineral mixture -05-1 gm	Fallen grain, kitchen waste, scavenging for -4-6 hr	F	G1, G2, G4	S1, S2, S3, S4
3	**Age of first laying** (Wk)	Improved breed- 22 wk Local- 26 wk	Improved -25 wk Local- 28-30 wk	P	G2, G9	S2, S8
4	**Health care (**per year) - vaccination for Ranikhet disease prevention vaccination for Avian pox prevention vaccination for Infectious bursal disease (IBD) prevention	Recommendation of Routine vaccination against RP, AP & IBD at field condition	Few followed	P	G1, G5, G7	S1, S3, S5, S6, S7
5.	**General management :** - floor cleaning (times / day) Disinfection of night shelter (times/ wk) - Housing (Paccca / Kutcha) -	1 1 Paccua	Occasionally Occasionally Poor night shelter	P	G1, G4, G5	S1, S3, S 4

	Drinking water (lts. / day)	good quality water adlibatum	Poor quality water adlib.			
6.	**Average Egg production** Wt of egg (g) Egg (no/ laying year/ hen)	 53-55 280-300	 45-50 180-190	P	G1, G2,G5, G6, G9	S1, S2, S3, S6, S8

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality feed G3: Lack of awareness G4: Lack of fund & infrastructure G5: Reluctance in adoption of new technology G6: High Disease incidence & Inadequate health care G7: Less accessibility of support service G8: Non availability of good quality chicks of improved breed G9: Rearing of non descriptive / non productive breed	S1: Training , demonstration and exposure visit S2: Promotion of use of home made concentrate feed S3: Awareness camp & motivation through technology showcasing S4: Linkage with financial institute S5 : Organization of health camp S 6: Use of ICT for disease, climate forecasting marketing information G8: Production of good quality chicks of rural improved breed

Table-45 B: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-II**
Type of Enterprise: *Poultry* **Farming situation: (Backyard)/ free range**
RepresentativeVillage : Bheti
Type of farmer: RPF **Existing farming system: II, III**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed**	Improved Rural poultry breed (RIR, Haringhata Black Vanaraja),	Local and few RIR	F	G1, G3, G8	S1, S3, S8
2	**Feed management** (per bird) - Concentrates (g/day) - Minerals (gms / day)	 for laying birds -120-130 Vit &	Fallen grain, kitchen waste, scavenging for -4-6 hr	F	G1, G2, G4	S1, S2, S3, S4

	- Vitamins (ml. / day)	mineral mixture -05-1 gm				
3	**Age of first laying** (Wk)	Improved breed- 22 wk Local- 26 wk	Improved -25 wk Local- 28-30 wk	P	G2, G9	S2, S8
4	**Health care (**per year) - vaccination for Ranikhet disease prevention vaccination for Avian pox prevention vaccination for Infectious bursal disease (IBD) prevention	Recommendation of Routine vaccination against RP, AP & IBD at field condition	Nil	F	G1, G5, G7	S1, S3, S5, S6, S7
5.	**General management :** - floor cleaning (times / day) Disinfection of night shelter (times/ wk) - Housing (Paccca / Kutcha) - Drinking water (lts. / day)	 1 1 Paccua good quality water adlibatum	 Occasionally Occasionally Poor night shelter Poor quality water adlib.	 P	G1, G4, G5	S1, S3, S 4
6.	**Average Egg production** **Wt of egg (g)** **Egg (no/ laying year/ hen)**	53-55 280-300	48-49 170-180	P	G1, G2,G5, G6, G9	S1, S2, S3, S6, S8

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality feed G3: Lack of awareness G4: Lack of fund & infrastructure G5: Reluctance in adoption of new technology G6: High Disease incidence & Inadequate health care G7: Less accessibility of support service G8: Non availability of good quality chicks of improved breed G9: Rearing of non descriptive / non productive breed	S1: Training , demonstration and exposure visit S2: Promotion of use of home made concentrate feed S3: Awareness camp & motivation through technology showcasing S4: Linkage with financial institute S5 : Organization of health camp S 6: Use of ICT for disease, climate forecasting marketing information S7: Mobile animal health care service G8: Production of good quality chicks of rural improved breed

Table-45 C: Gap in adoption and proposed extension strategy for improving the productivity / income of milch and meat animals

District : Burdwan **Agro-ecological situation : AES-III**
Type of Enterprise: *Poultry* **Farming situation: (Backyard)/ free range**
Representative village : Moira
Type of farmer: RPF **Existing farming system: II, III, VI**

Sl. No.	Items of the package	Recommended practice	Existing practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (**)	Farmer Proposed extension strategy (***)
1	**Breed**	Improved Rural poultry breed (RIR, Haringhata Black Vanaraja),	Local and few RIR	F	G1, G3, G4, G8	S1, S3, S8
2	**Feed management** (per bird) - Concentrates (g/day) - Minerals (gms / day) - Vitamins (ml. / day)	for laying birds -120-130 Vit & mineral mixture -05-1 gm	Fallen grain, kitchen waste, scavenging for –whole day	F	G1, G2, G4	S1, S2, S3, S4
3	**Age of first laying** (Wk)	Improved breed- 22 wk Local- 26 wk	Improved -25 wk Local- 30 wk	P	G2, G9	S2, S8
4	**Health care (**per year) - vaccination for Ranikhet disease prevention vaccination for Avian pox prevention vaccination for Infectious Bursal disease (IBD) prevention	Recommendation of Routine vaccination against RP, AP & IBD at field condition	Nil	F	G1, G5, G7	S1, S3, S5, S6, S7
5.	**General management :** - floor cleaning (times / day) Disinfection of night shelter (times/ wk) - Housing (Paccca /	1 1	Occasionally Nil Poor night	P	G1, G4, G5	S1, S3, S 4

	Kutcha) - Drinking water (lts. / day)	Paccua good quality water adlibatum	shelter Poor quality water adlib.			
6.	**Average Egg production** Wt of egg (g) Egg (no/ laying year/ hen)	53-55 280-300	45-48 150-160	P	G1, G2,G5, G6, G8, G9	S1, S2, S3, S6, S8

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge and skill G2: Non-availability of quality feed G3: Lack of awareness G4: Lack of fund & infrastructure G5: Reluctance in adoption of new technology G6: High Disease incidence & Inadequate health care G7: Less accessibility of support service G8: Non availability of good quality chicks of improved breed G9: Rearing of non descriptive / non productive breed	S1: Training , demonstration and exposure visit S2: Promotion of use of home made concentrate feed S3: Awareness camp & Motivation through technology showcasing S4: Linkage with financial institute S5 : Organization of health camp S 6: Use of ICT for disease, climate forecasting marketing information S7: Mobile animal health care service G8: Production of good quality chicks of rural improved breed

Table - 46 A: Gap in adoption and proposed extension strategy for improving the fish seed production / income

Part I : Seed production and Rearing

District: Burdwan: AES- I
Farmer Type: RP & RR Representative Village: Porsura

Sl No.	Item of package	Recommended practice	Existing practice	Gap in adoption (N/P/ F)	** Specific reasons for the gap	*** Farmer proposed extension strategy
1A.	**Induced breeding (Happa)**					
	i) Carps	i) By Pituitary gland				
		ii) Injection of pituitary gland 2-3 mg/kg body wt. of male one time , 2-3 mg/kg body wt. of female 1st dose and repeat after 5-6 hrs (5-8 mg/kg body wt..for female only).	Not followed proper dose use over dose	P	G1, G4	S1, S4
		iii) Manure brooder of 205 – 5 kg				
	ii) Catfish	Induced breeding by ovaprim	Followed few /Nil	P	G1, G4	S1, S4
B.	**Spontaneous breeding**					
	(Common carp)	Good Pond condition	In confined Water	P	G3	S3
2.	**Nursery preparation**					
	a Routine manuring (kg/h)					
	(i) Raw cow dung	4000-5000	Improper	P	G1, G5	S1, S5
	(ii) Lime	400-500	300	P	G1, G4	S1, S4
	b Instant manuring					
	(i) Inorganic fertilizer	Urea 30- 32 kg/ h , SSP- 55-60 kg/h	Improper	P	G1, G3, G9	S1, S3
	(ii) Oil cake	2500-3000 kg/h/yr	1200 kg/h/yr	P	G1, G8	S1, S8
3.	**Insect control**					
	(a) Manual	Manual	Manual	N		
	(b) Veg oil &soap	1:3	Insecticide – cypermeprin 40 ml/ bigha	F	G1, G4	S1, S4
	c) Oil	Kerosene -125 lit/hac	few followed	P	G1, G3	S1, S3
4.	**Spawn**					

	density					
	a) single sp.	14-16 lac	15-18 lac	P	G1, G2	S1, S2
	b) multiple spp.	15-20 lac	20-28 lac	P	G1, G2	S1, S2
5.	**Feeding practice** a) Rice bran b) Oil cake	a:b=1:1 30-50 gm/0.03 h	a:b= 1:1 20 g/0.03 h	P	G1, G4, G8	S1, S4, S8
6.	**Disease**					
	Fungal	Foramalin, Nacl	Lime & beaching	P	G1, G6	S1, S8, S9
	Anaerobic	$KMNO_4$, Aeration	Lime	P	G3, G6	S3, S9
7.	**Rearing period (Duration) Month**	30-35 days March -Aug	15-45 days May- Oct.	P	G1, G7	S1, S3
8.	**Method of harvesting**	Netting in 15 days interval	Irregular netting/ during occasion	F	G3, G7, G4	S3, S7, S6
9.	**Marketing**	Selling at market Selling wt- 250g-1.5 kg	At local market at any size of fish	P	G3, G7, G9	S3, S7, S9
10	**Production Yield (q/h)**	IMC-25-32	IMC- 22-33	P	G1, G2, G4, G5, G6,G11	S1, S2,S7, S8

* F= Full, P= Partial and N= Nil

**** Specific reasons for the gap**	***** Farmer proposed extension strategy**
G1: Lack of knowledge G2: Non-availability of quality fish seed G3: Lack of awareness G4: Lack of fund & facility G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctancy in adoption & social problem like poaching, multi-ownership G11: Aquatic environmental pollution	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of livestock based integrated farming S6: Technology showcasing S7: Creation of transport & storage facility S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information

Table - 46 B: Gap in adoption and proposed extension strategy for improving the fish seed production / income

Part I : Seed production and Rearing

District: Burdwan: AES- II

Farmer Type: RP & RR Representative Village: Bheti

Sl No.	Item of package	Recommended practice	Existing practice	Gap in adoption (N/P/ F)	** Specific reasons for the gap	*** Farmer proposed extension strategy
1A.	**Induced breeding (Happa)**					
	i) Carps	i) By Pituitary gland				
		ii) Injection of pituitary gland 2-3 mg/kg body wt. of male one time , 2-3 mg/kg body wt. of female 1st dose and repeat after 5-6 hrs (5-8 mg/kg body wt.for female only).	High dose used	P	G1, G4	S1, S4
		iii) Manure brooder of 205 – 5 kg				
	ii) Catfish	Induced breeding by ovaprim	Followed few	P	G1, G4	S1, S4
B.	**Spontaneous breeding**					
	(Common carp)	Good Pond condition	In confined Water	P	G3	S3
2.	**Nursery preparation**					
	a Routine manuring (kg/h)					
	(i) Raw cow dung	4000-5000	Improper	P	G1, G5	S1, S5
	(ii) Lime	400-500	300	P	G1, G4	S1, S4
	b Instant manuring					
	(i) Inorganic fertilizer	Urea 30- 32 kg/ h , SSP- 55-60 kg/h	Improper	P	G1, G3, G9	S1, S3
	(ii) Oil cake	2500-3000 kg/h/yr	1200 kg/h/yr	P	G1, G8	S1, S8
3.	**Insect control**					
	(a) Manual	Manual	Manual	N		
	(b) Veg oil &soap	1:3	Insecticide – cypermeprin 40 ml/ bigha	F	G1, G4	S1, S4
	c) Oil	Kerosene -125 lit/hac	few followed	P	G1, G3	S1, S3
4.	**Spawn density**					
	a) single sp.	14-16 lac	15-18 lac	P	G1, G2	S1, S2

	b) multiple spp.	15-20 lac	20-28 lac	P	G1, G2	S1, S2
5.	**Feeding practice** a) Rice bran b) Oil cake	a:b=1:1 30-50 gm/0.03 h	a:b= 1:1 20 g/0.03 h	P	G1, G4, G8	S1, S4, S8
6.	**Disease**					
	Fungal	Foramalin, Nacl	Lime & beaching	P	G1, G6	S1, S8, S9
	Anaerobic	$KMNO_4$, Aeration	Lime	P	G3, G6	S3, S9
7.	**Rearing period (Duration) Month**	30-35 days March -Aug	25-45 days May- Oct.	P	G1, G7	S1, S3
8.	**Method of harvesting**	Netting in 15 days interval	Irregular netting/ during occasion	F	G3, G7, G4	S3, S7, S6
9.	**Marketing**	Selling at market Selling wt- 250g-1.5 kg	At local market at any size of fish	P	G3, G7, G9	S3, S7, S9
10	**Production Yield (q/h)**	IMC-24 -29	IMC- 20-28	P	G1, G2, G4, G5, G9,G11	S1, S2,S7, S8

* F= Full, P= Partial and N= Nil

**** Specific reasons for the gap**	***** Farmer proposed extension strategy**
G1: Lack of knowledge	S1: Training , demonstration and exposure visit
G2: Non-availability of quality fish seed	S2: Quality seed production
G3: Lack of awareness	S3: Awareness camp
G4: Lack of fund & facility	S4: Linkage with financial institute
G5: Non-availability of organic matter	S5: Promotion of livestock based integrated farming
G6: Less accessibility of support service	S6: Technology showcasing
G7: Labour crisis	S7: Creation of transport & storage facility
G8: Lack of input supply at proper time,	S8: Establishment of input supply centre
G9: Reluctancy in adoption & social problem like poaching, multi-ownership	S9: Use of ICT for disease, climate forecasting marketing information
G11: Aquatic environmental pollution	

Table - 46 C: Gap in adoption and proposed extension strategy for improving the fish seed production / income

Part I : Seed production and Rearing :

District: Burdwan: AES- III
Farmer Type: RP & RR Representative Village: Moira

Sl No.	Item of package	Recommended practice	Existing practice	Gap in adoption (N/P/ F)	** Specific reasons for the gap	*** Farmer proposed extension strategy
1A.	**Induced breeding (Happa)**					
	i) Carps	i) By Pituitary gland				
		ii) Injection of pituitary gland -2-3 mg/kg body wt. of male one time , 2-3 mg/kg body wt. of female 1st dose and repeat after 5-6 hrs (5-8 mg/kg body wt. for female only).	Improper dose	P	G1,	S1,
		iii) Manure brooder of 205 – 5 kg				
	ii) Catfish	Induced breeding by ovaprim	Followed few	P	G1, G4	S1, S4
B.	**Spontaneous breeding**					
	(Common carp)	Good Pond condition	In confined Water	P	G3	S3
2.	**Nursery preparation**					
	a Routine manuring (kg/h)					
	(i) Raw cow dung	4000-5000	3000- 3500	P	G1, G5	S1, S5
	(ii) Lime	400-500	350	P	G1, G4	S1, S4
	b Instant manuring					
	(i) Inorganic fertilizer	Urea 30- 32 kg/ h , SSP- 55-60 kg/h	Not used	F	G1, G3, G9	S1, S3
	(ii) Oil cake	2500-3000 kg/h/yr	1200 kg/h/yr	P	G1, G8	S1, S8
3.	**Insect control**					
	(a) Manual	Manual	Manual	N		
	(b) Veg oil &soap	1:3	Insecticide – cypermeprin 30 ml/ bigha	F	G1, G4	S1, S4
	c) Oil	Kerosene -125 lit/hac	few followed	P	G1, G3	S1, S3
4.	**Spawn**					

	density					
	a) single sp.	14-16 lac	20-22 lac	P	G1, G2	S1, S2
	b) multiple spp.	15-20 lac	20-30 lac	P	G1, G2	S1, S2
5.	**Feeding practice** a) Rice bran b) Oil cake	a:b=1:1 30-50 gm/0.03 h	a:b= 1:1 25 g/0.03 h	P	G1, G4, G8	S1, S4, S8
6.	**Disease**					
	Fungal	Foramalin, Nacl	Lime & beaching	P	G1, G6	S1, S8, S9
	Anaerobic	$KMNO_4$, Aeration	Lime	P	G3, G6	S3, S9
7.	**Rearing period (Duration) Month**	30-35 days March -Aug	25-45 days May- Oct.	P	G1, G7	S1, S3
8.	**Method of harvesting**	Netting in 15 days interval	Irregular netting/ during occasion	F	G3, G7, G4	S3, S7, S6
9.	**Marketing**	Selling at market Selling wt- 250g-1.5 kg	At local market at any size of fish	P	G3, G7, G9	S3, S7, S9
10	**Production Yield (q/h)**	IMC-20 -25	IMC- 17-20	P	G1, G2, G4, G5, G9,G11, G12	S1, S2,S7, S8, S10

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge G2: Non-availability of quality fish seed G3: Lack of awareness G4: Lack of fund & facility G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctancy in adoption & social problem like poaching, multi-ownership G11: Aquatic environmental pollution G12: Water scarcity	S1: Training , demonstration and exposure visit S2: Quality seed production S3:Awareness camp S4: Linkage with financial institute S5: Promotion of livestock based integrated farming S6: Technology showcasing S7: Creation of transport & storage facility S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of seasonal fish cultivation

Table - 47A: Gap in adoption and proposed extension strategy for improving the fish seed production / income

Part-II: Commercial production & rearing of fish

District: Burdwan **AES: I**
Farmer type: RP & RR **Representative village: Porsura**

Sl No.	Item of package	**Recommended practice**	**Existing practice**	Gap in adoption (N/P/ F)	** **Specific reasons for the gap**	*** **Farmer proposed extension strategy**
1	Culture component					
	i) IMC	Rahu: Catla: Mrigal= 3:4:3	Rahu: Catla: Mrigal= 2:5:3	P	G1,	S1
	ii) Exotic carp	Silver carp, Grass carp & common carp	Silver carp, Grass carp & common carp	N	-	-
	iii) Catfish	Pabda, Chital, Folui	in small quantity	P	G1, G4	S1, S4
2	**Pond preparation**					
	Organic manure (kg/h)	mohua oil cake- 2500	applied – 1500- 1700	P	G3, G4	S 3, S4
	In organic manure (kg/h)	Urea 30- 32 kg/ h , SSP- 55-60 kg/h	Not used	F	G1, G3, G9	S1, S3
	Lime (kg/h)	400-500	350	P	G1, G4	S1, S4
	Water dept (m)	1.5-2.5	4-6	P	G1	S1
3	Weed control					
	Manual					
	Chemical	2-4 D	2-4 D	-	-	-
	Mechanical	using mechanical weeder	not followed	F	G4	S4
4.	**Stocking (size / no/ h)**					
	Spawn	5-8 mm sized spawn- 4-6 lac	6-8 lac	P	G1, G2, G11	S1, S2, S11
	Fry	15-40 mm sized fry- 50000	1 lac	P		
	Fingerlings	10000 (size-40-100 mm)	0.2 lac	P		
5.	**Feeding practice** a) Rice bran b) Oil cake	a:b=1:1 30-50 gm/0.03 h	a:b= 1:1 25 g/0.03 h	P	G1, G4, G8	S1, S4, S8
	C) protein based feed	protein rich ingredients	very few apply commercial feed	P	G1, G4	S1, S4

6	**Sample netting**	Very 15 days interval	occasionally	P	G 3, G4, G7	S3, S4
7	**Disease**					
		Formalin, Nacl $KMnO_4$, Aeration probiotic based disinfectant	Lime & beaching	P	G1, G6	S1, S8, S9
			Lime	P	G3, G6	S3, S9
8.	**Method of harvesting**	Netting in 15 days interval	Irregular netting/ during occasion	F	G3, G7, G4	S3, S7, S6
9.	**Culture method**	Composite fish culture	mixed poly culture	P	G3, G8, G9	S3, S6, S9
10	**Production Yield (q/h)**	IMC-22-25	IMC- 22-24	P	G1, G2, G4, G5, G9,G11,	S1, S2,S7, S8, S10

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge	S1: Training , demonstration and exposure visit
G2: Non-availability of quality fish seed	S2: Quality seed production
G3: Lack of awareness	S3: Awareness camp
G4: Lack of fund & facility	S4: Linkage with financial institute
G5: Non-availability of organic matter	S5: Promotion of livestock based integrated farming
G6: Less accessibility of support service	S6: Technology showcasing
G7: Labour crisis	S7: Creation of transport & storage facility
G8: Lack of input supply at proper time,	S8: Establishment of input supply centre
G9: Reluctancy in adoption & social problem like poaching, multi-ownership	S9: Use of ICT for disease, climate forecasting marketing information
G11: Aquatic environmental pollution	S10: Promotion of seasonal fish cultivation
	S11: Promoting of bio-control method followed by chemical method

Table – 47B: Gap in adoption and proposed extension strategy for improving the fish seed production / income

Part-II: Commercial production & rearing of fish

District: Burdwan **AES- II**
Farmer type: RP & RR **Representative village: Bheti**

Sl No.	Item of package	**Recommended practice**	**Existing practice**	Gap in adoption *	** **Specific reasons for the gap**	*** **Farmer proposed extension strategy**
1	Culture component					
	i) IMC	Rahu: Catla: Mrigal= 3:4:3	Rahu: Catla: Mrigal= 2:5:3	P	G1,	S1
	ii) Exotic carp	Silver carp, Grass carp & common carp	Silver carp, Grass carp & common carp	N	-	-

	iii) Catfish	Pabda, Chital, Folui	in small quantity	P	G1, G4	S1, S4
2	**Pond preparation**					
	Organic manure (kg/h)	mohua oil cake- 2500	applied – 1500- 1700	P	G3, G4	S 3, S4
	In organic manure (kg/h)	Urea 30- 32 kg/ h , SSP- 55-60 kg/h	Not used	F	G1, G3, G9	S1, S3
	Lime (kg/h)	400-500	350	P	G1, G4	S1, S4
	Water dept (m)	1.5-2.5	4-6	P	G1	S1
3	Weed control					
	Manual					
	Chemical	2-4 D	2-4 D	-	-	-
	Mechanical	using mechanical weeder	not followed	F	G4	S4
4.	**Stocking (size / no/ h)**					
	Spawn	5-8 mm sized spawn- 4-6 lac	6-8 lac	P	G1, G2, G11	S1, S2, S11
	Fry	15-40 mm sized fry- 50000	1 lac	P		
	Fingerlings	10000 (size-40-100 mm)	0.2 lac	P		
5.	**Feeding practice** a) Rice bran b) Oil cake	a:b=1:1 30-50 gm/0.03 h	a:b= 1:1 25 g/0.03 h	P	G1, G4, G8	S1, S4, S8
	C) protein based feed	protein rich ingredients	very few apply commercial feed	P	G1, G4	S1, S4
6	**Sample netting**	Very 15 days interval	occasionally	P	G 3, G4, G7	S3, S4
7	**Disease**					
		Formalin, Nacl $KMNO_4$, Aeration probiotic based disinfectant	Lime & beaching	P	G1, G6	S1, S8, S9
			Lime	P	G3, G6	S3, S9
8.	**Method of harvesting**	Netting in 15 days interval	Irregular netting/ during occasion	F	G3, G7, G4	S3, S7, S6
9.	**Culture method**	Composite fish culture	mixed poly culture	P	G3, G8, G9	S3, S6, S9
10	**Production Yield (q/h)**	IMC-20 -25	IMC- 22-23	P	G1, G2, G4, G5, G9,G11	S1, S2,S7, S8, S10

* F= Full, P= Partial and N= Nil

** Specific reasons for the gap	*** Farmer proposed extension strategy
G1: Lack of knowledge	S1: Training , demonstration and exposure visit
G2: Non-availability of quality fish seed	S2: Quality seed production
G3: Lack of awareness	S3: Awareness camp
G4: Lack of fund & facility	S4: Linkage with financial institute
G5: Non-availability of organic matter	S5: Promotion of livestock based integrated farming

G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctancy in adoption & social problem like poaching, multi-ownership G11: Aquatic environmental pollution	S6: Technology showcasing S7: Creation of transport & storage facility S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of seasonal fish cultivation S11: Promoting of bio-control method followed by chemical method

Table – 47C: Gap in adoption and proposed extension strategy for improving the fish seed production / income

Part-II: Commercial production & rearing of fish

District: Burdwan **AES: III**
Farmer type: RP & RR **Representative village: Moira**

Sl No.	Item of package	**Recommended practice**	**Existing practice**	Gap in adoption	**** Specific reasons for the gap**	***** Farmer proposed extension strategy**
1	Culture component					
	i) IMC	Rahu: Catla: Mrigal= 3:4:3	Rahu: Catla: Mrigal= 2:5:3	P	G1,	S1
	ii) Exotic carp	Silver carp, Grass carp & common carp	Silver carp, Grass carp & common carp	N	-	-
	iii) Catfish	Pabda, Chital, Folui	in small quantity	P	G1, G4	S1, S4
2	**Pond preparation**					
	Organic manure (kg/h)	mohua oil cake- 2500	applied – 1500- 1700	P	G3, G4	S 3, S4
	In organic manure (kg/h)	Urea 30- 32 kg/ h , SSP- 55-60 kg/h	Not used	F	G1, G3, G9	S1, S3
	Lime (kg/h)	400-500	350	P	G1, G4	S1, S4
	Water dept (m)	1.5-2.5	4-6	P	G1	S1
3	Weed control					
	Manual					
	Chemical	2-4 D	2-4 D	-	-	-
	Mechanical	using mechanical weeder	not followed	F	G4	S4
4.	**Stocking (size / no/ h)**					
	Spawn	5-8 mm sized spawn- 4-6 lac	6-8 lac	P	G1, G2, G11	S1, S2, S11
	Fry	15-40 mm sized fry- 50000	1 lac	P		
	Fingerlings	10000 (size-40-100 mm)	0.2 lac	P		
5.	**Feeding**		a:b= 1:1	P	G1, G4, G8	S1, S4, S8

	practice a) Rice bran b) Oil cake	a:b=1:1 30-50 gm/0.03 h	25 g/0.03 h			
	C) protein based feed	protein rich ingredients	very few apply commercial feed	P	G1, G4	S1, S4
6	**Sample netting**	Very 15 days interval	occasionally	P	G 3, G4, G7	S3, S4
7	**Disease**	Formalin, Nacl $KMNO_4$, Aeration probiotic based disinfectant	Lime & beaching	P	G1, G6	S1, S8, S9
			Lime	P	G3, G6	S3, S9
8.	**Method of harvesting**	Netting in 15 days interval	Irregular netting/ during occasion	F	G3, G7, G4	S3, S7, S6
9.	**Culture method**	Composite fish culture	mixed poly culture	P	G3, G8, G9	S3, S6, S9
10	**Production Yield (q/h)**	IMC-20 -25	IMC- 17-20	P	G1, G2, G4, G5, G9,G11, G12	S1, S2,S7, S8, S10

* F= Full, P= Partial and N= Nil

**** Specific reasons for the gap**	***** Farmer proposed extension strategy**
G1: Lack of knowledge G2: Non-availability of quality fish seed G3: Lack of awareness G4: Lack of fund & facility G5: Non-availability of organic matter G6: Less accessibility of support service G7: Labour crisis G8: Lack of input supply at proper time, G9: Reluctancy in adoption & social problem like poaching, multi-ownership G11: Aquatic environmental pollution G12: Water scarcity	S1: Training , demonstration and exposure visit S2: Quality seed production S3: Awareness camp S4: Linkage with financial institute S5: Promotion of livestock based integrated farming S6: Technology showcasing S7: Creation of transport & storage facility S8: Establishment of input supply centre S9: Use of ICT for disease, climate forecasting marketing information S10: Promotion of seasonal fish cultivation S11: Promoting of bio-control method followed by chemical method

Proposed Strategies to Bridge the Gap

Table- 48 A: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy--Paddy Present crop: Kharif Paddy
Previous crop: Boro Paddy Next crop: Boro Paddy
Name of crop under study : ***Kharif Paddy*** Moisture condition : Rainfed
District : Burdwan Village : Porsura Agro-ecological situation: AES-I

Sl No.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (* *)	Proposed strategy (* **)
1	**Soil Testing / Soil Health Cards**	Below -10 % farmers	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Use in less quantity	5	P	G2, G4	S1, S4
	- Compost					
	- Vermi compost		2			
3	**Use of major fertilizers :**					
	Basal dose (kg/ha)					
	N: P: K	Imbalance use more phosphate	18:35:35	P	G1, G3, G6	S1, S2, S3, S6
	Top dress (kg/ha)	No split dose of K_2O_5	52:00:00			
	Total N:P;K		70:35:35			
	Use of micro-nutrients (Kg/ha)					
	-	Nil to very	ZnSo4 – 25kg ,Borax – 10 kg/ha Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Few followed		P	G1, G2, G4	S1, S2, S4
			BGA- 10			
			Azolla- 24			
			Azophos-12			

* F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**
G1. Lack of awareness
G2. Lack of knowledge
G3: Lack of soil testing facility at block level
G4: Non availability of FYM/ biofertilizer
G5: Lack of finance
G6: High residual effect of fertilizer / manure used in previous crop
G7: Non availability of green mannure seed

***** Code for proposed strategy**
S1. Soil health camp cum awareness programme
S2 Training, demonstration & On farm trial
S3: Strengthening of soil testing facility throughout the district
S4: Promotion of production of organic manure
S5: Linkage with credit institutions
S6: Proper soil health management
S7: Promoting seed production of green manuring crops

Table- 48 B: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Mustard-Paddy Present crop: Kharif Paddy
Previous crop: Boro Paddy Next crop: Mustard
Name of crop under study: ***Kharif Paddy*** Moisture condition : Rainfed
District : Burdwan Village : Bheti Agro-ecological situation: AES-II

Sl No.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (* *)	Proposed strategy (* **)
1	**Soil Testing / Soil Health Cards**	Below -10 % farmers	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Use in less quantity	4-5	P	G1, G4	S1, S4
	- Compost					
	- Vermi compost					
3	**Use of major fertilizers :**					
	Basal dose (kg/ha)					
	N: P: K	Imbalance use more phosphate	18:35:35	P	G1, G3, G5, G6	S1, S2, S3, S5, S6
	Top dress (kg/ha)	No split dose of K_2O_5	52:00:00			
	Total N:P;K		70:35:35			
	Use of micro-nutrients (Kg/ha)					
	-	Nil to very	ZnSo4 – 25kg Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/h)	Few followed		P	G1, G2, G4	S1, S2, S4
			BGA- 10			
			Azolla- 24			
			Azophos-12			

* F = Full P = Partial N = Nil

** Code for reasons for gap in adoption	*** Code for proposed strategy
G1. Lack of awareness	S1. Soil health camp cum awareness programme
G2. Lack of knowledge	S2 Training, demonstration & On farm trial
G3: Lack of soil testing facility at block level	S3: Strengthening of soil testing facility
G4: Non availability of FYM/ biofertilizer	S4: Promotion of production of organic manure
G5: Lack of finance	S5: Linkage with credit institutions
G6: High residual effect of fertilizer / manure used in previous crop	S6: Proper soil health management
G7: Non availability of seed	S7: Promoting seed production of green manuring crops

Table- 48 C: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Wheat Present crop: Kharif Paddy
Previous crop: Wheat Next crop: Wheat
Name of crop under study : ***Kharif Paddy*** Moisture condition : Rainfed
District : Burdwan Village : Moira Agro-ecological situation: AES-III

Sl No.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N) (*)	Reasons for gap in adoption (* *)	Proposed strategy (* **)
1	**Soil Testing / Soil Health Cards**	Below -10 % farmers	Each plot every 3 yrs	P	G1, G2, G3	S1,S2, S3
2	**Use of manure (T/ha)**					
	- FYM	Use in less quantity	4-5	P	G1, G4	S1, S4
	- Compost					
	- Vermi compost					
3	**Use of major fertilizers :**					
	N: P: K (Basal dose (kg/ha)	Imbalance use more phosphate	18:35:35	P	G1, G3, G5	S1, S2, S3, S5
	Top dress (kg/ha)	No split dose of K_2O_5	52:00:00			
	Total N:P;K		70:35:35			
	Use of micro-nutrients (Kg/ha)					
	-	Nil to very	ZnSo4 – 25 Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/h)	Few followed		P	G1, G2, G4	S1, S2, S4
			BGA- 10			
			Azolla- 24			
			Azophos-12			

* F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**
G1. Lack of awareness
G2. Lack of knowledge
G3: Lack of soil testing facility at block level
G4: Non availability of FYM/ biofertilizer
G5: Lack of finance
G6: High residual effect of fertilizer / manure used in previous crop
G7: Non availability of seed

***** Code for proposed strategy**
S1. Soil health camp cum awareness programme
S2 Training, demonstration & On farm trial
S3: Strengthening of soil testing facility
S4: Promotion of production of organic manure
S5: Linkage with credit institutions
S6: Proper soil health management
S7: Promoting seed production of green manuring crops

Table- 48 D: Proposed strategy for promoting integrated nutrient management

Cropping system: Paddy--Paddy Present crop: Boro Paddy Previous crop: Kharif Paddy
Next crop: Kharif Paddy
Name of crop under study : ***Boro Paddy*** Moisture condition : Irrigated
District : Burdwan Village : Porsura Agro-ecological situation: AES-I

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	Followed few farmers	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Use as available but not optimum	5	P	G2, G4	S1, S4
	- Compost					
	- Vermi compost		2			
3	**Use of major fertilizers :**					
	Basal dose (kg/ha)	75:75:80	65:65:55	P	G1, G3	S1, S2, S3,
	N: P: K	65-75 Kg/Ha. nitrogen	½ N during land preparation, 1st top dressing with ¼ N at 21 DOT, 2nd top dressing with ¼ N during tillering	P	G1, G3	S1, S2, S3,
	Top dress (kg/ha) N:P;K					
	Total	140:75:80	130:65:55			
	Use of micro-nutrients (Kg/ha)	Nil to very	ZnSo4 – 25kg, Borax- 10 kg Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Few followed	BGA- 10 kg/ h	P	G1, G2, G4	S1, S2, S4
			Azolla- 24 kg/h			
			Azophos-12 kg/h			

*F = Full P = Partial N = Nil

** Code for reasons for gap in adoption	*** Code for proposed strategy
G1. Lack of awareness	S1. Soil health camp cum awareness programme
G2. Lack of knowledge	S2 Training, demonstration & On farm trial
G3: Lack of soil testing facility at block level	S3: Strengthening of soil testing facility
G4: Non availability of FYM/ biofertilizer	S4: Promotion of production of organic manure
G5: Lack of finance	S5: Linkage with credit institutions
G6: High residual effect of fertilizer / manure used in previous crop	S6: Proper soil health management
G7: Non availability of seed	S7: Promoting seed production of green manuring crops

Table- 48 E: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy— Paddy Present crop: Boro Paddy
Previous crop: Kharif paddy Next crop: Kharif Paddy
Name of crop under study : ***Boro Paddy*** Moisture condition : Irrigated
District : Burdwan Village : Bheti Agro-ecological situation: AES-II

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	Followed few farmers	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Use as available but not optimum	4-5	P	G1, G4	S1, S4
	- Compost					
	- Vermi compost					
3	**Use of major fertilizers :**					
	Basal dose (kg/ha)	75:80:80	65:65:55	P	G1, G3	S1, S2, S3,
	N: P: K	60-75 Kg/Ha. nitrogen	½ N during land preparation, 1st top dressing with ¼ N at 21 DOT, 2nd top dressing with ¼ N during tillering	P	G1, G3	S1, S2, S3,
	Top dress (kg/ha) N:P;K					
	Total	140:75:80	130:65:55			
	Use of micro-nutrients (Kg/ha)	Nil to very	ZnSo4 – 25kg Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G6	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Few followed	BGA- 10 kg/ h	P	G1, G2, G4	S1, S2, S4
			Azolla- 24 kg/h			
			Azophos-12 kg/h			

*F = Full P = Partial N = Nil

** Code for reasons for gap in adoption	*** Code for proposed strategy
G1. Lack of awareness	S1. Soil health camp cum awareness programme
G2. Lack of knowledge	S2 Training, demonstration & on farm trial
G3: Lack of soil testing facility at block level	S3: Strengthening of soil testing facility
G4: Non availability of FYM/ biofertilizer	S4: Promotion of production of organic manure
G5: Lack of finance	S5: Linkage with credit institutions
G6: Non availability of seed	S6: Proper soil health management
	S7: Promoting seed production of green manuring crops

Table- 48 F: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Potato - Til Present crop: Potato
Previous crop: Kharif Paddy Next crop: Til
Name of crop under study : ***Potato*** Moisture condition : Irrigated
District : Burdwan Village : Porsura Agro-ecological situation: AES-I

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	Followed few farmers	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Use as available but not optimum	5	P	G2, G4	S1, S4
	- Compost					
	- Vermi compost		2			
3	**Use of major fertilizers :**					
	Basal dose (kg/ha) N: P: K	40:20:20	40:40:40	P	G1, G3	S1, S2, S3,
		20:00:00	40:00:00	P	G1, G3	S1, S2, S3,
	Top dress (kg/ha) N:P;K					
	Total	60:20:20	80:40:40			
	Use of micro-nutrients (Kg/ha)	Nil to very	0.05 % Zn EDTA, 0.1% Boric acid Foliar spray	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Limited use	Azophos-18 kg/h	P	G1, G2, G4	S1, S2, S4

*F = Full P = Partial N = Nil

** Code for reasons for gap in adoption	*** Code for proposed strategy
G1. Lack of awareness	S1. Soil health camp cum awareness programme
G2. Lack of knowledge	S2 Training, demonstration & On farm trial
G3: Lack of soil testing facility at block level	S3: Strengthening of soil testing facility
G4: Non availability of FYM/ biofertilizer	S4: Promotion of production of organic manure
G5: Lack of finance	S5: Linkage with credit institutions or credit thrift activity in self help group
G6: High residual effect of fertilizer / manure used in previous crop	S6: Proper soil health management
G7: Non availability of seed	S7: Promoting seed production of green manuring crops

Table- 48 G: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Potato – Til/Jute Present crop: Potato
Previous crop: Kharif Paddy Next crop: Til/Jute
Name of crop under study : ***Potato*** Moisture condition : Irrigated
District : Burdwan Village : Bheti Agro-ecological situation: AES-II

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	Followed few farmers	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Use as available but not optimum	10	P	G2, G4	S1, S4
	- Compost					
	- Vermi compost					
3	**Use of major fertilizers :**					
	Basal dose (kg/ha) N: P: K	110:200:150	66:150:150	P	G1, G3	S1, S2, S3,
		130:00:00	134:00:00	P	G1,	S1, S2, S3,
	Top dress (kg/ha) N:P;K					
	Total	240:200:150	200:150:150			
	Use of micro-nutrients (Kg/ha)	Few followed	0.05 % Zn EDTA, 0.1% Boric acid Foliar spray	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Limited use	Azophos-18 kg/h	P	G1, G2, G4	S1, S2, S4

*F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**
G1. Lack of awareness
G2. Lack of knowledge
G3: Lack of soil testing facility at block level
G4: Non availability of FYM/ biofertilizer
G5: Lack of finance
G6: High residual effect of fertilizer / manure used in previous crop
G7: Non availability of seed

***** Code for proposed strategy**
S1. Soil health camp cum awareness programme
S2 Training, demonstration & On farm trial
S3: Strengthening of soil testing facility
S4: Promotion of production of organic manure
S5: Linkage with credit institutions
S6: Proper soil health management
S7: Promoting seed production of green manuring crops

Table- 48 H: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Mustard – Boro Paddy Present crop: Mustard
Previous crop: Kharif Paddy Next crop: Boro Paddy
Name of crop under study : ***Mustard*** Moisture condition : Irrigated
District : Burdwan Village : Porsura & Bheti Agro-ecological situation: AES-I& AES-**II**

S. N.	Particulars	Existing practice AES-I	Existing practice AES-II	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy***
1	**Soil Testing / Soil Health Cards**	Followed few farmers	Followed few farmers	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**						
	- FYM	Use as available but not optimum	Compost -2	5	P	G2, G4	S1, S4
	- Compost						
	- Vermi compost						
3	**Use of major fertilizers :**						
	Basal dose (kg/ha) N: P: K:S	40:50:40:10	40:40:40	50:50:25:30	P	G1, G3	S1, S2, S3,
		40:00:00:00	40:00:00	50:00:25:00	P	G1,	S1, S2, S3,
	Top dress (kg/ha)						
	Total N:P;K	**80:50:40:10**	**80:40:40**	**100:50:50:30**			
	Use of micro-nutrients (Kg/ha)	Few followed Foliar spray	Not followed	0.05 % Zn EDTA, 0.1% Boric acid Foliar spray	P	G2, G5	S1, S2, S5
4	**Cultivation of legume**						
	- As rotational crop	Very less area with legumes		Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop						
	- As green manure			Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Limited use		Azophos-1 5 kg/h	P	G1, G2, G4	S1, S2, S4

*F = Full P = Partial N = Nil

** Code for reasons for gap in adoption	*** Code for proposed strategy
G1. Lack of awareness	S1. Soil health camp cum awareness programme
G2. Lack of knowledge	S2 Training, demonstration & On farm trial
G3: Lack of soil testing facility at block level	S3: Strengthening of soil testing facility
G4: Non availability of FYM/ biofertilizer	S4: Promotion of production of organic manure
G5: Lack of finance	S5: Linkage with credit institutions or credit
G6: High residual effect of fertilizer	S6: Proper soil health management
G7: Non availability of seed	S7: Promoting seed production of green manuring crops

Table- 48 I: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Wheat | Present crop: Wheat
Previous crop: Kharif Paddy | Next crop: Kharif Paddy
Name of crop under study : ***Whaet*** | Moisture condition : Irrigated
District : Burdwan Village : Moira | Agro-ecological situation: AES-III

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	Nil	Each plot every 3 yrs	P	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	FYM-1-2	FYM-5 or	P	G2, G4	S1, S4
	- Compost		Oil cake- 0.5			
	- Vermi compost					
3	**Use of major fertilizers :**					
	Basal dose (kg/ha) N: P: K	15:15:15	60:60:60	P	G1, G3	S1, S2, S3,
		10:00:00	30:00:00	P	G1,	S1, S2, S3,
	Top dress (kg/ha) N:P;K		30:00:00			
	Total	25:15:15	120:60:60			
	Use of micro-nutrients (Kg/ha)	Nil	0 Zn-EDTA-25; Borax 10; Ammonium Molybdate @0.5; Soil Application at the time of final land preparation	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Negligible area	Leguminous	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Limited use	Azophos-15 kg/h	P	G1, G2, G4	S1, S2, S4, S6

*F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**
G1. Lack of awareness
G2. Lack of knowledge
G3: Lack of soil testing facility at block level
G4: Non availability of FYM/ biofertilizer
G5: Lack of finance
G6: High residual effect of fertilizer / manure used in previous crop
G7: Non availability of seed

***** Code for proposed strategy**
S1. Soil health camp cum awareness programme
S2 Training, demonstration & On farm trial
S3: Strengthening of soil testing facility
S4: Promotion of production of organic manure
S5: Linkage with credit institutions
S6: Proper soil health management
S7: Promoting seed production of green manuring crops

Table- 48 J: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Onion-Jute Present crop: Onion
Previous crop: Kharif Paddy Next crop: Jute
Name of crop under study : ***Onion*** Moisture condition : Irrigated
District : Burdwan Village : Bheti Agro-ecological situation: AES-II

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	1 %	Each plot every 3 yrs	F	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Nil/ FYM-1-2	FYM-10	P	G2, G4	S1, S4
	- Compost					
	- Vermi compost					
3	**Use of major fertilizers :**					
	Basal dose (kg/ha) N: P: K	80:40:50	HYV- 100:40:75 Hybrid 130:50:100	P	G1, G3	S1, S2, S3,
				P	G1,	S1, S2, S3,
	Top dress (kg/ha) N:P;K					
	Total	25:15:15	120:60:60			
	Use of micro-nutrients (Kg/ha)	Nil	Zn So4-7 kg or sulphur- 20 kg Borax 10kg Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Limited	Pulse	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Limited use	PSB, Azotobacter	P	G1, G2, G4	S1, S2, S4, S6

*F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**
G1. Lack of awareness
G2. Lack of knowledge
G3: Lack of soil testing facility at block level
G4: Non availability of FYM/ biofertilizer
G5: Lack of finance
G6: High residual effect of fertilizer / manure used in previous crop
G7: Non availability of seed

***** Code for proposed strategy**
S1. Soil health camp cum awareness programme
S2 Training, demonstration & On farm trial
S3: Strengthening of soil testing facility
S4: Promotion of production of organic manure
S5: Linkage with credit institutions or credit thrift activity in self help group
S6: Proper soil health management
S7: Promoting seed production of green manuring crops

Table- 48 K: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Paddy—Onion-Jute Present crop: Jute
Previous crop: Onion Next crop: Kharif paddy
Name of crop under study : ***Jute*** Moisture condition : Irrigated/ rainfed
District : Burdwan Village : Bheti Agro-ecological situation: AES-II

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	1 %	Each plot every 3 yrs	F	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Nil/ FYM-1-2	FYM-10	P	G2, G4	S1, S4
	- Compost					
	- Vermi compost					
3	**Use of major fertilizers :**					
	Basal dose (kg/ha) N: P: K	40:40:40	30:30:30	P	G1, G3	S1, S2, S3,
		40:00:00	30:00:00	P	G1,	S1, S2, S3,
	Top dress (kg/ha) N:P;K					
	Total	40:40:40	60:30:30			
	Use of micro-nutrients (Kg/ha)	Nil	Zn So4-7 kg or sulphur- 20 kg Borax 10kg Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Limited	Pulse	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Glyricidia as green manure 5t/h			
	Use of bio-fertilizer (kg/ha)	-	*PSB-200g/kg of seed*	P	G1, G2, G4	S1, S2, S4, S6

*F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**
G1. Lack of awareness
G2. Lack of knowledge
G3: Lack of soil testing facility at block level
G4: Non availability of FYM/ biofertilizer
G5: Lack of finance
G6: High residual effect of fertilizer / manure used in previous crop
G7: Non availability of seed

***** Code for proposed strategy**
S1. Soil health camp cum awareness programme
S2 Training, demonstration & On farm trial
S3: Strengthening of soil testing facility
S4: Promotion of production of organic manure
S5: Linkage with credit institutions
S6: Proper soil health management
S7: Promoting seed production of green manuring crops

Table- 48 L: Proposed strategy for promoting integrated nutrient management

Cropping system/sequence: Banana — Present crop: -Banana
Previous crop: Banana — Next crop: -
Name of crop under study : ***Banana*** — Moisture condition : Irrigated
District : Burdwan — Village : Bheti — Agro-ecological situation: AES-II

S. N.	Particulars	Existing practice	Recommended practice	Gap in adoption (F/P/N)*	Reasons for gap in adoption**	Proposed strategy* **
1	**Soil Testing / Soil Health Cards**	1 %	Each plot every 3 yrs	F	G1, G3	S1, S3
2	**Use of manure (T/ha)**					
	- FYM	Nil/ FYM-0.5-1	FYM-10	P	G2, G4	S1, S4
	- Compost					
	- Vermi compost					
3	**Use of major fertilizers :**					
	Basal dose (kg/ha) N: P: K	80:40:50	HYV- 100:40:75 Hybrid 130:50:100	P	G1, G3	S1, S2, S3,
				P	G1,	S1, S2, S3,
	Top dress (kg/ha) N:P;K					
	Total	25:15:15	120:60:60			
	Use of micro-nutrients (Kg/ha)	Nil	Zn So4-7 kg or sulphur- 20 kg Borax 10kg Soil	P	G2, G5	S1, S2, S5
	Cultivation of legume					
	- As rotational crop	Limited	Pulse	P	G1, G7	S1, S2, S7
	- As inter crop					
	- As green manure		Dhancha as green manure			
	Use of bio-fertilizer (kg/ha)	Limited use	PSB, Azotobacter	P	G1, G2, G4	S1, S2, S4, S6

*F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**
G1. Lack of awareness
G2. Lack of knowledge
G3: Lack of soil testing facility at block level
G4: Non availability of FYM/ biofertilizer
G5: Lack of finance
G6: High residual effect of fertilizer / manure used in previous crop
G7: Non availability of seed

***** Code for proposed strategy**
S1. Soil health camp cum awareness programme
S2 Training, demonstration & On farm trial
S3: Strengthening of soil testing facility
S4: Promotion of production of organic manure
S5: Linkage with credit institutions
S6: Proper soil health management
S7: Promoting seed production of green manuring crops

Table- 49 A: Proposed strategy for promoting integrated pest management (IPM)

Name of crop under study: *Kharif/Boro Paddy/ Zero* Moisture condition: *Rainfed /irrigated*
Season: *Kharif/Boro* District : Burdwan Village : Porsura, Bheti, Moira
Agro-ecological situation: AES-I, AES-II, AES-III Pest: **BPH**

S. N	Particulars	Existing practice	Recommended practice	Gap in Adoption	Reason for gas in adoption	Proposed strategy
1	Culture practices					
	Summer ploughing	Limited Use	1-2 Summer plough	P	G1.G2	S1,S2,S3
	Timely sowing	Normal to Late	Compulsory	P	G1.G2	S1,S2,S3
2.	Resistant / tolerance variety	MTU-7029, MTU-1001, Gobindabhogh	MTU-7029,IR-64,IET-5656	p	G1.G2	S1,S2,S3,S5,S6
3	Biopesticides					
	Neem products	Limited Use	Neem Based pesticide	p	G1.G2,G3,G5	S1,S2,S3,S6
	NPV					
4.	Bio agents	Not Practiced	Conservation of Anagrus, oligocitus & Gnatoserus	F	G1.G2,G3,G5	S1,S2,S3,S6
	Egg parasites	Not Practiced	Conservation of Anagrus, oligocitus & Gnatoserus	F	G1.G2,G3,G5	S1,S2,S3,S6
	Predators	Not Practiced	Conservation of mired, Bug & Lady bird beetle, Spider	F	G1.G2,G3,G5	S1,S2,S3,S6
5.	Other practices					
	Pheromone trap	Minor	To be followed	p	G1.G2,G3,G5	S1,S2,S3,S6
	Light trap	Not Practiced	To be followed	F	G1.G2,G3,G5	S1,S2,S3,S6
	Bird Pirchar	Not Practiced	To be followed	F	G1.G2,G3,G5	S1,S2,S3,S6
6.	Pesticides (no. of application)					
	Spraying	Indiscriminate Use of Chemicals	Use of Govt Recommended Dose of Acephate 75 % WP Immidaclorophid 17.8 SL	P	G1.G2	S1,S2,S3
	Dusting	Not Practiced	Endosulfal 4 %, Methyl parathion 2 %	F	G1.G2	S1,S2,S3

* F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**	***** Code for proposed strategy**
G1. Lack of awareness/	S1. Awareness programme
G2. Lack of knowledge on pest identification/management	S2 Training, demonstration & On farm trial
G3: Non availability of bio pesticide and high cost	S3: Establishment of Plant clinics in PPP mode at GP wise
G4: Lack of finance	S4: Linkage with credit institutions
G5: Chemical pesticide resistance	S5: Promotion of Agro-climate based advisory service & use of ICT
	S6: Research on tolerance variety

Table- 49 B: Proposed strategy for promoting integrated pest management (IPM)

Name of crop under study : *Kharif/Boro Paddy* Moisture condition : *Rainfed /irrigated*
Season: *Kharif/Boro* District : Burdwan Village : Porsura, Bheti, Moira
Agro-ecological situation: AES-I, AES-II, AES-III Pest: **Stem Borer of Paddy**

S. N	Particulars	Existing practice	Recommended practice	Gap in Adoption	Reason for gas in adoption	Proposed strategy
1	Culture practices					
	Summer ploughing	Limited Use	1-2 Summer plough	P	G1.G2	S1,S2,S3
	Timely sowing	Normal to Late	Compulsory	P	G1.G2	S1,S2,S3
2.	Resistant / tolerance variety	MTU-7029, MTU-1001, Gobindabhogh	IR-36, IR-64	p	G1.G2	S1,S2,S3,S5,S6
3	Biopesticides					
	Neem products	Limited Use	Neem Based pesticide	p	G1.G2,G3, G5	S1,S2,S3,S6
	NPV					
4.	Bio agents	Not Practiced	Conservation of Anagrus, oligocitus & Gnatoserus	F	G1.G2,G3, G5	S1,S2,S3,S6
	Egg parasites	Not Practiced	Conservation of Anagrus, oligocitus & Gnatoserus	F	G1.G2,G3, G5	S1,S2,S3,S6
	Predators	Not Practiced	Conservation of mired, Bug & Lady bird beetle, Spider	F	G1.G2,G3, G5	S1,S2,S3,S6
5.	Other practices					
	Pheromone trap	Minor	To be followed	p	G1.G2,G3, G5	S1,S2,S3,S6
	Light trap	Not Practiced	To be followed	F	G1.G2,G3, G5	S1,S2,S3,S6
	Bird Pirchar	Not Practiced	To be followed	F	G1.G2,G3, G5	S1,S2,S3,S6
6.	Pesticides (no. of application)					
	Spraying	Indiscriminate Use of Chemicals	Use of Govt Recommended Dose of Trizophosh , Flubendamide, Immidaclorophid 17.8 SL	P	G1.G2	S1,S2,S3
	Dusting	Not Practiced	Use of Govt Recommended Dose of Carbofuran 3-G, Fipronyl- G, Thimet-10 G at Nursery Bed	P	G1.G2	S1,S2,S3
	Soil treatment	Minor	Use of Govt Recommendation			

* F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**	***** Code for proposed strategy**
G1. Lack of awareness/	S1. Awareness programme
G2. Lack of knowledge on pest identification/management	S2 Training, demonstration & On farm trial
G3: Non availability of bio pesticide and high cost	S3: Establishment of Plant clinics in PPP mode at GP wise
G4: Lack of finance	S4: Linkage with credit institutions
G5: Chemical pesticide resistance	S5: Promotion of Agro-climate based advisory service & use of ICT
	S6: Research on tolerance variety

Table- 49 C: Proposed strategy for promoting integrated pest management (IPM)

Name of crop under study : *Kharif/Boro Paddy* Moisture condition : *Rainfed /irrigated*
Season: *Kharif/Boro* District : Burdwan Village : Porsura, Bheti, Moira
Agro-ecological situation: AES-I, AES-II, AES-III Pest: **Sheath Blast/ Blast**

S. N	Particulars	Existing practice	Recommended practice	Gap in Adoption	Reason for gas in adoption	Proposed strategy
1	Culture practices					
	Summer ploughing	Limited Use	1-2 Summer plough	P	G1.G2	S1,S2,S3
	Water Management	Limited Use	Removal of water from affected field for few days	P	G1.G2	S1,S2,S3
2.	Resistant / tolerance variety – Sheat Blight	MTU-7029, MTU-1001, Gobindabhogh	IR-64,IET-1444,IET-5656,2815	p	G1.G2	S1,S2,S3,S5,S6
	Resistant / tolerance variety – Blast	IR-36, IET-4786	IET-4786, IR-36,Manassorobor	p	G1.G2	S1,S2,S3,S5,S6
3.	Treatment Seed	Limited Use Carbendazim	Tricodermaviride, Psedomonas florosense, Carbendazim, Streptocylin, Trisicolazole	p	G1.G2	S1,S2,S3
	Seed Bed	Limited Use	TDV, Carbendazim	p	G1.G2	S1,S2,S3
4	Bio & Botanical Pesticide					
	Biopesticides TDV	Limited Use	Tricodermaviridi	p	G1.G2,G3, G5	S1,S2,S3,S6
5	Fertilizer Management Balanced Use	Indiscriminate Use of Chemical fertilizer	Soil Testing	p	G1.G2,G3, G5	S1,S2,S3,S6
6	Avoiding N-Top Dressing	Not Practiced	Avoiding N-Fertilizer application infected field	p	G1.G2	S1,S2,S3
7	Spraying for Sheath Blight	Indiscriminate Use of Pesticide at wrong method	Use of Govt Recommended Dose of Validamycin, Tricycolazole, Hexaconazole	P	G1.G2	S1,S2,S3
	Spraying for Sheath Blight	Indiscriminate Use of Pesticide at wrong method	Use of Govt Recommended Dose of Ediphenphosh, Tebuconazole, Hexaconazole, Isoprothiolane	P	G1.G2	S1,S2,S3

* F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**	***** Code for proposed strategy**
G1. Lack of awareness/	S1. Awareness programme
G2. Lack of knowledge on pest identification/management	S2 Training, demonstration & On farm trial
G3: Non availability of bio pesticide and high cost	S3: Establishment of Plant clinics in PPP mode at GP wise
G4: Lack of finance	S4: Linkage with credit institutions
G5: Chemical pesticide resistance	
	S5: Promotion of Agro-climate based advisory service & use of ICT
	S6: Research on tolerance variety

Table- 49 D: Proposed strategy for promoting integrated pest management (IPM)

Name of crop under study : Potato Moisture condition : *Irrigated*
Season: Rabi District : Burdwan Village : Porsura, Bheti, Moira
Agro-ecological situation: AES-I, AES-II, AES-III Pest: **Early and Late Blight**

S. N	Particulars	Existing practice	Recommended practice	Gap in Adoption (F/P/N)	Reason for gas in adoption	Proposed strategy
1	Culture practices					
	Summer ploughing	Limited Use	1-2 Nos	P	G1.G2	S1,S2,S3
	Timely sowing	Normal to Late	By 15 th Nov.	P	G1.G2	S1,S2,S3
2.	Resistant / tolerance variety	K. Jyoti, K. Chandramukhi, K. Pokhraj, S-1,	K. Jyoti, K. Chandramukhi, K. Pokhraj, K.Asoka	p	G1.G2	S1,S2,S3,S5,S6
3.	Treatment Seed	Impoper Use	Tricodermaviride, Psedomonas florosense, Mancozeb,	p	G1.G2	S1,S2,S3
	Soil Treatment	Not Practiced	TDV, Carbendazim	F	G1.G2	S1,S2,S3
4	Bio & Botanical Pesticide					
	Biopesticides TDV	Limited Use	Soil application at land preparation	p	G1.G2,G3, G5	S1,S2,S3,S6
5	Fertilizer Management Balanced Use	Indiscriminate Use of Chemical fertilizer	Soil Testing	p	G1.G2,G3, G5	S1,S2,S3,S6
6	Avoiding N-Top Dressing	Not Practiced	Avoiding N-Fertilizer application infected field	p	G1.G2	S1,S2,S3
7	Other Practice Water Management	Limited Use	Removal of water from affected field for few days	P	G1.G2	S1,S2,S3
8	Spraying	Indiscriminate Use of Pesticide at wrong method	Use of Govt Recommended Dose of COC, Dimithomorph + Mancozeb, Cymoxlin +Mancozeb	P	G1.G2	S1,S2,S3

* F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**	***** Code for proposed strategy**
G1. Lack of awareness/	S1. Awareness programme
G2. Lack of knowledge on pest identification/management	S2 Training, demonstration & On farm trial
G3: Non availability of bio pesticide and high cost	S3: Establishment of Plant clinics in PPP mode at GP wise
G4: Lack of finance	S4: Linkage with credit institutions
G5: Chemical pesticide resistance	S5: Promotion of Agro-climate based advisory service & use of ICT
	S6: Research on tolerance variety

Table- 49 E: Proposed strategy for promoting integrated pest management (IPM)

Name of crop under study: -***Jute*** Moisture condition: Irrigated
Season: Kharif District: Burdwan Village: Bheti
Agro-ecological situation: AES-II Pest: **All**

S. N	Particulars	Existing practice	Recommended practice	Gap in Adoption (F/P/N)	Reason for gas in adoption	Proposed strategy
1	Culture practices					
	Summer ploughing	Y	Y	N	-	-
	Timely sowing	May- June	April-May	P	G1	S1
	Method of sowing	Few followed – line majority- broadcasting	Line (30 cm in row spacing)	P	G1	S1
2.	Resistant / tolerance variety	-	-	-	-	-
3	Biopesticides					
	Neem products					
	NPV					
4.	Bio agents					
	Pheromone trap					
	Light trap					
	Bird Pirchar					
	Weeding	Once / twice manually	Twice either manually or by herbicides	P	G1, G2	S1, S2

* F = Full P = Partial N = Nil

**** Code for reasons for gap in adoption**	***** Code for proposed strategy**
G1. Lack of awareness/knowledge	S1. Awareness programme
G2. Lack of knowledge on pest identification/management	S2 Training, demonstration & on farm trial (OFT)
G3: Non availability of bio pesticide and high cost	S3: Establishment of plant clinics in PPP mode at GP wise
G4: Lack of finance	S4: Linkage with credit institutions
G5: Chemical pesticide resistance	S5: Promotion of Agro-climate based advisory service & use of ICT
	S6: Research on tolerance variety

Table- 50A: Proposed strategy for seed replacement ratio

District : Burdwan Village : Porsura
Name of crop : ***Kharif Paddy*** Preferred variety : MTU-7029
Agro-ecological Situation: AES-I

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (Q)	Area sown (ha) under the crop with different varieties		Quality of seed of preferred variety (G/A/P)*
			Preferred variety	Other varieties	
A	**Purchase from outside:**				
	From Private Dealer	5	8	1	A
	From public sector	10	15	1	G
B	**Use of self produced seed:**				
	- From own field	10	15	1	P
	- From others field	4	5	1	A
C	**Any other**	-	-	-	-
	Total	29	43	4	

* G = Good A = Average P = Poor

- Approximate shortfall in the quantity of seed of preferred variety in the village (Q): 5

- Willingness of farmers to produce seed of preferred variety for commercial sale to other farmers (Y/N) : yes

- What are the kind of support / assistance required from outside

* Supply of foundation seed of parental lines (Y/N): **Yes**
* Training on seed production and seed certification (Govt.) etc. (Y/N) :**Yes**
* Any other (specify): Need promotion of village seed production in participatory mood

Table- 50B: Proposed strategy for seed replacement ratio

District : Burdwan Village : Bheti
Name of crop : ***Kharif Paddy*** Preferred variety :MTU7029
Agro-ecological Situation: AES-II

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (Q)	Area sown (ha) under the crop with different varieties		Quality of seed of preferred variety (G/A/P)*
			Preferred variety	Other varieties	
A	**Purchase from outside:**				
	From Private Dealer	4	6	1	P
	From public sector	5	8	1	G
B	**Use of self produced seed:**				
	- From own field	4	6	1	P
	- From others field	2	3	1	A
C	**Any other**	-	-	-	-
	Total	15	23	4	

* G = Good A = Average P = Poor

- Approximate shortfall in the quantity of seed of preferred variety in the village (Q): 4

- Willingness of farmers to produce seed of preferred variety for commercial sale to other farmers (Y/N) : yes

- What are the kind of support / assistance required from outside

* Supply of foundation seed of parental lines (Y/N): **Yes**
* Training on seed production and seed certification (Govt.) etc. (Y/N) :**Yes**
* Any other (specify): Need promotion of village seed production in participatory mood

Table- 50C: Proposed strategy for seed replacement ratio

District : Burdwan Village :Moira
Name of crop : ***Kharif Paddy*** Preferred variety: MTU7029
Agro-ecological Situation: AES-III

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (Q)	Area sown (ha) under the crop with different varieties		Quality of seed of preferred variety (G/A/P)*
			Preferred variety	Other varieties	
A	**Purchase from outside:**				
	From Private Dealer	12	20	1	P
	From public sector	5	8	1	G
B	**Use of self produced seed:**				
	- From own field	3	5	1	P
	- From others field	2	3	1	A
C	**Any other**	-	-	-	-
	Total	22	36	4	

* G = Good A = Average P = Poor

- Approximate shortfall in the quantity of seed of preferred variety in the village (Q): 10

- Willingness of farmers to produce seed of preferred variety for commercial sale to other farmers (Y/N) : yes

- What are the kind of support / assistance required from outside

* Supply of foundation seed of parental lines (Y/N): **Yes**
* Training on seed production and seed certification (Govt.) etc. (Y/N) :**Yes**
* Any other (specify): **Need promotion of village seed production in participatory mode**

Table- 50D: Proposed strategy for seed replacement ratio

District : Burdwan Village : Porsura
Name of crop : ***Boro Paddy*** Preferred variety : ITE-4786 (Satabdi), MTU 1010
Agro-ecological Situation: AES-I

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (Q)	Area sown (ha) under the crop with different varieties		Quality of seed of preferred variety (G/A/P)*
			Preferred variety	Other varieties	
A	**Purchase from outside:**				
	From Private Dealer	5	8	1	A
	From public sector	10	15	1	G
B	**Use of self produced seed:**				
	- From own field	4	5	1	P
	- From others field	4	5	1	A
C	**Any other**	-	-	-	-
	Total	29	38	4	

* G = Good A = Average P = Poor

- Approximate shortfall in the quantity of seed of preferred variety in the village (q): 8

- Willingness of farmers to produce seed of preferred variety for commercial sale to other farmers (Y/N) : Yes

- What are the kind of support / assistance required from outside

* Supply of foundation seed of parental lines (Y/N): **Yes**
* Training on seed production and seed certification (Govt.) etc. (Y/N) :**Yes**
* Any other (specify): Need promotion of village seed production in participatory mood

Table- 50E: Proposed strategy for seed replacement ratio

District : Burdwan Village : Bheti
Name of crop : ***Boro Paddy*** Agro-ecological Situation: AES-II
Preferred variety : ITE-4786 (Satabdi), MTU 1010

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (Q)	Area sown (ha) under the crop with different varieties		Quality of seed of preferred variety (G/A/P)*
			Preferred variety	Other varieties	
A	**Purchase from outside:**				
	From Private Dealer	2	3	1	A
	From public sector	1	2	1	G
B	**Use of self produced seed:**				
	- From own field	2	3	1	P
	- From others field	1	2	1	A
C	**Any other**	-	-	-	-
	Total	6	10	4	

* G = Good A = Average P = Poor

- Approximate shortfall in the quantity of seed of preferred variety in the village (Q): 5

- Willingness of farmers to produce seed of preferred variety for commercial sale to other farmers (Y/N) : Yes

- What are the kind of support / assistance required from outside

* Supply of foundation seed of parental lines (Y/N): **Yes**
* Training on seed production and seed certification (Govt.) etc. (Y/N) :**Yes**
* Any other (specify): Need promotion of village seed production in participatory mood

Table- 50F: Proposed strategy for seed replacement ratio

District : Burdwan Village : Porsura
Name of crop : ***Potato*** Preferred variety : Kufri Pokhraj , Kufri Jyoti
Agro-ecological Situation: AES-I

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (Q)	Area sown (ha) under the crop with different varieties		Quality of seed of preferred variety (G/A/P)*
			Preferred variety	Other varieties	
A	**Purchase from outside:**				
	From Private Dealer	60	2		A
	From public sector	-	-	-	
B	**Use of self produced seed:**				
	- From own field	180	6		A
	- From others field	60	2.0		A
C	**Any other**	-	-	-	-
	Total	300	10.0	4	

* G = Good A = Average P = Poor

- Approximate shortfall in the quantity of seed of preferred variety in the village (Q): 250

- Willingness of farmers to produce seed of preferred variety for commercial sale to other farmers (Y/N) : No

- What are the kind of support / assistance required from outside

* Supply of foundation seed of parental lines (Y/N): **Yes**
* Training on seed production and seed certification (Govt.) etc. (Y/N) :**Yes**
* Any other (specify): Need promotion of village seed production in participatory mode in few pockets

Table- 50 G: Proposed strategy for seed replacement ratio

District : Burdwan Village : Bheti
Name of crop : ***Potato*** Agro-ecological Situation: AES-II
Preferred variety : Kufri Pokhraj , Kufri Jyoti (certified)

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (Q)	Area sown (ha) under the crop with different varieties		Quality of seed of preferred variety (G/A/P)*
			Preferred variety (Jyoti)	Other varieties (Pokhaj)	
A	**Purchase from outside:**				
	From Private Dealer	30	1	-	A
	From public sector	2	0.5		G
B	**Use of self produced seed:**				
	- From own field	200	7.5		A
	- From others field	85	2.4		A
C	**Any other**	-	-	-	-
	Total	317	11.4		

* G = Good A = Average P = Poor

- Approximate shortfall in the quantity of seed of preferred variety in the village (Q): 75

- Willingness of farmers to produce seed of preferred variety for commercial sale to other farmers (Y/N) : Yes

- What are the kind of support / assistance required from outside

* Supply of foundation seed of parental lines (Y/N): **Yes**
* Training on seed production and seed certification (Govt.) etc. (Y/N) :**Yes**
* Any other (specify): Need promotion of village seed production in participatory mood

Table- 51: Proposed strategy for promoting preferred horticultural planting material

District : Burdwan **Village : Bheti**
Name of crop : Banana **Agro-ecological Situation: AES-II**

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of planting materials used of horticultural crop (no)	Area sown (ha) under the crop with different varieties		Quality of preferred planting materials required for the district
			Preferred Variety (Grant niane)*	Other varieties (Matanam)	
A	**Purchase from outside:**				
	From Private Nurshery	1000	2	1	**Grant niane**
	From public sector				
B	**Use of self produced seed:**				
	- From own field				
	- From others field				
C	**Any other**	-	-	-	-

*A = Average

Table- 52: Proposed strategy for promoting preferred horticultural planting material

District : Burdwan **Village :Porsura/ Bheti/ Moira**
Name of crop :Mango **Agro-ecological Situation: AES-I, AES-II, AES-III**

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of planting materials used of horticultural crop (no)	Area sown (ha) under the crop with different varieties		Quality of preferred planting materials required for the district
			Preferred variety (Langra, Himsagar**)***	**Other varieties (Local)**	
A	**Purchase from outside:**				
	From Private Nurshery	206	2.5	5	Langra, Himsagar
	From public sector	34			
B	**Use of self produced seed:**				
	- From own field				
	- From others field				
C	**Any other**	-	-	-	-

*A = Average

Table- 53: Proposed strategies for promotion of horticultural crops

Strategies	Extension Activities
Decentralized production of seed and planting materials of major Vegetables	i. Awareness campaign
	ii. Exposure visit of progressive farmers to successful sites in the district/ other districts of the states
	iii. Training for veg. seed production & certification process
	iv. Arrangement of foundation/ certified seed of location specific varieties from recognized organization/ University
	v. Identification and promotion of Farmers Interest Group for vegetable seed production
Intensification of True Potato Seed production	i. Awareness campaign and identification of areas where farmers are ready to grow TPS. ii. Training to interested growers at University/ Research organization particularly for nursery preparations iii. Exposure visit to success sites iv. Demonstration on farmers site v. Linkage with research and extension institutions
Promotion of Farmers-interest Group for production of planting materials of horticultural plants	i. Awareness camp. and Identification of FIGs in specific areas to promote them for production of planting materials of improved cultivars . ii. Special training to FIGs' for production of planting materials. iii. Facilitate supply of critical inputs such as planting material. iv. Exposure visits to BTT members on –Group Dynamics, IPNM, Water Budgeting, Vermi-composting, Plant Tissue culture. v. Exposure visit to successful sites for FIGs'.

Table- 54: Proposed strategy for promoting success stories and its replication

Title of success story	Whether it shall spread on its own	Reasons behind Non adoption of successful Technology	Type of recommendation	Proposed Strategy
Production of organic inputs using poly vermin-pit for own farm use	No	1.Lack of awareness and 2.Lack of availability of poly- vermin pit at local area 3. Lack of good quality vermin/ high mortality	1. Training and skill development programme 2. Regular supply of decay material like cow dung, partial compost straw, water hyacinth	1. Mass awareness and media coverage through TV programme 2. Exposure visit to successful site 3.Long term training of progressive farmers & demonstration 4. Linkage with input supplier 5. Documentation like preparation of extension leaflet, documentary film etc.
Cost & time minimization through use of combine harvester in harvesting paddy	Yes in few pockets	1.Non availability of machine in time 2. Fragmented land 3. Less no. of custom hiring centre 4. Not getting straw for livestock rearing	Formation of more number of custom hiring centre through Cooperative/ individual	1. Mass awareness and media coverage 2. Method demonstration at farmers field 3. Establishment of custom hire centre in sufficient numbers
Integrated farming system (Crop- livestock-fish)	Scattered way	1. Lack of awareness and 2. Lack of motivation 3. Lack of technical know how	Aquatic based integrated farming system (Crop- livestock-fish)	1. Mass awareness and media coverage 2. Training and demonstration 3. Exposure visit of successful site 4. Preparation of documentary film, extension leaflet, 5. Technology show casing in mela/ exhibition

Table- 55: Proposed strategy for management of land and water resources

District: Burdwan

Critical Problem	**Affect**	**Strategy**	**Proposed activities**
Undulating Lateritic zone in AES-III	Undulating topography with mounds & hillocks, unbunded cultivable wastelands, sloppy lands, excessive runoff, susceptible to soil erosion, moisture stress, Soil depth shallow at ridges & deep in valleys, low pH, acidic soils, low in organic matter, The organic carbon content, potash, phosphate, base saturation is significantly low in the ridges and increases down the slope, Micro nutrient deficiencies like Bo, Zn, Mo and S etc inadequate irrigation facility, ground water economically not trappable, application of low input observed.	To bring more area under cultivation by development of cultivable wastelands into arable land. Cultivable wastelands in the ridge areas which are lying unbunded, will be developed through land leveling, field bunding, graded bunding, bench terracing, gully control measures	1.In-situ moisture conservation and development of cultivable wastelands into arable lands through land leveling, field bunding, graded bunding etc in the Undulating Lateritic Agro-climatic Zone of Burdwan district. 2. Plantation of fruit / horticultural crops / mixed plantation in the uncultivable wastelands and converting into productive lands 3. Control of gully & rill erosion of arable & non- arable land through loose boulder structure, brush wood dam, drop spillway, chute spillway etc. in the Undulating Lateritic Agro-climatic Zone of Burdwan District. 4. Generation of mass awareness among the people regarding reasons & effect of soil erosion, conservation & management of rainwater.
Scarcity and erratic rainfall	Decreased cropping intensity Loss of production due to drought	Water Resources Development	1.Excavation of new Water Harvesting structures / dug well etc in the Lateritic Agro-climatic zone 2.Maintenance / strengthening of existing irrigation system 3.Popularization of micro irrigation system 4. Promotion of climate resilience technology
Deterioration of Soil health	1.Poor productivity 2.More deficiency symptoms in field crops **3.** Development of acidity and low fertilizer use efficiency	**Soil health restoration**	1. Training on soil health management 2. Introduction of soil health card 3. Production of organic inputs **4.** Popularization of Integrated nutrient management

Policy Issues

Issues for policy consideration in Agriculture and Allied Sectors

District: Burdwan **Agro- ecological situation: AES-I, AES-II, AES-III**

The critical issues, problems and opportunities relating to various production systems in the district have been identified on the basis of primary and secondary data for preparation of need based strategy on extension and research activities. For the sake of convenience in strategic planning, the relevant information have been grouped under five categories ie. Agricultural Production System, Horticulture Production System, Livestock Production System, Fish Production System and National Resource Management. A summary statement about the Issues, Problems under each Agro – Ecological Situation is given in table 56 A, B, C, D, E. The proposed Policy interventions were also given sector wise.

Table - 56 A : Issues for policy consideration in Agriculture

Sl. No.	Issue/ problem	AES-I	AES-II	AES-III
1	**Agriculture production system**			
	A. Considerable yield gap in crops like Paddy, Potato, Mustard, Pulse.			
	Depleting of soil fertility	**Y**	**Y**	**Y**
	Lack of irrigation and rain water management			**Y**
	Non-availability of desired variety of seeds	**Y**	**Y**	**Y**
	Inadequate seed replacement ratio	**Y**	**Y**	**Y**
	Non availability of organic manure	**Y**	**Y**	**Y**
	Farmers refer local variety due to food habit and climatic condition			**Y**
	Knowledge and skill gap in I N M & I P M	**Y**	**Y**	**Y**
	Non-availability of Bio-fertilizer	**Y**	**Y**	**Y**
	Negligible area covers with High Yielding Varieties		**Y**	**Y**
	Major Technology gap and poor adoption rate of new technology in crop management practice	**Y**	**Y**	**Y**
	Non availability of timely credit for purchase of inputs	**Y**	**Y**	**Y**
	B. Low Profit from agricultural crops due to :-			
	Low Productivity		**Y**	**Y**

	High Production cost	**Y**	**Y**	**Y**
	Non-availability of organized market	**Y**	**Y**	**Y**
	Exploitation of middle man			**Y**
	Non-adoption of risk involving new technology	**Y**	**Y**	**Y**
	Lack of storage facilities and post harvest technology		**Y**	**Y**
	Poor farm mechanization	**Y**	**Y**	**Y**

Table -56 B: Issues for policy consideration in Horticulture sector

Sl. No.	**Issue/ problem**	**AES-I**	**AES-II**	**AES-III**
1	**Horticulture production system**			
	A. Significant yield gap in fruit crops and vegetables due to:-			
	Lack of irrigation potential			**Y**
	Non-availability of quality seed and planting material	**Y**	**Y**	**Y**
	Imbalance use of fertilizer	**Y**	**Y**	**Y**
	Timely non availability of input	**Y**	**Y**	**Y**
	Poor soil health	**Y**	**Y**	**Y**
	Knowledge and skill gap in improved technology	**Y**	**Y**	**Y**
	Non-adoption of IPM & INM practices	**Y**	**Y**	**Y**
	Excess post harvest loss	**Y**	**Y**	**Y**
	Poor acceptance of hybrid seed in vegetables		**Y**	**Y**
	Grazing by stray cattle/ goat	**Y**		**Y**
	B. Low profit in fruits and vegetables due to:-			
	Intervention of middle man	**Y**	**Y**	-
	Lack of organized market facility	**Y**	**Y**	**Y**
	Lack of storage facility and non-adoption of preservation Technology	**Y**	**Y**	**Y**
	Lack of organization among the farmers	**Y**	**Y**	**Y**
	Lack of Agro processing and post harvest technology	**Y**	**Y**	**Y**
	C. Poor Productivity in Fruit Crops:-	**Y**	**Y**	**Y**
	Climatic change	**Y**	**Y**	**Y**

	Inadequate care and Maintenance of plants	**Y**	**Y**	**Y**
	Lack of new Technology			

Table - 56 C: Issues for policy consideration in Livestock sector

Sl. No.	Issue/ problem	AES-I	AES-II	AES-III
1	**Livestock production system**			
	A. Low productivity in dairy animals due to:-			
	Use of non descriptive breed of dairy animal	**Y**	**Y**	**Y**
	Crisis of and feed and green fodder	**Y**	**Y**	**Y**
	Significant gap in feed management and health care	**Y**	**Y**	**Y**
	Lack of artificial insemination at block level.	**Y**	**Y**	**Y**
	Poor sanitation and housing facility	**Y**	**Y**	**Y**
	Limited Insurance facility	**Y**	**Y**	**Y**
	Lack of fund	**Y**	**Y**	**Y**
	Non-adoption of improved technologies		**Y**	**Y**
	Labour crisis	**Y**	**Y**	
	B. Low profit in dairy produce due to:-		**Y**	**Y**
	Lack of farmers organization	**Y**		**Y**
	Involvement of middle man	**Y**	**Y**	
	Lack of chilling plant and collection centers for milk	**Y**	**Y**	-
	Inadequate market and road facility for dairy product	**Y**	**Y**	**Y**
	High cost of medicine and feed	**Y**	**Y**	**Y**
2.	**Low productivity & profitability of rural Poultry rearing:-**			
	Use of local breeds of poultry birds	**Y**	**Y**	**Y**
	Lack of vaccination facility in rural areas	**Y**	**Y**	**Y**
	Technology gap in nutrition management and housing	**Y**	**Y**	**Y**
	Non-availability of poultry feed in rural areas	**Y**	**Y**	**Y**
	Predator attack		**Y**	**Y**

Table - 56 D: Issues for policy consideration in Fishery sector

Sl. No.	Issue/ problem	AES-I	AES-II	AES-III
1	**Fish Production System**			
	Low productivity of fish is due to:-			
	Non-availability of quality fish seed, fingerlings.	**Y**	**Y**	**Y**
	Technology gap in adoption of scientific production practices	**Y**	**Y**	**Y**
	Improper management and maintenance of Tank / Pond	**Y**	**Y**	**Y**
	Less capacity to hold the water due to siltation and mostly dry up in summer season	**Y**	**Y**	**Y**
	Non-availability of low cost feed	**Y**	**Y**	**Y**
	Multi ownership of one aquatic bodies	**Y**	**Y**	**Y**
	Lack of adequate credit flow in to fishery sector	**Y**	**Y**	**Y**
	Lack of transport facility for fingerlings & live fish		**Y**	**Y**

Table - 56 E: Issues for policy consideration in Irrigation sector

Sl. No.	Issue/ problem	AES-I	AES-II	AES-III
1	**Irrigation System**			
	Lack of skill in rainwater harvesting.	**Y**	**Y**	**Y**
	Lack of WHT.	**Y**	**Y**	**Y**
	Unbunding land	**Y**	**Y**	**Y**
	Lack of scientific approach to built the WHT	**Y**	**Y**	**Y**
	Non adoption of efficient water management system	**Y**	**Y**	**Y**

Proposed policy intervention:

Agriculture

- Soil reclamation and preserving soil quality for sustainable crop production
- Increasing cropping intensity with suitable intervention. Promotion of pulse crops to be largely enhanced
- Productivity augmentation through judicious fertilizer and pest management. Introduction of improved cultivars, dissemination of promising technologies, seed treatment, farm mechanization
- Capacity building of extension workers for efficient dissemination of technologies
- Implementing strategies for producing more per quanta of land and water through judicious use of resources. Adoption of integrated farming methodologies wherever applicable for enhancing farmers income is called for.
- Correction of soil acidity by using Dolomites, basic slugs, ash etc should be undertaken judiciously so that the effect should be sustainable. Fly ash from the thermal power stations in Burdwan can be purchased in a very low price and can be distributed among the farmers in place of Dolomite. This will ensure more procurement and less expenditure on transport and procurement.
- Production of quality seed material through participatory approach
- Adoption of climate resilient technologies to cope up with climate change which is imminent
- More emphasis on red and lateritic zone for agriculture intensification through creation of water harvesting structures, watersheds etc.
- Value addition to agricultural produce to be given emphasis through SHGs, common interest groups, JLGs

Horticulture

- Strengthening of horticultural department in the line of agriculture, ARD and fisheries department with block level officials and support staff
- Capacity building of farmers and extension workers for speedy development of horticulture in the district
- Protected cultivation techniques to be much strengthened
- Potential for horticulture development in the red and lateritic region is to be exploited. Extension of horticultural activities in this zone by supply of saplings (fruits and tree species) and undertaking plantation activities should be taken up. Plantation of *Arjun* in the lateritic zone can help the poor farmers, basically tribals by introducing Tasar cultivation in collaboration with Sericulture department.
- Emphasis to be given on production as well as marketing of high value horticultural crops
- Attention to be given on management of water resource through establishment of micro irrigation for fruit, plantation and vegetable crops.
- Entrepreneurship development through value addition to horticultural produces is to be pressed

Animal husbandry

- Breed up-gradation of livestock and poultry
- Capacity building of extension workers/ animal raisers for efficient dissemination of technologies
- Augmentation of productivity of livestock and poultry
- Emphasis on infrastructure of Artificial insemination
- Strengthening of animal feed resource through production of green fodder, preparation of homemade concentrate feed and complete feed block
- Provision for insurance and credit facility
- Strengthening of post harvest operation including value addition of animal products
- Unorganised market should be converted into organized market linkages
- Removal of technological gap in nutrition, management and housing of poultry birds
- Promotion of women SHGs for rural production of eggs and meat

Fishery

- Ensuring ready supply of quality fingerling in the district.
- Aquaculture based integrated farming modules to be implemented in all the excavated pond under MGNREGA scheme
- Entrepreneurship development in the area of fingerling production.
- Capacity building of fish farmers for improved techniques of fish production, including pond management, feed management, stocking species and density, multiple tire carp farming etc.
- Efficient marketing chain development through feasible cold chain establishment
- Entrepreneurship development in ornamental fish culture.
- Exploiting potential for fishery development in canals, enclosed large water bodies etc.

Agricultural marketing

- Contractual farming
- SHG/JLG/CIG mediated marketing strategy
- Infrastructural support for SHG/JLG/CIGs involved in production and marketing of agricultural produce
- Strengthening of marketing facilities by procuring of farm produces through Kisan Mandies directly from farmers/ entrepreneurs

Credit & Cooperation

- Storage system for vegetables, followers etc. - Veg. godown & multipurpose godown is needed.
- Efficient linkage to be established between produced crops and marketing mainly for non-conventional crops.
- Farmers' club, adequate training, using modern – scientific technique for production of crops is needed.

- All the S.K.U.S.s should have well metal road connection for fertilizer business & other various purposed.
- Agro processing unit to form by Joint venture with S.K.U.S.s – if possible.
- PACS in the district should be promoted for all kinds of agricultural based activities, including production of seeds, distribution of fertilizers etc
- Credit linkages should be increased for the farmers so that they can market their products and a handsome amount

Irrigation

- Promotion of minor as well as micro irrigation
- Construction of rain water harvesting structures
- Renovation of sub-canals
- Recharge of ground water

Policy Summary

Issues and Policies

11.1. Summarized extension issues and strategy

From the primary data of all agro- ecological situations of the district, it is revealed that there are many reasons for low productivity and profitability of field crops and enterprises. Various intervention and suggestions are proposed by the farmers and well as the specialists. But most significant interventions/ suggestion are proposed in SREP document.

Sl. No	Extension Strategy	Activities	Intervened by
1	Capacity building programme of various aspects of crop/livestock/ fish production/post harvest operation	• Training of farmers, farm women, rural youths and extension personal • Skill development programme for SHGs, rural youths and school drop outs	SAU, Department of Agriculture, ARD, Department of Fishery, Agri-irrigation and KVK
2.	Awareness camp.	• Organization of **farmers day** • Coverage through mass media, film show, local cable network • Interaction meeting • Messaging through application of smart ICT	Department of Agriculture, ARD, Department of Fishery, agri-irrigation and KVK
3.	Quality critical input production	• Production of quality seeds, planting materials • Production of fish seed, chicks/ducklings and spawn	Department of Agriculture, ARD, and Fishery, KVK and private growers
4.	Technology Exhibition	• Exposure visit to successful site/ University/ Govt. farms • Organization of mela • Preparation of documentary film • Establishment crop cafeteria	Department of Agriculture, ARD, Department of Fishery, agri-irrigation and KVK

5.	Adoption of New technology and wide dissemination	• Field Demonstration with new crop, cultivars, breed • Package demonstration of new technology • On farm testing of newly generated technologies • Organization of field days • Development of extension leaflet in local language • Use of ICT in agriculture for climate, disease, market information	Department of Agriculture, ARD, Department of Fishery, agri-irrigation and KVK
6.	Promotion of farmer- lead extension	• Farm school and group discussion • Preparation and documentation of success stories • Farmers recognition/ award	All Departments , Mass media, PACs and NGOs

11.2. Short term Researchable issue in this plan

i) Development of club root resistant short duration mustard cultivar.
ii) Development of sheath blight resistant medium duration paddy cultivar.
iii) Identification of integrated disease management protocol for potato.
iv) Development of GIS based soil resource mapping (1:10000 scale) for micro level agricultural planning.
v) Development of acid tolerant oilseed and pulse cultivars.
vi) Identification of suitable agro-forestry/silvi-pastoral models
vii) Identification of suitable IFS model for red and lateritic zone.
viii) Development of farmer-friendly, cost-effective retting technology of jute.
ix) Identification of remunerative alternate kharif crops like kharif onion, kharif groundnut etc.
x) Development of area-specific mineral mixture for goat

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All Farmers of three representative villages