

**STRATEGIC RESEARCH AND EXTENSION PLAN
(SREP)
OF
EAST SINGHBHUM DISTRICT**

Prepared By:

**AGRICULTURAL TECHNOLOGY MANAGEMENT AGENCY
(ATMA, EAST SINGHBHUM)**

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Project Director
ATMA, East Singhbhum

Sri. R. K. Agarwal
I.A.S.

FORWARDING

ATMA is established at district level as an autonomous institution providing flexible working environment involving all the stakeholders in planning and implementation of extension activities. ATMA caters to activities in agriculture and allied sectors adopting a farming system approach and convergence of programmers of related departments. Local research and extension priorities are set through Strategic Research and Extension Plan (SREP). One of the most important activities undertaken by ATMA is to prepare SREP, which consists of detailed information about agriculture and allied sectors of the district. It acts as a guideline to identify research and extension needs for the ATMA district. In SREP emphasis is given on participatory and bottom up approach for the planning of different stages. SREP is prepared with full participation of the farmers and representatives at different level. Technical officers of agriculture and allied departments as well as subject matter experts from KVKs and other research institutions fully participate in the preparation of SREP.

Based on the research- extension strategies given in the SREP's, block/ district level plans are developed by ATMA institutions. The State Extension work Plan developed at state level is a consolidated activity wise plan incorporating all the district level plans and the state level activities.

In order to provide needed Human Resource Development (HRD) support in the innovative areas of extension delivery, State Agricultural Management and Extension training institution (SAMETI) has also been established in each state.

The SREP prepared and compiled by Sri Gamaliel Hansda, District Agriculture Officer and Project Director ATMA of East Singhbhum contains excellent strategies on extension and research plan for the holistic development of agriculture and allied sectors in the district. . I compliment Sri G. Hansda for his endeavor and believe that this book will help in implementing the Strategic plan of action by ATMA, East Singhbhum.

Deputy Commissioner
East Singhbhum

I

INTRODUCTION

The X Five Year Plan Approach Paper called for radical overhaul of extension services and significant improvements in sophistication of technology dissemination methodologies. It highlighted the need for specific measures to ensure that research technology development and extension services meet the special needs of farmers. The PFAE and experiences under ATMA approach have also been directed towards similar strategies. Accordingly, The Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India is implementing the Support to State Extension Programmers for Extension schemes during the Xth Plan period.

The Scheme “Support to State Extension Programmers for Extension Reforms” is the main scheme to operationalize agriculture extension reforms across the country. The district level autonomous body called agricultural technology management agency (ATMA) will have the responsibility of implementing the extension reforms at district level.

Agricultural technology management agency is a district level body created under the Innovation Technology Dissemination component of National Agricultural Technology project for pilot testing agricultural extension reforms. This is an autonomous institution with participant of all the key stakeholders involved in agricultural activities for sustainable agricultural development. **It has the flexibility to receive funds directly (Government of India/States, Membership fees, beneficiaries contribution etc)** . ATMA has the main responsibility of all the technology dissemination activities at the district level. It has linkages with all the line department, research organizations, non-governmental organizations and agencies associated with agricultural development in the district with a substantial representation of farmers organizations. Research and extension units within the district, such KVKs, ZRSs, Department of Agriculture, Horticulture, Animal Husbandry, Fisheries, Sericulture, Marketing, etc. are constituent members.

In East Singhbhum district the ATMA has started in 2007. One of the first task of ATMA is to facilitate the preparation of strategic Research and Extension Plan (SREP) of the district. The SREP is prepared Through participatory methodologies Such as participatory Rural Appraisal (PRA) involving all the stakeholders and farmers. The SREP contains detailed analysis of the all information on existing farming systems in the district and research extension gaps required to be filled-up. It also prioritizes the research extension strategies within the district. It becomes the basis for development of work plans at block/district level.

The SREP is the basic documents which is not only decides The development activities that need to be carried out but also in which manner and by whom it has to be done.

The District East Singhbhum is situated at the extreerm corner of Southwest of Jharkhand. It is bounded by the district of West Bengal in the North and East, Saraikela district in the west and Mayurbhanj district of Orissa in the South. The total geographical area is 3533 sq. kilometer.

The climate of the district is Temperate. Annual rainfall is 1200 to 1400 mm. This area comes under the path of south-west monsoon. So sometime it receives heavy rain

during July to September. During Summer season maximum temperature goes upto 40°C – 45°C. Where as Winter it has recorded a minimum temperature of 8°C.

The district has varied landforms like hill ranges, eroded valleys and undulating land. The Dalma and Dhalbhum are main hill ranges and covered by dense forest. The relief is high in southern and north western portion of the district. The lower area lies between hill ranges known as Dhalbhum plain mainly created by river Subarnarekha and its tributaries. Geologically The area is comprise with granites, gneiss and schist. Formation of igneous, sedimentary and metamorphic rocks of Dharwarian period are found at places. Major rivers in the district are Subarnarekha and Kharkai.

Due to varied landscape the forest cover is found in different proportion in different area. Plains associated with Subarnarekha basin recorded considerable deforestation but Dalma and Dhanjori highland area are under these forest cover.

Keeping the view of agriculture the district has divided in to two type of situations. One type of situation is plain land, sandy loam soil and irrigated conditation. The land under This situation is quite productive for agriculture due to irrigation facility by chandil dam, Dih barag in Icha Dam. In This area farmer takes double paddy crop. About 10,000 hectare are covered by summer paddy. Although, the area is very suitable for pulses and oilseed crop, farmer don't prefer to grow the crop in large scale. It is only due to lack of knowledge.

The second type of situation is Undulated, upland sandy soil and rainfed condition. The main crop of the area under this situation is paddy. In this area paddy are grown mostly by direct seeding method in kharif season. Due to this productivity of paddy is very poor. Farmer takes only one crop during the whole year due to poor irrigation facilities and lack of knowledge.

Majority of this farmers are small and marginal in the district. Farmers have small halding. The adaption of farm mechanization is difficult. The farmer also rear milch and draught animals. These two avocation are complimentary to each other. In the absence of scientific land use planning and proper infrastructure to provide graded animal the much needed diversification in agricultural sector and increase milk production in animal husbandry sector for improving socio economic condition of the farmers can not be done.

During the last decade number of management tools have been developed which are helpful in facilitating farmers' involvement in an effective manner, Based upon these tools a participatory methodology has been work out for preparing a strategic research and extension plan of the district level. The present documents has emerged through application of above tools in a limited number of two villages of representing two Agro-eco-situation by selected extension officer and researcher of the district.

SREP is the guideline for the ATMA district. In SREP emphasis is given on participatory and bottom up approaches from planning stages. For preparation of SREP of East Singhbhum district of Jharkhand following steps have been taken-

II.1 Orientation of district / Block level officer and scientists on SREP

Three days orientation programme on SREP preparation for district /block officer and scientists were conducted jointly by SAMETI Ranchi and ATMA East Singhbhum on dated 27th to 29th January 2008.

Following officials participated in the above training from East Singhbhum district.

1. District Agriculture Officer, East Singhbhum
2. District Horticulture Officer, East Singhbhum
3. District Fisheries Officer, East Singhbhum
4. District Animal Husbandry Officer, East Singhbhum
5. Block Agriculture Officer, Jamshedpur
6. Block Agriculture Officer, Potka
7. Block Agriculture Officer, Patamda
8. Block Agriculture Officer, Ghatsila
9. Block Agriculture Officer, Dumaria
10. Block Agriculture Officer, Musabani
11. Block Agriculture Officer, Dhalbhumgarh
12. Block Agriculture Officer, Chakulia
13. Block Agriculture Officer, Bahragora
14. Block Co-Operative Officer, Jamshedpur
15. Block Co-Operative Officer, Potka
16. Block Co-Operative Officer, Patamda
17. Block Co-Operative Officer, Ghatsila
18. Block Co-Operative Officer, Dumaria
19. Block Co-Operative Officer, Musabani
20. Block Co-Operative Officer, Dhalbhumgarh
21. Block Co-Operative Officer, Chakulia

22. Block Co-Operative Officer, Bahragora
23. Block Animal Husbandry Officer, Jamshedpur
24. Block Animal Husbandry Officer, Potka
25. Block Animal Husbandry Officer, Patamda
26. Block Animal Husbandry Officer, Ghatsila
27. Block Animal Husbandry Officer, Dumaria
28. Block Animal Husbandry Officer, Musabani
29. Block Animal Husbandry Officer, Dhalbhumgarh
30. Block Animal Husbandry Officer, Chakulia
31. Block Animal Husbandry Officer, Bahragora
32. Programme Co-Ordinator, KVK, Darisai, Ghatsila
33. Sri Gondra Mardi, Subject matter Specialist, KVK, Darisai, Ghatsila
34. Scientist, ZRS, Darisai, Ghatsila
35. District Soil Conservation Officer, East Singhbhum
36. Representative of Taigor Society, NGO,

II.2 Identification of agro-ecological situation (AES) and constitution of AES

Agro-ecological situation of the district were identified through discussion with all line department and scientist of KVK/ZRS on the basis of soil type, topography, irrigation. District was divided into two Agro-ecological situation (AES) as follows

Agro-climatic zone	Agro- ecological situation	Representative Village	Panchayat	Block
VII Eastern Plateau And Hills	I Plain land sandy loam soil and irrigated area	Kalapathar	Kalapathar	Chakulia
	II Undulated upland sandy soil rainfed forest cover area	Charradih	Kowali	Potka

Data from the representative village has been collected by the Multi disciplinary team consist of various disciplines and line department officers and representative of NGO working in the district.

II.3 Selection of Members:

Selection of members of multi-disciplinary team (MDT) of 14 officers representing different government departments' viz. Agriculture, Animal Husbandry, Dairy development officer, Horticulture and scientists from ZRS, KVK Darisai & NGO was made to provide them basic training / orientation about the concept of Extension Reforms for preparation of SREP.

Two AES zones are selected. The core teams for each AES zone were as follows –

AES TEAM

AES - I	1. Miss. Arti bina Ekka, (Team Leader)	Programme Co-Ordinator, KVK, Darisai
	2. Mr. Gamaliel Hansda,	DAO cum PD, ATMA, Jamshedpur
	3. Dr. Stanley kujur	DAHO, East Singhbhum
	4. Mr. Chandra kumar Singh	Dist. Dairy dev. Officer, East Singhbhum
	5. Mr. Amrendra kumar varma	Fisheries extension supervisor, JSR
	6. Block agriculture officer,	Chakulia
	7. Mr. Gondra Mardi,	Subject matter Specialist, KVK, Darisai, Ghatsila
AES - II	1. Mr. Robert anthony	Consultant, UNICEF, Jamshedpur
	2. Mr. Anthon Ekka	DHO, East Singhbhum
	3. Mr. Sambhu prasad yadev	Dist. fishries officer, East Singhbhum
	4. Dr. Manoj kumar	Sub. Veterinary officer, Jamshedpur
	5. Mr. Sailesh kumar	Dairy technical officer, Jamshedpur
	6. Mr. Dinesh kumar Gupta	Block agriculture officer, Potka
	7. Mr. K.L. Mahto	Project Co-Ordinator, agriculture, Kila Mandir, NGO, Janamdih Branch

II.4 Training of MDT:

The selected scientists and officers of MDT were given training on theoretical aspects of SREP at ATMA, East Singhbhum by Technical Experts on the following aspects.

- Present Extension System & ATMA Model
- Extension Reforms
- Roles and Responsibility of Stakeholders
- Orientation on SREP
- Concept of Participatory Rural Appraisal (PRA) & Tools
- Farming System Approach
- Farming System Based Situation
- Gender Participation
- Field Exercise on Participatory Data Collection.

II.5 Technical Expert involved in the training:

1. Mr. Abhisek Trikey, Expert, SAMITI Jharkhand, Ranchi
2. Miss. Arti bina Akka, Programme Co-Ordinator, KVK, Darisai, Ghatsila, East Singhbhum
3. Mr. Gondra Mardi, Subject matter Specialist, KVK, Darisai, Ghatsila, East Singhbhum

During the course of AES training, two major Agro-Ecological situations (AES) were identified and representative villages based on various agro-ecological factors were identified.

II.6 Data collection

Data was collected from each representative village by PRA technique by using participatory tools like Social mapping, resource mapping, transacts, matrix and preferential ranking, trend analysis. Venn diagram, time line, seasonality calendar, scoring, community problem analysis, semi-structured interview, focused group discussion, direct observation etc.

II.7 Analysis of collected data and prioritization of extension and research issues

Project director collected district, Block and representative village level Secondary data. Primary data of representative village and Secondary data of the district analyzed district technical team under the leadership of Project Director ATMA and Mr. Gondra Mardi, SMS, KVK, Darisai, Ghatsila, East Singhbhum.

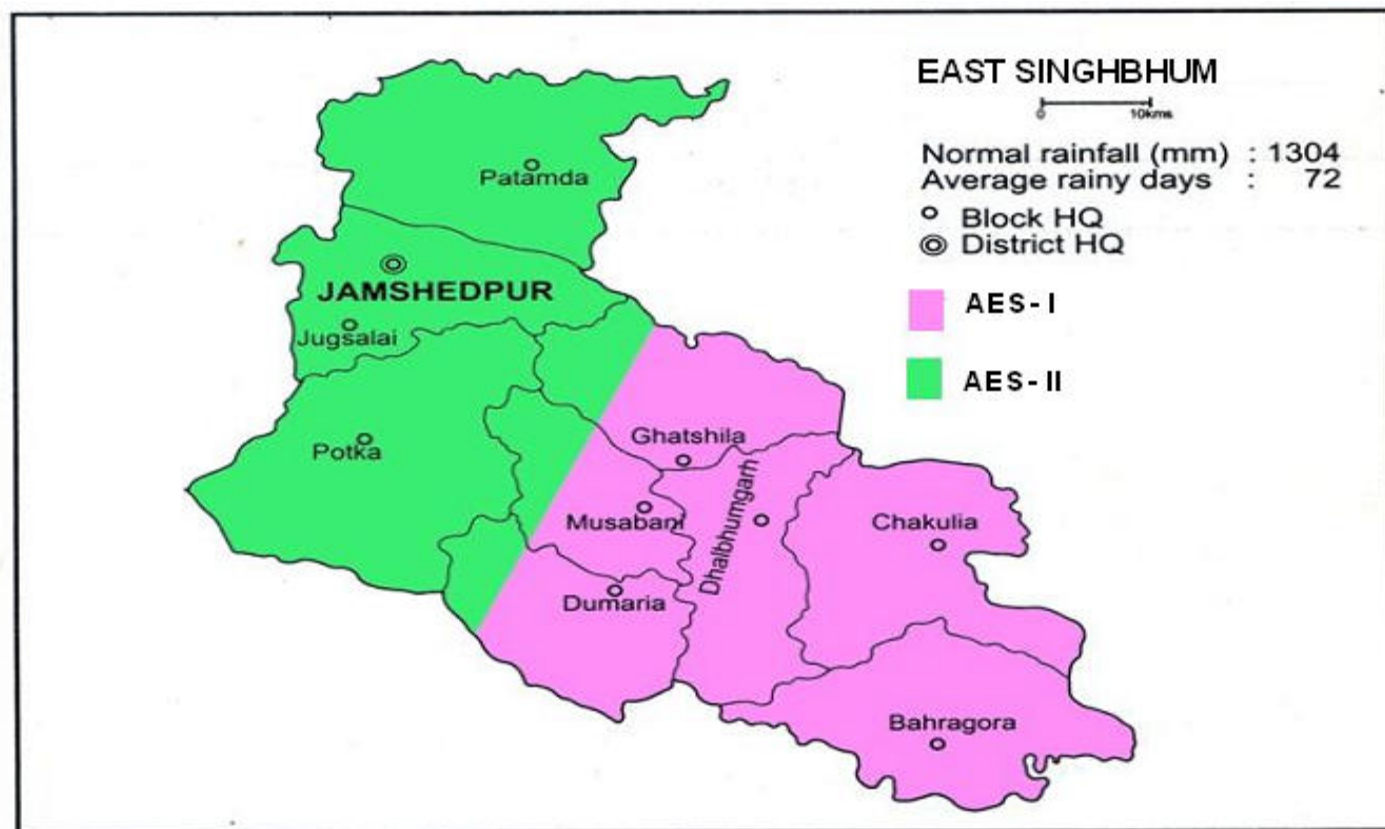
Table II.7 : AES and village selected for participatory data collection

Sl. No.	Name of AES	Blocks	Representative Village Identified	Geographical Area (in Ha.)	% Of total geographical area
1.	AES – I	Dhalbhumgarh, Chakulia, Bahragora & part of Ghatsila, Musabani & Dumaria	Kalapather, Chakulia Block	183716	52
2.	AES – II	Potka, Jamshedpur, Patamda & part of the Ghatsila, Musabani & Dumaria	Charradih, Potka Block	169584	48
				353300	100

AES Identification

AES – I - Sandy loam, Irrigated plain area

AES – II - Sandy soil, Rain fed Undulated Plateau Forest Area.



Map of district East Singhbhum

Table II.8 : Criteria for AES Selection

AES	Village	Vegetation	Soil Type	Irrigation	Cropping Pattern
AES-I	Kalapather	Sal, Gamhar, Mahua, Bamboo and Grass	Heavy clay with sand light brown to dark yellow in texture	Irrigated	Mono cropping but canal side Double cropping, vegetables and rabi production occurs
AES-II	Charradih	Palash, Mahua, Shrubs, Bamboo, Assan and Grass	Sandy Loam, Sandy Clay with Yellow Texture	Rain fed	Mono Cropping rainfed vegetable

Agro ecological situations were identified based on Soil Type, Vegetation, Irrigation and Cropping pattern in consultation with the Scientists of the KVK and zonal research station, Darisai, Ghatsila, Jamshedpur. NGO's working in the district and officials of Agriculture and other line departments. One village in each agro ecological situations was selected thus there were 2 villages representing 2 Agro ecological situations in the East Singhbhum district.

Formation of Multi-Disciplinary Groups:

For each AES, Multi-disciplinary groups comprising 7 members from different line departments and Scientists from KVK and NGO. These groups were given the task collection of primary information from the representative village's uses PRA tools and techniques for the preparation of SREP. The revised format for the collection of field data through participatory method was also given to each AES team members.

Conducting field survey:

Field survey were conducted in East Singhbhum district from 26-30 April 2009 during which members of the inter-disciplinary group collected data and information for the preparation of SREP. The primary data collected during field survey was checked with various farmers groups in the village through triangulation.

The collected data was summarized and presented by each AES team in the presence of scientists from KVK and ZRS, Darisai along with the senior level officers from all concerned departments and farmers from representative villages.

Collection of Secondary Information:

Secondary data used for preparing SREP was collected from different publications from the records of the district offices of Agriculture, Horticulture, Soil Conservation, Animal Husbandry, Statistical Office, District Credit Plan (09-10) prepared by Bank of India and database prepared by NIC Website.

Summarization and Presentation of Data:

A core team comprising of 3 members from the AES teams facilitated by KVK and ZRS Facilitators undertook the job of tabulation, analysis of data collected by various AES teams and preparation of the first draft SREP (Partial) was presented before SAMETI on 10th July 2009 and discussed on each chapter with faculty SAMETI and core team of each AES of the district. It was sent MANAGE Haydrabad for approval. MANAGE consultant advised to incorporate graph, comment on table, cost benefit ratio, colors map, and budget of ongoing development scheme and opportunity and challenge in introduction part. Modification has been done as suggested according.



BACKGROUND INFORMATION OF THE DISTRICT

*** Location & Map ***

District : East Singhbhum

Longitudinal Extent : 86 Deg 04 Min - 86 Deg 54 Min East
Latitudinal Extent : 22 Deg 12 Min - 23 Deg 01 Min North

Sl. No.	Block Name	Longitude		Latitude	
		East	East	North	North
1	Patamda	86 Deg 11 Min	86 Deg 33 Min	22 Deg 48 Min	23 Deg 01 Min
2	Jamshedpur	86 Deg 08 Min	86 Deg 28 Min	22 Deg 40 Min	22 Deg 51 Min
3	Potka	86 Deg 04 Min	86 Deg 24 Min	22 Deg 26 Min	22 Deg 44 Min
4	Ghatshila	86 Deg 23 Min	86 Deg 39 Min	22 Deg 33 Min	22 Deg 46 Min
5	Musabani	86 Deg 17 Min	86 Deg 30 Min	22 Deg 26 Min	22 Deg 40 Min
6	Dumaria	86 Deg 17 Min	86 Deg 32 Min	22 Deg 18 Min	22 Deg 31 Min
7	Dhalbhumgarh	86 Deg 28 Min	86 Deg 40 Min	22 Deg 26 Min	22 Deg 37 Min
8	Chakulia	86 Deg 34 Min	86 Deg 52 Min	22 Deg 21 Min	22 Deg 36 Min
9	Bahragora	86 Deg 32 Min	86 Deg 54 Min	22 Deg 12 Min	22 Deg 26 Min

Boundary Districts	East	West	North	South
	Midnapur District (W.Bengal)	West Singhbhum	Purulia District (W.Bengal)	Mayurbhanj District (Orissa)

Rural Area, ha Census 2001	Urban Area, ha Town Directory, 2001	Total area, ha Census 2001	Geographical Area, ha Surveyor General*
314704	22467	337171	-

Administrative Classification, nos.	Sub-division	Blocks	Panchayat	Village
	2	9	150	1782

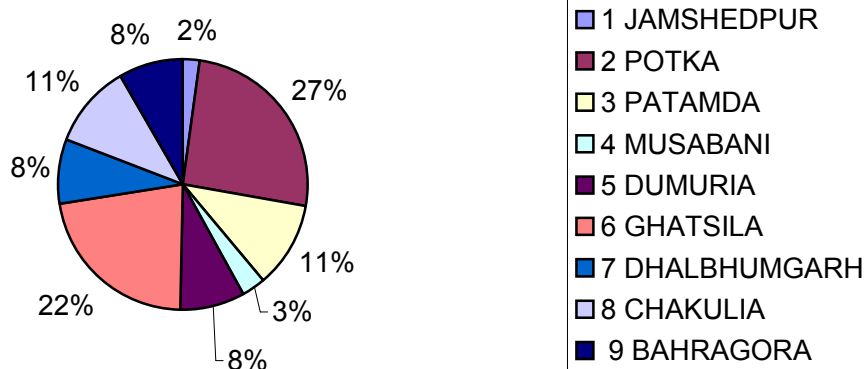
Chapter III Table 1: Land use classification of the district

Sl. No.	Block Name	Total Geographical area	Forest	Barren & Uncultivable Area	Land Used for Non-agricultural use	Cultivable waste land	Pasture Land	Land under Misc. Tree crops	Current & Other fallow land	Total (4 11)	Net crop area
1	2	3	4	5	6	7	8	9	11	12	13
1	JAMSHEDPUR	23285.30	580.37	1000.00	4643.46	735.41	189.34	54.97	862.75	8066.30	15219.00
2	POTKA	68551.60	8793.90	12185.12	4944.44	16165.01	117.20	790.95	2746.05	45742.67	22808.93
3	PATAMDA	51148.00	12982.00	5247.01	4321.18	6587.18	633.95	1751.36	2635.00	34157.68	16990.32
4	MUSABANI	22117.00	2000.00	1447.92	1105.85	1308.23	110.00	50.00	2305.00	8327.00	13790.00
5	DUMURIA	31673.00	9217.76	4002.11	1583.65	1265.87	275.00	744.61	1000.00	18089.00	13584.00
6	GHATSILA	37576.25	8538.60	10538.62	1000.55	2484.72	150.00	560.00	1999.07	25271.56	12304.69
7	DHALBHUMGARH	32453.20	10049.62	3994.85	1862.02	919.08	47.63	100.00	1200.02	18173.22	14279.98
8	CHAKULIA	43162.03	10925.71	5144.60	4709.34	3360.00	478.18	564.18	1272.00	26454.01	16708.02
9	BAHRAGORA	43333.62	10239.46	3990.30	2462.75	2458.08	200.00	800.00	2960.07	23110.66	20222.96
	Total :-	353300.00	73327.42	47550.53	26633.24	35283.58	2201.30	5416.07	16979.96	207392.10	145907.9

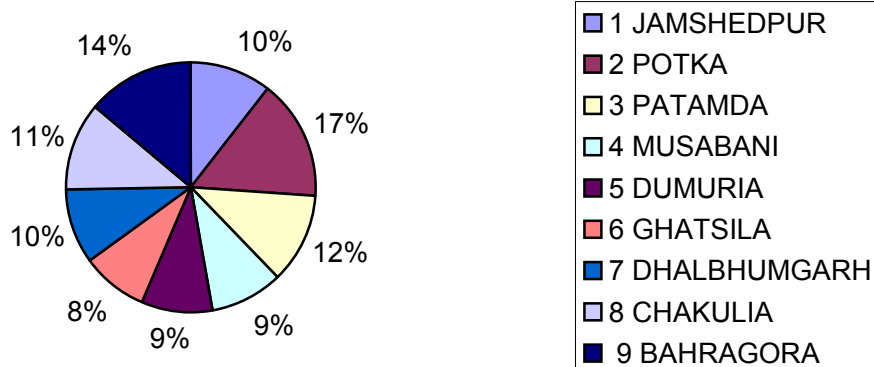
Source : District Agriculture Office ,NIC Website, District Credit Plan

Total geographical area of the district is 353300.00 hectare. Which is only 4.4 percentage of total geographical area of the Jharkhand state. Forest area is 21 percentage of total geographical area of the district. Bahragora (10239.46 ha) block has highest area under forest. Net sown area of the district is only 41.3 percentage of the total geographical area of the district.

Percent Distribution of Forest Area in different blocks of East Singhbhum District



Percent Distribution of Net Sown Area in different blocks of East Singhbhum District



The climatic condition of the district is tropical which comprises of (a) Hot and dry summer season. (b) Humid and warm rainy season. (c) Winter season. The summer season begins from the month of March and end by the month June. The southeast monsoon from Bay of Bengal comes here in the mid of June and frequent moderate to heavy rains occurs in the district. Monsoon lasts up to the month of September, July and August receives maximum rainfalls in the district. During the rest of the year the weather remains normally dry, with occasional summer rain in the evening. However due to the proximity of the region to the coastal area of the Bay of Bengal. The district gets good rainfall of 1200 to 1400 mm. However the maximum rainwater goes off as waste due to excessive run –off water. Maximum temperature recorded during summer is 45°C. Due to this the district receive good rainfall and preponderance of forest cover many perennial streams are in the districts. The 2 major rivers are Swarnarekha and Kharkai.

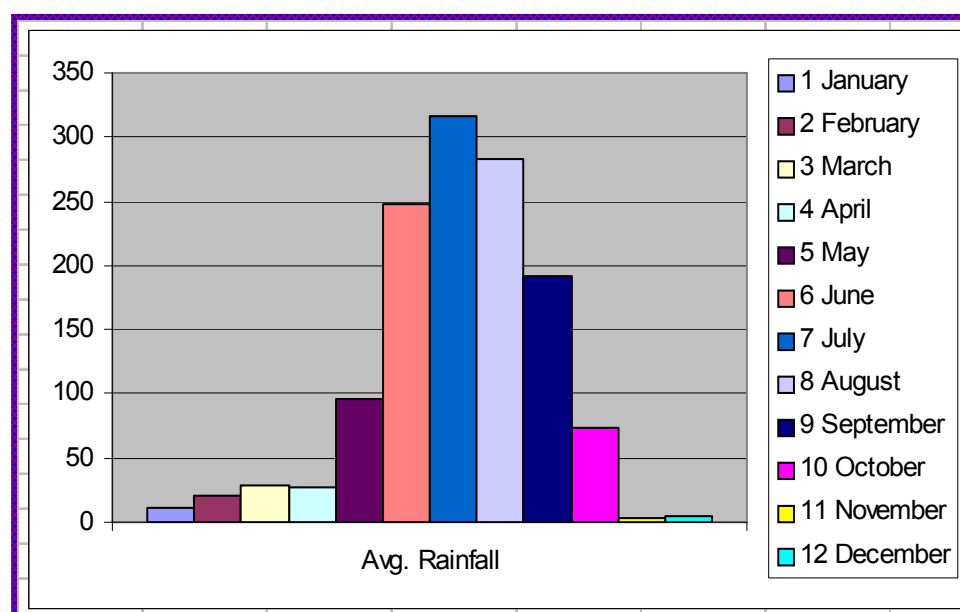
Chapter III Table 2 : Average annual rainfall of the district

Sl. No.	1	2	3	4	5	6	7	8	9	10
Block's :-	Jamshedpur	Potka	Patamda	Musabani	Dumaria	Ghatshila	Dhalbhumgarh	Chakulia	Bahragora	Avg.
January	11.1	14.1	12.0	11.0	11.1	11.0	11.0	11.1	11.0	11.5
February	20.1	18.6	12.0	18.0	21.7	26.2	27.6	25.0	18.0	20.9
March	29.0	26.2	29.0	29.0	28.1	28.1	29.3	28.3	28.2	28.3
April	23.3	20.6	21.3	14.0	26.7	34.6	45.0	31.6	28.0	27.2
May	94.6	95.1	90.4	90.8	87.1	102.9	97.5	166.5	93.9	95.4
June	261.0	225.0	239.0	240.0	243.0	249.0	240.0	254.0	260.0	247.8
July	298.0	316.0	315.0	308.0	321.0	323.0	324.0	324.0	383.0	316.8
August	298.0	298.0	258.0	238.0	283.0	285.0	292.0	295.0	302.0	283.2

September	179	182.0	185.0	187.0	195.0	198.0	202.0	199.0	200.0	191.9
October	57.1	93.2	78.4	98.3	64.0	61.7	81.1	65.8	63.0	73.6
November	3.5	3.4	3.6	3.4	3.4	3.6	2.8	2.2	2.5	3.1
December	3.8	-	8.8	0.8	3.7	-	8.5	7.7	8.8	4.7

District Agriculture Office & NIC website District Credit Plan BOI

Average Monthly rainfall of the East Singhbhum district



According to 2001 Census the total population of the district is 1982988. Rural population is 44.97% of the total population while urban is 55.03% ST population in the district is 27.85%. Mostly Santhal, Bhumij and Ho constitute 85% of the Tribal population. According to 2001 census female population is 48.76, male population is 51.24%. Increase in population during the decade is 19.96%, Literacy is 50.7% the total no. of villages are 1774 and total Panchayat is 150. The details of the population according to blockwise and caste wise shown in Table given below -

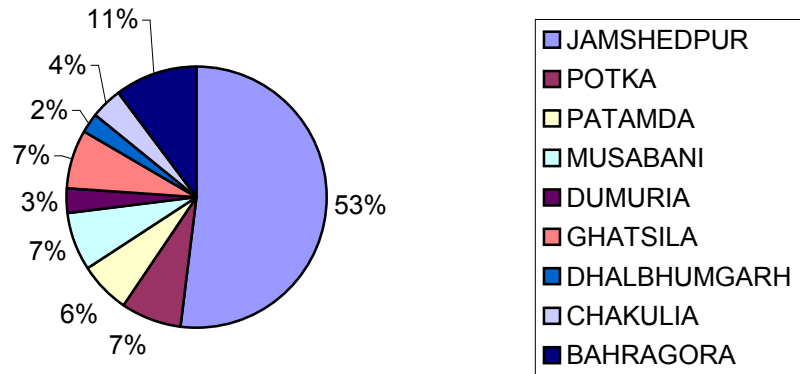
Chapter III Table 3 : Blockwise and Category wise Population

Sl. No.	Block Name	Population	SC	ST	Others
1	JAMSHEDPUR	T- 1076544	T- 48897	T- 132189	T- 895458
		R- 91054	R- 2612	R- 37907	R- 50535
		U- 985490	U- 46285	U- 94282	U- 844923
2	POTKA	T- 170657	T- 7030	T- 87444	T- 76183
		R- 170657	R- 7030	R- 87444	R- 76183
		U- 0	U- 0	U- 0	U- 0
3	PATAMDA	T- 131879	T- 6029	T- 53272	T- 72578
		R- 131879	R- 6029	R- 53272	R- 72578
		U- 0	U- 0	U- 0	U- 0
4	MUSABANI	T- 104299	T- 6762	T- 44935	T- 52602
		R- 50754	R- 1794	R- 33351	R- 15609
		U- 53545	U- 4968	U- 11584	U- 36993
5	DUMURIA	T- 53615	T- 2824	T- 37836	T- 12955
		R- 53615	R- 2824	R- 37836	R- 12955
		U- 0	U- 0	U- 0	U- 0
6	GHATSILA	T- 115130	T- 6981	T- 46414	T- 61735
		R- 77276	R- 3085	R- 42296	R- 31895
		U- 37854	U- 3896	U- 4118	U- 29840
7	DHALBHUMGARH	T- 72528	T- 2224	T- 42959	T- 27345
		R- 72528	R- 2224	R- 42959	R- 27345
		U- 0	U- 0	U- 0	U- 0
8	CHAKULIA	T- 108806	T- 3572	T- 51258	T- 53976
		R- 94481	R- 2864	R- 48691	R- 42926
		U- 14325	U- 708	U- 2567	U- 11050
9	BAHRAGORA	T- 149530	T- 9776	T- 55880	T- 83874
		R- 149530	R- 9776	R- 55880	R- 83874
		U- 0	U- 0	U- 0	U- 0
TOTAL :-		T- 1982988	T- 94095	T- 552187	T- 1336706
		R- 891784	R- 38238	R- 439636	R- 413900
		U- 1091204	U- 55857	U- 112551	U- 922806

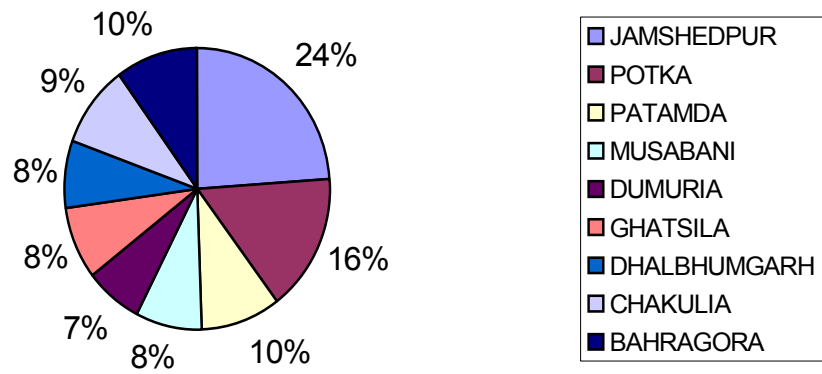
T – Total, R – Rural, U- Urban

District Agriculture Office & NIC website District Credit Plan BOI

SC Population



ST Population



As district has preponderance of forest, but due to continuous exploitation of forest, the excessive run-off water goes as waste. The uplands are subjected to excessive erosion as some villages are forest villages, mostly tribal villages are forest villages. The people are somehow dependent on forest products despite their dependency on forest products their main occupation is agriculture.

Chapter III Table 4 : Educational Institution

Type of School/Institution	No.	Type of School/Institution	No.
Primary School	1089	Adult Literacy Centre	0
Middle School	382	Industrial School	0
High School	59	Training Institute	0
H. S. School	0	Others School	76
Colleges	10		

Source: Census 2001

Chapter III Table 5: Rural Health Facility

Type of Health Centre	No.	Type of Health Centre	No.
Hospital	06	Dispensary	15
Mat. & Child Welfare Centre	04	Family Planning Centre	04
Maternity Homes	02	Nursing Home	01
Child Welfare Centre	10	Regd. Private Practitioner	41
Primary Health Centre	09	Subsi. Medical Practitioner	0
Health Centre	16	Other Centre	0
Primary Health Sub-Centre	244	TB Centre	01

Source: Census 2001

Chapter III Table 6: Block wise Male, Female, Sex ratio

Block	Total Population	Total Male	Total Female	Sex Ratio (F/1000 male)
JAMSHEDPUR	91064	47119	43945	932
POTKA	170657	86273	84384	978
PATAMDA	131879	66866	65013	972
MUSABANI	50754	25663	25091	977
DUMURIA	53615	26885	26730	994
GHATSILA	33320	39371	37905	962
DHALBHUMGARH	72528	37022	35506	959
CHAKULIA	94481	47897	46584	972
BAHRAGORA	149530	76710	72820	949
TOTAL :	847828	453806	437978	8695

Chapter III Table 7: Population 0-6 year, Rural

Block	Number	Density per sq.km	% of Total Rural Population
JAMSHEDPUR	14901	386	16.36
POTKA	28444	274	16.66
PATAMDA	21632	246	16.40
MUSABANI	7806	218	15.38
DUMURIA	9318	161	17.37
GHATSILA	12525	95	16.20
DHALBHUMGARH	11744	213	16.19
CHAKULIA	14350	218	15.18
BAHRAGORA	22777	329	15.23

Chapter III Table 8: Education Status

Block	Number Literate		% of Respective Population	
	Male	Female	Male	Female
JAMSHEDPUR	28610	16580	61.72	37.73
POTKA	49668	25810	57.57	30.59
PATAMDA	36415	16249	54.46	24.99
MUSABANI	14166	7571	55.20	30.17
DUMURIA	12843	6121	47.77	22.90
GHATSILA	21860	11220	55.52	29.60
DHALBHUMGARH	19767	9838	53.39	27.71
CHAKULIA	27325	14542	57.05	31.22
BAHRAGORA	44232	24704	57.66	33.92

Chapter III Table 9: Rural Working Population

Block	Type of work (Main)								
	Cultivator			Agri. Labour			Main Agri. worker as % of Population		
	M	F	T	M	F	T	M	F	T
JAMSHEDPUR	4290	1054	5344	2678	1129	3807	2.94	1.24	4.18
POTKA	20578	6388	26966	11066	8753	19819	6.48	5.13	11.61
PATAMDA	20235	4147	24382	8182	4858	13040	6.20	3.68	9.89
MUSABANI	4275	657	4932	4366	2527	6893	8.60	4.98	13.58
DUMURIA	3636	1254	4890	2528	1413	3941	4.72	2.64	7.35
GHATSILA	9233	2296	11529	6078	3602	9680	18.24	10.81	29.05
DHALBHUMGARH	9032	1983	11015	4168	3539	7707	5.75	4.88	10.63
CHAKULIA	13117	3955	17072	8007	6556	14563	8.47	6.94	15.41
BAHRAGORA	15783	1983	17766	12895	8735	21630	8.62	5.84	14.47

Chapter III Table 10: Animal Wealth with Farmers

S. No.	Blocks	Milch						Drought Animal	Sheep	Goat	Poultry Birds		Piggery		Others
		Cows			Buffaloes						Backyard	Farm	Exotic	Local	
		L	UP	E	L	UP	E	No.	No.	No.					
1	JAMSHEDPUR	7142	35	1852	1552	Nil	694	9135	19746	5379	Nil	103060	Nil	3130	Nil
2	POTKA	20835	11	47	604	Nil	16	39518	39086	12709	Nil	256700	Nil	2864	Nil
3	PATAMDA	17574	2	Nil	1056	Nil	6	32560	50921	14320	Nil	171967	Nil	2537	Nil
4	MUSABANI	4557	2	Nil	330	Nil	24	8930	13237	2028	Nil	72702	Nil	32202	Nil
5	DUMURIA	4731	Nil	Nil	134	Nil	Nil	14618	2107	1538	Nil	91675	Nil	1619	Nil
6	GHATSILA	10262	73	167	370	Nil	557	16792	3354	7925	Nil	110000	Nil	2673	Nil
7	DHALBHUMGARH	10163	Nil	Nil	530	Nil	7	17444	21789	5852	Nil	104584	Nil	24075	Nil
8	CHAKULIA	19345	37	167	297	Nil	34	26379	35688	9962	Nil	142488	Nil	4212	Nil
9	BAHRAGORA	30721	6	149	1015	Nil	1	28622	37628	6463	Nil	147731	Nil	3907	Nil
	TOTAL :-	125330	166	2382	5888	Nil	1339	193998	223556	66176	Nil	1200907	Nil	77219	Nil

District Agriculture Office & NIC website District Credit Plan BOI

Chapter III Table 11: Status of Seed Multiplication Farms

Location, Block	Baliguma	Ghatshila	Potka	Patamda	Dhalbhu mgarh	Dumaria	Bahragora
Area, ha.	10	10	10	10	10	10	10
Usable area, %	60	70	70	70	75	75	75
Boundary protection	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Condition of boundary	Need new fencing	Need new fencing	Need new fencing	Need new fencing	Need new fencing	Need new fencing	Need new fencing
Source of Irrigation	W	W	Nil	W	W	Nil	W
W = Well, P = Pond, L = From rivulet	P	P	Nil	P	P	P	Nil
Condition of Irrigation Source	Better	Better	Bad	Good	Better	Good	Bad
Pump, No.	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Pump, Condition	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Other Equipments & Condition	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Building, No.	1	1	Nil	1	1	1	Nil
Condition of building	Need repair	New	Need new	Need repair	Need repair	Need repair	Need new

District Agriculture Office

Chapter III Table 12 : Demographic Information for the East Singhbhum District

S. No.	Name of the Block	Population (As per 2001 census Total)	% of Literacy	Male No.	Female No.	Workers No.				Categories No.		
						Agri.		Non-agri.		SC	ST	Other
						Male	Fem-ale	Male	Fem-ale			
1	JAMSHEDPUR	91064	45190	47119	43945	2678	1129	-	-	2612	37907	50545
2	POTKA	170657	75478	86273	84384	11066	8753	5649	610	7030	87444	76183
3	PATAMDA	131879	52664	66866	65013	8182	4858	1753	291	6029	53272	72578
4	MUSABANI	50754	21737	25663	25091	4366	2527	11618	378	1794	33351	15609
5	DUMURIA	53615	18964	26885	26730	2528	1413	2528	1413	2824	37836	12955
6	GHATSILA	77276	33080	39371	37905	6078	3602	7136	759	3085	42296	31895
7	DHALBHUMGARH	72528	29605	37022	35506	4168	3539	2612	533	2224	42959	27345
8	CHAKULIA	94481	41867	47897	46584	8007	6556	3540	574	2864	48691	42926
9	BAHRAGORA	149530	68936	76710	72820	12895	8735	3657	505	9776	55880	83874

District Agriculture Office & NIC website District Credit Plan BOI

Chapter III Table 13: Number and Area of Operational Land Holding

SI No.	Name of the Village	Large	Area	Medium	Area	Small	Area	Marginal	Area	Landless Number only
1	Kalaphater	3	16	9	27	30	20	81	27	124
3	Charrdih	4	22	12	37	28	18	30	20	12

Chapter III Table 14: Information on land use pattern in the representative village of AES

S. No.	Name of the Representative village	Geographical Area	Cultivable Area	Cultivated Area	Cultivable waste	Current Fallow
1	Kalaphater	169	90.26	80	64.77	10.26
2	Charrdih	134	97.45	85	3.35	17.45

Chapter III Table 15: Lamps & Cooperatives

Type of Orgination	Jamshe dpur	Potka	Patamda	Musabani	Dumaria	Ghatsila	Dhalbhu mgarh	Chakulia	Bahragora
Fertilizer input Centre	11	12	8	10	5	10	10	5	11
LAMPS	4	4	4	4	4	4	4	4	4
SHG's	263	245	504	95	138	344	288	300	241

Chapter III Table 16: Rural Market

Block	Daily (no.)	Weekly (no.)
JAMSHEDPUR	-	5
POTKA	-	2
PATAMDA	-	2
MUSABANI	-	4
DUMURIA	-	9
GHATSILA	-	4
DHALBHUMGARH	-	2
CHAKULIA	-	3
BAHRAGORA	-	2

Source: Field Visit

Chapter III Table 17: Postal Connectivity

Block	No. of Post Office
JAMSHEDPUR	9
POTKA	24
PATAMDA	21
MUSABANI	3
DUMURIA	1
GHATSILA	8
DHALBHUMGARH	13
CHAKULIA	18
BAHRAGORA	31

Source: Post & Telegraph Dept.

Soils

Chapter III Table 18: Soils under different reaction classes

Soil Reaction	Area ('00 ha)	% of the TGA
Very Strongly acidic (pH 4.5 to 5.0)	1551	43.9
Strongly Acidic (pH 5.1 to 5.5)	696	19.7
Moderately acidic (pH 5.6 to 6.0)	476	13.5
Slightly acidic (pH 6.1 to 6.5)	256	7.3
Neutral (pH 6.6 to 7.3)	140	3.9
Miscellaneous	85	2.4
Total :	3204	90.70

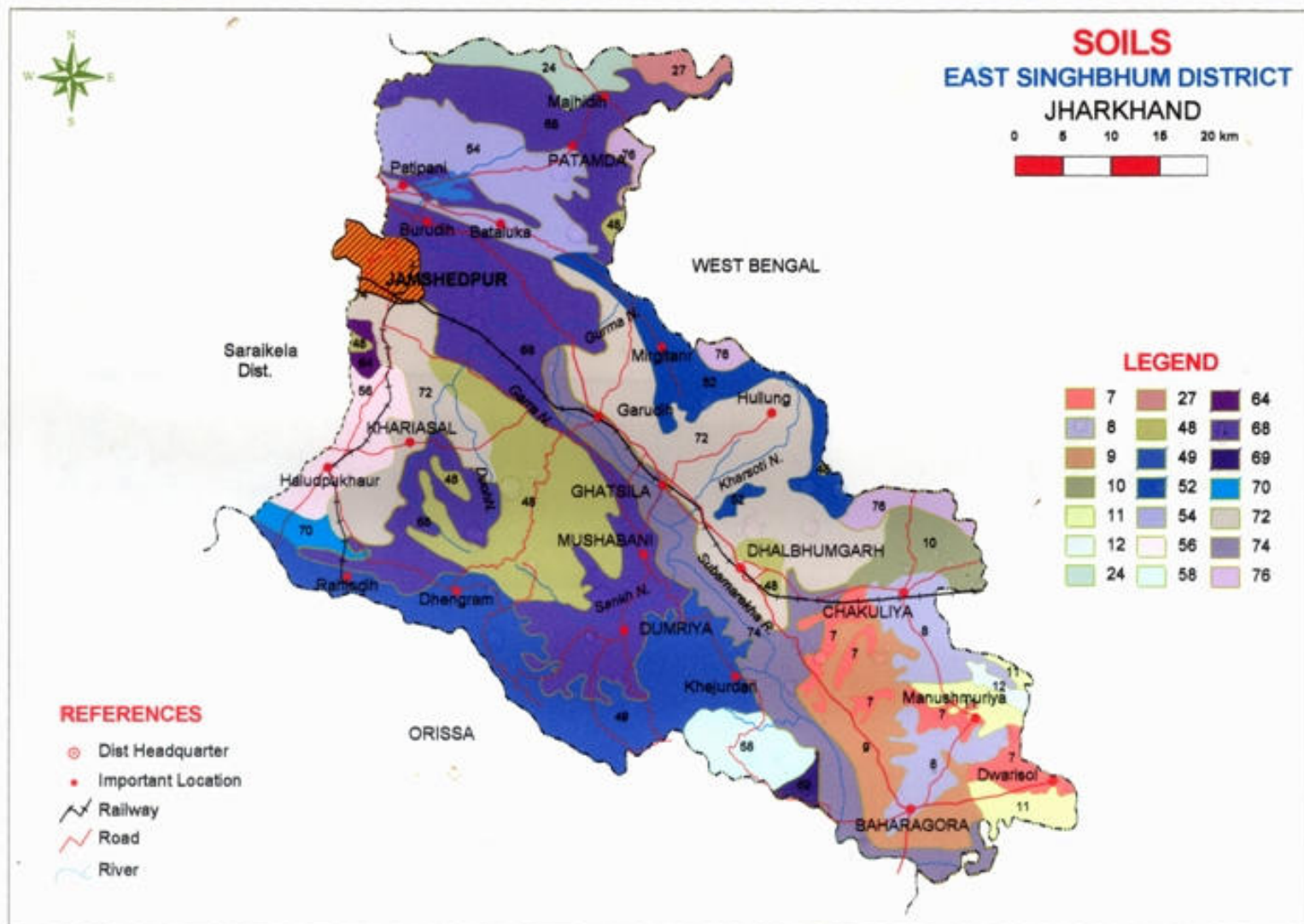
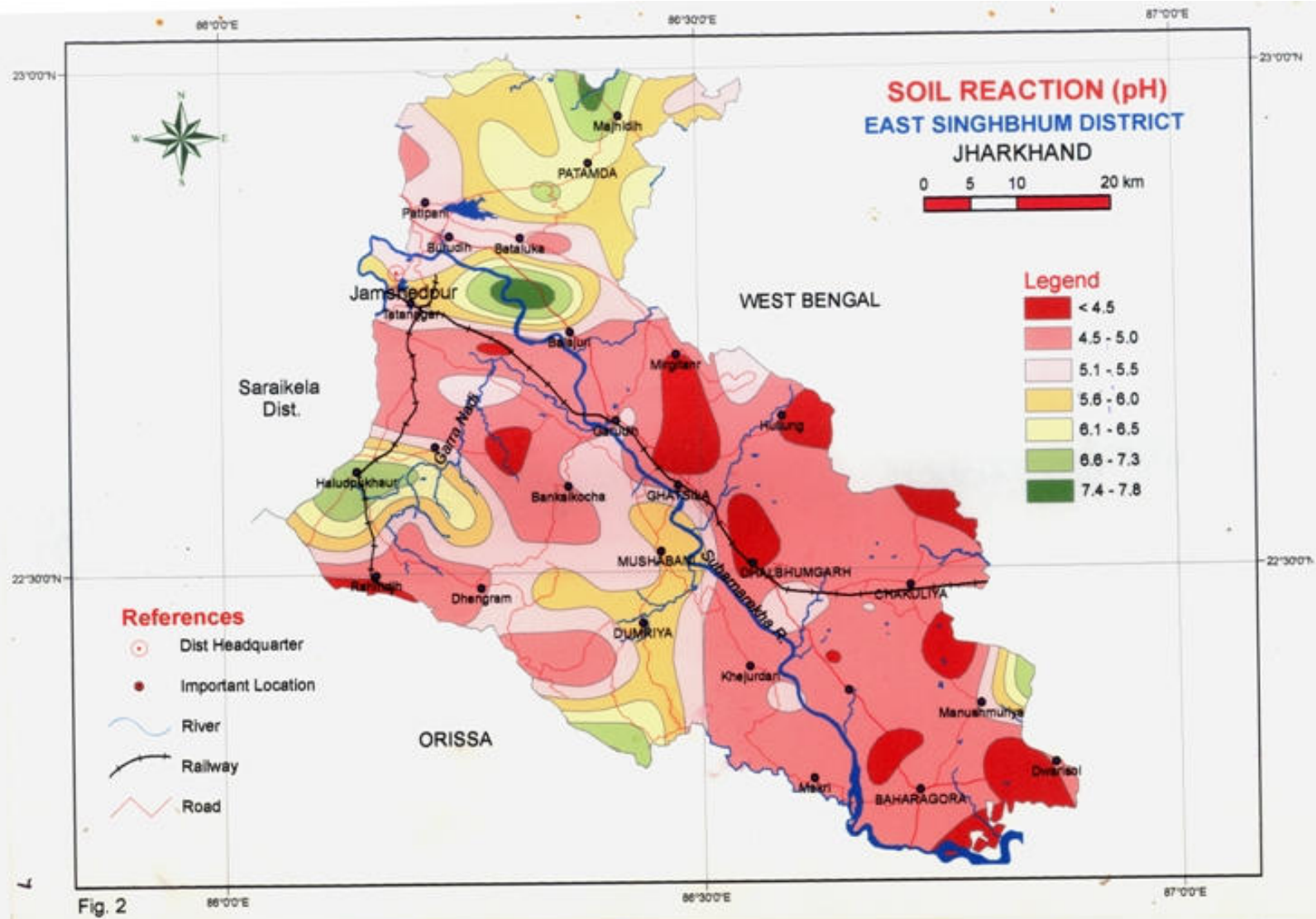
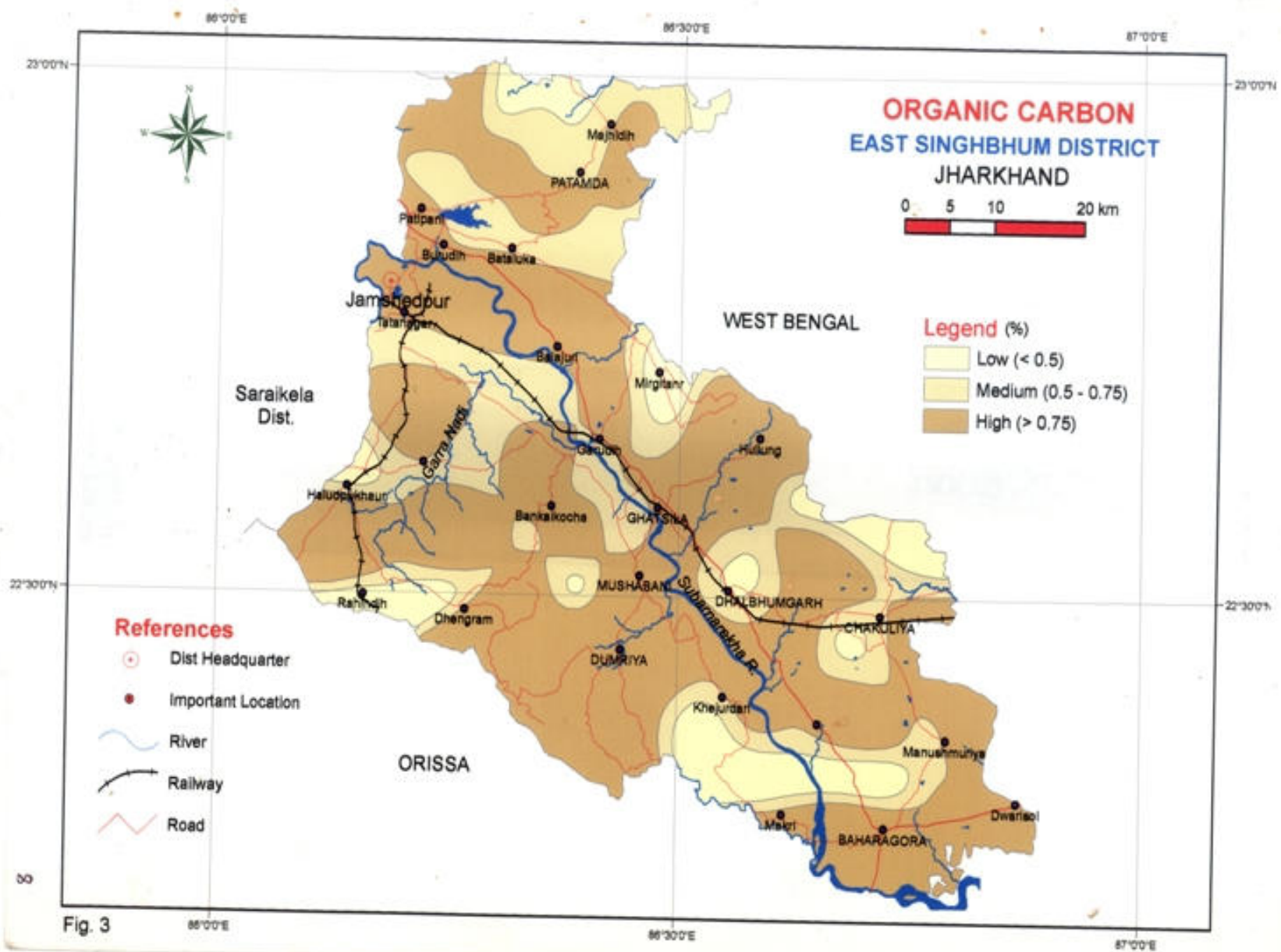


Fig. 1



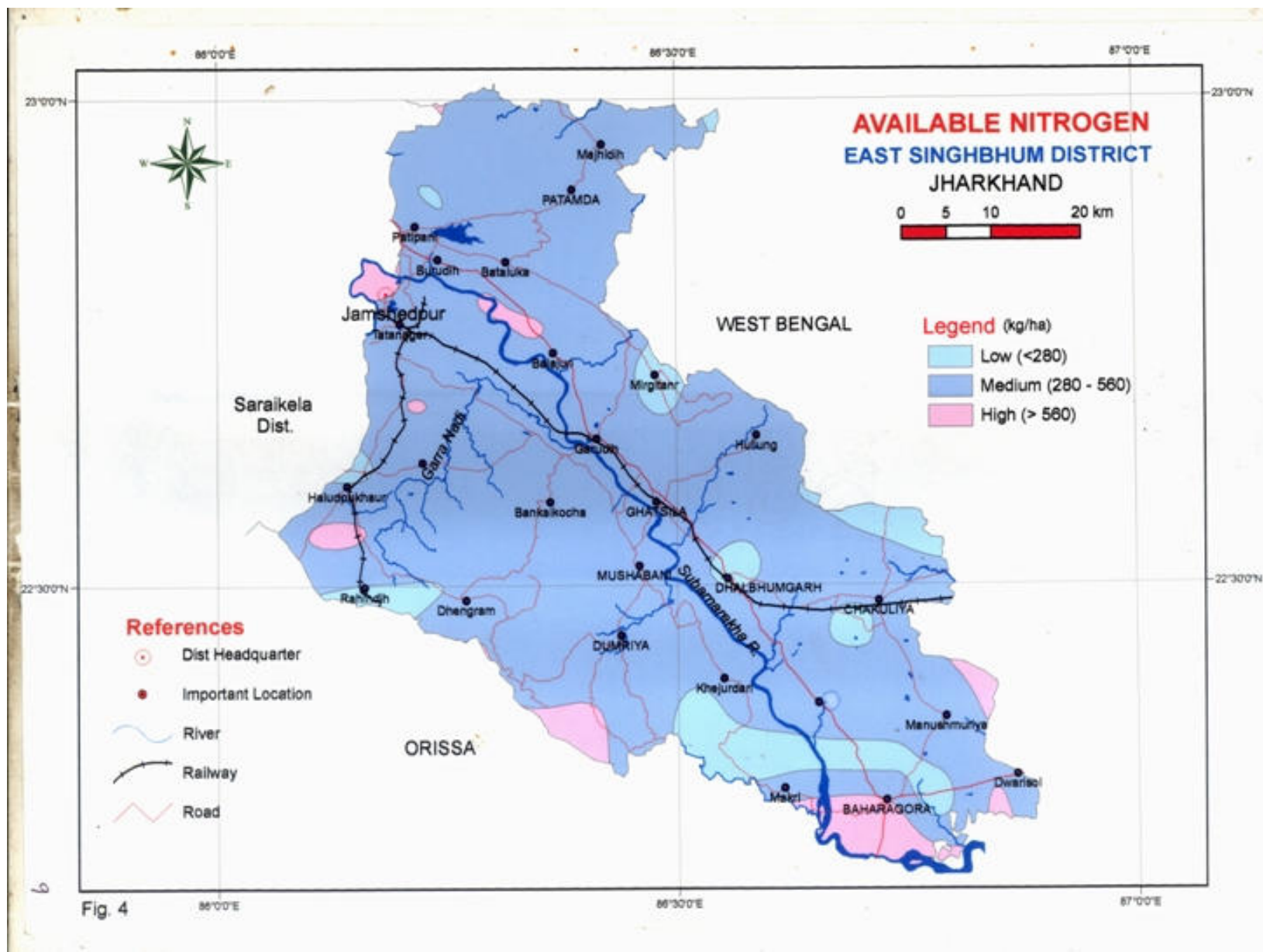
Chapter III Table 19: Available Organic Carbon status in the surface soils

Organic Carbon (%)	Area ('00 ha)	% of the TGA
Low (below 0.50 %)	349	9.9
Medium (0.50 -0.75%)	922	26.1
High (above 0.75%)	2177	61.6
Miscellaneous	85	2.4
Total :	3533	100.00



Chapter III Table 20: Available Nitrogen Status in the surface Soils

Available Nitrogen (Kg ha⁻¹)	Area ('00 ha)	% of the TGA
Low (below 280)	305	8.6
Medium (280-560)	2964	83.9
High (above 560)	179	5.1
Miscellaneous	85	2.4
Total :	3553	100.00



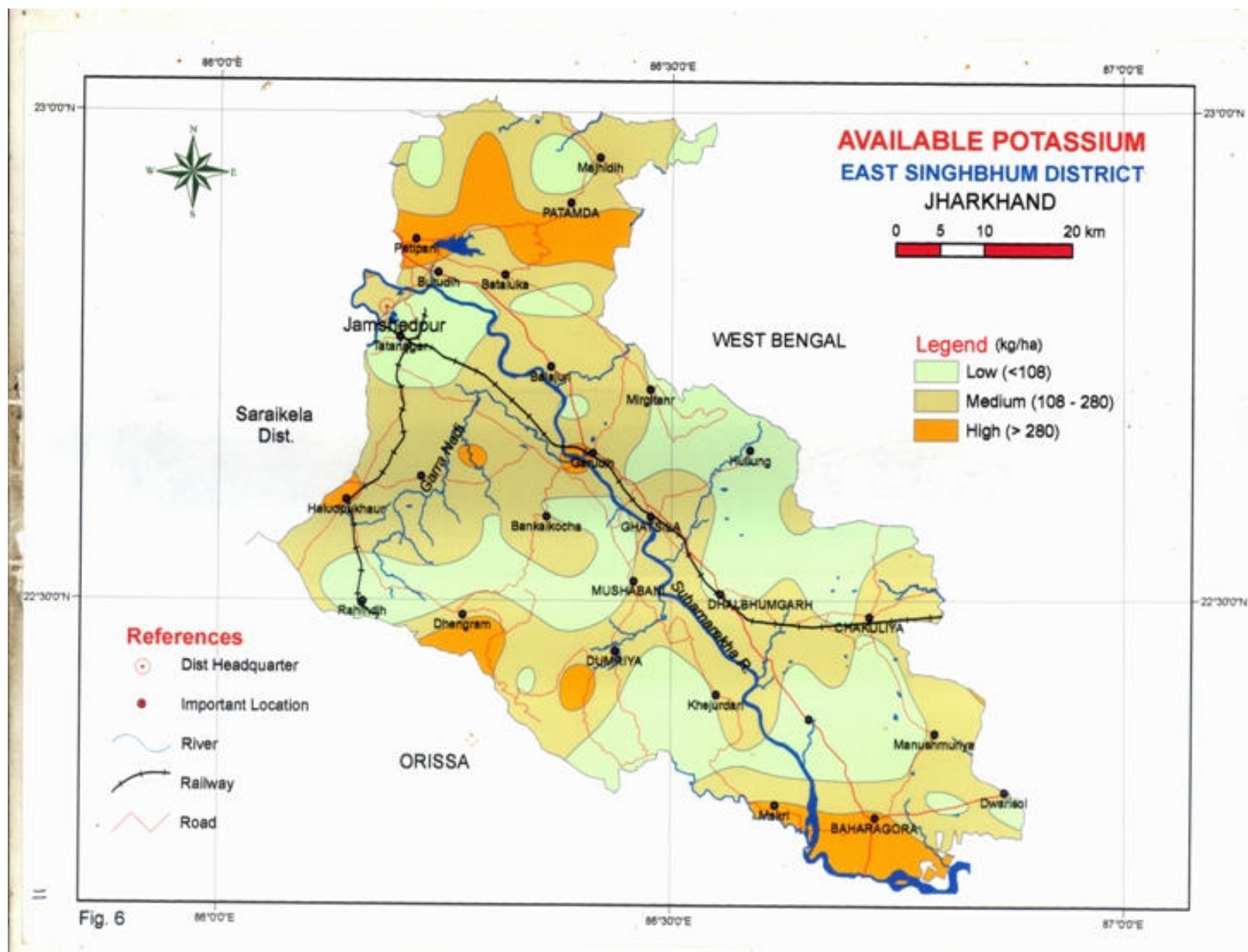
Chapter III Table 21: Available Phosphorous status in the surface soils

Available Phosphorous (Kg ha⁻¹)	Area ('00 ha)	% of the TGA
Low (below 10)	3134	88.7
Medium (10-25)	314	8.9
Miscellaneous	85	2.4
Total :	3533	100.00



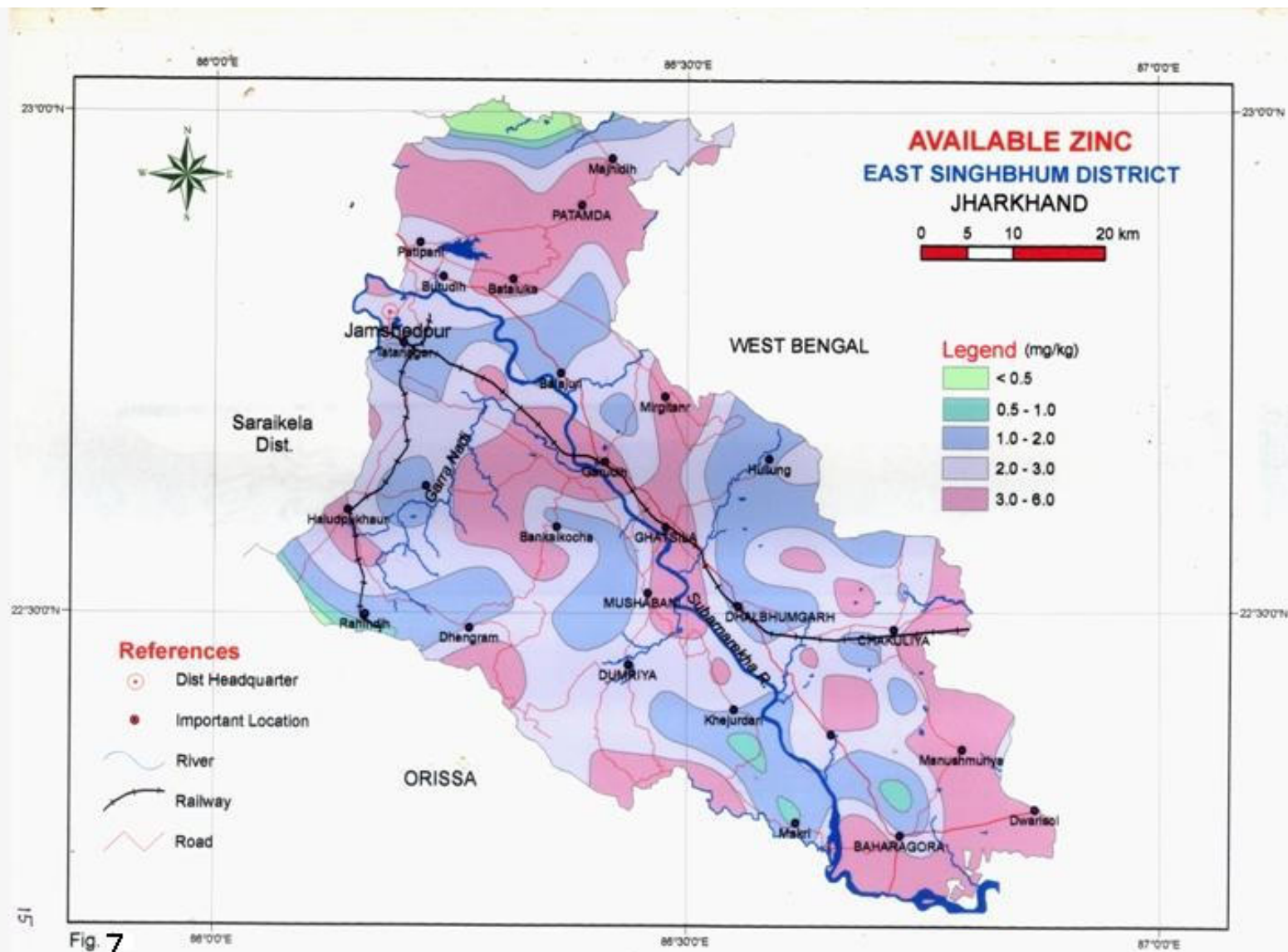
Chapter III Table 22: Available Potassium status in the surface soils

Available Potassium (Kg ha-1)	Area ('00 ha)	% of the TGA
Low (below 108)	1236	35.0
Medium (108-280)	1871	53.0
High (above 280)	341	9.6
Miscellaneous	85	2.4
Total :	3533	100.00



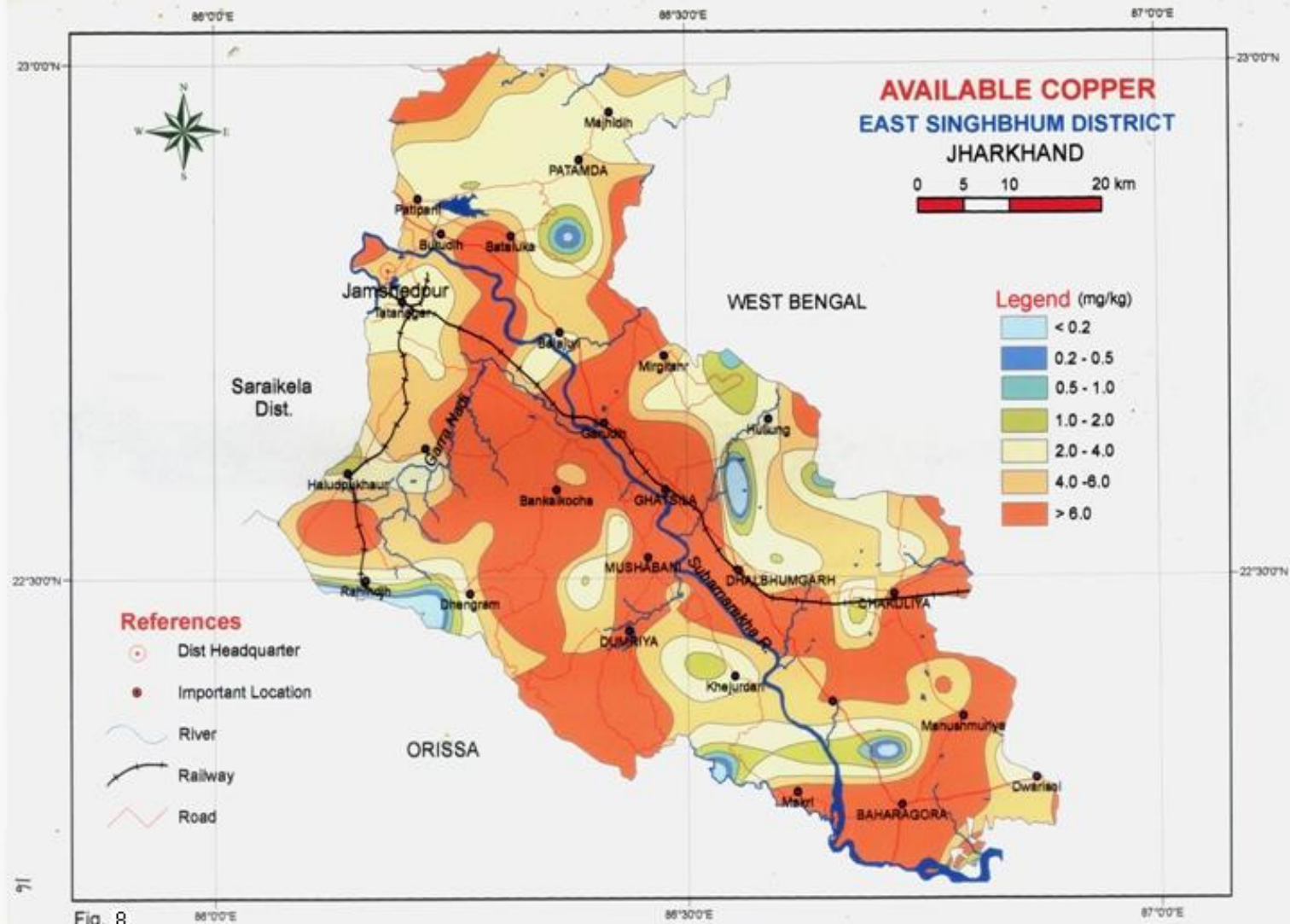
Chapter III Table 23: Available Zinc status in the surface soils

Available Zinc (Mgkg-1)	Area ('00 ha)	% of the TGA	Rating
< 0.5	38	1.1	Deficient
0.5 -1.0	50	1.4	Sufficient
1.0-2.0	841	23.8	
2.0-3.0	1427	40.4	
3.0-6.0	1092	30.9	
Miscellaneous	85	2.4	
Total :	3533	100.00	



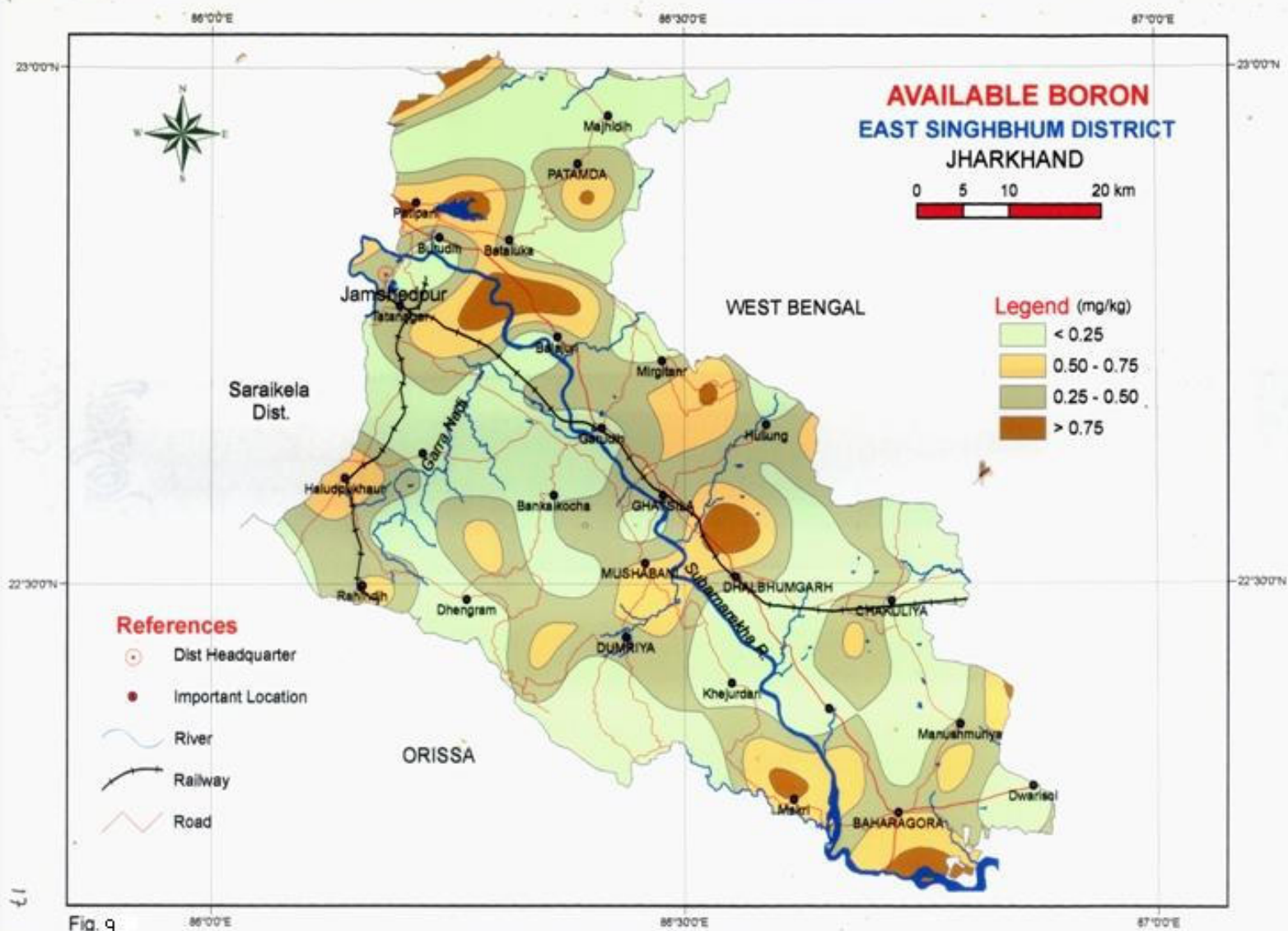
Chapter III Table 24: **Available copper status in the surface soils**

Available Copper (Mgkg-1)	Area ('00 ha)	% of the TGA	Rating
< 0.2	33	0.9	Deficient
0.2 -0.5	15	0.4	Sufficient
0.5-1.0	34	1.0	
1.0-2.0	140	4.0	
2.0-4.0	831	23.5	
4.0-6.0	951	26.9	
> 6.0	1444	40.9	
Miscellaneous	85	2.4	
Total :	3533	100.00	



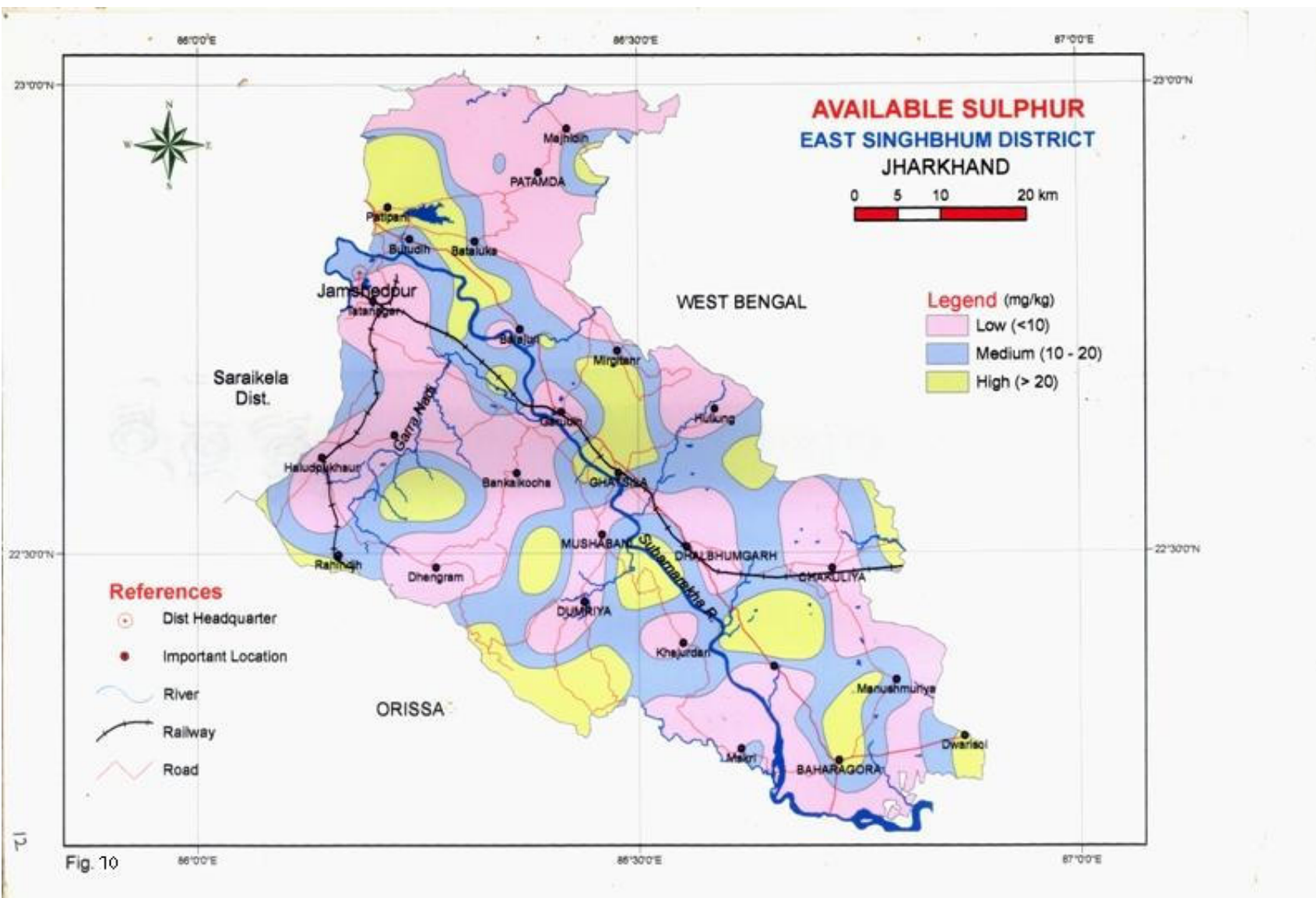
Chapter III Table 25 : **Available Boron status in the surface soils**

Available Boron (Mgkg-1)	Area ('00 ha)	% of the TGA	Rating
< 0.25	1538	43.5	Deficient
0.25-0.50	1193	33.8	
0.50-0.75	587	16.6	Sufficient
> 0.75	130	3.7	
Miscellaneous	85	2.4	
Total :	3533	100.00	



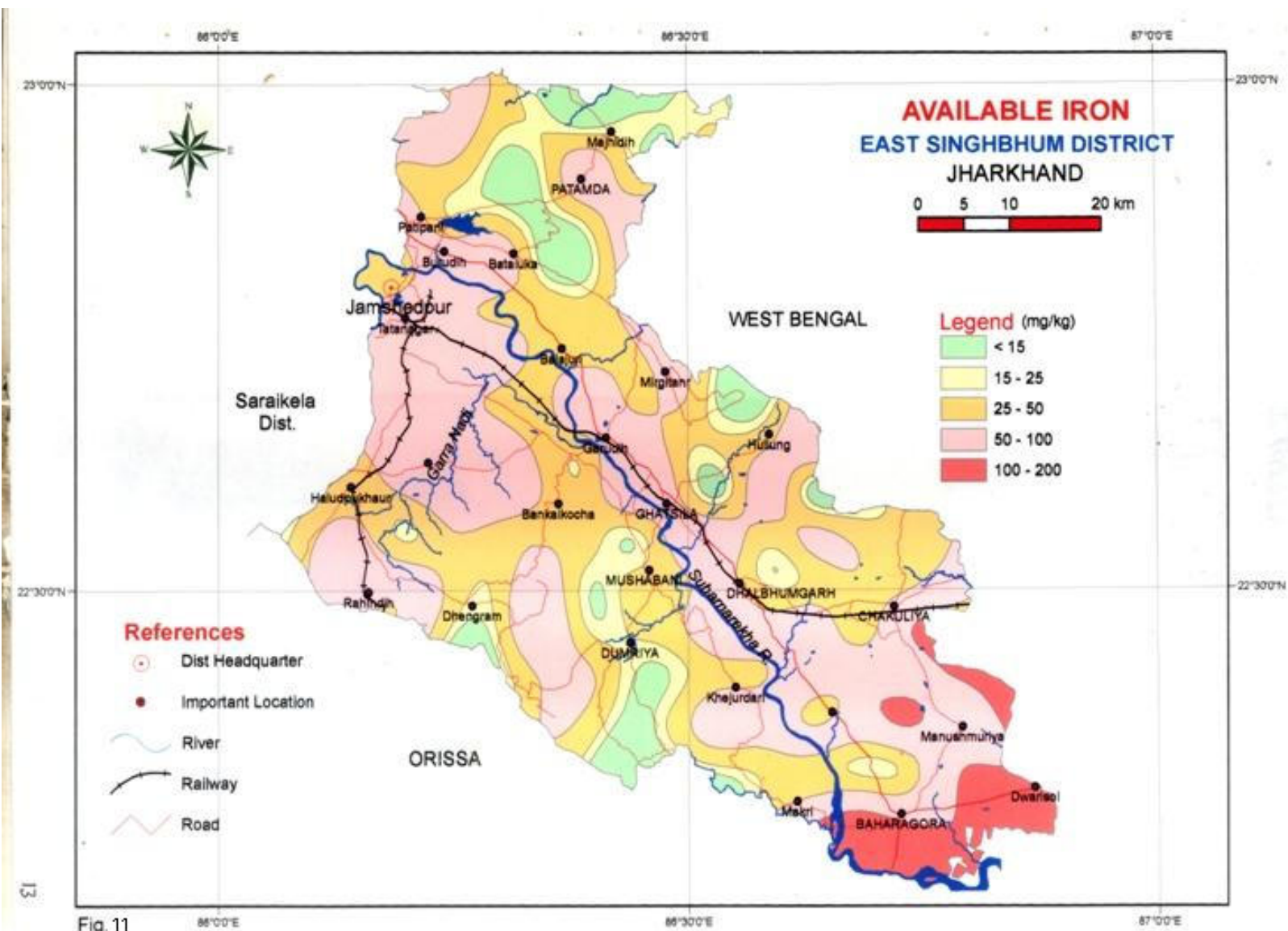
Chapter III Table 26: **Available Sulphur status in the surface soils**

Available Sulphur (Mgkg-1)	Area ('00 ha)	% of the TGA
Low (<10)	1646	46.6
Medium (10-20)	1105	31.3
High (>20)	697	19.7
Miscellaneous	85	2.4
Total :	3533	100.00



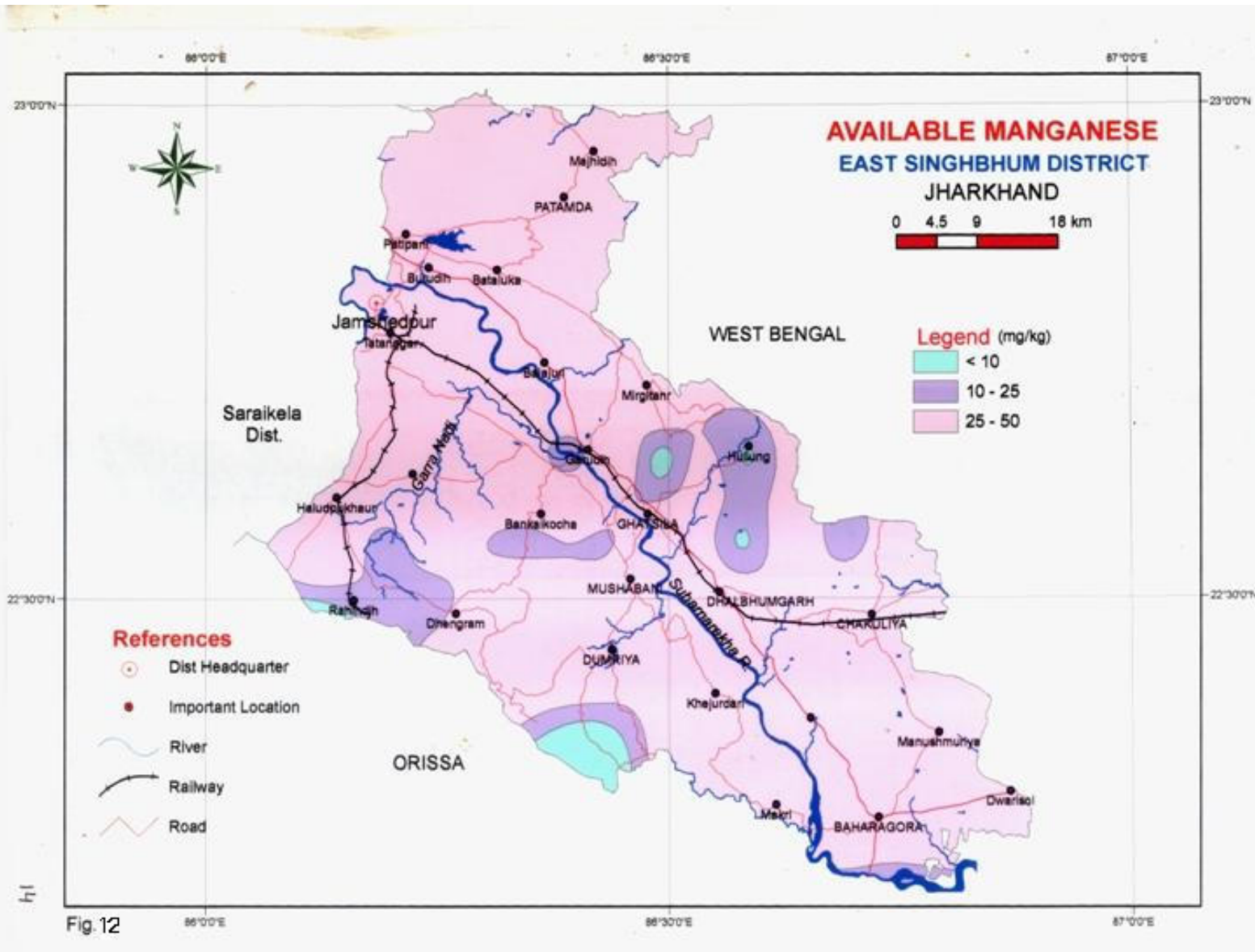
Chapter III Table 27: **Available IRON status in the surface soils**

Available Sulphur (Mgkg-1)	Area ('00 ha)	% of the TGA	Rating
< 15	240	6.8	Sufficient
15-25	306	8.7	
25-50	1180	33.4	
50-100	1535	43.4	
100-200	187	5.3	
Miscellaneous	85	2.4	
Total :	3533	100.0	



Chapter III Table 28: **Available MANGANESE status in the surface soils**

Available Sulphur (Mgkg-1)	Area ('00 ha)	% of the TGA	Rating
<10	63	1.8	Sufficient
10-25	344	9.7	
25-50	3041	86.1	
Miscellaneous	85	2.4	
Total :	3533	100.0	



Chapter III Table 29
REPRESENTATIVE VILLAGE OF EACH AGRO-ECOLOGICAL
SITUATION FOR THE DISTRICT

Agro-Climatic Zone	Agro-Ecological Situation	Representative village	Panchayat	Block
VII Eastern Plateau And Hills	I Plain land sandy loam soil and irrigated area	Kalapather	Kalapather	Chakulia
	II Undulated upland sandy soil rainfed forest cover area	Charradih	Kowali	Potka

Chapter III Table 30:General feature of the district East Singhbhum

Sl. No	Name of the block/ Taluk/ Mandal	Geographical Area	No. of Gram Panchayats	No. of revenue Villages	Information					
					Average Rainfall and rainy days (in mm)					
					2006		2007		2008	
					Avg in mm	No. of Days	Avg in mm	No. of Days	Avg in mm	No. of Days
1	2	3	4	5	6	7	8	9	10	11
1	JAMSHEDPUR	23285.30	14	93	1838.7		1739.4		1495.3	
2	POTKA	68551.60	26	280	2714.7		1518.9		1189.1	
3	PATAMDA	51148.00	24	176	1565.7		1821.9		1670.7	
4	MUSABANI	22117.00	7	49	1733.0		1678.2		1276.9	
5	DUMURIA	31673.00	7	90	1308.6		1894.4		1308.4	
6	GHATSILA	37576.25	14	154	1667.6		1624.6		1586.5	
7	DHALBHUMGARH	32453.20	13	146	1880.5		1941.8		1476.3	
8	CHAKULIA	43162.03	18	278	2247.7		2450.1		1723.0	
9	BAHRAGORA	43333.62	27	508	2240.00		2445.0		1725.0	

Chapter III Table 31.1**Production and Productivity of important commodities under different enterprises****A. Agriculture****Paddy**

S. No	Name of the Commodity	2006			2007			2008		
		A	P	Y	A	P	Y	A	P	Y
1	JAMSHEDPUR	9868	225.77	22.88	2633	13509.92	5131	2918	10574.83	3624
2	POTKA	14185	26242	18.50	5500	10257.50	1865	4211	8855.73	2103
3	PATAMDA	12659	199885	15.79	3485	6851.51	1966	2248	4372.36	1945
4	MUSABANI	9815	93242	9.60	2700	7441.20	2756	-	-	-
5	DUMURIA	10580	84641	8.0	3800	11134.00	2930	2978	2873.77	965
6	GHATSILA	12945	256310	19.80	6292	25419.68	4040	2116	4274.32	2020
7	DHALBHUMGARH	10200	334558	32.80	3800	5396.00	1420	2610	7250.58	2778
8	CHAKULIA	11039	29639	26.85	2788	3602.10	1292	1512	1558.87	1031
9	BAHRAGORA	15300	244800	16.00	3992	6938.10	1738	2664	9270.72	3480

A – Area in '00' ha.

P – Production '00' m. tons.

Y – Yield (Productivity) in Qtts/ha.

Chapter III Table 31.2
Maize

S. No	Name of the Commodity	2006			2007			2008		
		A	P	Y	A	P	Y	A	P	Y
1	JAMSHEDPUR	479	3835	8	127	88.90	700	317	312	985
2	POTKA	420	5250	1250	175	157.50	900	550	722	1312
3	PATAMDA	447	10490	25	80	76.00	950	360	364	1012
4	MUSABANI	199	1492	7.50	21	14.70	700	238	282	1186
5	DUMURIA	254	1780	7.00	19	13.68	720	312	282	905
6	GHATSILA	407	3255	8.00	95	76.00	800	430	359	835
7	DHALBHUMGARH	525	6301	12.00	100	90.00	900	390	422	1082
8	CHAKULIA	287	2869	10.00	35	33.25	950	335	333	995
9	BAHRAGORA	450	4949	11.00	95	80.75	850	375	387	1032

A – Area in '00' ha.

P – Production '00' m. tons.

Y – Yield (Productivity) in Qtts/ha.

Chapter III Table 31.3
Arhar

S. No	Name of the Commodity	2006			2007			2008		
		A	P	Y	A	P	Y	A	P	Y
1	JAMSHEDPUR	74	30	30	215	172.00	800	132	119	905
2	POTKA	125	595	8	215	157.80	720	127	113	886
3	PATAMDA	185	908	7.25	200	180.00	900	267	219	819
4	MUSABANI	185	1250	10	36	25.20	700	162	128	791
5	DUMURIA	93	1295	7.00	305	213.50	700	342	312	912
6	GHATSI LA	265	300	6.50	325	276.25	850	324	206	635
7	DHALBHUMGARH	215	2120	8	575	546.25	950	475	324	682
8	CHAKULIA	13	2042	9.50	113	96.05	850	360	205	569
9	BAHRAGORA	280	117	9	265	265.00	1000	294	224	761

A – Area in '00' ha.

P – Production '00' m. tons.

Y – Yield (Productivity) in Qtts/ha.

Chapter III Table 32**AREA, PRODUCTION AND PRODUCTIVITY OF IMPORTANT COMMODITIES IN
DISTRICT EAST SINGHBHUM**

Sl. No.	Name of the commodity	2001		
		A	P	PY
1	Tomato	1386	27720	2000
2	Brinjal	1279	25780	2000
3	Cabbage	634	10114	1600
4	Potato	500	10000	2000
5	Cauliflower	762	12192	1600
6	Vandhy	2406	33684	1400

A- Area in ha.

P- Production in M. tons.

PY- Productivity in tons / ha

Chapter III Table 33

DETAILS OF MEDICINAL, AROMATIC AND OTHER MINOR FOREST BY PRODUCTS OF EAST SINGHBHUM DISTRICT

Sl. No.	Name of the Block	Crop	Organic	Inorganic	Area in (ha)	Production in Tons	No. of farmers	
							No.	%
1	JAMSHEDPUR	Aswagandha, Kalimusli, Satavar, Kalmegh	AVAILABLE UNDER FOREST					
2	POTKA	Aswagandha, Kalimusli, Satavar, Kalmegh						
3	PATAMDA	Aswagandha, Kalimusli, Satavar, Kalmegh						
4	MUSABANI	Aswagandha, Kalimusli, Satavar, Kalmegh						
5	DUMURIA	Aswagandha, Kalimusli, Satavar, Kalmegh						
6	GHATSILA	Aswagandha, Kalimusli, Satavar, Kalmegh						
7	DHALBHUMGARH	Aswagandha, Kalimusli, Satavar, Kalmegh						
8	CHAKULIA	Aswagandha, Kalimusli, Satavar, Kalmegh						
9	BAHRAGORA	Aswagandha, Kalimusli, Satavar, Kalmegh						

Chapter III Table 34
Demographic Information for the East Singhbhum District

S. N o.	Name of the Block	Population (As per 2001 census Total)	% of Literacy	Male No.	Female No.	Workers No.				Categories No.		
						Agri.		Non-agri.		SC	ST	Other
						Male	Female	Male	Female			
1	JAMSHEDPUR	91064	45190	47119	43945	2678	1129	-	-	2612	37907	50545
2	POTKA	170657	75478	86273	84384	11066	8753	5649	610	7030	87444	76183
3	PATAMDA	131879	52664	66866	65013	8182	4858	1753	291	6029	53272	72578
4	MUSABANI	50754	21737	25663	25091	4366	2527	11618	378	1794	33351	15609
5	DUMURIA	53615	18964	26885	26730	2528	1413	2528	1413	2824	37836	12955
6	GHATSILA	77276	33080	39371	37905	6078	3602	7136	759	3085	42296	31895
7	DHALBHUMGARH	72528	29605	37022	35506	4168	3539	2612	533	2224	42959	27345
8	CHAKULIA	94481	41867	47897	46584	8007	6556	3540	574	2864	48691	42926
9	BAHRAGORA	149530	68936	76710	72820	12895	8735	3657	505	9776	55880	83874

IV

ONGOING EXTENSION AND DEVELOPMENT OF THE DISTRICT

Chapter IV Table 1 : On Going Extension and Developmental Activities Under State /Central in the District East Singhbhum

S. No.	Department	Scheme	Type of Activity		Financial Target (Rs. In Lakhs)
			Extension Component	Developmental component	
1	Agriculture				
		Rastriya Krishi Vikash Yojna	Extension	Development	172.55
		Support to state Extension programme for extension reforms	Extension		
		Mukhiya mantri kishan khushhali yojna	Extension	Development	58.18
		Seed Exchange programme		Development	38.80
		Seed production programme		Development	2.23
		Seed treatment programme	Extension		
		Agriculture farm renovation programme		Development	
2	Horticulture				
		National Horticulture Development	Extension	Development	90.00
		Production of Quality Planting material		Development	
3	Animal Husbandry				
		Artificial Insemination			0.50
		Vaccination			
		Treatment			16.50
		R. K. V. Y.			
		Animal treatment camp			32.48
		Goat Rearing			
		Poultry			
4	Dairy development				
		Minlch cow distribution programme			100.00
		Breed Improvement programme			15.00
		Heeper rearing programme			15.00
		Fodder development programme			5.00
		Technical Input programme			

		Training & Extension programme			10.00
		Gokul graam development programme			30.00
		Grassland development programme			8.25
5	Soil Conservation				
		N. W. D. P. R. A.	Extension	Development	80.00
6	Fishery				
		Machua Awas Nirman Karyakram		Development	
		Construction of 30 dis. Pond		Development	
		Development of Pond		Development	
		Construction of hatchery in private land			
		Insurance scheme For Fisherman			
		Development of Waterbodys programme			
		Production of Spawn	Extension	Development	
		Short term training of fish culture	Extension		
		Distribution of boat to fishermen Co-Operative Society		Development	

V

IDENTIFICATION, DESCRIPTION AND ANALYSIS OF EXISTING FARMING SYSTEMS (trends & sowt analysis) UNDER EACH AES AND THE RESEARCH & EXTENSION GAPS EMERGED AND THE STRATEGIES TO BRIDGE THE GAPS

Agro-Ecological Situation

The planning commission, Govt. of India, has divided the Country into 15 agro climatic regions. Jharkhand state falls under Zone VII and it is further divided into three agro climatic sub zones i.e. sub zone IV (Central and north eastern plateau) sub zone V (Western plateau) sub zone VI (South eastern plateau). Among the three East Singhbhum district comes under the South eastern plateau zone (Agro-climatic sub-zone VI). Based on the variation in topography, soil types and its problem, source of irrigation, cropping pattern, forest area the district was divided into two agro-ecological situations (AESs) for the purpose of SREP preparation. One representative village of each AES was selected for participatory data collection through multidisciplinary AES teams. These AES are named as under.

AES - I Plain land sandy loam soil and irrigated area

AES - II Undulated upland sandy soil rainfed forest cover area

Chapter V Table 1: Block Covered Under different AES & Total geographical Area

Sl. No.	Name of AES	Block Covered	Total Area (ha)
1	AES - I Plain land sandy loam soil and irrigated area	Ghatsila, Dhalbhumgarh, Chakulia, Bahragora	156525.10
2	AES – II Undulated upland sandy soil rainfed forest cover area	Jamshedpur, Potka, Patamda, Musabani, Dumaria	196774.90

Chapter V Table 2: AES & Village selected for participatory data collection

AES number	Name of AES	Name of Block	Name of representative village	Area and percentage	
				Area (ha)	%
AES – I	Plain land sandy loam soil and irrigated area	Chakulia	Kalapathar	183716	52
AES – II	Undulated upland sandy soil rainfed forest cover area	Potka	Charradih	169584	48

Chapter V Table 3: Details about number and percentage of families under Resource poor and resource rich categories in the representative villages of the AESs in the District

Table V.3

Sl. No.	Categories	No of Families and their percentages			
		AES-1		AES-2	
		No.	%	No.	%
1	Resource Rich	55	24.8	05	5.2
2	Resource Poor	167	75.2	91	94.8
	TOTAL	222	100	96	100

Chapter V Table 4: Details about predominant existing farming systems (EFS) in the representative Village

For Identification of Existing farming system in each Agro-Ecological situation PRA technique were used with the active participation of villagers. Following existing farming system were identified.

Sl. No.	Existing farming system	AES- I				AES- II			
		RR	%	RP	%	RR	%	RP	%
EFS I	Agril.	-	-	45	27	-	-	20	22
EFS II	Agril.+ Horti	35	64	25	15	2	40	23	25
EFS III	Agril.+ Horti + Fish	7	13	-	-	-	-	-	-
EFS IV	Agril. + Horti.+ AH	13	23			3	60	-	-
EFS V	Agril. + AH	-	-	97	58	-	-	28	31
EFS VI	Agril. + AH. + Sericulture	-	-	-	-	-	-	20	22
Total		55	100	167	100	5	100	91	100

EFS - Existing farming situation

RR - Resource rich

RP - Resource poor

Chapter V Table 5: Major enterprises associated with each Existing Farming System

Resource Rich Farmers

TYPE OF ENTERPRISES / COMMODITIES	% of families associated with dominant enterprises									
	AES-1						AES-2			
	EFS-2		EFS-3		EFS-4		EFS-2		EFS-4	
	No.	%	No.	%	No.	%	No.	%	No.	%
Agricultural crops										
Irrigated										
Paddy			7	100	6	56	-	-	-	-
Mustard			4	57	-	-	-	-	-	-
Rained										
Paddy	45	100	7	100	13	100	2	100	3	100
Maize							2	100	3	100
Arhar/Gram	35	100	7	100	13	100	2	100	3	100
Mustard/Tisi	20	57	7	100	6	46	-	-	-	-
Horticulture										
Vegetable										
Tomato	35	100	7	100	13	100	2	100	3	100
Brinjal	35	100	7	100	13	100	2	100	3	100
Potato	35	100	7	100	13	100	2	100	3	100
Cauliflower	-	-	7	100	13	100	2	100	3	100
Animal Husbandry										
Cows	-	-	-	-	5	38	-	-	-	-
Goat	-	-	-	-	-	-	-	-	3	100
Poultry	-	-	-	-	13	100	2	100	3	100
Sericulture	-	-	-	-	-	-	-	-	-	-
Fisheries	-	-	7	50	-	-	-	-	-	-

Various commodities are grown in each farming system number of families and their percentage of shown in the above table.

Chapter V Table 6: enterprises associated with each Existing Farming System

Resource Poor farmers

TYPE OF ENTERPRISES / COMMODITIES	% of families associated with dominant enterprises													
	AES-1							AES-2						
	EFS-1		EFS-2		EFS-5		EFS-1		EFS-2		EFS-5		EFS-6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agricultural crops														
Rainfed														
Paddy	45	100	25	100	97	100	20	100	23	100	28	100	20	100
Maize	-	-	10	40	25	26	-	-	20	87	25	89	20	100
Pulses	-	-	15	60	46	47	-	-	-	-	-	-	-	-
Mustard/Tisi	-	-	15	60	30	31	-	-	-	-	-	-	10	50
Horticulture														
Vegetable														
Tomato	-	-	25	100	-	-	-	-	23	100	10	36	-	-
Brinjal	-	-	15	60	-	-	-	-	15	65	10	36	-	-
Potato	-	-	10	40	-	-	-	-	10	43	-	-	-	-
Cauliflower	-	-	5	20	-	-	-	-	5	22	-	-	-	-
Mango			10	40	5	20	-	-	-	-	-	-	-	-
Animal Husbandry														
Cows	-	-	10	40	5	20	-	-	-	-	-	-	-	-
Goat	-	-	-	-	-	-	-	-	-	-	28	100	20	100
Poultry	23	50	10	10	40	41	-	-	12	52	14	50	-	-
Sericulture	-	-	-	-	-	-	-	-	-	-	-	-	20	100

Chapter V Table 7: Contribution of different enterprises towards annual income under each farming system

Resource Rich farmers

TYPE OF ENTERPRISES / COMMODITIES	Contribution of different enterprises in terms of P/S/T/Q and net income in Rs.									
	Unit	AES-1						AES-2		
		EFS-2		EFS-3		EFS-4		EFS-2		EFS-4
Agricultural crops										
Irrigated										
Paddy	ha.	7000	S	7000	S	8000	S		S	
Gram	ha.	-		-		-		-		-
Mustard	ha.	-		3000		-		-		-
Rainfed		-				-		-		-
Paddy	ha.	5000		5000		5500		5500		6000
Maize	ha.							3000		2700
Arhar/Gram	ha.	3000		3200		3400		3200		3500
Mustard/Tisi	ha.	1000		1050		1500		-		-
Horticulture										
Vegetable										
Tomato	ha.	10000	P	11000	P	13000	P	12000	P	13000
Brinjal	ha.	12000		13000		14000		13500		14000
Potato	ha.	7000		7500		8000		7000		8000
Cauliflower	ha.	-		17000		18000		14500		15000
Animal Husbandry										
Cows/4 animal	-	-		-		3000	Q	-	T	-
Goat/5 animal	-	-		-		-		-		4000
Pig/5 animal	-	-		-		-		-		-
Poultry/10 birds	-	-				2000		2000		2500
Sericulture	-	-		-		-		-		-
Fisheries	-	-		-		5000	T	-		-
Total		45000		67750		81400		60700		68700

Chapter V Table 8: Contribution of different enterprises towards annual income under each farming system

Resource Poor farmers

TYPE OF ENTERPRISES / COMMODITIES	Unit	Contribution of different enterprises in terms of P/S/T/Q and net income in Rs.														
		AES-1						AES-2								
		EFS-1		EFS-2		EFS-5		EFS-1		EFS-2		EFS-5		EFS-6		
Agricultural crops																
Rain fed			P		S		S		P		S		S		P	
Paddy	ha.	4600		5000		4200		3000		3000		4000		4000		
Maize	ha.	-		1500		1300		-		1800		1800		1800		
Pulses	ha.	-		1500		1800		-		-		-		-		
Mustard/Tisi	ha.	-		2000		2300		-		-		-		-		
Horticulture																
Vegetable																
Tomato	ha.	-	P	14500	P	-	P	-	P	13000	P	14000	P	-	S	
Brinjal	ha.	-		15000		-		10700		12000		-				
Cauliflower	ha.	-		14000		-		12000		-		-				
Potato	-	-		9000		-		9000		-		-				
Mango	-	-		4000		5000		-		-		-				
Animal Husbandry																
Cows/4 animal		-		4000	5000		-		-		-	-	-	-		
Goat/5 animal		-		-	-	S	-		-	T	4500	T	3000	T		
Poultry/10 birds		1500		2000	2000		2000		2500		2500		2500			
Sericulture	.	-		-	-		-		-		4000		5000	Q		
Total		6100		72500		21600		5000		52000		42800		16300		

Chapter V Table 9: Analysis of Specific Problems associated with each Existing Farming System and its Solutions and Strategies as perceived by the Farmers

Agro-ecological situation-1

Resource Rich farmers

TYPE OF ENTERPRISES / COMMODITIES	EFS-2					EFS-3					EFS-4				
	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy
Agricultural crops irrigated															
Paddy	-	-	-	-	-	3,5,7,8,10,19	7	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	6	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Mustard	-	-	-	-	-	3,5,7,8,10,19	4	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	-	-	-	-	-
Rainfed															
Paddy	3,5,7,8,10,19	45	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	7	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	13	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Mustard/Tishi	3,5,7,8,10,19	20	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	7	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	6	3,4,5,6,7,8,11,15,16,17,18	2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Arhar	2,4,5,8,10,13,18,	35	1,2,3,4,5,6,10,11,12,15,16,17	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	2,4,5,8,10,18,	7	1,2,3,4,5,6,10,11,12,15,16,17	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	2,4,5,8,10,18,	13	1,2,3,4,5,6,10,11,12,15,16,17	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10

Horticulture															
Vegetable															
Tomato	5,7,8,1 0,11	35	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0	2,7,8,1 0,11	7	5,6,8,10,1 1,15,16	2,3,4, 5,6,8, 9,11,1 2	1,2,3,4 5,7,8, 9,10	2,7,8,10 11	13	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0
Brinjal	5,7,8,1 0,11	35	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0	5,7,8,1 0,11	7	5,6,8,10,1 1,15,16	2,3,4, 5,6,8, 9,11,1 2	1,2,3,4 5,7,8, 9,10	5,7,8,10 11	13	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0
Cauliflower	2,3,6,7, 8,10,11 ,20	35	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0	2,3,6,7, 8,10,11 ,20	7	5,6,8,10,1 1,15,16	2,3,4, 5,6,8, 9,11,1 2	1,2,3,4 5,7,8, 9,10	2,3,6,7, 8,10,11, 20	13	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0
Potato	2,3,6,7, 8,10,	35	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0	2,3,6,7, 8,10,	7	5,6,8,10,1 1,15,16	2,3,4, 5,6,8, 9,11,1 2	1,2,3,4 5,7,8, 9,10	2,3,6,7, 8,10,	13	5,6,8,10,1 1,15,16	2,3,4,5,6 8,9,11,1 2	1,2,3, 4,5,7, 8,9,1 0
Animal Husbandry															
Cows/4 animal	-	-	-	-	-	-	-	-	-	-	12,13,1 5,16,23	5	8,9,13,14, 15,16,17, 19	2,3,4,5,6 8,9,11,1 2	1,2,4, 5
Goat/5 animal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poultry/10 birds	-	-	-	-	-	-	-	-	-	-	12,13,1 5,16,23	13	8,9,13,14, 15,16,17, 19	2,3,4,5,6 8,9,11,1 2	1,2,4, 5
Fishery	-	-	-	-	-	12,13,1 4,	7	8,9,13,15, 16,17,19	4,5,6, 8,9,11 ,12	1,2,3,4 12					

Specific Problem*		Proposed solution**		Reasons for non adoption #	Proposed Strategies ##
1. Erratic distribution of rainfall 2. Non adoption of recommended varieties 3. Use of traditional low yielding crop varieties 4. Broadcast method of sowing 5. Low input use 6. Excess use of N & low use of P&K 7. Non adoption of seed treatment 8. Low use of organics 9. Low availability of water 10. Lack of pest & disease management 11. Marketing problems 12. Lack of improved breeds 13. Lack of awareness 14. Non availability of perennial water sources	15. Inadequate availability of fodder 16. Lack of finance 17. Small land holding 18. Non adoption of crop rotation 19. Non-adoption of inter cropping in uplands 20. Lack of knowledge on secondary (Ca,s) and micronutrient use (B, Zn, Mo) 21. No knowledge of benefits of liming in acid soils. 22. More care of vegetable crops compared to rice because of cast income 23. Poor management of animal	1. Application of lime in acid soils 2. Managing rain water for use in agricultural crops 3. Improved crop production technologies 4. Line sowing/transplanting of crops 5. Use of high yielding crop varieties 6. Promotion of INM in vegetables/pulses/oilseeds 7. Balanced use of plant nutrients 8. Market information 9. Use of improved breeds of animals 10. Crop rotation 11. Control of diseases and pests in crops	12. Developing improved post harvest techniques 13. Controlling animal diseases 14. Better nutrition of animals 15. Training and exposure visits 16. Demonstrations 17. Dissemination of knowledge through mass media 18. Use of phosphate, calcium and lime with biofertilisers for crops 19. Preventive vaccination 20. Using low water requiring crops such as coarse cereals	1. Small holdings 2. Lack of capitals 3. Lack of labour 4. Lack of awareness 5. Poor transfer of technology to farmers 6. Non-availability of inputs 7. Inability to take risks under rainfed conditions 8. Lack of knowledge/motivation 9. Poor market information's 10. Non-profitable agriculture 11. Poor transport 12. Low excess to improved technologies	1. Training and exposure visit 2. Demonstrations 3. Providing financial assistance/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Inter cropping in uplands 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Using lime to neutralise soil acidity especially in uplands 10. More emphasis on judicious use of soil and water 11. Using improved breeds of cattle 12. Training on Lac/sericulture

Chapter V Table 10: Analysis of Specific Problems associated with each Existing Farming System and its Solutions and Strategies as perceived by the Farmers

Agro-ecological situation-1

Resource Poor farmers

TYPE OF ENTERPRISES / COMMODITIES	EFS-1					EFS-2					EFS-5				
	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy
Agricultural crops															
Rainfed															
Paddy	3,5,7,8,10,19	45	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	25	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	97	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Maize	-	-	-	-	-	3,5,7,8,10,19	10	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	25	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Pulses	-	-	-	-	-	3,5,7,8,10,19	15	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	46	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Mustard/Tishi	-	-	-	-	-	3,5,7,8,10,19	15	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,7,8,10,19	30	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Horticulture															
Vegetable															
Tomato	-	-	-	-	-	2,5,6,7,8	25	5,6,8,10,11	2,3,4,5,6	1,2,3,4,5,7,8	-	-	-	-	-

						,10,11,18		,15,16	8,9,11,12	,9,10					
Brinjal	-	-	-	-	-	2,5,6,7,8 ,10,11,18	15	5,6,8,10,11 ,15,16	2,3,4,5,6, 8,9,11,12	1,2,3,4,5,7,8 ,9,10	-	-	-	-	-
Potato	-	-	-	-	-	2,5,6,7,8 ,10,11,18	10	5,6,8,10,11 ,15,16	2,3,4,5,6, 8,9,11,12	1,2,3,4,5,7,8 ,9,10	-	-	-	-	-
Cauliflower	-	-	-	-	-	2,3,6,7, 8,10,11, 20	5	5,6,8,10,11 ,15,16	2,3,4,5,6, 8,9,11,12	1,2,3,4,5,7,8 ,9,10	-	-	-	-	-
Mango	-	-	-	-	-	2,3,6,7, 8,10,11, 20	10	5,6,8,10,11 ,15,16	2,3,4,5,6, 8,9,11,12	1,2,3,4,5,7,8 ,9,10	2,3, 6,7, 8,10 ,11, 20	5	5,6,8,10, 11,15,16	2,3,4,5,6,8,9 ,11,12	1,2,3,4,5,7,8 ,9,10
Animal Husbandry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cows/4 animal	-	-	-	-	-	3,5,6	18	8,9,13,14,1 5,16,17,19	2,3,4,5,6, 8,9,11,12	1,2,3,4,5,11	3,5,6	18	8,9,13,1 4,15,16, 17,19	2,3,4,5,6,8,9 ,11,12	1,2,3,4,5,11
Goat/5 animal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poultry/10 birds	11,12,1 3,15,16, 23	23	8,9,13,15,1 6,17,19	4,5,6,8,9, 11,12	1,2,3,4, 12	11,12,13 ,15,16,2 3	10	8,9,13,15,1 6,17,19	4,5,6,8,9, 11,12	1,2,3,4,12	11,1 2,13, 15,1 6,23	40	8,9,13,1 5,16,17, 19	4,5,6,8,9,11, 12	1,2,3,4,12

Specific Problem*		Proposed solution**		Reasons for non adoption #	Proposed Strategies ##
1. Erratic distribution of rainfall 2. Non adoption of recommended varieties 3. Use of traditional low yielding crop varieties 4. Broadcast method of sowing 5. Low input use 6. Excess use of N & low use of P&K 7. Non adoption of seed treatment 8. Low use of organics 9. Low availability of water 10. Lack of pest & disease management 11. Marketing problems 12. Lack of improved breeds 13. Lack of awareness 14. Non availability of perennial water sources	15. Inadequate availability of fodder 16. Lack of finance 17. Small land holding 18. Non adoption of crop rotation 19. Non-adoption of inter cropping in uplands 20. Lack of knowledge on secondary (Ca,s) and micronutrient use (B, Zn, Mo) 21. No knowledge of benefits of liming in acid soils. 22. More care of vegetable crops compared to rice because of cast income 23. Poor management of animal	1. Application of lime in acid soils 2. Managing rain water for use in agricultural crops 3. Improved crop production technologies 4. Line sowing/transplanting of crops 5. Use of high yielding crop varieties 6. Promotion of INM in vegetables/pulses/oilseeds 7. Balanced use of plant nutrients 8. Market information 9. Use of improved breeds of animals 10. Crop rotation 11. Control of diseases and pests in crops	12. Developing improved post harvest techniques 13. Controlling animal diseases 14. Better nutrition of animals 15. Training and exposure visits 16. Demonstrations 17. Dissemination of knowledge through mass media 18. Use of phosphate, calcium and lime with biofertilisers for crops 19. Preventive vaccination 20. Using low water requiring crops such as coarse cereals	1. Small holdings 2. Lack of capitals 3. Lack of labour 4. Lack of awareness 5. Poor transfer of technology to farmers 6. Non-availability of inputs 7. Inability to take risks under rainfed conditions 8. Lack of knowledge/motivation 9. Poor market information's 10. Non-profitable agriculture 11. Poor transport 12. Low excess to improved technologies	1. Training and exposure visit 2. Demonstrations 3. Providing financial assistance/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Inter cropping in uplands 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Using lime to neutralize soil acidity especially in uplands 10. More emphasis on judicious use of soil and water 11. Using improved breeds of cattle 12. Training on Lac/sericulture

Chapter V Table 11: Analysis of Specific Problems associated with each Existing Farming System and its Solutions and Strategies as perceived by the Farmers

Agro-ecological situation-2

Resource Rich farmers

TYPE OF ENTERPRISES / COMMODITIES	EFS-2					EFS-4				
	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy
Agricultural crops										
Rainfed										
Paddy	2,4,5,8,10,12,13,17,18,21	2	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	2,4,5,8,10,12,13,17,18,21	3	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Maize	3,5,18,10,19,21	2	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,18,10,19,21	3	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Arhar/Gram	3,5,18,10,19,21	2	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	3,5,18,10,19,21	3	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Horticulture										
Vegetable										
Tomato	2,6,7,8,9,10,11,13,16,17,18,20,21	2	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	2,6,7,8,9,10,11,13,16,17,18,20,21	3	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10
Brinjal	2,6,7,8,9,10,11,13,16,17,18,20,21	2	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	2,6,7,8,9,10,11,13,16,17,18,20,21	3	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10
Cauliflower	2,6,7,8,9,10,11,13,16,17,18,20,21	2	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	2,6,7,8,9,10,11,13,16,17,18,20,21	3	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10
Animal Husbandry										
Cows/4 animal	-	-	-	-	-	-	-	-	-	-
Goat/5 animal	-	-	-	-	-	11,12,13,15,16,23	3	8,9,13,14,15,16,17,19	2,3,4,5,6,8,9,11,12	1,2,3,4,5,11
Poultry/10 birds	11,12,13,15,16,23	2	8,9,13,14,15,16,17,19	2,3,4,5,6,8,9,11,12	1,2,3,4,5,11	11,12,13,15,16,23	3	8,9,13,14,15,16,17,19	2,3,4,5,6,8,9,11,12	1,2,3,4,5,11
Sericulture	-	-	-	-	-	-	-	-	-	-

Specific Problem*		Proposed solution**		Reasons for non adoption #	Proposed Strategies ##
1. Erratic distribution of rainfall 2. Non adoption of recommended varieties 3. Use of traditional low yielding crop varieties 4. Broadcast method of sowing 5. Low input use 6. Excess use of N & low use of P&K 7. Non adoption of seed treatment 8. Low use of organics 9. Low availability of water 10. Lack of pest & disease management 11. Marketing problems 12. Lack of improved breeds 13. Lack of awareness 14. Non availability of perennial water sources	15. Inadequate availability of fodder 16. Lack of finance 17. Small land holdin 18. Non adoption of crop rotation 19. Non-adoption of inter cropping in uplands 20. Lack of knowledge on secondary (Ca,s) and micronutrient use (B, Zn, Mo) 21. No knowledge of benefits of liming in acid soils. 22. More care of vegetable crops compared to rice because of cast income 23. Poor management of animal	1. Application of lime in acid soils 2. Managing rain water for use in agricultural crops 3. Improved crop production technologies 4. Line sowing/transplanting of crops 5. Use of high yielding crop varieties 6. Promotion of INM in vegetables/pulses/oilseeds 7. Balanced use of plant nutrients 8. Market information 9. Use of improved breeds of animals 10. Crop rotation 11. Control of diseases and pests in crops	12. Developing improved post harvest techniques 13. Controlling animal diseases 14. Better nutrition of animals 15. Training and exposure visits 16. Demonstrations 17. Dissemination of knowledge through mass media 18. Use of phosphate, calcium and lime with biofertilisers for crops 19. Preventive vaccination 20. Using low water requiring crops such as coarse cereals	1. Small holdings 2. Lack of capitals 3. Lack of labour 4. Lack of awareness 5. Poor transfer of technology to farmers 6. Non-availability of inputs 7. Inability to take risks under rainfed conditions 8. Lack of knowledge/motivation 9. Poor market information's 10. Non-profitable agriculture 11. Poor transport 12. Low excess to improved technologies	1. Training and exposure visit 2. Demonstrations 3. Providing financial assistance/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Inter cropping in uplands 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Using lime to neutralize soil acidity especially in uplands 10. More emphasis on judicious use of soil and water 11. Using improved breeds of cattle 12. Training on Lac/sericulture

Chapter V Table 12: Analysis of Specific Problems associated with each Existing Farming System and its Solutions and Strategies as perceived by the Farmers

Agro-ecological situation-2

Resource Poor farmers

TYPE OF ENTERPRISE / COMMODITIES	EFS-1					EFS-2					EFS-5					EFS-6				
	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy	Specific Problem	No of Families affected	Solution as proposed by farmer	Reasons for non adoption	Proposed Strategy
Agricultural crops																				
Rainfed																				
Paddy	1,2,4,5,8,10,12,13,17,18,21	20	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	1,2,4,5,8,10,12,13,17,18,21	23	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	1,2,4,5,8,10,12,13,17,18,21	28	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	1,2,4,5,8,10,12,13,17,18,21	20	1,2,4,5,8,10,12,13,17,18,21	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Maize	-	-	-	-	-	1,3,5,8,10,19,21	20	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	1,3,5,8,10,19,21	25	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	1,3,5,8,10,19,21	20	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Pulses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mustard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,3,5,8,10,19,21	10	3,4,5,6,7,8,11,15,16,17,18	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Horticulture																				
Vegetable																				
Tomato	-	-	-	-	-	2,6,7,8,9,10,11,13,16,17,18,20,21	23	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	2,6,7,8,9,10,11,13,16,17,18,20,21	10	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	2,6,7,8,9,10,11,13,16,17,18,20,21	-	-	-	-

Brinjal	-	-	-	-	-	2,6,7,8,9,10,11,13,16,17,18,20,21	15	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	2,6,7,8,9,10,11,13,16,17,18,20,21	10	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	2,6,7,8,9,10,11,13,16,17,18,20,21	-	-	-	-
Potato	-	-	-	-	-	2,6,7,8,9,10,11,13,16,17,18,20,21	10	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	-	-	-	-	-	-	-	-	-	-
Cauliflower	-	-	-	-	-	2,6,7,8,9,10,11,13,16,17,18,20,21	21	1,3,5,6,8,10,11,12,15,16,17,18	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10	-	-	-	-	-	-	-	-	-	-
Animal Husbandry																				
Cows/4 animal	-	-	-	-	-										1					1
Goat/5 animal	-	-	-	-	-	-	-	-	-	-	11,12,13,15,16,23	28	8,9,13,14,15,16,17,19	2,3,4,5,6,8,9,11,12	1,2,3,4,5,11	11,12,13,15,16,23	20	8,9,13,14,15,16,17,19	2,3,4,5,6,8,9,11,12	1,2,3,4,5,11
Poultry/10 birds	11,12,13,16,23	10	8,13,14,15,16,19	2,4,5,6,8,9,11	1,2,3,4,5,11	11,12,13,16,23	12	8,13,14,15,16,19	2,4,5,6,8,9,11	1,2,3,4,5,11	11,12,13,16,23	14	8,13,14,15,16,19	2,4,5,6,8,9,11	1,2,3,4,5,11	11,12,13,16,23	5	8,13,14,15,16,19	2,3,4,5,6,7,8,9,11	1,2,3,4,5,11
Sericulture	-	-	-	-	-	-		-	-	-	10,11,13,16	7	8,11,12,15,16,17	2,4,5,8,9,12	1,2,3,4,12	10,11,13,16	20	8,11,12,15,16,17	2,4,5,8,9,12	1,2,3,4,12

Specific Problem*		Proposed solution**		Reasons for non adoption #	Proposed Strategies ##
1. Erratic distribution of rainfall 2. Non adoption of recommended varieties 3. Use of traditional low yielding crop varieties 4. Broadcast method of sowing 5. Low input use 6. Excess use of N & low use of P&K 7. Non adoption of seed treatment 8. Low use of organics 9. Low availability of water 10. Lack of pest & disease management 11. Marketing problems 12. Lack of improved breeds 13. Lack of awareness 14. Non availability of perennial water sources	15. Inadequate availability of fodder 16. Lack of finance 17. Small land holding 18. Non adoption of crop rotation 19. Non-adoption of inter cropping in uplands 20. Lack of knowledge on secondary (Ca,s) and micronutrient use (B, Zn, Mo) 21. No knowledge of benefits of liming in acid soils. 22. More care of vegetable crops compared to rice because of cast income 23. Poor management of animal	1. Application of lime in acid soils 2. Managing rain water for use in agricultural crops 3. Improved crop production technologies 4. Line sowing/transplanting of crops 5. Use of high yielding crop varieties 6. Promotion of INM in vegetables/pulses/oilseeds 7. Balanced use of plant nutrients 8. Market information 9. Use of improved breeds of animals 10. Crop rotation 11. Control of diseases and pests in crops	12. Developing improved post harvest techniques 13. Controlling animal diseases 14. Better nutrition of animals 15. Training and exposure visits 16. Demonstrations 17. Dissemination of knowledge through mass media 18. Use of phosphate, calcium and lime with bio fertilizers for crops 19. Preventive vaccination 20. Using low water requiring crops such as coarse cereals	1. Small holdings 2. Lack of capitals 3. Lack of labour 4. Lack of awareness 5. Poor transfer of technology to farmers 6. Non-availability of inputs 7. Inability to take risks under rainfed conditions 8. Lack of knowledge/motivation 9. Poor market information's 10. Non-profitable agriculture 11. Poor transport 12. Low excess to improved technologies	1. Training and exposure visit 2. Demonstrations 3. Providing financial assistance/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Inter cropping in uplands 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Using lime to neutralize soil acidity especially in uplands 10. More emphasis on judicious use of soil and water 11. Using improved breeds 12. Training on sericulture

Chapter V Table 13: Proposed farming systems and Mutually Agreed Upon Farming System In terms of Net income (in rupees) and the Interventions (Diversification & Intensification) In AES-1**

Agro-ecological situation-1

Resource Rich farmers

TYPE OF ENTERPRISES / COMMODITIES	EFS – 2				EFS – 3				EFS – 4			
	Op-i	Op-ii	Mut. Ag. Upon	Interventions*	Op-i	Op-ii	Mut. Ag. Upon	Interventions	Op-i	Op-ii	Mut. Ag. Upon	Interventions
Agricultural crops												
Irrigated												
Paddy	-	-	-	-	7000	8500	8500	A-1	8000	8500	8500	A-1
Mustard	-	-	-	-	3000	4000	4000	A-1	-	-	-	-
Rainfed												
Paddy	5000	6000	6000	A-1	5000	6500	5500	A-1	5500	6500	6000	A-1
Gram/Arhar	3000	4000	4000	A-1&2	3200	4100	3400	A-1&2	3400	5000	5000	A-1&2
Mustard	1000	1500	1500	A-1&2	1050	1600	1500	A-1&2	1500	2000	2000	A-1&2
Horticulture												
Vegetable												
Tomato	10000	12000	12000	A-2	11000	13000	13000	A-2	13000	14000	14000	A-2
Brinjal	12000	14000	14000	A-2	14000	15000	15000	A-2	14000	15000	15000	A-2
Potato	7000	8000	8000	A-1&2	7500	8000	8000	A-1&2	8000	9000	9000	A-1&2
Cauliflower	-	-	-	-	17000	18000	18000	A-2	18000	20000	20000	A-2
Animal Husbandry												
Cows	-	-	-	-	-	-	-	-	3000	5000	5000	A-2&4
Buffalo	-	-	-	-	-	-	-	-				
Goat	-	-	-	-	-	-	-	-	-	-	-	-
Pig	-	-	-	-	-	-	-	-	-	-	-	-
Poultry	-	-	-	-	-	-	-	-	2000	3000	3000	A-2&4
Fishery	-	-	-	-	5000	7000	7000	A-2				
Total -	38000	45500	45500		73750	85700	85700		76400	88000	88000	

Intervention:

A. Intensification

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Chapter V Table 14: Proposed farming systems and Mutually Agreed upon Farming System In terms of Net income (in rupees) and the Interventions (Diversification & Intensification) In AES-1**

Agro-ecological situation-1

Resource Poor farmers

TYPE OF ENTERPRISES / COMMODITIES	EFS- 1				EFS- 2				EFS- 5			
	Op-i	Op-ii	Mut. Ag. Upon	Interventions*	Op-i	Op-ii	Mut. Ag. Upon	Interventions	Op-i	Op-ii	Mut. Ag. Upon	Interventions
Agricultural crops												
Rainfed												
Paddy	4600	5400	5400	A-1	5000	5500	5500	A-1	4200	6000	6000	A-1
Maize	-	-	-	-	1500	2300	2300	A-1&2	3400	4000	4000	A-1&2
Pulse	-	-	-	-	2500	3000	3000	A-1&2	3000	4000	4000	A-1&2
Mustard	-	-	-	-	2000	2500	2500	A-2	2300	3000	3000	A-2
Horticulture												
Vegetable												
Tomato	-	-	-	-	14500	15000	15000	A-2	-	-	-	-
Brinjal	-	-	-	-	15000	16000	16000	A-2	-	-	-	-
Potato	-	-	-	-	9000	11000	11000	A-1&2	-	-	-	-
Cauliflower	-	-	-	-	14000	15500	15500	A-2	-	-	-	-
Mango					4000	5000	5000	A-1&2	4500	6000	6000	A-1&2
Animal Husbandry												
Cows/4 animal	-	-	-	-	4000	5000	5000	A-2&4	5000	6000	6000	A-2&4
Poultry/10 birds	1500	2000	2000	A-4	2000	2300	2300	A-2 & 4	2000	2500	2500	A-2&4
Total	6100	7400	7400		73500	83100	83100		24400	31500	31500	

Intervention:

A. Intensification

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Chapter V Table 15: Proposed farming systems and Mutually Agreed Upon Farming System In terms of Net income (in rupees) and the Interventions** (Diversification & Intensification) In AES-2

Agro-ecological situation-2

Resource Rich farmers

TYPE OF ENTERPRISES / COMMODITIES	EFS – 2				EFS – 4			
	Op-i	Op-ii	Mut. Ag. Upon	Interventions	Op-i	Op-ii	Mut. Ag. Upon	Interventions
Agricultural crops								
Rainfed								
Paddy	5500	6500	6500	A-1	6000	7000	7000	A-1
Arhar	3200	3500	3500	A-1,2&B-1	3500	3800	3800	A-1,2&B-1
Maize	3000	3500	3500	A-1,2&B-1	2700	3200	3200	A-1,2&B-1
Horticulture								
Vegetable								
Tomato	12500	13000	13000	A-2	13000	14000	14000	A-2
Brinjal	13500	14500	14500	A-2	14000	15000	15000	A-2
Cauliflower	14500	15000	15000	A-2	15000	16000	16000	A-2
Potato	7000	8000	8000	A-1&2	8500	9000	9000	A-1&2

Animal Husbandry								
Goat	-	-	-	-	4000	5000	5000	A-2&4
Poultry	1000	1100	1100	A-2&4	1200	1350	1350	A-2&4
Sericulture	-	-	-	-	-	-	-	-
Total	60200	65100	65100		67900	74350	74350	

Intervention:

A. Intensification

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Chapter V Table 16: Proposed farming systems and Mutually Agreed Upon Farming System In terms of Net income (in rupees) and the Interventions (Diversification & Intensification) In AES-2**

Agro-ecological situation-2

Resource Poor farmers

Type of enterprises / commodities	EFS-I				EFS- 2				EFS- 5				EFS- 6			
	Op-i	Op-ii	Mut. Ag. Upon	Intervention s	Op-i	Op-ii	Mut. Ag. Upon	Interventions*	Op-i	Op-ii	Mut. Ag. Upon	Intervention s	Op-i	Op-ii	Mut. Ag. Upon	Intervention s
Agricultural crops																
Rainfed																
Paddy	3000	4000	4000	A-1	3500	4500	4500	A-1	4000	4500	4500	A-1	4000	4500	4500	A-1
Maize	-	-	-	-	1800	2200	2200	A-1,2&B-1	1800	2200	2200	A-1,2&B-1	1800	2200	2200	A-1,2&B-1
Mustard	-	-	-	-	-	-	-	-	-	-	-	-	1500	2000	2000	A-1,2&B-1
Horticulture																
Vegetable																

Tomato	-	-	-	-	13000	14000	14000	A-2	14000	15000	15000	A-2-	-	-	-	-
Brinjal	-	-	-	-	10700	12000	12000	A-2	12000	13000	13000	A-2-	-	-	-	-
Potato	-	-	-	-	9000	10000	10000	- A-2	-	-	-	-	-	-	-	-
Cauliflower	-	-	-	-	12000	13000	13000	A-2	-	-	-	-	-	-	-	-
Animal Husbandry																
Cows/4 animal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goat/5 animal	-	-	-	-	-	-	-	-	4500	5400	5400	A-2&4	3000	4000	4000	A-2&4
Poultry/10 birds	2000	3000	3000	A-2&4	2500	3000	3000	A-2&4	2500	3000	3000	A-2&4	2500	3000	3000	A-2&4
Sericulture	-	-	-	-	-	-	-	-	5000	6000	6000	A-2&4	5500	7000	7000	A-2&4
Total	5000	7000	7000		52500	58700	58700		43800	49100	49100		18300	22700	22700	

Intervention:

A. Intensification

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Chapter V Table 17: Gap in adoption and proposed strategies for promoting the Modified Farming System

Agro-ecological situation-1

Resource Rich Farmers

Type of enterprises / commodities	EFS-2						EFS-3						EFS-4					
	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies
	Op-i	MAU					Op-i	MAU					Op-i	MAU				
Agricultural crops																		
Irrigated																		
Paddy	-	-	-	-	-	-	7000	8500	A-1	P	1,2,4,5,6,7,8,9,12	1,2,3,5,6,7,9,10	8000	8500	A-1	P	1,2,4,5,6,7,8,12	1,2,4,5
Mustard	-	-	-	-	-	-	3000	4000	A-1	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	-	-	-	-	-	-
Rainfed																		
Paddy	5000	6000	A-1	P	2,4,5,6,9,12	1,2,3,4,7,8,9,10	5500	6500	A-1	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	6000	6500	A-1	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10
Gram/Arhar	3000	4000	A-1&2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	3200	4100	A-1&2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	3400	5000	A-1&2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10
Mustard	1000	1500	A-2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	1050	1600	A-2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	1500	2000	A-2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10
Horticulture																		
Vegetable																		
Tomato	10000	12000	1,2	P	2,4,5,6,8,9,12	1,2,3,4,5,7,8,9,10	11000	13000	- A-2	P	- 2,4,5,6,8,9,12	- 1,2,3,4,7,8,9,10	12000	14000	A-2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10

Brinjal	12000	14000	A-2	P	2,4,5,6,8,9,11	1,2,3,4,5,7,8,9,10	13000	15000	A-2	P	2,4,5,6,8,9,12	- 1,2,3,4,7,8,9,10	14000	15000	A-2	P	2,4,5,6,8,9,12	1,2,4,5,7,8,9,10
Cauliflower	-	-	-	-	2,4,5,6,9,11	1,2,3,4,5,7,8,9,10	17000	18000	A-2	P	2,4,5,6,8,9,12	- 1,2,3,4,7,8,9,10	18000	20000	A-2	P	2,4,5,6,8,9,12	1,2,4,5,7,8,9,10
Potato	7000	8000	-	P	2,4,5,6,8,9,1		7500	8000	A1&-2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	8000	9000	A-1&2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10
Animal Husbandry																		
Cows	-	-	-		-	-	-	-	-	-	-	-	3000	5000	A-2&4	F	2,4,5,6,8,9,12	1,2,3,4,11
Poultry	-	-	-	-	-	-	-	-	-	-	-	-	2000	3000	A-2-	-	2,4,5,6,8,9,12	1,2,3,4,11
Fishery	-	-	-	-	-	-	5000	7000	- A-2	F	2,4,5,6,8,9,1-	- 1,2,3,4,7,8,9,10	6500	7000	A-2	F	2,4,5,6,8,	1,2,3,4,
Total	45000	54000					70250	81700					82400	95000				

Intervention:

A. Intensification

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Reasons for gap =	1. Small holdings, 2. Lack of capitals, 3. Lack of labour, 4. Lack of awareness, 5. Poor transfer of technology to farmers, 6. Non-availability of inputs, 7. Inability to take risks under rainfed conditions, 8. Lack of knowledge/motivation, 9. Poor market information's, 10. Non-profitable agriculture, 11. Poor transport and 12. Low access to improved technologies
Prop. Strategies =	1. Training and exposure visit, 2. Demonstrations, 3. Providing financial assistance/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Inter cropping in uplands, 7. Control of pests and diseases in crops, 8. Greater use of vermicompost and other organics to build up soil fertility, 9. Using lime to neutralise soil acidity especially in uplands, 10. More emphasis on judicious use of soil and water, 11. Using improved breeds of cattle and 12. Training on Lac/sericulture

Chapter V Table 18: Gap in adoption and proposed strategies for promoting the Modified Farming System

Agro-ecological situation-1

Resource Poor Farmers

Type of enterprises / commodities	EFS-1						EFS-2						EFS-5					
	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies
	Op-i	MAU					Op-i	MAU					Op-i	MAU				
Agricultural crops																		
Rainfed																		
Paddy	4600	5400	A-1	P	2,4,5,6,7,8,12	1,2,3,5,6,7,9	5000	5500	A-1	P	2,4,5,6,7,8,12	1,2,3,5,6,7,9	4200	6000	A-1	P	2,4,5,6,7,8,12	1,2,3,5,6,7,9
Maize	-	-	-	-	2,3,4,5,6,7,8,12	1,2,3,5,6,7,9,10	3000	3300	A-1&2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10-	3400	4000	A-1&2-	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10-
Pulse	-	-	-	-	-	-	2500	3000	A-1&2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	3000	4000	A-1&2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10
Mustard	-	-	-	-	-	-	2000	2500	A-2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10	2300	3000	A-2	P	2,4,5,6,8,9,12	1,2,3,4,7,8,9,10
Horticulture																		
Vegetable																		
Tomato	-	-	-	-	-	-	14500	15000	A-2	P	2,3,4,5,6,8,9,12-	- 1,2,3,4,7,8,9,10	-	-	A-2	P	2,3,4,5,6,8,9,12	1,2,3,4,5,7,8,9,10

Brinjal	-	-	-	-	-	-	15000	16000	A-2-	P	2,3,4, 5,6,8, 9,12	- 1,2,3, 4,7,8, 9,10	11000	15000	A-2	P	2,3,4, 5,6,8, 9,12	1,2,3, 4,5,7, 8,9,10
Potato	-	-	-	-	-	-	9000	11000	A-2-	P	2,3,4, 5,6,8, 9,12	1,2,3, 4,7,8, 9,10	-	-	A-2	P	2,3,4, 5,6,8, 9,12	1,2,3, 4,5,7, 8,9,10
Cauliflower	-	-	-	-	2,3,4, 5,6,8, 9,11,1 2	1,2,3, 4,5,7, 8,9,10	14000	15500	A-2	P	-	-	-	-	A-2	P	2,3,4, 5,6,8, 9,12	1,2,3, 4,5,7, 8,9,10
Mango	-	-	-	-	-	-	4000	5000	A-1&2-	P	2,3,4, 5,6,8, 9,12-	1,2,3, 4,7,8, 9,10	4500	6000	A-1&2	P	2,3,4, 5,6,8, 9,12-	1,2,3, 4,7,8, 9,10
Animal Husbandry																		
Cows/4 animal	-	-	-	-	-	-	4000	5000	A-2-	F	4,5,6, 8,9,12 -	- 1,2,3, 4,11	5000	6000	A-2	F	4,5,6, 8,9,12	1,2,3, 4,11,
Goat/5 animal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poultry/10 birds	1500	2000	A-2	P	2,3,4, 5,6,8, 9,12-	1,2,3, 4,11-	2000	2300	A-2	P	4,5,6, 8,9,12	1,2,3, 4,11	2000	2500	A-2-	P	4,5,6, 8,9,12	1,2,3, 4,11
Total	6100	7400					75000	84100					35400	46500				

Intervention:

A. Intensification

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

- Reasons for gap = 1. Small holdings, 2. Lack of capitals, 3. Lack of labour, 4. Lack of awareness, 5. Poor transfer of technology to farmers, 6. Non-availability of inputs, 7. Inability to take risks under rainfed conditions, 8. Lack of knowledge/motivation, 9. Poor market information's, 10. Non-profitable agriculture, 11. Poor transport and 12. Low access to improved technologies
- Prop. Strategies = 1. Training and exposure visit, 2. Demonstrations, 3. Providing financial assistance/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Inter cropping in uplands, 7. Control of pests and diseases in crops, 8. Greater use of vermicompost and other organics to build up soil fertility, 9. Using lime to neutralise soil acidity especially in uplands, 10. More emphasis on judicious use of soil and water, 11. Using improved breeds of cattle and 12. Training on Lac/sericulture

Chapter V Table 19: Gap in adoption and proposed strategies for promoting the Modified Farming System

Agro-ecological situation-2

Resource Rich Farmers

Type of enterprises / commodities	EFS-2						EFS-4					
	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies
	Op-i	MAU					Op-i	MAU				
Agricultural crops												
Rainfed												
Paddy	5500	6500	A-1	P	1,2,4,5,6,7,8,12	1,2,3,5,6,7,9,10	6000	7000	A-1	P	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Arhar	3200	3500	A-1&2	P	1,2,4,5,6,7,8,12	1,2,3,5,6,7,9,10	3500	3800	A-&2	P	1,2,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10
Maize	3000	3500	A-1&2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8,9,10	2700	3200	A-1&2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8,9,10
Horticulture												
Vegetable												
Tomato	12500	13000	A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8,9,10	13000	14000	-	-	2,3,4,5,6,8,9,11,12	
Brinjal	13500	14500	A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8,9,10	14000	15000	A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10
Potato	7000	8000	A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8,9,10	8500	9000	-	-		
Cauliflower	14500	15000	A-2	- P	2,3,4,5,6,8,9,11,12-	1,2,3,4,7,8,9,10-	15000	16000	A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,9,10
Animal Husbandry												
Goat	-	-	-	-	-	-	4000	5000	A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,5,11
Poultry	1000	1100	A-2	P	2,3,4,5,6,7,8,9,11	1,2,3,4,5,11	1200	1350	A-2	P	2,3,4,5,6,7,8,9,11	1,2,3,4,5,11
Total	60200	65100	-	-	-	-	64435	74350	-	-	-	-

Intervention:**A. Intensification**

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Reasons for gap = 1. Small holdings, 2. Lack of capitals, 3. Lack of labour, 4. Lack of awareness, 5. Poor transfer of technology to farmers, 6. Non-availability of inputs, 7. Inability to take risks under rainfed conditions, 8. Lack of knowledge/motivation, 9. Poor market information's, 10. Non-profitable agriculture, 11. Poor transport and 12. Low excess to improved technologies

Prop. Strategies = 1. Training and exposure visit, 2. Demonstrations, 3. Providing financial assistance/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Inter cropping in uplands, 7. Control of pests and diseases in crops, 8. Greater use of vermicompost and other organics to build up soil fertility, 9. Using lime to neutralise soil acidity especially in uplands, 10. More emphasis on judicious use of soil and water, 11. Using improved breeds of cattle and 12. Training on Lac/sericulture

Chapter V Table 20: Gap in adoption and proposed strategies for promoting the Modified Farming System

Agro-ecological situationa-2

Resource Poor Farmers

Type of enterprises / commodities	EFS-1						EFS-2					
	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies
	Op-i	MAU					Op-i	MAU				
Agricultural crops												
Rainfed												
Paddy	3000	4000	A-1&A-2	P	2,4,5,6,7,12	1,2,3,5,6,7,10	3500	4500	A-1	P	2,4,5,6,7,12	1,2,3,5,6,7,8
Maize	-	-	-	-	-	-	1800	2200	A-1&2		2,4,5,6,7,12	1,2,3,5,6,7,8
Arhar	-	-	-	-	-	-	2600	3000	A-2	P	1,2,4,5,6,7,12	1,2,3,5,6,7,8
Sugarcane	-	-	-	-	-	-	-	-	-	-	-	-
Horticulture												
Vegetable												
Tomato	-	-	-	-	-	-	13000	14000	A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8
Brinjal	-	-	-	-	-	-	10700	12000	A-2-	P	2,3,4,5,6,8,9,12-	1,2,3,4,7,8
Potato	-	-	-	-	-	-	9000	10000	A-2-	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8,

Cauliflower	-	-	-	-	-	-	12000	13000	- A-2	P	2,3,4,5,6,8,9,11,12	1,2,3,4,7,8,
Animal Husbandry												
Goat	-	-	-	-	-	-					2,3,4,5,6,8,9,12	1,2,3,4,5,7,8
Poultry	-	-	-	-	-	-	2500	3000	A-2	P	2,3,4,5,6,7,8,9,12	1,2,3,4,5,7,8
Total	3000	4000					55100	61700				

Intervention:

A. Intensification

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Reasons for gap =

1. Small holdings, 2. Lack of capitals, 3. Lack of labour, 4. Lack of awareness, 5. Poor transfer of technology to farmers, 6. Non-availability of inputs, 7. Inability to take risks under rainfed conditions, 8. Lack of knowledge/motivation, 9. Poor market information's, 10. Non-profitable agriculture, 11. Poor transport and 12. Low excess to improved technologies

Prop. Strategies =

1. Training and exposure visit, 2. Demonstrations, 3. Providing financial assistance/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Inter cropping in uplands, 7. Control of pests and diseases in crops, 8. Greater use of vermicompost and other organics to build up soil fertility, 9. Using lime to neutralise soil acidity especially in uplands, 10. More emphasis on judicious use of soil and water, 11. Using improved breeds of goat/poultry and 12. Training on Lac/sericulture

Conted Table V.20

Type of enterprises / commodities	EFS-5						EFS-6					
	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies	Contribution in terms of net income		Interventions to be carried out	Gaps in adoption F/P/N	Reasons for gap	Proposed Strategies
	Op-i	MAU					Op-i	MAU				
14	15	16	17	18	19	20	21	22	23	24	25	26
Agricultural crops												
Rainfed												
Paddy	4000	4500	A-2	P	1,2,4,5,6,7,8,12	1,2,3,5,6,7,9,10	4000	4500	A-2	P	1,2,4,5,6,7,8,12	1,2,3,5,6,7
Maize	1800	2200	A-1&2	P	1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10	1800	2200	A-1&2	P	1,2,3,4,5,6,7,8,12	1,2,3,5,6,7,8
Horticulture												
Vegetable												
Tomato	14000	15000	A-2	P	- 1,2,3,4,5,6,7,8,10,12	1,2,3,5,6,7,9,10 -	-	-	-	-	1,2,3,4,5,6,7,8,12-	- 1,2,3,5,6,8
Brinjal	12000	13000	A-2	P	1,2,3,4,5,6,7,8,10,12-	- 1,2,3,5,6,7,9,10	-	-	-	-	1,2,3,4,5,6,7,8,12-	1,2,3,5,6,8 -
Animal husbandry												
Goat/5 animal	4500	5400	A-2&4	P	2,3,4,5,6,8,9,11,12	1,2,3,4,5,11	3000	4000	A-2&4	P	2,3,4,5,6,8,9,11,12	1,2,3,4,5,7,8,11
Poultry/10 birds	2500	3000	A-2	P	2,3,4,5,6,7,8,9,11	1,2,3,4,5,11	2500	3000	A-2	P	2,3,4,5,6,7,8,9,11	1,2,3,4,5,11
Sericulture	4000	5000	A-2	P	2,4,5,8,9,11,12	1,2,3,4,12	5000	6000	A-2	P	2,4,5,8,9,11,12	1,2,3,4,12
Total	42800	48100					16300	19700				

Intervention:**A. Intensification**

1. Change of Variety from local to high yielding variety.
2. Improved management practices.
3. Use of bio-fertilizers.
4. Change of breed from local to improve.

B. Diversification

1. Paddy/Maize+Arhar.
2. Paddy+oil seed.
3. Para cropping (paddy with pea/gram/lentil).
4. Paddy cum fish culture.

Reasons for
gap =

1. Small holdings, 2. Lack of capitals, 3. Lack of labour, 4. Lack of awareness, 5. Poor transfer of technology to farmers, 6. Non-availability of inputs, 7. Inability to take risks under rain fed conditions, 8. Lack of knowledge/motivation, 9. Poor market information's, 10. Non-profitable agriculture, 11. Poor transport and 12. Low access to improved technologies

Prop.
Strategies =

1. Training and exposure visit, 2. Demonstrations, 3. Providing financial assistance/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Inter cropping in uplands, 7. Control of pests and diseases in crops, 8. Greater use of vermicompost and other organics to build up soil fertility, 9. Using lime to neutralise soil acidity especially in uplands, 10. More emphasis on judicious use of soil and water, 11. Using improved breeds of poultry and goat. 12. Training on sericulture

Chapter V Table 21: Trend Area, Production and Productivity of Rice in Different AES of major commodities

Name of enterprises : Agriculture

Name of commodities : Paddy

Year	AES- I		AES- II	
	Area in ha.	Productivity in Q/ha.	Area in ha.	Productivity in Q/ha.
2000	45000	1550	57107	1200
2005	46484	1700	56000	1350
2008	49000	1900	58000	1500

Chapter V Table 22: Trend Area, Production and Productivity of Maize in Different AES of major commodities

Name of enterprises : Agriculture

Name of commodities : Maize

Year	AES- I		AES- II	
	Area in ha.	Productivity in Q/ha.	Area in ha.	Productivity in Q/ha.
2000	1700	12100	1800	950
2005	1540	1300	1750	1000
2008	1290	1350	1600	1200

Chapter V Table 23: Trend Area, Production and Productivity of Arhar in Different AES of major commodities

Name of enterprises : Agriculture

Name of commodities : Arhar

Year	AES- I		AES- II	
	Area in ha.	Productivity in Q/ha.	Area in ha.	Productivity in Q/ha.
2000	775	550	662	525
2005	750	675	575	600
2008	765	750	600	725

Chapter V Table 24: Trend Area, Production and Productivity of Tomato in Different AES of major commodities

Name of enterprises : Horticulture

Name of commodities : Tomato

Year	AES- I		AES- II	
	Area in ha.	Productivity in Q/ha.	Area in ha.	Productivity in Q/ha.
2000	700	75	800	80
2005	800	100	850	105
2008	850	150	990	175

Chapter V Table 25: Trend Area, Production and Productivity of Brinjal in Different AES of major commodities

Name of enterprises : Horticulture

Name of commodities : Brinjal

Year	AES- I		AES- II	
	Area in ha.	Productivity in Q/ha.	Area in ha.	Productivity in Q/ha.
2000	850	145	625	125
2005	925	165	700	140
2008	1050	175	850	150

Chapter V Table 26: Trend Area, Production and Productivity of Cauliflower in Different AES of major commodities

Name of enterprises : Horticulture

Name of commodities : Cauliflower

Year	AES- I		AES- II	
	Area in ha.	Productivity in Q/ha.	Area in ha.	Productivity in Q/ha.
2000	475	160	510	165
2005	500	170	555	175
2008	525	175	575	185

Chapter V Table 27: Trend Area, Production and Productivity of Goat in Different AES of major commodities

Name of enterprises : Animal Husbandry

Name of commodities : Goat

Year	AES- I		AES- II	
	No.	Productivity in weight in kg/Goat/6 month	No.	Productivity in weight in kg/Goat/6 month
2000	-	-	32300	6 Kg.
2005	-	-	34325	6.5 Kg.
2008	-	-	35974	7.0 Kg.

Chapter V Table 28: Trend Area, Production and Productivity of Cow in Different AES of major commodities

Name of enterprises : Animal Husbandry

Name of commodities : Cow

Year	AES- I		AES- II	
	No.	Productivity in weight in milk/day	No.	Productivity in weight in milk
2000	49500	1 Lt.	-	-
2005	55000	1.25 Lt.	-	-
2008	70491	1.5 Lt.	-	-

Chapter V Table 29: Trend Area, Production and Productivity of Poultry in Different AES of major commodities

Name of enterprises : Animal Husbandry

Name of commodities : Poultry

Year	AES- I		AES- II	
	No.	Productivity in weight in kg/Goat/6 month	No.	Productivity in weight in kg/Goat/6 month
2000	125000	500 gm.	315000	550 gm.
2005	132000	600 gm.	335000	675 gm.
2008	149000	650 gm.	351000	700 gm.

SWOT Analysis of EFS 1

SWOT Analysis of the EFS 2 (Agriculture + Horticulture)		SWOT analysis of the MAFS Agriculture + (Organic vegetable + Fruit)	
Strength	Weakness	Strength	Weakness
➤ Farming system approach minimize risk ➤ More profitable for both categories of farmers i.e. resource rich and resource poor ➤ More employment created	➤ Poor quality of vegetable seed sown by the farmers ➤ Low soil fertility ➤ Unstable market prices for vegetable especially Tomato ➤ Less use of chemical fertilizer	➤ Diversification of traditional vegetable to cash crop vegetable ➤ Off season and organic vegetable production. ➤ Diversification of traditional vegetables to floriculture ➤ More employment created	➤ Irrigation facility is must ➤ Scarcity of O.M ➤ Scarcity of animal drought power
Opportunities	Threats	Opportunities	Threats
➤ Scope for diversification and intensification ➤ Introduction of cash crop. ➤ Scope for introduction of off season and organic vegetable. ➤ Introduction of floriculture	➤ Non judicious use of insecticides and pesticides in vegetable ➤ Non judicious use of chemical fertilizer ➤ Insect pest become resistant to insecticides ➤ Glut in market	➤ Off season vegetable ➤ Organic vegetable production ➤ Big market is available of Jamshedpur ➤ Good transport and road network available	➤ High capital investment ➤ Required good knowledge, skill and management for floriculture

SWOT Analysis of EFS 2

SWOT Analysis of the EFS II (Agriculture + Horticulture+ Animal Husbandry)		SWOT analysis of the MAFS (Paddy + Pulse) + A.H (Breed improvement)+Organic vegetable	
Strength	Weakness	Strength	Weakness
➤ More profitable for both categories of farmers i.e. resource rich and resource poor ➤ Adequate availability of fodder ➤ More employment created ➤ Organic manure available for crops	➤ Poor quality of seed sown by the farmers ➤ Green fodder not growing	➤ Diversification of traditional variety and practices to high yield varieties and improved practices ➤ Green fodder production ➤ Improved breed of milch meat animal introduced ➤ Staple food and nutritional scarcity of family	➤ Difficult to properly manage two enterprises ➤ Improved breed of pig, goat is not properly manage by resource poor farmers. ➤ Improved breed of cow and buffalo not manage properly by resource poor farmers
Opportunities	Threats	Opportunities	Threats
➤ Scope for diversification ➤ Introduction of cash crop ➤ Regular income from A.H. ➤ Introduction of biological control of insect pest ➤ Scope for vermicompost production ➤ Soil fertility can be improved by using O.M. and pulse crop in cropping system ➤ By product of agriculture. Can be utilized as animal feed	➤ Small animal create problem for field crop ➤ Agriculture. Become secondary enterprise	➤ Vermicompost production ➤ Scope for organic farming	➤ Improved breed of pig become problem for society. ➤ Small animal damage field crops. ➤ Non judicious use of insecticides effect Bio-physical and soil health. ➤ Risk to loose biodiversity due to introduction of HYV and hybrids

SWOT Analysis of EFS 3

SWOT Analysis of the EFS III (Agriculture + Horticulture+Fishery)		SWOT analysis of the MAFS Agril +Horticulture (Organic Vegetable + Fruit) + Fishery. (Composite fish culture)	
Strength	Weakness	Strength	Weakness
➤ More employment created ➤ Organic manure available for crops ➤ Cost benefit ratio of all enterprise is good ➤ One enterprises can be managed properly	➤ Improved breed of cow and buffalo not managed properly by resource poor farmers ➤ Improved breed of pig, goat is not properly manage by resource poor farmers. ➤ Irrigation facility is poor	➤ Diversification of traditional vegetable to cash crop vegetable ➤ Off season vegetable production. ➤ Improved breed of milch animal introduce for response rich farmers	➤ Very difficult to manage all enterprises properly. ➤ Irrigation facility is poor
Opportunities	Threats	Opportunities	Threats
➤ Scope for diversification ➤ Introduction of cash crop. ➤ Scope for introduction of organic vegetable. ➤ Introduction of floriculture ➤ Scope for breed improvement of milch meat animal ➤ Introduction of biological control of insect pest	➤ Non judicious use of insecticides and pesticides in vegetable ➤ Non judicious use of chemical fertilizer ➤ Insect pest become resistant to insecticides	➤ Off season vegetable ➤ Effective use of soil depth and workforce ➤ Soil fertility can be improved by using O.M. and pulse crop in cropping system.	➤ Improved breed of pig become problem of society. ➤ Small animal damage field crops. ➤ Fisk to loose biodiversity due to introduction of HYV and hybrids

SWOT Analysis of EFS

SWOT Analysis of the EFS V (Agriculture)		SWOT analysis of the MAFS [Agril. + A.H. (Goatry)]	
Strength	Weakness	Strength	Weakness
➤ Low cost of production ➤ Staple food ➤ Easy availability of workforce	➤ Scarcity of O.M. ➤ Scarcity of draught power ➤ Low risk bearing capacity ➤ Irrigation facility is needed	➤ Staple food ➤ Nutritional security ➤ Regular income ➤ Utilization of family labour	➤ Unstable market prices for vegetable cultivation ➤ Difficult to manage all enterprise
Opportunities	Threats	Opportunities	Threats
➤ Scope for diversification/intensification ➤ Soil fertility can be improved by sue of pulse crop in cropping system	➤ No nutritional security to maily ➤ High risk ➤ No protection against loss of crop due to drought ➤ Depleted soil fertility.	➤ Additional and assured source of income from Goat ➤ By product of agril. Can be utilized as animal feed	➤ Small animal create problem for filed crop

SWOT Analysis of EFS

SWOT Analysis of the EFS VI (Agriculture)		SWOT analysis of the MAFS [Agril. + A.H. (Goatry)]	
Strength	Weakness	Strength	Weakness
➤ Low cost of production ➤ Staple food ➤ Easy availability of workforce	➤ Scarcity of O.M. ➤ Scarcity of drough power ➤ Low risk bearing capacity ➤ Irrigation facility is needed	➤ Staple food ➤ Nutritional security ➤ Regular income ➤ Utilization of family labour	➤ Unstable market prices for vegetable cultivation ➤ Difficult to manage all enterprise
Opportunities	Threats	Opportunities	Threats
➤ Scope for diversification/intensification ➤ Soil fertility can be improved by sue of pulse crop in cropping system	➤ No nutritional security to maily ➤ High risk ➤ No protection against loss of crop due to drought ➤ Depleted soil fertility.	➤ Additional and assured source of income from Goat ➤ By product of agril. Can be utilized as animal feed	➤ Small animal create problem for filed crop

VI

ANALYSIS OF THE FARMING SITUATION OF MAJOR CROPS OR COMMODITIES IN EACH AES AND THE RESEARCH & EXTENSION GAPS EMERGED AND THE STRATEGIES TO BRIDGE THE GAPS

The following farming situations are identified in the district for different crops and animals :

Chapter VI Table 1

Sl. No.	Crop / Animal	Situation		
		FS-1	FS-2	FS-3
1.	Paddy	Upland direct seeded rainfed	Medium and low land transplanted rainfed	Summer paddy
2.	Maize	Normal sown rainfed		
3.	Arhar	Upland rainfed		
4.	Brinjal	Upland rainfed	Medium land transplanted	
5.	Mustard	Medium land rainfed		
6.	Tomato	Upland rainfed kharif	Medium land irrigated	
7	Cauliflower	Medium land irrigated Rabi		
8	Potato	Medium land irrigated Rabi		
9.	Goat	Local breed		
10.	Cow	Local breed		
11	Poultry	Desi Birds		
12	Fishery	Rainfed seasonal pond	Rainfed perinial pond	
13	Sericulture	Upland rainfed		

Chapter VI Table 2: No. and percentage of different farming situation of a crop/Animal in district East Singhbhum

Agriculture

Table 2.1

Crop	AES I 57040 ha (No. & Percentage)						AES II 66071 ha (No. & Percentage)					
	FS 1		FS 2		FS 3		FS 1		FS 2		FS 3	
	ha.	%	ha.	%	ha.	%	ha.	%	ha.	%	ha.	%
Paddy	22816	40	25668	45	8556	15	36339	55	29732	45	-	-

Table 2.2

Crop	AES I 1530 ha (No. & Percentage)				AES II 1777 ha (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Maize	1530	100	-	-	1777	100	-	-

Table 2.3

Crop	AES I 1453 ha (No. & Percentage)				AES II 1030 ha (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Arhar	1453	100	-	-	1030	100	-	-

Horticulture/Vegetables

Table 2.4

Crop	AES I 400 ha (No. & Percentage)				AES II 200 ha (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Tomato	100	25	300	75	50	21	150	79

Table 2.5

Crop	AES I 1000 ha (No. & Percentage)				AES II 500 ha (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Potato	1000	100	-	-	500	100	-	-

Table 2.6

Crop	AES I 400 ha (No. & Percentage)				AES II 200 ha (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Brinjal	108	27	292	73	90	49	110	51

Table 2.7

Crop	AES I 320 ha (No. & Percentage)				AES II 200 ha (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Cauliflower	320	100	-	-	200	100	-	-

Livestock**Table 2.8**

Animal	AES I No. (No. & Percentage)				AES II 35974 No. (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	No.	%	No.	%	No.	%	No.	%
Goat	-	-	-	-	35974	100	-	-

Table 2.9

Animal	AES I No. (No. & Percentage)				AES II 35974 No. (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	No.	%	No.	%	No.	%	No.	%
Cow	70491	100	-	-	-	-	-	-

Table 2.10

Animal	AES I No. (No. & Percentage)				AES II 35974 No. (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	No.	%	No.	%	No.	%	No.	%
Poultry	149000	100	-	-	351000	100	-	-

Fishery**Table 2.11**

Fishery	AES I 185 ha (No. & Percentage)				AES II 4 ha (No. & Percentage)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Fish	35	19	150	81	-	-	-	-

Sericulture**Table 2.12**

Sericulture	AES I 390 ha (No. & Percentage) (Including forest area)				AES II 675 ha (No. & Percentage) (Including forest area)			
	FS 1		FS 2		FS 1		FS 2	
	ha.	%	ha.	%	ha.	%	ha.	%
Sericulture	390	100	-	-	675	100	-	-

Chapter VI Table 3 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop
Agriculture

AES - I		Crop: Paddy									Resource Rich				
ITEMS	FS-I					FS-II					FS-III				
	Existing practices	Recommend ed	Gap in adopti on	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommend ed	Gap in adoption	Specific Reasons for gap	Farm er Strate gy	Existing practices	Recommend ed	Gap in adopt ion	Specifi c Reaso ns for gap	Farm er Strat egy
Sowing															
Time	June-July	June-July	N			June-July	June-July	N			January-February	January-February	N		
Method	Broadcasting	Line sowing	F	1,4,9	1,2,5	Random transplanting	Line transplanting	F	1,4,9	1,2,5	Random transplanting	Line transplanting	F	1,4,9	1,2,5
Variety	Local, Gora	Anjali Birsa Gora 102 Birsa Vikas Dhan 109,110	P	1,2,5,7,8,9	1,2,5,7	Local, IR-36, IR-64, MTU 7029	IR - 36 IR - 64 Sita IET-5656 Rajshree MTU-7029	P	1,2,5,7,8,9	1,2,5,7	Local, IR-36, IR-64, MTU 7029	IR - 36 IR - 64 Sita IET-5656 Rajshree MTU-7029	P	1,2,5,7,8,9	1,2,5,7
Seed Rate	100-125	90-95 kg/ha	P	1,9	1,2,5	50-70	40-50 kg/ha	P	1,9	1,2,5	50-70	40-50 kg/ha	P	1,9	1,2,5
Seed Treatment	-	Thiram 2g/kg seed	F	1,5	1,2,5	-	Thiram 2g/kg seed	F	1,5	1,2,5	-	Thiram 2g/kg seed	F	1,5	1,2,5
Organic Manure	1 Ton/ha	10 Ton/ ha	F	1,5,7,8	1,2,6	2 Ton/ ha	10 Ton/ ha	F	1,5,7,8	1,2,6	2 Ton/ha	10 Ton/ ha	F	1,5,7,8	1,2,6
Fertilizer (Nutrient kg/ha)	20:00:00	40:20:20	P		1,2,3,5,6	40:20:0	80:40:20	P		1,2,3,5,6	50:20:10	100:40:20	P		1,2,3,5,6
Basal (N+P+K)	10:00:00	20:40:20	P	1,5,7,8	1,2,3,5,6	15:20:0	40:40:20	P	1,5,7,8	1,2,3,5,6	20:20:10	50:40:20	P	1,5,7,8	1,2,3,5,6
Top Dressing (N)	10 kg.	20Kg	P	1,5,7,8	1,2,3,5,6	25 kg	20+20 Kg	P	1,5,7,8	1,2,3,5,6	30	25+25	P	1,5,7,8	1,2,3,5,6
Total	20:00:00	40:20:20	P	--	--	40:20:0	80:40:20	P	--	--	50:20:10	100:40:20	P	--	--
Pest Management															
Stem Borer	-	Monocroptop hos (0.05%)	F	1,3,5,7	2,4,5,6	-	Monocroptop hos (0.05%)	F	1,3,5,7	1,2,4,5,6	-	Monocroptop hos (0.05%)	F	1,3,5,7	1,2,4,5,6
Gandhi Bug	-	Quinalphes 1.5 % 10kg/ha	F	1,3,5,7	2,4,5,6	-	Quinalphes 1.5 % 10kg/ha	F	1,3,5,7	1,2,4,5,6	-	Quinalphes 1.5 % 10kg/ha	F	1,3,5,7	1,2,4,5,6

Disease Management															
Blast	-	Indofil M – 45 2.5kg/ha	F	1,3,5,7	1,2,4,5,6	-	Indofil M – 45 2.5kg/ha	F	1,3,5,7	1,2,4,5,6	-	Indofil M – 45 2.5kg/ha	F	1,3,5,7	1,2,4,5,6
Bacterial Blight	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,5,7	1,2,4,5,6	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,5,7	1,2,4,5,6	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,5,7	1,2,4,5,6
Weed Management															
Mechanical	Hand weeding	Hand weeding	N	1,3,5,7	1,2,4,6	Hand weeding	Hand weeding	N	1,3,5,7	1,2,4,6	Hand weeding	Hand weeding	N	1,3,5,7	1,2,4,6
Herbicide	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2,5,6	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2,5,6	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2,5,6
Water Management	Rain fed	–	F	1,4,5	1,2,5,6	Rain fed	–	F	1,4,5	1,2,5,6	As per need	As per need		1,4,5	1,2,5,6
No. of Irrigation				1,4,5	1,2,5,6				1,4,5	1,2,5,6				1,4,5	1,2,5,6
Method				1,4,5	1,2,5,6				1,4,5	1,2,5,6				1,4,5	1,2,5,6
Land Management															
Acidity	-					-					-				
Water Logging	-	-				-	-				-	-			
Method of Harvesting	By Sickle	Sickle, Harvester	N			By Sickle	Sickle, Harvester	N			By Sickle	Sickle, Harvester	N		
Any Other/Threshing		Tractor	P	1,5,6	1,2,4,5,6		Tractor	P	1,5,6	1,2,4,5,6		Tractor	P	1,5,6	1,2,4,5,6
Average Yield	5-6 qt.	20-25 qt.	F	1, 2, 3, 5, 8	1, 2, 3 & 4	15-18 qt.	30-35 qt.		1, 2, 3, 5, 8	1, 2, 3 & 4	20-25 qt.	35-40 qt.		1, 2, 3, 5, 8	1, 2, 3 & 4

(*) F=Full

P=Partial

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

N=Nil

***** code for farmer proposed extension**

1. On farm trials / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 4 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop
Agriculture

AES - I		Crop: Paddy									Resource Poor				
ITEMS	FS-I					Existing practices	FS-II				FS-III				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy		Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing															
Time	June-July	June-July	N			June-July	June-July	N			January-February	January-February	N		
Method	Broadcasting	Line sowing	F	1,4,9	1,2,5	Random transplanting	Line transplanting	F	1,4,9	1,2,5	Random transplanting	Line transplanting	F	1,4	1,2
Variety	Local, Gora	Anjali Birsa Gora 102 Birsa Vikas Dhan 109,110	P	1,2,5,7,8,9	1,2,5,7	Local, IR-36, IR-64, MTU 7029	IR - 36 IR - 64 Sita IET-5656 Rajshree MTU-7029	P	1,2,5,7,8,9	1,2,5,7	Local, IR-36, IR-64, MTU 7029	IR - 36 IR - 64 Sita IET-5656 Rajshree MTU-7029	P	1,2,4,5	1,2
Seed Rate	100-125	90-95 kg/ha	P	1,9	1,2,5	50-70	40-50 kg/ha	P	1,9	1,2,5	50-70	40-50 kg/ha	P	1,4,	1,2
Seed Treatment	-	Thiram 2g/kg seed	F	1,5	1,2,5	-	Thiram 2g/kg seed	F	1,5	1,2,5	-	Thiram 2g/kg seed	F	1,4,5	1,2
Organic Manure	1 Ton/ha	10 Ton/ ha	F	1,5,7,8	1,2,6	2 Ton/ ha	10 Ton/ ha	F	1,5,7,8	1,2,6	2 Ton/ha	10 Ton/ ha	F	1,4,5	1,2
Fertilizer (Nutrient kg/ha)	15:00:00	40:20:20	P		1,2,3,5,6	25:20:0	80:40:20	P		1,2,3,5,6	30:20:00	100:40:20	P		1,2,3,4
Basal (N+P+K)	10:00:00	20:40:20	P	1,5,7,8	1,2,3,5,6	15:20:0	40:40:20	P	1,5,7,8	1,2,3,5,6	20:20:00	50:40:20	P	1,4,5	1,2,

															3
Top Dressing (N)	5 kg.	20Kg	P	1,5,7,8	1,2,3,5,6	10 kg	20+20 Kg	P	1,5,7,8	1,2,3,5,6	10	25+25	P	1,4,5	1,2,3
Total	15:00:00	40:20:20	P	--	--	25:20:0	80:40:20	P	--	--	30:20:10	100:40:20	P	--	--
Pest Management															
Stem Borer	-	Monocroptophos (0.05%)	F	1,3,5,7	1,2,4,5,6	-	Monocroptophos (0.05%)	F	1,3,5,7	1,2,4,5,6	-	Monocroptophos (0.05%)	F	1,3,4,5	1,2,4
Gandhi Bug	-	Quinalphes 1.5 % 10kg/ha	F	1,3,5,7	1,2,4,5,6	-	Quinalphes 1.5 % 10kg/ha	F	1,3,5,7	1,2,4,5,6	-	Quinalphes 1.5 % 10kg/ha	F	1,3,4,5	1,2,4

Disease Management															
Blast	-	Indofil M – 45 2.5kg/ha	F	1,3,5,7	1,2,4,5	-	Indofil M – 45 2.5kg/ha	F	1,3,5,7	1,2,4,5	-	Indofil M – 45 2.5kg/ha	F	1,3,4,5	1,2,4
Bacterial Blight	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,5,7	1,2,4,5	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,5,7	1,2,4,5	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,4,5	1,2,4
Weed Management														1,3,4,5	
Mechanical	Hand weding	Hand weding	N	1,3,5,7	1,2,4,6	Hand weding	Hand weding	N	1,3,5,7	1,2,4,6	Hand weding	Hand weding	N		
Herbicide	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2,5,6	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2,5,6	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2
Water Management	Rain fed	–	F	1,4,5	1,2,5,6	Rain fed	–	F	1,4,5	1,2,5,6	As per need	As per need			
No. of				1,4,5	1,2,5,6				1,4,5	1,2,5,6					

Irrigation															
Method				1,4,5	1,2,5,6				1,4,5	1,2,5,6					
Land Management															
Acidity	-					-					-				
Water Logging	-	-				-	-				-	-			
Method of Harvesting	By Sickle	Sickle, Harvester	N			By Sickle	Sickle, Harvester	N			By Sickle	Sickle, Harvester	N		
Any Other/Threshing		Tractor	P	1,5,6	1,2,4,5,6		Tractor	P	1,5,6	1,2,4,5,6		Tractor	P	1,5	1,2
Average Yield	5-6 qt.	20-25 qt.	F	1, 2, 3,5,8	1, 2, 3 & 4	15-18 qt.	30-35 qt.		1, 2, 3,5,8	1, 2, 3 & 4	20-25 qt.	35-40 qt.			

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

***** code for farmer proposed extension**

1. On farm trials / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 5 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Agriculture

AES –2

**Crop - Paddy
Resource Poor**

ITEMS	FS-I						FS-II			
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing										
Time	June-July	June-July	N			June-July	June-July	N		
Method	Broadcasting	Line sowing	F	1,4,9	1,2,5	Random transplanting	Line transplanting	F	1,4,9	1,2,5
Variety	Local, Gora	Anjali Birsas Gora 102 Birsas Vikas Dhan 109,110	P	1,2,5,7,8,9	1,2,5,7	Local, IR-36, IR-64, MTU 7029	IR - 36 IR - 64 Sita IET-5656 Rajshree MTU-7029	P	1,2,5,7,8,9	1,2,5,7
Seed Rate	100-125	90-95 kg/ha	P	1,9	1,2,5	50-70	40-50 kg/ha	P	1,9	1,2,5
Seed Treatment	-	Thiram 2g/kg seed	F	1,5	1,2,5	-	Thiram 2g/kg seed	F	1,5	1,2,5
Organic Manure	1 Ton/ha	10 Ton/ ha	F	1,5,7,8	1,2,6	2 Ton/ ha	10 Ton/ ha	F	1,5,7,8	1,2,6
Fertilizer (Nutrient kg/ha)	15:00:00	40:20:20	P		1,2,3,5,6	25:20:0	80:40:20	P		1,2,3,5,6
Basal (N+P+K)	10:00:00	20:40:20	P	1,5,7,8	1,2,3,5,6	15:20:0	40:40:20	P	1,5,7,8	1,2,3,5,6
Top Dressing (N)	5 kg.	20Kg	P	1,5,7,8	1,2,3,5,6	10 kg	20+20 Kg	P	1,5,7,8	1,2,3,5,6
Total	20:00:00	40:20:20	P	--	--	25:20:0	80:40:20	P	--	--
Pest Management										
Stem Borer	-	Monocrotophos (0.05%)	F	1,3,5,7	1,2,4,5	-	Monocrotophos (0.05%)	F	1,3,5,7	1,2,4,5
Gandhi Bug	-	Quinalphos 1.5 % 10kg/ha	F	1,3,5,7	1,2,4,5	-	Quinalphos 1.5 % 10kg/ha	F	1,3,5,7	1,2,4,5

Disease Management										
Blast	-	Indofil M – 45 2.5kg/ha	F	1,3,5,7	1,2,4,5	-	Indofil M – 45 2.5kg/ha	F	1,3,5,7	1,2,4,5
Bacterial Blight	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,5,7	1,2,4,5	-	Bavistin Dithne Z-78 1ml/liter	F	1,3,5,7	1,2,4,5
Weed Management										
Mechanical	Hand wedding	Hand wedding	N	1,3,5,7	1,2,4,6	Hand wedding	Hand wedding	N	1,3,5,7	1,2,4,6
Herbicide	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2,5,6	-	Dxytlorfen 200gm/ha	F	1,3,4,5	1,2,5,6
Water Management	Rain fed	–	F	1,4,5	1,2,5,6	Rain fed	–	F	1,4,5	1,2,5,6
No. of Irrigation				1,4,5	1,2,5,6				1,4,5	1,2,5,6
Method				1,4,5	1,2,5,6				1,4,5	1,2,5,6
Land Management										
Acidity	-					-				
Water Logging	-	-				-	-			
Method of Harvesting	By Sickle	Sickle, Harvester	N			By Sickle	Sickle, Harvester	N		
Any Other/Threshing		Tractor	P	1,5,6	1,2,4,5,6		Tractor	P	1,5,6	1,2,4,5,6
Average Yield	5-6 qt.	20-25 qt.	F	1, 2, 3,5,8	1, 2, 3 & 4	15-18 qt.	30-35 qt.		1, 2, 3,5,8	1, 2, 3 & 4

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

***** code for farmer proposed extension**

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

**Chapter VI Table 6 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/
Commodity in different AES**

AES – I & II,

Resource Rich

Crop:- Paddy

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown			Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1	Fs-2	Fs-3			
Sowing						
Time	-	-	-			
Method	√	√	√	1,4,9	1,2,5	1, 2
Variety	√	√	√	1,2,5,7,8,9	1,2,5,7	1, 2, & 9
Seed Rate	√	√	√	1,9	1,2,5	1, 2, 3, 5 & 9
Seed Treatment	√	√	√	1,5	1,2,5	1, 2, 3
Organic Manure	√	√	√	1,5,7,8	1,2,6	1, 2, 3, 5,6 & 10
Fertilizer (Nutrient kg/ha)						
Basal (N+P+K)	√	√	√	1,5,7,8	1,2,3,5,6	1, 2, 3, 5,6 & 10
Top Dressing (N)	√	√	√	1,5,7,8	1,2,3,5,6	1, 2, 3, 5,6 & 10
Pest Management						
Stem Borer	√	√	√	1,3,5,7	1,2,4,5,6	1, 2, 3,5,6,7 & 7
Gandhi Bug	√	√	√	1,3,5,7	1,2,4,5,6	1, 2, 3,5,6,7 & 7
Disease Management						
Blast	√	√	√	1,3,5,7	1,2,4,5,6	1, 2, 3,5,6,7 & 7
Bacterial Blight	√	√	√	1,3,5,7	1,2,4,5,6	1, 2, 3,5,6,7 & 7
Weed Management						
Mechanical	-	-	-	-	-	-
Herbicide	√	√	√	1,3,4,5	1,2,5,6	1,2,3 & 9
Water Management						
No. of Irrigation	√	√	-	1,4,5	1,2,5,6	1, 2, 3 & 10
Method	-	-	-	-	-	-
Land Management						
Acidity	-	-	-	-	-	-
Water Logging	-	-	-	-	-	-
Method of Harvesting						
Any Other/Threshing	√	√	√	1,5,6	1,2,4,5,6	1, 2, 3 & 4

If the gap is present in that farming situation then (√) and no gap (-)

Chapter VI Table 7 : CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT

Crop : Paddy

Production Practices (items)	AES-1		AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F		N/P/F	
Sowing				
Time	N		N	
Method	F	1, 2	F	1, 2
Variety	P	1, 2, & 9	P	1, 2, & 9
Seed Rate	P	1, 2, 3, 5 & 9	P	1, 2, 3, 5 & 9
Seed Treatment	F	1, 2, 3	F	1, 2, 3
Organic Manure	F	1, 2, 3, 5,6 & 10	F	1, 2, 3, 5,6 & 10
Fertilizer (Nutrient kg/ha)	P		P	
Basal (N+P+K)	P	1, 2, 3, 5,6 & 10	P	1, 2, 3, 5,6 & 10
Top Dressing (N)	P	1, 2, 3, 5,6 & 10	P	1, 2, 3, 5,6 & 10
Pest Management				
Stem Borer	F	1, 2, 3,5,6,7 & 7	F	1, 2, 3,5,6,7 & 7
Gandhi Bug	F	1, 2, 3,5,6,7 & 7	F	1, 2, 3,5,6,7 & 7
Disease Management				
Blast	F	1, 2, 3,5,6,7 & 7	F	1, 2, 3,5,6,7 & 7
Bacterial Blight	F	1, 2, 3,5,6,7 & 7	F	1, 2, 3,5,6,7 & 7
Weed Management				
Mechanical	N	-	N	-
Herbicide	F	1,2,3 & 9	F	1,2,3 & 9
Water Management	F		F	
No. of Irrigation	P	1, 2, 3 & 10	P	1, 2, 3 & 10
Method	P	-	P	-
Land Management				
Acidity		-		-
Water Logging		-		-
Method of Harvesting	N		N	
Any Other/Threshing	P	1, 2, 3 & 4	P	1, 2, 3 & 4

***** Strategies proposed to overcome the gap :**

1. Training and exposure visit, 2. Demonstrations/on farm trails,
3. Linkage with financial institution/crop insurance, 4. Providing market opportunities,
5. Gearing quality input supply in rural areas, 6. Use of locally available materials for nutrient management & plant protection, 7. Control of pests and diseases in crops,
8. Greater use of vermicompost and other organics to build up soil fertility,
9. Farmers scientist interaction, 10. More emphasis on judicious use of soil and water

Chapter VI Table 8 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Agriculture

AES - I

Crop: Maize

Resource: Rich

ITEMS	FS-1				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing Time	June - July	June	P	1,4,5	1,2
Method	Behind plough	Line: 75 x 25 cm	F	1,4,5	1,2
Variety	Local, Kanchan	Swan Composite-1, Birsa Vikas Makka-2, Kanchan, Hybrid	F	1,2,3,4	1,2,6,7
Seed Rate	20-25 kg.	18 kg/ha	P	1,7,8	1,2,5
Seed Treatment		Captan 2 gram/kg	F	1,3,5	1,2,5,6
Organic Manure	3 ton/ha	10-15 ton/ha	P	1,5,8	1,2,3,6
Fertilizer (Nutrient kg/ha)	30:10:00	100:60:40	P	1,5,8	1,2,3,6
Basal (N+P+K)	20:10	30:60:40	P	1,5,8	1,2,3,6
Top Dressing (N)	10	40+30	P	1,5,8	1,2,3,6
Pest Management					
Stem Borer	-	Thimet 10 G 15 kg/ha	F	1,3,5	1,2,3,4,6
Disease Management			-		
Bacterial Stalk rot	1	Bleaching powder @ 20-25 kg/ha	F	1,3,5,6	1,2,3,4,6
Weed Management			-		
Mechanical	HOe	Khurpi/Hoe	N	-	-
Herbicide	-	Simazine and Atrazine 1.0-1.25 kg/ha	F	1,3,5	1,2,4,6
Water Management			-		
No. of Irrigation	Rain fed	As per need	F	1,8	1,2,4,6
Method		Furrow	N	-	-
Land Management			-	-	-
Acidity	Nil	Line 2-5-4 Q/ha	F	1,5	1,2,6
Method of Harvesting	Plucking	Plucking	N	-	-
Any Other/Threshing	-	Maize Seller machine	F	1,2,3,4,5,6,7,8,9	-
Average Yield	15-18 q/ha.	40-50 q/h	P	1,3,4	1,2,3,4,5,6
Storage Pest Control		Steel Bean Aluminum Phosphide	F	1,5,9	1,2,3,6

Chapter VI Table 9 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Agriculture
AES - I

Crop: Maize
Resource: Poor

ITEMS	FS-1				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing Time	June - July	June	P	1,4,5	1,2
Method	Behind plough	Line: 75 x 25 cm	F	1,4,5	1,2
Variety	Local, Kanchan	Swan Composite-1, Birsa Vikas Makka-2, Kanchan,Hyb.	F	1,2,3,4	1,2,6,7
Seed Rate	20-25 kg.	18 kg/ha	P	1,7,8	1,2,5
Seed Treatment		Captan 2 gram/kg	F	1,3,5	1,2,5,6
Organic Manure	3 ton/ha	10-15 ton/ha	P	1,5,8	1,2,3,6
Fertilizer (Nutrient kg/ha)	30:10:00	100:60:40	P	1,5,8	1,2,3,6
Basal (N+P+K)	20:10	30:60:40	P	1,5,8	1,2,3,6
Top Dressing (N)	10	40+30	P	1,5,8	1,2,3,6
Pest Management					
Stem Borer	-	Thimet 10 G 15 kg/ha	F	1,3,5	1,2,3,4,6
Disease Management			-		
Bacterial Stalk rot	1	Bleaching powder @ 20-25 kg/ha	F	1,3,5,6	1,2,3,4,6
Weed Management			-		
Mechanical	HOe	Khurpi/Hoe	N	-	-
Herbicide	-	Simazine and Atrazine 1.0-1.25 kg/ha	F	1,3,5	1,2,4,6
Water Management			-		
No. of Irrigation	Rain fed	As per need	F	1,8	1,2,4,6
Method		Furrow	N	-	-
Land Management			-	-	-
Acidity	Nil	Line 2-5-4 Q/ha	F	1,5	1,2,6
Method of Harvesting	Plucking	Plucking	N	-	-
Any Other/Threshing	-	Maize Seller machine	F	1,2,3,4,5,6,7,8,9	-
Average Yield	15-18 q/ha.	40-50 q/h	P	1,3,4	1,2,3,4,5,6
Storage Pest Control		Steel Bean Aluminum Phosphide	F	1,5,9	1,2,3,6

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

***** code for farmer proposed extension**

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 10 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Agriculture
AES - II

Crop: Maize
Resource: Rich

ITEMS	FS-1				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing Time	June - July	June	P	1,4,5	1,2
Method	Behind plough	Line: 75 x 25 cm	F	1,4,5	1,2
Variety	Local, Kanchan	Swan Composite-1, Birsa Vikas Makka-2, Kanchan, Hybrid	F	1,2,3,4	1,2,6,7
Seed Rate	20-25 kg.	18 kg/ha	P	1,7,8	1,2,5
Seed Treatment		Captan 2 gram/kg	F	1,3,5	1,2,5,6
Organic Manure	3 ton/ha	10-15 ton/ha	P	1,5,8	1,2,3,6
Fertilizer (Nutrient kg/ha)	30:10:00	100:60:40	P	1,5,8	1,2,3,6
Basal (N+P+K)	20:10	30:60:40	P	1,5,8	1,2,3,6
Top Dressing (N)	10	40+30	P	1,5,8	1,2,3,6
Pest Management					
Stem Borer	-	Thimet 10 G 15 kg/ha	F	1,3,5	1,2,3,4,6
Disease Management			-		
Bacterial Stalk rot	1	Bleaching powder @ 20-25 kg/ha	F	1,3,5,6	1,2,3,4,6
Weed Management			-		
Mechanical	HOe	Khurpi/Hoe	N	-	-
Herbicide	-	Simazine and Atrazine 1.0-1.25 kg/ha	F	1,3,5	1,2,4,6
Water Management			-		
No. of Irrigation	Rain fed	As per need	F	1,8	1,2,4,6
Method		Furrow	N	-	-
Land Management			-	-	-
Acidity	Nil	Line 2-5-4 Q/ha	F	1,5	1,2,6
Method of Harvesting	Plucking	Plucking	N	-	-
Any Other/Threshing	-	Maize Seller machine	F	1,2,3,4,5,6,7,8,9	-
Average Yield	15-18 q/ha.	40-50 q/h	P	1,3,4	1,2,3,4,5,6
Storage Pest Control		Steel Bean Aluminum Phosphide	F	1,5,9	1,2,3,6

(*) F=Full

P=Partial

N=Nil

** Code for specific reasons for gap in adoption

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

*** code for farmer proposed extension

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 11 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

Crop:- Maize
AES – I, II,

Resource Rich & Poor

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	FS 1			
Sowing Time	√	1,4,5	1,2	1,2,9
Method	√	1,4,5	1,2	1,2,9
Variety	√	1,2,3,4	1,2,6,7	1,2,3,5
Seed Rate	√	1,7,8	1,2,5	1,2,9
Seed Treatment	√	1,3,5	1,2,5,6	1,2,9
Organic Manure	√	1,5,8	1,2,3,6	1,2,6,8
Fertilizer (Nutrient kg/ha)				
Basal (N+P+K)	√	1,5,8	1,2,3,6	1,2,3,5,10
Top Dressing (N)	√	1,5,8	1,2,3,6	1,2,3,5,10
Pest Management				
Stem Borer	√	1,3,5	1,2,3,4,6	1,2,3,5,6,7,9
Disease Management	-			
Bacterial Stalk rot	√	1,3,5,6	1,2,3,4,6	1,2,3,5,6,7,9
Pythium	√	1,3,5,6	1,2,3,4,6	1,2,3,5,6,7,9
Weed Management				
Mechanical	–	-	-	-
Herbicide	√	1,3,5	1,2,4,6	1,2,3,5
Water Management				
No. of Irrigation	√	1,8	1,2,4,6	1,2,3,10
Method	-	-	-	-
Land Management				
Acidity	√	1,5	1,2,6	1,2,3,11
Water Logging	-	-	-	-
Method of Harvesting	-	-	-	-
Any Other/Threshing	√	1,5,9	1,2,3,6	1,2,3,4
Average Yield	√	1,4,5	1,2	1,2,5,6,7,8
Storage Pest Control	√	1,4,5	1,2	1,2,6,7

(*) F=Full

P=Partial

N=Nil

Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Strategies proposed to overcome the gap

1. Training and exposure visit
2. Demonstrations/on farm trails
3. Linkage with financial institution/crop insurance
4. Providing market opportunities
5. Gearing quality input supply in rural areas
6. Use of locally available materials for nutrient management & plant protection
7. Control of pests and diseases in crops
8. Greater use of vermicompost and other organics to build up soil fertility
9. Farmers scientist interaction
10. More emphasis on judicious use of soil and water
11. Popularisation of lime application

Chapter VI Table 12 :CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT

Crop :- Maize

Production Practices (items)	AES-1		AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F		N/P/F	
Sowing Time	P	1,2,9	P	1,2,9
Method	N		N	
Variety	F	1,2,9	F	1,2,9
Seed Rate	P	1,2,9	P	1,2,9
Seed Treatment	F	1,2,6,8	F	1,2,6,8
Organic Manure	P	1,2,6,8	P	1,2,6,8
Fertilizer (Nutrient kg/ha				
Basal (N+P+K)	P	1,2,3,5,10	P	1,2,3,5,10
Top Dressing (N)	P	1,2,3,5,10	P	1,2,3,5,10
Total	P		P	
Pest Management				
Stem Borer	F	1,2,3,5,6,7,9	F	1,2,3,5,6,7,9
Disease Management				
Bacterial Stalk rot	F	1,2,3,5,6,7,9	F	1,2,3,5,6,7,9
Pythium	-	-	-	-
Weed Management				
Mechanical	N	-	N	-
Herbicide	F	1,2,3,5	F	1,2,3,5
Water Management	-		-	
No. of Irrigation	F	1,2,3,10	F	1,2,3,10
Method	N	-	N	-
Land Management				
Acidity	F	1,2,3,11	F	1,2,3,11
Water Logging	N		N	
Method of Harvesting				
Any Other/Threshing	F	1,2,5,6,7,8	F	1,2,5,6,7,8
Average Yield	P	1,2,6,7	P	1,2,6,7
Storage Pest Control	F	1,2,9	F	1,2,9

***** Strategies proposed to overcome the gap :**

1. Training and exposure visit, 2. Demonstrations/on farm trails, 3. Linkage with financial institution/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Use of locally available materials for nutrient management & plant protection, 7. Control of pests and diseases in crops, 8. Greater use of vermicompost and other organics to build up soil fertility, 9. Farmers scientist intraction, 10. More emphasis on judicious use of soil and water

Chapter VI Table 13 :Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

<i>Agriculture</i>	Resource Rich/Poor					Crop: Arhar				
ITEMS	AES - I FS-1					AES - II FS-1				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing										
Time	June-July	15 th June – 15 th July	N			June-July	15 th June – 15 th July	N		
Method	Broad casting	Line sowing	P	1,2,6,9	1,2,4,5	Broad casting	Line sowing	P	1,2,6,9	1,2,4,5
Variety	Local, Bahar	BR-65, Birsa Arhar-1, Laxmi T-21, Bahar	P	1,2	1,2,5,6,7	Local, Bahar	BR-65, Birsa Arhar-1, Laxmi T-21, Bahar	P	1,2	1,2,5,6,7
Seed Rate	30 kg/ha	20 kg/ha	P	1,9	1,2,5	30 kg/ha	20 kg/ha	P	1,9	1,2,5
Seed Treatment	-	Bavistin 2g/kg seed	F	1,3,5	1,2,5,6	-	Bavistin 2g/kg seed	F	1,3,5	1,2,5,6
Organic Manure	Nil	5 ton/ha	F	1,5,8	1,2,3,6	Nil	5 ton/ha	F	1,5,8	1,2,3,6
Fertilizer (Nutrient kg/ha)	10:10:0	20+40+20	-	1,5,7,8	1,2,3,6	10:00:00	20+40+20	-	1,5,7,8	1,2,3,6
Basal (N+P+K) 10+40+20	4:10:00	10:40:20	P	1,5,7,8	1,2,3,6	5:00:00	10:40:20	P	1,5,7,8	1,2,3,6
Top Dressing (N)	6 kg.	10	P	1,5,7,8	1,2,3,6	5 kg.	10	P	1,5,7,8	1,2,3,6
Pest Management										
Pod Borer		Endosulphan 35 EC @ 1.5-2 ml/liter water	F	1,3,5	1,2,4,5,6		Endosulphan 35 EC @ 1.5-2 ml/liter water	F	1,3,5	1,2,4,5,6
Disease Management			F	1,3,5	1,2,4,5,6			F	1,3,5	1,2,4,5,6
Wilt		Crop rotation/Resistant variety/seed treatment	F	1,3,5	1,2,5,6		Crop rotation/Resistant variety/seed treatment	F	1,3,5	1,2,5,6
Weed Management	-	Bavision @ 2 gm /kg seed	F	1,3,5	1,2,5,6	-	Bavision @ 2 gm /kg seed	F	1,3,5	1,2,5,6
Mechanical	Hand weeding	Hand weeding within 1 month of sowing	N	-	-	Hand weeding	Hand weeding within 1 month of sowing	N	-	-

Chapter VI Table 14 :Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Agriculture		Resource Rich/Poor						Crop: Arhar		
ITEMS	AES - I FS-1					AES - II FS-1				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing										
Time	June-July	15 th June – 15 th July	N			June-July	15 th June – 15 th July	N		
Method	Broad casting	Line sowing	P	1,2,6,9	1,2,4,5	Broad casting	Line sowing	P	1,2,6,9	1,2,4,5
Variety	Local, Bahar	BR-65, Birsa Arhar-1, Laxmi T-21, Bahar	P	1,2	1,2,5,6,7	Local, Bahar	BR-65, Birsa Arhar-1, Laxmi T-21, Bahar	P	1,2	1,2,5,6,7
Seed Rate	30 kg/ha	20 kg/ha	P	1,9	1,2,5	30 kg/ha	20 kg/ha	P	1,9	1,2,5
Seed Treatment	-	Bavistin 2g/kg seed	F	1,3,5	1,2,5,6	-	Bavistin 2g/kg seed	F	1,3,5	1,2,5,6
Organic Manure	Nil	5 ton/ha	F	1,5,8	1,2,3,6	Nil	5 ton/ha	F	1,5,8	1,2,3,6
Fertilizer (Nutrient kg/ha	10:10:0	20+40+20	-	1,5,7,8	1,2,3,6	10:00:00	20+40+20	-	1,5,7,8	1,2,3,6
Basal (N+P+K) 10+40+20	4:10:00	10:40:20	P	1,5,7,8	1,2,3,6	5:00:00	10:40:20	P	1,5,7,8	1,2,3,6
Top Dressing (N)	6 kg.	10	P	1,5,7,8	1,2,3,6	5 kg.	10	P	1,5,7,8	1,2,3,6
Pest Management										
Pod Borer		Endosulphan 35 EC @ 1.5-2 ml/liter water	F	1,3,5	1,2,4,5,6		Endosulphan 35 EC @ 1.5-2 ml/liter water	F	1,3,5	1,2,4,5,6
Disease Management			F	1,3,5	1,2,4,5,6			F	1,3,5	1,2,4,5,6
Wilt		Crop rotation/Resistant variety/seed treatment	F	1,3,5	1,2,5,6		Crop rotation/Resistant variety/seed treatment	F	1,3,5	1,2,5,6
	-	Bavision @ 2 gm /kg seed	F	1,3,5	1,2,5,6	-	Bavision @ 2 gm /kg seed	F	1,3,5	1,2,5,6
Weed Management										
Mechanical	Hand weeding	Hand weeding within 1 month of sowing	N	-	-	Hand weeding	Hand weeding within 1 month of sowing	N	-	-

Herbicide	-	Fluchlorine 45 Ec @ 2 liter/ha	F	1,3,5	1,2,5,6	-	Fluchlorine 45 Ec @ 2 liter/ha	F	1,3,5	1,2,5,6
Water Management										
No. of Irrigation	-	Avoid water logging	N	-	-	-	Avoid water logging	N	-	-
Method	-	Irrigate in case of dry spell	-	-	-	-	Irrigate in case of dry spell	-	-	-
Land Management										
Acidity	-	Lime @ 3 q/ha in furrow at the time of sowing	F	1,5,9	1,2,5,6	-	Lime @ 3 q/ha in furrow at the time of sowing	F	1,5,9	1,2,5,6
Water Logging		Drainage	N	-	-		Drainage	N	-	-
Method of Harvesting	hand picking	Hand picking or steam cutting	N	-	-	hand picking	Hand picking or steam cutting	N	-	-
Any Other/Threshing	Beating	Beating	N	-	-	Beating	Beating	N	-	-
Average Yield	7 q/ha	18-20 q/ha	P	1,2,3,5,8,9	1,2,3,4,5,6,7	7 q/ha	18-20 q/ha	P	1,2,3,5,8,9	1,2,3,4,5,6,7
Storage Pest Control	-	Steel bean aluminum phosphate	F	1,2,3,4	1,2,5,6	-	Steel bean aluminum phosphate	F	1,2,3,4	1,2,5,6

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

***** code for farmer proposed extension**

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 15 :Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

Crop:- Arhar
AES - I, II,

Resource Rich & Poor

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1			
Sowing				
Time	-	-	-	-
Method	√	1,2,6,9	1,2,4,5	1, 2, 9
Variety	√	1,2	1,2,5,6,7	1, 2, 3, 5
Seed Rate	√	1,9	1,2,5	1,2,9
Seed Treatment	√	1,3,5	1,2,5,6	1,2,3,5
Organic Manure	√	1,5,8	1,2,3,6	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha)				
Basal (N+P+K) 10+40+20	√	1,5,7,8	1,2,3,6	1,2,3,5,10
Top Dressing (N)	√	1,5,7,8	1,2,3,6	1,2,3,5,10
Pest Management				
Pod Borer	√	1,3,5	1,2,4,5,6	1,2,3,6,7,9
Disease Management				
Wilt	√	1,3,5	1,2,5,6	1,2,3,6,7,9
Weed Management				
Mechanical	-	-	-	-
Herbicide	√	1,3,5	1,2,5,6	1,2,3,5,9
Water Management				
No. of Irrigation	-	-	-	-
Method	-	-	-	-
Land Management				
Acidity	√	1,5,9	1,2,5,6	1,2,3,5,6,11
Water Logging	-	-	-	
Method of Harvesting				
Any Other/Threshing	-	-	-	-
Average Yield	√	1,2,3,5,8,9	1,2,3,4,5,6,7	1,2,3,5,6,7
Storage Pest Control	√	1,2,3,4	1,2,5,6	1,2,6,9

(*) F=Full P=Partial Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	N=Nil Strategies proposed to overcome the gap
1. Lack of awareness/knowledge 2. Non availability of required quantity of quality seed 3. Plant protection is not economical under rainfed conditions 4. Non-availability of labour 5. Lack of resource 6. Non-profitability and Non availability 7. Risk of crop failure 8. Lack of assured irrigation 9. Lack of conviction	1. On farm trails / Demonstration 2. Training and exposure visits 3. Use of locally available materials for nutrient management & plant protection 4. Improved farm implements 5. Farmers scientist intraction 6. Link to financial institutions 7. Improved variety of crops	1. Training and exposure visit 2. Demonstrations/on farm trails 3. Linkage with financial institution/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Use of locally available materials for nutrient management & plant protection 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Farmers scientist intraction 10. More emphasis on judicious use of soil and water 11. Popularisation of lime application

Chapter VI Table 16 :CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT

Crop :- Arhar

Production Practices (items)	AES-1		AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F		N/P/F	
Sowing				
Time	N	-	N	-
Method	P	1, 2, 9	P	1, 2, 9
Variety	P	1, 2, 3, 5	P	1, 2, 3, 5
Seed Rate	P	1,2,9	P	1,2,9
Seed Treatment	F	1,2,3,5	F	1,2,3,5
Organic Manure	F	1,2,3,5,6,8	F	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha				
Basal (N+P+K) 10+40+20	P	1,2,3,5,10	P	1,2,3,5,10
Top Dressing (N)	P	1,2,3,5,10	P	1,2,3,5,10
Pest Management				
Pod Borer	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Disease Management				
Wilt	F	1,2,3,5,9	F	1,2,3,5,9
Weed Management				
Mechanical	N	-	N	-
Herbicide	F	1,2,3,5,9	F	1,2,3,5,9
Water Management				
No. of Irrigation	N	-	N	-
Method	-	-	-	-
Land Management				
Acidity	F	1,2,3,5,6,7	F	1,2,3,5,6,7
Water Logging	N	-	N	-
Method of Harvesting				
Any Other/Threshing	N	-	N	-
Average Yield	P	1,2,6,9	P	1,2,6,9
Storage Pest Control	F	1, 2, 9	F	1, 2, 9

***** Strategies proposed to overcome the gap :**

1. Training and exposure visit,
2. Demonstrations/on farm trails,
3. Linkage with financial institution/crop insurance,
4. Providing market opportunities,
5. Gearing quality input supply in rural areas,
6. Use of locally available materials for nutrient management & plant protection,
7. Control of pests and diseases in crops,
8. Greater use of vermicompost and other organics to build up soil fertility,
9. Farmers scientist interaction,
10. More emphasis on judicious use of soil and water

Chapter VI Table 17
Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Agriculture		Resource Rich/Poor					Crop: Mustard			
ITEMS	AES - I FS-1					AES - II FS-1				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing										
Time	October	1 st Oct to 15 Oct	N			October	1 st Oct to 15 Oct	N		
Method	Behind plough	Line sowing 30 x 10 cm	P	1,2,6,9	1,2,4,5	Behind plough	Line sowing 30 x 10 cm	P	1,2,6,9	1,2,4,5
Variety	Yellow sero black sero, Local variety	Varuna, Shiwani BR-40, Pusa Bold Karanti	F	1,2	1,2,5,6,7	Yellow sero black sero, Local variety	Varuna, Shiwani BR-40, Pusa Bold Karanti	F	1,2	1,2,5,6,7
Seed Rate	10-12 kg/ha	6- 8 kg/ha	P	1,9	1,2,5	10-12 kg/ha	6- 8 kg/ha	P	1,9	1,2,5
Seed Treatment	-	Thiram 2g/kg seed	F	1,3,5	1,2,5,6	-	Thiram 2g/kg seed	F	1,3,5	1,2,5,6
Organic Manure	2 ton/ ha	5-10 ton/ha	P	1,5,8	1,2,3,6	2 ton/ ha	5-10 ton/ha	P	1,5,8	1,2,3,6
Fertilizer (Nutrient kg/ha	10:05:00	25:25:20		1,5,7,8	1,2,3,6	10:05:00	25:25:20		1,5,7,8	1,2,3,6
Basal (N+P+K)	5:5	15:25:20	P	1,5,7,8	1,2,3,6	5:5	15:25:20	P	1,5,7,8	1,2,3,6
Top Dressing (N)	5:00:00	10	P	1,5,7,8	1,2,3,6	5:00:00	10	P	1,5,7,8	1,2,3,6
Sulphur	Nil	20 Kg/ha	F			Nil	20 Kg/ha	F		
Pest Management				1,3,5	1,2,4,5,6				1,3,5	1,2,4,5,6
Mustard Aphid	Roger	Monocrotophos @ 1.2 ml/liter	P	1,3,5	1,2,4,5,6	Roger	Monocrotophos @ 1.2 ml/liter	P	1,3,5	1,2,4,5,6
Disease Management				1,3,5	1,2,5,6				1,3,5	1,2,5,6
Alternaria Blight	-	Dithane N-45 45 @ 8 kg/liter	F	1,3,5	1,2,5,6	-	Dithane N-45 45 @ 8 kg/liter	F	1,3,5	1,2,5,6

Downy mildew	-	Karathane 0.1 %	F			-	Karathane 0.1 %	F		
Weed Management				-	-				-	-
Mechanical	Hand weeding	Hand weeding	N	1,3,5	1,2,5,6	Hand weeding	Hand weeding	N	1,3,5	1,2,5,6
Herbicide	-	Isopsutron 75% 10kg/ha	F			-	Isopsutron 75% 10kg/ha	F		
Water Management				-	-				-	-
No. of Irrigation	1	3	P	-	-	1	3	P	-	-
Method	flooding	Furrow	P			flooding	Furrow	P		
Land Management				1,5,9	1,2,5,6				1,5,9	1,2,5,6
Acidity	-	Liming 2-3 q/ha	F	-	-	-	Liming 2-3 q/ha	F	-	-
Method of Harvesting	Sickle	Sickle	N	-	-	Sickle	Sickle	N	-	-
Marketing		Organised	F	-	-		Organised	F	-	-
Farm Level Processing	Beating	Bullock/Tractor	F	1,2,3,5,8,9	1,2,3,4,5,6,7	Beating	Bullock/Tractor	F	1,2,3,5,8,9	1,2,3,4,5,6,7
Grading	-	Seed Size	F	1,2,3,4	1,2,5,6	-	Seed Size	F	1,2,3,4	1,2,5,6
Packing	Gunny Bag	Gunny Bag	F			Gunny Bag	Gunny Bag	F		
Processing	-	Milling	F			-	Milling	F		
Storage Pest Control			F	1,2,6,9	1,2,4,5			F	1,2,6,9	1,2,4,5
Average Yield	3-4 q/ha	8-9 q/ha	P	1,2	1,2,5,6,7	3-4 q/ha	8-9 q/ha	P	1,2	1,2,5,6,7

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

***** code for farmer proposed extension**

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 18 :Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES
Crop:- Mustard **AES – I, II,** **Resource Rich & Poor**

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown (FA – 1)	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
Sowing				
Time	-	-	-	-
Method	√	1,4,6	1,2,4,5	1, 2, 9
Variety	√	1,2,5,7	1,2,5,6	1, 2, 3, 5
Seed Rate	√	1,9	1,2,5	1,2,9
Seed Treatment	√	1,3,5,8	1,2,5,6	1,2,3,5
Organic Manure	√	1,5,8,9	1,2,3,6	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha				
Basal (N+P+K)	√	1,5,8,9	1,2,3,6	1,2,3,5,10
Top Dressing (N)	√	1,5,8,9	1,2,3,6	1,2,3,5,10
Sulphur	√	1,5,8,9	1,2,3,6	1,2,3,5,10
Pest Management				
Mustard Aphid	√	1,3,5	1,2,3,4,6	1,2,3,6,7,9
Disease Management			1	
Alternaria Blight	√	1,3,5	1,2,3,4,6	1,2,3,6,7,9
Downy mildew	√	1,3,5,6	1,2,3,4,6	1,2,3,6,7,9
Weed Management				
Mechanical	-	-	-	-
Herbicide	√	1,3,5,6	1,2,6	1,2,3,5,9
Water Management				
No. of Irrigation	√	1,5,8	1,2,4,6	1,2,3,5,9
Method	√	1,5,8,9	1,2,4,6	1,2,3,5,9
Land Management				
Acidity	√	1,5,9	1,2,6	1,2,3,5,6,11
Method of Harvesting				
Marketing	√	1,5,9	1,2,4,6	1,3,5,6
Farm Level Processing	√	1,9	1,2,4,6	1,2,3,5,6
Grading	√	1,9	1,2,4,6	1,2,6,9
Packing	√	1,9	1,2,4,6	1,2,6,9
Processing	√	1,9	1,2,4,6	1,2,6,9
Storage Pest Control	√	1,9	1,2,4,6	1, 2, 9
Average Yield	√	1,2,3,5,7,8,9	1,2,3,4,5,6,7	1, 2, 3, 5

(*) F=Full P=Partial Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	N=Nil Strategies proposed to overcome the gap
1. Lack of awareness/knowledge 2. Non availability of required quantity of quality seed 3. Plant protection is not economical under rainfed conditions 4. Non-availability of labour 5. Lack of resource 6. Non-profitability and Non availability 7. Risk of crop failure 8. Lack of assured irrigation 9. Lack of conviction	1. On farm trails / Demonstration 2. Training and exposure visits 3. Use of locally available materials for nutrient management & plant protection 4. Improved farm implements 5. Farmers scientist intraction 6. Link to financial institutions 7. Improved variety of crops	1. Training and exposure visit 2. Demonstrations/on farm trails 3. Linkage with financial institution/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Use of locally available materials for nutrient management & plant protection 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Farmers scientist intraction 10. More emphasis on judicious use of soil and water 11. Popularisation of lime application

Chapter VI Table 19 :CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT

Crop :- Mustard

Production Practices (items)	AES-1		AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F		N/P/F	
Sowing				
Time	N	-	N	-
Method	P	1, 2, 9	P	1, 2, 9
Variety	F	1, 2, 3, 5	F	1, 2, 3, 5
Seed Rate	P	1,2,9	P	1,2,9
Seed Treatment	F	1,2,3,5	F	1,2,3,5
Organic Manure	P	1,2,3,5,6,8	P	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha				
Basal (N+P+K)	P	1,2,3,5,10	P	1,2,3,5,10
Top Dressing (N)	P	1,2,3,5,10	P	1,2,3,5,10
Sulphur	F	1,2,3,5,10	F	1,2,3,5,10
Pest Management				
Mustard Aphid	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Disease Management				
Alternaria Blight	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Downy mildew	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Weed Management				
Mechanical	N	1,2,3,5,9	N	1,2,3,5,9
Herbicide	F	1,2,3,5,9	F	1,2,3,5,9
Water Management				

No. of Irrigation	P	1,2,3,5,9	P	1,2,3,5,9
Method	P	1,2,3,5,6,11	P	1,2,3,5,6,11
Land Management				
Acidity	F	1,2,3,5,6,7	F	1,2,3,5,6,7
Method of Harvesting	N	-	N	-
Marketing	F	1,2,3,5,6,7	F	1,2,3,5,6,7
Farm Level Processing	F	1,2,6,9	F	1,2,6,9
Grading	F	1,2,6,9	F	1,2,6,9
Packing	F	1,2,6,9	F	1,2,6,9
Processing	F	1, 2, 9	F	1, 2, 9
Storage Pest Control	F	1, 2, 3, 5	F	1, 2, 3, 5
Average Yield	P	1, 2, 3, 5	P	1, 2, 3, 5

***** Strategies proposed to overcome the gap :**

1. Training and exposure visit, 2. Demonstrations/on farm trails, 3. Linkage with financial institution/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Use of locally available materials for nutrient management & plant protection, 7. Control of pests and diseases in crops, 8. Greater use of vermicompost and other organics to build up soil fertility, 9. Farmers scientist intraction, 10. More emphasis on judicious use of soil and water, 11. Popularisation of lime application

Chapter VI Table 20
Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Vegetable/Horticulture

Crop: Potato
Resource Rich/Poor

ITEMS	AES - I FS-1					AES - II FS-I				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing										
Time	Oct. to Nov.	10 Oct. to 10 Nov.	N	-		Oct. to Nov.	10 Oct. to 10 Nov.	N	-	
Method	Furrow dibbling	Furrow dibbling	N			Furrow dibbling	Furrow dibbling	N		
Variety	Local, K. Jyoti, K. Lalima, K. Sinduri, Lal Gulab	K. Lalima, K. Badsah, K. Kuber, K. Chandra mukhi, K. Jyoti, K. Sinduri	P	1,2,5,8,9	1,2,5,6,7	Local, K. Jyoti, K. Lalima, K. Sinduri, Lal Gulab	K. Lalima, K. Badsah, K. Kuber, K. Chandra mukhi, K. Jyoti, K. Sinduri	P	1,2,5,8,9	1,2,5,6,7
Seed Rate	30-35 q/ha	20-30 q/ha	P	1,7,8	1,2,4,6	30-35 q/ha	20-30 q/ha	P	1,7,8	1,2,4,6
Seed Treatment	-	Mancozed 4 gm	F	1,3,5	1,2,5,6	-	Mancozed 4 gm	F	1,3,5	1,2,5,6
Organic Manure	10 ton/ha	200-250 q/ha	P	1,5,8,9	1,2,3,6	10 ton/ha	200-250 q/ha	P	1,5,8,9	1,2,3,6
Fertilizer (Nutrient kg/ha)	60:30:10	100:100:90	P	1,5,8,9	1,2,3,6	60:30:10	100:100:90	P	1,5,8,9	1,2,3,6
Basal (N+P+K)	30:30:10	50:100:90	P	1,5,8,9	1,2,3,6	30:30:10	50:100:90	P	1,5,8,9	1,2,3,6
Top Dressing (N)	30	50	P	1,5,8,9	1,2,3,6	30	50	P	1,5,8,9	1,2,3,6
Pest Management										
Aphid	-	Linden dust 25 kg/ha	F	1,3,5,6,9	1,2,3,4,6	-	Linden dust 25 kg/ha	F	1,3,5,6,9	1,2,3,4,6
Disease Management										
Early Blight	Indofil M-45	Indofil M-45, 2 kg/ha	P	1,3,5,6,9	1,2,3,4,6	Indofil M-45	Indofil M-45, 2 kg/ha	P	1,3,5,6,9	1,2,3,4,6
Late blight		Ridomil MZ (0.1-0.15%)	F	1,3,5,6,9	1,2,3,4,6		Ridomil MZ (0.1-0.15%)	F	1,3,5,6,9	1,2,3,4,6

Weed Management										
Mechanical	Kudal	Kudal, Khurpi	N	-	-	Kudal	Kudal, Khurpi	N	-	-
Herbicide	-	Atrazine, 50 % 1 kg/ha	F	1,5,6	1,2,5,6	-	Atrazine, 50 % 1 kg/ha	F	1,5,6	1,2,5,6
Water Management										
No. of Irrigation	7	9	P	5,8,9	1,2,4,6	7	9	P	5,8,9	1,2,4,6
Method	Furrow	Furrow	N	-	-	Furrow	Furrow	N	-	-
Land Management										
Water Logging	Rainfed	Gypsum/Lime	-	-	-	Rainfed	Gypsum/Lime	-	-	-
Method of Harvesting	Digging	Digging	N	-	-	Digging	Digging	N	-	-
Any Other/Threshing	-	-	-	-	-	-	-	-	-	-
Average Yield	110-120 q/ha	250-300 q/ha	P	1,2,3,4,5,8	1,2,3,6,7	110-120 q/ha	250-300 q/ha	P	1,2,3,4,5,8	1,2,3,6,7
Storage Pest Control	-	malathion	F	1,3,5,9	1,2,3	-	malathion	F	1,3,5,9	1,2,3

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

***** code for farmer proposed extension**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 21 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

AES - I, II,		Crop:- Potato		Resource Rich & Poor	
Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap	
	Fs-1				
Sowing					
Time	-	-		-	
Method	-	-	-	-	
Variety	√	1,2,5,8,9	1,2,5,6,7	1, 2, 3, 5	
Seed Rate	√	1,7,8	1,2,4,6	1,2,9	
Seed Treatment	√	1,3,5	1,2,5,6	1,2,3,5,7	
Organic Manure	√	1,5,8,9	1,2,3,6	1,2,3,5,6,8	
Fertilizer (Nutrient kg/ha)					
Basal (N+P+K)	√	1,5,8,9	1,2,3,6	1,2,3,5,10	
Top Dressing (N)	√	1,5,8,9	1,2,3,6	1,2,3,5,10	
Pest Management					
Aphid	√	1,3,5,6,9	1,2,3,4,6	1,2,3,6,7,9	
Disease Management					
Early Blight	√	1,3,5,6,9	1,2,3,4,6	1,2,3,6,7,9	
Late blight	√	1,3,5,6,9	1,2,3,4,6	1,2,3,6,7,9	
Weed Management					
Mechanical	-	-	-	-	
Herbicide	√	1,5,6	1,2,5,6	1,2,3,5,9	
Water Management					
No. of Irrigation	√	5,8,9	1,2,4,6	1,2,3,5,9	
Method	-	-	-	-	
Land Management					
Acidity		-	-	-	
Water Logging	-	-	-	-	
Method of Harvesting					
Any Other/Threshing	-	-	-	-	
Average Yield	√	1,2,3,4,5,8	1,2,3,6,7	1,2,5,6,7,8	
Storage Pest Control	√	1,3,5,9	1,2,3	1,2,3,4,6	

If the gap is present in that farming situation then (√) and no gap ()

(*) F=Full P=Partial Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	N=Nil Strategies proposed to overcome the gap
1. Lack of awareness/knowledge 2. Non availability of required quantity of quality seed 3. Plant protection is not economical under rainfed conditions 4. Non-availability of labour 5. Lack of resource 6. Non-profitability and Non availability 7. Risk of crop failure 8. Lack of assured irrigation 9. Lack of conviction	1. On farm trails / Demonstration 2. Training and exposure visits 3. Use of locally available materials for nutrient management & plant protection 4. Improved farm implements 5. Farmers scientist interaction 6. Link to financial institutions 7. Improved variety of crops	1. Training and exposure visit 2. Demonstrations/on farm trails 3. Linkage with financial institution/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Use of locally available materials for nutrient management & plant protection 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Farmers scientist interaction 10. More emphasis on judicious use of soil and water

Chapter VI Table 22 :CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT

Crop :- Potato

Production Practices (items)	AES-1		AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F		N/P/F	
Sowing				
Time	N	-	N	-
Method	N	-	N	-
Variety	P	1, 2, 3, 5	P	1, 2, 3, 5
Seed Rate	P	1,2,9	P	1,2,9
Seed Treatment	F	1,2,3,5,7	F	1,2,3,5,7
Organic Manure	P	1,2,3,5,6,8	P	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha)				
Basal (N+P+K)	P	1,2,3,5,10	P	1,2,3,5,10
Top Dressing (N)	P	1,2,3,5,10	P	1,2,3,5,10
Pest Management				
Aphid	-	-	-	-
Disease Management	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Early Blight	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Late blight	-	-	-	-
Weed Management				
Mechanical	P	1,2,3,5,9	P	1,2,3,5,9
Herbicide	F	1,2,3,5,9	F	1,2,3,5,9
Water Management				
No. of Irrigation	N	-	N	-
Method	F	1,2,3,5,9	F	1,2,3,5,9
Land Management				
Acidity	P	1,2,3,5,9	P	1,2,3,5,9
Water Logging	N	-	N	-
Method of Harvesting				
Any Other/Threshing	-	-	-	-
Average Yield	P	1,2,5,6,7,8	P	1,2,5,6,7,8
Storage Pest Control	F	1,2,3,4,6	F	1,2,3,4,6

***** Strategies proposed to overcome the gap :**

1. Training and exposure visit.
2. Demonstrations/on farm trails,.
3. Linkage with financial institution/crop insurance,.
4. Providing market opportunities.
5. Gearing quality input supply in rural areas.
6. Use of locally available materials for nutrient management & plant protection.
7. Control of pests and diseases in crops.
8. Greater use of vermicompost and other organics to build up soil fertility.
9. Farmers scientist intraction.
10. More emphasis on judicious use of soil and water.
11. Popularisation of lime application

Chapter VI Table 23

Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Vegetable/Horticulture

Crop: Tomato

AES - I

Resource Rich/Poor

ITEMS	FS-1					FS-2				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Sowing										
Time	July	July, August	N	-	-	Oct. to Nov.	Oct. to Nov.	N	-	-
Method	Transplanting	Transplanting 60x45 cm	N	-	-	Transplanting	Transplanting 60x45 cm	N	-	-
Variety	Pusa Ruby, Suraksha, Hybrid	Pusa Ruby, Pusa Swarna Navin, Swarna Lalima, Abha, hybrid	N	-	-	Pusa Ruby, Suraksha, Hybrid	Pusa Ruby, Swarna Navin, Swarna Lalima, Abha, hybrid, Swarna Baibhaw	N	-	-
Seed Rate	800 gram/ha	500-600 gram/ha	P	1,7,8	1,2	800 gram/ha	500-600 gram/ha	P	1,7,8	1,2
Seed Treatment	-	Bavistin @ 2 g/ha	P	1,3,5	1,2, 4,6	-	Bavistin @ 2 g/ha	P	1,3,5	1,2,4, 6
Organic Manure	150-200 q/ha	200-250 q/ha	P	1,5,7	1,2, 3,6	150-200 q/ha	200-250 q/ha	P	1,5,7	1,2,3, 6
Fertilizer (Nutrient kg/ha)	40:20:00	120:60:60			1,2, 3,6	50:20:5	120:60:60			1,2,3, 6
Basal (N+P+K)	20:20:00	60:60:60	P	1,5,7	1,2, 3,6	20:20:5	60:60:60	P	1,5,7	1,2,3, 6
Top Dressing (N)	20:00:00	60	N	-	-	30"00:00	60	N	-	-
Micro Nutrient kg/ha		Borax @ 20-25 kg/ha	F	1,5,7	1,2, 6	-	Borax @ 20-25 kg/ha	F	1,5,7	1,2,6
Pest Management										
Fruit, Borer	Endosulpha	Endosulphan (10.07%)	N	-	-	Endosulpha	Endosulphan (10.07%)	N	-	-
		Monocrotophos/Monocil (0.05%)					Monocrotophos/Monocil (0.05%)			
Disease Management				1,3,5, 6	1,2, 3,5, 6				1,3,5, 6	1,2,3, 5,6
Leaf curl of tomato	-	Dimethoate (0.05%) 1 monocrotophos (0.05%)	F	1,3,5, 6	1,2, 3,5, 6	-	Dimethoate (0.05%) 1 monocrotophos (0.05%)	F	1,3,5, 6	1,2,3, 5,6
Tomato mosaic		- do -	F	1,3,5, 6	1,2, 3,6		- do -	F	1,3,5, 6	1,2,3, 6

Weed Management										
Mechanical	2	2-3 weeding	N	-	-	2	2-3 weeding	N	-	-
Herbicide	-	Pendi metholin @ 1 kg ai/ha	N			-	Pendi metholin @ 1 kg ai/ha	N		
Water Management	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6
No. of Irrigation	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6
Method	Flooding	Flood/drip	N	-	-	Flooding	Flood/drip	N	-	-
Land Management										
Acidity	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6
Method of Harvesting	Picking	Picking	N	-	-	Picking	Picking	N	-	-
Marketing	un Organized	Organized	F	1,5,9	1,2,5,6	un Organized	Organized	F	1,5,9	1,2,5,6
Farm Level Processing	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6
Grading	-	Grade wise	F	1,4,5,6	1,2,6	-	Grade wise	F	1,4,5,6	1,2,6
Packing	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6
Processing	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6
Storage	-	Zero energy cold storage	F	1,4,5,6	1,2,6	-	Zero energy cold storage	F	1,4,5,6	1,2,6
Average Yield	70-75 q/ha	150-200 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7	100-120 q/ha	200-250 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

***** code for farmer proposed extension**

1. On farm trials / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 24

Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Vegetable/Horticulture

Crop:
Tomato

AES - II

Resource Rich/Poor

ITEMS	FS-1					FS-2				
	Existin g practic es	Recommended	Gap in ado ptio n	Spe cifi c Rea son s for gap	Far mer Stra tegy	Existin g practic es	Recommended	Gap in adopt ion	Spec ific Reas ons for gap	Far mer Stra tegy
Sowing										
Time	July	July, August	N	-	-	Oct. to Nov.	Oct. to Nov.	N	-	-
Method	Transpl anting	Transplanting 60x45 cm	N	-	-	Transpl anting	Transplanting 60x45 cm	N	-	-
Variety	Pusa Ruby, Suraks ha, Hybrid	Pusa Ruby, Pusa Swarna Navin, Swarna Lalima, Abha, hybrid	N	-	-	Pusa Ruby, Suraksh a, Hybrid	Pusa Ruby, Swarna Navin, Swarna Lalima, Abha, hybrid, Swarna Baibhaw	N	-	-
Seed Rate	800 gram/h a	500-600 gram/ha	P	1,7, 8	1,2	800 gram/ha	500-600 gram/ha	P	1,7,8	1,2
Seed Treatment	-	Bavistin @ 2 g/ha	P	1,3, 5	1,2, 4,6	-	Bavistin @ 2 g/ha	P	1,3,5	1,2,4 ,6
Organic Manure	150- 200 q/ha	200-250 q/ha	P	1,5, 7	1,2, 3,6	150- 200 q/ha	200-250 q/ha	P	1,5,7	1,2,3 ,6
Fertilizer (Nutrient kg/ha)	40:20:0 0	120:60:60			1,2, 3,6	50:20:5	120:60:60			1,2,3 ,6
Basal (N+P+K)	20:20:0 0	60:60:60	P	1,5, 7	1,2, 3,6	20:20:5	60:60:60	P	1,5,7	1,2,3 ,6
Top Dressing (N)	20:00:0 0	60	N	-	-	30"00:0 0	60	N	-	-
Micro Nutrient kg/ha		Borax @ 20-25 kg/ha	F	1,5, 7	1,2, 6	-	Borax @ 20-25 kg/ha	F	1,5,7	1,2,6
Pest Management										
Fruit, Borer	Endosu lpha	Endosulphan (10.07%)	N	-	-	Endosul pha	Endosulphan (10.07%)	N	-	-
		Monocrosopho s/Monocil (0.05%)					Monocrosophos/ Monocil (0.05%)			
Disease Management				1,3, 5,6	1,2, 3,5, 6				1,3,5 ,6	1,2,3 ,5,6
Leaf curl of tomato	-	Dimethoate (0.05%) 1 monocrolophos (0.05%)	F	1,3, 5,6	1,2, 3,5, 6	-	Dimethoate (0.05%) 1 monocrolophos (0.05%)	F	1,3,5 ,6	1,2,3 ,5,6
Tomato mosaic		- do -	F	1,3,	1,2,		- do -	F	1,3,5	1,2,3

				5,6	3,6				,6	,6
Weed Management										
Mechanical	2	2-3 weeding	N	-	-	2	2-3 weeding	N	-	-
Herbicide	-	Pendi metholin @ 1 kg ai/ha	N			-	Pendi metholin @ 1 kg ai/ha	N		
Water Management	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6
No. of Irrigation	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6
Method	Floodin g	Flood/drip	N	-	-	Floodin g	Flood/drip	N	-	-
Land Management										
Acidity	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6
Method of Harvesting	Picking	Picking	N	-	-	Picking	Picking	N	-	-
Marketing	un Organized	Organized	F	1,5,9	1,2,5,6	un Organized	Organized	F	1,5,9	1,2,5,6
Farm Level Processing	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6
Grading	-	Grade wise	F	1,4,5,6	1,2,6	-	Grade wise	F	1,4,5,6	1,2,6
Packing	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6
Processing	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6
Storage	-	Zero energy cold storage	F	1,4,5,6	1,2,6	-	Zero energy cold storage	F	1,4,5,6	1,2,6
Average Yield	70-75 q/ha	150-200 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7	100-120 q/ha	200-250 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7

(*) F=Full

P=Partial

N=Nil

** Code for specific reasons for gap in adoption

*** code for farmer proposed extension

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Chapter VI Table 25 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

Crop:- Tomato

Resource Rich & Poor

AES - I, II,

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1			
Sowing				
Time	-	-	-	-
Method	-	-	-	-
Variety	-	-	-	-
Seed Rate	√	1,7,8	1,2	1,2,9
Seed Treatment	√	1,3,5	1,2,4,6	1,2,3,5,7
Organic Manure	√	1,5,7	1,2,3,6	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha)				
Basal (N+P+K)	√	1,5,7	1,2,3,6	1,2,3,5,10
Top Dressing (N)	-	-	-	-
Micro Nutrient kg/ha	√	1,5,7	1,2,6	1,2,3,5,10
Pest Management				
Fruit, Borer		-	-	-
Disease Management				
Leaf curl of tomato	√	1,3,5,6	1,2,3,5,6	1,2,3,6,7,9
Tomato mosaic	√	1,3,5,6	1,2,3,5,6	1,2,3,6,7,9
Weed Management				
Mechanical		-	-	-
Herbicide	√	1,3,5,6	1,2,3,6	1,2,3,5,9
Water Management				
No. of Irrigation	√	1,4,5,6	1,2,4,6	1,2,3,5,9
Method	√	1,4,5,6	1,2,4,6	1,2,3,5,9
Land Management				
Acidity	√	1,5,9	1,2,6	1,2,5,6,7,
Method of Harvesting				
Marketing	-	-	-	-
Farm Level Processing	√	1,5,9	1,2,5,6	1,2,5,6,7,8
Grading	√	1,4,5,6	1,2,5,6	1,2,3,4,6
Packing	√	1,4,5,6	1,2,6	1,2,3,4,6
Processing	√	1,4,5,6	1,2,6	1,2,3,4,6
Storage	√	1,4,5,6	1,2,6	1,2,3,4,6
Average Yield	√	1,4,5,6	1,2,6	1, 2, 3, 5

If the gap is present in that farming situation then (√) and no gap (-)

(*) F=Full P=Partial	N=Nil
Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers
1. Lack of awareness/knowledge 2. Non availability of required quantity of quality seed 3. Plant protection is not economical under rainfed conditions 4. Non-availability of labour 5. Lack of resource 6. Non-profitability and Non availability 7. Risk of crop failure 8. Lack of assured irrigation 9. Lack of conviction	1. On farm trails / Demonstration 2. Training and exposure visits 3. Use of locally available materials for nutrient management & plant protection 4. Improved farm implements 5. Farmers scientist interaction 6. Link to financial institutions 7. Improved variety of crops
	Strategies proposed to overcome the gap
	1. Training and exposure visit 2. Demonstrations/on farm trails 3. Linkage with financial institution/crop insurance 4. Providing market opportunities 5. Gearing quality input supply in rural areas 6. Use of locally available materials for nutrient management & plant protection 7. Control of pests and diseases in crops 8. Greater use of vermicompost and other organics to build up soil fertility 9. Farmers scientist interaction 10. More emphasis on judicious use of soil and water

Chapter VI Table 26 : CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT

Crop :- Tomato

Production Practices (items)	AES-1		AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F		N/P/F	
Sowing				
Time	N	-	N	-
Method	N	-	N	-
Variety	N	-	N	-
Seed Rate	P	1,2,9	P	1,2,9
Seed Treatment	P	1,2,3,5,7	P	1,2,3,5,7
Organic Manure		1,2,3,5,6,8		1,2,3,5,6,8
Fertilizer (Nutrient kg/ha				
Basal (N+P+K)	F	1,2,3,5,10	F	1,2,3,5,10
Top Dressing (N)	N	-	N	-
Micro Nutrient kg/ha	P	1,2,3,5,10	P	1,2,3,5,10
Pest Management				
Fruit, Borer	N	-	N	-
Disease Management				
Leaf curl of tomato	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Tomato mosaic	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Weed Management				
Mechanical	N		N	
Herbicide	P	1,2,3,5,9	P	1,2,3,5,9
Water Management				
No. of Irrigation	P	1,2,3,5,9	P	1,2,3,5,9
Method	N	-	N	-
Land Management				
Acidity	F	1,2,5,6,7,	F	1,2,5,6,7,
Method of Harvesting				
Marketing	F	1,2,5,6,7,8	F	1,2,5,6,7,8
Farm Level Processing	F	1,2,3,4,6	F	1,2,3,4,6
Grading	N	-	N	-
Packing	F	1,2,3,4,6	F	1,2,3,4,6
Processing	F	1,2,3,4,6	F	1,2,3,4,6
Storage	P	1, 2, 3, 5	P	1, 2, 3, 5
Average Yield	P	1, 2, 3, 5	P	1, 2, 3, 5

***** Strategies proposed to overcome the gap :**

1. Training and exposure visit.
2. Demonstrations/on farm trails
3. Linkage with financial institution/crop insurance.
4. Providing market opportunities
5. Gearing quality input supply in rural areas,,
6. Use of locally available materials for nutrient management & plant protection.
7. Control of pests and diseases in crops.
8. Greater use of vermicompost and other organics to build up soil fertility
9. Farmers scientist interaction.
10. More emphasis on judicious use of soil and water.
11. Popularisation of lime application

Chapter VI Table 27
Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Vegetable/Horticulture

Crop: Brinjal

AES - I

Resource Rich/Poor

ITEMS	FS-1					FS-2				
	Existin g practice s	Recommen ded	Gap in adop tion	Specifi c Reason s for gap	Farme r Strate gy	Existin g practice s	Recommen ded	Gap in adopti on	Specifi c Reason s for gap	Farme r Strate gy
Sowing										
Time	July	July, August	N	-	-	Oct. to Nov.	Oct. to Nov.	N	-	-
Method	Transpla nting	Transplantin g 60x45 cm	N	-	-	Transpla nting	Transplantin g 60x45 cm	N	-	-
Variety				-	-				-	-
Seed Rate	800 gram/ha	500-600 gram/ha	P	1,7,8	1,2	800 gram/ha	500-600 gram/ha	P	1,7,8	1,2
Seed Treatment	-	Bavistin @ 2 g/ha	P	1,3,5	1,2,4, 6	-	Bavistin @ 2 g/ha	P	1,3,5	1,2,4, 6
Organic Manure	150-200 q/ha	200-250 q/ha	P	1,5,7	1,2,3, 6	150-200 q/ha	200-250 q/ha	P	1,5,7	1,2,3, 6
Fertilizer (Nutrient kg/ha)	40:20:0 0	120:60:60			1,2,3, 6	50:20:5	120:60:60			1,2,3, 6
Basal (N+P+K)	20:20:0 0	60:60:60	P	1,5,7	1,2,3, 6	20:20:5	60:60:60	P	1,5,7	1,2,3, 6
Top Dressing (N)	20:00:0 0	60	N	-	-	30"00:0 0	60	N	-	-
Micro Nutrient kg/ha		Borax @ 20- 25 kg/ha	F	1,5,7	1,2,6	-	Borax @ 20- 25 kg/ha	F	1,5,7	1,2,6
Pest Managemen t										
Fruit, Borer	Endosul pha	Endosulphan (10.07%)	N	-	-	Endosul pha	Endosulphan (10.07%)	N	-	-
		Monocrosop hos/Monocil (0.05%)					Monocrosop hos/Monocil (0.05%)			
Disease Managemen t				1,3,5,6	1,2,3, 5,6				1,3,5,6	1,2,3, 5,6
Leaf curl of tomato	-	Dimethoate (0.05%) 1 monocroloph os (0.05%)	F	1,3,5,6	1,2,3, 5,6	-	Dimethoate (0.05%) 1 monocroloph os (0.05%)	F	1,3,5,6	1,2,3, 5,6
Tomato mosaic		- do -	F	1,3,5,6	1,2,3, 6		- do -	F	1,3,5,6	1,2,3, 6
Weed Managemen t										
Mechanical	2	2-3 weeding	N	-	-	2	2-3 weeding	N	-	-
Herbicide	-	Pendi metholin @	N			-	Pendi metholin @	N		

		1 kg ai/ha					1 kg ai/ha			
Water Management	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6
No. of Irrigation	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6
Method	Flooding	Flood/drip	N	-	-	Flooding	Flood/drip	N	-	-
Land Management										
Acidity	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6
Method of Harvesting	Picking	Picking	N	-	-	Picking	Picking	N	-	-
Marketing	un Organized	Organized	F	1,5,9	1,2,5,6	un Organized	Organized	F	1,5,9	1,2,5,6
Farm Level Processing	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6
Grading	-	Grade wise	F	1,4,5,6	1,2,6	-	Grade wise	F	1,4,5,6	1,2,6
Packing	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6
Processing	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6
Storage	-	Zero energy cold storage	F	1,4,5,6	1,2,6	-	Zero energy cold storage	F	1,4,5,6	1,2,6
Average Yield	70-75 q/ha	150-200 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7	100-120 q/ha	200-250 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7

(*) F=Full	P=Partial	N=Nil
** Code for specific reasons for gap in adoption		*** code for farmer proposed extension
1. Lack of awareness/knowledge, 2. Non availability of required quantity of quality seed, 3. Plant protection is not economical under rainfed conditions, 4. Non-availability of labour, 5. Lack of resource, 6. Non-profitability, 7. Risk of crop failure, 8. Lack of assured irrigation, 9. Lack of conviction		1. On farm trails / Demonstration, 2. Training and exposure visits, 3. Use of locally available materials for nutrient management & plant protection, 4. Improved farm implements, 5. Farmers scientist interaction, 6. Link to financial institutions, 7. Improved variety of crops

Chapter VI Table 28
Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Vegetable/Horticulture

Crop: Brinjal

AES - II

Resource Rich/Poor

ITEMS	FS-1					FS-2				
	Existin g practice s	Recommen ded	Gap in adop tion	Specifi c Reason s for gap	Farmer Strategy	Existin g practice s	Recommen ded	Gap in adopti on	Specifi c Reason s for gap	Farme r Strate gy
Sowing										
Time	July	July, August	N	-	-	Oct. to Nov.	Oct. to Nov.	N	-	-
Method	Transpla nting	Transplantin g 60x45 cm	N	-	-	Transpla nting	Transplantin g 60x45 cm	N	-	-
Variety				-	-				-	-
Seed Rate	800 gram/ha	500-600 gram/ha	P	1,7,8	1,2	800 gram/ha	500-600 gram/ha	P	1,7,8	1,2
Seed Treatment	-	Bavistin @ 2 g/ha	P	1,3,5	1,2,4,6	-	Bavistin @ 2 g/ha	P	1,3,5	1,2,4, 6
Organic Manure	150-200 q/ha	200-250 q/ha	P	1,5,7	1,2,3,6	150-200 q/ha	200-250 q/ha	P	1,5,7	1,2,3, 6
Fertilizer (Nutrient kg/ha)	40:20:0 0	120:60:60			1,2,3,6	50:20:5	120:60:60			1,2,3, 6
Basal (N+P+K)	20:20:0 0	60:60:60	P	1,5,7	1,2,3,6	20:20:5	60:60:60	P	1,5,7	1,2,3, 6
Top Dressing (N)	20:00:0 0	60	N	-	-	30"00:0 0	60	N	-	-
Micro Nutrient kg/ha		Borax @ 20- 25 kg/ha	F	1,5,7	1,2,6	-	Borax @ 20- 25 kg/ha	F	1,5,7	1,2,6
Pest Managemen t										
Fruit, Borer	Endosul pha	Endosulphan (10.07%)	N	-	-	Endosul pha	Endosulphan (10.07%)	N	-	-
		Monocrosop hos/Monocil (0.05%)					Monocrosop hos/Monocil (0.05%)			
Disease Managemen t				1,3,5,6	1,2,3,5,6				1,3,5,6	1,2,3, 5,6
Leaf curl of tomato	-	Dimethoate (0.05%) 1 monocroloph os (0.05%)	F	1,3,5,6	1,2,3,5,6	-	Dimethoate (0.05%) 1 monocroloph os (0.05%)	F	1,3,5,6	1,2,3, 5,6
Tomato mosaic		- do -	F	1,3,5,6	1,2,3,6		- do -	F	1,3,5,6	1,2,3, 6
Weed Managemen t										
Mechanical	2	2-3 weeding	N	-	-	2	2-3 weeding	N	-	-

Herbicide	-	Pendi metholin @ 1 kg ai/ha	N			-	Pendi metholin @ 1 kg ai/ha	N		
Water Management	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6	As per required	7-10 days interval	P	1,4,5,6	1,2,4,6
No. of Irrigation	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6	6-8	15-18 irrigations	P	1,4,5,6	1,2,4,6
Method	Floodin g	Flood/drip	N	-	-	Floodin g	Flood/drip	N	-	-
Land Management										
Acidity	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6	-	Lime application @ 20-25 g/ha	F	1,5,9	1,2,6
Method of Harvesting	Picking	Picking	N	-	-	Picking	Picking	N	-	-
Marketing	un Organize d	Organized	F	1,5,9	1,2,5,6	un Organize d	Organized	F	1,5,9	1,2,5,6
Farm Level Processing	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6	-	Ketup, souce, Quarry, chatni powder	F	1,4,5,6	1,2,5,6
Grading	-	Grade wise	F	1,4,5,6	1,2,6	-	Grade wise	F	1,4,5,6	1,2,6
Packing	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6	Basket	Basket (Bamboo)	N	1,4,5,6	1,2,6
Processing	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6	-	Souce, ketchup, puric, Pickle	F	1,4,5,6	1,2,6
Storage	-	Zero energy cold storage	F	1,4,5,6	1,2,6	-	Zero energy cold storage	F	1,4,5,6	1,2,6
Average Yield	70-75 q/ha	150-200 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7	100-120 q/ha	200-250 q/ha	P	1,2,3,4,5,8,9	1,2,3,5,6,7

(*) F=Full

P=Partial

N=Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness/knowledge,
2. Non availability of required quantity of quality seed,
3. Plant protection is not economical under rainfed conditions,
4. Non-availability of labour,
5. Lack of resource,
6. Non-profitability,
7. Risk of crop failure,
8. Lack of assured irrigation,
9. Lack of conviction

***** code for farmer proposed extension**

1. On farm trails / Demonstration,
2. Training and exposure visits,
3. Use of locally available materials for nutrient management & plant protection,
4. Improved farm implements,
5. Farmers scientist interaction,
6. Link to financial institutions,
7. Improved variety of crops

Chapter VI Table 29 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

Crop:- Brinjal

Resource Rich & Poor

AES - I, II,

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1			
Sowing				
Time	-	-	-	-
Method	-	-	-	-
Variety	-	-	-	-
Seed Rate	√	1,7,8	1,2	1,2,9
Seed Treatment	√	1,3,5	1,2,4,6	1,2,3,5,7
Organic Manure	√	1,5,7	1,2,3,6	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha)				
Basal (N+P+K)	√	1,5,7	1,2,3,6	1,2,3,5,10
Top Dressing (N)	-	-	-	-
Micro Nutrient kg/ha	√	1,5,7	1,2,6	1,2,3,5,10
Pest Management				
Fruit, Borer	-	-	-	-
Disease Management				
Leaf curl of tomato	√	1,3,5,6	1,2,3,5,6	1,2,3,6,7,9
Tomato mosaic	√	1,3,5,6	1,2,3,6	1,2,3,6,7,9
Weed Management				
Mechanical		-	-	-
Herbicide	√			1,2,3,5,9
Water Management		1,4,5,6	1,2,4,6	
No. of Irrigation	√	1,4,5,6	1,2,4,6	1,2,3,5,9
Method	√	-	-	1,2,3,5,9
Land Management				
Acidity	√	1,5,9	1,2,6	1,2,5,6,7,
Method of Harvesting		-	-	
Marketing	-	1,5,9	1,2,5,6	-
Farm Level Processing	√	1,4,5,6	1,2,5,6	1,2,5,6,7,8
Grading	√	1,4,5,6	1,2,6	1,2,3,4,6
Packing	√	1,4,5,6	1,2,6	1,2,3,4,6
Processing	√	1,4,5,6	1,2,6	1,2,3,4,6
Storage	√	1,4,5,6	1,2,6	1,2,3,4,6
Average Yield	√	1,2,3,4,5,8,9	1,2,3,5,6,7	1, 2, 3, 5

If the gap is present in that farming situation then (√) and no gap (-)

(*) F=Full

P=Partial

N=Nil

Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

Strategies proposed to overcome the gap

1. Training and exposure visit
2. Demonstrations/on farm trails
3. Linkage with financial institution/crop insurance
4. Providing market opportunities
5. Gearing quality input supply in rural areas
6. Use of locally available materials for nutrient management & plant protection
7. Control of pests and diseases in crops
8. Greater use of vermicompost and other organics to build up soil fertility
9. Farmers scientist interaction
10. More emphasis on judicious use of soil and water

**Chapter VI Table 30 : CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A
CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT**

Crop :- Brinjal

Production Practices (items)	AES-1		AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F		N/P/F	
Sowing				
Time	N	-	N	-
Method	N	-	N	-
Variety	N	-	N	-
Seed Rate	P	1,2,9	P	1,2,9
Seed Treatment	P	1,2,3,5,7	P	1,2,3,5,7
Organic Manure		1,2,3,5,6,8		1,2,3,5,6,8
Fertilizer (Nutrient kg/ha				
Basal (N+P+K)	F	1,2,3,5,10	F	1,2,3,5,10
Top Dressing (N)	N	-	N	-
Micro Nutrient kg/ha	P	1,2,3,5,10	P	1,2,3,5,10
Pest Management				
Fruit, Borer	N	-	N	-
Disease Management				
Leaf curl of tomato	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Tomato mosaic	F	1,2,3,6,7,9	F	1,2,3,6,7,9
Weed Management				
Mechanical	N		N	
Herbicide	P	1,2,3,5,9	P	1,2,3,5,9
Water Management				
No. of Irrigation	P	1,2,3,5,9	P	1,2,3,5,9
Method	N	-	N	-
Land Management				
Acidity	F	1,2,5,6,7,	F	1,2,5,6,7,
Method of Harvesting				
Marketing	F	1,2,5,6,7,8	F	1,2,5,6,7,8
Farm Level Processing	F	1,2,3,4,6	F	1,2,3,4,6
Grading	N	-	N	-
Packing	F	1,2,3,4,6	F	1,2,3,4,6
Processing	F	1,2,3,4,6	F	1,2,3,4,6
Storage	P	1, 2, 3, 5	P	1, 2, 3, 5
Average Yield	P	1, 2, 3, 5	P	1, 2, 3, 5

***** Strategies proposed**

to overcome the gap :

1. Training and exposure visit,
2. Demonstrations/on farm trails,
3. Linkage with financial institution/crop insurance,
4. Providing market opportunities,
5. Gearing quality input supply in rural areas,
6. Use of locally available materials for nutrient management & plant protection,
7. Control of pests and diseases in crops,
8. Greater use of vermicompost and other organics to build up soil fertility,
9. Farmers scientist interaction,
10. More emphasis on judicious use of soil and water

Chapter VI Table 31

GAP IN ADOPTION AND PROPOSED EXTENSION STRATEGY FOR IMPROVING THE PRODUCTIVITY / INCOME FROM AGRICULTURAL CROPS

Name of agro-ecology situation: AES – I District: East Singhbhum

Crop: Mango

Farming situation: I

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: planting - Time - Method	June-July	June-July	N	-	-
2.	Varieties	Amrapali, Dashehari, Langra and Gulab Khas	Amrapali, Dashehari, Langra and Gulab Khas	P	1	1,3
3.	Seed rate per(ha)	100 seedling per ha	100 seedlings / ha	P	-	-
4.	Seed treatment	25 kg/ha/	-	-		
5.	Organic manure (tons / ha)	5 tonnes/ha	3	F	2	5
6.	Fertilizer / nutrient (kg/ha) year - Basal (N+P+k) - Top dress (M+)	-	-	-	-	-
.	Total – 5 th crop	365:90:340 gms /per plant		F	1,4	1
7.	Method of fertilizer use; - Basal - Top dress	Basal	Basal	N	-	-
8.	Micro nutrient (specify): -Dos (kg/ha) -Method of application	-	Micronutrient 4-5ml/lit of water	N	-	5

9.	Pest management Tukra Leaf roller pest	Mango hopper 4 gm carbonyl Aphids 4 gm carbonyl	Spraying insecsicide	Monacrotph os or Pyrethroids	1.5 ml/lt 1.5 ml/lt	-
10.	Disease management - Powdery mildew - Leaf spot disease	Leaf spot powdey mildew 1 ml phosphomidon + 3 gm water soluble sulphur	Feengicide – bavistin	N	-	-
11.	Post harvest management	-	-	-	-	-
12.	Weed management - Mechanical - Herbicide	Mechanical Mecrarical intercultivation	-	N	-	-
13.	Water management - Number of irrigation - Method of irrigation	2 times	-	F	3	1,6
14.	Land management: - Salinity/acidity - Water logging	-	Nil	-	-	-
15.	Method of harvesting	Plucking	Plucking	N	-	-
16.	Any other	-	-	-	-	-
	Average yield (Q/ha) - Grain - Fodder	1-5 tonns / ha	2-4 tonns / ha	P	1,4	3,5,6

+RPF = Resource Poor Farmer

+RRF: Resource Rich Farmer

@ Separately for each farming situation under each existing Farming systems

(*) F=Full

P = Partial

N = Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness
2. Non availability of organic manure
3. Mango crop is raised under Rainfed condition thus leading to lack of moisture
4. Lack of interest regarding use of recommended dose of fertilizers
5. Lack of adoption of intercultivation practices

***** code for farmer proposed extension**

1. Training programmes required
2. Rejuvenation of existing orchards
3. Grafting of improved, dwarf and high yielding varieties
4. Training regarding soil and water management
5. Training regarding improved methods of compost preparation
6. Two protective irrigations will lead to increase in the size of fruit, thus leading to increase in the yield.

Chapter VI Table 32 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

**Crop:- Mango
AES - I**

Resource Rich & Poor

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1			
Sowing				
Time	-	-	-	-
Method	-	-	-	-
Variety	-	-	-	-
Seed Rate	√	1,7,8	1,2	1,2,9
Seed Treatment	√	1,3,5	1,2,4,6	1,2,3,5,7
Organic Manure	√	1,5,7	1,2,3,6	1,2,3,5,6,8
Fertilizer (Nutrient kg/ha				
Basal (N+P+K)	√	1,5,7	1,2,3,6	1,2,3,5,10
Top Dressing (N)	-	-	-	-
Micro Nutrient kg/ha	√	1,5,7	1,2,6	1,2,3,5,10
Pest Management				
Fruit, Borer	-	-	-	-
Disease Management				
Leaf curl of tomato	√	1,3,5,6	1,2,3,5,6	1,2,3,6,7,9
Tomato mosaic	√	1,3,5,6	1,2,3,6	1,2,3,6,7,9
Weed Management				
Mechanical		-	-	-
Herbicide	√			1,2,3,5,9
Water Management		1,4,5,6	1,2,4,6	
No. of Irrigation	√	1,4,5,6	1,2,4,6	1,2,3,5,9
Method	√	-	-	1,2,3,5,9
Land Management				
Acidity	√	1,5,9	1,2,6	1,2,5,6,7,
Method of Harvesting		-	-	
Marketing	-	1,5,9	1,2,5,6	-

Farm Level Processing	√	1,4,5,6	1,2,5,6	1,2,5,6,7,8
Grading	√	1,4,5,6	1,2,6	1,2,3,4,6
Packing	√	1,4,5,6	1,2,6	1,2,3,4,6
Processing	√	1,4,5,6	1,2,6	1,2,3,4,6
Storage	√	1,4,5,6	1,2,6	1,2,3,4,6
Average Yield	√	1,2,3,4,5,8,9	1,2,3,5,6,7	1, 2, 3, 5

If the gap is present in that farming situation then (√) and no gap (-)

(*) F=Full P=Partial
Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness/knowledge
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Non-availability of labour
5. Lack of resource
6. Non-profitability and Non availability
7. Risk of crop failure
8. Lack of assured irrigation
9. Lack of conviction

Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training and exposure visits
3. Use of locally available materials for nutrient management & plant protection
4. Improved farm implements
5. Farmers scientist interaction
6. Link to financial institutions
7. Improved variety of crops

N=Nil
Strategies proposed to overcome the gap

1. Training and exposure visit
2. Demonstrations/on farm trails
3. Linkage with financial institution/crop insurance
4. Providing market opportunities
5. Gearing quality input supply in rural areas
6. Use of locally available materials for nutrient management & plant protection
7. Control of pests and diseases in crops
8. Greater use of vermicompost and other organics to build up soil fertility
9. Farmers scientist interaction
10. More emphasis on judicious use of soil and water

**Chapter VI Table 33 : CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND
PROPOSED STRATEGIES FOR THE DISTRICT**

Crop :- Mango

Production Practices (items)	AES-1	
	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F	
Sowing		
Time	N	-
Method	N	-
Variety	N	-
Seed Rate	P	1,2,9
Seed Treatment	P	1,2,3,5,7
Organic Manure		1,2,3,5,6,8
Fertilizer (Nutrient kg/ha		
Basal (N+P+K)	F	1,2,3,5,10
Top Dressing (N)	N	-
Micro Nutrient kg/ha	P	1,2,3,5,10
Pest Management		
Fruit, Borer	N	-
Disease Management		
Leaf curl of tomato	F	1,2,3,6,7,9
Tomato mosaic	F	1,2,3,6,7,9
Weed Management		
Mechanical	N	
Herbicide	P	1,2,3,5,9
Water Management		

No. of Irrigation	P	1,2,3,5,9
Method	N	-
Land Management		
Acidity	F	1,2,5,6,7,
Method of Harvesting		
Marketing	F	1,2,5,6,7,8
Farm Level Processing	F	1,2,3,4,6
Grading	N	-
Packing	F	1,2,3,4,6
Processing	F	1,2,3,4,6
Storage	P	1, 2, 3, 5
Average Yield	P	1, 2, 3, 5

***** Strategies proposed
to overcome the gap :**

1. Training and exposure visit,
2. Demonstrations/on farm trails,
3. Linkage with financial institution/crop insurance,
4. Providing market opportunities,
5. Gearing quality input supply in rural areas,
6. Use of locally available materials for nutrient management & plant protection,
7. Control of pests and diseases in crops,
8. Greater use of vermicompost and other organics to build up soil fertility,
9. Farmers scientist interaction,
10. More emphasis on judicious use of soil and water

Chapter VI Table 34 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Livestock

Animal: Goat

Farming Situation: Landless-Rainfed

ITEM	AES – II (FS – I)				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Resource Rich Farmer Strategy
Breed Up gradation	Local	Black Bengal, Improved	P	1,2,3	1,2,3
Artificial Insemination		A.I. Centre	F	1,2,3	1,2,3
Breed					
Location	Local	Black Bengal, Improved jamanapuri	P	1,2,3	1,2,4
Natural Insemination		Buck Centre	F	1,2,3	1,2,4
Breed					1,2
Location	3 kg	4-6 kg	P	1,4	1,2
Feed Management (per animal)	-	0.5	F	1,4	1,2
Green Fodder (kg/day)	30-40	150-250 gm	P	1,2,4	1,2
Dry Fodder (kg/day)	-	10-15gm /day	F	1,2,4	1,2
Concentrates (/day)	-	10-15 g/day	F	1,2,4	1,2
Minerals (mix)				1,2,4	1,2
Vitamins (mix)	-	Twice	F	1,2,5	1,2
Health Care (per annum)	-	Once	F	1,2,5	1,2
HSBQ (No. of Vaccinations)	-	On need	F	1,2,5	1,2
FMD	-	On need	F	1,2,5	1,2
ENT	-	On need	F	1,2,5	1,2
Mastitis	1	Quarterly once	F	125	1,2
Thilarisis					1,2
Deworming	Nil	Nil	N		1,2,3
General Management					
Washing (times/day)					
Cleaning (times/day)	1	Once	F	1,2,6	1,2,3
Housing (Pucca/Kaccha)	katcha	Pucca/ katcha	p	1,2,6	1,2,3
Drinking Water	4	5 liter	P	1,2,6	1,2,3
Average milk Yield/ days	-	3-Feb	F	1,2,3,4,5,6	1,2,3,4
Exotic/Graded		15-20 kg/Animal	P		
Deshi Meat	8	10-15 kg/Animal	P		

(*) F=Full

P = Partial

N = Nil

**** Code for specific reasons for gap in adoption**

***** code for farmer proposed extension**

1. Lack of awareness about breeding plan
2. Lack of Finance
3. Non availability of improve Breed
4. Lack of availability of fodder concentrates minerals & vitamins
5. Lack of disease awareness
6. Lack of housing and clearing awareness

1. Awareness program
2. Training & Demonstration
3. Exposure visit
4. Linkage with financial institution & market.

Chapter VI Table 35 : Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Livestock

Resource Poor

Animal: Goat

Farming Situation: Landless-Rainfed

ITEMS	AES - II FS-1				
	Existing practice	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Breed Up gradation					
Artificial Insemination					
Breed	Local	Black Bengal, Improved	P	1,2,3	1,2,3
Location		A.I. Centre	F	1,2,3	1,2,3
Natural Insemination					
Breed	Local	Black Bengal, Improved jamanapuri	P	1,2,3	1,2,4
Location		Buck Centre	F	1,2,3	1,2,4
Feed Management (per animal)					1,2
Green Fodder (kg/day)	3 kg	4-6 kg	P	1,4	1,2
Dry Fodder (kg/day)	-	0.5	F	1,4	1,2
Concentrates (/day)	30-40	150-250 gm	P	1,2,4	1,2
Minerals (mix)	-	10-15gm /day	F	1,2,4	1,2
Vitamins (mix)	-	10-15 g/day	F	1,2,4	1,2
Health Care (per annum)				1,2,4	1,2
HSBQ (No. of Vaccinations)	-	Twice	F	1,2,5	1,2
FMD	-	Once	F	1,2,5	1,2
ENT	-	On need	F	1,2,5	1,2
Mastitis	-	On need	F	1,2,5	1,2
Thilarisis	-	On need	F	1,2,5	1,2
Deworming	1	Quarterly once	F	125	1,2
General Management					1,2
Washing (times/day)	Nil	Nil	N		1,2,3
Cleaning (times/day)	1	Once	F	1,2,6	1,2,3
Housing (Pucca/Kaccha)	kaccha	Pucca/ kaccha	p	1,2,6	1,2,3
Drinking Water	4	5 liter	P	1,2,6	1,2,3

Average milk Yield/ days	0.25-0.50 kg/day	2-3 kg/day	F	1,2,3,4,5,6	1,2,3,4
Exotic/Graded		15-20 kg/Animal	P	1,2,3,4,5,6	1,2,3,4
Deshi Meat	7-8 kg/animal	10-15 kg/animal	P	1,2,3,4,5,6	1,2,3,4

(*) F=Full

P = Partial

N = Nil

**** Code for specific reasons for gap in adoption**

***** code for farmer proposed extension**

1. Lack of awareness about breeding plan
2. Lack of Finance
3. Non availability of improve Breed
4. Lack of availability of fodder concentrates minerals & vitamins
5. Lack of disease awareness
6. Lack of housing and clearing awareness

1. Awareness program
2. Training & Demonstration
3. Exposure visit
4. Linkage with financial institution & market.

Chapter VI Table 36 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

**Crop:- Goat
AES - II**

Resource Rich & Poor

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1			
Breed Up gradation	-	-	-	-
Artificial Insemination	-	-	-	-
Breed	√	1,2,3	1,2,3	1, 2, 3, 6
Location	√	1,2,3	1,2,3	1, 2, 3, 6
Natural Insemination	-	-	-	1, 2, 3, 6
Breed	√	1,2,3	1,2,4	1, 2, 3, 6
Location	√	1,2,3	1,2,4	1, 2, 3, 6
Feed Management (per animal)				
Green Fodder (kg/day)	√	1,4	1,2	1, 2, 3, 5
Dry Fodder (kg/day)	√	1,4	1,2	1, 2, 3, 5
Concentrates (/day)	√	1,2,4	1,2	1, 2, 3, 5
Minerals (mix)	√	1,2,4	1,2	1, 2, 3, 5
Vitamins (mix)	√	1,2,4	1,2	1, 2, 3, 5
Health Care (per annum)		1,2,4	1,2	1, 2, 6, 7 & 8
HSBQ (No. of Vaccinations)	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
FMD	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
ENT	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
Mastitis	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
Thilarisis	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
Deworming	√	125	1,2	1, 2, 3, 5, 7 & 8

General Management				
Washing (times/day)	-	-	-	-
Cleaning (times/day)	√	1,2,6	1,2,3	1, 2
Housing (Pucca/Kaccha)	√	1,2,6	1,2,3	1, 2, 3
Drinking Water	√	1,2,6	1,2,3	1, 2, 5
Average milk Yield/ days				
Exotic/Graded	√	1,2,3,4,5,6	1,2,3,4	1,2,3,4,5,6, 7, 8
Deshi Meat	√	1,2,3,4,5,6	1,2,3,4	1,2,3,4, 6, 7, 8

If the gap is present in that farming situation then (√) and no gap (-)

**** Code for specific reasons for gap in adoption**

1. Lack of awareness about breeding plan
2. Lack of Finance
3. Non availability of improve Breed
4. Lack of availability of fodder concentrates minerals & vitamins
5. Lack of disease awareness
6. Lack of housing and clearing awareness

***** code for farmer proposed extension**

1. Awareness program
2. Training & Demonstration
3. Exposure visit
4. Linkage with financial institution & market.

***** Strategies proposed to overcome the gap**

1. Training and exposure visit
2. Demonstrations/on farm trails
3. Linkage with financial institution/crop insurance
4. Providing market opportunities
5. Gearing quality input supply in rural areas
6. Breed improvement through AI/Improved bull
7. Preventive vaccination
8. Control of disease and pest

Chapter VI Table 37 : CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT

Crop :- Goat

Production Practices (items)	AES-2	
	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F	
Breed Up gradation		-
Artificial Insemination		-
Breed	P	1, 2, 3, 6
Location	F	1, 2, 3, 6
Natural Insemination		
Breed	P	1, 2, 3, 6
Location	F	1, 2, 3, 6
Feed Management (per animal)		
Green Fodder (kg/day)	P	1, 2, 3, 5
Dry Fodder (kg/day)	F	1, 2, 3, 5
Concentrates (/day)	P	1, 2, 3, 5
Minerals (mix)	F	1, 2, 3, 5
Vitamins (mix)	F	1, 2, 3, 5
Health Care (per annum)		
HSBQ (No. of Vaccinations)	F	1, 2, 3, 5, 7 & 8
FMD	F	1, 2, 3, 5, 7 & 8
ENT	F	1, 2, 3, 5, 7 & 8

Mastitis	F	1, 2, 3, 5, 7 & 8
Thilarisis	F	1, 2, 3, 5, 7 & 8
Deworming	F	1, 2, 3, 5, 7 & 8
General Management		
Washing (times/day)	N	-
Cleaning (times/day)	F	1, 2
Housing (Pucca/Kaccha)	P	1, 2, 3
Drinking Water	P	1, 2, 5
Average milk Yield/ days	F	1, 2, 5
Exotic/Graded	P	1,2,3,4,5,6, 7, 8
Deshi Meat	P	1,2,3,4, 6, 7, 8

***** Strategies proposed to overcome the gap :**

1. Training and exposure visit,
2. Demonstrations/on farm trails,
3. Linkage with financial institution/crop insurance,
4. Providing market opportunities,
5. Gearing quality input supply in rural areas,
6. Breed improvement through AI/Improved bull,
7. Preventive vaccination,
8. Control of disease and pest

Chapter VI Table 38 : Gap in adoption and Farmer Strategies for improving the production and productivity of the animal

Livestock					
Animal: Cow	Farming Situation: Landless-Rain fed			Resource Rich	
ITEMS	AES – 1 (FS – 1)				
	Existing practice	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Breed Up gradation					
Artificial Insemination					
Breed	Local	Black Bengal, Improved	P	1,2,3	1,2,3
Location		A.I. Centre	F	1,2,3	1,2,3
Natural Insemination					
Breed	Local	Black Bengal, Improved jamanapuri	P	1,2,3	1,2,4
Location		Buck Centre	F	1,2,3	1,2,4
Feed Management (per animal)					1,2
Green Fodder (kg/day)	3 kg	4-6 kg	P	1,4	1,2
Dry Fodder (kg/day)	-	0.5	F	1,4	1,2
Concentrates (/day)	30-40	150-250 gm	P	1,2,4	1,2
Minerals (mix)	-	10-15gm /day	F	1,2,4	1,2
Vitamins (mix)	-	10-15 g/day	F	1,2,4	1,2
Health Care (per annum)				1,2,4	1,2
HSBQ (No. of Vaccinations)	-	Twice	F	1,2,5	1,2
FMD	-	Once	F	1,2,5	1,2
ENT	-	On need	F	1,2,5	1,2
Mastitis	-	On need	F	1,2,5	1,2
Thilarisis	-	On need	F	1,2,5	1,2
Deworming	1	Quarterly once	F	125	1,2
General Management					1,2
Washing (times/day)	Nil	Nil	N		1,2,3
Cleaning (times/day)	1	Once	F	1,2,6	1,2,3
Housing (Pucca/Kaccha)	kaccha	Pucca/ kaccha	p	1,2,6	1,2,3
Drinking Water	4	5 liter	P	1,2,6	1,2,3
Average milk Yield/ days	0.25-0.50 kg/day	2-3 kg/day	F	1,2,3,4,5,6	1,2,3,4
Exotic/Graded		15-20 kg/Animal	P	1,2,3,4,5,6	1,2,3,4
Deshi Meat	7-8 kg/animal	10-15 kg/animal	P	1,2,3,4,5,6	1,2,3,4

(*) F=Full

P = Partial

N = Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness about breeding plan
2. Lack of Finance
3. Non availability of improve Breed
4. Lack of availability of fodder concentrates minerals & vitamins
5. Lack of disease awareness
6. Lack of housing and clearing awareness

***** code for farmer proposed extension**

1. Awareness program
2. Training & Demonstration
3. Exposure visit
4. Linkage with financial institution & market.

Chapter VI Table 39 : Gap in adoption and Proposed strategies for improving the production and productivity of the Crop/ Commodity in different AES

**Crop:- Cow
AES - I**

Resource Rich

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1			
Breed Up gradation	-	-	-	-
Artificial Insemination	-	-	-	-
Breed	√	1,2,3	1,2,3	1, 2, 3, 6
Location	√	1,2,3	1,2,3	1, 2, 3, 6
Natural Insemination	-	-	-	1, 2, 3, 6
Breed	√	1,2,3	1,2,4	1, 2, 3, 6
Location	√	1,2,3	1,2,4	1, 2, 3, 6
Feed Management (per animal)				
Green Fodder (kg/day)	√	1,4	1,2	1, 2, 3, 5
Dry Fodder (kg/day)	√	1,4	1,2	1, 2, 3, 5
Concentrates (/day)	√	1,2,4	1,2	1, 2, 3, 5
Minerals (mix)	√	1,2,4	1,2	1, 2, 3, 5
Vitamins (mix)	√	1,2,4	1,2	1, 2, 3, 5
Health Care (per annum)		1,2,4	1,2	1, 2, 6, 7 & 8
HSBQ (No. of Vaccinations)	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
FMD	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
ENT	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
Mastitis	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
Thilarisis	√	1,2,5	1,2	1, 2, 3, 5, 7 & 8
Deworming	√	125	1,2	1, 2, 3, 5, 7 & 8
General Management				
Washing (times/day)	-	-	-	-
Cleaning (times/day)	√	1,2,6	1,2,3	1, 2
Housing (Pucca/Kaccha)	√	1,2,6	1,2,3	1, 2, 3
Drinking Water	√	1,2,6	1,2,3	1, 2, 5
Average milk Yield/ days				
Exotic/Graded	√	1,2,3,4,5,6	1,2,3,4	1,2,3,4,5,6, 7, 8
Deshi Meat	√	1,2,3,4,5,6	1,2,3,4	1,2,3,4, 6, 7, 8

If the gap is present in that farming situation then (✓) and no gap (-)

** Code for specific reasons for gap in adoption	*** code for farmer proposed extension	*** Strategies proposed to overcome the gap
1. Lack of awareness about breeding plan	1. Awareness program	1. Training and exposure visit
2. Lack of Finance	2. Training & Demonstration	2. Demonstrations/on farm trails
3. Non availability of improve Breed	3. Exposure visit	3. Linkage with financial institution/crop insurance
4. Lack of availability of fodder concentrates minerals & vitamins	4. Linkage with financial institution & market.	4. Providing market opportunities
5. Lack of disease awareness		5. Gearing quality input supply in rural areas
6. Lack of housing and clearing awareness		6. Breed improvement through AI/Improved bull
		7. Preventive vaccination
		8. Control of disease and pest

**Chapter VI Table 40 : CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/
COMMODITY AND PROPOSED STRATEGIES FOR THE DISTRICT**

Crop: - Cow

Production Practices (items)	AES-I	
	Gap in adoption	Proposed Strategy to overcome the gap
	N/P/F	
Breed Up gradation		-
Artificial Insemination		-
Breed	P	1, 2, 3, 6
Location	F	1, 2, 3, 6
Natural Insemination		
Breed	P	1, 2, 3, 6
Location	F	1, 2, 3, 6
Feed Management (per animal)		
Green Fodder (kg/day)	P	1, 2, 3, 5
Dry Fodder (kg/day)	F	1, 2, 3, 5
Concentrates (/day)	P	1, 2, 3, 5
Minerals (mix)	F	1, 2, 3, 5
Vitamins (mix)	F	1, 2, 3, 5
Health Care (per annum)		
HSBQ (No. of Vaccinations)	F	1, 2, 3, 5, 7 & 8
FMD	F	1, 2, 3, 5, 7 & 8
ENT	F	1, 2, 3, 5, 7 & 8
Mastitis	F	1, 2, 3, 5, 7 & 8
Thilarisis	F	1, 2, 3, 5, 7 & 8
Deworming	F	1, 2, 3, 5, 7 & 8
General Management		
Washing (times/day)	N	-
Cleaning (times/day)	F	1, 2
Housing (Pucca/Kaccha)	P	1, 2, 3
Drinking Water	P	1, 2, 5
Average milk Yield/ days	F	1, 2, 5
Exotic/Graded	P	1,2,3,4,5,6, 7, 8
Deshi Meat	P	1,2,3,4, 6, 7, 8

***** Strategies proposed
to overcome the gap :**

1. Training and exposure visit, 2. Demonstrations/on farm trails, 3. Linkage with financial institution/crop insurance, 4. Providing market opportunities, 5. Gearing quality input supply in rural areas, 6. Breed improvement through AI/Improved bull, 7. Preventive vaccination, 8. Control of disease and pest

Chapter VI Table 41

Gap in adoption and Farmer Strategies for improving the production and productivity of the crop

Livestock

Resource Rich/Poor

Animal: Backyard

Farming Situation: Rain fed Local Backyard

Poultry

Poultry

ITEMS	AES - I FS-1					AES - II FS-I				
	Exist ing pract ices	Recom mended	Gap in adopt ion	Specific Reasons for gap	Farmer Strateg y	Exist ing pract ices	Recomm ended	Gap in adopt ion	Specific Reasons for gap	Farm er Strate gy
Breed Up gradation										
Breed	Desh i	Red Divyayan	F	1,2,3	1,2,3	Desh i	Red Divyayan	F	1,2,3	1,2,3
Breed			F	1,2,3	1,2,3			F	1,2,3	1,2,3
Location					1,2,3					1,2,3
Feed Management (per bird)	Free grazi ng		F	2	1,2,3	Free grazi ng		F	2	1,2,3
Green Fodder (kg/day)		2-3 kg	F	2	1,2,3		2-3 kg	F	2	1,2,3
Dry Fodder (kg/day)			P	2	1,2,3			P	2	1,2,3
Concentrates (g/day)		80-100 gm	P	2	1,2,3		80-100 gm	P	2	1,2,3
Minerals (mix)		1 gm/bird/day	F	2,4	1,2,3		1 gm/bird/day	F	2,4	1,2,3
Vitamins (mix)		0.1 ml/bird/day	F	2,4	1,2,3		0.1 ml/bird/day	F	2,4	1,2,3
Health Care (per annum)				2,4	1,2				2,4	1,2
Marks disease		Once in lifetime	F	2,4	1,2		Once in lifetime	F	2,4	1,2
RD (No. of vaccination)		Twice	F	2,4	1,2		Twice	F	2,4	1,2
Fowl Pox		Once	F	2,4	1,2		Once	F	2,4	1,2
Mastitis		On need	F	2,4	1,2		On need	F	2,4	1,2
Thilarisis			F	2,4	1,2			F	2,4	1,2

Deworming		Quarterly once	F	2,4	1,2		Quarterly once	F	2,4	1,2
General Management										
Washing (times/day)		Once	F	2,5	1,2,3		Once	F	2,5	1,2,3
Cleaning (times/day)		Once	F	2,5	1,2,3		Once	F	2,5	1,2,3
Housing (Pucca/Kaccha)	Kaccha	Pucca	N		1,2,3	Kaccha	Pucca	N		1,2,3
Drinking Water	Adequate	Adequate	P	2,5	1,2,3	Adequate	Adequate	P	2,5	1,2,3
Average Yield (egg)	70-75 eggs/year	150-200 eggs/year			1,2,3,4	70-75 eggs/year	150-200 eggs/year			1,2,3,4
Chicken Meat	1 kg/bird	2-2.5 kg / bird	P	2,5	1,2,3,4	1 kg/bird	2-2.5 kg / bird	P	2,5	1,2,3,4
Broiler Meat		1.2 – 2.0 kg/bird	N		1,2,3,4		1.2 – 2.0 kg/bird	N		1,2,3,4

(*) F=Full

P = Partial

N = Nil

**** Code for specific reasons for gap in adoption**

***** code for farmer proposed extension**

1. Lack of awareness about breeding plan
2. Lack of knowledge
3. Non availability of improve Breed
4. Lack of disease awareness
5. Lack of housing and clearing awareness

1. Awareness program
2. Training & Demonstration
3. Exposure visit
4. Linkage with financial institution & market.

Chapter VI Table 42
Gap in adoption and Proposed strategies for improving the production and productivity of the
Crop/ Commodity in different AES

Crop:- Backyard Poultry

Resource Rich & Poor

AES - I,&II

Production Practices (items)	Gap in adoption in the different situations in which the crop/ commodity is grown	Reasons for gap in adoption as perceived by the farmers	Strategies as perceived by the farmers	Strategies proposed to overcome the gap
	Fs-1			
Breed Up gradation				
Artificial Insemination	√	1,2,3	1,2,3	1, 2, 3
Breed	√	1,2,3	1,2,3	1, 2, 3
Location	√	1,2,3	1,2,3	1, 2, 3
Natural Insemination	-	-	-	-
Breed	√	1,2,3	1,2,3	1, 2, 3
Location	-	-	-	-
Feed Management (per bird)				
Green Fodder (kg/day)	√	2	1,2,3	1, 2, 3 & 5
Dry Fodder (kg/day)	√	2	1,2,3	1, 2, 3 & 5
Concentrates (g/day)	√	2	1,2,3	1, 2, 3 & 5
Minerals (mix)	√	2,4	1,2,3	1, 2, 3 & 5
Vitamins (mix)	√	2,4	1,2,3	1, 2, 3 & 5
Health Care (per annum)		2,4	1,2	1, 2, 3, 7 & 8
Marks disease	√	2,4	1,2	1, 2, 3, 7 & 8
RD (No. of vaccination)	√	2,4	1,2	1, 2, 3, 7 & 8
Fowl Pox	√	2,4	1,2	1, 2, 3, 7 & 8
Mastitis	√	2,4	1,2	1, 2, 3, 7 & 8
Thilarisis	√	2,4	1,2	1, 2, 3, 7 & 8
Deworming	√	2,4	1,2	1, 2, 3, 7 & 8
General Management				
Washing (times/day)	√	2,5	1,2,3	1, 2, 3, 5 & 5
Cleaning (times/day)	√	2,5	1,2,3	1, 2, 3, 5 & 5
Housing (Pucca/Kaccha)	-		-	-
Drinking Water	√	2,5	1,2,3	1, 2, 3 & 4
Average Yield (egg)				
Chicken Meat	√	2,5	1,2,3,4	1, 2, 3, 4, 6, 7 & 8
Broiler Meat	√		1,2,3,4	1, 2, 3, 4, 6, 7 & 8

If the gap is present in that farming situation then (√) and no gap (-)

**** Code for specific reasons for gap in adoption**

1. Lack of awareness
2. Lack of availability of fooder
3. Cost Factor
4. Lack of technical persons.
5. Unaware of management practices

***** code for farmer proposed extension**

1. Awareness programme through training & field visit.
2. Health Camp
3. Exposure Visit
4. Credit facilities
5. Management practices
6. Fooder availability

***** Strategies proposed to overcome the gap**

1. Training and exposure visit
2. Demonstrations/on farm trails
3. Linkage with financial institution/crop insurance
4. Providing market opportunities
5. Gearing quality input supply in rural areas
6. Breed improvement through AI/Improved bull
7. Preventive vaccination
8. Control of disease and pest

Chapter VI Table 43

**CONSOLIDATED GAPS IN PRODUCTION PRACTICES OF A CROP/ COMMODITY AND
PROPOSED STRATEGIES FOR THE DISTRICT**

Crop :- Backyard Poultry

Production Practices (items)	AES-1		AES-2		
	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption	Proposed Strategy to overcome the gap	Gap in adoption
	N/P/F		N/P/F		N/P/F
Breed Up gradation					
Artificial Insemination	-	-	-	-	-
Breed	P	1, 2, 3	P	1, 2, 3	P
Location	F	1, 2, 3	F	1, 2, 3	F
Natural Insemination					
Breed	P	1, 2, 3	P	1, 2, 3	P
Location	F	1, 2, 3	F	1, 2, 3	F
Feed Management (per bird)					
Green Fodder (kg/day)	P	1, 2, 3 & 5	P	1, 2, 3 & 5	P
Dry Fodder (kg/day)	F	1, 2, 3 & 5	F	1, 2, 3 & 5	F
Concentrates (g/day)	P	1, 2, 3 & 5	P	1, 2, 3 & 5	P
Minerals (mix)	F	1, 2, 3 & 5	F	1, 2, 3 & 5	F
Vitamins (mix)	F	1, 2, 3 & 5	F	1, 2, 3 & 5	F
Health Care (per annum)					
Marks disease	F	1, 2, 3, 7 & 8	F	1, 2, 3, 7 & 8	F
RD (No. of vaccination)	F	1, 2, 3, 7 & 8	F	1, 2, 3, 7 & 8	F
Fowl Pox	F	1, 2, 3, 7 & 8	F	1, 2, 3, 7 & 8	F
Mastitis	F	1, 2, 3, 7 & 8	F	1, 2, 3, 7 & 8	F
Thilarisis	F	1, 2, 3, 7 & 8	F	1, 2, 3, 7 & 8	F
Deworming	F	1, 2, 3, 7 & 8	F	1, 2, 3, 7 & 8	F
General					

Management					
Washing (times/day)	N	-	N	-	N
Cleaning (times/day)	F	1, 2, 3, 5 & 5	F	1, 2, 3, 5 & 5	F
Housing (Pucca/Kaccha)	P	-	P	-	P
Drinking Water	P	1, 2, 3 & 4	P	1, 2, 3 & 4	P
Average Yield (egg)	F		F		F
Chicken Meat	P	1, 2, 3, 4, 6, 7 & 8	P	1, 2, 3, 4, 6, 7 & 8	P
Broiler Meat	P	1, 2, 3, 4, 6, 7 & 8	P	1, 2, 3, 4, 6, 7 & 8	P

***** Strategies proposed
to overcome the gap :**

1. Training and exposure visit.
2. Demonstrations/on farm trails.
3. Linkage with financial institution/crop insurance.
4. Providing market opportunities.
5. Gearing quality input supply in rural area.
6. Breed improvement through AI/Improved bull.
7. Preventive vaccination, 8. Control of disease and pest.

Chapter VI Table 44
Gap in adoption and Farmer Strategies for improving the production and productivity of the fish

AES I

Resource Rich

Animal: Fishery

Farming Situation: Rainfed Seasonal Pond

Farming Situation: Rainfed Perennial Pond

ITEMS	FS-I					FS-II				
	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy	Existing practices	Recommended	Gap in adoption	Specific Reasons for gap	Farmer Strategy
Culture Component										
Indian Carp	Catla, Rohu, Mrigal	Catla, Rohu, Mrigal	P	2,4,5	2,3,4	Catla, Rohu, Mrigal	Catla, Rohu, Mrigal	P	2,4,5	2,3,4
Exotic Carp	-	IMC with EC	F	1,2,4,5	1,2,3,4	-	IMC with EC	F	1,2,4,5	1,2,3,4
Prawn	-	Catla, Rohu, Mrigal	F	1,2,4,5	1,2,3,4	-	Catla, Rohu, Mrigal	F	1,2,4,5	1,2,3,4
Cat fish	-	Silver carp grass	F	1,2,4,5	1,2,3,4	Silver carp grass	Silver carp grass	P	1,2,4,5	1,2,3,4
Pond preparation	-	Murrah, / PVC, MPCS	F	1,2,4,5	1,2,3,4	-	Murrah, / PVC, MPCS	F	1,2,4,5	1,2,3,4
Organic Manure	-	10000 kg	F	3,5	1,4	100 kg	10000 kg	P	3,5	1,4
Inorganic manure	-	200 kg/ha	F	3,5	1,4	-	200 kg/ha	F	3,5	1,4
Bio fertilizer	-	40000 kg/ha	F	3,5	1,4	-	40000 kg/ha	F	3,5	1,4
Lime	-	200 kg/ha	F	3,5	1,4	-	200 kg/ha	F	3,5	1,4
Water depth	-	1.5m	F	1,2,5	1,4	-	1.5m	F	1,2,5	1,4
Weed control	Manual	Manual/mechanical	P	1,4,5	1,4	Manual	Manual/mechanical	P	1,4,5	1,4
Stocking Zone										

Spawn		10000-20000	F	1,2,4,5	1,2,3,4	3000	10000-20000	P	1,2,4,5	1,2,3,4
Fry	700	10000	P	1,2,4,5	1,2,3,4	700	10000	P	1,2,4,5	1,2,3,4
Fingerling	-	5000	F	1,2,4,5	1,2,3,4	2000	5000	P	1,2,4,5	1,2,3,4
Feeding schedule	-		F	1,2,4,5	1,2,3,4	-		F	1,2,4,5	1,2,3,4
Rice bran	-	1:1	F	1,2,4,5	1,2,3,4	-	1:1	F	1,2,4,5	1,2,3,4
Oil cake	-		F	1,2,4,5	1,2,3,4	-		F	1,2,4,5	1,2,3,4
Green leaf	-		F	1,2,4,5	1,2,3,4	-		F	1,2,4,5	1,2,3,4
Disease	-	CIFAX, lime	F	1,2,4,5	1,2,3,4	-	CIFAX, lime	F	1,2,4,5	1,2,3,4
Sample netting	-		F	1,2,4,5	1,2,3,4	-		F	1,2,4,5	1,2,3,4
Aeration	-		F	1,2,4,5	1,2,3,4	-		F	1,2,4,5	1,2,3,4
Harvesting Method	Net	Cycle	F	1,2,4,5	1,2,3,4	Net	Cycle	F	1,2,4,5	1,2,3,4
Culture Method	Indigenous	Composite pisciculture	F	1,2,4,5	1,2,3,4	Indigenous	Composite pisciculture	F	1,2,4,5	1,2,3,4
Average yield	2 q/ha	2-3 t/ha	F	1,2,4,5	1,2,3,4	10 q/ha	2-3 t/ha	F	1,2,4,5	1,2,3,4

(*) F=Full P = Partial

**** Code for specific reasons for gap in adoption**

1. Lack of technical personal
2. Lack of awareness & availability of seed
3. Lack of availability of organic matter
4. Lack of finance
5. Lack of Knowledge and skill

N = Nil

***** code for farmer proposed extension**

1. Providing qualified technical personal
2. Providing improved quality of composite culture seed
3. Linkage with finance agency and market
4. Training and awareness campaign

Chapter VI Table 45 : GAP IN ADOPTION AND PROPOSED EXTENSION STRATEGY FOR IMPROVING THE PRODUCTIVITY / INCOME FROM SERICULTURE

Name of agro-ecology situation: AES – II District: East Singhbhum

Crop: Silkworm rearing Farming systems: I,

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: planting - Time - Method	July – Oct pit system	July-Oct & Pit system	- P	1	1
2.	Varieties	V1	M5 & V1	F	4	5
3.	Seed rate (per ha)	12000-00	20000-00	F	2	1
4.	Seed treatment	-	-	-	-	-
5.	Organic manure (tons / ha)	20 tons	10 tons	F	3	1
6.	Fertilizer / nutrient (kg/ha) year - Basal (N+P+k) - Top dress (N+)	300:120:120	150:60: 60	F	2	2
7	Method of fertilizer use; - Basal - Top dress	Through Trech	Basal	F	1	1
8	Micro nutrient (specify): -Dos (kg/ha) -Method of application	Seri boost Cytozyme harith	Seri boast cytozyme	F	1	1
9	Pest management Tukra Leaf roller pest	Nuvan	Nuvan	F	1	1
10	Disease management - Powdery mildew - Leaf spot disease	Dm-45 bavestin	DM-45 Bavestin	F	1	1
11	Post harvest management	-	-	-	-	-
12	Water management - Number of irrigation - Method of irrigation	Weekly thrice Drip	Weekly thrice Drip & flood	F F	1 & 2	2
13	Method of harvesting	Sicature	Sicature sickle pruning	P	3	4
14	Any other	-	-	-	-	-
15	Silk worm race	Bivoltine hybrid	Cross breed & Biboltine hybrid	P	1	1 & 2

16	Rearing methods	Shoot rearing	Shoot rearing tray rearing	P	1 & 5	1
17	Disease control	Disinfections of RH Use of Bed disinfectant	Disinfections of RH Use of Bed disinfectant	P P	1	1
18	Mounting method	Separate mounting hall & use of plastic mountages	Mounting in open places with bamboo mountages plastic mountages	P	1	1 & 2
19	Cocoon -average yield kg/100 DFLS	50 kg	62 kg	P	1	1, 2, 3 & 5

+RPF = Resource Poor Farmer

+RRF: Resource Rich

Farmer

@ Separately for each farming situation under each existing Farming systems

(*) F=Full

P = Partial

N = Nil

**** Code for specific reasons for gap in adoption**

1. Lack of awareness
2. Lack of Finance
3. Non availability of material
4. Demand of seed material
5. Lack of separate rearing house

***** code for farmer proposed extension**

1. On farm trails / Demonstration
2. Linkage with credit facilitates as credit thrarist activity in self help group
3. Specific recommended material tube introduced
4. Existing recommended materials available l l locally
5. Encourage to raise new mulberry variety V₁ through Kissan nursery

VII

STRATEGIES TO OVERCOME THE GAPS IN IPM / INM /SEED REPECEMENT / MARKETING IN THE DISTRICT

I : Proposed Strategies for Integrated Nutrient Management

Chapter VII Table I.1

Crop : Paddy

Sl. No.	Particulars	AES-I					AES-II				
		E.P	R.P.	G.A.	R.G.	P.S.	E.P	R.P.	G.A.	R.G.	P.S.
1.	Soil Testing/ Soil Health	-		F	1,4	1,2	-		F	1,4	1,2
2.	Use of Manures(mt./ha.)										
	FYM	2 tone	10+/ha	P	2,3,4	1-5	2 tone	10+/ha	P	2,3,4	1-5
	Compost	Nil		F	1,2,3,4	1-5	Nil		F	1,2,3,4	1-5
	Vermicompost	Nil		F	1,2,3,4	1-5	Nil		F	1,2,3,4	1-5
3.	Use of major Fert.										
	Basal dose Kg./ha.										
	N kg/ha	10	40-50 kg/ha	P	1,2,4	1-5	15	40-60 kg/ha	P	1,2,4	1-5
	P kg/ha	00	20-40 kg/ha	P	1,2,4	1-5	20	40 kg/ha	P	1,2,4	1-5
	K kg/ha	00	20-40 kg/ha	F	1,2,3,4	1-5	00	20-40 kg/ha	F	1,2,3,4	1-5
4.	Top dress (Kg./ha.)										
	N	10	40-50 kg/ha	P	1,3,4	1-5	20	20-50 kg/ha	P	1,3,4	1-5
5.	Cultivation of Legumes										
	As rotational crop	Not done	Pulse crop	F	1,2,4	1-4	Not done	Pulse crop	F	1,2,4	1-4
	As inter crop	-	-	F	1,2,4	1-4	-	-	F	1,2,4	1-4
	As Green mannure	Not done	Greengram/Cowpea, Sunhemp/Sesbania etc	F	1,2,4	1-4	Not done	Greengram/Cowpea, Sunhemp/Sesbania etc	F	1,2,4	1-4
	Use of bio-fertil.(Kg./ha.)	-	Blue Green algae 2 kg/ha	F	1,2,3	1-4	-	Blue Green algae 2 kg/ha	F	1,2,3	1-4
		-	Azolla	F	1,2,3	1-4	-	Azolla	F	1,2,3	1-4
		-	Phosphate	F	1,2,3	1-4	-	Phosphate	F	1,2,3	1-4
		-	Solubilizers	F	1,2,3	1-4	-	Solubilizers	F	1,2,3	1-4
6.	Any other										

Reasons for gap

1. Lack of knowledge
2. Lack resources
3. Non availability of inputs
4. Unaware of Management practices

Gap in Adoption

- N = Nil
P = Partial
F = Full

Proposed Strategy

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trail/ORF
5. Soil testing based fertilizer use needed to be strengthened

Chapter VII Table I.2
Crop : Maize

Sl. No.	Particulars	AES-I					AES-II				
		E.P	R.P.	G.A.	R.G.	P.S.	E.P	R.P.	G.A.	R.G.	P.S.
1	Soil Testing/ Soil Health			F	1,4	1,2			F	1,4	1,2
2	Use of Manures(mt./ha.)										
	FYM	2 tone	10-15/ha	P	2,3,4	1-5	2 tone	10-15/ha	P	2,3,4	1-5
	Compost	-		F	1,2,3,4	1-5	-		F	1,2,3,4	1-5
	Vermicompost	-		F	1,2,3,4	1-5	-		F	1,2,3,4	1-5
3.	Use of major Fert.										
	Basal dose Kg./ha.										
	N	20	30 kg/ha	P	1,2,4	1-5	20	30 kg/ha	P	1,2,4	1-5
	P	10	60 kg/ha	P	1,2,4	1-5	10	60 kg/ha	P	1,2,4	1-5
	K	00	40 kg/ha	F	1,2,3,4	1-5	00	40 kg/ha	F	1,2,3,4	1-5
4.	Top dress (Kg./ha.)										
	N	10	40+30 kg/ha	P	1,3,4	1-5	10	40+30 kg/ha	P	1,3,4	1-5
5.	Cultivation of Legumes										
	As rotational crop	-	Pigeonpea, Cowpea	F	1,2,4	1-4	-	Pigeonpea, Cowpea	F	1,2,4	1-4
	As inter crop	Groundnut	Soybean, Groundnut Cowpea	p	1,2,4	1-4	Groundnut	Soybean, Groundnut Cowpea	p	1,2,4	1-4
	As Green manure	-	-	F	1,2,4	1-4	-	-	F	1,2,4	1-4
	Use of bio-fertl.(Kg./ha.)	-	Azotobacter	F	1,2,3	2-4	-	Azotobacter	F	1,2,3	2-4
		-	Phosphate Solubilizers	F	1,2,3	2-4	-	Phosphate Solubilizers	F	1,2,3	2-4
6.	Any other										

Reasons for gap 1. Lack of knowledge 2. Lack resources 3. Non availability of inputs 4. Unaware of Management practices	Gap in Adoption N = Nil P = Partial F = Full	Proposed Strategy 1. Training & awareness campaign 2. Demonstration 3. Exposure visit 4. On farm trail/ORF 5. Soil testing based fertilizer use needed to be strengthened

Chapter VII Table I.3
Crop : Arhar

Sl. No.	Particulars	AES-I					AES-II				
		E.P	R.P.	G.A.	R.G.	P.S.	E.P	R.P.	G.A.	R.G.	P.S.
1.	Soil Testing/ Soil Health	-					-				
2.	Use of Manures(mt./ha.)										
	FYM	1 tone	5 tone	P	2,3,4	1-5	1 tone	5 tone	P	2,3,4	1-5
	Compost	-		-	-	-	-		-	-	-
	Vermicompost	-		-	-	-	-		-	-	-
3.	Use of major Fert.										
	Basal dose Kg./ha.										
	N	4	10 kg/ha	P	1,2,4	1-5	05	10 kg/ha	P	1,2,4	1-5
	P	10	40 kg/ha	P	1,2,4	1-5	00	40 kg/ha	P	1,2,4	1-5
	K	00	20 kg/ha	F	1,2,3,4	1-5	00	20 kg/ha	F	1,2,3,4	1-5
4.	Top dress (Kg./ha.)										
	N	6	10	P	1,3,4	1-5	5	10	P	1,3,4	1-5
5.	Cultivation of Legumes										
	As rotational crop	-	Greengram, Blackgram	F	1,2,4	1-4	-	Greengram, Blackgram	F	1,2,4	1-4
	As inter crop	Upland rice	Upland rice	N	-	-	Upland rice	Upland rice	N	-	-
	As Green manure	-	Niger, Maize	F	1,2,4	1-4	-	Niger, Maize	F	1,2,4	1-4
	Use of bio-fertil. (Kg./ha.)	-	Rhizobium	F	1,2,3	2-4	-	Rhizobium	F	1,2,3	2-4
		-	Phosphate Solubilizers	F	1,2,3	2-4	-	Phosphate Solubilizers	F	1,2,3	2-4
6.	Any other										

Reasons for gap

1. Lack of knowledge
2. Lack resources
3. Non availability of inputs
4. Unaware of Management practices

Gap in Adoption

- N = Nil
P = Partial
F = Full

Proposed Strategy

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trial/ORF

5. Soil testing based fertilizer use needed to be strengthened

Chapter VII Table I.4
Crop : Mustard

Sl. No.	Particulars	AES-I					AES-II				
		E.P	R.P.	G.A.	R.G.	P.S.	E.P	R.P.	G.A.	R.G.	P.S.
1.	Soil Testing/ Soil Health	-		-	-	-	-		-	-	-
2.	Use of Manures(mt./ha.)										
	FYM	-	5 tone	F	2,3,4	1-5	-	5 tone	F	2,3,4	1-5
	Compost	-		-	-	-	-		-	-	-
	Vermicompost	-		-	-	-	-		-	-	-
3.	Use of major Fert.										
	Basal dose Kg./ha.										
	N	5	15 kg/ha	P	1,2,4	1-5	5	15 kg/ha	P	1,2,4	1-5
	P	5	25 kg/ha	P	1,2,4	1-5	5	25 kg/ha	P	1,2,4	1-5
	K	0	20 kg/ha	F	1,2,3,4	1-5	0	20 kg/ha	F	1,2,3,4	1-5
4.	Top dress (Kg./ha.)										
	N	5	10	P	1,2,3,4	1-5	5	10	P	1,2,3,4	1-5
5.	Cultivation of Legumes										
	As rotational crop	Rich	Rich/Ground nut	P	1,2,4	1-4	Rich	Rich/Ground nut	P	1,2,4	1-4
	As inter crop	Potato	Wheat/Gram/Potato	P	1,2,4	1-4	Potato	Wheat/Gram/Potato	P	1,2,4	1-4
	As Green manure	-	Cowpea, Dhaincha	F	1,2,4	1-4	-	Cowpea, Dhaincha	F	1,2,4	1-4
	Use of bio-fertl.(Kg./ha.)	-	Phosphate Solubilizers	F	1,2,3	2-4	-	Phosphate Solubilizers	F	1,2,3	2-4
6.	Any other										

Reasons for gap	Gap in Adoption	Proposed Strategy
1. Lack of knowledge	N = Nil	1. Training & awareness campaign
2. Lack resources	P = Partial	2. Demonstration
3. Non availability of inputs	F = Full	3. Exposure visit
4. Unaware of Management practices		4. On farm trail/ORF
		5. Soil testing based fertilizer use needed to be strengthened

Chapter VII Table I.5
Crop : POTATO

Sl. No.	Particulars	AES-I					AES-II				
		E.P	R.P.	G.A.	R.G.	P.S.	E.P	R.P.	G.A.	R.G.	P.S.
1.	Soil Testing/ Soil Health	-	To be done	-	-	-	-	To be done	-	-	-
2.	Use of Manures(mt./ha.)										
	FYM	15	20-25 kg/ha	P	2,3,4	1-5	15	20-25 kg/ha	P	2,3,4	1-5
	Compost	-	-	-	-	-	-	-	-	-	-
	Vermicompost	-	4-5 kg/ha	F	2,3,4	1-5	-	4-5 kg/ha	F	2,3,4	1-5
3.	Use of major Fert.										
	Basal dose Kg./ha.										
	N kg/ha	30	50 kg/ha	P	1,2,4	1-5	30	50 kg/ha	P	1,2,4	1-5
	P kg/ha	30	100 kg/ha	P	1,2,4	1-5	30	90 kg/ha	P	1,2,4	1-5
	K kg/ha	10	90 kg/ha	P	1,2,3,4	1-5	10	100 kg/ha	P	1,2,3,4	1-5
4.	Top dress (Kg./ha.)										
	N	30	50 kg/ha	P	1,2,3,4	1-5	30	50 kg/ha	P	1,2,3,4	1-5
5.	Cultivation of Legumes										
	As rotational crop	-	Frenchbeen	F	1,2,4	1-4	-	Frenchbeen	F	1,2,4	1-4
	As inter crop	Mustard, Bean	Beans, Cabbage, Cucumber	P	1,2,4	1-4	Mustard, Bean	Beans, Cabbage, Cucumber	P	1,2,4	1-4
	As Green manure	-	-	-	-	-	-	-	-	-	-
	Use of bio-fertil.(Kg./ha.)	-	Azotobacter 0.5 kg/ha Phosphate Solubilizers	F	1,2,3	2-4	-	Azotobacter 0.5 kg/ha Phosphate Solubilizers	F	1,2,3	2-4
6.	Any other	-	-	-	-	-	-	-	-	-	-

Reasons for gap	Gap in Adoption	Proposed Strategy
1. Lack of knowledge	N = Nil	1. Training & awareness campaign
2. Lack resources	P = Partial	2. Demonstration
3. Non availability of inputs	F = Full	3. Exposure visit
4. Unaware of Management practices		4. On farm trail/ORF
		5. Soil testing based fertilizer use needed to be strengthened

Chapter VII Table I.6
Crop : Tomato

Sl. No.	Particulars	AES-I					AES-II				
		E.P	R.P.	G.A.	R.G.	P.S.	E.P	R.P.	G.A.	R.G.	P.S.
1.	Soil Testing/ Soil Health	-	To be done	F	2,3,4	1-5	-	To be done	F	2,3,4	1-5
2.	Use of Manures(mt./ha.)										
	FYM	7	15-20 kg/ha	P	2,3,4	1-5	7	15-20 kg/ha	P	2,3,4	1-5
	Compost	-	-	-	-	-	-	-	-	-	-
	Vermicompost	-	4 kg/ha	F	2,3,4	1-5	-	4 kg/ha	F	2,3,4	1-5
3.	Use of major Fert.										
	Basal dose Kg./ha.										
	N	20	60 kg/ha	P	1,2,4	1-5	20	60 kg/ha	P	1,2,4	1-5
	P	20	60 kg/ha	P	1,2,4	1-5	20	60 kg/ha	P	1,2,4	1-5
	K	00	60 kg/ha	F	1,2,3,4	1-5	00	60 kg/ha	F	1,2,3,4	1-5
4.	Top dress (Kg./ha.)										
	N	20	60 kg/ha	P	1,2,3,4	1-5	20	60 kg/ha	P	1,2,3,4	1-5
5.	Cultivation of Legumes										
	As rotational crop	-	Frenchbean/Pea	F	1,2,4	1-4	-	Frenchbean/Pea	F	1,2,4	1-4
	As inter crop	-	Onion, Carrot, Radish, Chinies cabbage	F	1,2,4	1-4	-	Onion, Carrot, Radish, Chinies cabbage	F	1,2,4	1-4
	As Green mannure	-	-	-	-	-	-	-	-	-	-
	Use of bio-fertil.(Kg./ha.)	-	Azotobacter 0.5 kg/ha Phosphate Solubilizers	F	1,2,3	2-4	-	Azotobacter 0.5 kg/ha Phosphate Solubilizers	F	1,2,3	2-4
6.	Any other			-	-	-			-	-	-

Reasons for gap 1. Lack of knowledge 2. Lack resources 3. Non availability of inputs 4. Unaware of Management practices	Gap in Adoption N = Nil P = Partial F = Full	Proposed Strategy 1. Training & awareness campaign 2. Demonstration 3. Exposure visit 4. On farm trail/ORF 5. Soil testing based fertilizer use needed to be strengthened
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Chapter VII Table I.7
Crop : BRINJAL

Sl. No.	Particulars	AES-I					AES-II				
		E.P	R.P.	G.A.	R.G.	P.S.	E.P	R.P.	G.A.	R.G.	P.S.
1.	Soil Testing/ Soil Health	-	To be done	F	2,3,4	1-5	-	To be done	F	2,3,4	1-5
2.	Use of Manures(mt./ha.)										
	FYM	7	15-20 kg/ha	P	2,3,4	1-5	7	15-20 kg/ha	P	2,3,4	1-5
	Compost	-	-	-	-	-	-	-	-	-	-
	Vermicompost	-	4 kg/ha	F	2,3,4	1-5	-	4 kg/ha	F	2,3,4	1-5
3.	Use of major Fert.										
	Basal dose Kg./ha.										
	N kg/ha	20	60 kg/ha	P	1,2,4	1-5	20	60 kg/ha	P	1,2,4	1-5
	P kg/ha	20	60 kg/ha	P	1,2,4	1-5	20	60 kg/ha	P	1,2,4	1-5
	K kg/ha	00	60 kg/ha	F	1,2,3,4	1-5	00	60 kg/ha	F	1,2,3,4	1-5
4.	Top dress (Kg./ha.)										
	N	20	60 kg/ha	P	1,2,3,4	1-5	20	60 kg/ha	P	1,2,3,4	1-5
5.	Cultivation of Legumes										
	As rotational crop	-	Frenchbean	F	1,2,4	1-4	-	Frenchbean	F	1,2,4	1-4
	As inter crop	-	Cucumber	F	1,2,4	1-4	-	Cucumber	F	1,2,4	1-4
	As Green manure	-	-	-	-	-	-	-	-	-	-
	Use of bio-fertl.(Kg./ha.)	-	Azotobacter 0.5 kg/ha Phosphate Solubilizers	F	1,2,3	2-4	-	Azotobacter 0.5 kg/ha Phosphate Solubilizers	F	1,2,3	2-4
6.	Any other			-	-	-			-	-	-

Reasons for gap

1. Lack of knowledge
2. Lack resources
3. Non availability of inputs
4. Unaware of Management practices

Gap in Adoption

- N = Nil
P = Partial
F = Full

Proposed Strategy

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trail/ORF
5. Soil testing based fertilizer use needed to be strengthened

II : Proposed Strategies for Integrated Pest Management

Name of the Pest Stem Borer, Hispa, Leaf Folder, & Diseases like blast, Blight etc.

Chapter VII Table II.1

<i>Crop:PADDY</i>		AES I					AES II				
Sl. No.	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
		Deep repeated ploughing	-	P	1,2,3,4	1,2,3,4	Deep repeated ploughing	-	P	1,2,3,4	1,2,3,4
	Summer ploughing	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	N	F	1,2,3,4		Y	N	F	1,2,3,4	
2	Resistance Varieties	Y	Local varieties	F	1,2,3,4	1,2,3,4,5	Y	Local varieties	F	1,2,3,4	1,2,3,4,5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2,3,4	Y	N	F	1-4	1,2,3,4
	Neem Products	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	NPV	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	VT	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
4	Bioagents										
	Egg parasite	Trichogram	-	F	1,3,4	2,4,	Trichogram	-	F	1,3,4	1,2,4,5

		ma				5	ma				
	Larvel parasite	Trichogramma	-	F	1,3,4	2,4,5	Trichogramma	-	F	1,3,4	1,2,4,5
5	Other practices										
	Pheromone Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
	Light Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
6	Pesticide (No. of application)										
	Spraying	2	1	P	1,2,3,4	1,2,3,4	2	1	P	1,2,3,4	1,2,3,4
	Dusting	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Seed Treatment	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Soil application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Granular application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
7	Any other										
	Seedling treatment	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Conservation of natural enemy (Frog)	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4

Reasons for gap

1. Lack of knowledge
2. Lack resources

3. Non availability of inputs
4. Unaware of Management practices

Gap in Adoption

N = Nil

P = Partial

F = Full

Proposed Strategy

1. Training & awareness campaign
2. Demonstration
3. Exposure visit

4. On farm trail/ORF

5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table II.2

Name of the Pest Stem Borer, , Leaf Folder, & Diseases like leaf spot

<i>Crop: Maize</i>		AES I					AES II				
Sl. No	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
1	Cultural Practices	Deep repeated ploughing	Shallow ploughing	P	1,2,3,4	1,2,3,4	Deep repeated ploughing	Shallow ploughing	P	1,2,3,4	1,2,3,4
	Summer ploughing	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	N	F	1,2,3,4		Y	N	F	1,2,3,4	
2	Resistance Varieties	Y	Local varieties	F	1,2,3,4	1,2,3,4,5	Y	Local varieties	F	1,2,3,4	1,2,3,4,5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2,3,4	Y	N	F	1-4	1,2,3,4
	Neem Products	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	NPV	Bt-Spray	N	F	1,2,3,4	1,2,3,4	Bt-Spray	N	F	1,2,3,4	1,2,3,4
	VT	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
4	Bioagents										
	Egg parasite	Trichogramma	-	F	1,3,4	2,4,5	Trichogramma	-	F	1,3,4	2,4,5
	Larvel parasite	Trichogramma	-	F	1,3,4	2,4,5	Trichogramma	-	F	1,3,4	2,4,5

5	Other practices										
	Pheromone Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
	Light Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
6	Pesticide (No. of application)										
	Spraying	2-3	1	P	1,2,3,4	1,2,3,4	2-3	1	P	1,2,3,4	1,2,3,4
	Dusting	-	-	-	-	-	-	-	-	-	-
	Seed Treatment	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Soil application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Granular application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
7	Any other										
	Seedling treatment	-	-	-	-	-	-	-	-	-	-
	Conservation of natural enemy (Frog)	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4

Reasons for gap

1. Lack of knowledge
2. Lack resources
3. Non availability of inputs
4. Unaware of Management practices

Gap in Adoption

- N = Nil
- P = Partial
- F = Full

Proposed Strategy

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trail/ORF
5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table II.3

Name of the Pest Stem Borer, Hispa, Leaf Folder, & Diseases like blast, Blight etc.

<i>Crop:Wheat</i>		AES - I					AES - II				
Sl. No	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
1	Cultural Practices	Deep repeated ploughing	1-2 Shallow ploughing	P	1,2,3, 4	1,2,3, 4	Deep repeated ploughing	1-2 Shallow ploughing	P	1,2,3, 4	1,2,3, 4
	Summer ploughing	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3, 4	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3, 4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	N	F	1,2,3, 4		Y	N	F	1,2,3, 4	
2	Resistance Varieties	Y	Local varieties	F	1,2,3, 4	1,2,3, 4,5	Y	Local varieties	F	1,2,3, 4	1,2,3, 4,5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2,3, 4	Y	N	F	1-4	1,2,3, 4
	Neem Products	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
	NPV	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
	VT	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
4	Bioagents										
	Egg parasite	-	-	-	-	-	-	-	-	-	-
	Larvel parasite	Y	N	F	1,2,4	2,4,5	Y	N	F	1,2,4	2,4,5
5	Other practices										
	Pheronmone Trap	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4
	Light Trap	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4

6	Pesticide (No. of application)										
	Spraying	2	1	P	1,2,3,4	1,2,3,4	2	1	P	1,2,3,4	1,2,3,4
	Dusting	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Seed Treatment	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Soil application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Granular application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
7	Any other										
	Seedling treatment	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Conservation of natural enemy (Frog)	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Use of Karanj cake, Neem cake	250 kg/ha	N	F	1,2,3,4	1,2,3,4	250 kg/ha	N	F	1,2,3,4	1,2,3,4

Reasons for gap		Gap in Adoption	Proposed Strategy	
1. Lack of knowledge	3. Non availability of inputs	N = Nil	1. Training & awareness campaign	4. On farm trial/ORF
2. Lack resources	4. Unaware of Management practices	P = Partial	2. Demonstration	5. Research is needed for resistant variety having nearer taste to local variety
		F = Full	3. Exposure visit	

Chapter VII Table II.4

Name of the Pest Pod Borer, & Diseases like Wilt

<i>Crop:ARHAR</i>		AES I					AES II				
Sl. No.	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
1	Cultural Practices	Deep repeated ploughing	1-2 Shallow ploughing	P	1,2,3, 4	1,2,3, 4	Deep repeated ploughing	1-2 Shallow ploughing	P	1,2,3, 4	1,2,3, 4
	Summer ploughing	Deep ploughing	N	P	1,3,4	1,2,3, 4	Deep ploughing	N	P	1,3,4	1,2,3, 4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	N	F	1,2,3, 4		Y	N	F	1,2,3, 4	
2	Resistance Varieties	Y	Local varieties	F	1,2,3, 4	1,2,3, 4,5	Y	Local varieties	F	1,2,3, 4	1,2,3, 4,5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2,3, 4	Y	N	F	1-4	1,2,3, 4
	Neem Products	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
	NPV	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
	Trichodrama specific	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
4	Other practices										
	Pheronmone Trap	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4
	Light Trap	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4
5	Pesticide (No. of application)										
	Spraying	2-3	1	P	1,2,3, 4	1,2,3, 4	2-3	1	P	1,2,3, 4	1,2,3, 4
	Dusting	-	-	F	1,2,3, 4	1,2,3, 4	-	-	F	1,2,3, 4	1,2,3, 4

	Seed Treatment	1	-	F	1,2,3, 4	1,2,3, 4	1	-	F	1,2,3, 4	1,2,3, 4
	Soil application	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
	Granular application	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
6	Any other										
	Seedling treatment	-	-	-	-	-	-	-	-	-	-
	Conservation of natural enemy (Frog)	Y	N	F	1,2,3, 4	1,2,3, 4	Y	N	F	1,2,3, 4	1,2,3, 4
	Use of Karanj cake, Neem cake	250 kg/ha	N	F	1,2,3, 4	1,2,3, 4	250 kg/ha	N	F	1,2,3, 4	1,2,3, 4

Reasons for gap		Gap in Adoption	Proposed Strategy	
1. Lack of knowledge	3. Non availability of inputs	N = Nil	1. Training & awareness campaign	4. On farm trial/ORF
2. Lack resources	4. Unaware of Management practices	P = Partial	2. Demonstration	5. Research is needed for resistant variety having nearer taste to local variety
		F = Full	3. Exposure visit	

Chapter VII Table II.5

Name of the Pest Leaf hopper Cut worm Thrips Tuber moth, & Diseases like Early and Late Blight, wart disease, Leaf curl etc.

Crop POTATO		AES I					AES II				
Sl. No.	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
1	Cultural Practices	Deep repeated ploughing Crop rotation	Shallow ploughing	P	1,2,3,4	1,2,3,4	Deep repeated ploughing Crop rotation	Shallow ploughing	P	1,2,3,4	1,2,3,4
	Summer ploughing	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	Y	P	1,2,3,4		Y	Y	P	1,2,3,4	
2	Resistance Varieties	Y	Local varieties	F	1,2,3,4	1,2,3,4,5	Y	Local varieties	F	1,2,3,4	1,2,3,4,5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2,3,4	Y	N	F	1-4	1,2,3,4
	Neem Products	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	NPV	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	VT	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
4	Bioagents										
	Egg parasite	Trichogramma	N	F	1,2,4	2,4,5	Trichogramma	N	F	1,2,4	2,4,5
	Larvel parasite	Trichoderma Viridi @ 2-4 gram/kg seed	-	F	1,2,4	2,4,5	Trichoderma Viridi @ 2-4 gram/kg seed	-	F	1,2,4	2,4,5
5	Other practices										
	Pheromone Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
	Light Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
6	Pesticide (No. of application)										

	Spraying	3-4	1	P	1,2,3,4	1,2,3,4	3-4	1	P	1,2,3,4	1,2,3,4
	Dusting	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Seed Treatment	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Soil application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Granular application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
7	Any other										
	Seedling treatment	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Conservation of natural enemy (Frog)	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Use of Karanj cake, Neem cake	250 kg/ha	N	F	1,2,3,4	1,2,3,4	250 kg/ha	N	F	1,2,3,4	1,2,3,4

Reasons for gap

1. Lack of knowledge
2. Lack resources
3. Non availability of inputs
4. Unaware of Management practices

Gap in Adoption

- N = Nil
P = Partial
F = Full

Proposed Strategy

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trial/ORF
5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table II.6

Name of the Pest Leaf hopper, Aphid, Leaf roller, fruit borer , & Diseases like Damping off, Fussarium wilt, Leaf Curl , Early and late Blight etc.

<i>Crop:TOMATO</i>		AES I					AES II				
Sl. No.	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
1	Cultural Practices	Deep repeated ploughing Crop rotation Use of trap crop	Shallow ploughing	P	1,2,3,4	1,2,3,4	Deep repeated ploughing Crop rotation Use of trap crop	Shallow ploughing	P	1,2,3,4	1,2,3,4
	Summer ploughing	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	N	F	1,2,3,4		Y	N	F	1,2,3,4	
2	Resistance Varieties	Y	N	F	1,2,3,4	1,2,3,4,5	Y	N	F	1,2,3,4	1,2,3,4,5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2,3,4	Y	N	F	1-4	1,2,3,4
	Neem Products	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	NPV	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	VT	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
4	Bioagents										
	Egg parasite	Trichogramma	-	F	1,2,4	2,4,5	Trichogramma	-	F	1,2,4	2,4,5
	Larvel prasite	Trichoderma Viridi	-	F	1,2,4	2,4,5	Trichoderma	-	F	1,2,4	2,4,5

		@ 2-4 gram/kg seed					Viridi @ 2-4 gram/kg seed				
5	Other practices										
	Pheromone Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
	Light Trap	5 trap/ha	-	F	1,2,3,4	1,2,3,4	5 trap/ha	-	F	1,2,3,4	1,2,3,4
6	Pesticide (No. of application)										
	Spraying	3-4	1-2	P	1,2,3,4	1,2,3,4	3-4	1-2	P	1,2,3,4	1,2,3,4
	Dusting	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Seed Treatment	1	-	F	1,2,3,4	1,2,3,4	1	-	F	1,2,3,4	1,2,3,4
	Soil application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Granular application	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
7	Any other										
	Seedling treatment	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Conservation of natural enemy (Frog)	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	Use of Karanj cake, Neem cake	250 kg/ha	N	F	1,2,3,4	1,2,3,4	250 kg/ha	N	F	1,2,3,4	1,2,3,4

Reasons for gap

1. Lack of knowledge
2. Lack resources
3. Non availability of inputs
4. Unaware of Management practices

Gap in Adoption

- N = Nil
P = Partial
F = Full

Proposed Strategy

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trial/ORF
5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table II.7

Name of the Pest Fruit borer, Leaf webber Epilachna beetle Leaf Folder, & disease like damping off, wilt, Phomosis Blight, etc.

Crop BRINJAL		AES I					AES II				
Sl. No.	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
1	Cultural Practices	Deep repeated ploughing Crop rotation Use of trap crop	Shallow ploughing	P	1,2, 3,4	1,2, 3,4	Deep repeated ploughing Crop rotation Use of trap crop	Shallow ploughing	P	1,2, 3,4	1,2, 3,4
	Summer ploughing	Deep ploughing	Shallow ploughing	P	1,3, 4	1,2, 3,4	Deep ploughing	Shallow ploughing	P	1,3, 4	1,2, 3,4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	N	F	1,2, 3,4		Y	N	F	1,2, 3,4	
2	Resistance Varieties	Y	N	F	1,2, 3,4	1,2, 3,4, 5	Y	N	F	1,2, 3,4	1,2, 3,4, 5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2, 3,4	Y	N	F	1-4	1,2, 3,4
	Neem Products	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2, 3,4	1,2, 3,4
	NPV	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2, 3,4	1,2, 3,4
	VT	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2, 3,4	1,2, 3,4
4	Bioagents										
	Egg parasite	Trichogramma	-	F	1,2, 4	2,4, 5	Trichogramma	-	F	1,2, 4	2,4, 5
	Larval parasite	Trichoderma Viridi @ 2-4 gram/kg	-	F	1,2, 4	2,4, 5	Trichoderma Viridi @ 2-4	-	F	1,2, 4	2,4, 5

		seed					gram/kg seed				
5	Other practices										
	Pheromone Trap	5 trap/ha	-	F	1,2, 3,4	1,2, 3,4	5 trap/ha	-	F	1,2, 3,4	1,2, 3,4
	Light Trap	5 trap/ha	-	F	1,2, 3,4	1,2, 3,4	5 trap/ha	-	F	1,2, 3,4	1,2, 3,4
6	Pesticide (No. of application)										
	Spraying	3-4	1-2	P	1,2, 3,4	1,2, 3,4	3-4	1-2	P	1,2, 3,4	1,2, 3,4
	Dusting	1	-	F	1,2, 3,4	1,2, 3,4	1	-	F	1,2, 3,4	1,2, 3,4
	Seed Treatment	1	-	F	1,2, 3,4	1,2, 3,4	1	-	F	1,2, 3,4	1,2, 3,4
	Soil application	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2, 3,4	1,2, 3,4
	Granular application	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2, 3,4	1,2, 3,4
7	Any other										
	Seedling treatment	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2, 3,4	1,2, 3,4
	Conservation of natural enemy (Frog)	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2, 3,4	1,2, 3,4
	Use of Karanj cake, Neem cake	250 kg/ha	N	F	1,2, 3,4	1,2, 3,4	250 kg/ha	N	F	1,2, 3,4	1,2, 3,4

Reasons for gap		Gap in Adoption	Proposed Strategy	
1. Lack of knowledge	3. Non availability of inputs	N = Nil	1. Training & awareness campaign	4. On farm trial/ORF
2. Lack resources	4. Unaware of Management practices	P = Partial	2. Demonstration	5. Research is needed for resistant variety having nearer taste to local variety
		F = Full	3. Exposure visit	

Chapter VII Table II.8

Name of the Pest Mustard aphid Mustard saw fly Pianted bug, & Diseases t, Blight etc.

Crop: MUSTARD		AES I					AES II				
Sl. No.	Particulars	R.P.	E.P	G.A.	R.G.	P.S.	R.P.	E.P	G.A.	R.G.	P.S.
1	Cultural Practices	Deep repeated ploughing Crop rotation Use of trap crop	Shallow ploughing	P	1,2,3,4	1,2,3,4	Deep repeated ploughing Crop rotation Use of trap crop	Shallow ploughing	P	1,2,3,4	1,2,3,4
	Summer ploughing	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4	Deep ploughing	Shallow ploughing	P	1,3,4	1,2,3,4
	Timely sowing	Y	Y	N	-		Y	Y	N	-	
	Clean Cultivation	Y	N	F	1,2,3,4		Y	N	F	1,2,3,4	
2	Resistance Varieties	Y	N	F	1,2,3,4	1,2,3,4,5	Y	N	F	1,2,3,4	1,2,3,4,5
3	Bio-pesticides (Y/N)	Y	N	F	1-4	1,2,3,4	Y	N	F	1-4	1,2,3,4
	Neem Products	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	NPV	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
	VT	Y	N	F	1,2,3,4	1,2,3,4	Y	N	F	1,2,3,4	1,2,3,4
4	Bioagents										
	Egg parasite	Trichogramma	-	F	1,2,4	2,4,5	Trichogramma	-	F	1,2,4	2,4,5
	Larvel prasite	Trichoderma Viridi @ 2-4 gram/kg	-	F	1,2,4	2,4,5	Trichoderma Viridi	-	F	1,2,4	2,4,5

		seed					@ 2-4 gram/kg seed				
5	Other practices										
	Pheromone Trap	5 trap/ha	-	F	1,2, 3,4	1,2, 3,4	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4
	Light Trap	5 trap/ha	-	F	1,2, 3,4	1,2, 3,4	5 trap/ha	-	F	1,2,3, 4	1,2,3, 4
6	Pesticide (No. of application)										
	Spraying	3-4	1-2	P	1,2, 3,4	1,2, 3,4	3-4	1-2	P	1,2,3, 4	1,2,3, 4
	Dusting	1	-	F	1,2, 3,4	1,2, 3,4	1	-	F	1,2,3, 4	1,2,3, 4
	Seed Treatment	1	-	F	1,2, 3,4	1,2, 3,4	1	-	F	1,2,3, 4	1,2,3, 4
	Soil application	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2,3, 4	1,2,3, 4
	Granular application	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2,3, 4	1,2,3, 4
7	Any other										
	Seedling treatment	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2,3, 4	1,2,3, 4
	Conservation of natural enemy (Frog)	Y	N	F	1,2, 3,4	1,2, 3,4	Y	N	F	1,2,3, 4	1,2,3, 4
	Use of Karanj cake, Neem cake	250 kg/ha	N	F	1,2, 3,4	1,2, 3,4	250 kg/ha	N	F	1,2,3, 4	1,2,3, 4

Reasons for gap		Gap in Adoption	Proposed Strategy
1. Lack of knowledge	3. Non availability of inputs	N = Nil	1. Training & awareness campaign
2. Lack resources	4. Unaware of Management practices	P = Partial	2. Demonstration
		F = Full	3. Exposure visit
			4. On farm trial/ORF
			5. Research is needed for resistant variety having nearer taste to local variety

III : STRATEGIES FOR INTEGRATED PEST MANGEMENT						
Chapter VII Table III.1						
District: East Singhbhum					Crop:	Paddy
Sl. No.	Particulars	Gap in adoption in the Pest Mngt. in different AES in the dist.		Reasons for gap in adoption as perceived by the farmers *	Strategies as perceived by the farmers **	Strategies proposed to overcome the gap ***
		AES-I	AES-II			
1	Cultural Practices	Simple Tick mark or dash	Simple Tick mark or dash	1	1	1
				2	2	2
				3	3	3
				4	4	4
				5		5
	Summer ploughing	√	√	1,4	1,3,4	1,2,3
	Timely sowing	√	√	1,4	1,3,4	1,2,4
	Clean Cultivation	√	√	1,4	1,3,4	1,2,3,4
2	Resistant Varieties	√	√	1,2,4	1,2	1,2,3,5
3	Bio-pesticides (Y/N)					
	Neem Products	√	√	1,4	1,2,4	1,2,4
	NPV	√	√	1,4	1,2,4	1,2,4
	VT	√	√	1,4	1,2,4	1,2,4
4	Bioagents					
	Egg parasite	√	√	1,4,5	1,2,4	2,3,4
	Larval parasite	√	√	1,4,5	1,2,4	2,3,4
5	Other practices					
	Pheromone Trap	√	√	1,3,4,5	2,4	2,4
	Light Trap	√	√	1,3,4,5	2,4	2,4
6	Pesticide (No. of application)					
	Spraying	√	√	1,4,5	2,4	1,2,4
	Dusting	√	√	1,4,5	2,4	1,2,4
	Seed Treatment	√	√	1,4,5	2,4	1,2,4
	Soil application	√	√	1,4,5	2,4	1,2,4
	Granular appli.	√	√	1,4,5	2,4	1,2,4
7	Any other					
	Seedling treatment	√	√	1,4	1,2,4	1,2,4
	Conservation of nutritional enemy (Frog)	√	√	1,4	2,4	1,2,4
	Use of Karanj cake, Neem cake	√	√	1,5	2,4	1,2,4

* Code for Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Lack of knowledge
5. Lack of resource

** code for Strategies as perceived by the farmers

1. On farm trials / Demonstration
2. Training
3. Soil testing and application of fertilizers as per recommendation
4. Use of locally available materials for nutrient management & plant protection

*** code for Strategies proposed to overcome the gap

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trial/ORF
5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table III.2

STRATEGIES FOR INTEGRATED PEST MANGEMENT

District: East Singhbhum						
Sl. No.	Particulars	Gap in adoption in the Pest Mngt. in different AES in the dist.		Reasons for gap in adoption as perceived by the farmers *	Crop: Strategies as perceived by the farmers **	Maize Strategies proposed to overcome the gap ***
		AES-I	AES-II			
1	Cultural Practices	Simple Tick mark or dash	Simple Tick mark or dash			
				2	2	2
				3	3	3
				4	4	4
				5		5
	Summer ploughing	√	√	1,4	12,3,4	1,2,3,4,5
	Timely sowing	√	√	1,4	2,3,4	1,2,3,4
	Clean Cultivation	√	√	1,4	2,3,4	1,2,3,4
2	Resistance Varieties	√	√	1,4,5	1,2,3,4	1,2,3
3	Bio-pesticides (Y/N)					
	Neem Products	√	√	1,4	1,2,3,4	1,2,3,4
	NPV	√	√	1,4	1,2,4	1,2,3,4
	VT	√	√	1,4	1,2,4	1,2,3
4	Bioagents					
	Egg parasite	√	√	1,3,4	1,2,4	1,2,4
	Larvel prasite	√	√	1,3,4	1,2,4	1,2,4
5	Other practices					
	Pheronmone Trap	√	√	1,3,4	1,2,4	1,2,3,4
	Light Trap	√	√	1,3,4	1,2,4	1,2,3,4
6	Pesticide (No. of application)					
	Spraying	√	√	1,3,4	1,2,4	1,4
	Dusting	√	√	1,3,4	1,2,4	1,4
	Seed Treatment	√	√	1,3,,4	1,2,4	1,4
	Soil application	√	√	1,3,4	1,2,4	1,4
	Granular appli.	√	√	1,3,4	2,4	1,4
7	Any other					
	Seedling trreatment	√	√	1,2,4	2,4	1,2,4
	Conservation of nuturala enemy (Frog)	√	√	1,4	2,4	1,2,4
	Use of Karanj cack, Neem cake	√	√	1,4,5	3,4	1,2,4

* Code for Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Lack of knowledge

** code for Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training
3. Soil testing and application of fertilizers as per recommendation
4. Use of locally available materials for nutrient management & plant protection

*** code for Strategies proposed to overcome the gap

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trail/ORF

5. Lack of resource

5. Research is needed for resistant variety
having nearer taste to local variety

Chapter VII Table III.3						
STRATEGIES FOR INTEGRATED PEST MANGEMENT						
District: East Singhbhum		Gap in adoption in the Pest Mngt. in different AES in the dist.		Reasons for gap in adoption as perceived by the farmers *	Crop : Strategies as perceived by the farmers **	Arhar Strategies proposed to overcome the gap ***
Sl. No.	Particulars	AES-I	AES-II			
1	Cultural Practices	Simple Tick mark or dash	Simple Tick mark or dash	1	1	1
				2	2	2
				3	3	3
				4	4	4
				5	5	5
	Summer ploughing	√	√	1,3,4	1,2,3	1,2,4,5
	Timely sowing	√	√	1,3,4	1,2,3	1,2,4,5
	Clean Cultivation	√	√	1,3,4	1,2,3	1,2,4,5
2	Resistance Varieties	√	√	1,2,3,4	1,2,3	1,2,4,5
3	Bio-pesticides (Y/N)					
	Neem Products	√	√	1,2,4,5	1,2,4,5	2,4,5
	NPV	√	√	1,2,4,5	1,2,4,5	2,4,5
	VT	√	√	1,2,4,5	1,2,4,5	2,4,5
4	Bioagents					
	Egg parasite	√	√	3,4,5	1,2,4	2,4,5
	Larvel prasite	√	√	3,4,5	1,2,4	2,4,5
5	Other practices					
	Pheronmone Trap	√	√	3,4,5	1,2,4	2,4,5
	Light Trap	√	√	3,4,5	1,2,4	2,4,5
6	Pesticide (No. of application)					
	Spraying	√	√	1,3,4	2,4,5	1,3,4
	Dusting	√	√	1,3,4	2,4,5	1,3,4
	Seed Treatment	√	√	1,3,4	2,4,5	1,3,4
	Soil application	√	√	1,3,4	2,4,5	1,3,4
	Granular appli.	√	√	1,3,4	2,4,5	1,3,4
7	Any other					
	Seedling trreatment	√	√	1,3,4	1,3,4	1,2,4
	Conservation of natural enemy (Frog)	√	√	1,3,4	1,2,4	1,2,4
	Use of Karanj cack, Neem cake	√	√	1,3,5	1,3,4	1,2,4,5

* Code for Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Lack of knowledge

** code for Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training
3. Soil testing and application of fertilizers as per recommendation
4. Use of locally available materials for nutrient management & plant protection

*** code for Strategies proposed to overcome the gap

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trail/ORF

5. Lack of resource

5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table III.4						
STRATEGIES FOR INTEGRATED PEST MANGT.						
District: East Singhbhum			Crop : Potapo			
Sl. No.	Particaulrs	Gap in adoption in the Pest Mngt. in different AES in the dist.		Reasons for gap in adoption as perceived by the farmers *	Strategies as perceived by the farmers **	Strategies proposed to overcome the gap ***
		AES-I	AES-II			
1	Cultural Practices	Simple Tick mark or dash	Simple Tick mark or dash			
				2	2	2
				3	3	3
				4	4	4
				5	5	5
	Summer ploughing	√	√	1,3,4,5	1,2,4	1,2,3,4,5
	Timely sowing	√	√	1,3,4,5	1,2,4	1,2,3,4,5
	Clean Cultivation	√	√	1,3,4,5	1,2,4	1,2,3,4,5
2	Resistance Varieties	√	√	1,2,3,5	1,2,4	1,2,3,,5
3	Bio-pesticides (Y/N)					
	Neem Products	√	√	2,4,5	2,3,4	1,2,4
	NPV	√	√	2,4,5	2,3,4	1,2,4
	VT	√	√	2,4,5	2,3,4	1,2,4
4	Bioagents					
	Egg parasite	√	√	2,3,4	2,3,4	1,2,4
	Larvel prasite	√	√	2,3,4	2,3,4	1,2,4
5	Other practices					
	Pheronmone Trap	√	√	2,3,4	2,3,4	1,2,3,4,5
	Light Trap	√	√	2,3,4	2,3,4	1,2,3,4,5
6	Pesticide (No. of application)					
	Spraying	√	√	1,3,4	1,2,4	1,2,4
	Dusting	√	√	1,3,4	1,2,4	1,2,4
	Seed Treatment	√	√	1,3,4	1,2,4	1,2,4
	Soil application	√	√	1,3,4	1,2,4	1,2,4
	Granular appli.	√	√	1,3,4	1,2,4	1,2,4
7	Any other					
	Seedling trreatment	√	√	1,2,3,5	1,4,5	1,2,4
	Conservation of natural enemy (Frog)	√	√	1,2,3,4	1,4,5	1,2,4
	Use of Karanj cack, Neem cake	√	√	1,2,3,5	1,4,5	1,2,4

* Code for Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Lack of knowledge

** code for Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training
3. Soil testing and application of fertilizers as per recommendation
4. Use of locally available materials for nutrient management & plant protection

*** code for Strategies proposed to overcome the gap

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trail/ORF

5. Lack of resource

5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table III.5						
STRATEGIES FOR INTEGRATED PEST MANGT.						
District: East Singhbhum					Crop:	Tomato
Sl. No.	Particulars	Gap in adoption in the Pest Mngt. in different AES in the dist.		Reasons for gap in adoption as perceived by the farmers *	Strategies as perceived by the farmers **	Strategies proposed to overcome the gap ***
		AES-I	AES-II			
1	Cultural Practices	Simple Tick mark or dash	Simple Tick mark or dash			
				2	2	2
				3	3	3
				4	4	4
				5		5
	Summer ploughing	√	√	1,2,4,5	2,3,4	1,2,4,5
	Timely sowing	√	√	1,2,4,5	2,3,4	1,2,4,5
	Clean Cultivation	√	√	1,2,4,5	2,3,4	1,2,4,5
2	Resistance Varieties	√	√	1,2,3,4	2,3,4	1,2,5
3	Bio-pesticides (Y/N)					
	Neem Products	√	√	1,3,4	1,2,4	1,2,4
	NPV	√	√	1,3,4	1,2,4	1,2,4,5
	VT	√	√	1,3,4,5	1,2,4	1,2,4,5
4	Bioagents					
	Egg parasite	√	√	3,4,5	1,2,4	1,2,4,5
	Larvel prasite	√	√	3,4,5	1,2,4	1,2,4,5
5	Other practices					
	Pheronmone Trap	√	√	3,4,5	1,2,4	1,2,4,5
	Light Trap	√	√	3,4,5	1,2,4	1,2,4,5
6	Pesticide (No. of application)					
	Spraying	√	√	1,3,4,5	1,2,4	1,2,4
	Dusting	√	√	1,3,4,5	1,2,4	1,4
	Seed Treatment	√	√	1,3,4,5	1,2,4	1,4
	Soil application	√	√	1,3,4,5	1,2,4	1,4
	Granular appli.	√	√	1,3,4,5	1,2,4	1,4,5
7	Any other					
	Seedling treament	√	√	1,2,3	1,3,4	1,2,4
	Conservation of nutural enemy (Frog)	√	√	1,2,3	1,3,4	1,2,4
	Use of Karanj cack, Neem cake	√	√	1,2,3	1,3,4	1,2,4,5

* Code for Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions
4. Lack of knowledge

** code for Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training
3. Soil testing and application of fertilizers as per recommendation
4. Use of locally available materials for nutrient management & plant protection

*** code for Strategies proposed to overcome the gap

1. Training & awareness campaign
2. Demonstration
3. Exposure visit
4. On farm trail/ORF

5. Lack of resource

5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table III.6						
STRATEGIES FOR INTEGRATED PEST MANGEMENT						
District: East Singhbhum					Crop :	Brinjal
Sl. No.	Particulars	Gap in adoption in the Pest Mngt. in different AES in the dist.		Reasons for gap in adoption as perceived by the farmers *	Strategies as perceived by the farmers **	Strategies proposed to overcome the gap ***
		AES-I	AES-II			
1	Cultural Practices	Simple Tick mark or dash	Simple Tick mark or dash			
				2	2	2
				3	3	3
				4	4	4
				5		5
	Summer ploughing	√	√	1,4,5	1,2,3	2,3,4,5
	Timely sowing	√	√	1,4,5	1,2,3	2,3,4,5
	Clean Cultivation	√	√	1,4,5	1,2,3	2,3,4,5
2	Resistance Varieties	√	√	1,2,4,5	1,2,3,5	2,3,4,5
3	Bio-pesticides (Y/N)					
	Neem Products	√	√	1,3,4,5	2,3,4,5	1,2,3,4
	NPV	√	√	1,3,4,5	2,3,4,5	1,2,3,4
	VT	√	√	1,3,4,5	2,3,4,5	1,2,3,4
4	Bioagents					
	Egg parasite	√	√	1,3,4	1,2,3,4	1,2,4
	Larvel prasite	√	√	1,3,4	1,2,3,4	1,2,4
5	Other practices					
	Pheronmone Trap	√	√	1,3,4	1,2,3,4	1,2,4,5
	Light Trap	√	√	1,3,4	1,2,3,4	1,2,4,5
6	Pesticide (No. of application)					
	Spraying	√	√	1,3,4,5	1,2,3,4	1,2,4
	Dusting	√	√	1,3,4,5	1,2,3,4	1,2,4
	Seed Treatment	√	√	1,3,4,5	1,2,3,4	1,2,4
	Soil application	√	√	1,3,4,5	1,2,3,4	1,2,4
	Granular appli.	√	√	1,3	1,2,3,4	1,2,4
7	Any other					
	Seedling trreatment	√	√	1,2,3	1,3,4	1,2,4
	Conservation of nuturala enemy (Frog)	√	√	1,2,3	1,3,4	1,2,4
	Use of Karanj cack, Neem cake	√	√	1,2,3	1,3,4	1,2,4

* Code for Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness
2. Non availability of required quantity of quality seed
3. Plant protection is not economical under rainfed conditions

** code for Strategies as perceived by the farmers

1. On farm trails / Demonstration
2. Training
3. Soil testing and application of fertilizers as per recommendation

*** code for Strategies proposed to overcome the gap

1. Training & awareness campaign
2. Demonstration
3. Exposure visit

4. Lack of knowledge

5. Lack of resource

4. Use of locally available materials for nutrient management & plant protection

4. On farm trail/ORF

5. Research is needed for resistant variety having nearer taste to local variety

Chapter VII Table III.7						
STRATEGIES FOR INTEGRATED PEST MANGEMENT						
District: East Singhbhum					Crop:	Mustard
Sl. No.	Particulars	Gap in adoption in the Pest Mngt. in different AES in the dist.		Reasons for gap in adoption as perceived by the farmers *	Strategies as perceived by the farmers **	Strategies proposed to overcome the gap ***
		AES-I	AES-II			
		Simple Tick mark or dash	Simple Tick mark or dash	2	2	2
				3	3	3
				4	4	4
				5		5
	Summer ploughing	√	√	1,4,5	1,2,3	2,3,4,5
	Timely sowing	√	√	1,4,5	1,2,3	2,3,4,5
	Clean Cultivation	√	√	1,4,5	1,2,3	2,3,4,5
2	Resistance Varieties	√	√	1,2,4,5	1,2,3,5	2,3,4,5
3	Bio-pesticides (Y/N)					
	Neem Products	√	√	1,2,3,4	2,3,4	1,2,4,5
	NPV	√	√	1,2,3,4	2,3,4	1,2,4,5
	VT	√	√	1,2,3,4	2,3,4	1,2,4,5
4	Bioagents					
	Egg parasite	√	√	2,3,4,5	2,3,4,5	1,2,4
	Larvel prasite	√	√	2,3,4,5	2,3,4,5	1,2,4
5	Other practices					
	Pheronmone Trap	√	√	2,3,4,5	2,3,4,5	1,2,4,5
	Light Trap	√	√	2,3,4,5	2,3,4,5	1,2,4,5
6	Pesticide (No. of application)					
	Spraying	√	√	1,2,3,5	1,2,4	1,2,3,4
	Dusting	√	√	1,2,3,5	1,2,4	1,2,3,4
	Seed Treatment	√	√	1,2,3	1,2,4	1,2,3,4
	Soil application	√	√	1,2,3	1,2,4	1,2,3,4
	Granular appli.	√	√	1,2,3,5	1,2,4	1,2,3,4
7	Any other					
	Seedling treatment	√	√	1,2,3,5	1,3,4	1,2,4
	Conservation of nutural enemy (Frog)	√	√	1,2,3	1,3,4	1,2,4
	Use of Karanj cack, Neem cake	√	√	1,2,3,5	1,3,4	1,2,4

* Code for Reasons for gap in adoption as perceived by the farmers

1. Lack of awareness

2. Non availability of required quantity of quality seed

3. Plant protection is not economical under rainfed conditions

** code for Strategies as perceived by the farmers

1. On farm trails / Demonstration

2. Training

3. Soil testing and application of fertilizers as per recommendation

*** code for Strategies proposed to overcome the gap

1. Training & awareness campaign

2. Demonstration

3. Exposure visit

4. Lack of knowledge

5. Lack of resource

4. Use of locally available materials for
nutrient management & plant protection

4. On farm trail/ORF

5. Research is needed for resistant
variety having nearer taste to local
variety

IV : PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS MULTIPLICATION

Chapter VII Table IV.1

Name of crop: Paddy

Village: Kalapather

Preferred variety: MTU- 7029, IR -64, LALAT Agro-ecological situation: AES-I

Sl. No.	Source of seed of preferred variety	Quantity of seed used (of preferred variety)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	MTU 7029 - 10 q	MTU 7029 - 20 ha		G
	- From Public sector	Lalat – 5 q IR 64 - 5 q	Lalat – 10 ha. IR 64 - 10 ha		G
B	Use of self produced seed:		MTU 7029 – 20 ha.		
	- From own field	MTU 7029 - 10 q			A.G
	Total	30 q	60 ha.		

G – Good

A – Average

P – Poor

Chapter VII Table –IV.2

**PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS
MULTIPLICATION**

Name of crop: Paddy

Village: Charradih

Preferred variety: IR -64, Sawarna , Anjali

Agro-ecological situation: AES-II

Sl. No.	Source of seed of preferred variety	Quantity of seed used (of preferred variety)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	Sawarna – 4 q Anjali – 5 q	Sawarna – 8 ha Anjali – 10 ha		G G
	- From Public sector	Sawarna – 5 q IR 64 – 10 q	Sawarna – 10 ha IR 64 – 20 ha		G
B	Use of self produced seed:				
	- From own field	Sawarna – 10 q IR 64 - 2 q	Sawarna – 20 ha IR 64 - 4 ha		A.G
	Total	36 q	72 ha		

Chapter VII Table –IV.3

**PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS
MULTIPLICATION**

Name of crop: Maize

Village: Kalapather

Preferred variety: Kanchan - 5, Suwan Composite, Local Variety, Hybrid

Agro-ecological situation: AES-I

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	Kanchan 5 - 1 q Hybrid - 1 q Suwarn Composite - 1 q	Kanchan 5 - 5 ha Hybrid - 5 ha Suwarn Composite - 4 ha		G G G
	- From Public sector				
B	Use of self produced seed:		Local Variety - 15 ha		
	- From own field	Local Variety - 3 q			A.G
	- From others field	Local Variety - 1 q			A.G
	Total	7 q			

Chapter VII Table –IV.4

**PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS
MULTIPLICATION**

Name of crop: Maize

Village: Charradih

Preferred variety: IR 36, IR 64, Gora Dhan, Lal Sawarna and Local Variety

Agro-ecological situation: AES-II

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	Kanchan 5 - .5 q Hybrid - .5 q	Kanchan 5 - 2.5 ha		G G
	- From Public sector		Hybrid - 2.5 ha		G
B	Use of self produced seed:		Local Variety - 12 ha		
	- From own field	Local Variety - 2 q			A
	- From others field	Local Variety - 1 q			A
	Total	4 q			

Chapter VII Table –IV.5

**PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS
MULTIPLICATION**

Name of crop: Tomato

Village: Kalapather

Preferred variety: Pusa Rubi, Suraksha, Hybrid Agro-ecological situation: AES-I

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (kg)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	Pusa Rubi - .700 kg Suraksha - 1 kg Hybrid - 1 kg	Pusa Rubi - 1 ha Suraksha - 2 ha Hybrid - 2 ha		G G G
	- From Public sector				
B	Use of self produced seed:				
	- From own field				
	- From others field				
	Total	2.700 kg			

Chapter VII Table –IV.6

**PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS
MULTIPLICATION**

Name of crop: Tomato

Village: Charradih

Preferred variety: Pusa Rubi, Suraksha, Hybrid

Agro-ecological situation: AES-II

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (kg)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	Pusa Rubi - .5 kg Suraksha - .5 kg Hybrid - .5 kg	Pusa Rubi -.5 ha Suraksha - .75 ha Hybrid - 1 ha		G G G
	- From Public sector				
B	Use of self produced seed:				
	- From own field				
	- From others field				
	Total	1.5 kg	2.5 Ha.		

Chapter VII Table –IV.7

**PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS
MULTIPLICATION**

Name of crop: Brinjal

Village: Kalapather

Preferred variety: Hybrid, Local Variety, Pusa Purple Long

Agro-ecological situation: AES-I

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (kg)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	Hybrid - 1 kg Pusa Purple Long - 1 kg	Hybrid - 1 ha Local Variety - 1 ha		G P A
	- From Public sector		Pusa Purple Long - 1ha		
B	Use of self produced seed:				
	- From own field	Local Variety - 1 kg			
	- From others field				
	Total	3 kg			

Chapter VII Table –IV.8

**PROPOSED STRATEGY FOR PROMOTING SUPPLY OF SEED AND ITS
MULTIPLICATION**

Name of crop: Brinjal

Village: Charradih

Preferred variety: Hybrid, Local Variety, Pusa Purple Long

Agro-ecological situation: AES-II

Sl. No.	Source of seed of preferred variety/ hybrid	Quantity of seed used (of preferred variety) (kg)	Area sown (ha) under the crop with different variety		Quality of seed of preferred variety (G/A/P)
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	Hybrid - .5 kg Pusa Purple Long - .5 kg	Hybrid - 1 ha Local Variety - 1 ha		G P A
	- From Public sector		Pusa Purple Long		
B	Use of self produced seed:		- .5 ha		
	- From own field	Local Variety - 1 kg			
	- From others field				
	Total	2 kg			

V : PROPOSED STRATEGY FOR PROMOTING PREFERRED HORTICULTURAL PLANTING MATERIAL

Chapter VII Table –V.1

Sl. No.	Source of preferred planting material of horticultural crops	Quantity of planting material used of preferred variety	Area sown (ha) under the crop with different variety		Quality of preferred planting material required for the district
			Preferred variety	Other varieties	
A	Purchase form outside:				
	- From Private dealer	125000	Mango		A
	- From Public sector	25000	(Amrapali, Langra, Malika,		A
B	Use of self produced planting material		Dashari,		
	- From own field	10000	Alphanso)		
	- From others field		Guava (L 49,		
C	Any other		Ilahabad Safeda)		
	Total	3 kg			

Chapter VII Table VI.1

VI : PROPOSED STRATEGY FOR PROMOTING MARKETING

Sl. No.	Critical gap	Proposed marketing Strategies
1.	Very high fluctuating market demand & Unpredictable market price	Creating awareness on market led extension
		Encouraging farmer organization/commodity growers groups to create local marketing centers
		Encouraging FO/CGs to serve as market intelligence in association with reputed market organization
		Arranging market survey exposure visits for farmers to different marketing systems
		Establishing direct linkage between rural market and urban consumers
		Arranging buy back arrangements for farmers' produce
		Training farmers in supply chain and facilitate direct linkage with urban market
		Propaganda and publicity on the quality products
		Establishing linkage between industries and producers
		Promotion of producer-exporter interface
2.	Lack of post harvest technologies	Motivating farmers to go for value addition, product diversification and other post harvest technologies
3.	Absence of backward and forward linkages	Establishing single window service to provide backward and forward linkages
		Encouraging cooperatives to support farmers in providing inputs and arranging for assured market

Chapter VII Table –VII.2

VII : PROPOSED STRATEGY FOR PROMOTING MEDIA SUPPORT

Sl. No.	Critical gap	Proposed marketing Strategies
1.	Very high fluctuating market demand & Unpredictable market price	Establishment of region based exclusive agricultural channels to deliver specific information needs of farmers in local language
		Reengineering radio programmes through incorporating farmers innovation, success stories in local language
2.	Nonexistence of market intelligence information	Strengthening information communication technology
		Strengthening Kisan call centers, portals of department of agriculture and cooperation and other related agricultural research, extension and marketing organisations
		Market intelligence through SMS on mobile telephone
3.	Poor and inadequate columns devoted exclusively for agriculture in daily newspapers	Strengthening the agriculture columns in the dailies by earmarking adequate columns and adequate information for the existing farmers' needs
4.	Lack of capsule form information to meet the urgent information requirement in production and marketing	Production of capsule form information on region basis through radio, television and dailies
5.	Lack of quality printed technical	Encouraging development departments, NGOs, etc. to produce technical literatures like leaflets, folders, booklets etc. in local language
6.	Non existence of farmers' discussion groups in villages/taluks/district level	Encouraging FO/CG/others to organize farmer discussion groups
7.	Lack of opportunity for farmers to interact with scientists and extension specialists	Conducting region specific agricultural seminars to provide opportunity for farmers to participate
		Organising farmer-scientist - extension personnel interactions

VIII STRATEGIES FOR HUMAN RESOURCE DEVELOPMENT

Capacity Building of different stackholder in the programme is required for achieving the objective and goal of the programme. The areas like multi disciplinary approach, organization of farmers role of information technology in the transfer of technologies, documentation of success stories and their analysis, generation of technology out of ITK's etc., are new to all the professionals presently engaged in the development of agriculture and allied activities. Orientation training and exposure about these extension tools is the key of the success of NATP. The representation of various farmers organizations, non-official members of governing board, ATMA and farmers advisory committees at block level would be oriented about the concept of the project, their role in decision making, planning and implementation of the project.

Chapter VII Table –VIII.1

Sl. No	Department	Strategy for Development	Training Need	Cadre of participants	Topics of training	No. of training	Name of the Inst. for training
1	Agriculture	Technology Management	Knowledge & skill development	Farmers/ BTT	Three day training on INM and fertilizer use on soil test basis.	9	KVK/ ATMA
2	Agriculture	Technology Management	Knowledge & skill development	Farmers/ BTT	Three day training on in situ water harvesting techniques	10	KVK/ ATMA/ HARP
3	Horticulture	Technology Management	Knowledge & skill development	Farmers	Three day training on commercial and organic cultivation of vegetable, preservation and packaging of vegetables.	11	KVK/ ATMA
4	Horticulture	Technology Management	Knowledge & skill development	Farmers	Three day training on nursery raising of fruit plants, vegetables and flowers	12	KVK/ ATMA/ HARP
5	Horticulture	Technology Management	Knowledge & skill development	Farmers/ BTT	One day training on scope and potential of green house/poly house technology.	10	KVK/ ATMA
6	Horticulture	Technology Management	Knowledge & skill development	Farmers	Three day training on economic use and maintenance of power tillers.	11	KVK/ ATMA
7	Horticulture	Technology Management	Knowledge & skill development	Farmers	Three day training on production technology of off-season and exotic vegetables.	12	KVK/ ATMA/ HARP

8	Horticulture	Technology Management	Knowledge & skill development	Farmers/ BTT	Three day training on cultivation, preservation, packaging and marketing of rare/exotic vegetables.	10	KVK/ ATMA/ HARP
9	Agriculture	Technology Management	Knowledge & skill development	Farmers	Three day training on control of obnoxious weeds and management of pasture lands/arable lands.	12	KVK/ ATMA
10	Horticulture	Technology Management	Knowledge & skill development	Farmers	Four day training on commercial floriculture and its marketing.	8	KVK/ ATMA
11	Horticulture	Technology Management	Knowledge & skill development	Farmers	Three day training on training and pruning practices in horticultural crops	12	KVK/ ATMA
12	Horticulture	Technology Management	Knowledge & skill development	Farmers	Six day training on successful mushroom cultivation.	10	KVK/ ATMA
13	Animal Husbandry	Technology Management	Knowledge & skill development	Block level veterinary officers	One day training to vet. Pharmacists of AH department on goat management and breed improvement..	11	KVK/ ATMA
14	Fishery	Technology Management	Knowledge & skill development	Field officer	Three day training to field officers of fisheries department regarding composite and ornamental fish farming technology.	3	BAU
15	Line Department	Extension management	Knowledge & skill development	District level officers	Study visits/exposure visits to field officers of Animal Husbandry/ fishery/ and other concerned departments/ Scientists to study project activities in other ATMA districts. (5 days visit outside the state)	2	OUTSIDE STATE
16	Line Department	Extension management	Knowledge & skill development	District level officers	Study visits/exposure visits to field officers of Animal Husbandry/fisher and other concerned departments/Scientists to study project activities in other ATMA districts (5 days visit within the state).	2	WITHIN STATE
17	Line Department	Extension management	Knowledge & skill development	NGO members	Three day training to NGO executive on advanced agriculture, horticulture, animal husbandry, fishery, sericulture, laculture and other income generating avocations.	2	BAU/HARP
18	ATMA	Extension management	Knowledge & skill development	ATMA GB members	Orientation of GB about project management (3 days)	2	KVK/ ATMA

19	ATMA	Extension management	Knowledge & skill development	Officers	Study visit of ATMA Chairman, Project Director / Dy. P.D. and State Consultant in participatory extension management 6 abroad.	2	OUTSIDE STATE
20	ATMA	Extension management	Knowledge & skill development	Officers	Orientation of AMC about project implementation and project management.	2	MANAGE
21	ATMA	Extension management	Knowledge & skill development	Officers	Project management and participatory extension aboard for ATMA and line department officers.	1	OUTSIDE STATE
22	ATMA	Extension management	Knowledge & skill development	BTT	Training for BTT members about extension reforms, preparation of Block Action Plan and Account keeping (6 days)	3	KVK/ ATMA/ SAMETI
23	ATMA	Extension management	Knowledge & skill development	BTT	Orientation of BTT members about team building modules, formation of FIG, SHG, ITK and success stories (2 days)	3	KVK/ ATMA/ SAMETI
24	ATMA	Extension management	Knowledge & skill development	FAC	Orientation of FAC members regarding ATMA-Extension Reforms project management.	8	KVK/ ATMA/ SAMETI
25	ATMA	Extension management	Knowledge & skill development	Officers	Interaction of FIG, SHG, NGO with BTT and line department officers/ scientists.	3	KVK/ ATMA
26	ATMA	Extension management	Knowledge & skill development	Gram Panchayat Member	Sensitization of Block and Gram Panchayat members (Pradhan and Up-Pradhan, Mukhiya etc.) about Extension Reforms-ATMA project.	8	KVK/ ATMA
27	ATMA	Extension management	Knowledge & skill development	BTT	Orientation course of BTT members about farmers training methodology monitoring of the project and extension management (6 days)	3	KVK/ ATMA/ SAMETI
28	ATMA	Extension management	Knowledge & skill development	Officers	Training of AMC and other officers of the line departments about participatory extension management (3 days)	2	SAMETI/ MANAGE
29	ATMA	Extension management	Knowledge & skill development	Officers	Exposure visit of AMC and other line department officers to other ATMA districts outside the state.	2	OUTSIDE STATE
30	ATMA	Extension management	Knowledge & skill development	Officers	Training of AMC and other officers of line departments about monitoring and evaluation of Extension Reforms. (3 days)	2	OUTSIDE STATE

31	ATMA	Extension management	Knowledge & skill development	Officers	Exposure visit of BTT and FAC members to other ATMA districts within and outside state for project management and formation of FIGs, SHG and FO sites (5 days)	2	ATMA/ SAMETI
32	ATMA	Extension management	Knowledge & skill development	Officers	Orientation of AMC and other officers of line departments about Strategic and participatory planning (3 days)	2	ATMA/ SAMETI
33	Stakeholders	Extension management	Knowledge & skill development	Input dealer	Orientation of stakeholders like input distributing agencies regarding role of inputs in the agricultural development (2 days)	2	KVK/ ATMA / SAMETI
34	ATMA	Extension management	Knowledge & skill development	Input dealer	Orientation of quality control enforce agencies regarding their roles and responsibilities for making available quality inputs to the farmers (2 days)	2	KVK/ ATMA
35	ATMA	Extension management	Knowledge & skill development	FAC	Orientation of FAC members about Extension Reforms (1 days)	8	KVK/ ATMA
36	Stake Holders	Extension management	Knowledge & skill development	NGO/ FIG	Exposure visit of NGOs, FIGs and other stakeholders to other ATMA within and outside the state to acquire latest technology and extension participatory management skills.	3	OUTSIDE STATE
37	ATMA	Extension management	Knowledge & skill development	FAC	Exposure visit of FACs and BTTs to other success story sites/ATMA.	2	OTHER ATMA
38	ATMA	Extension management	Knowledge & skill development	BTT	Organization of training programme for BTT members on extension methodology and communication techniques (2 days)	2	KVK/ ATMA
39	Line Department	Extension management	Knowledge & skill development	Officers	Training need assessment.	2	SAMETI
40	Line Department	Extension management	Knowledge & skill development	Officers	Farming system approach.	3	SAMETI
41	Stake Holders	Extension management	Knowledge & skill development	Officers	Exposure visits for NGOs, successful farmers, non-official members of GB.	2	
42	ATMA	Extension management	Knowledge & skill development	Officers	Orientation and training to AGB, AMC members and O/C of FAC (2 days)	2	MANAGE/SAMETI
43	ATMA	Extension management	Knowledge & skill development	Officers	Interaction of AGB and AMC members with FAC members.	2	KVK/ ATMA

44	ATMA	Extension management	Knowledge & skill development	Officers	Training of O/C FAC and its members for preparation of Block Action Plan.	3	KVK/ ATMA
45	NGO	Extension management	Knowledge & skill development	NGO	Training of NGOs on community organizations (7 days)	3	KVK/ ATMA
46	Stake Holders	Extension management	Knowledge & skill development	Private Extension workers	Organizing training for private extension workers (NGOs, FIGs, SHGs etc.)	3	KVK/ ATMA
47	Stake Holders	Extension management	Knowledge & skill development	Private Extension workers	Exposure visits for public and private extension workers to appropriate areas and organizations outside district/state	2	KVK/ ATMA
48	ATMA	IT	Knowledge & skill development	Officers	Training on use of media, IT and use of Internet of AMC members (6 days)	2	SAMETI
49	ATMA	IT	Knowledge & skill development	Officers	Training on use of media, IT and use of Internet to officers of line department (4 days)	2	SAMETI
50	ATMA	IT	Knowledge & skill development	Officers	Training on use of media, IT and use of Internet to BTT members and officers of line departments (4 days)	2	SAMETI
51	ATMA	IT	Knowledge & skill development	Officers	Training on use of media, IT and use of Internet to AGB members and scientists of KVK, ZRS and officers of line departments (3 days)	2	SAMETI
52	ATMA	IT	Knowledge & skill development	Officers	Training on use of media, IT and use of Internet to District Core Team members and officers of line department (6 days)	2	SAMETI

IX

ACTIVITY SCHEDULE FOR THE IDENTIFIED RESEARCH AND EXTENSION STRATEGIES

Based upon the analysis of issues, problem and opportunities, relevant and feasible strategies have been worked out for carrying out extension activities in the district. The strategies have been categorized under major groups as indicated below :

Strategies-

- A. Improvement in productivity and income of farmers in the existing enterprises and farming system.
- B. Sustainability in productivity / income
- C. Natural resource management
- D. Financial sustainability
- E. Marketing system

Sl. No.	Strategy	Thrust Area	Proposed activity	Relevance to the AES	
				I	II
	Horticultural Production				
1.	Expansion of area under off season vegetable by crop substitution	Diversification of rainfed uplands	- Identification and analysis of success stories where innovative farmers have already started cultivating off season vegetables. - Exposure visit to above successful examples by other farmers. - Facilitate supply of seeds & other inputs for off-season vegetables. - Training of farmer groups for cultivation of off season vegetables and seed production (Institutional) - Post harvest processing and value addition to off-season vegetables.	√	√
2.	Dry land horticulture as alternate land use and crop diversification	Diversification of part of upland rice area for horticulture	- Organizing awareness campaigns for dry land horticulture. - Exposure visit to sites where dry land horticulture has successfully been taken. - Training of farmers on dry land horticulture. - Facilitate supply of grafts for dry land horticulture plantation (mango, guava, lime). - Decentralized production of saplings & grafts by involving NGOs & private sector. - Linkage with marketing.	√	√
3.	Cultivation of organic spices like ginger turmeric & tuber crops	Diversification of uplands for high value crops	- Awareness campaign for motivating farmers to go for organic spice & tuber cultivation. - Training by farmer groups for organic spice cultivation (Institution) - Facilitate supply of high yielding types of ginger &	√	√

			- turmeric. - Conducting demonstration on organic spice cultivation. - Arranging field days at successful demonstration sites. - Agro-processing & value addition of organic spices.		
4.	Introduction of commercial floriculture open & protected with drip & sprinkler irrigation system.	Diversification of upland for flower cultivation for higher income	- Identification & analysis of success stories where innovative farmers have started commercial floriculture. - Exposure visit to above successful site by other farmers. - Organizing training programme on cultivation of rose, chrysanthemum tube rose & gladiola and marigold (Institutional). - Facilitate supply of key inputs for floriculture. - Linkage with marketing of cut flowers.	√	√
5.	Introduction of paddy & Dhingiri mushroom in around town area	Diversification & organizing farm women for mushroom cultivation	- Identification of villages and farmer groups, where substrate is available. - Organizing demonstration on mushroom production. - Facilitate supply of critical inputs like spawn. - Linkage with marketing of produced mushroom.	√	√
6.	Commercial cultivation of honey bee	Diversification & encouraging farmers for bee-keeping processing & marketing.	- Identification of areas with nectar bearing trees and field crops like mustard, fruit plants & krunj etc. - Identification of farmer interest groups and organizing training for them (village level). - Facilitate supply of high yielding bees (Italian bee) box, smoker etc. for apiary. - Demonstration on extraction of honey and preservation. - Linkage with marketing.	√	√
7.	Intensive vegetable cultivation on irrigated areas (Protected & Open)	Intensification of vegetable cultivation in areas with assured irrigation	- Identification of areas where vegetables have been successfully cultivated intensively. - Exposure visit to successful sites for motivation of farmers. - Organizing training for the farmers on vegetable cultivation using innovative farmers as resource personnel (Institutional). - Facilitate supply of critical inputs for vegetable production. - Organize FIGs for vegetable seed production and marketing.	-	-
8.	Over coming technological gaps in major vegetable crops like Brinjal, tomato, bean, potato, (Cabbage and cauliflower), onion and sweet potato, ole, alti and spices (Ginger & turmeric).	Intensification of vegetable cultivation by promoting appropriate technology	- Educations of farmer through mass media on technological gaps. - Organizing need based training on technological. - Demonstration on seed treatment planting techniques, INM & IPM etc. - Linkage of farmers or groups with credit, supply of inputs & marketing. - Organizing special training on hybrid vegetable production technology.	√	√
9.	Decentralized production of vegetable seed & planting materials for fruit crops.	Intensification of vegetable seed production in rural areas	- Identification and analysis of success stories where seed & planting materials are produced & sold by the farmers. - Exposure visit of willing farmers to the successful farms. - Identification of sites & selection of willing farmers	√	√

			for seed & planting materials production. - Training of seed producing farmers about seed production technology. - Organizing field days for farmers & dealers who are willing to purchase seeds. - Linkage with supply of foundation seeds on cost basis, credit & marketing. - Development of on-going schemes on seed & planting material production.		
10.	Post harvest technology, value addition & agro processing for fruits, vegetable and spices	Intensification and promoting value-addition in vegetable crops	- Carry out diagnostic study about issues relating to market. - Assess marketed surplus each commodity with different types of farmers family. - Identify alternate market opportunities for each commodity. - Assess specification regarding consumer's preference for each commodity at alternate market. - Assess new technological options regarding post harvest handling at farm level. - Organizing training & demonstration for the farmers groups about post harvest handling, value addition and agro processing (preservation techniques) to meet, specific consumer's preference. - Linkage with input supply & marketing.	√	√
11.	Overcoming technological gaps in fruit crops like mango, papaya, guava, jack fruit, aonla with drip & sprinkler irrigation	Intensification and value addition in fruit crops	- Awareness campaigns on fruit plantation & on technological gaps. - Exposure visit to successful plantation sites. - Organizing need based training on serious technological gaps. - Demonstration on raising of saplings, grafting, pruning and aftercare of fruit plants. - Linkage of farmers or groups with credit, input supply & marketing.	√	√
	Agriculture				
1.	Substitution of upland rice crop to millets and pulses.	Diversification to drought tolerant crop in uplands	- Conducting field demonstration on crop diversification. - Organizing field days near successful demonstration sites. - Facilitate supply of critical inputs like seed of pulses for sole/inter cropping.	√	√
2.	Improvement of rainfed farming adopting dry land technology	Intensification and promoting rainfed farming	- Awareness campaign for adoption of dry land technology. - Identification and analysis of success stories on dry land technology and indigenous water harvesting measures. - Exposure visit of farmers to success sites where dry land farming techniques have been adopted. - Training to farmers on dry land technology such as weather analysis and crop planning, on-site moisture conservation, soil and water conservation, run-off harvesting & recycling, alternate land use & standard crop husbandry practices (field level) - Organizing demonstration on standard crop husbandry practices. - Facilitate supply of seedlings/saplings for agro-forestry & dry land horticulture. - Organizing field days for conviction of farmers at the	√	√

			site of successful demonstrations.		
3.	Cultivation of aromatic rice for export	Diversification and value addition	- Identification and characterization of indigenous aromatic rice varieties. - Conducting demonstration of Basmati & non-Basmati type of rice varieties with local aromatic types and study their economics. - Facilitate linkage with marketing by organizing farmers interest groups.	-	-
4.	Adoption of Scientific Crop rotation	Diversification Intensification for optimal use of resources	- Organizing farmer's training on scientific crop planning & crop rotation using resource farmer (Institutional) - Conducting demonstration on ideal crop rotation and study the economics. - Exposure visit of other farmers to successful demonstration sites to have interaction with the demonstrating farms.	√	√
5.	Overcoming technological gap in major agricultural crops paddy, maize, pulses, mustard, tissi etc.	Intensification with appropriate technology	- Educating the farmers through mass media on technological gaps. - Organizing training programme on technological gaps. - Organizing demonstration on seed testing, seed treatment, fertilizer application & pest management. - Organizing farmers field days on the site of successful demonstration. - Linkage of farmers with credit, inputs & marketing. - Demonstration on agro processing & value addition techniques. - Demonstration on use of bio-fertilizers & micronutrients.	√	√
6	Decentralized production of seeds of preferred varieties under the concept of seed villages scheme.	Intensification with production of quality seeds	- Identification and analysis of success stories where seed is produced and sold by farmers. - Exposure visit of farmers to successful sites. - Identification of sites (villages) and farmers who are willing to produce and market seed at their own level. - Training of seed production farmers about seed production & certification skills. - Procurement of foundation seeds of preferred variety (to be decided by matrix ranking) from reliable sources on cost payment. - Organization of field days at maturity of crops for farmers & local dealers who are willing in purchasing seeds. - Facilitate linkage with credit, input supply & certification including processing.	√	√
7	Value addition and agro processing in paddy, maize, pulses & oilseeds	- Intensification with value addition	- Identification of farmer interest or commodity interest groups. - Organizing demonstration & training on agro processing and value addition. - Facilitate linkage with supply of machinery credit & marketing.	√	√
8	Farm mechanization for timely & effective agricultural operations.	- Diversification with improved farm implements	- Organizing awareness campaigns on farm mechanization. - Organizing training and demonstration on farm mechanization. - Identification of agro service centers for dealing with farm machinery. - Linkage with on-going schemes for subsidized sale of agriculture implements & farm machinery. - Group formation for finance on farm machinery. - Organizing training on Repairing & Maintenance of existing farm machineries	√	√

	Livestock production system				
1.	Expansion of goat and sheep rearing units and breed up gradation	- Intensification	- Supply of improved bucks and rains for natural breeding. - Training to farmers for care and maintenance of goats and sheep for meat and wool (Institutional). - Vaccination, de-worming & treatment against ecto-parasites for goat & sheep. - Marketing linkage for sheep growers for wool production.	√	√
2.	Expansion of goat rearing units and breed up gradation	- Intensification	- Supply of improved T&D Breeds of Pig. - Training to farmers for care and maintenance of improve Pig. - Vaccination, de-worming & treatment against ecto-parasites for Pig. - Marketing linkage for Pig growers.	√	√
3.	Encouraging backyard poultry	- Intensification	- Popularization of Red Divyan local breeds of poultry birds for backyard poultry. - Organization of training for disease management & feeding of poultry birds. - Facilitate vaccination do-worming & treatment against ecto parasites in poultry birds.	√	√
4.	Vaccination, de-worming and treatment against ecto parasites for poultry, pig & goat	Intensification	- Identification of para vets & NGOs willing to take up the work. - Organization of training for Para vets, NGOs & farmers on vaccination, de-worming & treatment techniques. - Supply of critical inputs on cost basis. - Organization of mobile treatment camps at village level.	√	√
5.	Fodder cultivation for improved nutrition of small animals.	Intensification	- Identification of success stories where fodder cultivation has been taken successfully. - Exposure visit of identified farmers or farmer groups to successful sites. - Identification of sites and species (grasses) for green fodder cultivation. - Organization of trainings on improved fodder cultivation techniques. - Facilitate supply of critical inputs.	√	√
6.	Processing and preservation of meat and milk products	Intensification	- Assessment of marketed surplus of milk. - Identification/formation of groups for milk processing. - Organizing training for processing & preservation of milk & milk products. - Linkage with input, credit & marketing.	√	√
	Improvement in sustainability in production / income				
1.	Amendment of upland acid soils	Intensification with acid soils management	- Testing of soils to access the pH - Identify the upland area where the pH is 5.5 or less for amendment. - Organize the farmers to obtain soil amendments like basic slag @ 39 t/ha or at 10% lime requirement allowing transportation subsidy. - Train the farmers to amend the acid soils by using local materials dolomite & lime.	√	√
2.	Conservation of bio-diversity (Agricultural)	Intensification	- Identify the valuable indigenous crop varieties & forest species by involving farmers. - Multiply these varieties and species among farmer co-operations. - Categories these varieties & species using farmers participatory research. - Promote in situ conservation on small farms	√	√

			through encouragement and diversification. - Combine the re-introduced and indigenous varieties & species with improved & ecologically sound soil, water and nutrient management to further improve the productivity of these local varieties/species.		
3.	Integrated Plant Nutrient supply system	Intensification with combined use of organics, inorganic, & bio fertilizers	- Organize awareness campaigns for IPNS. - Prepare a detailed action plan to manage the IPNS at farm level. - Organize trainings for farmers on production and use of bio-fertilizers compost, vermin compost and use of balanced fertilizer based on soil tests. - Identify the feasible wastelands for production of green manure seeds & bio fertilizers like Azolla & BGA by SHGs/Mahila Mandal etc. - Supply bio-fertilizer at subsidy & organize crop demonstrations. - Conduct field days at the site of successful demonstrations. - Follow up support for use of non-traditional nutrients sources like bio fertilizer, Vermi compost etc. - Organize plantation of leaf manure crops like Glyricidia on wastelands or on common lands. - Refinement of technological package on INM for different AES recycling organic wastes & crop residues etc.	√	√
4.	Integrated Pest Management	Intensification	- Organize awareness campaigns on IPM technology. - Identification of key crop pests and diagnosis of pest problem in an endemic village in each AES. - Analysis of technological options emerging through different sources of innovation including bio-pesticides. - Organizing demonstration / action research on crop pest management. - Concurrent evaluation of technological options by participating farmers. - Organizing Farmer Field School (FFS) programme to make the farmer IPM experts. - Facilitate supply of bio pesticides, pheromone trips etc. on payment of cost.	√	√
5.	Integrated Watershed management	Intensification with land use plans in micro-watersheds using a farming system approach.	- Organizing training for watershed committees, watershed association on technological gaps and watershed plus activities. - Demonstration on improved cropping system in watershed areas. - Participatory solution of root cause of problems in watershed areas. - Organizing training for the user groups on equity in distribution of benefits and conflict management - Assess the magnitude of soil erosion problems in specific area and prepare a detailed action plan to manage the erosion problem by involving the farmers. - Identify technological action including ITK	√	√

			- and assess farmers preference to the above options - Assess willingness of farmers to pay at least 25-50% of cost required of mechanical measures. - Organize training for the user groups regarding implementation of various soil conservation measures & maintenance or records. - Release the fund for implementation of mechanical or biological measured in installment.		
	Community Organization				
1.	Organization of farmer groups for new commodities to be produced through diversification of farming system.	Diversification	- Identify the new commodities and assess the scope for formation of groups. - Sub-contract to NGOs for organization of farmer groups. - Organizing training for capacity building to the groups.	√	√
2.	Organization of commodity oriented groups for better access to inputs, marketing & technological support.	Intensification	- Identify the success stories where CIGs have been successful. - Exposure visit of feasible farmer groups to successful areas where CIGs have been formed. - Organize groups with the help of NGOs. - Organize training for skill up gradation & group empowerment.	√	√
3.	Organization of woman SHGs for NRM.	NRM	- Identify the successful SHGs. - Arrange exposure visit to successful villages. - Organize SHG formation through regular interaction by involving local NGOs. - Motivate the group member for capacity to share, collectiveness to work on group & capacity to make decision. - Organize trainings for the SHGs on management of records and capacity building. - Facilitate linkage with other institutions for development of economic base of members, supply of credit & inputs etc. - Conduct regular meetings of the SHGs and decide further course of action.	√	√
4.	Organization of Water User Association (Pani Panchayat) for distribution of canal water & maintenance of system.	NRM	- Organize the farmers to form WUA through the NGOs. - Exposure visit of WUA members to successful canal areas under AIP. - Training of WUAs on water management, maintenance of canals, rational distribution of water, crop planning & collection of water rates. - Demonstration in canal areas on water management & multiple cropping. - System improvement & farmer turn over in canal areas.	√	√
5.	Organization of user groups for afforestation & JFM.	NRM	- Identification & analysis of success stories on JFM. - Exposure visit of farmers to successful sites. - Identification of common lands or waste lands for afforestation. - Formation of user groups by involving NGOs. - Training for the group members on raising seedlings, planning techniques, after care & protection of plantation and management of CPRs. - Linkage with forest department, revenue department & Panchayat for afforestation & joint forest management.	√	√

			- Linkage with input supply such as seeds, saplings, polythene bags etc. for raising healthy seedlings/saplings.		
Sustainability of the Project					
1.	Cost sharing by farmers on sustainable issues like soil & water conservation & NRM.	Sustainability	- Awareness campaign for the farmers for NRM & farmers participation. - Motivating the farmers to pay 25-50% for the community work and 50% contribution for individual works. - Pursuing the user group to contribute for community work & building a revolving fund.	√	√
2.	Building up revolving fund on service charges & supply of critical inputs.	Sustainability	- Organizing awareness campaign over the farmers about the necessity of revolving funds. - Motivating the CIGs or FIGs for payment of cost for AI, Soil testing, consultancy, grafts & bio fertilizers etc. - Utilizing the revolving fund for further multiplication by supply more inputs.	√	√
3.	Opening agro- clinics and providing consultancy on payment	Sustainability	- Organizing awareness campaigns for the farmers about the concept of agro clinic at block level & Panchayat level. - Collection of service for charges additional field & advisory service.	√	√
4.	Publication of newsletter and periodicals by ATMA and circulation at nominal prices	Sustainability	- Identify success status of various enterprises, important commodities of different AES, need of the farmer etc. - Publish monthly newsletter and periodicals on technical and managerial aspects. - Circulate among the farmers and extension functionaries on payment of cost for creating the revolving fund of ATMA.	√	√
Community Organization					
5.	Creation of farmer's forum with membership fee at ATMA level for participatory, monitoring and evaluation of ATMA activities	Sustainability	- Awareness campaign at Panchayat level about the farmers forum at ATMA. - Collect annual or life membership from farmers who are interested to be members of the farmers forum. - Training of members on participatory monitoring and evaluation. - Constitute a monitoring evaluation unit at ATMA and a committee involving NGOs/farmers representative for monitoring and evaluation of ATMA activities on participatory basis.	√	√
6.	Developing linkage between district level farmers federation and sectorial groups at block level with ATMA through affiliation.	Sustainability	- Formation of block level sectorial association and district level federation with the help of NGOs. - Affiliate the bodies with ATMA under specific terms and conditions. - Organize training for farmers federation for their empowerment. - Distribute technical literature prepared by ATMA to the FA/FF at a very nominal price to build up their capacity or knowledge base.	√	√
Fish Production System					
1.	Introduction of composite fishery in water bodies	Intensification	- Awareness campaign for pond preparation and composite fishery - Organizing farmers training for composite fishery - Demonstration of critical practices. - Facilitate supply of critical inputs like fingerlings and prawn juveniles.	√	√

2.	Introduction of poly culture in village tanks	Intensification	- Exposure visit to successful sites and CIFA, Bhubaneswar. - Training of motivated persons on technology aspects by using successful farmers as trainees (Institutional). - Linkage of above farmers with credit & input organizations. - Demonstration of critical practices on poly culture.	√	√
3.	Pond preparation & adoption of technology for high fish production	Intensification	- Exposure visit of willing fish farmers to CIFA or successful pond sites. - Training on improved production technology. - Facilitate linkage with supply of critical inputs, credit & marketing.	√	√
4.	Decentralized production of fingerlings	Intensification	- Identification of pond, water bodies where fish production on composite techniques or poly culture techniques is feasible. - Identification of farmers for fish seed production. - Exposure visit to CIFA & local units of fingerlings production. - Organization of training for fingerling production. - Facilitate linkage with input supply, credit for setting hatchery unit & marketing.	√	√
Plantation Crops					
1.	Alternate land use with agro forestry, silvi-pasture and farm forestry	NRM	- Awareness campaigns for alternate land use on arable and non arable lands. - Organizing user groups in watershed area for alternate land use. - Training on raising seedling & planting techniques for social forestry, agro forestry & JFM. - Facilitate supply of seed materials for raising sapling (Subabul, Siris, Babul, Acacia, Shisam, Aonla, Imli, Rosewood, Mahua & teak)	√	√
2.	Cultivation of medicinal plants	NRM	- Identifying sites & farmers for medicinal plant cultivation. - Exposure visit to research station & successful plantation sites. - Training to need farmers on cultivation techniques & processing. - Facilitate linkage with inputs supply & marketing.	√	√

Proposed Research Strategies

In most cases, farmers have either not adopted or partially adopted the technologies recommended by research station/centers because the technologies are not consistent with their farming situations. It is a fact that farmers vary on socio-economic parameters such as farm size, resources, labour, skill, literacy level, managerial ability, land tenure system and risk bearing capacity. The technologies, therefore, have to be evaluated and refined by taking into account the realistic environment of the farmer with their active participation through On Farm Adaptive Research. For effective results, this needs to be done in district recommendation domains, characterized by relatively homogenous farming system associated with similar soil and agro-climatic conditions. Moreover, some problems of local significance, being faced by the farmers in particular AES are also required to be dealt by conducting adaptive basic research as the information on the same is not available.

With these facts as the background and with the available meager resources at the disposal of the farmers in the district, commodity wise and AES wise research strategy is proposed in this chapter

Schedule of activities for research strategies

Crop	Strategy	Proposed activity	Relevance to the AES	
			I	II
Paddy	Screening of superior local varieties of paddy from different paddy growing pockets of the district and testing performance.	- On station research - On farm trails Seed + Fertilizer as per recommendation.	√	√
	Testing and verification of HYV of short duration of paddy recommended in the state and adjoining area	- On station research. - On farm trails Seed + Fertilizer as per recommendation.	√	√
	Testing and demonstration of HYV/ Hybrid paddy recommended in the state and adjoining areas	- On farm trails SEED + Fertilizer as per recommendation	√	√
	Development and verification of fine variety of paddy	- On station research - On farm trails.	√	√
	Re synthesis of fertilizer dose of upland paddy for resource poor farmer (INM)	- On farm trails. - On station research.	√	√
	Participatory selection of suitable intercrop with upland paddy.	- On farm trails.		
Maize	To develop/ verification of Hybrid/composite variety with INM/ IPM package	- On farm trails Seed + Fertilizer as per recommendation - Farmers practice.	√	√

Miscellaneous Research Issue

Sl. No.	Strategy	Proposed activity	Relevance to the AES	
			I	II
1.	Amendment of acid soil using locally available liming material (Basic Slog)	- On farm trials		√
2.	Verification and introduction of compost making from locally available biomass	- Digging pit + Rock phosphate	√	√
3.	Verification and testing of Vermi culture techniques for making organic manure from farm waste	- On farm trials	√	√
4.	Introduction of improved breed of Pig (T & D) and goat.	- On farm trials	√	√
5.			√	√
6.	Validation of ITKs for control of crop pest and animal diseases	- On farm trial. - On farm trial.	√	√
7.	Minimum tillage requirement for upland crops in the context of soil erosion	- On farm trials.	√	√
8.	Selection of ideal fodder crops for animal Nutrition	- On station trials.	√	√
9.	Mixed planting using different proportion of timber wood, fuel, food and fodder species.	- On farm trials.	√	√
10.	Introduction of medicinal plants like Ashwagandha, Lemon Grass, Neem, Wild, Marigold etc.	- On farm trials - Planting material.	√	√

X

POLICY ISSUES TO BE ADDRESSED IN EAST SINGHBHUM DISTRICT

Issue/ Problem

1. Degradation of land due to soil erosion.
2. Deforestation of forest.
3. Glut in the vegetable market particularly in tomato.
4. Open grazing of animal after kharif season due to problem of feed/fodder and mineral mixture.
5. Poor irrigation facility
6. Certification of Organic produce.
7. Low price of farmers produce.
8. Lack of technical graduate at block.
9. Lack of quality Input
10. Lack of Financial Support
11. Low moisture holding capacity

Proposed Policy/ Intervention

1. Detail survey of eroded area and possible solution to reclaim this area.
2. Reclamation of degraded land by afforestation.
3. Market yard facility with cool chain system should be provided in the district.
4. Opening of Agri-horticulture Park, Agri-technology Park & Agri-bio Park for providing single window system for export.
5. Establishment of Gramin haat
6. To minimize the open grazing, existing pasture Land should be developed to facilitate water, perennial fodder as well as trench for animals.
7. Government should provide subsidy on animal feed/ mineral mixture like fertilizer to boost the milk production.
8. Social forestry and joint forest management should be promoted to check the deforestation.
9. Modern cold storage facility should be provided in every block of the district.
10. Proper utilization of existing water bodies such as Swarnrekha Multipurpose Project, as well as perennial nalas & rivers etc.
11. Location specific rainwater management.
12. Promotion of organic farming..
13. Effective implementation of Bank Credit Flow System for farmers.
14. Establishment of Agro based food processing industry.
15. Establishment of Food Park.
16. Establishment of Govt. Purchase Centre at Block Level to assure minimum support price to the farmers.
17. Railway linkage with metropolitan city for the farmers to carry and sale their produce.

XI

BASE LINE DATA AND VISION FOR THE NEXT FIVE YEARS

Important Agricultural Statistics of East Singhbhum District for the year 2004-05

Base Line Data in respect of interventions likely to be carried out by PIAs (Indicative)

Sl. No.	Sector	Base Line Data		Productivity (Qtl./ha) after 5 Years	Intervention
		Area (Ha)	Productivity (Kg/ha)		
1.	Rice (Garma+Bhadai+Aghani)	106000	1500	3000	Diversification of upland paddy area for pulses and vegetable cultivation. - Use of HYV/ Hybrid, drought resistant and blast tolerant varieties. - INM & IPM.
2.	Maize	3468	1000	2000	- Use of good quality private & public hybrids. - Popularitition of high protein quality maize, popcorn, baby corn etc. - INM & IPM.
3.	Gram	500	900	1200	- Use of good quality HYV. - INM & IPM. - Proper agronomic management.
4.	Arhar	1500	600	1000	- Area to be increased by intercropping with maize, upland paddy, groundnut, soyabean etc. - INM & IPM - Introduction of high yielding medium duration variety.
5.	Kulthi	1500	400	1000	- Use of good quality HYV - Proper agronomic management. - INM & IPM.
6.	Urad	3000	600	900	- Use of good quality HYV - Proper agronomic management. - INM & IPM.
7	Mustard	800	250	700	Use of good quality drought tolerant HYV - INM & IPM
8	Groundnut	300	800	1500	- Use of HYV - INM & IPM. - Intercropping with Arhar
9	Cauliflower	520	15000	25000	- Supply of good quality HYV for off-season crop. - Use of micro nutrient

					- INM & IPM. - Processing and post harvest management to be encouraged.
10	Cabbage	360	20000	25000	Supply of good quality HYV for off-season crop. - Use of micro nutrient - INM & IPM. - Processing and post harvest management to be encouraged.
11	Potato	1500	15000	20000	- Supply of good quality blight resistant variety. - Cold storage facility - Contract farming with public & private partnership. - INM & IPM.
12	Tomato	600	15000	25000	- Supply of high yielding wilt resistant varieties. - Kharif tomato should be promoted. - INM & IPM - Processing of tomato to be encourages.
13	Brinjal	640	15000	30000	- Supply of high yielding wilt resistant varieties. - INM & IPM
14	Bhindi	1000	10000	15000	- Supply of good quality HYV/hybrid variety seeds - INM & IPM
15	Ridge Gourd	560	15000	20000	- Supply of good quality HYV/hybrid variety seeds - INM & IPM
16	Bitter Gourd	30	5000	10000	- Supply of good quality HYV/hybrid variety seeds - INM & IPM
17	Fisheries	185	2000	5000	- Introduction of Composite Fish Culture - Supply of good quality Fish fry. - Improve management practices.
18	Milch Cow		1.25	2.5	- Artificial insemination - Feeding management
19	Goat	191254	20 Kg.meat/ anum/No.	80 Kg.meat/ anum/No.	Breed Improvement Feeding management
20	Poultry	500000	½ Kg.	1 Kg.	- Feeding management