Government of Assam
Assam Rural Infrastructure and Agricultural Service Project Society

E984
Volume 7

Assam Agriculture Competitiveness Project
(World Bank Funded)

FINAL REPORT
Report on Stakeholder Consultations
CONSULTATION REPORT
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**ANNEXURES**
1. Introduction

1.1 PREAMBLE

The Government of Assam has implemented the Assam Rural Infrastructure and Agriculture Services Project (ARIASP) with financial assistance from the World Bank between 1995-2003. Towards implementation of the project, an ARIASP Society has been established to co-ordinate the planning and implementation with different line departments. With the experiences gained and to carry forward the various interventions in ARIASP, the Government of Assam (GoA) has sought the assistance of the World Bank to continue the development and support to the agriculture and allied activities as a follow on project, namely the "Assam Agriculture Competitiveness Project".

The AACP is being planned to:
- Accelerate growth in the agriculture and allied activities through better resource mobilization, removal of infrastructure bottlenecks and development of marketing infrastructure, promoting diversification and promoting better price realization.
- Promote development of small and marginal farmers
- Improve nutrition of rural poor
- Build capacity of stakeholders to plan implement monitor development works
- Promote growth in sectors, which are economically viable and environmentally sustainable.

1.2 SCOPE OF WORK

The scope of work as per the ToR is as follows:
- Compile existing knowledge base and research findings from ARIASP
- Consultations with stakeholders and compilation of primary data
- Assessment of impacts
- Developing and finalizing options and remedial measures for impact mitigation
- Developing and finalizing ECPs, EMF and EMPs

1.3 PROJECT OBJECTIVES

The interventions proposed in the project are expected to have "low environmental impacts" and no interventions are being suggested in protected areas as forests or areas designated as hotspots in the Biodiversity action plan for Assam. Though the magnitude of impacts is expected to be low, there is a likelihood of the cumulative impacts of these sub-projects to be significant. In the absence of any specific guidance on management of environmental impacts due to these interventions, the ARIASP society has initiated the preparation of the Environmental Management Framework to streamline environmental considerations in project planning, design and implementation. The Framework shall help the PIU and the implementing agencies enhance the assessment and management of environment issues due to the AACP. The specific objectives of the study are to:
To assess the positive and negative environmental impacts (direct, indirect, induced and cumulative) of each of the proposed project interventions.

To recommend how the preparation (planning and design), implementation and supervision arrangement might be enhanced, and how any identified environmental risk might be mitigated including recommending capacity augmentation within the PIU and the implementing department to manage the environmental issues adequately.

1.4 THE STAKEHOLDERS CONSULTATION PROCESS

The consultation process for the project has been designed during three stages namely:

- During assessment of current practices and impacts
- For development and finalizing of options
- For finalizing Environment Codes of Practices

1.5 METHODOLOGY FOR STAKEHOLDERS CONSULTATIONS

Stakeholder’s consultation was carried out in a planned way as follows. Methodology for the consultation process includes:

- Identification of Stakeholders
- Dissemination of project objectives to stakeholders
- Stakeholders’ consultation: Identification of issues and addressal
- Consultation with end-users: FMC, individual farmers
- Consultation with Government Departments
- Consultations with NGOs
- Consultation with Research Institutions

**Identification of Stakeholders**

The identification of the stakeholders is an important part of the consultation process. The stakeholders identified were classified as Primary Stakeholders and other stakeholders. The primary stakeholders are the end users of programmes and projects. Moreover primary stakeholders are key to the success and implementation of the programmes. The other stakeholders are the research & governing bodies and motivating organizations for the implementation of the projects and programmes.

The identification of the primary stakeholders in AACP has been done based on beneficiary of programmes under ARIASP. Government departments, NGOs, FMCs etc, that are directly involved with the AACP and institutions other than these involved with the project are also considered as stakeholders.

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1. Primary Stakeholders are Individual Farmers and Community Organisations
2. Other Stakeholders are FMCs, NGOs, Traders, Government Departments and Research Institutions
2. Participants Profile in Stake Holders Consultations

2.1 PRIMARY STAKEHOLDERS CONSULTATION

Consultation with primary stakeholders were held at all the six sample districts\(^1\) during the Assessment Stage. Codes of practices were discussed with select group of farmer with adequate representation of marginal and progressive farmers. Traders and retailers were also consulted during both the Assessment and finalization of ECPs. Information on the constitution of the stakeholders are presented in Table 2-1.

Table 2-1: Details of Primary Stakeholders Consultation

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Date</th>
<th>Stakeholder</th>
<th>District</th>
<th>Stakeholder Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>26-27 February 2004</td>
<td>Sonali Field management Committee, Bandiya,</td>
<td>Mangaldai, Darrang</td>
<td>Farm Management Committee</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Futki Hatchery, Bordalguni,</td>
<td>Mangaldai, Darrang</td>
<td>Individual Farmer</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>Shipalhur, Duck farm,</td>
<td>Mangaldai, Darrang</td>
<td>Government Farm</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Kacharidal Beel Development Committee</td>
<td></td>
<td>Community</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>Pakaridal Lift Irrigation Scheme</td>
<td></td>
<td>Community</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>Intergraded Dairy Development Project</td>
<td>Pureban, Darrang</td>
<td>Cooperative Society</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>Deep Tubewell Irrigation System</td>
<td>Bhutan, Darrang</td>
<td>Community</td>
</tr>
<tr>
<td>8.</td>
<td>29 February-1 March 2004</td>
<td>Prabati PPS FMC, Balabhetta</td>
<td>Barpeta</td>
<td>Farm Management Committee</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>Fish Seed Producers Association</td>
<td>Barpeta Road, Barpeta</td>
<td>Fish Seed Producers</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>Nawjagaran dairy farm</td>
<td>Kumargaon, Barpeta</td>
<td>Dairy Farmers</td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td>Sarbhog Beel,</td>
<td></td>
<td>Fishermen Community</td>
</tr>
<tr>
<td>12.</td>
<td>2(\text{nd}) March 2004</td>
<td>Fish Seed Producers association, Nagaon</td>
<td>Naogaon</td>
<td>Fish Seed Producers</td>
</tr>
<tr>
<td>13.</td>
<td>3-4 March 2004</td>
<td>Dairy farm,</td>
<td>Jorhat</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td></td>
<td>Malokhat PPS FMC,</td>
<td>Malokhat, Jorhat</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>5(\text{th}) March 2004</td>
<td>Gulung Beel, Deragaon,</td>
<td>Golaghat</td>
<td>Beel Development Committee</td>
</tr>
<tr>
<td>16.</td>
<td>8(\text{th}) March 2004</td>
<td>Salpachar Lift Irrigation at Ramnagar,</td>
<td>Silchar, Cachar</td>
<td>Community</td>
</tr>
<tr>
<td>17.</td>
<td></td>
<td>Eco hatchery, at</td>
<td>Kabuganj, Silchar, Cachar</td>
<td>Individual Farmer</td>
</tr>
<tr>
<td>18.</td>
<td></td>
<td>Gungnur dairy farm,</td>
<td>Silchar, Cachar</td>
<td>Individual Farmer</td>
</tr>
</tbody>
</table>

\(^1\) Barpeta District (Lower Brahmaputra Valley), Darrang District (Karbi Anlong Plateau), Jorhat (Upper Brahmaputra Valley) and Cachar (Barak Valley), and Golaghat and Naogaon were selected to ensure observations were representative of all regions and sectors.
### Finalisation of ECP

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Date</th>
<th>Stakeholder</th>
<th>District</th>
<th>Stakeholder Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>19th May 2004</td>
<td>NE Agro Inputs Private Limited</td>
<td></td>
<td>Fertiliser trader</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>Mr. Mostafizur Rehman, Green Seed House, Barpeta</td>
<td></td>
<td>Trader, Farm inputs</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td>Mr. Biren Kalita, Eastern Agro Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>Mr. Gautam Saha, Green Nursery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>Mr. Samaridra Thakulia, Manager, Mukti Bio-Chem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>Mr. Horjat Ali, Kisan Beej Bhandar, Mondia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>19th May 2004</td>
<td>Mr. Pradip Das, Farmer, Barpeta</td>
<td></td>
<td>Farmer Barpeta</td>
</tr>
<tr>
<td>26</td>
<td></td>
<td>Mr. Debo Das, Farmer, Barpeta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
<td>Mr. Abu Saman, Barpeta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td>Mr. Ishaq Ali, Barpeta</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.2 State Level Stakeholders Consultation with Government

Simultaneous to the consultation with the primary stakeholders consultations were held with the government departments. Consultations were held during all three stages namely, i) Assessment Stage ii) Finalisation of Options and iii) Finalisation of ECPs.

The departments consulted are:

**Assessment Stage**
- Director & staff, Directorate of Dairy Development
- Nodal Officer and Extension Officer, Animal Husbandry
- Nodal Officer and Director Plant Protection, Directorate of Agriculture
- Nodal Officer & Extension Officers, Directorate of Fisheries
- District Veterinary Officer, Barpeta
- District Dairy Development Officer, Directorate of Dairy Development, Barpeta
- District Fishery Development Officer, District Fishery Department, Barpeta
- District Agriculture Officer, District Agriculture Department, Barpeta
- Executive Engineer, Irrigation Department, Barpeta
- District Fishery Development Officer, Field Extension Officer, Fishery Department, Naogoan
- District Veterinary Officer, District Veterinary Department, Jorhat
- District Dairy Development Officer, Directorate of Dairy Development, Jorhat
- District Fishery Development Officer, District Fishery Department, Jorhat
- District Agriculture Officer, District Agriculture Department, Jorhat
- District Veterinary Officer, District Veterinary Department, Cachar
- District Dairy Development Officer, Directorate of Dairy Development, Cachar
- District Agriculture Officer, District Agriculture Department, Cachar
- District Veterinary Officer, District Veterinary Department, Cachar
- District Fishery Development Officer, District Fishery Department, Cachar
FIANALISATION OF OPTIONS

- Mr. Ravi Kota PD, ARIASP
- Dr. Satyendra Singh (IFS), Environment Specialist, ARIASP
- Director, Department of Fisheries,
- Director, Directorate of Dairy Development
- Consultant(Agriculture), ARIASP.
- Director, Plant Protection, Directorate of Agriculture

FINALISATION OF ECPS

- Mr. S. Talukdar, Superintending Engineer, Directorate of Agriculture
- Deputy Director, Plant Protection, Directorate of Agriculture
- Deputy Director, Nutrient Management, Directorate of Agriculture
- District Officer, Nutrient Management, Directorate of Agriculture
- Dr. Jogen Das, Joint Director (Frozen Semen), AH&VS Department
- District officer, AH&VS Department
- Mr. Anil Vohra (ACS), Director, Dairy Development
- Mr. Malakar, Deputy Director, Diary Development
- Mr. G.C. Nath, Nodal Officer, Fishery Department
- District officer, Fishery Department
- District Fishery Development Officer, Fishery Department, Golaghat
- Extension Officer, Fishery Department, Golaghat
- District Agriculture Officer, Barpeta District
- Mr. Siken Das, Dy Director , Dairy Development Department, Barpeta
- Mr. B Tewari, Dy, Director , PTS, Barpetta Bull, Mother Farm
- Dr. S Das, Dy Veterinary Officer, Barpeta
- Dr. P N Ojha, Farm Manager, Barpeta
- Mr. Dijen Chowdhury, ARDEO, Howly, Barpeta

2.3 DEPARTMENTS, ORGANISATIONS AND RESEARCH INSTITUTIONS

In addition the research and education institutionas were also consulted to incorporate the opinions of experts in the formulation of the Codes of Practice. The details of Consultation are presented in Table 2-2.

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Date</th>
<th>Stakeholder</th>
<th>Areas of Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>27th March 2004</td>
<td>College of Veterinary Sciences, Guwahati</td>
<td>Animal Husbandry and Artificial Insemination Programmes</td>
</tr>
<tr>
<td>2.</td>
<td>2nd March 2004</td>
<td>Assam College of Fisheries, Raha</td>
<td>Fishery</td>
</tr>
<tr>
<td>3.</td>
<td>4th March 2004</td>
<td>Assam Agriculture University</td>
<td>Agriculture and Fishery</td>
</tr>
<tr>
<td>4.</td>
<td>17th March 2004</td>
<td>Assam Pollution Control Board</td>
<td>Bio-Medical Waste Management</td>
</tr>
<tr>
<td>5.</td>
<td>18th May 2004</td>
<td>R&amp;D Centre, NEDFI,</td>
<td>Medicinal Plants</td>
</tr>
</tbody>
</table>
3. Findings from Stakeholders Consultation

Stakeholder's consultation has been carried out during the entire project to understand the current practice and assess the impacts. In addition secondary stakeholders such as Government Departments, Research institutions, Line departments and NGOs have also been consulted. Options and mitigation measures developed to overcome these impacts have been discussed with the secondary stakeholders formalized. This has assisted in developing Environment Codes of Practice. The Environment Codes of Practices were discussed with primary as well as Secondary Stakeholders.

3.1 ASSESSMENT STAGE

a) Agriculture Sector

Primary Stakeholder

- Mono crop area; with introduction of STWs the cropping intensity has increased to 3 crops per year.
- Vegetable crops have been introduced with improved irrigation infrastructure.
- Intensive use of pesticide in vegetables has lead to the pest being resistant to the pesticides.
- The fertilisers are not applied in appropriate composition.
- No soil test is carried out for assessing nutrient level in soil.
- Lack of marketing and storage infrastructure.
- Resistance to pesticides has been observed for the past three years.
- Drinking water is collected from the shallow tube wells. The hand pumps used for collection of water are also installed on the first layer.
- Productivity as well as the cost of production has increased.

Other Stakeholders

- Use of fertiliser and pesticide has increased in past 5-6 years. And it has been attributed to the fact that the use of the fertiliser and pesticide has gone up in area with STW.
- depth of shallow tubewells is 20-30m and distance between two tubewells is 100m.
- Water table near urban areas has gone down.
- STWs are installed at 60-80 feet.
- STWs are also not feasible as water table during lean season is around 50 feet. The draw dawn is around 10-15ft.
- Yield of the tubewells is low ranging between 0.7 to 1.0 cusec.
- Minor irrigation schemes have been implemented.
- Hybrid varieties of rice are replacing the local varieties. Local varieties are also not grown in government farms.
- Pesticides used are Melathion, Fumethion, Diethone, Thiodin and endosulphone.
- Diseases are mainly neck blast and leaf spot.
- Hybrid varieties of rice are replacing the local varieties.
Use of chemical fertiliser has deteriorated soil quality
Combinations of pesticides are used.
Fertiliser consumption has increased and is 57kg per hectare.
IPM has been started and the response is encouraging.
Marketing of agriculture produce is a problem.

b) Fishery Sector

**Primary Stakeholders**
- farmer was aware of ill effects of cross breeding and inbreeding
- farmer was not conversant with good practices of fish breeding.
- Insufficient brood stock leading to the collection of the brood stock from the fish growers
- Crops are grown on the bed of the pond during winter season to augment incomes
- Mass Awareness of good practices have to be conducted to propagate good practices in aquaculture and fish seed

**Other Stakeholders**
- Carcinogenic substances has been found in fishes in some of the districts of state
- Degradation of beels is due to weeds infestation, silt inflow clogging of water channels
- And lack of training of the farmers and the official
- Problem of inbreeding and cross breeding has been reported
- Breeders did not maintain the brood stock.
- Growth of Rohu is 800gm per year and Catla is 1.2kgs per year which less than the expected.
- Productivity is low in composite fish culture
- The beels land has been given on Miyadi Patta for agriculture.
- Nets are placed on the channels which turn hinders the natural conservation
- Training is only organised on issues related to breeding of fishes and aquaculture.

Animal Husbandry and Veterinary Sector

**Primary Stakeholders**
- The animals are resistant to disease there has been no major outbreak of disease but FMD has been reported but the intensity of the disease is poor.
- The animal are resistant to disease there has been no major outbreak of disease.
- The animals were suffering from the FMD. The milk production of the farm has gown down from 250 litres to 125 litres.
- The animal are resistant to disease there has been no major outbreak of disease.

**Other Stakeholders**
- Usually open grazing is practiced. However hybrid animals are stall feed.
- No new disease has been reported since inception of cross breeding of livestock.
- As a practice the veterinary doctor visits the farmers for treatment of animals. The animals are rarely brought here for treatment.
- Only major operations are conducted here. Organized disposal system was not observed but it was reported the body parts are disposed by deep burial.
• Quantification of the volume of waste was not possible but approximately 4-5 kgs of wastes are generated per month mainly containing used vaccine bottles, syringes etc. These are dumped in an open pit.
• As a practice the veterinary doctor visits the farmers for performing AI activities.
• Organized disposal system was not observed.
• After births are usually disposed by deep burial after disinfections at the farm itself.
• Other wastes generated like straw are disposed on open ground surrounding the AI Center.
• It has been reported the mode and mechanism of transportation of crayo canes to the AI centres. The crayo canes returned from AI centre does not contain any residual liquid.
• The defunct crayo canes neither contain mercury nor any heavy metal.
• It has been further discussed about the breeding policy of the state. It was reported that till date only 2% of the animal are crossbreed against the government policy of 20%.
• It was reported that hybridisation is maximum 63:37 instead of 75:25 as per the breeding policy to have more resistant variety of hybrid to local climatic conditions.
• Animal Husbandry is practiced in the proximity of the urban centers.

c) Dairy Development

Primary Stakeholders
• The waste (cow dung) has been dumped in the open ground at the rear side of the farm.
• The dairy farms are concentrated near the urban centres.
• The milk distributions are done by the unorganised sector.
• Milk was sold to local vendors at Rs 15/kg.

Other Stakeholders
• Average numbers of cattle per household are 3-4.
• The waste (cow dung) was collected and dumped in the open ground. This was later collected by farmer and used as manure.
• Milk Production has increased with introduction of improved breeds.
• The unorganised sector has been the main supplier of milk through out the state.
• Hygienic practice has been maintained during packaging.

3.2 DEVELOPMENT OF OPTIONS

Consultation was held with the respective line departments and the ARIASP Society were held to finalise options. Details of the meeting are presented in Annexure 3.2.

Agriculture Sector
• Monitoring of Shallow tube wells for water quality shall be conducted both for preseason and post season.
• Land development component in the project shall include drainage of areas, which are temporarily inundated due to lack of drainage channels. Screening criteria shall be developed for selection of such projects.
• Nutrient Management shall address methods of treatment of acidic soils.
• Usage and storage of Bio-Fertilizer needs to be incorporated in the Environment Codes of Practice for Nutrient Management.
Fishery Sector

- Bio-diversity assessment has to be carried out for beels selected for development of fishery. A procedure for screening shall be developed for the purpose.
- For Implementation of Environment Codes of Practice indicator for assessment of the efficiency of implementation shall have to be developed.

Veterinary and Animal Husbandry

- Treatment of Biomedical wastes shall have to conform to the Bio-Medical Waste Management & Handling Rules 1998.

3.3 ENVIRONMENT CODE OF PRACTICE

The consultation has been carried out with the state and district level departments, farmers, traders etc. The ECPs consultation also involves the suggestion of stakeholders on the provisions of ECPs. Table 3-1 and Annexure 3.3 shows the stakeholders suggestions on sector wise ECPs.

<table>
<thead>
<tr>
<th>Suggestions on ECPs</th>
<th>Primary Stakeholders¹</th>
<th>Government Departments²</th>
<th>Research Institutions³</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. AGRICULTURE SECTOR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) ECP Agri.1: Collection, Cultivation &amp; Processing of Medicinal Plants</td>
<td>i) Study on commercial viable state specific agriculture package ii) Attach role of NHB and Plant quarantine rules</td>
<td>i) Study to be supported by AAU and Department ii) Attach the list of medicinal and aromatic plant, which shall be grown in Assam.</td>
<td></td>
</tr>
<tr>
<td>ii) ECP Agri. 2: Irrigation Management</td>
<td>i) Training on operation and maintenance of tube wells</td>
<td>i) Attach the List of Districts where STW is Possible ii) Integrating Irrigation ECP with guidelines of Micro shed Projects</td>
<td></td>
</tr>
<tr>
<td>iii) ECP Agri. 3: Soil and Nutrient Management</td>
<td>i) Attach the quantity of nutrient uptake by soil ii) What is the time period of nutrient to be in soil after applying Bio fertilizer</td>
<td>i) Study on the amount of the nutrient supply to soil by various practices of nutrient inputs</td>
<td></td>
</tr>
<tr>
<td>iv) ECP Agri. 4: Fertilizer &amp; Pesticide Handling &amp; Storage</td>
<td>i) Attach the guidelines for disposal of unused pesticides</td>
<td>ii) Training of the traders and officials for storing and disposal of pesticides</td>
<td></td>
</tr>
<tr>
<td><strong>B. FISHERY SECTOR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) ECP Fishery 1:Beel (Open Water) Fishery Management</td>
<td></td>
<td>i) Attach the quality and quantity of key parameters in Clause 1.3.1 ii) In basic strategies</td>
<td></td>
</tr>
</tbody>
</table>

¹ Primary Stakeholders are Farmers and Traders  
² Government Departments are Agriculture Department; Fishery Department; Animal Husbandry Department; and Dairy Department  
³ Research Institutions consulted are R&D Centre NEDFI
<table>
<thead>
<tr>
<th>Suggestions on ECPs</th>
<th>Primary Stakeholders¹</th>
<th>Government Departments²</th>
<th>Research Institutions³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>emphasis on the herbal medicine clause 1.6.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Specify the technique to be adopted for Distillation as per the size of beels</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv) The Lessee shall in presence of DFDO release the fry into rearing tanks and raise theme to size of advance fingerlings and then release it to beels.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>v) Control over harvesting over subsequent years</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>i) No new tank construction as Low lying areas are used for fish culture</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Specify the depth of tank for fish culture</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Only certified seeds shall be used for stocking</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>iii) Approval for tank construction from fishery department</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv) Clause 2.6.1 not Applicable</td>
<td></td>
</tr>
<tr>
<td>ii) ECP Fishery 2: Farmers Ponds and Community Tanks</td>
<td>i) Farmers using chemical pesticides wanted suggestion on effective insecticide control measures.</td>
<td>Minimum size of the Catla female shall be 4kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Carried over fish seed shall be encouraged</td>
<td></td>
</tr>
<tr>
<td>iii) ECP Fishery 3: Fish Seed Production Management</td>
<td>i) Documents of ban fishery shall be made available to all beneficiary</td>
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The provisions in the ECPs to incorporate suggestions and concerns of the stakeholders are provided in Annexure 3.4. Reason for non-acceptance of suggestions has also been incorporated in the same.
### ANNEXURE 1.1: INTERVENTIONS IN AACP

#### Agriculture Sector
- Horticultural activity - on orange, cashewnuts, ginger, turmeric, black pepper, banana, pineapple etc.
- Mechanization of agriculture - emphasis on the usage of farm power like tractors, power tillers, etc., with field management committees (FMCs) as the focal point of such support.
- Establishment of agriculture service centers (ASCs) for providing all inputs, implements and extension facilities to the farmers by unemployed youth who are to be organized and trained.
- Preservation, promotion & commercial production of herbal medicinal plants.
- Crop diversification - through demonstration, thrust programme, training of farmers, provision of extension facilities, etc., for helping the farmers to diversify into more profitable value added crops.
- Development of marketing network, which would encourage and ensure better price realization for farm produce.
- Promotion of value addition and development of storage facilities.
- Demand driven research activities and improvement of linkage between research and extension.
- Capacity building of farmers, FMCs and the department of agriculture to ensure more effective extension network.
- Introduction of decentralized, demand-driven extension system using Agricultural Technology Management Agency (ATMA) model in the line of ongoing National Agricultural Technology Project (NATP) to improve the agricultural extension system and coordination among Agriculture, Fisheries, Dairy Development and A H & Veterinary Departments.

#### Irrigation
- Expansion of the area under irrigation through exploring ground water potential by installation of more shallow tubewells (STWs), tapping surface water in those areas where STWs are not feasible; and rehabilitation of deep tubewells (DTWs), and river-pumping stations (RPS).
- Watershed management schemes for areas where other irrigation facilities like STW, DTW, RPS are not feasible due to low ground water table or other reasons.
- Community mobilization.
- Capacity building of water user associations (WUAs) and the departments.

#### Animal Husbandry and Veterinary Sector
- Livestock development through artificial insemination (AI), focus on animal health extension.
- Promotion of dairy, poultry including duckery and piggery activities with participation of woman in the rural areas.
- Strengthening of veterinary dispensaries/hospitals through out the state by rehabilitating the infrastructure facilities & equipments.
- Strengthening central diagnostic laboratory to cater to all the requirement of the state.
- Strategy for utilizing the service of the in terms of the veterinary college in rural veterinary dispensaries/hospitals.
- Marketing of dairy, poultry produce.
- Capacity building of farmers, beneficiaries and the department.

#### Fisheries Sector
- Increase in the coverage of community tank and farmers’ pond under fisheries development programme.
- Development of beels (open water fisheries) and their professional management.
- Improving beel leasing mechanism- recovery of investments.
- Promotion of private seed growers for development of formulated fish seed, quality fish seed, eco-friendly prawn culture, development of ornamental exotic fish, promote indigenous fishes like muga, singhi, kari, Sal, Seal etc.
- Development of marketing network for the above.
- Capacity building of farmers, beneficiaries and the department.
Rural Roads
- Road construction - black topped, gravel roads.
- Construction of bridges, pipe culverts, pre-fabricated box culverts, vented causeways.
- Strengthening of the road research laboratory.
- Provision for supporting services like vehicles, consultancy, roads equipment and training.
- Maintenance of roads and road construction equipment procured during ARIASP

Forestry Sector
- Capacity building of the officials of the Department of Environment to act as facilitator enable more effective service delivery of integrated JFM/rural development programs in forest fringe communities.
- Transform current micro-planning into a broader and more integrated rural livelihoods approach, to help communities find solutions to their own development needs.
- Provide access markets for various forest and non-forest products (such as cane, bamboo, medicinal plants, aromatic oils, and fruits).
- Implementation of sustainable forest-based livelihood activities identified in the micro-plan for pilot communities.
ANNEXURE 3.1: FIRST ROUND STAKEHOLDERS CONSULTATIONS

MINUTES OF MEETING

Date: 25.02.2004
Venue: Office of Project Director

Participants
- Dr. Ravi Kota (IAS), Project Director, ARIASP Society
- Dr. Satyendra Singh (IFS), Environment Specialist, ARIASP Society
- Director of Animal Husbandry, Animal Husbandry and Verteinray Department, Govt of Assam
- Nodal Officer (Animal Husbandry), ARIASP
- Director of Dairy Development, Department of Dairy Development, Govt of Assam
- Director of Fisheries, Department of Fisheries, Govt of Assam
- Nodal Officer (Fisheries), ARIASP Society
- Nodal Officer (Agriculture), ARIASP Society
- Mr. Rahul Singh, LEA Associates South Asia Pvt Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt Ltd.

The meeting was preceded over by Dr. Ravi Kota (IAS), Project Director ARIASP Society. Salient points of the discussion are:

1. **Selection of districts for site visits:**

   It was decided that the state would be sub-divided into four regions for the purpose of the study. The study team would visit one district with interventions from all the sectors in each region. The districts selected for the site visits are Barpeta in Lower Assam; Darrang in central Assam; Jorhat and Golaghat in upper Assam; Cachar in Southern Assam.

   The schedule of the site visit was finalised and it was decided that the consultants would take up discussions on sector wise interventions in the state with nodal officers of the departments.

2. **Discussion with Departments:**
   
   a. **Department of Fishery**

   The discussions with nodal officers are as follows:
   
   - It has been reported that carcinogenic substances has been found in fishes in some of the districts of state.

   1 The Golaghat district has been selected to see the interventions in the fishery sector.
It has been informed that the degradation of beels is due to weeds infestation, silt inflow clogging of water channels. The interventions taken up are Cleaning of beels, stopping of silt infloation, Channel development of the beels.

The problem of ownership of the beels has also been discussed. The ownership of the beels is with the revenue department and transfer it fishery department for fishery development is lacking.

Traditional fish feeds are being used. Dry Fishmeals could not be used due to the financial constraints.

It was also highlighted that problems associated with fishery are over practising of the activity. And lack of training of the farmers and the official.

b. **Department of Agriculture**

The discussions with nodal officers are as follows:

- The interventions taken in the ARIASP-1 is the agriculture mechanisation, which involves setting up of shallow tubewells and distribution of tractors and power trillers.
- It was reported that the use of fertiliser and pesticide has increased in past 5-6 years. And it has been attributed to the fact that the use of the fertiliser and pesticide has gone up in area with STW.
- It was also reported that the cultivated area has increased in recent past.
- It has been reported that around 20000 hectare of wetland/Marshy Land/Swamps in 23 district of the state will be taken up for agriculture use. How ever the exact site for this purpose is not yet finalised.

c. **Department of Animal Husbandry and Veterinary Sciences**

The discussions with nodal officers are as follows:

- The intervention during the first phase has been briefed.
- It has been reported the mode and mechanism of transportation of crayo canes to the AI centres. The crayo canes returned from AI centre does not contain any residual liquid.
- The defunct crayo canes did contain neither mercury nor any heavy metal.
- It was reported that the empty bottles of the vaccines are brought back to the Institute of veterinary sciences. The bottles are treated and disposed on the composite municipal site or reused.
- It has been further discussed about the breeding policy of the state. It was reported that till date only 2% of the animal are crossbreed against the government policy of 20%.
It was reported that hybridisation is maximum 63:37 instead of 75:25 as per the breeding policy to have more resistant variety of hybrid to local climatic conditions.

As part of the project only backyard poultry with 10-15 local birds are being encouraged.

d. Department of Dairy Development

The discussions with nodal officers are as follows:

- It has been reported that no intervention has been proposed in ARIASP. The integrated dairy development project has been undertaken. The dairy cooperative movement has been initiated in Jorhat, Silchar and Guwahati. In Jorhat and Sichar the movement has failed. In Guwahati the organised dairy cooperative has been functioning.

- The unorganised sector has been the main supplier of milk throughout the state.

- The meat processing plant is being established to handle 1500 sheep and goat and 100 pigs per day. Though this is not a part of AACP, consultants were asked to visit it.
MINUTES OF MEETING

Date: 26-27 February 2004
Venue: Circuit House, Mangaldai

Participants
- Additional District Commissioner, Darrang
- District Veterinary Officer, Darrang
- District Dairy Development Officer, Darrang
- District Fishery Development Officer, Darrang
- District Agriculture Officer, Darrang
- Executive Engineer, Irrigation Department, Darrang
- Nodal NGO, ARIASP, Darrang
- Dr. Satyendra Singh (IFS), Environment Specialist, ARIASP
- Dr. S.K. Das, Consultant (Fishery), LEA Associates South Asia Pvt Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt Ltd.

The meeting was presided over by Additional District Commissioner, Darrang. Salient points of the discussion are:

1. Discussion with Departments:
   a. Department of Fishery
      The discussions with district officers are as follows:
      - Problem of inbreeding and cross breeding has been reported.
      - No new disease has occurred.
      - Pollution of water in fishponds is not an issue as semi intensive fish culture is practised.
      - Breeders did not maintain the brood stock.
      - Rice brain and oil cake has been used as a feed.

   b. Department of Agriculture
      The discussions with district officers are as follows:
      - It has been reported that the concentration of tubewells are in Doalgaon, Shipajhar, Purb Mangaldai, Paschim Mangaldai, and Koilagoan.
      - The depth of shallow tubewells is 20-30m and distance between two tubewells is 100m.
      - Two to four crops are grown of which two are rice crops and others are pulses, mustard and vegetables.
      - Hybrid varieties of rice are replacing the local varieties. Local varieties are also not grown in government farms.
      - Pesticides used are Melathion, Fumethion, Diethone, Thiodin and endosulphone.
      - Diseases are mainly neck blast and leaf spot.

   c. Department of Animal Husbandry and Veterinary
The discussions with district officers are as follows:

- Average numbers of cattle per household are 3-4.
- Usually open grazing is practised. However hybrid animals are stall feed.
- Cow dung is used as manure.
- No new disease has been reported.
- Kakhi cambel is reared for duck cum fish culture.

After the meeting with district officials the study team has visited intervention sites. The team has discussion with field staffs, local farmers and members of field management committee. Salient points of the discussion are:

1. Discussion with beneficiaries:
   a. Sonali Field management Committee, Bandiya, Mangaldai, Darrang

   The discussions with Member of Committee are as follows:
   - Earlier it was a mono crop area; with introduction of STWs the cropping intensity has increased to 3 crops per year.
   - Vegetable crops have been introduced with improved irrigation infrastructure.
   - Intensive use of pesticide in vegetables has lead to the pest being resistant to the pesticides.
   - The fertilisers are not applied in appropriate composition.
   - No soil test is carried out for assessing nutrient level in soil.
   - Lack of marketing and storage infrastructure.
   b. Futki Hatchery, Bordalguli, Mangaldai, Darrang
   - The farmer was aware of ill effects of cross breeding and inbreeding.
   - The farmer was not conversant with good practices of fish breeding.
   - It was informed that the farmer has increased the size of fishpond to increase the brood stock.
   c. Shipajhar, Duck farm, Mangaldai, Darrang
   - Droppings are washed and drained into the nearby depressions.
   - No bed material was observed.
   - Vaccination is carried out every six months. One voil of vaccine is used for 100 ducks.
   - No new diseases have been reported.
   - Disinfectant was placed at the entrances.

   d. Kacharidal Beel Development Committee
   - There are 452 beneficiaries of which 305 are from BPL category and 147 belong to APL category
The beels had degenerated as the channels carrying water into the beel was blocked by the embankment of the village road. The Kacharidal Beel Development Committee had developed four tanks for fish culture.

- Five major carps are reared.
- Natural rainwater is collected into the beel run off is not allowed to enter the beel.
- Rice bran and oil cake is used as fish feed no other formulated feed is used.
- No major out break of disease has taken place. EUS (Epizotic Ulseritic Syndrome) is the only disease, which has occurred in the fish stock and is prevalent in the area. Since 1988. Traditional medicines like paste turmeric powder and lime has been used.

**e. Pakaridal Lift Irrigation Scheme**

The scheme has been developed as part of ARIASP with the involvement of the Nodal NGO. The salient points of discussion are presented below:

- The area is single cropped with development of irrigation facility the multiple cropping would start.
- Command area of the irrigation scheme is 80 ha. 440 m of underground pipe line has been laid for distribution with the involvement of beneficiaries.

**f. Intergraded Dairy Development Project, Pureban**

The Pureban Co-operative Dairy, which was developed as part of the Integrated Development Project, a centrally sponsored scheme. The cooperative dairy has 15 crossbred animals.

- The waste (cow dung) was collected and dumped in the open ground. This was later collected by farmer and used as manure.
- The animals are resistant to disease there has been no major outbreak of disease but FMD has been reported but the intensity of the disease is poor.
- Milk was sold to local vendors at Rs 15/kg.

**g. Dolagoan Veterinary Dispensary**

- As a practice the veterinary doctor visits the farmers for treatment of animals. The animals are rarely brought here for treatment.
- Only major operations are conducted here. Organised disposal system was not observed but it was reported the body parts are disposed by deep burial.
- Quantification of the volume of waste was not possible but approximately 4-5 kgs. of wastes are generated per month mainly containing used vaccine bottles, syringes etc. These are dumped in an open pit.
- Other wastes generated like straw are disposed on open ground surrounding the Veterinary Center.

**h. Deep Tubewell Irrigation System, Bhudan**

- With development of irrigation 3 crops have grown, 2 crop of rice and one vegetable crop is grown.
Inorganic fertilizers are used along with organic manure.

It has been reported that inadol and indosal are the pesticides, which are mainly used.

Resistance to pesticides has been observed for the past three years.
MINUTES OF MEETING

Date: 29 February-1 March 2004

Venue: Circuit House, Barpeta

Participants
- District Commissioner, Barpeta
- District Veterinary Officer, Barpeta
- District Dairy Development Officer, Barpeta
- District Fishery Development Officer, Barpeta
- District Agriculture Officer, Barpeta
- Executive Engineer, Irrigation Department, Barpeta
- Nodal NGO, ARIASP, Barpeta
- Dr. S.K. Das, Consultant (Fishery), LEA Associates South Asia Pvt Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt Ltd.

The meeting was presided over by District Commissioner, Barpeta. Salient points of the discussion are:

1. Discussion with Departments:
   a. Department of Fishery
      The discussions with district officers are as follows:
      - Problem of inbreeding and cross breeding has been reported.
      - Growth of Rohu is 800gm per year and Catla is 1.2kgs per year which less than the expected.
      - No new disease has occurred.
      - Care of brood stock is of concern. Breeders did not maintain the brood stock.
      - The brood stock is collected from fish farmers.
   b. Department of Agriculture
      The discussions with district officers are as follows:
      - Two to four crops are grown of which two are rice crops and others are pulses, mustard and vegetables.
      - Hybrid varieties of rice are replacing the local varieties.
      - Pesticides used are Ustad, Rogor, Melathion and Di-Methyene.
      - Diseases are mainly neck blast and leaf spot.
   c. Department of Animal Husbandry and Veterinary
      The discussions with district officers are as follows:
      - Usually open grazing is practised. However some dairy cooperatives are formed in 5-10km radius of Barpeta town.
      - 80-100kg of waste is generated for unit of 3 animals. Cow dung is presently used as manure.
      - No new disease has been reported.
After the meeting with district officials, the study team has visited intervention sites. The team has discussions with field staffs, local farmers, and members of field management committees. Salient points of the discussion are:

1. **Discussion with beneficiaries:**
   a. *Fish Seed Producers Association, Barpeta road, Barpeta*
   
   The discussions with Member of Committee are as follows:
   
   - Insufficient brood stock leading to the collection of the brood stock from the fish growers.
   - Crops are grown on the bed of the pond during winter season.
   - The license has been issued to the fish seed producers.
   - Mass awareness about ill effects of farming with pesticides on tank beds has to be created.

   b. *Nawjiagar dairy farm, Barpeta*
   
   - 20 animals out of which 15 are cross breeds of different blood lines.
   - The waste (cow dung) has been dumped in the open ground at the rear side of the farm.
   - The animal are resistant to disease; there has been no major outbreak of disease.
   - Milk was sold to local vendors at Rs 15/kg.

   c. *Prabati PPS FMC, Balabheta, Barpeta*
   
   - Cropping pattern is paddy-paddy-potato-vegetable.
   - Pesticides used are Indofil, Rogor, and Tricell.
   - Drinking water is collected from the shallow tubewells. The hand pumps used for collection of water are also installed on the first layer.
   - Local variety of rice like Kalamani, Moinaguru has been replaced by high yielding varieties like Ranjit and Bahadur.
   - Productivity as well as the cost of production has increased.

   i. *Sarbhog Beel, Kumargaon, Barpeta*
   
   - This is one of the active beel. It is formed by diversion of Baki River with total water area of the 50 hectares.
   - It has been leased to the lessee from Guwahati.
   - The encroachment has been observed on the periphery of the beels. The activities are mainly agriculture, residential premises, and roads.

   j. *Artificial Insemination Centre, Barpeta road, Barpeta*
   
   - As a practice the veterinary doctor visits the farmers for performing AI activities.
Organized disposal system was not observed.

After births are usually disposed by deep burial after disinfections at the farm itself.

Other wastes generated like straw are disposed on open ground surrounding the AI Center.

k. Chilling Plant, Sarbhog, Barpeta

- No treatment and disposal of wastewater has been observed. The plant has been established in 2004 and mainly focusing on packaging of pasteurized milk.
- Hygienic practice has been maintained during packaging.
MINUTES OF MEETING

Date: 2 March 2004
Venue: Circuit House, Nagaon

Participants
- District Fishery Development Officer, Nagaon
- Field Extension Officer, Nagaon
- Member, Fish Seed Producers association, Nagaon
- Nodal NGO, ARIASP, Nagaon
- Dr. S.K. Das, Consultant (Fishery), LEA Associates South Asia Pvt Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt Ltd.

The meeting was presided over by District Fishery Development Officer, Nagaon. Salient points of the discussion are:

1. Discussion with Departments:
   a. Department of Fishery
   The discussions with district officers are as follows:
   - Problem of inbreeding and cross breeding has been reported.
   - Productivity is low in composite fish culture.
   - Semi intensive carp culture is only practiced.
   - Rice bran and Oil cake are used as fish feed.
   - Narbanga beel has been developed with involvement of the community.
   - The beels land has been given on Miyadi Patta for agriculture.
   - Nets are placed on the channels which turn hinders the natural conservation.
   - Training is only organised on issues related to breeding of fishes and aquaculture.
The meeting was presided over by District Commissioner, Jorhat. Salient points of the discussion are:

1. **Discussion with Departments:**

   **a. Department of Fishery**

   The discussions with district officers are as follows:
   - Problem of inbreeding and cross breeding has been reported.
   - An aquatic weed has been a problem resulting in fish mortality. Weeds are removed manually.
   - Technical guidance is provided to the farmers through training.
   - Manuring of fish ponds are done by adding cow dung, urea, sulphur phosphate and multiplex.
   - Care of brood stock is of concern. Breeders did not maintain the brood stock.
     The brood stock is collected from fish farmers.

   **b. Department of Agriculture**

   The discussions with district officers are as follows:
   - Traditional varieties of rice are M.Sali, Jahaia, S.Sali, K. Sali, R. Sali, Joha, Bora and Sapoia. These varieties are being replaced by Bahadur and Ranjit.
   - Use of chemical fertiliser has deteriorated soil quality.
   - No soil test is done before applying fertilisers.
   - Combinations of pesticides are used.
   - Water table near urban areas has gone down.
   - STWs are installed at 60-80 feet.

   **c. Department of Animal Husbandry and Veterinary**

   The discussions with district officers are as follows:
Animal Husbandry is practised in the proximity of the Jorhat town.
Training modules for farmers includes rearing, maintenance, treatment and precautionary measures for animals.
Cross breed animals are 12000 whereas total livestock population is 4 lakhs.
No new disease has been reported. Moreover the intensity of disease has remained constant.
After the meeting with district officials the study team has visited intervention sites. The team has discussion with field staffs, local farmers and members of field management committee. Salient points of the discussion are:

1. Discussion with beneficiaries:
   a. **Dairy farm, Jorhat**
      - 25 animals out which 18 are cross breeds of different blood lines.
      - The waste (cow dung) has been dumped in the open ground at the rear side of the farm.
      - The animals were suffering from the FMD. The milk production of the farm has gowan down from 250 litres to 125 litres.
      - The dairy farms are concentrated near the urban centres.
      - The milk distributions are done by the unorganised sector.
      - Milk was sold to local vendors at Rs 15/kg.
   b. **Malokhat PPS FMC, Malokhat, Jorhat**
      - 34 STWs has been installed in 700 bigha under the FMC. The STWs are concentrated in the low-lying areas of the district along the river.
      - Fertiliser consumption has increased.
      - Moisture content of soil is high.
MINUTES OF MEETING

Date: 5 March 2004

Venue: Circuit House, Golaghat

Participants

- District Commissioner, Golaghat
- District Veterinary Officer, Golaghat
- District Dairy Development Officer, Golaghat
- District Fishery Development Officer, Golaghat
- District Agriculture Officer, Golaghat
- Executive Engineer, Irrigation Department, Golaghat
- Nodal NGO, ARIASP, Golaghat
- Mr. Rahul Singh, LEA Associates South Asia Pvt Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt Ltd.

The meeting was presided over by District Commissioner, Jorhat. Salient points of the discussion are:

1. Discussion with Departments:

a. Department of Fishery

The discussions with district officers are as follows:

- 273 projects in different category have been implemented.
- Beel development project has been taken up at Deragaon.
- Community pond development at Nargaon.
- Golaghat district has experienced multiplier effect in Fishery development. 400 community tanks and an individual tank have been developed in Merapari area with technical assistance from the department.
- The department maintains regular monitoring of fishery activity with the coordination from other department.
- The regular monitoring of hatcheries are done during the breeding season.
- The licensing of fingerlings is done based on the sustainable capacity of the fish seed producer.

b. Gulung Beel, Deragaon, Golaghat

- This is one of the beels developed with the citizen Government participation. It has total water area of 7 hectare.
- The beel management committee is known as Saru Samunoy Gulung Meen Palan Samvoy Samiti.
- The entire community of Mising tribes has been involved in management and development of beel.
A legal literacy campaign was undertaken to educate the community about usufruct rights.

The manual removal of peats and weeds are undertaken by community for restoration of beel.

The community has been encouraged to grow vegetable crops, which require pesticide only on highland areas, which slopes away from the beel.

The contribution of the community is in the form of labour.

The bund has been constructed in selected areas take slopes into consideration to avoid inflow.
MINUTES OF MEETING

Date: 8 March 2004

Venue: Circuit House, Silchar

Participants

- District Commissioner, Cachar
- District Veterinary Officer, Cachar
- District Dairy Development Officer, Cachar
- District Fishery Development Officer, Cachar
- District Agriculture Officer, Cachar
- Executive Engineer, Irrigation Department, Cachar
- Dr. H. Pathak, Consultant (Agriculture), LEA Associates South Asia Pvt. Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt Ltd.

The meeting was presided over by District Commissioner, Cachar. Salient points of the discussion are:

1. Discussion with Departments:
   a. Department of Fishery
   The discussions with district officers are as follows:
   - Problem of inbreeding and cross breeding has been reported.
   - Fish seed industry has been registered and licenses has been issued. But department has no control over fish seed producers.
   - Mature fish are not used for breeding.
   b. Department of Agriculture
   The discussions with district officers are as follows:
   - No assured supply of irrigation.
   - STWs are also not feasible as water table during lean season is around 50 feet. The draw dawn is around 10-15ft.
   - Yield of the tubewells is low ranging between 0.7 to 1.0 cusec.
   - Fertiliser consumption has increased and is 57kg per hectare.
   - Area under Sali paddy has increased.
   - Area under Oilseeds and pulses has remained constant.
   - Horticultural crops have been introduced.
   - IPM has been started and the response is encouraging.
   - Minor irrigation schemes have been implemented.
   - Marketing of agriculture produce is a problem.
   c. Department of Animal Husbandry and Veterinary
The discussions with district officers are as follows:
- Milk Production has increased with introduction of improved breeds.
- FMD is observed all through out the year instead of seasonal phenomenon. The severity of the disease has decreased.
- Hygienic measures are lacking.

After the meeting with district officials the study team has visited intervention sites. The team has discussion with field staffs, local farmers and members of field management committee. Salient points of the discussion are:

1. **Discussion with beneficiaries:**
   a. *Salpachar Lift irrigation at Ramnagar, Silchar, Cachar*

   The discussions with Member of Committee are as follows:
   - Command area 35 hectares.
   - Community has been involved in the restoration of the water body.
   - Distribution system is through pipes and open channel.

   b. *Eco hatchery, at Kabuganj, Silchar, Cachar*

   The discussions with Member of Committee are as follows:
   - The infrastructure is large enough to support the existing supply of brood stock for quality seed production.

   c. *Gungnur dairy farm, Silchar, Cachar*
   - 8 animals out which 6 are cross breeds of different blood lines.
   - The waste (cow dung) has been dumped in the depression near the farm.
   - The animal are resistant to disease there has been no major outbreak of disease.
ANNEXURE-3.2: MINUTES OF MEETING

Date: 16th April 2004

Venue: PIU Meeting Room, Guwahati

Participants

- Mr. Ravi Kota PD, ARIASP
- Dr. Satyendra Singh (IFS), Environment Specialist, ARIASP
- Director, Department of Fisheries.
- Director, Directorate of Dairy Development
- Consultant(Agriculture), ARIASP.
- Director, Plant Protection, Directorate of Agriculture
- Dr. P C Bhattacharya, Consultant (Bio-Diversity), LEA Associates South Asia Pvt Ltd.
- Mr. R. Vishwanathan, LEA Associates South Asia Pvt Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt Ltd.

Agriculture Sector

- Monitoring of Shallow tube wells for water quality shall be conducted both for preseason and post season.
- Land development component in the project shall include drainage of areas, which are temporarily inundated due to lack of drainage channels. Screening criteria shall be developed for selection of such projects.
- Nutrient Management shall address methods of treatment of acidic soils.
- Usage and storage of Bio-Fertilizer needs to be incorporated in the Environment Codes of Practice for Nutrient Management.

Fishery Sector

- Bio-diversity assessment has to be carried out for beels selected for development of fishery. A procedure for screening shall be developed for the purpose.
- For Implementation of Environment Codes of Practice indicator for assessment of the efficiency of implementation shall have to be developed.

Veterinary and Animal Husbandry

- Treatment of Biomedical wastes shall have to conform to the Bio-Medical Waste Management & Handling Rules 1998.
ANNEXURE 3.3: THIRD ROUND STAKEHOLDERS CONSULTATIONS

MINUTES OF MEETING

Date: 14.05.2004  Venue: Office of Project Director

Participants

- Dr. Satyendra Singh (IFS), Environment Specialist, ARIASP Society
- Mr. S. Talukdar, Superintending Engineer, Directorate of Agriculture
- Deputy Director, Plant Protection, Directorate of Agriculture
- Deputy Director, Nutrient Management, Directorate of Agriculture
- District Officer, Nutrient Management, Directorate of Agriculture
- Mr. Aliud Islam, NE Agro Inputs Private Limited
- Mr. R. Viswanathan, LEA Associates South Asia Pvt. Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt. Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt. Ltd.

The consultant’s team initiated the discussion by briefing the officials on the contents on Environment Code of Practice on Agriculture. Salient points of the Environment Code of Practice wise discussion are presented below:

1. **ECP AGRI 2: Irrigation Management**
   - It has been suggested to conduct periodic water testing and monitoring for iron/fluoride/hydrocarbons.
   - It has been suggested to put colour signboard on the tube wells indicating its usage for drinking purpose.
   - Rehabilitation of Tube wells shall be carried out only after studying the cost of rehabilitation.
   - As per the CGWB study STW/DTW are only possible in 18 districts of state, which are Tinsukia, Dibrugarh, Sibsagar, Jorhat, Golaghat, Nagaon, Morigaon, Kamrup, Nalbari, Barpeta, Bongaigaon, Dhubri, Kokrajhar, Goalpara, Darrang, and Sonitpur.
   - Avoiding use of bamboo filter.

2. **ECP AGRI 3: Soil and Nutrient Management**
   - Soil testing kit shall be provided to the District level officer.
   - Module for Bio-fertiliser as substitute for application on Agriculture.
   - Micronutrient requirement of soil has to be considered.
   - Farmers have to conduct soil testing once in 3 years. The nutrient requirement shall be first fulfilled by applying green manure, bio fertiliser and then by chemical fertiliser.
   - The package of practice shall be developed by the Assam Agriculture University to fulfil the sulphur requirement in the soil.
   - The green manure shall be grown on the water channels. The soil erosion can be controlled as well as the green manure can be used for manuring the field.
3. ECP AGRI 4: Fertiliser and Pesticide Handling and Storage

- Buildings for storing pesticides and fertiliser are mainly rented house constructed in the market area.
- The factors inspected in the buildings are pucca floor, Loading and unloading of facility available, habitat density, and storage space availability.
- License renewal is done every 3 years for fertiliser traders and 2 years for pesticide traders.
- Training of traders shall be undertaken.
- The expiry date of pesticides shall not be less than 1 year.
- Insecticide inspector shall inspect the pesticides expiry dates and then suggest the traders for the disposal of expired pesticides.
ANNEXURE 3.3: THIRD ROUND STAKEHOLDERS CONSULTATIONS

MINUTES OF MEETING

Date: 14.05.2004

Venue: Office of Project Director

Participants

- Dr. Satyendra Singh (IFS), Environment Specialist, ARIASP Society
- Dr. Jogen Das, Joint Director (Forzen Semen), AH&VS Department
- District officer, AH&VS Department
- Mr. Anil Vohra (ACS), Director, Dairy Development
- Mr. Malakar, Deputy Director, Diary Development
- Mr. R. Viswanathan, LEA Associates South Asia Pvt. Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt. Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt. Ltd.

The consultant's team initiated the discussion by briefing the officials on the contents on Environment Code of Practice on Agriculture. Salient points of the Environment Code of Practice wise discussion are presented below:

1. **ECP Dairy 1: On Farm Waste Management**
   - Proposing pilot project for the waste management in the peri urban areas of the Guwahati city.
   - The waste management measures are vermi-composting, Biogas plant and Composting.
   - The cost benefit analysis shall be worked out for the community based waste management system.

2. **ECP Dairy 2: Processing Plant Waste Management**
   - Training of the officials and workers of processing plant for waste minimisation practices.
   - Form for consent has to be annexed with ECP.
   - National Productive Act and Environment Protection Act shall be annexed with ECP.
   - Tentative Cost of Detailed design and installation cost of common effluent treatment plant in Guwahati shall be included.

3. **ECP AH&VS 1: Bio-Medical Waste Management**
   - Awareness programme shall be conducted at state and district level official for safe disposal of bio medical waste from veterinary facilities.
   - The veterinary facilities are located in the radius of 10-15km.
   - The Performa has to be annexed for recording the waste generated from the veterinary activities.
ANNEXURE 3.3: THIRD ROUND STAKEHOLDERS CONSULTATIONS

MINUTES OF MEETING

Date: 14.05.2004
Venue: Office of Project Director

Participants
- Dr. Satyendra Singh (IFS), Environment Specialist, ARIASP Society
- Mr. G.C. Nath, Nodal Officer, Fishery Department
- District officer, Fishery Department
- Mr. R. Viswanathan, LEA Associates South Asia Pvt. Ltd.
- Mr. Rahul Singh, LEA Associates South Asia Pvt. Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt. Ltd.

The consultant's team initiated the discussion by briefing the officials on the contents on Environment Code of Practice on Fishery. Salient points of the Environment Code of Practice wise discussion are presented below:

1. **ECP Fishery 1: Beel (Open Water) Fishery Management**
   - Awareness programme for sensitising and motivating farmers for adopting good practice for fish culture in natural water bodies.
   - Alternate source of income during non-fishing season or allow fishing in the confined area during fishing season.
   - Fishing on the periphery of the beels shall be allowed.
   - Manual disiltation of channels shall be done after rainy season.
   - Artificial stocking of beels shall be done in presence of fishery department.
   - Raise the stock on the periphery of the beels in the rearing tanks and raising theme to size of fingerlings before releasing in beels.
   - Marketing of fish shall be done through the department.

2. **ECP Fishery 2: Community Tanks and Farmers Ponds**
   - Farmers shall not be allowed to culture banned species.
   - Awareness programme shall be organised for farmers for construction of ponds and culture of fishes in confined environment.
   - The consumer shall be made aware of the exotic species through hoardings near the market place. Moreover information dissemination though audiovisual modes.
ANNEXURE 3.3: THIRD ROUND STAKEHOLDERS CONSULTATIONS

MINUTES OF MEETING

Date: 18.05.2004
Venue: Circuit House, Golaghat

Participants
- District Fishery Development Officer, Fishery Department, Golaghat
- Extension Officer, Fishery Department, Golaghat
- Mr. Rahul Singh, LEA Associates South Asia Pvt. Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt. Ltd.

The consultant's team initiated the discussion by briefing the officials on the contents on Environment Code of Practice on Fishery. Salient points of the Environment Code of Practice wise discussion are presented below:

1. **ECP Fishery 1: Beel (Open Water) Fishery Management**
   - Provision of portable kit for testing water quality of Beels. The periodic testing can be done with availability of the kit at the district level officers.
   - The aquatic weeds are to be cleaned manually.
   - Small Size beels (less then 1 hectare) disiltation shall be done manually.
   - Annual disiltation is required for the beels.
   - Encourage Herbal Medicine such as Garlic, Lime, Turmeric and banana stem to minimise acidity.
   - Awareness programme for sensitising and motivating farmers for adopting good practice for fish culture in natural water bodies.
   - Manual disiltation of channels shall be done after rainy season.
   - Artificial stocking of beels shall be done in presence of fishery department.
   - Raise the stock on the periphery of the beels in the rearing tanks and raising theme to size of fingerlings before releasing in beels.

2. **ECP Fishery 2: Community Tanks and Farmers Ponds**
   - Farmers shall not be allowed to culture banned species.
   - Low lying wasteland are used for construction of ponds
   - Depth of the tank should be in the range of 1.5m to 2.0m, which can hold water for 10 months.
   - Quantity of lime required depends on the acidity of the soil. Mainly 200 to 600kg per hectare per year liming are required.
   - Mono fish culture shall be done.
   - Grass carp has to be cultured in less number.
   - Awareness programme shall be organised for farmers for construction of ponds and culture of fishes in confined environment.
   - Farmers culturing exotic species are punishable under section 144 IPC.
3. ECP Fishery 3: Fish Seed Production Management

- Farmers have to be trained for fish breeding and protection of impurity in fishes.
- Farmers are to be trained practically in the fish seed production process.
- Water Analysis shall be done intermittently.
- The size female catla brood stock should be 4000gm.
ANNEXURE 3.3: THIRD ROUND STAKEHOLDERS CONSULTATIONS

MINUTES OF MEETING

Date: 19.05.2004
Venue: Circuit House, Barpeta

Participants
- District Agriculture Officer, Barpeta District
- Mr. Mostafizur Rehman, Green Seed House, Barpeta
- Mr. Biren Kalita, Eastern Agro Service
- Mr. Gautam Saha, Green Nursery
- Mr. Samaridra Thakulia, Manager, Mukti Bio-Chem
- Mr. Horjat Ali, Kisan Beej Bhandar, Mondia
- Mr. Rahul Singh, LEA Associates South Asia Pvt. Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt. Ltd.

The consultant’s team initiated the discussion by briefing the officials on the contents on Environment Code of Practice on Agriculture. Salient points of the Environment Code of Practice wise discussion are presented below:

1. **ECP AGRI 2: Irrigation Management**
   - Deep tube wells are not successful for irrigation.
   - The water testing shall be done before commissioning the tube wells
   - Integrating micro watershed programme with the water harvesting schemes.

2. **ECP AGRI 3: Soil and Nutrient Management**
   - Training of farmers for applying lime and soil testing shall be done in subsidised manner.
   - Awareness of farmers about importance of soil testing
   - Organising training at FMC level for information dissemination and awareness program.
   - Training for crop harvesting practice for green manure.

3. **ECP AGRI 4: Fertiliser and Pesticide Handling and Storage**
   - Buildings for storing pesticides and fertiliser are mainly rented house constructed in the market area.
   - The factors inspected in the buildings are pucca floor, Loading and unloading of facility available, habitat density, and storage space availability.
   - License renewal is done every 3 years for fertiliser traders and 2 years for pesticide traders.
   - Training of traders shall be undertaken.
   - The expiry date of pesticides shall not be less than 1 year.
   - Insecticide inspector shall inspect the pesticides expiry dates and then suggest the traders for the disposal of expired pesticides.
ANNEXURE 3.3: THIRD ROUND STAKEHOLDERS CONSULTATIONS

MINUTES OF MEETING

Date: 19.05.2004

Venue: Circuit House, Barpeta

Participants

- Mr. Pradip Das, Farmer, Barpeta
- Mr. Debo Das, Farmer, Barpeta
- Mr. Abu Saman, Barpeta
- Mr. Ishaq Ali, Barpeta
- Mr. Siken Das, Dy Director, Dairy Development Department, Barpeta
- Mr. B Tewari, Dy, Director, PTS, Barpetta Bull, Mother Farm
- Dr. S Das, Dy Veterinary Officer, Barpeta
- Dr. P N Ojha, Farm Manager, Barpeta
- Mr. Dijen Chowdhury, ARDEO, Howly, Barpeta
- Mr. Rahul Singh, LEA Associates South Asia Pvt. Ltd.
- Mr. Avijit Ghosh, LEA Associates South Asia Pvt. Ltd.

The consultant’s team initiated the discussion by briefing the officials on the contents on Environment Code of Practice on Animal Husbandry and Dairy. Salient points of the Environment Code of Practice wise discussion are presented below:

1. **ECP AH&VS1: On Farm Waste Management**
   - The farmers were in agreement of the provisions suggested in the ECP but they insisted for financial assistance from the project for handling of waste.
   - Officials of the department expressed satisfaction over the provisions.
   - It was suggested by the department that the ECP should be widely circulated. They suggested that the ECP should be made available at the following places:
     - Veterinary Dispensaries and Hospitals
     - Town Committees and Municipalities
     - Government Farms
     - District Administration and Panchayat
     - Farm Management Committees
     - Nodal NGO
   - Stress was laid on improving interagency co-ordination within the administration.
# Annexure-3.4: Addressal of the concerns of Stakeholders on ECPs

<table>
<thead>
<tr>
<th>Environment Codes of Practice</th>
<th>Issues/Concerns</th>
<th>Provisions where it has been incorporated</th>
<th>Reasons for non-Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. AGRICULTURE SECTOR</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ECP Agri. 1: Study on commercial viable state specific agriculture package</td>
<td>A study has been proposed for developing package of practice for commercially viable medicinal plants</td>
<td></td>
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<tr>
<td></td>
<td>Attach role of beneficiary with relevance to NHB and Plant quarantine rules</td>
<td>Annexure 1.3 contains the formats for application to NHB for approval of commercial development of horticulture and medicinal plants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attach role of beneficiary with relevance Plant quarantine rules</td>
<td></td>
<td>Benefits to encouraging to grow only indigenous species and are not allowed to grow imported species hence the provision of the Plant Quarantine Rules does not apply</td>
</tr>
<tr>
<td></td>
<td>Attach the list of Medicinal and aromatic plant, which shall be grown in Assam</td>
<td>A list of medicinal plants, which can be grown in Assam, is provided as Appendix 1.4.</td>
<td></td>
</tr>
<tr>
<td>ECP Agri. 2: Training on operation and maintenance of tube wells</td>
<td>This may be included in the module for training of beneficiaries.</td>
<td></td>
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<td></td>
<td>Attach the List of Districts where STW is Possible</td>
<td>Clause 2.1 provides a list of 18 districts where tube wells are feasible.</td>
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<tr>
<td></td>
<td>Integrating Irrigation ECP with guidelines of Micro shed Projects</td>
<td></td>
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<tr>
<td>ECP Agri. 3: Soil and Nutrient Management</td>
<td>Attach the quantity of nutrient uptake by crop</td>
<td>Appendix 3.3 contains nutrient requirement by crops.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the time period of nutrient to be in soil after applying Bio fertilizer</td>
<td>Nutrients applied through organic sources remain in soil for quite some time. For N, about 50% is taken by crop within 35-40 days. Then the availability reduces. After harvest generally 25-30% is left in soil. However, the rate varies with type of manure and soil and weather conditions. Nutrient requirements and time for application of nutrient for organic manuring is presented in Box 3.2.</td>
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<td></td>
<td>Study on the amount of the nutrient supply to the soil by various practices of nutrient inputs</td>
<td>A study to this effect has already been incorporated in the Project.</td>
<td></td>
</tr>
<tr>
<td>ECP Agri. 4: Fertilizer &amp; Pesticide Handling &amp; Storage</td>
<td>Attach the guidelines for disposal of unused pesticides</td>
<td>These have been detailed in Clause 4.7. For further reference: Guidelines for the management of small quantities of unwanted and obsolete pesticides, FAO PESTICIDE DISPOSAL SERIES 7 may be used.</td>
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<tr>
<td></td>
<td>Training of the traders and officials for storing and disposal of pesticides</td>
<td>This has been incorporated in the Training plan for Agriculture Department.</td>
<td></td>
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<tr>
<td>ECP Agri 5: Land Development</td>
<td>Methods to ascertain environment aspects in land development</td>
<td>The ECP on land development has been incorporated in the ECPs.</td>
<td></td>
</tr>
<tr>
<td>Environment Codes of Practice</td>
<td>Issues/Concerns</td>
<td>Provisions where it has been incorporated</td>
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<tr>
<td>B. FISHERY SECTOR</td>
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<tr>
<td>ECP Fishery 1: (Open Water)</td>
<td>Attach the quality and quantity of key parameters in Clause 1.3.1</td>
<td>Details of Bio-diversity assessment have been provided in ECP Common 1: Bio-Diversity Assessment</td>
<td>Standard practices have been developed by CIFRI for other parameters for different aquaculture systems.</td>
</tr>
<tr>
<td>Fishery Management</td>
<td>In basic strategies emphasis on the herbal medicine clause 1.6.1</td>
<td>Emphasis has been laid on the use of Bio-resource as inputs in aquaculture.</td>
<td>Beels are shallow water bodies. Desiltation of the beels have not been recommended as it would affect the characteristics of the natural water body. Desiltation has been suggested only in the water channels recharging the beels and manual methods have been preferred with involvement of community (Clause 1.5).</td>
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<td></td>
<td>Specify the technique to be adopted for Desiltation as per the size of beels</td>
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<td></td>
<td>The Lessee shall in presence of DFDO release the fry into rearing tanks and raise them to size of advance fingerlings and then release it to beels.</td>
<td>Strategically, it has been decided that beels taken up under this project will not be under the any lease agreement of AFDC Clause 1.5.3 has been modified and release of fry into rearing tanks will only be carried out under the supervision of DFDO or a Fishery Expert.</td>
<td>The issue is beyond the ambit of the study and may be addressed at appropriate forums</td>
</tr>
<tr>
<td>ECP Fishery 2: Farmers Ponds and Community Tanks</td>
<td>Department shall have control over harvesting over subsequent years</td>
<td>Clause 2.7.7: Selection of inputs lays emphasis on education farmers on selection and use of organic pesticides and herbal medicines in fish culture</td>
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<td></td>
<td>Farmers using chemical pesticides wanted suggestion on effective insecticide control measures</td>
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<td></td>
<td>No new tank construction as Low lying areas are used for fish culture</td>
<td></td>
<td>Since standard packages have been developed by CIFRI for construction of fish pond for different culture systems the same has not been repeated in the ECP.</td>
</tr>
<tr>
<td></td>
<td>Specify the depth of tank for fish culture</td>
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<td></td>
<td>Only certified seeds shall be used for stocking</td>
<td>Clause 2.7 has been modified and only quality seeds certified by the department shall be used for stocking.</td>
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<tr>
<td></td>
<td>Approval for tank construction from fishery department</td>
<td>Clause 2.3.3 requiring beneficiary to obtain approval of the Fishery Department before construction of New tank has been added</td>
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<td></td>
<td>Clause 2.6.1 not Applicable</td>
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<td></td>
<td>Exotic carps are economically beneficial and has been recommended technically for polyculture system contrary to the recommendations in the ECPs</td>
<td>Clause 2.6.2 was modified: Silver Carps and grass carps may be introduced in Farmers pond and Community Tanks. Common carps shall not be introduced instead mrigal shall be used as alternate species in the poly-culture system till impact of introduction of common carp is studied.</td>
<td></td>
</tr>
<tr>
<td>ECP Fishery 3: Fish Seed Production Management</td>
<td>Documents of ban fishery shall be made available to all beneficiary</td>
<td>Training and awareness campaigns proposed shall be used for the platform to make people aware</td>
<td></td>
</tr>
<tr>
<td>ECP NH&amp;VS 1: Bio-Medical &amp; Chemical Waste</td>
<td>Attach the Performa for the inventorisation of waste</td>
<td></td>
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</tr>
</tbody>
</table>

C. ANIMAL HUSBANDRY AND VETERINARY SCIENCES
<table>
<thead>
<tr>
<th>Environment Codes of Practice</th>
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<th>Provisions where it has been incorporated</th>
<th>Reasons for non-Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Attach the procedure for deep burial.</td>
<td>Appendix ECP AH&amp;VS 1.4 provides standards for deep burial.</td>
<td></td>
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<tr>
<td></td>
<td>Add the disposal of solid waste and disinfected non biodegradable waste in the pit for tree plantation</td>
<td>Clause 1.7.3 provides methods for disposal of non biodegradable waste.</td>
<td></td>
</tr>
<tr>
<td>D. DAIRY DEVELOPMENT</td>
<td></td>
<td></td>
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<tr>
<td>ECP Dairy 1: On Farm Waste Management</td>
<td>Funding to be provided for making provision for disposal of waste</td>
<td>Provisions have been made in the Environment Management Framework for developing Bio gas plant and Composting plant as a pilot project</td>
<td></td>
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<tr>
<td></td>
<td>Mandatory provision for disposal of farm waste in urban areas.</td>
<td>Area requirement for collection and options for disposal for different types of dairy has been presented in Clause 1.5 &amp; 1.6</td>
<td></td>
</tr>
<tr>
<td>ECP Dairy 2: Management of Wastes Processing Plants and Abattoirs</td>
<td>Attach the cost of the processing plant in Guwahati</td>
<td>Provisions for two Effluent treatment plant has been provided in the Environment Management Framework.</td>
<td>This is beyond the scope of the preparation of Environment Management Framework.</td>
</tr>
<tr>
<td></td>
<td>Feasibility study of the composite treatment plant to be undertaken in Guwahati</td>
<td></td>
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<tr>
<td>E. RURAL ROADS</td>
<td></td>
<td>Provisions for nominating a representative of the Executive Engineer is made in all ECPs</td>
<td></td>
</tr>
<tr>
<td>All ECPs</td>
<td>It would not be possible every time for the Executive Engineer to perform all activities mentioned in the ECPs</td>
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</tbody>
</table>