

Chapter VIII

Chapter VIII HRD

Strategies for Human Resource Development

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	One day training on INM and fertilizer use on soil test basis.	8	KVK/ ATMA
2	Agriculture	Technology Management	Knowledge skill development	Farmers/ BTT	One day training on in situ water harvesting techniques	8	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.	8	KVK/ ATMA
4	Horticulture	Technology Management	Knowledge skill development	Farmers	Three day training on nursery raising of fruit plants, vegetables and flowers	8	KVK/ ATMA/ HARP
5	Horticulture	Technology Management	Capacity building	Farmers/ BTT	One day training on scope and potential of green house/poly house technology.	8	KVK/ ATMA
6	Horticulture	Technology Management	Capacity building	Farmers	One day training on economic use and maintenance of power tillers.	8	KVK/ ATMA
7	Horticulture	Technology Management	Capacity building	Farmers	Three day training on production technology of off-season and exotic vegetables.	8	KVK/ ATMA/ HARP
8	Horticulture	Technology Management	Capacity building	Farmers/ BTT	Three day training on cultivation, preservation, packaging and marketing of rare/exotic vegetables.	8	KVK/ ATMA/ HARP
9	Agriculture	Technology Management	Capacity building	Farmers	One day training on control of obnoxious weeds and management of pasture lands/arable lands.	8	KVK/ ATMA
10	Horticulture	Technology Management	Capacity building	Farmers	One day training on commercial floriculture and its marketing.	8	KVK/ ATMA
11	Horticulture	Technology Management	Capacity building	Farmers	One day training on training and pruning practices in horticultural crops	8	KVK/ ATMA
12	Horticulture	Technology Management	Capacity building	Farmers	One day training on successful mushroom cultivation.	8	KVK/ ATMA
13	Animal Husbandry	Technology Management	Capacity building	Block level veterinary officers	One day training to vet. pharmacists of AH department on cattle management and artificial insemination.	8	KVK/ ATMA
14	Fishery	Technology Management	Capacity building	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	Capacity building	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	Capacity building	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	Capacity building	NGO members	One 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	Capacity building	ATMA GB members	Orientation of GB about project management (3 days)	2	KVK/ATMA
Sl. No.	Department	Strategy for Development	Training Need	Cadre of participants	Topics of training	No. of training	Name of the Inst. for training
19	ATMA	Extension management	Capacity building	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	Capacity building	Officers	Orientation of AMC about project implementation and project management.	2	MANAGE
21	ATMA	Extension management	Capacity building	Officers	Project management and participatory extension aboard for ATMA and line department officers.	1	Outside State
22	ATMA	Extension management	Capacity building	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	Capacity building	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	Capacity building	FAC	Orientation of FAC members regarding ATMA-Extension Reforms project management.	8	KVK/ATMA/SAMETI
25	ATMA	Extension management	Capacity building	Officers	Interaction of FIG, SHG, NGO with BTT and line department officers/scientists.	3	KVK/ATMA
26	ATMA	Extension management	Capacity building	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	Capacity building	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	Capacity building	Officers	Training of AMC and other officers of the line departments about participatory extension management (3 days)	2	SAMETI/MANAGE
29	ATMA	Extension management	Capacity building	Officers	Exposure visit of AMC and other line department officers to other ATMA districts outside the state.	2	Outside State
30	ATMA	Extension management	Capacity building	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	Capacity building	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	Capacity building	Officers	Orientation of AMC and other officers of line departments about Strategic and participatory planning (3 days)	2	ATMA/SAMETI
33	Stakeholders	Extension management	Capacity building	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	Capacity building	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	Capacity	FAC	Orientation of FAC members about	8	KVK/

Sl. No.	Department	Strategy for Development	Training Need	Cadre of participants	Topics of training	No. of training	Name of the Inst. for training
36	Stake Holders	management Extension management	building Capacity building	NGO/ FIG	Extension Reforms (1 days) 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	ATMA Outside State
37	ATMA	Extension management	Capacity building	FAC	Exposure visit of FACs and BTTs to other success story sites/ATMA.	2	Other ATMA
38	ATMA	Extension management	Capacity building	BTT	Organization of training programme for BTT members on extension methodology and communication techniques (2 days)	2	KVK/ ATMA
39	Line Department	Extension management	Capacity building	Officers	Training need assessment.	2	SAMETI
40	Line Department	Extension management	Capacity building	Officers	Farming system approach.	3	SAMETI
41	Stake Holders	Extension management	Capacity building	Officers	Exposure visits for NGOs, successful farmers, non-official members of GB.	2	
42	ATMA	Extension management	Capacity building	Officers	Orientation and training to AGB, AMC members and O/C of FAC (2 days)	2	MANAGE /SAMETI
43	ATMA	Extension management	Capacity building	Officers	Interaction of AGB and AMC members with FAC members.	2	KVK/ ATMA
44	ATMA	Extension management	Capacity building	Officers	Training of O/C FAC and its members for preparation of Block Action Plan.	3	KVK/ ATMA
45	NGO	Extension management	Capacity building	NGO	Training of NGOs on community organizations (7 days)	3	KVK/ ATMA
46	Stake Holders	Extension management	Capacity building	Private Extension workers	Organizing training for private extension workers (NGOs, FIGs, SHGs etc.)	3	KVK/ ATMA
47	Stake Holders	Extension management	Capacity building	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	Capacity building	Officers	Training on use of media, IT and use of Internet of AMC members (6 days)	2	SAMETI
49	ATMA	IT	Capacity building	Officers	Training on use of media, IT and use of Internet to officers of line department (4 days)	2	SAMETI
50	ATMA	IT	Capacity building	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	Capacity building	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	Capacity building	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

Chapter

IX

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	Proposed activity	Thrust Area	Relevance to the AES			
	Horticultural Production			I	II	III	IV
1.	Expansion of area under off season vegetable by crop substitution	<ul style="list-style-type: none"> - 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. 	Diversification of rainfed uplands	√	√	√	√
2.	Dry land horticulture as alternate land use and crop diversification	<ul style="list-style-type: none"> - Organising 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. 	Diversification of part of upland rice area for horticulture	√	√	√	√
3.	Cultivation of organic spices like ginger turmeric & tuber crops	<ul style="list-style-type: none"> - 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. 	Diversification of uplands for high value crops	√	√	√	√
4.	Introduction of commercial floriculture open & protected with drip & sprinkler irrigation system.	<ul style="list-style-type: none"> - Identification & analysis of success stories where innovative farmers have started commercial floriculture. - Exposure visit to above successful site by other farmers. - Organising 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. 	Diversification of upland for flower cultivation for higher income	√	√	√	√
5.	Introduction of paddy & Dhingiri mushroom in around town area	<ul style="list-style-type: none"> - Identification of villages and farmer groups, where substrate is available. - Organising demonstration on mushroom production. - Facilitate supply of critical inputs like spawn. - Linkage with marketing of produced mushroom. 	Diversification & organizing farm women for mushroom cultivation	√	√	√	√
6.	Commercial cultivation of honey bee	<ul style="list-style-type: none"> - Identification of areas with nectar bearing trees and field crops like mustard, fruit plants & krunj etc. - Identification of farmer interest groups and organising 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. 	Diversification & encouraging farmers for bee-keeping processing & marketing.	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Horticulture			I	II	III	IV
7.	Intensive vegetable cultivation on irrigated areas (Protected & Open)	<ul style="list-style-type: none"> - Identification of areas where vegetables have been successfully cultivated intensively. - Exposure visit to successful sites for motivation of farmers. - Organising training for the farmers on vegetable cultivation using innovative farmers as resource personnel (Institutional). - Facilitate supply of critical inputs for vegetable production. - Organise FIGs for vegetable seed production and marketing. 	Intensification of vegetable cultivation in areas with assured irrigation	-	-	√	√
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).	<ul style="list-style-type: none"> - Educations of farmer through mass media on technological gaps. - Organising 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. 	Intensification of vegetable cultivation by promoting appropriate technology	√	√	√	√
9.	Decentralised production of vegetable seed & planting materials for fruit crops.	<ul style="list-style-type: none"> - 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. - Organising 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. 	Intensification of vegetable seed production in rural areas	√	√	√	√
10.	Post harvest technology, value addition & agro processing for fruits, vegetable and spices	<ul style="list-style-type: none"> - 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. - Organising 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. 	Intensification and promoting value-addition in vegetable crops	√	√	√	√
11.	Overcoming technological gaps in fruit crops like mango, papaya, guava, jack fruit, aonla with drip & sprinkler irrigation	<ul style="list-style-type: none"> - Awareness campaigns on fruit plantation & on technological gaps. - Exposure visit to successful plantation sites. - Organising 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. 	Intensification and value addition in fruit crops	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Agriculture			I	II	III	IV
1.	Substitution of upland rice crop to millets and pulses.	<ul style="list-style-type: none"> - 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. 	Diversification to drought tolerant crop in uplands	√	√	-	-
2.	Improvement of rainfed farming adopting dry land technology	<ul style="list-style-type: none"> - 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. 	Intensification and promoting rainfed farming	√	√	√	√
3.	Cultivation of aromatic rice for export	<ul style="list-style-type: none"> - 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 organising farmers interest groups. 	Diversification and value addition	-	-	√	√
4.	Adoption of Scientific Crop rotation	<ul style="list-style-type: none"> - Organising 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. 	Diversification Intensification for optimal use of resources	√	√	√	√
5.	Overcoming technological gap in major agril. crops paddy, maize, pulses, mustard, tissi etc.	<ul style="list-style-type: none"> - Educating the farmers through mass media on technological gaps. - Organising training programmes on technological gaps. - Organising demonstration on seed testing, seed treatment, fertilizer application & pest management. - Organising 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. 	Intensification with appropriate technology	√	√	√	√
6	Decentralised production of seeds of preferred varieties under the concept of seed villages scheme.	<ul style="list-style-type: none"> - 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. - Organisation 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. 	Intensification with production of quality seeds	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Agriculture			I	II	III	IV
7	Value addition and agro processing in paddy, maize, pulses & oilseeds	<ul style="list-style-type: none"> - 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. 	Intensification with value addition	√	√	√	√
8	Farm mechanization for timely & effective agricultural operations.	<ul style="list-style-type: none"> - Organising awareness campaigns on farm mechanisation. - Organising training and demonstration on farm mechanisation. - Identification of agro service centres for dealing with farm machinery. - Linkage with on-going schemes for subsidised sale of agriculture implements & farm machinery. - Group formation for finance on farm machinery. - Organising training on Repairing & Maintenance of existing farm machineries 	Diversification with improved farm implements	√	√	√	√
<u>Livestock production system</u>							
1.	Breed up gradation in cattle	<ul style="list-style-type: none"> - Restricting A.I. service to only those villages where crossbreed animals are being currently raised. - A.I. services in buffaloes to be intensified at doorsteps through local Para vets. - Training of Para vet for providing A.I. at door step (Institutional). - Supply of inputs on cost basis. - Training to FIGs on breed up-gradation and presentation of animals (village level). 	Intensification	√	√	√	√
2.	Expansion of goat and sheep rearing units and breed up gradation	<ul style="list-style-type: none"> - Supply of improved bucks and rams 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. 	Intensification	√	√	√	√
3.	Expansion of pig rearing units and breed upgradation	<ul style="list-style-type: none"> - 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. 	Intensification	√	√	√	√
4.	Encouraging backyard poultry	<ul style="list-style-type: none"> - 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. 	Intensification	√	√	√	√
5.	Improved feeding, housing & health care for dairy & drought animal (cow & buffaloes)	<ul style="list-style-type: none"> - Awareness campaign on breed upgradation, care & maintenance of dairy & drought animals & schematic provisions. - Identification of milk unions & FIGs for improvement of dairy. - Organising training for the farmer's groups to abridge the technological gaps. - Exposure visit to successful villages. - Arrangement of required inputs on cost basis. - Facilitate linkage with credit, input & marketing. 	Intensification	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Live stock			I	II	III	IV
6.	Vaccination, de-worming and treatment against ecto parasites for poultry, pig & goat	<ul style="list-style-type: none"> - Identification of para vets & NGOs willing to take up the work. - Organisation of training for Para vets, NGOs & farmers on vaccination, de-worming & treatment techniques. - Supply of critical inputs on cost basis. - Organisation of mobile treatment camps at village level. 	Intensification	√	√	√	√
7	Fodder cultivation for improved nutrition of dairy animals.	<ul style="list-style-type: none"> - 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. - Organisation of trainings on improved fodder cultivation techniques. - Facilitate supply of critical inputs. 	Intensification	√	√	√	√
7.	Processing and preservation of milk products	<ul style="list-style-type: none"> - Assessment of marketed surplus of milk. - Identification/formation of groups for milk processing. - Organising training for processing & preservation of milk & milk products. - Linkage with input, credit & marketing. 	Intensification	√	√	√	√
Improvement in sustainability in production / income							
1.	Amendment of upland acid soils	<ul style="list-style-type: none"> - Testing of soils to access the pH - Identify the upland area where the pH is 5.5 or less for amendment. - Organise 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. 	Intensification with acid soils management	√	√	√	√
2.	Conservation of bio-diversity (Agril.)	<ul style="list-style-type: none"> - 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. 	Intensification	√	√	√	√
3.	Integrated Plant Nutrient supply system	<ul style="list-style-type: none"> - 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. 	Intensification with combined use of organics, inorganics, & biofertilizers	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Improvement in Income/ Production			I	II	III	IV
4.	Integrated Pest Management	<ul style="list-style-type: none"> - 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. - Organising demonstration / action research on crop pest management. - Concurrent evaluation of technological options by participating farmers. - Organising Farmer Field School (FFS) programme to make the farmer IPM experts. - Facilitate supply of bio pesticides, pheromone trips etc. on payment of cost. 	Intensification	√	√	√	√
5.	Integrated Watershed management	<ul style="list-style-type: none"> - Organising 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. - Organising training for the user groups on equity in distribution of benefits, conflict management & CPR mngt. - 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. - Organise 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. 	Intensification with land use plans in micro-watersheds using a farming system approach.	√	√	√	√
<u>Community Organisation</u>							
1.	Organisation of farmer groups for new commodities to be produced through diversification of farming system.	<ul style="list-style-type: none"> - Identify the new commodities and assess the scope for formation of groups. - Sub-contract to NGOs for organisation of farmer groups. - Organising training for capacity building to the groups. 	Diversification	√	√	√	√
2.	Organisation of commodity oriented groups for better access to inputs, marketing & technological support.	<ul style="list-style-type: none"> - Identify the success stories where CIGs have been successful. - Exposure visit of feasible farmer groups to successful areas where CIGs have been formed. - Organise groups with the help of NGOs. - Organise training for skill upgradation & group empowerment. 	Intensification	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Community Organisation			I	II	III	IV
3.	Organisation of woman SHGs for NRM.	<ul style="list-style-type: none"> - Identify the successful SHGs. - Arrange exposure visit to successful villages. - Organise 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. - Organise 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. 	NRM	√	√	√	√
4.	Organisation of Water User Association (Pani Panchayat) for distribution of canal water & maintenance of system.	<ul style="list-style-type: none"> - Organise 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. 	NRM	√	√	√	√
5.	Organisation of user groups for afforestation & JFM.	<ul style="list-style-type: none"> - 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. 	NRM	√	√	√	√
Sustainability of the Project							
1.	Cost sharing by farmers on sustainable issues like soil & water conservation & NRM.	<ul style="list-style-type: none"> - 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. 	Sustainability	√	√	√	√
2.	Building up revolving fund on service charges & supply of critical inputs.	<ul style="list-style-type: none"> - Organising 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. - Utilising the revolving fund for further multiplication by supply more inputs. 	Sustainability	√	√	√	√
3.	Opening agro-clinics and providing consultancy on payment	<ul style="list-style-type: none"> - Organising 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. 	Sustainability	√	√	√	√
4.	Publication of newsletter and periodicals by ATMA and circulation at nominal prices	<ul style="list-style-type: none"> - 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. 	Sustainability	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Community Organisation			I	II	III	IV
5.	Creation of farmer's forum with membership fee at ATMA level for participatory, monitoring and evaluation of ATMA activities	<ul style="list-style-type: none"> - 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. 	Sustainability	√	√	√	√
6.	Developing linkage between district level farmers federation and sectorial groups at block level with ATMA through affiliation.	<ul style="list-style-type: none"> - 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. 	Sustainability	√	√	√	√
Fish Production System							
1.	Introduction of composite pisciculture in water bodies	<ul style="list-style-type: none"> - Awareness campaign for pond preparation and composite pisciculture. - Organising farmers trg. for composite pisciculture. - Demonstration of critical practices. - Facilitate supply of critical inputs like fingerlings and prawn juveniles. 	Intensification	√	√	√	√
2.	Introduction of polyculture in village tanks	<ul style="list-style-type: none"> - Exposure visit to successful sites and CIFA, Bhubaneshwar. - Trg. 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. 	Intensification	√	√	√	√
3.	Pond preparation & adoption of technology for high fish production	<ul style="list-style-type: none"> - Exposure visit of willing fish farmers to CIFA or successful pond sites. - Trg. on improved production technology. - Facilitate linkage with supply of critical inputs, credit & marketing. 	Intensification	√	√	√	√
4.	Decentralised production of fingerlings	<ul style="list-style-type: none"> - 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. - Organisation of trgs. for fingerling production. - Facilitate linkage with input supply, credit for setting hatchery unit & marketing. 	Intensification	√	√	√	√

Sl. No.	Strategy	Proposed activity	Thrust Area	Relevance to the AES			
	Plantation Crops			I	II	III	IV
1.	Alternate land use with agro forestry, silvipasture and farm forestry	<ul style="list-style-type: none"> - Awareness campaigns for alternate land use on arable and non arable lands. - Organising user groups in watershed area for alternate land use. - Trg. 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) 	NRM	√	√	√	√
2.	Planting mulberry & sericulture	<ul style="list-style-type: none"> - Identification of success stories on sericulture. - Exposure visit of new groups to the successful villages. - Trg. to the FIGs on sericulture. - Facilitate linkage with inputs supply & marketing of produce. 	NRM	√	√	√	√
3.	Promoting Lac Cultivation	<ul style="list-style-type: none"> - Training to FIG on lacculture. - Facilitate linkage with ILRI, Namkom, Ranchi for seed and marketing of produce. - Exposer Visit of FIG groups to successful villages. - Preservation and plantation of Host Plants of Lacculture. 	NRM				
4.	Cultivation of medicinal plants	<ul style="list-style-type: none"> - Identifying sites & farmers for medicinal plant cultivation. - Exposure visit to research station & successful plantation sites. - Trg. to need farmers on cultivation techniques & processing. - Facilitate linkage with inputs supply & marketing. 	NRM	√	√	√	√

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	III	IV
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.	√	√	√	√
	Resynthesis 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.	√	√	√	√
Wheat	Testing verification of HYV variety of wheat recommended in the state and adjoining area.	- On farm trails Seed + Fertilizer as per recommendation	√	√	√	√

Crop	Strategy	Proposed activity	Relevance to the AES			
			I	II	III	IV
Pulses	Verification and testing of technology available for growing pulse crops like Arhar, Urd, Kulthi, gram both in pure and intercropping situation.	- On farm trails pure crops - Seed + Fertilizer as per recommendation	√	√	√	√
	Identification, verification and testing of local germplasm available in the area	- On farm trials	√	√	√	√
	Verification and testing of INM/ IPM for the control of wilt and pod borer	- On farm trials.	√	√	√	√
Oilseed crops	Verification and testing of technology available for growing oilseed crop like Niger, Mustard, Rai, Tori, sunflower, Safflower etc.	- On farm trials.	√	√	√	√
	Introduction of Soybean cultivation	- On farm trails Seed + Fertilizer as per recommendation	√	√	√	√
Vegetable	Screening and verification of different variety of Tomato particularly in rainy season.	- On farm trials Only seeds	√	√	√	√
	Standarization & verification of improved technology of IPM package for tomato, brinjal, chilli	- On farm trials	√	√	√	√
	Standardization & verification of improved technology of INM package for potato	- On farm trials.	√	√	√	√
	Standardization & verification of improved technique for growing off season vegetable throughout the year with INM/ IPM packages	- On farm trials	√	√	√	√
Fruit	Introduction of new regular bearing variety of Mango	- On farm trial	√	√	√	√
	Introduction of HYV of minor fruit crops like Kathal, Ber, Sharifa, Karonda, Jamun, Aonla etc.	- On farm trial Planting material	√	√	√	√

Miscellaneous Resource Issue

Sl. No.	Strategy	Proposed activity	Relevance to the AES			
			I	II	III	IV
1.	Amendment of acid soil using locally available liming material	- On farm trials	√	√	√	√
2.	Verification and introduction of compost making from locally available biomass	- Digging pit + Rock phosphate	√	√	√	√
3.	Verification and testing of vermiculture techniques for making organic manure from farm waste	- On farm trials	√	√	√	√
4.	Introduction of improved breed of Pig (TXD) and goat.	- On farm trials piglets	√	√	√	√
5.	Introduction of Hybrid poultry chicken.	- On farm trials Red Diviyayan	√	√	√	√
6.	Validation of ITKs for control of crop pest and animal diseases	- On station trials. - 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.	√	√	√	√

Chapter X

POLICY ISSUES TO BE ADDRESSED IN THE SERAIKELLA 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. Revival of Lacculture.
7. Certification of Organic produce.
8. Low price of farmers produce.
9. Lack of technical graduate at block level.
10. Lack of KVK at district level.

Proposed Policy/ Intervention

1. Detail survey of eroded area and possible solution to reclaim these 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 raitu market.
6. To minimize the open grazing, existing GOCHAR 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, Palna Project, Suru Project as well as perrineal nalas & rivers etc.
11. Location specific rainwater management.
12. Promotion of organic farming.
13. Export of Sericulture produce & Organic produce.
14. Intervention of spices board of Govt. of India to promote activities and market for Turmeric & Ginger grower.
15. Effective implementation of Bank Credit Flow System for farmers.
16. Establishment of Agrobased food processing industry.
17. Establishment of Food Park.
18. Establishment of Krishi Vigyan Kendra.
19. Establishment of Govt. Purchase Centre at Block Level to assure minimum support price to the farmers.
20. Railway linkage with metropolitan city for the farmers to carry and sale their produce.

Chapter XI

Important Agricultural Statistics of Seraikella 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)	83000	1167	22.0	<ul style="list-style-type: none"> - Diversification of upland paddy area for pulses and vegetable cultivation. - Use of HYV/ Hybrid, drought resistant and blast tolerant varieties. - INM & IPM.
2.	Maize	2630	1540	30.0	<ul style="list-style-type: none"> - Use of good quality private & public hybrids. - Popularisation of high protein quality maize, popcorn, baby corn etc. - INM & IPM.
3.	Wheat	1050	1629	28.0	<ul style="list-style-type: none"> - Use of good quality high yielding varieties. - INM & IPM. - Proper water management.
4.	Gram	260	398	10.0	<ul style="list-style-type: none"> - Use of good quality HYV. - INM & IPM. - Proper organomic management.
5.	Arhar	5000	326	12.0	<ul style="list-style-type: none"> - Area to be increased by intercropping with maize, upland paddy, groundnut, soyabean etc. - INM & IPM - Introduction of high yielding medium duration variety.
6.	Kulthi	1290	778	10.0	<ul style="list-style-type: none"> - Use of good quality HYV - Proper organomic management. - INM & IPM.
7.	Urad	7096	696	10.0	<ul style="list-style-type: none"> - Use of good quality HYV - Proper organomic management. - INM & IPM.
8.	Pea	390	500	15.0	<ul style="list-style-type: none"> - Use of good quality HYV - Proper organomic management. - INM & IPM.

Sl. No.	Sector	Base Line Data		Productivity (Qtl./ha) after 5 Years	Intervention
		Area (Ha)	Productivity (Kg./ha)		
9.	Masoor	79	1000	15.0	<ul style="list-style-type: none"> - Use of good quality HYV - Proper organomic management. - INM & IPM. - Used in intercropping
10.	Moong	88	1000	15.0	<ul style="list-style-type: none"> - Use of good quality HYV - Proper organomic management. - INM & IPM. - Used in intercropping and catch crop.
11.	Rape Mustard	349	500	16.0	<ul style="list-style-type: none"> - Use of good quality drought tolerant HYV - INM & IPM
12.	Groundnut	49	1273	18.0	<ul style="list-style-type: none"> - Use of HYV - INM & IPM. - Intercropping with Arhar
13.	Cauliflower	820	15.96	30.0	<ul style="list-style-type: none"> - Supply of good quality HYV for off-season crop. - Use of micro nutrient - INM & IPM. - Processing and post harvest management to be encouraged.
14.	Cabbage	540	16.01	30.0	<ul style="list-style-type: none"> - Supply of good quality HYV for off-season crop. - Use of micro nutrient - INM & IPM. - Processing and post harvest management to be encouraged.
15.	Potato	648	8.37	20.0	<ul style="list-style-type: none"> - Supply of good quality blight resistant variety. - Cold storage facility - Contract farming with public & private partnership. - INM & IPM.

Sl. No.	Sector	Base Line Data		Productivity (tons/ha) after 5 Years	Intervention
		Area (Ha)	Productivity (tons/ha)		
16.	Tomato	686	19.98	30.0	<ul style="list-style-type: none"> - Supply of high yielding wilt resistant varieties. - Kharif tomato should be promoted. - INM & IPM - Processing of tomato to be encourages.
17.	Brinjal	729	20	30.0	<ul style="list-style-type: none"> - Supply of high yielding wilt resistant varieties. - INM & IPM
18.	Pumpkin	102	14.96	25.0	<ul style="list-style-type: none"> - Supply of good quality HYV/hybrid variety seeds - INM & IPM
19	Sponge Gourd	197	11.99	24.0	<ul style="list-style-type: none"> - Supply of good quality HYV/hybrid variety seeds - INM & IPM
20	Ridge Gourd	27	6.0	12.0	<ul style="list-style-type: none"> - Supply of good quality HYV/hybrid variety seeds - INM & IPM
21	Bitter Gourd	30	6.0	12.0	<ul style="list-style-type: none"> - Supply of good quality HYV/hybrid variety seeds - INM & IPM
22	Fisheries	189	0.35	1.3	<ul style="list-style-type: none"> - Introduction of Composite Fish Culture - Supply of good quality Fish fry. - Improve management practices.
23	Milch Cow	221635	2.5 ltr./day/No.	5 ltr./day/No.	-
24	Buffalow	2899	3.0 ltr./day/No.	6 ltr./day/No.	-
25	Goat	191254	20 Kg.meat/ anum/No.	80 Kg.meat/ anum/No.	-
26	Poultry	943999	50 egg/anum/No. 2 Kg. Meat/ anum/No.	285 egg/anum/No. 8 Kg. Meat/ anum/No.	-