

# IX PROPOSED STRATEGIES ACTIVITY PLAN FOR EXTENSION

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

### **A. Improvement of Productivity**

#### **1A: Agricultural production system**

Crop	Thrust area	Strategies purpose	Activities purpose	Relevance to AES
<b>1 Paddy (Rainfed)</b>	Higher seed rate due to broad casting method of sowing	Use of recommended seed rate	-Demonstration -Exposure visits -Training -Popularization of suitable sowing implements	I, II & IV
	Use of untreated seeds	Encouraging sowing with treated seeds	-Demonstration -Training -Availability of small sized packets of seed treatment chemicals	I, II & IV
	Judicious used of chemical fertilizer	To promote balanced application of chemical fertilizer	-Demonstration -Soil testing -Exposure visits -Training	I, II & IV
	Excess use of N fertilizer as top dressing	Promotion of recommended dosage of N Fertilizer	-Demonstration -Soil testing -Exposure visits -Training	I, II & III
<b>2. Paddy (Irrigated)</b>	1. Improper nursery method	-Raised seed beds -Increase of area for nursery	-Demonstration -Exposure visit - Training	II & III
	2. Use of local varieties	Improved/Hybrid	-Demonstration -Exposure visit - Training	II & III
	3. Over aged seedlings	-Transplanting optimum aged seedlings	-Demonstration -Exposure visit - Training	II & III

	4. High seed rate	- Use of optimum seed rate	-Demonstration -Exposure visit - Training	II & III
	5.Low plant population	- Optimum Plant population	-Demonstration -Exposure visit - Training	II & III
	6. Non application of micro nutrients	-Popularization of micro nutrients	-Demonstration -Exposure visit - Training	II & III
	7. Judicious use of pesticides	- Popularization of Integrated insect pest and disease management	-Demonstration -Exposure visit - Training	II & III
	8. Weed management	- Popularization of chemical weedicides	-Demonstration -Exposure visit - Training	II & III
	9. Improper time of harvesting	- Popularization of proper time of harvesting	-Demonstration -Exposure visit - Training	II & III
	10. Excessive use of fertilizer dose	- Promotion of recommended dosage of fertilizer	- Method - Demonstration - Exposure visit - Training	I, II & III
	11..Non use of micro nutrients	- Popularisation of recommended dosage of micro nutrients	-Method - Demonstration - Exposure visit - Training	I, II & III
	12. Inadequate disease management	- Popularization of IDM	- Method - Demonstration - Exposure visit - Training	I, II & III
	2. No seed Treatment	- Use of seed treatment chemical	-Method Demonstration -Exposure visit - Training	II & III
	3. Imbalanced use of fertilizer and micro nutrients	- Application of recommended dose of fertilizer along with Gypsum	-Demonstration -Exposure visit - Training	II & III
	4. Non use of Bio-fertilizes	- Popularization of Bio-fertilizes	-Demonstration -Exposure visit - Training	II & III
	5. No pest and disease Management	- Popularization of Integrated pest and disease management practices	-Demonstration -Exposure visit - Training	II & III
<b>3.Pulses</b>	1. Conservation of local varieties	- Popularisation of improved HYVs	-Demonstration -Exposure visit - Training	I, II, III & IV
	2. Improper fertilizer application	- Use of fertilizers in accordance with the recommended dose	-Demonstration -Exposure visit - Training	I, II, III & IV
	3. Use of untreated seed	- Sowing with treated seeds	-Demonstration -Exposure visit - Training	I, II, III & IV

	4. Non-inoculation of seed with Rhizobium culture	- To promote inoculation of seed with Rhizobium culture	- Demonstration - Exposure visit - Training	I, II, III & IV
	5. Poor weed management	- Adoption of timely and proper weed management	- Demonstration - Exposure visit - Training	I, II, III & IV
	6. Heavy insect pest/ disease infestation	Adoption of IPM	- Demonstration - Exposure visit - Training	I, II, III & IV
<b>4. Maize (Irrigated and rainfed)</b>	1. High seed rate	- Optimum seed rate	- Method - Demonstration - Exposure visit - Training	I, II, III & IV
	2. Non adoption of seed treatment	- Application of seed treatment	- Demonstration - Exposure visit - Training	I, II, III & IV
	3. Judicious use of chemical fertilizers	-Use of recommended dose of fertilizer	- Demonstration - Exposure visit - Training	I, II, III & IV
	4. Use of Micro-nutrients	-Use of recommended quantity of micro nutrients	- Demonstration - Exposure visit - Training	I, II, III & IV
	5. Judicious use of insecticides and pestisides	-Adoption of Integrated pest and disease management practices	- Demonstration - Exposure visit - Training	I, II, III & IV
	6. Sowing of maize in endemic areas	-Crop rotation	- Demonstration - Exposure visit - Training	I, II, III & IV
<b>5. Pop corn</b>	1. No seed treatment	- Use of seed treatment chemicals	- Method - Demonstration - Exposure visit - Training	I, II & III
	2. Inadequate use of fertilizes	- Use of recommended dose fertilizer	- Demonstration - Exposure visit - Training	III
	3. Non use of micro nutrients	- Use of recommended micro nutrients	- Demonstration - Exposure visit - Training	III
	4. Improper pest and disease management practices	- Adoption of integrated pest and disease management practices	- Demonstration - Exposure visit - Training	III
	5. Non adoption of hand pollination practices	-Following hand pollination	- Demonstration - Exposure visit - Training	III
<b>2. Horticultural Production System.</b>				
<b>1) Tomato</b>	1. No seed treatment	Adoption of recommended seed treatment	-Method Demonstration - Exposure visit - Training	I, II, III & IV
	2. Excess use of fertilizer	Application of recommended dose of fertilizers	- Demonstration - Exposure visit - Training	I, II, III & IV
	3. Non use of micro nutrients	Application of recommended micro nutrients	- Demonstration - Exposure visit - Training	I, II, III & IV

	4. Judicious use of insecticides & pesticides	Adoption of IPM & IDM	- Demonstration - Exposure visit - Training	I, II, III & IV
	5. Use of resistant Hybrids for Bacterial wilt	Use of Bacterial resistant Hybrids	- Demonstration - Exposure visit - Training	I, II, III & IV
	6. Glut in the market	Restricting the Tomato area through Legislation	Legislation on area of production	I, II, III & IV
<b>b) Potato</b>	1. Improper seed treatment	Adoption of recommended seed treatments.	- Method Demonstration - Exposure visit - Training	II & III
	2. Unbalanced use of chemical fertilizer	Use of recommended fertilizer	- Soil testing - Demonstration - Exposure visit - Training	II & III
	3. Judicious use of insecticides and pesticides	- Popularization of IPM & IDM	- Demonstration - Exposure visit - Training	II & III
	4. Storage loss	Popularization of improved storage method	- Demonstration - Exposure visit - Training	II & III
<b>c) Cabbage / cauliflower</b>	1. Non use of micro nutrients	Use of recommended micro nutrients	Demonstration Exposure visit Training	II & III
	2. Judicious use of insecticides and pesticides	Adoption of Integrated pest and disease management	Demonstration Exposure visit Training	II & III
<b>d) Chilles</b>	1. Judicious use of insecticides and pesticides	Adoption of Integrated pest and disease management	Demonstration Exposure visit Training	II & III
	2. Non use of micro nutrient	Use of recommended Micro nutrient	Demonstration Exposure visit Training	II & III
	3. Inadequate pest and disease management	Adoption of integrated pest and disease management	Demonstration Exposure visit Training	II & III
<b>e) Onion</b>	1. Broad casting method of sowing and non – optimal population	Adoption of line sowing and maintenance of plant population	Demonstration Exposure visit Training	II & III
	2. Untimely weed management	Popularization of weedicide	Demonstration Exposure visit Training	II & III
	3. Inadequate disease and pest management	Adoption of Integrated pest and disease management	Demonstration Exposure visit Training	II & III
<b>f) Mango</b>	1. Alternate bearing	Popularization of regular bearing varieties / Hybrid	Demonstration Exposure visit Training	I, II, III & IV
	2. Non use of fertilizers	Application of recommended dose of fertilizers	Demonstration Exposure visit Training	I, II, III & IV
	3. Inadequate plant protection measures	Popularization of recommended plant protection measures	Demonstration Exposure visit Training	I, II, III & IV

4. No regular Inter cultivation / weed management	Adoption of recommended Inter cultivation practices	Demonstration Exposure visit Training	I, II, III & IV
5. Local method of harvesting	Popularization Improved method of harvesting and Implements	Demonstration Training	I, II, III & IV
6. Improper sanitation in the garden	Proper maintenance of garden	Demonstration Exposure visit Training	I, II, III & IV
7. Old age trees	Rejuvenation / Replacement of aged trees	Demonstration Exposure visit Training	I, II, III & IV
8. Inadequate pest of disease management	Adoption of IPDM	Awareness Demonstration Training	I & III
9. Non use of micro nutrients	Use of recommended micro nutrients	Awareness Demonstration Training	I & III
10. Flooding method of irrigation	Adoption of drip method of irrigation Silk worm	Awareness Demonstration Training	I & III
11. Improper egg transportation	Popularizing the use of egg carrying box for safe transportation of silk worm egg	Awareness through Demonstration	I, II, & III
12. Dominance of Race CSR 2x4	Popularizing the high yielding race	Awareness through Training and Exposure	I, II, & III
13. Non adoption of disinfectants through power sprayers	Popularizing the importance of disinfectants through power sprayers	Awareness through Method Demonstrations	I, II, & III
14. Non adoptions of chawki rearing	Encourage to start private CRC	Create awareness Through method Demonstration	I, II, & III
15. Non adoption of recommended quantity of bed disinfectants	Adoption of recommended quantity of bed disinfectants	Awareness through Demonstrations	I, II, & III
16. Non use of mounting hormone	Popularizing the use of mounting hormone	Method Demonstrations	I, II, & III
17. Non adoption of separate Mounting hall	Popularizing the low cost mounting hall	Awareness through Exposure	I, II, & III
18. Non adoption of method of plastic mountages	Popularizing the use of plastic Chandrikes	Create awareness through exposure, and Method Demonstration	I, II, & III
10. Non adoption of method of use of lime powder	Popularizing the use of lime powder in large scale in rearing	Awareness through Exposure	I, II, & III
11. Non adoption of method of mounting temperature	Adoption of proper temperature at the time of mounting	Create awareness Through training regarding importance of temperature in mounting	I, II, & III

<b>3. Fish production System:</b>				
<b>1. Fish production</b>	1. Unawareness about physico-chemical parameters of soil and water of fishponds.	Creating awareness about physico-chemical Parameters	Training Exposure visit Demonstration	II & III
	2. Improper Pre stocking measures	Proper p restocking Measures	Training Exposure visit Demonstration	II & III
	3. Improper stocking measures	Promotion of proper stocking measures	Training Exposure visit Demonstration	II & III
	4. Unawareness about composite fish farming	Creating awareness about composite fish farming	Training Exposure visit Demonstration	II & III
	5. Improper artificial feeding	Promotion of proper artificial feeding	Training Exposure visit Demonstration	II & III
	6. Unexploited potential of fish farming in water storage ponds village ponds and rivetrlet	Exploiting the potential of fish farming in storage ponds village pond	Training Exposure visit Demonstration	II & III
	7. Marketing of fish through unorganized sectors	To promote marketing of fish through organized sectors	Training Exposure visit	II & III
	8. Unawareness about cold storage and processing of fish	To create awareness about storing fish in cold storages and process the fish	Training Exposure visit	II & III
	9. Non availability of quality seed in time and space	To Encourage private entrepreneurs to setup fish seed hatcheries	Training Exposure visit	II & III

#### 4. Animal Husbandry

<b>Animal</b>	<b>Critical gap</b>	<b>Strategic issue</b>	<b>Strategies</b>	<b>AES</b>
<b>1. Cow</b>	a) <u>Artificial insemination</u> Partial adoption of AI	a) Improving knowledge about advantage and disadvantages of AI. b) Improving percentage of conception in AI.	a) providing awareness about AI with audio – visual aids. b) Intensify the availability of technical staff. c) Providing refresher training to technical persons. e) Intensify the availability of semen , semen storage and transportation. f) Conducting fertility improvement camps.	I, II, III & IV
	b) <u>Fodder</u> gap in adoption of quality fodder feeding.	Improving the knowledge about animal production capacity and its fodder requirement	a) Providing awareness about animal production capacity, its requirements and dairy economics. b) Intensify the supply o good quality fodder seeds and root slips ex. Lucerne, Rhodes, Signal, Green panic and Azola.	I, II, III & IV
	c) <u>Minerals &amp; vitamins</u> Full gap in adoption of feeding minerals & vitamins.	Improving knowledge about importance of minerals & vitamins.	a) Intensify the awareness' programmes about importance of feeding minerals & vitamins.	I, II, III & IV
	d) <u>Inter-calving period</u> .	Improving knowledge about	a) Intensify the awareness programme about “a calf a year”.	I, II, III & IV

	larger inter calving period.	“a calf a year”.		
	e) <u>Health care.</u> gap in health care management.	Improving knowledge about animal health and hygiene.	a) Intensify the awareness programme about animal health & hygiene through trainings and field visits. b) Intensify the conduction of animal health camps. c) Intensify the conduction of mass dosing programme and external parasites control programmes. d) Erecting disease diagnostic labs at taluka level hospitals.	I, II, III & IV
	f) <u>General management.</u> Partial gap in adoption of general management	Improving knowledge about animal management and its importance.	a) Intensify the awareness programmes about animal management through training and field visits.	I, II, III & IV
	g) Average milk yield . full gap in average milk yield production ( 3-5 lts/ animal)	Improving the knowledge about complete dairy management and its economics	By providing awareness about complete dairy management and economics that is all the above mentioned activities	I, II, III & IV
<b>2. Buff aloes</b>	a) <u>Breed upgradation.</u> partial adoption of artificial insemination.	a)Improving awareness of AI importance. b) Improve availability of technical persons. c) Improve conception rate.	a) Providing awareness programmes through training and field visits. b) Intensify the availability of technical persons. c) Providing refreshment training to technical persons. d) Conducting fertility improvement camps.	II & III
	b) <u>Feed management.</u> Partial adoption of feed management.	Improve awareness about feed and fodder requirement of the animal.	a) Providing awareness programmes about the feed and fodder requirement of the animal. b) Intensify the supply of fodder seeds.	II & III
	c) <u>Intercalving period.</u> larger intercalving period.	Improve awareness about breeding programmes.	a) Conducting awareness programmes about breeding through training and field visits.	II & III
	d) <u>Health care</u> non adoption of deworming schedule	Improve the knowledge about the importance of deworming	a) Launching providing the awareness about importance of deworming b) Conducting deworming camps	II & III
<b>3. Sheep &amp; Goats</b>	a) <u>Breed upgradation.</u>  Breeding with non descriptive males.	Improving the awareness about the breeding.	a) Providing under taking the awareness programmes about the breeding i.e. avoiding inbreeding and in descriptive breeding through training & field visits. b) Providing graded rams i.e. Rambulae, Bannur. Bucks i.e. Jamnapuri. c) Assisting local progressive farmers with supply of breeding stocks.	I, II, III & IV

	b) <u>Feed management.</u> Feeding poor quality of green fodder and not feeding concentrates, minerals & vitamins.	Improving the awareness about requirements and importance of feed and fodder.	a) Providing under taking awareness programme about feed, fodder and production through training & field visits. b) Improve grassland quality through providing good quality fodder seeds like signal, green panic and stylo. c) Encouraging growing of fodder trees through supply of fodder trees.	I, II, III & IV
	c) <u>Interlambing period</u>  gap of 3-5 months .	Improving awareness about feed , health & general management practices .	a) Through trainings and field visits.	I, II, III & IV
	d) <u>Health care</u> conducting. deworming 1-2 times / year with partial gap.	Improve awareness about importance of deworming.	a) Improve awareness about the importance of deworming through trainings & field visits. b) Conducting mass dosing camps with the assistance of labs.	I, II, III & IV
	e) <u>general management</u> Gap in adoption of cleaning washing & Housing.	a) Improve awareness about general management & its important.	a) Improve awareness about general management & it importance through trainings and field visits. b) Assisting animal owners with bank loans to erect pakka housing.	I, II, III & IV

## 5. Diversification and Intensification

### 1. Agriculture

Critical gap	Strategic issue	Strategies	AESs
Less diversification from cereal crops to high value vegetable crops	Promoting diversification crops to high value vegetable crops	- Demonstration - Exposure visits - Trainings	III
Less area under HYV of cereal crops	Expansion of area under HYV of cereal crops	- Demonstration - Exposure visits - Trainings	II & III
Less area under HYV of oilseed and pulses	Expansion of area under HYV of oilseed and pulses	- Demonstration - Exposure visits - Trainings	I, II, III & IV
Cultivation of disease susceptible varieties of cereals, pulses and vegetable crops	Intensification of disease resistant varieties of cereals, pulses & vegetable crops	- Demonstration - Exposure visits - Trainings	I, II, III & IV

## 2. Horticulture

<b>Critical gap</b>	<b>Strategic issue</b>	<b>Strategies</b>	<b>AESs</b>
Less coverage of area under high value folwer crops	Diversification of area under high value flower crops	- Demonstration - Exposure visits - Trainings	III
Less intercropping practice of growing legume pulses in orchards	Expansion of area under intercropping of legume pulses in orchards	- Demonstration - Exposure visits - Trainings	I, II III
Lack of adoption of beekeeping as income generation source	Promotion of bee-keeping activities	- Demonstration - Exposure visits - Trainings	I & II
Lack of adoption of Mushroom cultivation as source of income	Popularisation of Mushroom cultivation in large no. of farmers	- Demonstration - Exposure visits - Trainings	III
Non-adoption of suitable medicinal plant cultivation	Poularisation of suitable medicinal plant cultivation	- Demonstration - Exposure visits - Trainings	I & II
Non-introduction of minor fruits	Introduction of minor fruits	- Demonstration - Exposure visits - Trainings	I, II, III & IV

## 3. Animal Husbandry

<b>Critical gap</b>	<b>Strategic Issue</b>	<b>Strategies</b>	<b>AESs</b>
Rearing of non-descript cows and buffaloes	Diversification from local breed to improved breeds of cows and buffaloes	- Demonstration - Exposure visits - Trainings	III
Waterland not covered with suitable fodder trees	Utilization of wasteland area under suitable fodder tree plantation	- Demonstration - Exposure visits - Trainings	III
Less adoption of agro-forestry system	Expansion of area under agro-forestry system by planting suitable fodder trees	- Demonstration - Exposure visits - Trainings	I & II
Lesser adoption of backyard poultry	Intensification of backyard pultry	- Demonstration - Exposure visits - Trainings	I, II, III & IV
Dairy enterprises limited to home consumption	Intensification of dairy enterprises as a source of income	- Demonstration - Exposure visits - Trainings	III
Rearing of non-descript piggery & goatry	Diversification from local breed to improved breed of pig (T & D)	- Demonstration - Exposure visits - Trainings	I, II & IV

#### 4. Fisheries

<b>Critical gap</b>	<b>Strategic issue</b>	<b>Strategies</b>	<b>AESs</b>
Less adoption of Pisciculture in ponds and running water	Intensification of Pisciculture in ponds/running water	- Demonstration - Exposure visits - Trainings	II & III
Monoculture practices are common in Fish farming	Diversification from monoculture to composite fish farming	- Demonstration - Exposure visits - Trainings	II & III

### 6. Sustainability

#### 1. Agriculture

<b>Critical gap</b>	<b>Strategic issue</b>	<b>Strategies</b>	<b>AESs</b>
Improper preparation and inadequate use of compost	Promoting proper preparation and adequate use of compst	- Demonstration - Exposure visits - Trainings	I, II, III & IV
Unawareness about the utility of bio-fertilizer and vermiculture	Popularising the use of bio fertilizers and vermiculture	- Demonstration - Exposure visits - Trainings	I, II, III & IV
Non-adoption of green manuring practices	Promoting the practice of gree manuring	- Demonstration - Exposure visits - Trainings	III
Depletion of soil fertility due to inadequate supplementation of major and minor plant nutrients	Promoting the use of major and minor plant nutrients	- Demonstration - Exposure visits - Trainings	III
Non-adoption of proper crop rotation for sustaining the soil fertility	Popularisation of proper crop rotation	- Demonstration - Exposure visits - Trainings	III
Non-adoption of Bio-pesticides	Promoting the use of Bio-pesticides	- Demonstration - Exposure visits - Trainings	I, II, III & IV

#### 2. Horticulture

<b>Critical gap</b>	<b>Strategic Issue</b>	<b>Strategies</b>	<b>AESs</b>
Non-adoption of drip irrigation in orchards	Promoting the use of drip irrigation in orchards	- Demonstration - Exposure visits - Trainings	I, II & IV
Non-adoption of mulching practices in orchards	Promoting the use of mulches in orchards	- Demonstration - Exposure visits - Trainings	IV
Non-adoption of integrated nutrient management	Promoting the use of INM	- Demonstration - Exposure visits - Trainings	I, II, III & IV
Non-availability of trained personnel for budding, grafting and pruning	Skill upgradation of FIG's/Field staff for budding, grafting, pruning etc.	- Demonstration - Exposure visits - Trainings	I, II, III & IV
Unawareness about fruit and mushroom preservation	Promoting improved fruit and mushroom preservation techniques	- Demonstration - Exposure visits - Trainings	I, II, III & IV

## 7. Natural Resource Management

Critical gap	Strategic Issue	Strategies	AESs
Unawareness about rainwater harvesting	Promoting rainwater harvesting structure/measures	- Demonstration - Exposure visits - Trainings	I, II & IV
Degradation of land due to gully erosions	Demonstrations of contour bunding, trenching, pugging and plantation of improved grasses	- Demonstration - Exposure visits - Trainings	I, II & IV
Indiscriminate mining in riverbeds, khuds, etc. leading to heavy soil erosion	Protection of riverbeds and khuds etc through constructing spur and through vegetative cover	- Demonstration - Exposure visits - Trainings	II
Non-introduction of Pisciculture in already constructed water harvesting structures	Popularisation of pisciculture in existing water harvesting structures	- Demonstration - Exposure visits - Trainings	III

### 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 meagre resources at the disposal of the farmers in the district, commodity wise and AES wise research strategy is proposed in this chapter

## 1. Farmers Participatory On Farm Research.

### Summary Statement of Proposed Research Strategies of AES in Chatra District

#### A. Agriculture

Sl. No.	Participatory research Issues	Relevant to different AES			
		AES-I	AES-II	AES-III	AES-IV
1.	Confirmation trial on the practice of inter cropping to red gram and maize	√	√		√
2.	Improvement in paddy varieties resist to blast and bacterial blight disease.	√	√	√	√
3.	Trial on use of bio fertilizer in rice	√	√	√	√
4.	Improving red gram variety resistant to wilt and pod borer evolving IPM practice.	√	√		√
5.	Conformation trials of on Birsa Bold ground nut varieties	√	√	√	√
6.	Assessment and refinement needed on semi irrigated paddy varieties Earheads.	√	√		√
7.	Assessment of Hybrid varieties of rice, maize		√	√	
8.	,Suitable study is needed in adoption of drip irrigation in paddy	√	√		
9.	Suitable studies water infiltration rate by taking water shed management practice	√	√		√
10.	Studies on improving the cooking quality of Hybrid paddy (Rice)		√	√	
11.	INM in rice wheat based cropping system			√	
13.	Screening and test of gene of pulses grown in District	√	√		√
14.	Introduction of pest resistance varieties of pigeonpea	√	√	√	√
15.	IPM in vegetable based cropping systems			√	
16.	Inclusion of low water requiring crop/crop rotation for rainfed areas	√	√		√
17.	Micronutrients scheduling for irrigated Rice-Wheat system			√	
18.	Soil organic matter studies with green manuring to keep healthy balance of organic carbon in soil			√	
19.	Screening of oilseeds like mustard-toria & castor, which has potential in the district			√	
20.	Validation of indigenous technical knowledge	√	√	√	√
21.	To study the feasibility of Agri.-horticulture & horti-pasture system in old & news orchards	√	√	√	√

**B. Horticulture.**

Sl. No.	Participatory research Issues	Relevant to different AES			
		AES-I	AES-II	AES-III	AES-IV
1.	Trial on use of Bio fertilizers in vegetable crops	√	√	√	√
2.	Use of Pheromone traps for Control of fruits and shoot borer in Brinjal		√	√	
3.	Trial on use of micro nutrient in Tomato and brinjal	√	√	√	√
4.	Conformation Research on excess use of fertilizers in Tomato		√	√	
5.	Economics feasibility in improved storage techniques at field level in Potato and Tomato	√	√	√	√
6.	Need more research in method of in sowing onion crop			√	
7.	Evolving annual bearing Mango varieties	√	√	√	√
8.	Inter cropping in orchards	√	√		√

**C. Animal Husbandry**

Sl. No.	Participatory research Issues	Relevant to different AES			
		AES-I	AES-II	AES-III	AES-IV
1.	Validation of TKS for Control crop pests and Animal disease	√	√	√	√
2.	Selection of ideal fodder varieties of crops for animal production			√	
3.	Bio mass recycling for soil health maintenance	√	√	√	√
4.	Study on improved breed of pig, cow and cock in different microfarming situation	√	√	√	√
5.	Studies and delineation of F.M.D. prone area in the district	√	√	√	√
6.	Studies on Crossbred cow infertility			√	
7.	Study of suitability of different fodder crops on agri-situation basis			√	
8.	Studies on demand and supply of animal products			√	
9.	Studies on demand and supply of animal products for marketing status improvement			√	
10.	Economic study of each animal enterprise under different situations of the district	√	√	√	√
	Studies on nutritious animal and poultry feed production from locally available material as health supplement	√	√	√	√

## 2. Research Strategies for Plantation crops

Sl. No.	Fish Production System	Relevant to different AES			
		AES-I	AES-II	AES-III	AES-IV
1.	Studies on development of riverine fish culture technique		√		
2.	Studies on exotic carp suffering from diseases		√	√	
3.	Studies on low cost fish feed production technique form locally available resources	√	√	√	√

## Proposed marketing strategies

### Proposed Strategies for Marketing Support And Value Addition

Sl. No.	Strategy/Intensification and Activities	AES - I	AES - II	AES - III	AES - IV
<b>A.</b>	<b>Marketing Support and Value Addition</b>				
1.	Promoting private entrepreneurship to establish tomato based industries		√	√	
2.	Promoting private entrepreneurship for maize based industries for cattle and poultry feed and other value added products – Research and HRD component	√	√	√	√
3.	Promotion of Kisan Ki Mandi – Tech. Know – how, Publicity, Contingency and Dovetailing with District Administration for cost sharing & facilitation 10 centre	√	√	√	√
4.	Promotion of Commodity Cooperative Marketing – Capacity building	√	√	√	√
5.	Promotion of Rural godowns and cold chambers – Dovetailing with Govt. departments	√	√	√	√
6.	Strengthening of FCI network, PACS and State Agril. Marketing Board outlets – Dovetailing with Govt.	√	√	√	√
7.	Networking with COMFED (Sudha brand) outlets for marketing honey etc.			√	
8.	Popularizing very fine rice varieties along with milling, processing and marketing. HRD, Exposure visit and forward linkage	√	√	√	√
9.	Intensification of organic vegetables production. HRD, Exposure visit and forward linkage	√	√	√	√
10.	Frequent market surveys for consumer preference to tailor demand-linked production (Market study & participatory technology developemnt)			√	
11.	Strengthening market information through IT and FIAC. (Internet connectivity & hiring IT facilitators)			√	
12.	Develop and establish market information network from block, district, State, national to international levels. (Through FIAC)	√	√	√	√
13.	Studying the present market information network prevailing in the district along with the gaps.	√	√	√	√
14.	Developing information technology network at various levels.	√	√	√	√
15.	Technical and managerial support to FIAC and BTTs	√	√	√	√
16.	Exploring possibility of news media-FM radio station (Hiring air time)	√	√	√	√
17.	Identifying and studying of the existing farmers organizations	√	√	√	√
18.	Identification of success stories	√	√	√	√
19.	Arranging exposure visits training etc.	√	√	√	√
20.	Providing techno-managerial support	√	√	√	√
21.	Identifying and studying activities of various organizations engaged in marketing operation along with commodities handled	√	√	√	√
22.	Finding out the need for marketing the commodities by farmers/farming community	√	√	√	√
23.	Exploring options for contract farming in medicinal and aromatic plants and vegetables	√	√	√	√
24.	Assessment of export oriented marketable commodity by engaging marketing consultants/agencies for forecasting the production and local consumption statistics for Chatra district	√	√	√	√

