



Assam Agribusiness and Rural Transformation

Consulting Services for Conducting Mid-term External Environmental Audit for APART



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CANADA | INDIA | ASIA | AFRICA | MIDDLE EAST

Page | i



Table of Contents

| | | |
|----------|--|------------|
| E | Executive Summary..... | 1-1 |
| | E.1 Project Back Ground | 1-1 |
| | E.2 Scope of Mid Term External Environmental Audit | 1-2 |
| | E.3 Approach & Methodology | 1-3 |
| | E.4 Institutional Arrangements..... | 1-7 |
| | E.5 Assessment of Project Consultants & Contractors | 1-8 |
| | E.6 Trainings & Capacity Buildings | 1-8 |
| | E.7 EMF Implementation | 1-8 |
| | E.8 Audit Findings | 1-8 |
| | E.9 Good Practices | 1-13 |
| | E.10 GAP Analysis & Reporting | 1-14 |
| | E.11 Major Issues & Challenges | 1-15 |
| | E.12 Suggestive Measures & Draft Action Plan | 1-15 |
| 1 | INTRODUCTION | 1-1 |
| | 1.1 Apart Agribusiness and Rural Transformation Project (APART) | 1-1 |
| | 1.2 Scope of Work..... | 1-4 |
| | 1.3 Purpose of this Report | 1-6 |
| | 1.4 Structure of the Report..... | 1-6 |
| 2 | APPROACH AND METHODOLOGY | 2-1 |
| | 2.1 Technical Approach and Methodology | 2-1 |
| | 2.2 Site Visit Plan..... | 2-2 |
| 3 | ENVIRONMENT AUDIT OBSERVATIONS..... | 3-3 |
| | 3.1 Introduction | 3-3 |
| | 3.2 Implementing Agency Capacity and Resources | 3-7 |
| | 3.3 Capacity Assessment of Implementing Agency | 3-9 |
| | 3.4 Training and Capacity Building..... | 3-10 |
| | 3.5 Implementation of EMF | 3-11 |
| | 3.6 Interactions and Site visits | 3-12 |
| | 3.7 Review of Project | 3-12 |
| | 3.8 Review of Implementation Arrangement..... | 3-14 |
| | 3.9 Environmental Safeguard Compliance to EMF (APART) | 3-15 |
| | 3.9.1 Civil Sector | 3-15 |
| | 3.9.2 MARKET | 3-28 |
| | 3.9.3 Warehouse..... | 3-42 |
| | 3.9.4 Renovation Building ATMA/DICC..... | 3-50 |
| | 3.9.5 Farmer Producing Company (FPC)/ Common Service Centre (CSC) | 3-55 |
| | 3.9.6 Dairy – Lab Renovation Under DDA..... | 66 |
| | 3.9.7 Piggery – AHVD Improve Bio-Security in Nucleus Pig Breeding Farm | 3-75 |
| | 3.9.8 Fish Seed Multiplication Centre..... | 3-88 |
| | 3.9.9 Agriculture | 3-95 |
| | 3.9.10 Fishery:..... | 8 |
| | 3.9.11 Horticulture | 3-18 |
| | 3.9.12 Seri - Culture | 3-29 |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | |
|----------|---|------------|
| 4 | SUMMARY OF AUDIT FINDINGS..... | 4-1 |
| 4.1.1 | Over all Good Practices..... | 4-1 |
| 4.1.2 | Component Wise Good Environmental Practices | 4-3 |
| 4.1.3 | Safeguard Documentation..... | 4-14 |
| 4.1.4 | Summary of Audit Findings..... | 4-15 |
| 4.1.5 | GAP Analysis/Reporting | 4-19 |
| 4.1.6 | Major Issues / Challenges | 4-21 |
| 4.1.7 | Suggestive Measures and Action Plan | 4-22 |



List of Figures

| | |
|---|------|
| FIGURE E-1: APPROACH & METHODOLOGY FOR ENVIRONMENTAL AUDIT | 1-5 |
| FIGURE 1-1: PROJECTS FOR MID - TERM EXTERNAL ENVIRONMENTAL AUDIT | 1-1 |
| FIGURE 2-1: APPROACH & METHODOLOGY FOR ENVIRONMENTAL AUDIT | 2-2 |
| FIGURE 3-1 : PIE GRAPH RE-PRESENTING AUDIT DETAILS..... | 3-5 |
| FIGURE 3-2: THE DETAILS OF PROJECT COMPONENTS WISE CONSIDERED UNDER AUDIT..... | 3-6 |
| FIGURE 3-3: PROJECT IMPLEMENTATION AND MANAGEMENT | 3-8 |
| FIGURE 3-4: STAFFING ARRANGEMENT FOR EMF COMPLIANCE | 3-9 |
| FIGURE 3-5:ARRANGEMENTS FOR EMF IMPLEMENTATION | 3-14 |
| FIGURE 3-6: DETAILS OF POINT UNDERWENT ENVIRONMENTAL SCREENING (EMF) | 3-29 |
| FIGURE 3-7: DETAILS OF EMF IMPLEMENTATION AGAINST APPROVED EMF POINTS | 3-43 |
| FIGURE 3-8 : PERCENTAGE OF EMF IMPLEMENTATION IN PROPOSED WAREHOUSES PROJECT | 3-43 |
| FIGURE 3-9: PERCENTAGE OF EMF IMPLEMENTATION AUDIT FINDINGS | 3-50 |
| FIGURE 3-10: PERCENTAGE OF EMF IMPLEMENTATION FINDING FOR ATMA BUILDINGS | 3-51 |
| FIGURE 3-11: PERCENTAGE OF EMF IMPLEMENTED DURING CONSTRUCTION/ OPERATION PHASE | 3-89 |
| FIGURE 3-12: % OF EMF IMPLEMENTED IN FISHERY SECTOR..... | 3-10 |
| FIGURE 3-13: % OF EMF IMPLEMENTED IN HORTICULTURE SECTOR (BASED ON AUDIT) | 3-19 |
| FIGURE 3-14: % OF EMF CHECKLIST IMPLEMENTED IN SERI -CULTURE SECTOR..... | 3-30 |

List of Tables

| | |
|--|------|
| TABLE E-1: TENTATIVE PROJECTS FOR MID TERM EXTERNAL ENVIRONMENTAL AUDIT | 1-5 |
| TABLE E-2: THE SITE VISIT SCHEDULE ALONG WITH PROJECT COMPONENT VISITED | 1-6 |
| TABLE 1-1: OVER VIEW OF PROJECT COMPONENTS..... | 1-2 |
| TABLE 1-2: STRUCTURE OF THE REPORT..... | 1-6 |
| TABLE 2-1: SITE VISIT SCHEDULE FOR MID TERM EXTERNAL ENVIRONMENTAL AUDIT AS FURNISHED BY APART | 2-1 |
| TABLE 3-1: TENTATIVE PROJECTS FOR MID TERM EXTERNAL ENVIRONMENTAL AUDIT | 3-4 |
| TABLE 3-2: THE SITE VISIT SCHEDULE ALONG WITH PROJECT COMPONENT VISITED | 3-6 |
| TABLE 3-3: DETAILS OF NODAL OFFICER FOR IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARD | 3-8 |
| TABLE 3-4: REVIEW OF CONTRACT DOCUMENTS..... | 3-13 |
| TABLE 3-5: SUMMERY OF AUDIT FINDINGS | 3-15 |
| TABLE 3-6: BRIEF SUMMARY OF OVERALL FINDINGS - ROAD PROJECTS..... | 3-17 |
| TABLE 3-7: EMF BRIEF SUMMARY OF OVERALL FINDINGS – MARKET | 3-30 |
| TABLE 3-8: EMF BRIEF SUMMARY OF OVERALL FINDINGS – WAREHOUSE | 3-45 |
| TABLE 3-9: EMF BRIEF SUMMARY OF OVERALL FINDINGS – DICC & ATMA BUILDING | 3-52 |
| TABLE 3-10 : PERCENTAGE OF EMF CHECKLIST IMPLEMENTED BY THE CSC/FPC | 3-56 |
| TABLE 3-11: EMF BRIEF SUMMARY OF OVERALL FINDINGS – CSC/ FPC..... | 3-57 |
| TABLE 3-12: EMF BRIEF SUMMARY OF OVERALL FINDINGS – DAIRY | 3-69 |
| TABLE 3-13: EMF BRIEF SUMMARY OF OVERALL FINDINGS – PIGGERY | 3-76 |
| TABLE 3-14: EMF BRIEF SUMMARY OF OVERALL FINDINGS – FISH SEED MULTIPLICATION..... | 3-90 |
| TABLE 3-15: EMF BRIEF SUMMARY OF OVERALL FINDINGS – AGRICULTURE | 3-97 |
| TABLE 3-16: EMF BRIEF SUMMARY OF OVERALL FINDINGS – FISHERY | 3-11 |
| TABLE 3-17: EMF BRIEF SUMMARY OF OVERALL FINDINGS – HORTICULTURE | 3-20 |
| TABLE 4-1: INFROMATION ON GAP REPORTING IN EACH PROJECT COMPONENTS | 4-19 |
| TABLE 4-2: MAJOR ENVIRONMENT ISSUES AND SUGGESTIVE MEASURES: ACTION PLAN | 4-22 |



Annexures

| | |
|--|---|
| ANNEXURE 1: LIST OF ENVIRONMENTAL AWARENESS, CAPACITY BUILDING AND TRAININGS GIVEN UNDER APART | 1 |
|--|---|



LIST OF ABBREVIATIONS

| | | |
|---------|-----|--|
| AAU | --- | Assam Agricultural University |
| AGDP | --- | Agriculture Gross Domestic Product |
| AHVD | --- | Animal Husbandry and Veterinary Department |
| ALPCo | --- | Assam Livestock and Poultry Corporation Limited |
| APART | --- | Assam Project on Agribusiness and Rural Transformation |
| ARIAS | --- | Assam Rural Infrastructure and Agriculture Services |
| ASAMB | --- | Assam State Agricultural Marketing Board |
| CFC | --- | Common Facility Centre |
| CPCB | --- | Central Pollution Control board |
| CPIU | --- | Core Project Implementation Units |
| CRZ | --- | Coastal Regulation Zone |
| CSC | --- | Community Service Centres |
| DICC | --- | District industries and commerce centre |
| DPR | --- | Detailed Project Report |
| EA | --- | Environmental Assessment |
| EDFP | --- | Enterprise Development and Promotion |
| EHS | --- | Environment, Health and Safety |
| EMF | --- | Environmental Management Framework |
| EMP | --- | Environmental Management Plan |
| EPA | --- | Environment (Protection) Act |
| EMU | --- | Environmental Management Unit |
| ESS | --- | Environmental and Social Standards |
| ESF | --- | Environmental Social Framework |
| FPCs | --- | Farmer Producer Companies |
| GoA | --- | Government of Assam |
| GoI | --- | Government of India |
| Ias | --- | Industry Associations |
| LASA | --- | Lea Associates South Asia Private Limited |
| MoEF&CC | --- | Ministry of Environment, Forest and Climate Change |
| NGO | --- | Non-Governmental Organization |
| OHS | --- | Occupational, Health and Safety |
| OPIU | --- | Operational Project Implementation Unit |
| PDO | --- | Project Development Objective |
| PIU | --- | Project Implementation Unit |
| SOP | --- | Standard Operating Procedure |
| SPCB | --- | State Pollution Control Board |
| TOR | --- | Terms Of Reference |
| WB | --- | World Bank |



E Executive Summery

The Assam Agribusiness and Rural Transformation Project (APART) stepped forward to develop a market connection for farmers to sell their agriculture-horticulture produce. The World Bank (WB) has approved a loan of US\$200 million to the Government of Assam (GoA) through the Government of India for the implementation of the Assam Agribusiness and Rural Transformation Project (APART). The goal is to boost the state's agricultural and related ecosystem by advising farmers on new technology, improving market connections, and so on.

With this goal in mind, ARIAS hired a consultant to conduct Mid Term External Environmental Audit for already approved Environmental Management Framework (EMF) which is in place and already being implemented for APART subprojects. APART has recruited LEA Associates South Asia Private Limited, New Delhi, as a consultant to carry out Environmental Audit. According to the contract, the Consultant has to assess the project's compliance with general and specific legislation, norms, and policies of the Government of India, the Government of Assam, and the Environmental Management Framework which is in place.

E.1 Project Back Ground

After successful completion of Assam Rural Infrastructure and Agricultural Services Project (ARIASP), World Bank financed 'Assam Agricultural Competitiveness Project (AACP)' with an objective to increase the productivity and market access of targeted farmers and community groups for increasing yields of crops, fish and livestock products, etc. The mission was closed on 15 March 2015.

After the successful completion of AACP projects, The Government of Assam (GoA) through Government of India (GoI) has received a loan from the World Bank for implementation of Assam Agribusiness and Rural Transformation Project (APART) with ARIAS Society as the main coordinating agency for the project. APART was entrusted with special focus on value addition in the production and post-harvest segments of selected agricultural commodity value-chains ; facilitate agribusiness investments through inclusive business models, that provide opportunities to small farmers as well as stimulate the establishment of new small & medium agribusiness enterprises; and support resilience of agriculture production systems in order to better-manage the increasing production and risks associated with climate change, in the targeted districts . The brief outline of various APART components and sub-components are as follows:

- a. Component A: Enable Agri-Enterprise Development – by implementing state capacity to attract private investments; Setting up of Agribusiness SME Fund and Establishing stewardship councils: for Milk, Fisheries, Piggery and sustainable market led climate resilient production
- b. Component B: Facilitate Agro-Cluster Development - The project will support enterprise clusters in Agro-processing by Support establishment of Industry Association (IA) and Supply chain infrastructure support to establish a modern supply chain.



- c. Component C: Market-led Production and Resilience Enhancement - Developing climate resilient production clusters; Common service centres (CSC) and market intelligence cell, Facilitating access and responsible use of financial services.
- d. Component D: Project Management, Monitoring and Learning - Ensure effective implementation of the project activities and monitor and evaluate project implementation progress, outputs and outcomes. Also involve in establishment and operations of a Project Coordination Unit (PCU). which would oversee and coordinate activities of the implementing agencies of the project

E.2 Scope of Mid Term External Environmental Audit

The objective of the Mid-term External Environmental audit is to perform an independent assessment of the environmental safeguard management of APART in line with the requirements established in the project EA-EMF. Focus will be placed on examining whether a system for addressing environmental aspects of the project and sub-project activities is functional and adequately resourced and whether implementation of mitigation measures and established mechanisms is in place as contemplated in the EA-EMF document. Gaps has been identified based on the audit findings and action plan will be recommended for project's benefit and growth.

The specific objectives of the Audit are:

- To ensure that project's EMF is being implemented appropriately and adequately.
- To verify and assess regulatory requirement, standards, and policies of Government of India, GoA, SPCB, Forest, World Bank ESF and ESS policies.
- To identify whether project specific mitigation measures are identified and implemented. Also, to ensure appropriate mechanism to implement mitigation measures are in place including disclosure. Identification of amendment required in already prepared EMF to improve effectiveness, measures of outcome of implementation of EMF.
- To prepare Mid-term External Environmental Audit Report.

Scope of Assignment

The Consultant is required to carry out an Environmental Audit and prepare the corresponding report according to the World Bank standards. During report preparation, the Consultant must undertake a detailed assessment of (a) impacts (outcomes) of EMF implementation, (b) identifying the major challenges faced and workable solutions proposes, (c) good environmental practices followed during implementation, (d) data/information gaps exist that may jeopardize successful completion of the Audit; and (e) how those gaps can be filled in a timely manner.

- The Consultant will develop a broad audit program that will confirm that the consultant understands the audit objective, scope, methodology/approach and schedule and prepare an audit checklist that will cover meetings at the PCU, State & District levels, including all implementing agencies and officials. The detailed methodology and audit checklist templates which is reviewed by the PCU. The audit program includes field visits to selected project locations.



- Based on clear and agreed criteria, site-specific activities or sub-projects is selected to be included in the audit through detailed desk review of documents like best management practices, training programme conducted and reports, progress report, monitoring reports, etc. The consultant will review and assess the adequacy of the sub-project's identification, analysis and selection as outlined in EA-EMF document.
- An environmental audit will assess compliance with the EMF requirements (including documentation, consultations, disclosure, etc.,) and relevant legislation and regulatory requirements, including clearances/NoCs and land clearances if required. The audit will assess whether a system for environmental management as stipulated in the EMF has been duly followed and fully functional. These include effectiveness of the institutional arrangements, resource adequacy, environmental management processes for screening, environmental assessments, considerations of alternatives, risk mitigation and oversight, reporting and documentation.
- Capacity and resources of the implementing agencies will be assessed. This covers assessment of institutional capacities of the PCU, OPIUs, and District level functionaries in supervising the overall implementation of the EMF and project consultants, contractors and supervising officials. Key areas of concerns include management of all relevant environmental risk mitigation measures of operations under EMF. The assessment shall include feedback on the quality of the environmental management reporting, including related reviewing and approving activities, risk management, plans, and project monitoring reports; as well as examining the implementation of mitigation measures and established mechanisms further elaboration of roles and responsibilities of the implementing units under the project.
- The capacities and resources of project consultants, contractors and supervision field level functionaries will be assessed in implementing and addressing all relevant environmental risks and impacts of sub-project activities under APART, in particular specific risks that were identified in the EMF and sub-project environmental assessments.
- Audit findings will be presented and gap-filling and enhancement measures will be recommended for the overall environmental management, with action plans agreed by the project proponent. Audit results shall be analysed to identify key issues and gaps will be addressed in continued implementation of the EMF and risk mitigation measures, and recommendations shall propose clear actions needed to address technical and capacity building gaps.
- The final deliverable will include extensive visual and graphic documentation including photographs of field conditions. The team will submit audit reports to the PCU, and discuss a mutually agreed timeframe for the implementation of proposed follow-up actions. The PCU will submit a final audit report to the World Bank for review. The audit will be deemed as closed only after this review and confirmation on action plans have been obtained.

E.3 Approach & Methodology

Technical approach has been developed as per the guidelines provided in the safeguard instruments under APART project and followed by the World Bank's Environmental and Social Safeguards Policies, Applicability of National & State Legislation and complement international obligations of India pertaining to Environmental and Social (E&S) aspects and presented in subsequent sections.



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The Mid-term environmental Audit has considered the following major aspects in selecting the sample activities/sites:

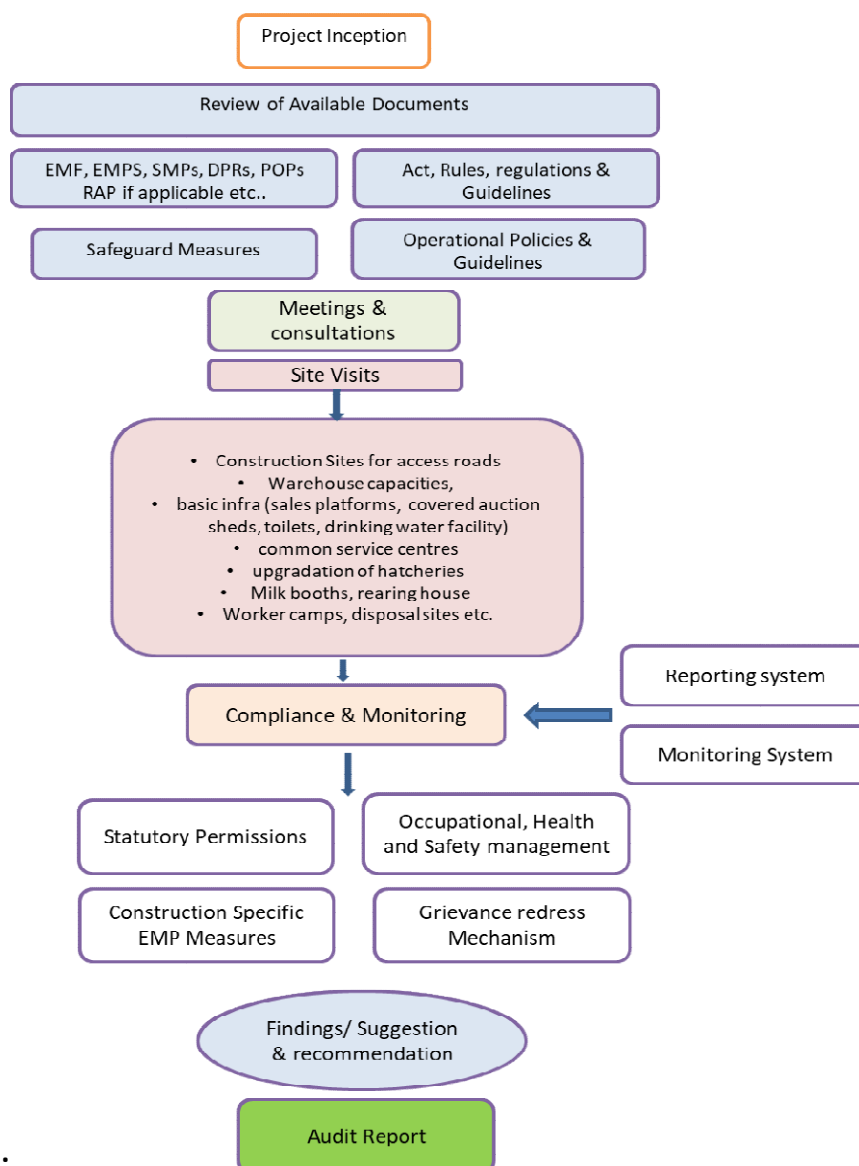
- Small to medium scale construction sites, including land clearance requirement from revenue dept.
- Sub project requiring clearances / NoC from various agencies (like Forest, PCBA, irrigation, APDCI, Panchayat local administration, etc.) and;
- Contractor led civil works with the site specific EMP & safeguard recommendations
- Demonstration with project approved SOPs, Environmental Guidelines, and Good Env. Practices etc.
- Occupational Health and safety aspect on the project location/ sites
- Waste management aspects
- Labour management
- COVID 19 Management

The approach and methodology conceived for this assignment suggests the best possible means to carry out the audit associated with the present assignment based on our National and International experiences. In view of the multiple tasks associated with the audit and review, we have framed a comprehensive, realistic, scientific and systematic scheme Work Program to undertake this challenging exercise.

- Determination of what is going right and why; and
- Determination of what is going wrong and why



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Figure E-1: Approach & Methodology for Environmental Audit

As per the ToR, the audit consultant is supposed to visit 5 sub-projects per sector of the 25 sub-project activities from each sector involving small to medium scale civil works. However as per discussion held during Project inception Meeting and viewing COVID 19 situation, sampling size has been upgraded to at least 50 percent (83 sites) of field level study and rest as desk review.

Seeing decline in COVID-19 pandemic, the Environment audit team has increased the sample size for site visit. The audit team has audited 176 sites comprising 119 (nearly 68 %) sites audit and 57 (32%) desk review.

Table E-1: Tentative Projects for Mid Term External Environmental Audit

| Sl.no. | Projects | Number of Sites As per Contract | No. of Site under Audit | Site visit | Desk Review |
|--------|------------|------------------------------------|----------------------------|------------|-------------|
| 1 | Market | 8 | 8 | 6 | 2 |
| 2 | Renovation | ATMA | 2 | 2 | - |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| Sl.no. | Projects | | Number of Sites As per Contract | No. of Site under Audit | Site visit | Desk Review |
|-------------|--|---|------------------------------------|----------------------------|------------|-------------|
| 3 | Buildings | DICC | 4 | 4 | 4 | - |
| 4 | Warehouse | | 3 | 3 | 3 | - |
| 5 | Road | | 13 | 15 | 15 | - |
| 7 | FPC/ CSC Establishment | | 23 | 18 | 17 | 1 |
| 8 | Dairy | Lab Reno under DDA | 5 | 4 | 4 | - |
| 9 | | Expansion of Existing Milk unit WAMUL | 1 | 1 | 1 | - |
| 10 | Piggery | AHVD (improve Bio-security in Nucleus Pig Breeding Farm) | 5 | 5 | 5 | - |
| 11 | Agriculture | Demonstration | 25 | 25 | 9 | 16 |
| 12 | Horticulture | Demonstration | 25 | 35 | 25 | 10 |
| 13 | Sericulture | Demonstration | 25 | 25 | 10 | 15 |
| 14 | Demonstration Fishery (Polyculture, Paddy cum Fish, Beel) | | 25 | 25 | 14 | 11 |
| 15 | Fish seed Multiplication centre to be added | | 2 | 2 | 2 | 2 |
| Total Sites | | | 166 | 176 | 119 | 57 |

The graphic presentation of the project under Audit is shown in figure below. Based on the graph it can be concluded that as per the ToR we have to Audit 166 sites, based on site visit summarization it is concluded that 176 project has been Audited which comprises 119 site visit and 57 desk review of documents.

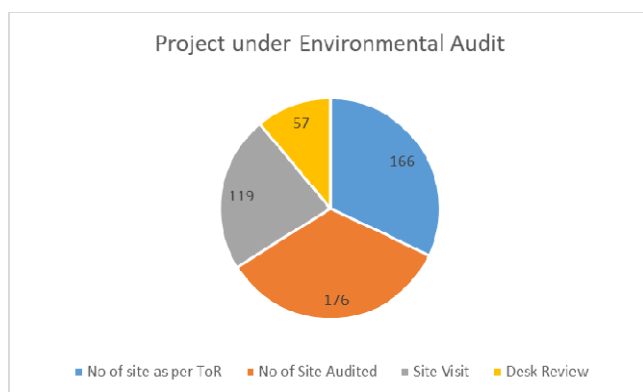


Figure E-2: Pie Graph Re-presenting Audit Details

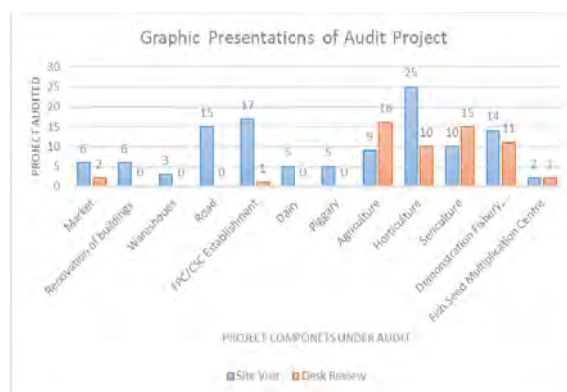


Figure E-3: The details of Project Components wise considered under Audit

The site visit Schedule along with Components Audited on Ground is given in Table below:

Table E-2: The Site Visit Schedule Along with Project Component Visited

| S. No | District | Date of Visit | Component Audit on Ground |
|-------|----------|---------------|---|
| 1. | Kamrup | 27/3/2022 | Market, Renovation Building, |
| 2. | | 28/3/2022 | Road, warehouse, Renovation Building |
| 3. | | 30/2/2022 | FPC, CSC, Piggery Bio-security, Fish Seed |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S. No | District | Date of Visit | Component Audit on Ground |
|-------|---------------|--------------------------|---|
| | | | Multiplication, Fishery Demonstration. |
| 4. | | 8/4/2022 | WAMUL, Piggery, Sericulture, FPC |
| 5. | | 27/4/2022 | Piggery, Sericulture, FPC, Lab Renovation, Fish Seed Multiplication |
| 6. | Morigaon | 01/4/2022 | FPC/CSC, Fishery Demonstration |
| 7. | Nalbari | 02/4/2022 | Road, FPC/CSC, Horti., Fishery Demo. |
| 8. | Barpeta | 28/04/2022 | ATMA, DICC, Road, Agri, Horti |
| 9. | Darang | 09/04/2022 | Market, warehouse, Road, Horti., Agri. |
| 10. | Sonitpur | 26/04/2022 | Warehouse, FPC/CSC, Horti., Fishery Demo. |
| 11. | Nagaon | 21/04/2022 | Market, ATMA, Warehouse, Road, Dairy, Horti. & Agri. |
| 12. | Goalpara | 31/04/2022 | Market, Road, Horti., Agri, Fishery |
| 13. | Karbi Anglong | 23/04/2022 | Road, FPC/CSC, Lab, Piggery Bio-security |
| 14. | Cachar | 05/04/2022 | FPC/CSC, lab, Horti., Agri. |
| 15. | Golaghat | 22/04/2022 | Market, Warehouse, Road, Lab, |
| 16. | Jorhat | 11/04/2022 12/04/2022 | FPC/CSC, Horticulture |
| 17. | Sibsagar | 11/04/2022 | Road, FPC/CSC, Sericulture, Horticulture |
| 18. | Majuli | 12/04/2022 | Road, FPC/CSC |

E.4 Institutional Arrangements

APART has a well-organized staffing system centrally with ARIAS Society as main coordination unit. The project is headed by State Project Director, ARIAS. He heads the PCU. Under the PCU there is an Environmental Management Specialist from APART. Down the line are Operational Project Implementation Unit (OPIU) which comprises of Nodal Officer, a government official (Experts) on deputation basis at state level.

Below him are the focal officers (APART) who are station at ATMA office at district level. They look after project operation, funding and implementation. Under him are the District Coordinators (District Environmental Coordinators) at the district level. The DEC at each district level are the key personnel at district level handling the responsibility of integrating safeguards into project activities (plan, designs), capacity building, monitoring and reporting. They are the bottom level appointed under APART.

Nodal officers/focal officers are nominated by the Government. In Government system, the transfer of officers is continuous process. But under APART project, the replacement of transfer officers is timely intimated among department and new officials to the position vacant are fulfilled on priority basis. The officers are appointed and refresher training is given. At certain interval PCU is organizing training / interactive sessions for executive engineers and other field officials for better coordination and understanding about the project.



E.5 Assessment of Project Consultants & Contractors

APART is organizing training on regular basis for project/ sector specific EMF implementation. At one or two district the DEC during visit is newly recruited and does not have full project information. The induction, proper handover and trainings need to be done. Fishery District Coordinator need to be engaged at all the district, where fishery demonstration is in place. On the whole seeing the project magnitude, the DEC's are aware of EMF implementation and over state and World Bank policy.

The contractor at civil site need to implement all contract obligations. All the contractors need to have safety mechanism in place for labours. Though contractors were given training on EMF implementation but refresher/intermittent training may be organised for better result. The DEC's have to drive the contractor to get the EMP and EMF implemented.

E.6 Trainings&Capacity Buildings

To enhance the capacity of the staffs, trainings has been organized by APART engaging their in-house experts and sectorial specialist from government departments, research institutes and universities. Since the start of APART mission as an Environmental Awareness & Capacity Building about 27 numbers of trainings have been conducted. Recently on 19th April, 2022 APART has organized an Orientation Training for newly Joined District Environment Coordinators Grade-4 & Refresher training for all DEC's. Trainings are given on best practices and technologies used in farming, use of new technologies, application of fertilizers, farming methods, handling and seed selection, crop harvesting and storage, value addition of Agri-products, pond rejuvenation, fish farming technique, etc training are given to FIG's, FPC's, Beneficiaries, etc at district level engaging district agriculture officers, fisheries, Horticulture, etc.

E.7 EMF Implementation

The EMF Implementation for all project components are in place. The DEC's are appraising the project based on the approved EMF, which is already approved and available at ARIAS Society websites with addendum and updates. The EMF also provides broader Institutional arrangement including roles and responsibility for effective ESMP implementation, monitoring and reporting. The EMF's also provides the Environmental Management Plan (EMP) which outlines the mitigation, monitoring, and administrative procedures that are used during project execution to minimize or eliminate negative environmental consequences. Further, it also finds practical and cost-effective methods that could help to mitigate potentially negative environmental issues. Time to time new DEC's are inducted and trainings are given on how to identify new project (primary screening), project screening on approved EMF, preparation of EMP and EMF appraisal during project life.

E.8 Audit Findings

A. Civil Construction Work

a) Roads:



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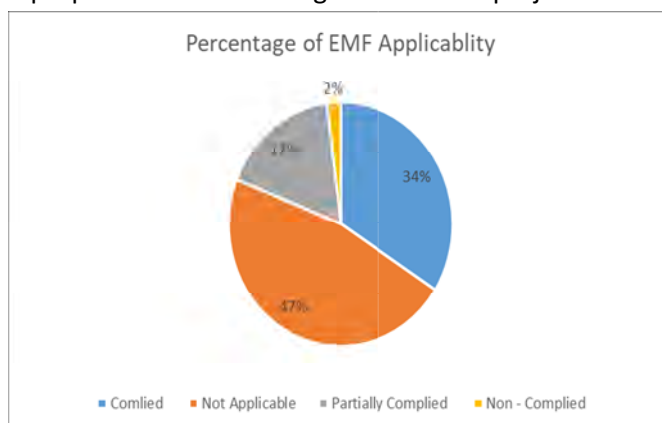
The pavement of the road is generally of intermediate standard (5.5 m wide) having a road width of minimum 6.0m and pavement width of 3.75 m has been proposed. All the road design is as per the technical specification recommended by the IRC and State PWD.

During the audit findings it was noted that the roads selected for rehabilitation and maintenance already exists. No Additional land acquisition was needed. Total 15 roads have been selected for midterm audit. It includes 6 (Six) roads which are already completed and 9 (nine) roads which are under different stage of construction. All the 15 roads are visited, which spread across 10 (ten) districts. The development responsibility of civil construction is mainly vested with PWRD. The shortfalls reported are in borrow earth, run off water and soil pollution to nearby agricultural land, and road embankment stabilization.

The EMP Budgets has been noted in contract document. There is provision for tree plantation in contractor and budget has been allocated accordingly. During audit it was not reported on ground for most of the road project. The DCEs should prepare list of trees planted along with Geographical Coordinate, survival rate, etc. Stone pitching or other embankment protection work have been adopted in some of the roads but should be proposed at all cross drain structures to prevent cutting and erosions. These would be more climate resilience adaptations.

b) Market Place:

Under Audit, eight projects have been proposed, which comprise of 6 projects under site visit and 2 project based on desk review. All the project are proposed at the existing market. The project involves construction of internal roads, lined drained, toilets (separate of male and female), rest area, drinking water facilities, Godown facilities, Godown, waste collection and handling, retailed shops, Solar Lighting, raised platform, drying yard, Utilities and office building, and Parking. Parking. The EMF implementation checklist comprises 122 points against which the audit was carried out. Against 100% considered for EMF Applicability, 47% of the EMF points are not applicable to the project, 34% are fully complied, 17% are partially complied (point not being implemented at one or two project sites). and 2% are completely not complied. Hence overall, the EMF is being implemented. Safety should be implemented as per the Contract. Budgetary cost has been considered in the BoQ item of EMP. Needs implementation on contractor part.



c) Warehouse:



Three projects have been screened for implementation against the approved EMF which is already in place and is part of contract document. These warehouses are located in Kamrup, Darang and Nagaon district. These warehouses are proposed within the existing warehouse, which involve demolition and re-construction of existing structures and construction of additional structure. The EMF checklist comprises 129 points. Out of 100% considered for EMF Applicability, 55% are not applicable to the project, 30% of total EMF screening point are fully complied, 8% are partially complied (not implemented by one project) and 7% are completely not complied. Hence overall, the EMF is being implemented.

Major Environmental Issues: Asbestos waste are major issues which are generated from existing warehouse roof. Project has structured guideline for asbestos waste handling and disposal. Following the guideline asbestos waste had been disposed at some of the construction sites. Dedicated monitoring system should be in place for 100% compliance.

Scope of Improvement: Safety should be implemented as per the Contract. Budgetary cost has been considered in the BoQ item of EMP. At some sites the labours reported at site not using appropriate safety PPE Kits.

d) Farmer Producing Company (FPC)/ Common Service Centre (CSC):

Common Service Centres (CSCs) has been encouraging as a platform through which technology dissemination, product aggregation, finance linkages, Agro-Business linkage; Agro-Business strategies can be operationalized and integrated. Farmer Producer company/ Common Service Centre are the common component that involves all the Agri sectors i.e., Agri, Horti, fishery, Seri, dairy & piggery. During Audit stage, consultant has visited available 18 (eighteen) FPC/CSC locations in 11 (Eleven) districts. Off the total audited projects, 2 projects have completed construction work and are under operations, 13 projects site selection completed and the remaining three project are under constructions

The percentage of CSC/FPC Complied is given in graph below. Only 5% of all the point mention in the EMF screening checklist are not complied.

Water discharge from plant premises is major issues and CtE/CtO condition need to be complied for the project. The Contract document item rate does not have budgetary note for Environmental Management. Peripheral green belt needs to be done as per site layout plan. CtE application need to be excited by the implementing agency under DEC supervisions.

e) Dairy – Lab Renovation Under DDA:

To follow the food safety regulations (FSSA-2006), food traded by value chain periodically tested for quality and safety is a mandate. The existing laboratories of DDD need to be strengthened, and capacity built for surveillance and response. To assess the Quality of Milk Dairy laboratory has been established in many districts in the state of Assam. Under Dairy Components 4 (four) projects under Lab renovation has been selected. The project involves funding for construction of Boundary wall, Electric connection (three phase), water connection, floor improvement, Regulated entry, laboratory equipment and chemicals for testing.



Major Environmental Issues are treated effluent from ETP would be source to STP for further treatment. The treated water should meet with the effluent discharge standards of CPCB if drains into existing Nala. The effluent testing should be carried out on regular basis. The proposed D.G sets should be provided with noise enclosures.

Plantation need to be carried as committed. Peripheral green belt needs to be done as per site layout plan. CtE application need to be expedited by the contractor under DEC supervisions. The EMF Checklist and environmental monitoring should have details like dates, signed by DEC and counter signed by Project managers. Few construction phase monitoring were reported.

f) Piggery – AHVD Improve Bio-Security in Nucleus Pig Breeding Farm

Under Piggery Value Chain despite being small-scale production contributes significantly to the livelihood of the majority of pig-rearing households. With availability of breeding most of indigenous pigs have been replaced by crossbreeds. Piggery Bio – Security is the Major Concern in Nucleus Pig Breeding Farm. The entry and exit needs to be well regulated and documented. This zone is prone to Viral and other diseases and can be wide spread in wild if proper preventive measures are not taken.

Under APART 5 projects has been funded out of which 4 project is in Kamrup district and 1 (one) in Karbi Anglong district. Environmental Audit was conducted for all the 5 (five) sites proposed under expansion/modernization. The upgradation involves construction of Security room, Display room cum sell Booth, Entry gate with wheel bath, Quarantine shed, dress changing room, Godown, repairing flood of pig shed, wire netting of pig shed, manure pit, dead animal disposal pit, overhead tanks, approach road and boundary wall. The Implementation of EMF was keenly noticed and audited, seeing the site seriousness and bio-security measures adopted.

Major issues are waste and urine handling from the sty. The soak pits filled and are over flowing. Some of the soak pits are covered with extensive growth of grasses. The drains which connect sty with septic tanks are broken.

The Contract document item rate does not have budgetary note for Environmental Management. Though EMP is part of contract document. Waste handling need to be strengthened. The soak pit and septic tanks need to be cleaned and if required addition should be constructed. Scope of setting biogas plant need to be explored. All drains repairs work needs to be done.

Foot Mouth Disease (FMD) was reported during audit. This needs proper management. These are contagious viral disease which widely spread from pig to pig.

g) At Fish seed Multiplication Centre

Algal bloom reported in the rearing ponds. This may be due to high level of nitrogen and phosphorus in soil. The EMP is dead fish carcass handling. Water quality need to be carried out on regular basis. Cloth washing in one of the ponds was noticed by the local residence. Complete fencing of premises if needed.

h) Agriculture



Agriculture of Assam is mostly tradition based where it is characterized by certain key constraints in its structural transformation like - lack of proper storage facility, processing facilities of the food produced, constrained market access, fragmented supply chain of inputs, low level of private sector involvement, underdeveloped knowledge and awareness among the farming community on markets and climate change and poor post-harvest management practices.

Under APART, agriculture upliftment is major concern. To increase productivity and teach the local farmers FIG and farmers beneficiaries has been identified at district level. Under this programme farmers are provided with seed, fertilizer, organic manure, technical assistance, thus encouraging the farmers toward climate resilience farming. The desk review per centage is higher because audit was undertaken between intercropping season.

Agricultural runoff to nearby field. Application of fertilizer without soil health card. Burning of agricultural waste post harvesting are few issues reported during audit.

i) Fishery:

Assam state fishery production has reaches up to 3.74lakhs MT in 2019-2020 from 2.9 lakhs MT during 2015-16. A rise of 26.87% in four years. The yawning demand-supply gap of 42 per cent in 2015-16, it has come down to mere 0.7 lakh metric tonnes in 2020-2021. Per capita fish consumption has risen from 8.5 kg per annum to 11.88 kg per annum. Fish seed production, too, has increased from 5,678 million to 9,886 million in the same corresponding period witnessing a rise of 74.11 percent.

25 demonstration projects under Fishery (Polyculture, Paddy cum Fish, Beel) has been audited. Out of 25 demonstration projects 14 (fourteen) demonstrations are visited by the expert in presence of District fishery officer, DEC and Beneficiaries. The remaining 11 (eleven) is desk reviewed based on the documents and screening reports furnished by the DEC.

Major Environmental Issues are Ponds drains and De-weeding of ponds. Application of DAP, Urea and fish supplement leading to algal bloom in ponds. Handling of diseased and dead fishes need to be addresses. They should not be discarded in open.

j) Horticulture

In the state of Assam Horticulture sector deals with following crops and variety. They are Fruits, Vegetable, Spices, Potato, Onion, Medicinal and aromatics and Mushroom. Under APART Horticulture has been identified under commodities value chain, which is offering promising prospects for economic growth and poverty reduction.

Under this mission APART has funded Horticulture sector, which involve provision of seeds, organic manure, pheromones, insect sticky boards (Yellow & Blue) and encourage integrated farming. This mission discourages use of pesticides.

Also, to promoted climate-resilient and sustainable crop-horticulture production systems. Only those species are selected which are tolerant to increasing incidence of short spells of extreme precipitation and surge in flash floods, and intermittent long dry spells during monsoon. Also, insect out break and tolerant variety to pest attack were considered.

Major Issues Agricultural runoff to nearby field. Application of fertilizer without soil health card. Burning of agricultural waste post harvesting. Use of pesticides to control pest. Provision of cold storage



for vegetable and horticulture products at district level. Improvement in supply chain from farm to major markets in state.

k) Seri – Culture

India is famous for good quality of silk all over the world. In India there are 6 (Six) state which are leading in Seri culture practices. State of Assam is at third place in raw silk production after Karnataka (lead) followed by Andhra Pradesh. In the financial year 2021 raw silk produced by Assam State is estimated to be 5000 metric Tons.

Under audit 25 sites has been considered. It comprises Eri and Moga worm rearing, plantations, fencing, construction of silk work multiplication units, cage distribution for Eri worm rearing, fertilizers, etc. At each district level there is experts on APART side and district government officers who looks after Seri culture. The beneficiaries under ARART are given financial assistance to fence the sites and under kind technical assistance, sapling, fertilizers, etc. are provided. Out of 25 sites selected which spread over district kamrup, Jorhar, Sibsagar and Biswanath, 10 sites are visited and remaining 15 finding are based on desk review. The EMF is 100% implemented in this sector.

E.9 Good Practices

During site visit and reviewing the document, it is perceived that an amount of performance security ESHS security has been kept with client as part of total payment to contractor; this would be paid to the contractor after fulfilling the ESHS compliance of the site as also obliged in the contract. This is very appreciative initiative in term of spreading awareness and importance of health and safety aspect on the construction sites.

The entire project specific contract document found well complied with EMF provisions. The site screening exercise, community consultation, transect walk, initial visit has been well recorded and documented.

The induction training given to DEC, DHC, DSSC, Junior Engineer, etc. joining APART are well organized. The intermediate yearly trainings given to them as continuous process has enhance their skill and capability of handling diverse nature of project. During interaction the DEC, shown that they are capability towards initial site appraisal, site selection for demonstration, road inventory, project specific environmental issues, etc were well noted. Their understanding to EMF, EMP and mitigation measures components wise were evaluated at the field during Mid Term Environmental Audit.

- The existing beels which were once good source of fishes to the locals are now dried up due to siltation, change in catchment area, intensive farming, anthropogenic activities, etc are now been taken up under APART. These beels under the supervision of district Fishery department – APART and local residence are now showing good sign of recovery.
- Under horticulture Demonstration, farmers were encouraged to follow pesticide free farming, provision of yellow and blue stick Board, Pheromone Traps are provided to beneficiaries. As an environmentally friendly horticulture practice use of chemical and herbicides are been restricted.



Biological methods have been adopted. Provision of bio-compost manure, desire quantity of fertilizers, inter crop plantation, etc were encourage.

- In the piggery sector bio-security methods in from of primary screening at the entrance gate with Potassium permanganate in water was noticed. the same was noticed at entry point to piggery styunits. The piggery sector is providing good variety piglets to the farmers. These inbred piglets before sold to the farmers are tested against African Swine Fever (ASF) virus as a bio-security measures.
- The FPC/CSC at has procured farm tools like tiller, thresher, Paddy thresher, Paddy hask machine, etc. These tools availability for the locals on rent has ease the farming practice. Earlier there was no centralize farming tools available for the farmers. Under the same Farmer Producing company there are 1580 beneficiaries across 60 villages.
- Implementation of Bio-engineering measures like plantation of shrubs to prevent cutting of road embankment and stone pitching adjacent to cross drain structure was noticed at Bokora – Chitada road in Majuli district. Other roads under audit are under construction. The design has considered these features.
- The waste handling for market under construction are well planned. Vermi-compost pit has been proposed to convert organic waste into manure. RCC mounted waste drying bed has also been proposed and noted during site visit.
- Safe drinking water with proper drinking facilities has been planned and noted during audit. A separate rest area has also been proposed for people visiting the market.
- At all proposed renovation of warehouse, rain water Harvesting has been considered in the lay out Plan. This would recharge the ground water.
- Proper Asbestos management plan was adopted for handling asbestos waste generated at Kamrup warehouse.
- Medical kits with appropriate medicine and date validity were noticed at most of the construction site.
- Integrated pest management was noticed for all horticulture sites. Yellow and blue Sticky boards and pheromone are installed within horticulture farms to attract insects and pests. An environmentally safe practice.

E.10 GAP Analysis & Reporting

- Some gaps are reported in contract document BoQ item and Environmental Management plan budgeting for projects involving civil and construction work; gas is also notice in EMF implementation in all the Project components and subcomponents.
- In some cases EMPs are found generic in nature. Site specific EMP need to be prepared for all sub-projects. The contract speaks about borrow earth, procurement of sand, gravels, quarry material etc. It is not noted in practice for some sub-projects.
- EMF framework is in place. Site screening is done as per approved EMF by DEC. while filling the screening checklist, every time the DEC should mention the dated, stage at which project appraisal done and counter signed by DEC and project manager.



E.11 Major Issues & Challenges

The major issues are to target each project components which are climate resilience, eco-friendly, energy efficient, minimum water with no environmental pollution.

- During implementation the major issues are to explain the project at the grass root level with available limited resource. There are large number of sub-projects/interventions in each district to be handled by single individual. Even some DEC has to take care of more than one district.
- For identification of new farmers (beneficiary), they have to organize meeting, village level interaction engaging government department. Travelling to remote area (Poor and non-accessible roads) and identifying new beneficiaries sometimes makes things difficult.
- Implementation of project in given time frame. Getting CtE/ CtO and other approval in given time limits. Resource identification and sourcing to construction site.
- Sometimes the district environmental coordinators find it difficult to motivate contractors for occupational health and safety measures such as PPEs since their direct interaction is limited and non-conformities raised during monthly monitoring are hard to be closed due to this lack of communication.
- Selection of demonstration plant species which are climate resilience, short life and with high yield and acceptable to farmers and consumers. In some cases use of pesticides by beneficiary without informing concern official or DEC.
- Stakeholder requires sensitisation on environmental safeguard provisions in a bit more elaborate and focused manner.
- District coordinator for fishery sector should be appointed in all district. Most of the district does not have fishery sector district coordinator. Training should be given to the contractors and their staff prior to start of civil construction work. Penalty clause in contract to be mandated for implementation of EMP and OHS.

E.12 Suggestive Measures & Draft Action Plan

A draft Action Plan has been recommended based on the findings reported during Mid Term Environmental Audit. They are as follows:

- **Implementation of approved EMF Monitoring Checklist:** More frequent training may be organised to give a clear instruction to all stakeholders explaining the stages of project, at which EMF screening and monitoring checklist needs to be filled by the DEC. Secondly more training need to be given to DEC, especially at demo site. All the checklist should have dates, signature of DEC and counter sign by district level govt. official and also clearly mention the stage at which EMF checklist has been filled/ screening carried out.
- The Beneficiary of Horticulture and Agriculture should be discouraged to use of pesticide. During interaction with beneficiaries, use of pesticides was reported by some. Awareness against use of pesticides need to be explained to farmers.
- The contractors, beneficiary, etc need to be briefed about the requirement of EMF monitoring checklist and its implementation. It should be translated into local language and should be made part of all contract. i.e., horticulture, fishery, sericulture, agriculture, etc.



FINAL REPORT Consulting Services for Mid Term External Environmental Audit

- Warehouse construction asbestos management plan should be followed properly. The identification of disposal site should be done prior to start of dismantling work.
- The solid waste management plan for piggery sector needs to be developed. Conversion of sty waste into organic manure need to be explore. The sewerage network within sty and connection to septic tanks and soak pit need to be improved. De-silting of septic tanks should be done on priority. The DEC should take up the matter as priority assignment.
- The use of solar lighting system at all the civil construction site during operation phase should be encouraged in contract. The % of solar energy generation and usage within premises should be clearly mention.
- The quantity of borrow earth and source should be part of DPR. The borrow earth management at site needs strengthening. The DEC at district level should ask for borrow earth source from the contractor. The records should be maintained for source, quality of earth required, etc. Borrow earth closure plan need to be developed complying with MoEf&CC guidelines.
- The conversion of post-harvest left out into organic manure should be encouraged. The burning of agriculture waste should be discouraged. The DHC, DAC and DEC discourage burning practices.
- The fishery sector needs more strengthening at the district level. Though improvement has been reported after implemented of APART demonstration. Most of the district does not have fishery District Coordinator. The appointment needs to be expedited. This would encourage interaction among the beneficiaries, DC and the district fishery officer. Good quality of Fish seed availability are major issues reported during consultation. Nodal officer and project manager at ATMA should take up the matters.
- Training to selected beneficiaries, all fishery DC at reputed fishery institute. The institute should have carried out similar work in aqua-culture and fish rearing.
- The boundary walls at fishery multiplication centre and at fish rearing ponds need improvement. Bio-security need to be enhanced. During audit presence of outsiders was noticed.

1 INTRODUCTION

1. The Assam Agribusiness and Rural Transformation Project (APART) stepped forward to develop a market connection for farmers to sell their agriculture-horticulture produce. The World Bank (WB) has approved a loan of US\$200 million to the Government of Assam (GoA) through the Government of India for the implementation of the Assam Agribusiness and Rural Transformation Project (APART). The goal is to boost the state's agricultural and related ecosystem by advising farmers on new technology, improving market connections, and so on. The project's development goal is to add value and strengthen the resilience of chosen agriculture value chains in Assam's targeted districts, with an emphasis on smallholder farmers and agro-entrepreneurs.

2. Assam Rural Infrastructure and Agricultural Services (ARIAS) Society, an ecologically conscious and socially responsible organisation, recognises the need to reduce the negative environmental impacts of projects in its portfolio and has built procedures to protect the environment.

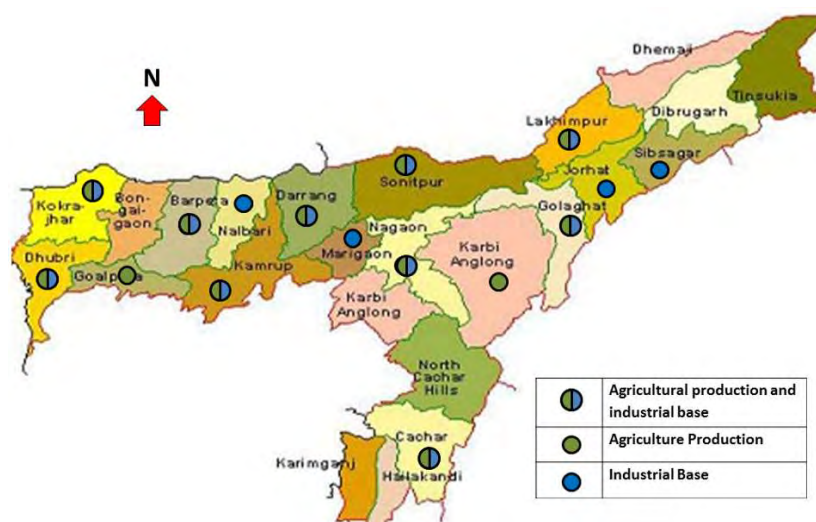


Figure 1-1: Projects for Mid - Term External Environmental Audit

3. With this goal in mind, ARIAS hired a consultant to conduct an Environmental Assessment (EA) and create an Environmental Management Framework (EMF) and which is being implemented for APART subprojects. APART has recruited LEA Associates South Asia Private Limited, New Delhi, as a consultant to conduct a Mid-Term External Environmental Audit. According to the contract, the Consultant has to conduct a Mid-Term Environmental Audit and assess the project's compliance with general and specific legislation, norms, and policies of the Government of India, the Government of Assam, and the Environmental Management Framework.

1.1 Apart Agribusiness and Rural Transformation Project (APART)

4. Agriculture and allied sectors are the primary source of employment and livelihood for the great majority of the rural population in Assam. Agriculture and related industries directly or indirectly support more than 75 percent of the population, employing over 53 percent of the total workforce.¹ The Assam Agricultural Competitiveness Project (AACP) was closed on 15th March 2015² was significant in raising cropping intensity, on-farm production, and agricultural diversification in the

¹<https://asrlms.assam.gov.in/as/node/90627>

²<http://www.arias.in/aacp-af.html>



state. The implementation of Assam Project on Agribusiness and Rural Transformation (APART) has the following objectives:

- Formation of Framers Producers Organisations/Companies (FPCs)
 - Development of Roads, Warehouses and Markets
 - Promotion of Agriculture Based enterprises through Industry Associations (IAs)
 - Development of new marketing channels
 - Promotion of Farm mechanization and adoption of climate smart agriculture technology.
5. To generate economies of scale, promote vertical and horizontal links between local agricultural enterprises, enable diffusion of innovations, leverage externalities, and channel public support for services and infrastructure, the project uses a production and enterprise cluster strategy within the targeted value chains. Table 1-1 provides an overview of project components, applicability, and execution.

Table 1-1: Over view of Project Components

| Sl. No. | Project Components | Project Sub-Components | EMF Applicability | Execution |
|---------|--|---|--|--|
| 1. | Component A: Enabling Agriculture Enterprise Development | Sub-Component A1: Enhancing State Capacity to Attract Private Investments Assam Bureau of Investment Promotion Sub-Component A2: Setting up Enterprise Development and Promotion Facility (EDFP) Sub-Component A.3: Setting up of Investment Fund Sub- Component A.4: Establishing stewardship councils | The overview of the proposed project subcomponents presents as if there no environmental impacts. However, unknowingly there are possibilities that the fund shall be invested in projects having significant environmental impacts. Hence in order to avoid that, a note/ guideline have been prepared for reference to screen the projects in the initial stage itself. | |
| 2. | Component B: Facilitate Agro Cluster Development | Sub-Component B.1: Support establishment of cluster level Industry Associations Sub-Component B.2: Supply chain support • Sub-Component B.2.1: Rehabilitation of access road • Sub-Component: B.2.2: Warehouse and warehouse receipts development • Sub-Component: B.2.3: Upgradation & modernization of agricultural wholesale market | For Implementing the project sub-component, the key infrastructure requirements are 1. Construction/ upgradation of Roads 2. Construction / upgradation of Warehouse 3. Construction/ Upgradation of the Markets 4. Community Service Centres (CSC 's) The proposed project interventions are likely to have significant environmental impacts during the construction and | The execution of the EMF has been evaluated by the District Coordinators. They audit the sub-project implementation against EMF checklist. The DEC also assist in obtaining concern NoC is required. Site visit for project under construction |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| Sl. No. | Project Components | Project Sub-Components | EMF Applicability | Execution |
|---------|---|---|---|--|
| | | | operation stages and accordingly suitable mitigation measures for the anticipated impacts have been prepared. | is done by DC on regular basis. Safety measures, quality assurance for structures is being guided by district PWD officials |
| 3. | Component C: Fostering Marketed Production and Resilience Enhancement | Sub-Component C1: Development of climate resilient production clusters •Sub-Component C1.1: Horticulture, crop, spices and condiments value chains • Sub-Component C1.2: Pork Value Chain •Sub-Component C1.3.1: Milk Value Chain: Formal sector •Sub-Component C1.3.2: Milk Value Chain: Informal sector •Sub-Component C1.4: Fisheries Value Chain •Sub-Component C1.5: Sericulture and Handloom Value Chain •Sub-Component C1.6: Cross cutting areas of Milk and sector animal health services Sub-Component C.2: Product Aggregation and Sale through Producer Associations and setting up market intelligence •Sub-Component C.2.1: Product Aggregation and Sale through Producer Associations •Sub-Component C2.2: Setting up market intelligence Cell Sub-Component C3: Facilitating access to and responsible use of financial services. | As indicated in the project subcomponents, the proposed production clusters (Agriculture, Piggery, Dairy, Fisheries, Sericulture and Handloom) are likely to have environmental impacts at various stages and hence, to mitigate the anticipated impacts suitable mitigation measures have been prepared. Please refer Chapter 6 of EA report | Climate resilience process has been adopted during project design and during site selection. Site connectivity was also accounted for, which can be approach in all weather conditions. e.g., in selection crop varieties, species of crop are selected for demonstration which are resistance to pest, fast growing with less investment, and meets with the market demands. Similarly for fishery and other sector site are selected under demonstration which are not prone to flooding, district agriculture and fishery department provide key guidance in species selection for demonstration. Same for milk sector too, where quality assessment of locally procured milk before supply to supplier and consumers need to have quality check, for which under local laboratory has been |



FINAL REPORT Consulting Services for Mid Term External Environmental Audit

| Sl. No. | Project Components | Project Sub-Components | EMF Applicability | Execution |
|---------|--|--|---|---|
| | | | | proposed and established, etc. |
| 4. | Component D: Project Management, Monitoring and Learning | Sub-Component D1: Project Coordination and Implementation Sub-Component D2: Monitoring and Evaluation Sub-Component D3: Environment Management Sub-Component D4: Social Management Sub-Component D5: Procurement Management Sub-Component D6: Financial Management. | Environmental Impacts are not anticipated under this subcomponent during implementation. However, as part of the capacity building (environmental monitoring, HR, budget allocation etc.), safeguard training has been proposed at various levels (PMU/ OPIU / DLCC and ATMA 's) for successful implementation of the EMF. Please refer chapter-9 of EA report. | Execution in place and being monitored by the PMU at top and DLCC and district level. |

1.2 Scope of Work

6. The objective of the Mid-term External Environmental audit is to perform an independent assessment of the environmental safeguard management of APART in line with the requirements established in the project EA-EMF. Focus will be placed on examining whether a system for addressing environmental aspects of the project and sub-project activities is functional and adequately resourced and whether implementation of mitigation measures and established mechanisms is in place as contemplated in the EA-EMF document. Gaps has been identified based on the audit findings and action plan will be recommended for project's benefit and growth.
7. The specific objectives of the Audit are:
 - ▶ To ensure that project's EMF is being implemented appropriately and adequately.
 - ▶ To verify and assess regulatory requirement, standards, and policies of Government of India, GoA, SPCB, Forest, World Bank ESF and ESS policies.
 - ▶ To identify whether project specific mitigation measures are identified and implemented. Also, to ensure appropriate mechanism to implement mitigation measures are in place including disclosure. Identification of amendment required in already prepared EMF to improve effectiveness, measures of outcome of implementation of EMF.
 - ▶ To prepare Mid-term External Environmental Audit Report.

Scope of the Assignment

- The Consultant is required to carry out an Environmental Audit and prepare the corresponding report according to the World Bank standards. During report preparation, the Consultant must undertake a detailed assessment of (a) impacts (outcomes) of EMF implementation, (b) identifying the major challenges faced and workable solutions proposes, (c) good environmental practices followed during





implementation, (d) data/information gaps exist that may jeopardize successful completion of the Audit; and (e) how those gaps can be filled in a timely manner.

- The Consultant will develop a broad audit program that will confirm that the consultant understands the audit objective, scope, methodology/approach and schedule and prepare an audit checklist that will cover meetings at the PCU, State & District levels, including all implementing agencies and officials. The detailed methodology and audit checklist templates which is reviewed by the PCU. The audit program incorporates field visits to selected project locations.
- Based on clear and agreed criteria, site-specific activities or sub-projects is selected to be included in the audit through detailed desk review of documents like best management practices, training programme conducted and reports, progress report, monitoring reports, etc. The consultant will review and assess the adequacy of the sub-project's identification, analysis and selection as outlined in EA-EMF document.
- An environmental audit will assess compliance with the EMF requirements (including documentation, consultations, disclosure, etc.,) and relevant legislation and regulatory requirements, including clearances/NoCs and land clearances if required. The audit will assess whether a system for environmental management as stipulated in the EMF has been duly followed and fully functional. These include effectiveness of the institutional arrangements, resource adequacy, environmental management processes for screening, environmental assessments, considerations of alternatives, risk mitigation and oversight, reporting and documentation.
- Capacity and resources of the implementing agencies will be assessed. This covers assessment of institutional capacities of the PCU, OPIUs, and District level functionaries in supervising the overall implementation of the EMF and project consultants, contractors and supervising officials. Key areas of concerns include management of all relevant environmental risk mitigation measures of operations under EMF. The assessment shall include feedback on the quality of the environmental management reporting, including related reviewing and approving activities, risk management, plans, and project monitoring reports; as well as examining the implementation of mitigation measures and established mechanisms further elaboration of roles and responsibilities of the implementing units under the project.
- The capacities and resources of project consultants, contractors and supervision field level functionaries will be assessed in implementing and addressing all relevant environmental risks and impacts of sub-project activities under APART, in particular specific risks that were identified in the EMF and sub-project environmental assessments.
- Audit findings will be presented and gap-filling and enhancement measures will be recommended for the overall environmental management, with action plans agreed by the project proponent. Audit results shall be analysed to identify key issues and gaps will be addressed in continued implementation of the EMF and risk mitigation measures, and recommendations shall propose clear actions needed to address technical and capacity building gaps.



FINAL REPORT Consulting Services for Mid Term External Environmental Audit

- The final deliverable will include extensive visual and graphic documentation including photographs of field conditions. The team will submit audit reports to the PCU, and discuss a mutually agreed timeframe for the implementation of proposed follow-up actions. The PCU will submit a final audit report to the World Bank for review. The audit will be deemed as closed only after this review and confirmation on action plans have been obtained.

1.3 Purpose of this Report

8. This report will present the result of implementation of the compliance with the EMF requirements (including paperwork, consultations, disclosure, and so on) as well as applicable legislation and regulatory requirements, such as clearances/NoCs and land clearances. Through audit, it is determined whether the EMF-mandated environmental management system has been properly implemented and is fully functional. This includes institutional efficacy, resource adequacy, environmental management processes for screening, environmental assessments, alternative considerations, risk mitigation and oversight, reporting and documentation, and risk mitigation and oversight.

1.4 Structure of the Report

9. This report consists of five chapters including the present one as Introduction. An overview of the chapters is given in Table 1-2:

Table 1-2: Structure of the Report

| Chapter | Description |
|--|--|
| Chapter 1: Introduction | This chapter presents the introduction and overview of Assam Agribusiness and Rural Transformation Project (APART) Program and summarises the Scope of Work of the Consultancy Services and purpose of this report. |
| Chapter 2: Approach and Methodology | This chapter details the approach and methodology, criteria for sample size selection and site visit schedule to be conducted for Mid Term External Environmental Audit. |
| Chapter 3: Environmental Audit Observations | The chapter presents the introduction to Environment Management Framework in place, audit of its implementation, interactions/meetings and site visits conducted. Finally providing the Environmental Safeguard Compliance with EMP. |
| Chapter 4: Summary of Audit Findings | The summary of Environmental Audit as well as suggestive measure and action plan has been presented in this chapter |



2 APPROACH AND METHODOLOGY

10. The main goals of the Mid-Term External Environmental Audit are to assess the potential negative environmental impacts caused during project implementation due to various interventions proposed under the project in all phases (design, construction, and operation). The Audit seeks for EMF implementation at various stage of the project.
11. The Environmental Audit is conducted in accordance with the World Bank's Environmental and Social Framework (ESF), Environmental Social Safeguard (ESS) policy, and General EHS Policy, as well as the statutory requirements. The goal of the Environmental Audit is to make sure that suggested infrastructure development interventions and other activities in agriculture-enterprise development are environmentally and socially sustainable.

2.1 Technical Approach and Methodology

12. Technical approach has been developed as per the guidelines provided in the safeguard instruments under APART project and followed by the World Bank's Environmental and Social Safeguards Policies triggered for APART Project and also as per the requirements of National & State Legislation and complement international obligations of India pertaining to Environmental and Social (E&S) aspects and presented in subsequent sections.
 13. Having given careful consideration to various components of the proposed assignment, a special emphasis will be laid on the following aspects for the successful implementation of the assignment.
 14. The Mid-term environmental Audit has considered the following major aspects in selecting the sample activities/sites:
 - ✓ Small to medium scale construction sites, including land clearance requirement from revenue dept.
 - ✓ Sub project requiring clearances / NoC from various agencies (like Forest, PCBA, irrigation, APDCI, Panchayat local administration, etc.) and;
 - ✓ Contractor led civil works with the site specific EMP & safeguard recommendations
- Demonstration with project approved SOPs, Environmental Guidelines, and Good Env. Practices etc.
- ✓ Occupational Health and safety aspect on the project location/ sites
 - ✓ Waste management aspects
 - ✓ Labor management
 - ✓ COVID 19 Management
15. The approach and methodology conceived for this assignment suggests the best possible means to carry out the audit associated with the present assignment based on our National and International experiences. In view of the multiple tasks associated with the audit and review, we have framed a comprehensive, realistic, scientific and systematic scheme of Work Program to undertake this challenging exercise.

16. The Environmental Audit will provide an opportunity to obtain an independent appraisal of where the project stands and the efficiency and effectiveness with which the project is being managed. A key focus of the Environmental Audit will be for the following:

- Determination of what is going right and why; and

Determination of what is going wrong and why;

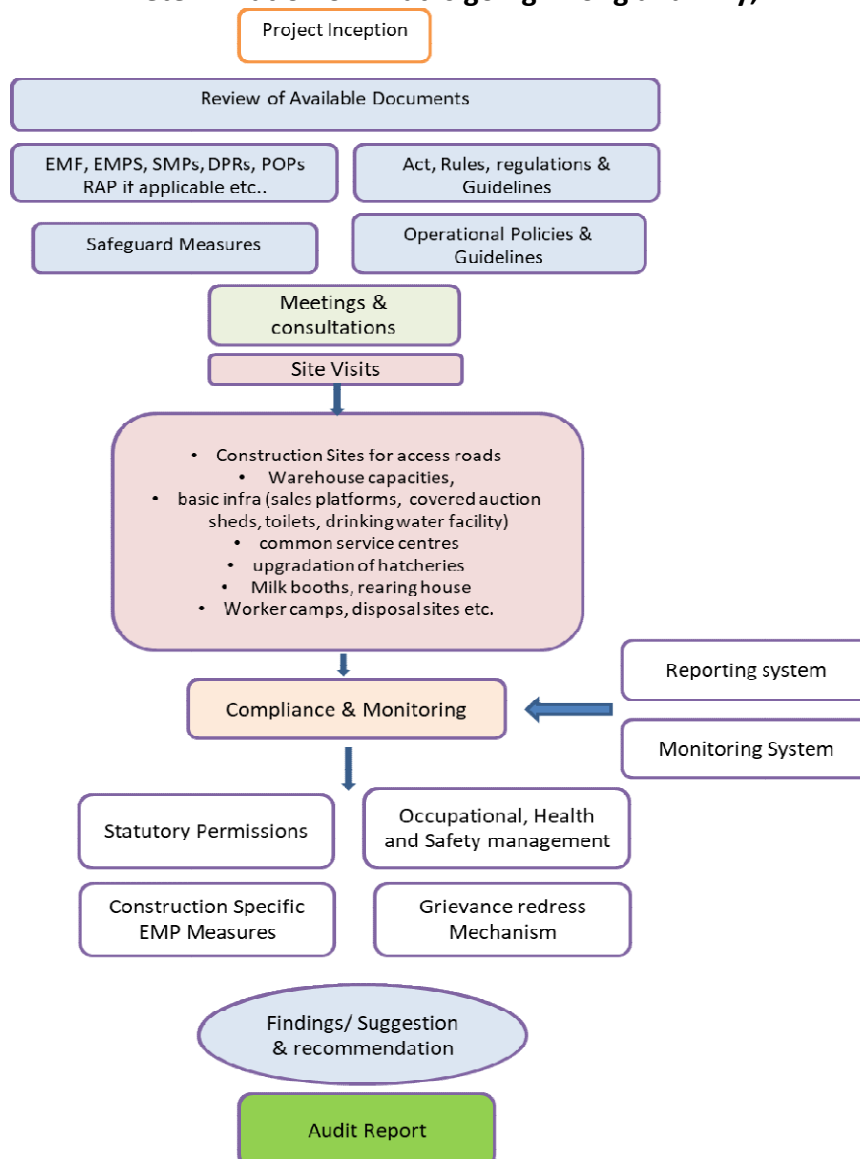


Figure 2-1: Approach & Methodology for Environmental Audit

2.2 Site Visit Plan

17. All the proposed Key Experts visited selected project locations based on the Site Visit Plan as per the schedule discussed in Table 2-1.



18. As per the ToR, the audit consultant was supposed to visit 5 sub-projects per sector of the 25 sub-project activities from each sector involving small to medium scale civil works. However as per discussion held during Project inception Meeting and viewing COVID 19 situation, sampling size has been upgraded to at least 50percent (83 sites) off field level study and rest as desk review. The selection criteria of sample for desk review and field study have been taken considering below points:

Selection Criteria

- District which is having more than 4 sector interventions has been preferred for the field visit, and having less than 3 samples are taken for desk review
- At least 30% of the selected sub-projects (166 projects in total) from each Sector has been considered for physical review & stakeholder consultation and rest desk review
- District wise representation of each sector has been considered

19. The sample size has been confirmed in consultation with ARIASS. The same is presented in the Table along with site visit schedule.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Table 2-1: Site Visit Schedule for Mid Term External Environmental Audits Furnished by APART

| SL.no. | Name of District | Market (Ongoing -completed) Renovation Buildings | | | Warehouse | Road | | FPC/ CSC Establishment | Dairy | | Piggery | Horticulture | Agriculture | Sericulture | Demonstration Fishery (Polyculture, Paddy cum Fish, Beel) | Fish seed Multiplication centre to be added in | Total | Field Visit & Review | | Desk review | | Schedule (2-4 days per district) |
|--------|------------------|---|------|-----------|-----------|---------|---|------------------------|---|---------------|-------------|---------------|-------------|-------------|---|--|-------|----------------------|----|------------------------------------|-----------------|----------------------------------|
| | | ATMA | DICC | Completed | | Ongoing | Lab Renno under DDA Expansion of Existing Milk unit WAMUL | | AHVD (improve Bio-security in Nucleus Pig Breeding Farm) | Demonstration | Agriculture | Demonstration | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
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| 1 | Kamrup | 1 | | 1 | 1 | 1 | 2 | 6 | 1 | 1 | 4 | | | 10 | 3 | 2 | 33 | 22 | 11 | 7- Seri,3 FPC (Rice, Fish), 1 DICC | Mar 30- April 1 | |
| 2 | Morigaon | | | | | | | 1 | | | | | | | 4 | | 5 | 3 | 2 | Demons. Fisheries | April 1-2 | |
| 3 | Nalbari | | | | | | 1 | 1 | | | | 5 | | | 5 | | 12 | 6 | 6 | 3-3 Demons. Fisheries, Horti | April 5-6 | |
| 4 | Barpeta | | 1 | 1 | | 1 | | 1 | | | | 5 | 10 | | | | 19 | 10 | 9 | 3-6 Demons. Horti, Agri | April 7-9 | |
| 5 | Darang | 1 | | | 1 | | 2 | | | | | | 8 | | 4 | | 16 | 9 | 7 | 5-2 Demons. Agri, fishery | April 11-13 | |
| 6 | Sonitpur | | | 1 | | | | 1 | | | | | 1 | | 5 | | 8 | 2 | 6 | 3-3 Demons. Seri, fishery | April 18-19 | |
| 7 | Nagaon | 2 | 1 | | 1 | 1 | | | 1 | | | | 3 | | | | 9 | 7 | 2 | Demons. Agri, | April 20-21 | |
| 8 | Dhubri | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | |
| 9 | Kokrajhar | 1 | | | | | | | | | | | | | | | 1 | 0 | 1 | Market | | |
| 10 | Goalpara | 1 | | | | 2 | | | | | | | 3 | | 4 | | 10 | 5 | 5 | 2-3 Demons. Agri, fishery | April 22-23 | |
| 11 | Karbi Anglong | | | | | | | 2 | 1 | | 1 | | | | | | 4 | 3 | 1 | FPC | April 25-30 | |
| 12 | Cachar | | | | | | | 2 | 1 | | | 5 | | | | | 8 | 4 | 4 | 3-1 Demons. Horti, FPC | April 25-30 | |
| 13 | Golaghat | 1 | | 1 | | | 1 | 2 | 1 | | | | | | | | 6 | 4 | 2 | CSC, DICC | April | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| SL.no. | Name of District | | | Market (Ongoing -completed) | Renovation Buildings | | | | | | | | | | | | | | | |
|--------|------------------|--|------|--------------------------------|-------------------------|-----------|-----------|---------|--|------------------------|--|---------------------|--|---|---------------|-------------|---------------|--|--|--|
| | | | ATMA | DICC | | Warehouse | | | | | | | | | | | | | | |
| | | | | | | | Completed | Ongoing | | FPC/ CSC Establishment | | Lab Renno under DDA | Expansion of Existing Milk unit WAMUL | AHVD (improve Bio-security in Nucleus Pig Breeding Farm) | Demonstration | Agriculture | Demonstration | | Demonstration Fishery (Polyculture, Paddy cum Fish, Beel) | Fish seed Multiplication centre to be added in |
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20. Seeing the COVID-19 situation under control and relaxation in State travel guidelines, the number of site visit has been increased to 53% compared to 30%. Senior team comprising 6 people and 6 juniors are included in the Audit. One senior and one junior visited each site as per the scheduled plan. The site visit started on March 30th and concluded by 30th April, spanning for nearly a month. In each sector, sub-project was visited based on the list finalized by APART. As per the list furnished, 166 projects have been considered under Audit, out of which 88 were visited and remaining 78 projects (47%) are desk reviewed.



3 ENVIRONMENT AUDIT OBSERVATIONS

3.1 Introduction

21. APART covers a wide spectrum of infrastructure projects, from minor to medium the development of these initiatives in accordance with the intended objectives could have detrimental environmental consequences. APART recognizes the need to mitigate the negative environmental impacts of projects in its portfolio and has developed systems to safeguard environmental concerns. The project adopts a production and enterprise cluster strategy within the targeted value chains, to generate economies of scale. The EMF compliance of each project component and sub-component are being screened during the audit. It aims to promote vertical and horizontal links between local agricultural enterprises.
22. As described in the previous chapter about sampling size and site visit, the table provides total no projects pertain to each sector/ sub sector, for which external Environmental Audit has been carried out.
23. Seeing the COVID-19 situation in better shape, the sites-based audit was increased and desk review was minimized. This was done to have more site-specific data, for better understanding and precise outcome of EMF implementation Audit. As per the tentative schedule shared, the consultant needs to audit 166 sites comprising 88 (53%) site visit and remaining 78 (47%) desk review.
24. Seeing decline in COVID-19 pandemic, the Environment audit team has increased the sample size for site visit. The audit team has audited 176 sites comprising 119 (nearly 68 %) sites audit and 57 (32%) desk review. Due to onset of pre-monsoon, some of the Demonstration Sites for Agriculture, Horticulture and Sericulture and Fishery were incommutable, hence reaching the site was not possible. The components wise list of site visit and desk review is discussed in **Table 3-1**.



Table 3-1: Tentative Projects for Mid Term External Environmental Audit

| Sl.no. | Projects | | Number of Sites As per Contract | No. of Site under Audit | Site visit | Desk Review |
|-------------|---|--|------------------------------------|----------------------------|------------|-------------|
| 1 | Market | | 8 | 8 | 6 | 2 |
| 2 | Renovation Buildings | ATMA | 2 | 2 | 2 | - |
| 3 | | DICC | 4 | 4 | 4 | - |
| 4 | Warehouse | | 3 | 3 | 3 | - |
| 5 | Road | | 13 | 15 | 15 | - |
| 7 | FPC/ CSC Establishment | | 23 | 18 | 17 | 1 |
| 8 | Dairy | Lab Renno under DDA | 5 | 4 | 4 | - |
| 9 | | Expansion of Existing Milk unit WAMUL | 1 | 1 | 1 | - |
| 10 | Piggery | AHVD (improve Bio-security in Nucleus Pig Breeding Farm) | 5 | 5 | 5 | - |
| 11 | Agriculture | Demonstration | 25 | 25 | 9 | 16 |
| 12 | Horticulture | Demonstration | 25 | 35 | 25 | 10 |
| 13 | Sericulture | Demonstration | 25 | 25 | 10 | 15 |
| 14 | Demonstration Fishery (Polyculture, Paddy cum Fish, Beel) | | 25 | 25 | 14 | 11 |
| 15 | Fish seed Multiplication centre to be added | | 2 | 2 | 2 | 2 |
| Total Sites | | | 166 | 176 | 119 | 57 |



25. The graphic presentation of the project under Audit is shown in figure below. Based on the graph it can be concluded that as per the ToR we have to Audit 166 sites, based on site visit summarization it is concluded that 176 project has been Audited which comprises 119 site visit and 57 desk review of documents.

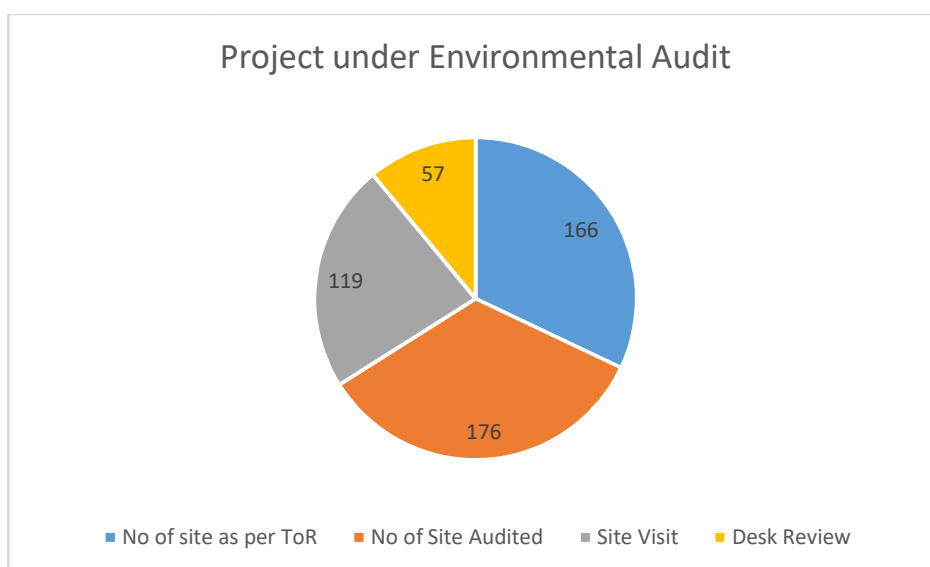


Figure 3-1 : Pie Graph Re-presenting Audit Details

26. The Bar Graphs represent the number of projects with their components considered for Audit. The Graphs clearly shows the details of site visit and project screened based on desk reviews. Out of the total, 176 projects are audited against 166 Number of projects (ToR), 119 site visit were conducted and 57 projects are based on desk review.
27. Components like roads, warehouse, piggery, dairy, renovation of buildings are visit and site screening was done at site. All documents are also reviewed at site. The projects under desk review are mostly Agriculture, Horticulture, and Sericulture and fishery demonstration. These demonstrations are mostly completed and field are cleared. Some are not approachable due to early monsoon. Where approach roads are flooded. The Bar graph representing the visit details are shown in figure below.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

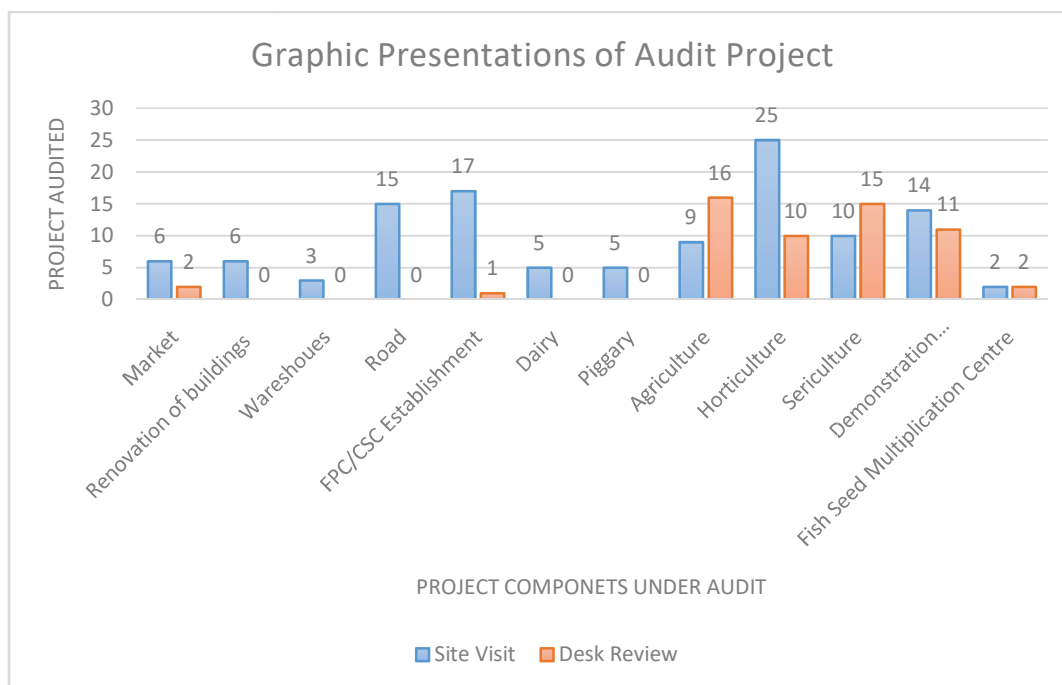


Figure 3-2: The details of Project Components wise considered under Audit

28. These visits captured all the components of the project. The project is spread across different districts of Assam like Kamrup, Morigaon, Nalbari, Barpeta, Darang, Sonitpur, Nagaon, Dhubri, Kokarajhar, Goalpara, Karbi Anglong, Cachar, Golaghat, Jorhat, Lakhimpur, Sibsagar, Majuli and Biswanath. The Schedule of Visit with component visited is briefed in table

Table 3-2: The Site Visit Schedule Along with Project Component Visited

| S. No | District | Date of Visit | Component Audit on Ground |
|-------|----------|---------------|--|
| 1. | Kamrup | 27/3/2022 | Market, Renovation Building, |
| 2. | | 28/3/2022 | Road, warehouse, Renovation Building |
| 3. | | 30/2/2022 | FPC, CSC, Piggery Bio-security, Fish Seed Multiplication, Fishery Demonst. |
| 4. | | 8/4/2022 | WAMUL, Piggery, Sericulture, FPC |
| 5. | | 27/4/2022 | Piggery, Sericulture, FPC, Lab Renovation, Fish Seed Multiplication |
| 6. | Morigaon | 01/4/2022 | FPC/CSC, Fishery Demonstration |
| 7. | Nalbari | 02/4/2022 | Road, FPC/CSC, Horti., Fishery Demo. |
| 8. | Barpeta | 28/04/2022 | ATMA, DICC, Road, Agri, Horti |
| 9. | Darang | 09/04/2022 | Market, warehouse, Road, Horti., Agri. |
| 10. | Sonitpur | 26/04/2022 | Warehouse, FPC/CSC, Horti., Fishery Demo. |
| 11. | Nagaon | 21/04/2022 | Market, ATMA, Warehouse, Road, Dairy, Horti. & Agri. |
| 12. | Goalpara | 31/04/2022 | Market, Road, Horti., Agri, Fishery |



FINAL REPORT Consulting Services for Mid Term External Environmental Audit

| S. No | District | Date of Visit | Component Audit on Ground |
|-------|---------------|--------------------------|--|
| 13. | Karbi Anglong | 23/04/2022 | Road, FPC/CSC, Lab, Piggery Bio-security |
| 14. | Cachar | 05/04/2022 | FPC/CSC, lab, Horti., Agri. |
| 15. | Golaghat | 22/04/2022 | Market, Warehouse, Road, Lab, |
| 16. | Jorhat | 11/04/2022 12/04/2022 | FPC/CSC, Horticulture |
| 17. | Sibsagar | 11/04/2022 | Road, FPC/CSC, Sericulture, Horticulture |
| 18. | Majuli | 12/04/2022 | Road, FPC/CSC |

3.2 Implementing Agency Capacity and Resources

29. APART has a well-organized staffing system centrally managed at the office of the ARIAS Society. There are District Environmental Coordinator (DEC) at each district level who are the key personnel at district level handling the responsibility of integrating safeguards into project activities (plan, designs), capacity building, monitoring and reporting. They report directly to the Environmental Management Specialist at APART Head office, Guwahati. These DEC are well experienced and knowledgeable about the regulatory requirements of GoA and GoI. They are engaged from the very beginning of the respective sub-projects, such as screening, site selection, site appraisal, project audit and as demanded during different stages of implementation and in compliance to the standard EMF. The DEC's interaction with respective government departments also was noteworthy. DEC's appropriately guide the FPC, CSC and Beneficiaries.
30. There is a systematic staffing pattern at each institutional level, headed by State Project Director, ARIAS. Under him there is Environment Management Specialist, ARIAS at PCU level. Down the ladder there is Operational Project Implementation Unit (OPIU) which comprises of Nodal Officer for Environmental Safeguards (All line Departments), followed by DLCC/ATMA comprising District Environmental Coordinator -16 Project District) and ultimately Focal officer from all line departments for knowledge sharing, technical assistance and for necessary coordination. The flow Chart for project governs is given in Figure 3-5.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Institutional Arrangement



Figure 3-3: Project Implementation and Management

Table 3-3: Details of Nodal officer for implementation of Environmental Safeguard

| SL No | Department/Directorate/Commissionerate/Agency | Name of Nodal Officer | Designation |
|-------|--|--------------------------------|-------------------------------|
| 1 | Assam State Warehouse Corporation | Sri. H.K . Goswami | E.E (O) |
| 2 | Assam Agrucultural University | Dr. N. Mazumdar | Principal Scientist, HRS, AAU |
| 3 | Directorate of Handloom & Textile | Sri. Jamini Borgohain | Inspector |
| 4 | Directorate of Sericulture | Sri. Ratan Phatowali | Addl. Director |
| 5 | Animal Husbandry & Veterinary | Dr. Prasanna Saikia | Vety.officer,BCPP, O/o Dvo, |
| 6 | The West Assam Milk Producers' Co-operative Union Ltd. | Sri Sameer Kumar Parida | Senior Manager |
| 7 | Directorate of Agruculture | Sri. Madhuram Patir | Asst.Director , Marketing |
| 8 | Assam State Agricultural Marketing Board | Sri. R.P.Dutta | Asst. Marketing Officer |
| 9 | Directorate of Dairy Development | Sri. Jayanta Malla Bujarbaruah | ARDEO (HQ) |
| 10 | Industries & Commerce | Sri. K.M. Das | Joint Director (TS) |
| 11 | Directorate of Fisheries | Md. Mintal Ali | PDO |
| 12 | Commissonerate of Industries & Commerce | Sri. Tapan Deka | Deputy Director (P) |
| 13 | Public Works & Roads Department | Sri. Simanta Baishya | Asst. Executive Engineer |
| 14 | Directorate of Horticulture and Food Processing | Kalpana Barman | |



FINAL REPORT Consulting Services for Mid Term External Environmental Audit



Figure 3-4: Staffing arrangement for EMF compliance

3.3 Capacity Assessment of Implementing Agency

31. The implementing Agency APART is well equipped with technical expert at PCU office Guwahati. The key expert has well verse knowledge in their domain sector. The capacity in handling such large number of projects in all four project components, with up to date information for all 16 districts in state of Assam is scholarly. Project better understanding was also noted at OPIU level (environmental officer at all line departments). During interaction with the OPIU it was noted that they have details of all the project up to date, they of details of contractors engaged, current status of the project, hurdle/ delay in work with reasons, etc.
32. At the district level, ATMA office is headed by the project manager who is supervise by the Nodal office of government concern department. During interaction with ATMA project manager it was noted, that there exists well organize system of project sanction and fundings. They also organize training to DC, FIGs, FPCs of the new innovative technology. They are key funding agency at district level for all trainings and project approvals. They engage agriculture institute, government fishery, and horticulture and sericulture department to train the District Coordinator. They are well with the EMF implementation and various checklist availability.



33. Down the line are the District Coordinator for different subcomponents. The lacuna in EMF implementation is reported at this level. They interact with contractor, project beneficiaries, CSC, FIGs, etc. During interaction it was noticed, that APART is organizing training on regular basis for project/ sector specific EMF implementation. At two districts the DEC during visit is newly recruited and does not have adequate project information. During audit it was also noted that few newly appointed DEC are not fully aware with World Bank EHS general guideline, policy and OHS implementation requirement. They are unable to drive the civil contractor in implementation safety policy as per their agreements. This need to be address. In most of the district, the Fishery expert at district level under APART project is not appointed. It is taken by DEC. The skill and training for handling fishery sector need to be given DEC. At some demonstration, the DEC does not able to fully convenience the local beneficiaries not to use non-recommended pesticides. During interaction with Horticulture beneficiary, it was not clear what they do with the pesticides empty bottles and how they follow safety procedure. There should be regular interaction between the contractor and DEC regarding project EMP, EMF implementation. The scope and obligation of contracts, etc.
34. Most of the contractor engaged in civil construction work, does not have site safety/ environmental personal. This are mostly look in by engineers. During interaction with contractor, it was also noted that they do not know about the EMP which is there in part of contract. The DEC has to drive the contractor to get the EMP and EMF implemented. During audit, at warehouse it was noted that the contractor does know about the hazardous effect of asbestos. It was not brief to the labours. They are handling without mask and glover. These issues need to be taken care by the DEC and need base training to contractor's personal need to be given.

3.4 Training and Capacity Building

35. To enhance the capacity of the staffs, trainings has been organized by APART engaging their in-house experts and sectorial specialist from government departments, research institutes and universities. Since the start of APART mission as an Environmental Awareness & Capacity Building about 27 numbers of trainings have been conducted. Nominated Nodal Officer from all OPIUs, Nominated Nodal Officer for Environmental Safeguard from all OPIUs & PCU key staffs were trained on 8th November, 2017. Recently on 19th April, 2022 APART has organized an Orientation Training forth newly Joined District Environment Coordinators Grade-4 & Refresher training for all DEC's.
36. Till date from the conception of APART project year 2017 around 27, numbers. of training has been carried out at various level. The trainings were conducted at state level, PCUs, OPIUs, Focal Env. Officers, concerned officer from aligned department etc, Major aspects of the training are Environmental



safeguards, Workshop for livestock sector, Fish value chain, Fisheries, PWRD contractors etc. The details of training given is attached as **Annexure -I**

37. To encourage or to improve proper understanding of best practices and technologies in farming technique, use of new technologies, application of fertilizers, farming methods, handling and seed selection, crop harvesting and storage, value addition of Agri-products, pond rejuvenation, fish farming technique, etc training are given to FIGs, FPCs, Beneficiaries, etc at district level engaging district agriculture officers, fisheries, Horticulture, etc. These representatives are from the district government departments.
38. Training is organized at FIG and FPCs level to train the farmers in encouraging their farm technique knowledge. The district coordinator in association of district agriculture department, agriculture expert from institution etc is invited to interact with the FIG and other farmers are also invited who are not member to share and spread farming technique at local level. Pamphlets, slides, seed selection technique, farming methodology, field workshops, protective kits and their usages, etc were demonstrated at the field. All the interaction are done in local language.

3.5 Implementation of EMF

39. This Environmental Management Framework guide the project's respective Line Departments in sub-project selection, screening, and categorization, environmental assessment, and preparation and implementation, monitoring, and preparation of environmental assessments/management plans in order to comply with the World Bank Operational Policies and Government Rules and Laws. The prepared EMF guided the ARIAS society to prepare Environmental Assessment reports for all categories of the subprojects as per the Government of India (GoI) and Government of Assam (GoA) applicable environmental rules and regulations and WB safeguard policies.
40. The ESMF available at ARIASS covers the key Environmental and Social Impacts anticipated from the implementation of the sub-projects. The ESMF also provides broader Institutional arrangement including roles and responsibility for effective ESMP implementation, monitoring and reporting. Under the public consultation and disclosure, the consultations conducted at the national level with stakeholders/ line departments are discussed. It is observed that the ESMF fulfils its intent as a guiding document for assessing the potential environmental and social impacts and to suggest suitable management/mitigation measures complying with the regulatory requirements at national and state level and also adheres to the operational policy guidelines of the World Bank.
41. The EMFs also provides the Environmental Management Plan (EMP) which outlines the mitigation, monitoring, and administrative procedures that are used during project execution to minimize or eliminate negative environmental consequences. Further, it also finds practical and cost-effective



methods that could help to mitigate potentially serious negative environmental effects to tolerable levels. If mitigation measures are not practical, cost-effective, or sufficient, the plan includes compensation actions. Further, to analyse the efficacy and efficiency of the proposed system, the EMF suggests that supervision, monitoring, and auditing be implemented.

42. The EMF provides criteria for the screening of sub-projects according to their likely environment impacts, and a determination of the level of Environment Assessment (EA) to be conducted for the sub-projects. The “High Impact” category sub-projects require detailed EA conducted by an independent agency, while “Low Impact” category sub-projects require preparation of Safeguard Management Plans. Auditor has reviewed and highlighted the sub-projects based on the approved EMF and EMP.

3.6 Interactions and Site visits

43. As suggested by ARIASS during the inception meeting, the audit consultant has primarily engaged in a detailed discussion at the office of State Project Implementation Unit (SPIU), District Level PIUs- Environmental Management Cell, sector wise Executing Agencies and project contractors, FPC, Demonstrations etc. Exclusive meetings and site visits were also carried out with representatives of Local self-governing bodies, project’s active sites & closed site, demonstration projects under sectors of agriculture, fisheries, sericulture, piggery and civil construction sites of (road, market, warehouse, common service centre, industries etc.) and discussion with contractors. In a nutshell, the audit included the following major activities:

| | |
|---|--|
| <ul style="list-style-type: none"> Meeting with: <ul style="list-style-type: none"> ✓ ARIAS Society, OPIU Officials, Departmental Coordinators, District level officials etc. <p>District Administration / Sub Divisional Officials, District Environmental Coordinators/ Executing Agency</p> <ul style="list-style-type: none"> Discussions with contractors Review of Documents available with DPUs/EA/ Contractors Discussions with FIGs, FPCs, etc Persons | <ul style="list-style-type: none"> On-site Observations - accompanied by EA/Contractor, ARIAS Society, OPIU Officials, Departmental Coordinators, District level officials etc. Personnel—various project components (road, market, warehouse, common service center, FPCs, demonstration of agriculture, fishery, sericulture, piggery and dairy) Discussions and feedback from Project beneficiaries Discussions with Local Community / Women Briefing and sharing of preliminary audit observations to ARIAS Society, OPIU Officials, Departmental Coordinators, District level officials /EA/Contractors, etc. |
|---|--|

3.7 Review of Project

44. All relevant project documents including Environmental and Social safeguards document, Environmental Management Framework, Environmental Assessment (EA) Report prepared for APART projects (if any), prepared for relevant sub-projects has been accessed through ARIAS Society’s website are under



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

revision. The other project related documents such as contract documents, bid documents etc., has been collated from project sites and sub project offices. In order to review the implementation of Environmental Management Framework and Audit of Compliance of Approved investments, Environmental Consultant is in the process of collecting and compiling various project documents like Project EMF, Project specific EMP, EA, Safeguard documents & other project related progress reports etc.

45. During Audit & site visits the following documents have been reviewed and/or verified for their adequacy, sourcing of authentic information and compliance status vis-à-vis requirement

- Project specific Screening checklist and Environmental Monitoring formats
- Sub Project specific EMP documents
- consent copies
- Asbestos waste management plan & implementation documents
- Labor license Copy, PUCs, onsite safety maintenance record
- Interim mission observations
- Project specific Contracts Documents
- Site specific SHE compliance and logbooks
- Demonstration project and management plan etc.

Table 3-4: Review of Contract documents

| Name of Sector | Project reviewed | No of projects | Provision of EMP | Environmental Screening Checklist | Provisions of Labour Management | Other provisions |
|----------------|--------------------|----------------|--|---|---|--|
| Civil | Renovation of ATMA | 25 | Included in all the contract documents, however no specific items with regard to this observed in the BOQ, e.g., Plantation. | Provided in all the contract documents. The initial stage screening as per EMF of APART has been addressed. | Labour management plan has been included in the contract documents. Other than these transect walk, initial and after consultation has also been well kept. | Land Lease documents NOCs from other dept. like irrigation, local gram panchayat etc. |
| | CSC/ warehouse | 10 | | | | |
| | ROAD | 52 | | | | |
| | Market | 40 | | | | |



46. For demonstration projects such as **Agriculture, Horticulture, Piggery, Sericulture, Fishery, FPC etc..**: environmental screening checklist as well as list of beneficiaries has been reviewed and randomly checked at site. The onsite verification has been discussed in subsequent chapters.

3.8 Review of Implementation Arrangement

47. For impactful implementation of the EMF, a structure is formed. Project Management Unit of APART have an Environmental Management Specialist at central level (in ARIAS) tackles the environmental issues related to project intervention and Implementation of EMF by coordinating with the line department of different sector, World bank, Appointed Consultant(if any). The specialist is supported by Nodal officer for environmental safeguard at all line department and by District Environmental Coordinator (all 16 district separately)
48. Operational Project Implementation Unit (OPIU) handles sector-specific project interventions. In each SPIU, an Environmental Management Cell with one Environmental Safeguard Specialist and a Support Staff deployed to build the capacity of the executing agencies to implement the provisions of the Environmental Management Framework, as well as environmental issues related to Project Intervention.
49. ARIAS Society, OPIU Officials, Departmental Coordinators, District level officials etc. Ensures the successful application of the Environment Management Framework and other environmental guidelines. Each DLCC have an environmental expert who oversee EMF implementation at cluster levels, including Common Service Centres, Market and Rural Hats, Warehouses, and Roads, with the help of field assistants.
50. The PCU/PMU directs project activities and communications to the State Project Implementation Unit (SPIU). The District Level Coordination Committee stationed in the respective districts, specifically the selected 16 districts, assists the End Implementation Agencies for this sub component. The implementation arrangement for EMFs implementation is provided in the Figure 3-5.

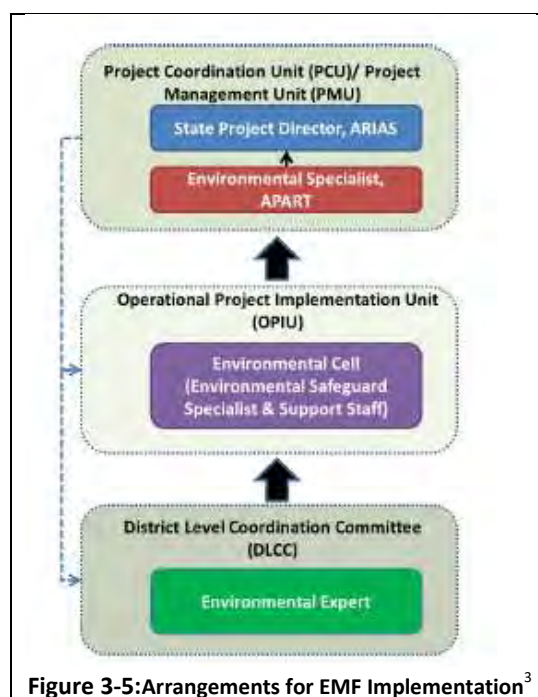


Figure 3-5:Arrangements for EMF Implementation³

³Sourced from EMF



3.9 Environmental Safeguard Compliance to EMF (APART)

3.9.1 Civil Sector

ROADS

51. To support the supply chain, APART has been proposed upgrading the rural access road that are connected to the enterprise and production clusters, thereby providing connectivity and market access to the project beneficiaries. About 550 km of rural access road was identified under APART as part of project preparation activity.
52. All the Roads are constructed using innovative technologies which are of climate resilient type. The crust composition of the road is granular materials base course of 200 mm over a prepared subgrade, two layers of WBM with grade 3 materials, followed by Interlocking Concrete paver blocks (ICPB) of 80 mm thickness has been considered
53. Based on the availability of Right of Way (ROW), the pavement of the road is generally of intermediate standard (5.5 m wide) having a road width of 7.5 m. In the area where road width is restricted due to non-availability of Govt. land, minimum of 6 m with a pavement width of 3.75 m has been proposed. Most of the site selected under audit is of 6m width with 3.75m of paver block pavement. All the road design is as per the technical specification recommended by the IRC and State PWD.
54. During the audit findings it was noted that the roads selected for rehabilitation and maintain ace already exists. These are village road and the proposed right of way (PRoW) already exists. No Additional land acquisition was needed. The Consent from the villagewas taken prior to start of work. 15 roads have been selected for midterm audit. It includes 6 (Six) roads which are already completed and 9 (nine) roads which are under different stage of construction. All the 15 roads are visited, which spread across 10 (ten) districts. The development responsibility of civil construction is mainly vested with PWRD. During Environmental Audit detailed interactions with respective PWRD, DEC APART, Contractors, workers and villagers were undertaken. The summery of audit finding is discussed in Table 3-5 and Table 3-6 The detailed EMF screening /observations is discussed in Table and Table .

Table 3-5: Summery of Audit Findings

| S. No | Environmental Issues | EMF Implementation | Name of Project |
|-------|-------------------------------|---|---|
| 1. | Borrow Earth for road filling | Borrow Earth for road filling is major issues. They are mostly obtained from the villagers. No NoC Obtained | Hamlai to longlit link road, Karbi Anglong, Goroimari to NikoriGutung – Golaghat, PhapuriKhaiti to Hugaltoli Road, Komoldoipur to Goroimari Road. Construction of Deulgiri Oil Plam Road (Completed), Nirikali to Patharighat Road, Garukhuti to Gosala Road, |
| 2. | Are provisions made for | The borrow earth are | Goroimari to NikoriGutung (construction), |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S. No | Environmental Issues | EMF Implementation | Name of Project |
|-------|--|--|--|
| | control of pollution of pond water during construction | noticed reaching the agriculture land and nearby water bodies ar surface runoff. | Golaghat; PhapuriKhaiti to Hugaltoli Road – Nagaon. |
| 3. | Are provisions made for rehabilitation of the water body, if affected | No provision adopted to rehabilitate water bodies | Goroimari to NikoriGutung (construction), Golaghat; PhapuriKhaiti to Hugaltoli Road – Nagaon. |
| 4. | Is quarry material is being used from existing quarry | The source of quarry material is notclear. Obtained from nearby area. | Hamlai to longnit link road (Under Construction- Karbi Anglong, |
| 5. | Are slope stabilization engineering Measures taken if included in the DPR | | Dilaji - Rongklarbong Road (Completed) and Hamlai to longnit link road (Under Construction) – Karbi Anglong; Goroimari to NikoriGutung (construction) Golaghat, PhapuriKhaiti to Hugaltoli Road (construction) – Nagaon. |
| 6. | Are culverts at such locations designed to handle the afflux and to ensure that upstream areas do not get flooded and excessive scour caused on downstream nor fields affected | The numbers of culverts proposed are not appropriate as per the geographical location of roads. This has resulted in road cutting. | Dilaji - Rongklarbong Road (Completed) and Hamlai to longnit link road (Under Construction) – Karbi Anglong; |
| 7. | No. of trees planted as per the compensatory afforestation plan and locations | Tree felling are involved in these projects. The contract BoQ item includes cost for tree plantation. But not reported during Audit. | Dilaji - Rongklarbong Road (Completed) and Hamlai to longnit link road (Under Construction) – Karbi Anglong; Goroimari to NikoriGutung (construction) - Golaghat |
| 8. | Are sandbags/earth bund adopted to prevent washing away of sand/silt and wastewater to drains, catchpit, public road and footpath? | Not adopted in most of the project under construction phase. | Dilaji - Rongklarbong Road, Hamlai to longnit link road, Goroimari to NikoriGutung, PhapuriKhaiti to Hugaltoli Road, Nanai Uriagaon to PachimJallah, Komoldoipur to Goroimari Road, |

55. 1. Summary: The project under audit, in Karbi Anglong district needs proper implementation of the EMF. The site involves large number of trees cutting. No tree felling detailing available with the contractor and DEC. The Labour camps, toilets, rest area need improvement. No water sprinkling for dust suppression was noticed. The labour is working without PPE kits. It was also not supplied by the contractor.

Tree plantation was noticed in projects Majuli district. As per the audit finding, most of the contractor will plant trees after completing civil work.



Table 3-6: Brief Summary of overall findings - Road Projects

| Sl.no | Project Audit | Observations |
|-------|---|---|
| 1. | Review of EMF Screening | EMF is in place and are being filled on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor. Need improvement in EMF screening appraisal. The EMF Screening report needs more clarity on sites like labour camps, borrow earth, source of construction material, tree felling, etc. The filling of implementation Column in EMF Checklist need to be more appropriate. |
| 2. | Review of Consent compliance / Permission | Consent needs to be checked by the DCE before start of work. Most of the Road Construction work need filling. Borrow earth approval is mandated by the MoEF&CC. |
| 3. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours undergoes Rt-PCR test before engagement on assignment. |
| 4. | Solid waste Management | Solid waste management is in Place except for Project "Hamlai to longnit link road (Under Construction)". Here solid waste management need improvement. |
| 5. | Road Design | The roads are constructed as per the approved design as given in the contract and supervised by PWD. |
| 6. | Climate resilience adaptation | The proposed roads are upgradation and reconstruction of existing village/ connecting roads and are 3.5 to 3.75m, paver block roads, which meets with the Climate resilience requirement. There pavers block road are tolerant to rainfall in comparison to bituminous roads and more environmentally friendly. Cross drains structure like culverts are provided in consultation with villagers and replacing the existing culverts. The culverts should be design based on local hydrology and rainfall. |
| 7. | Labour Issues & Management | The labour camps need improvement. The number of labours per room should be as per the norms. Proper facilities for cooking and drinking water should be provided. |
| 8. | Borrow Earth and Construction Material | Gap in borrow earth and construction raw material source are major issues. The Source of Borrow earth, locations along with approval for extraction needs to be available with the contractor and DCE should see in the matter. |
| 9. | Major Environmental Issues | Borrow earth was noticed reaching the adjacent agriculture land and streams crossing the proposed roads. The EMP proposed in the contract documents need to be implementation. |
| 10. | Scope of Improvement | There is provision of tree plantation in contractor, but during audit it was not reported on ground for most of the project. The DCE should prepare list of trees planted along with Geographical Coordinate, survival rate, etc.. Stone pitching should be proposed at cross drain structures to prevent cutting and erosions. These would be more climate resilience adaptations. |



FINAL REPORT

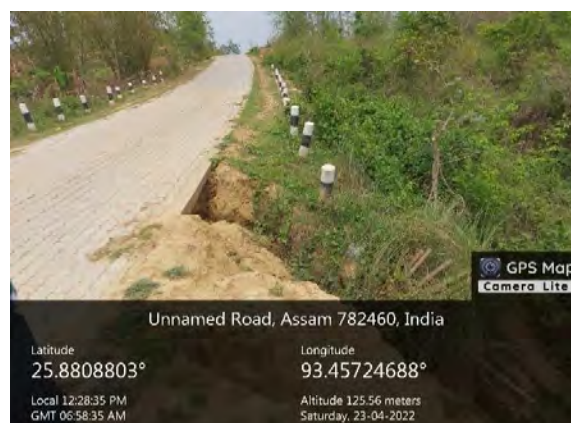
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Environmental Audit

Sites Photographs for Project Road under Audits

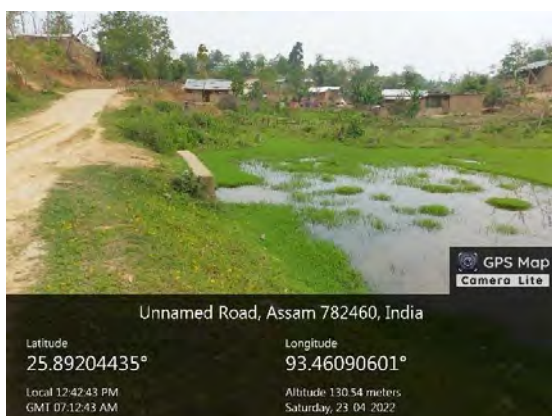
Rehabilitation of existing Dilaji - Rongklarbong Road (District Karbi Anglong)



Road damaged due to cut soil reaching the ROW.



Earthen shoulder washed of during rain, poor stabilization of embankment area



Culvert proposed at the water logging area to maintain natural flow



Start point of the constructed road



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Rehabilitation of existing Hamlai to longnit link road (District Karbi Anglong)



Longlit market, 2C68+523, Assam 782461, India

Latitude 26.01025564° Longitude 93.41543005°
Local 01:21:20 PM Altitude 157.59 meters
GMT 07:51:20 AM Saturday, 23-04-2022

Quarry material dumped in the green wood



Longlit market, 2C68+523, Assam 782461, India

Latitude 26.00968252° Longitude 93.41572396°
Local 01:28:04 PM Altitude 151.57 meters
GMT 07:58:04 AM Saturday, 23-04-2022



Assam 782461, India

Latitude 26.00727974° Longitude 93.41053659°
Local 02:04:22 PM Altitude 147.51 meters
GMT 08:34:22 AM Saturday, 23-04-2022

Labours working without PPE Kits



Longlit market, 2C68+523, Assam 782461, India

Latitude 26.01018801° Longitude 93.41544844°
Local 01:25:26 PM Altitude 151.79 meters
GMT 07:55:26 AM Saturday, 23-04-2022

Tree felling done, without tree numeration



Assam 782461, India

Latitude 26.00821261° Longitude 93.41261462°
Local 02:02:11 PM Altitude 144.8 meters
GMT 08:32:11 AM Saturday, 23-04-2022

Dust generation at the construction site



Longlit market, 2C68+523, Assam 782461, India

Latitude 26.01048969° Longitude 93.41508951°
Local 01:23:23 PM Altitude 154.89 meters
GMT 07:53:23 AM Saturday, 23-04-2022

Soakpits toilets with poor design



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Rehabilitation of existing Goroimari to NikoriGutunglink road (District Golaghat)



Awareness slogan at the labour camps



PPE Kits at the labour camps



Medical kits available at the labour camps



Borrow Earth reaching adjacent water bodies



Borrow earth Reaching adjacent flowing river with storm water



Borrow earth stacked at the transformer without maintaining safe distance



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Rehabilitation of existing PhapuriKhaiti to Hugaltoli Road (District Nagaon)



Earthen Shoulder washed off during Rain

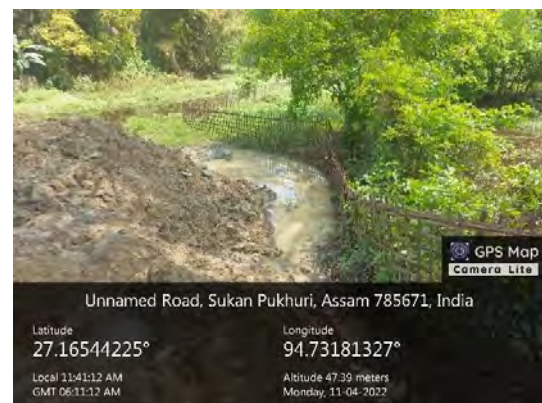


Borrow Earth reaching adjacent Agriculture land

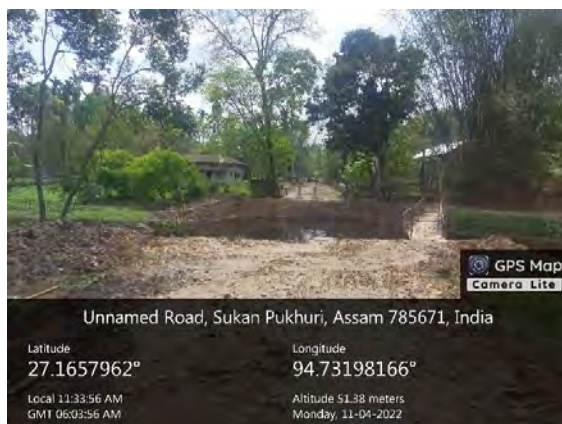
Rehabilitation of existing Komoldoipur to Goroimari Road (District Sibsagar)



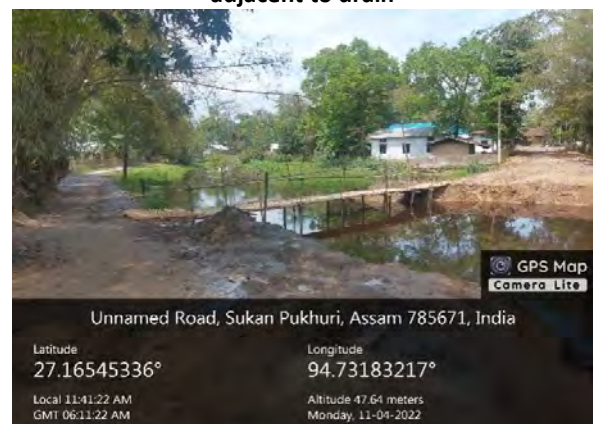
Earther Shoulder needs to be stabilized



Siltation of water bodies due to duming of borrow earth adjacent to drain



No temporary fence over Golahola Nala



Temporary cross over bridge at Golahola Nala



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Rehabilitation of existing Bokora to Chitadar Road (District Majuli)

Photographs of Construction Phase



Sand Bags placed at the cross drain structure to prevent washing off of loose soil



Labours wearing PPE kits during Road Construction

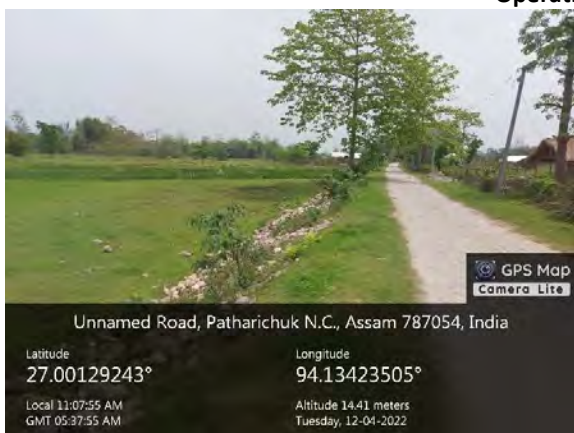


Emergency Contact number at construction site

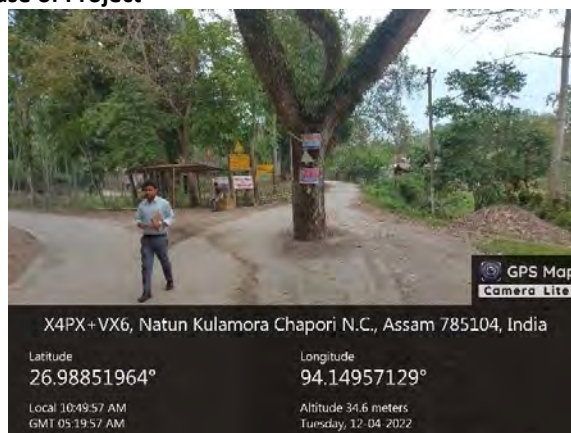


Facilities provided at on site labour camps

Operation Phase of Project



Stone pitching adopted to stabilize the road embankment and to prevent soil erosion

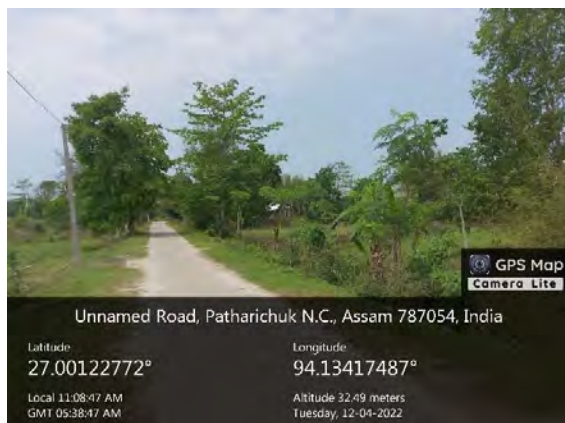


Tree with warning sign and with light reflector



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Plantation done along the proposed road



Road sinage along with project Description



Stone pitching at culverts locations



Sinage indicator being removed and lying along the road side.

Rehabilitation of existing Deulgiri Oil Palm Road (District Goalpara)



End point of the newly constructed road



Start point of the newly Constructed Road



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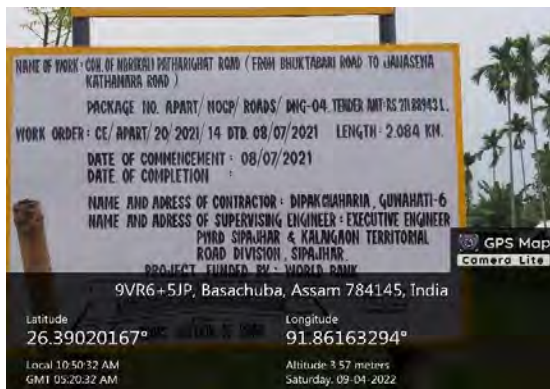


Project details with other details at the start point of the road



Weight limit sinage at the start point pf the constructed road.

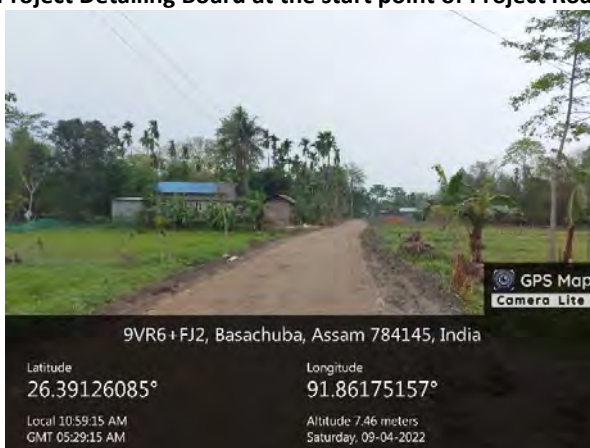
Rehabilitation of existing Narikali to Patharighat Road (District Darrang)



Project Detailing Board at the start point of Project Road



Road with paver block and earthen shoulder



Borrow earth reaching the adjacent agricultural land



Loose wire in the labour camps



FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit



Temporary Labour Camp with basic amenities



Flooding on path connecting the proposed road due to no cross drainage structure.

Rehabilitation of existing Garukhuti to Gosala Road (District Darrang)



Borrow earth reaching adjacent water bodies



Labour at culvert construction site not wearing helmets and boots



Borrow earth silting adjacent pond



Material stacked segregated at stacking yard



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Consulting Services for Mid Term External Environmental Audit



Provision of Cooking Gas for the construction labour



Soakpits loilets at the construction camps

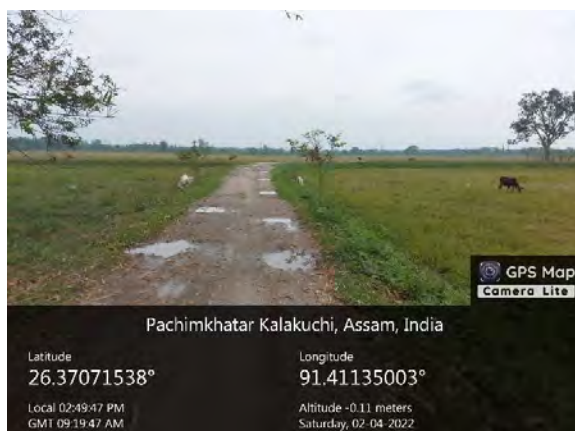


Labour wearing PPE kits at construction site



Poor condition of approach road due to poor management of construction site

Rehabilitation of existing Satra Bara to Kadartal Gopal Mandir (District Nalbari)



The proposed road passing through Beneficiaries (Agri & Horticulture)



Hanuman Temple adjacent to confluence point with main road



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Poor condition of existng road



Arjuna Tree which need to be cut for project implementation

Chokhorabari Road (Ongoing)



Access road blocked due to dumping of construction materials



Labours working without proper PPEs



Road roller with missing Insurance papers



Proper Cross drainage facilities provided



Consultation with DEC, Site Engineer and Contractor



NOC from irrigation dept. obtained

Bagibari to Kolongpar Road (Ongoing)



Underconstruction road



Fencing missing at Camp Site



Cautionary signages required



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Water sprinkled for dust suppression



First AID box provided at construction camp



Poor kitchen at labour camp

Rongphor village Phulongaon to SonapurBurnihat PWD Road (Completed)



Citizen Information Board placed



Construction works completed



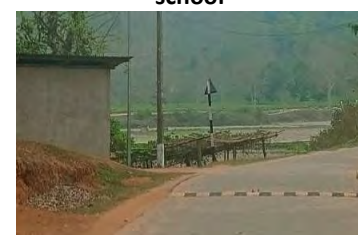
Speed breaker provided near school



Proper Cross drainage facilities provided



Protection with Geo-Bags provided



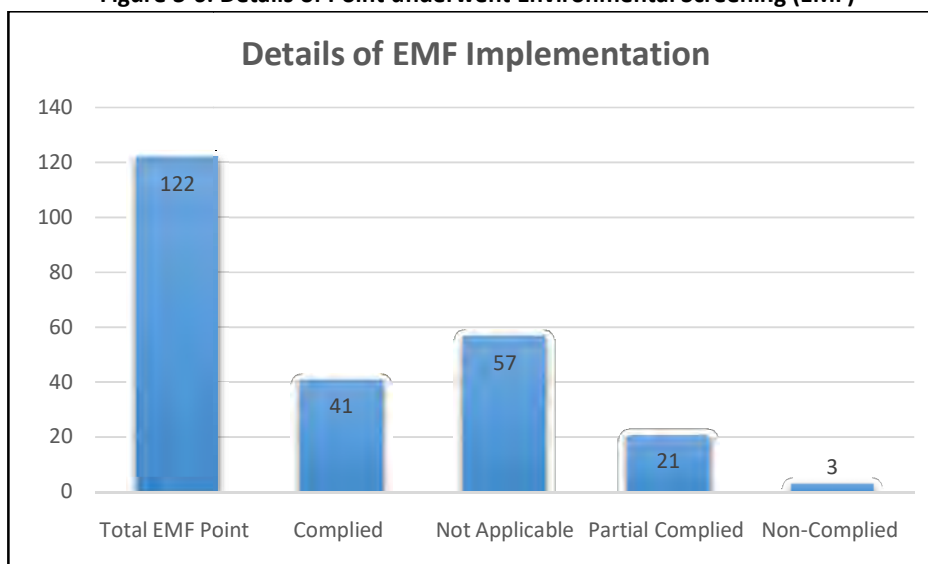
Signages should be visible from both ways of the road

3.9.2 MARKET

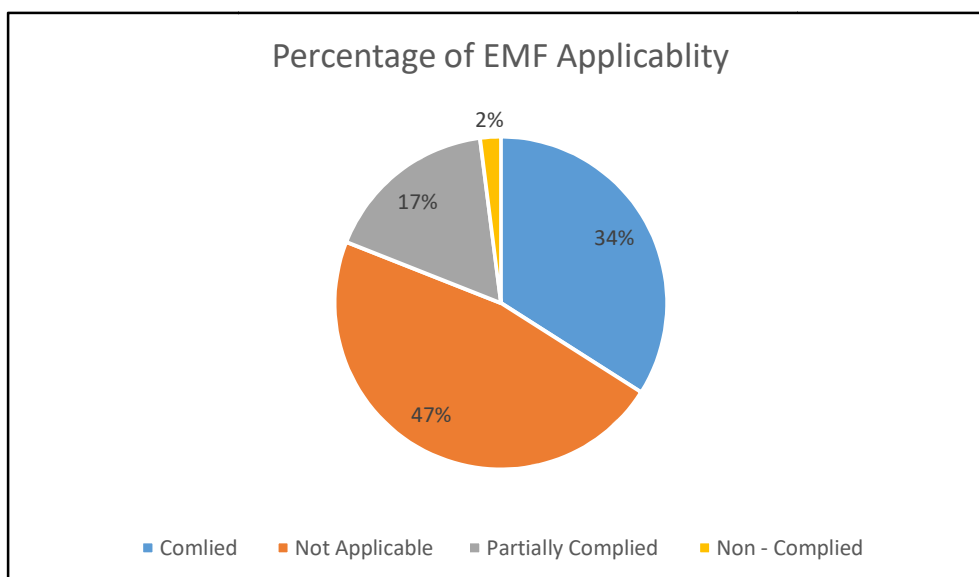
56. Under Audit, eight projects have been proposed, which comprise of 6 projects under site visit and 2 project based on desk review. The entire project is proposed at the existing market. The project involves construction of internal roads, lined drained, toilets (separate of male and female), rest area, drinking water facilities, Godown, waste collection and handling, retailed shops, Solar Lighting, raised platform, drying yard, Utilities and office building, and Parking.
57. All the projects considered under audit are under civil construction phase. The land ownership belongs to the respective market committee. It was noted that, few market would operate once a week, some twice a week and some on the daily bases. The Markets EMF audit spread over 7 (Seven) districts in the state of Assam. The EMF checklist comprises 122 points against which the audit was carried out. The details of complied, Not Applicable, partially complied and non – compliance is given in graph below:



Figure 3-6: Details of Point underwent Environmental Screening (EMF)



58. Out of 100% considered for EMF Applicability, 47% of the EMF points are not applicable to the project (these points are not attached by the project), 34% of total EMF screening point are fully complied, 17% are partially complied (missing in few projects) and 2% are completely not complied. The figure below gives the distribution of EMF applicability with respect to projects. Hence in overall, the EMF is complied.



59. Brief summary of overall findings is discussed in Table 3-7. The detailed compliance to EMF implementation for Market construction has been presented in Table .



Table 3-7: EMF Brief Summary of overall findings – Market

| Sl.no | Project Audit | Observations |
|-------|---|--|
| 1. | Review of EMF Screening | EMF screening is in place and is being filled on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor. Need improvement in EMF screening appraisal. The EMF Screening report needs more clarity on sites like labour camps, source of construction material, tree felling, etc. The filling of implementation Column in EMF Checklist needs to be more appropriate. |
| 2. | Review of Consent compliance / Permission | Consent needs to be checked by the DCE before start of work. The Market Construction work need filling. Borrow earth approval is mandated by the MoEF&CC. |
| 3. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours under goes Rt-PCR test before engagement on assignment. |
| 4. | Solid waste Management | As per the Contract, solid waste management facilities have been proposed. Vermicompost has been proposed to cater with organic waste. |
| 5. | Market Layout | Under Construction as per the approved design as given in the contract and supervised by PWD. |
| 6. | Climate resilienceadaptation | The proposed upgradation and reconstruction of existing market has adopted climate resilience features. Like paver block internal roads, provision of solar lighting. Internal drains and peripheral drains considering rainfall, roof top design based on rainfall patterns. Replacement of existing roof with JSW colour coated profile sheet in place of traditional asbestos roof. Design of shades accounting wind direction. RCC mounted raised platform to prevent flooding, etc. |
| 7. | Labour Issues & Management | The labour camps need improvement. The number of labours per room should be as per the norms. Proper facilities for cooking and drinking water should be provided. |
| 8. | Borrow Earth and Construction Material | Gap in borrow earth and construction raw material source are major issues. The Source of Borrow earth, locations along with approval for extraction needs to be available with the contractor and DCE should see in the matter. |
| 9. | Major Environmental Issues | Market drains outfall points.. |
| 10. | Scope of Improvement | There is no provision of tree plantation in contractor BoQ item. The DCE should prepare list of tree plantation for each tree felling involve. Safety should be implemented as per the Contract. Budgetary cost has been considered in the BoQ item for EMP. Needs implementation on contractor part. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Site Visit Photographs of Market Place Monitoring Construction of Amjonga Market, District Goalpara



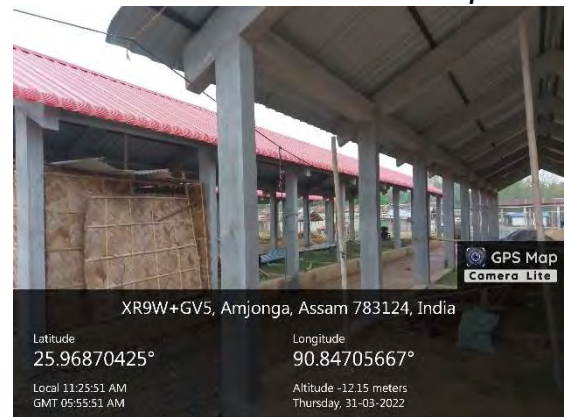
Provision of separate Toilets for Male and Female



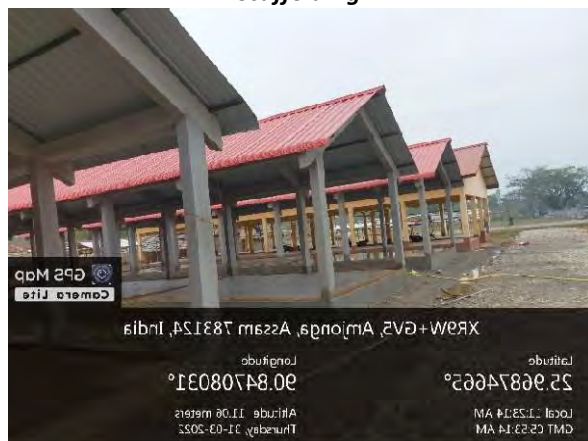
Well lines internal roads within shops



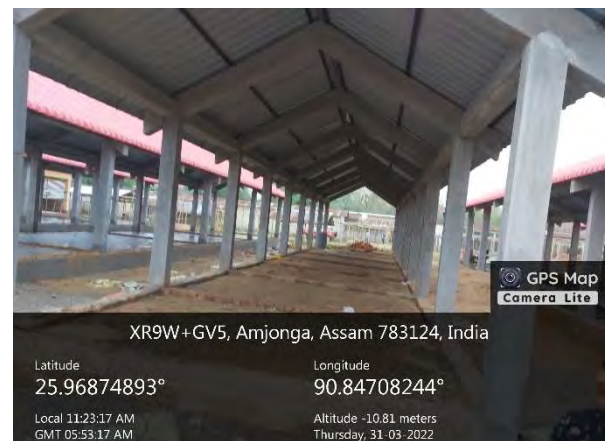
Working at height not properly adopted. Improper scaffolding



Loose wire in construction area



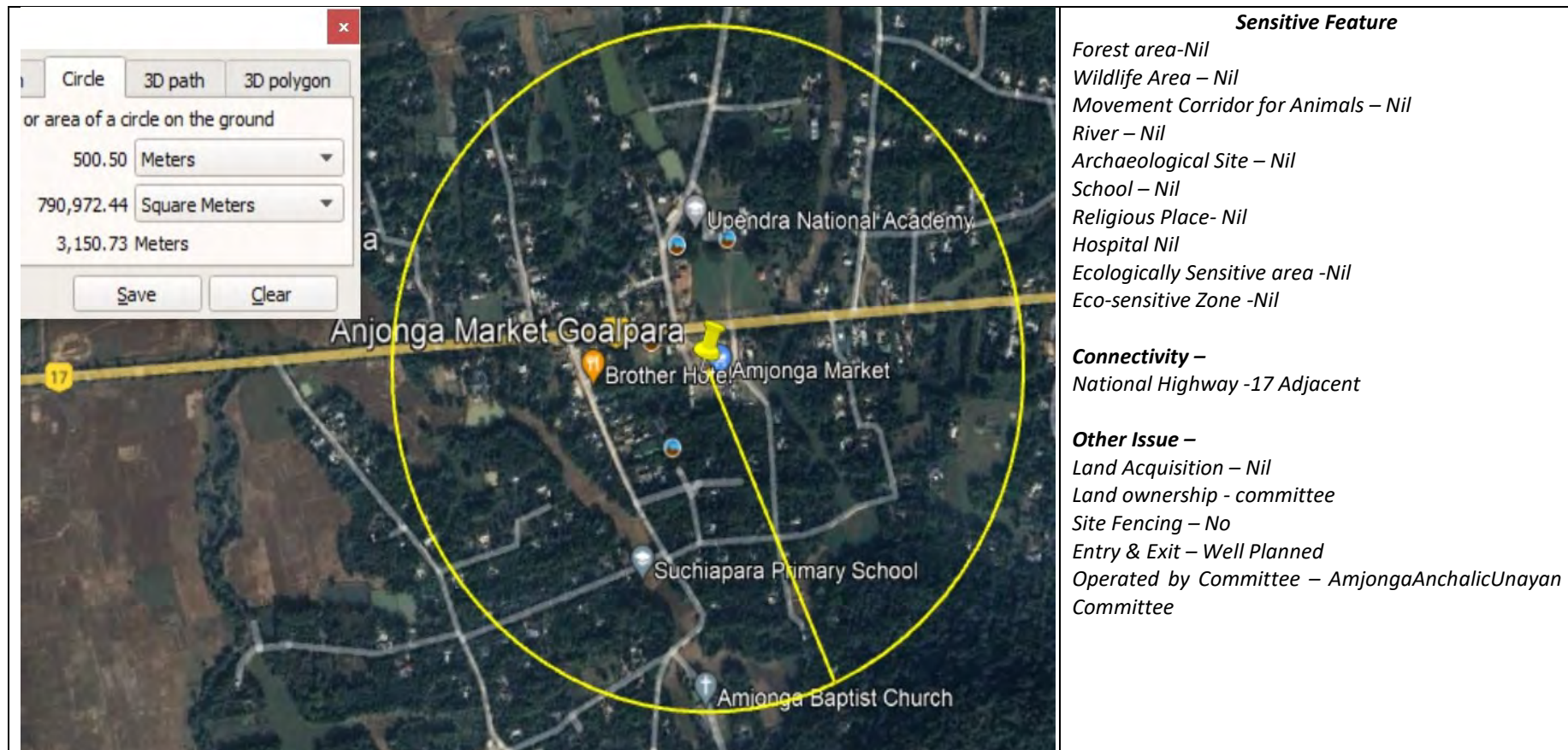
Well design major entry roads. Separate entry and exit



Fire free roof material and with good height clearance



Google Image with environmental Sensitive Feature within radius of 500 mts. Of Amjonga Market Goalpara





Monitoring Construction of Amjonga Market, District Goalpara



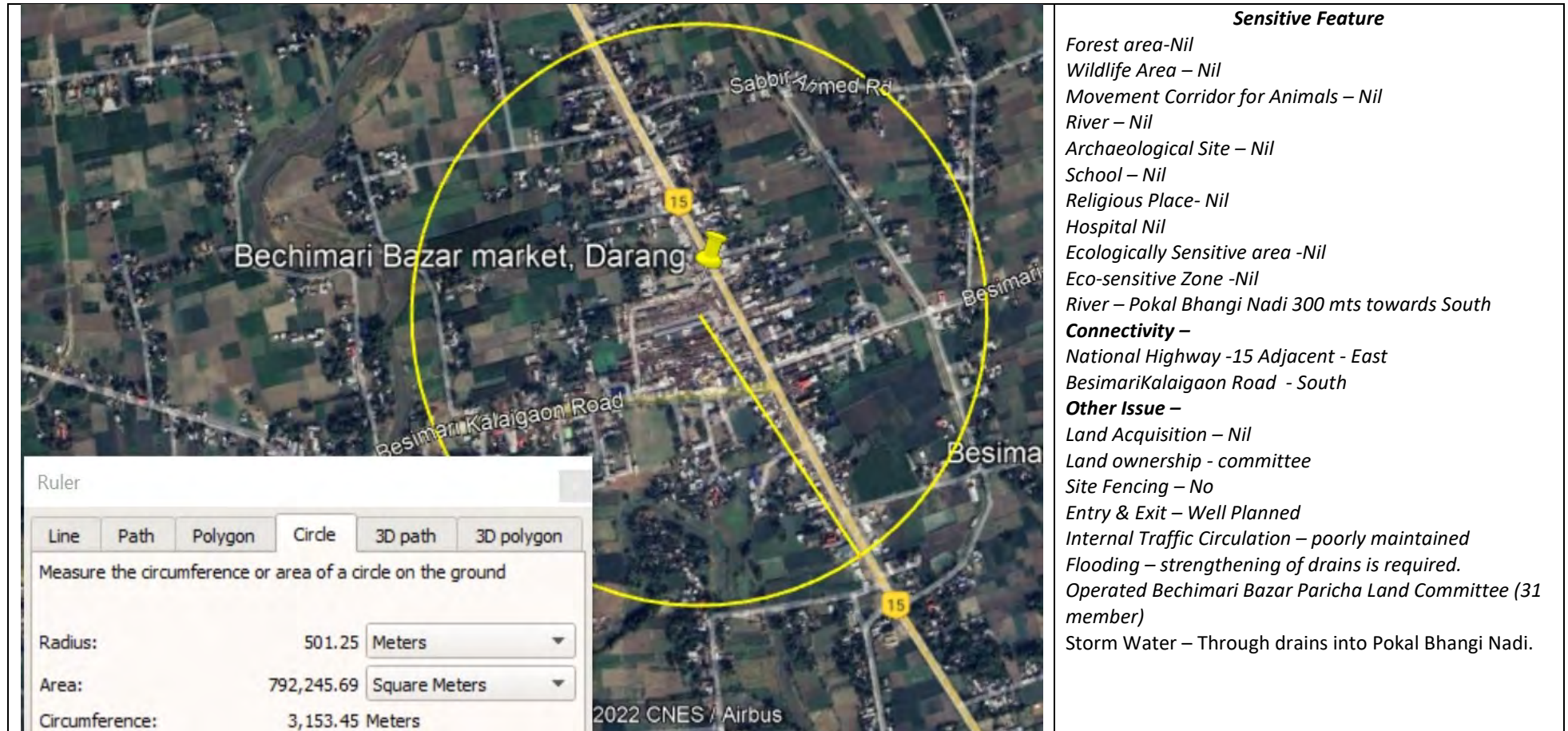
Site marsh during rain. Drains are under construction



Vegetable are being sold in the market



Google Image with environmental Sensitive Feature within radius of 500 mts. Of Bechimari Bazar Market





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

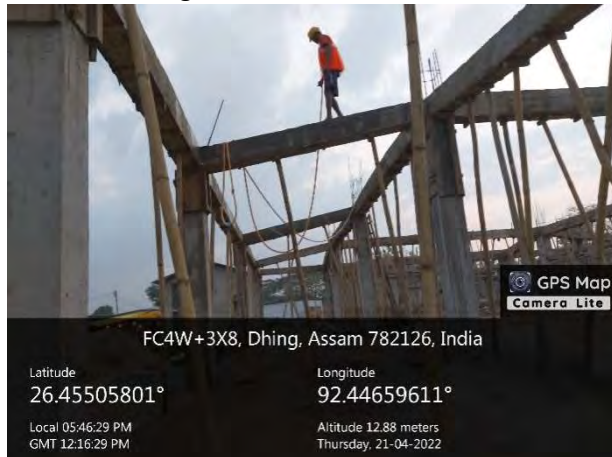
Monitoring Construction of Dhing PMY (Under Construction) Market, District Nagaon



Scaffolding with timber at construction site



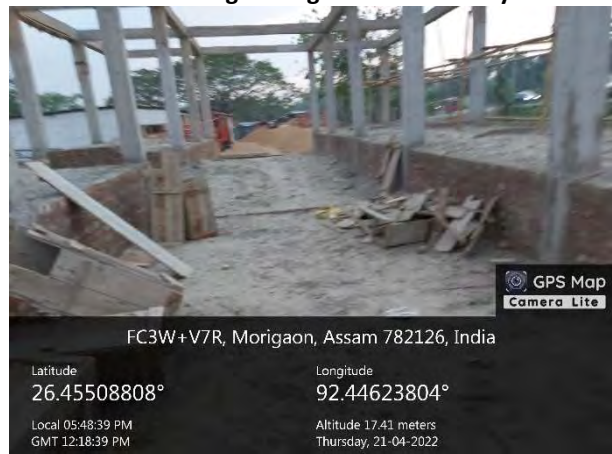
Safety strip at cut area for construction of drains



Workers working at height without safety belts



Working wearing PPE kits for construction work



Construction material unsegregated. Wood having nail are noticed



The final oufall of storm water



Vermicompost pits and waste drying bed



Labour camps with COVID-19 awareness slogan



Emergency contact number at site camp



Temporary labour camps for outstation labours



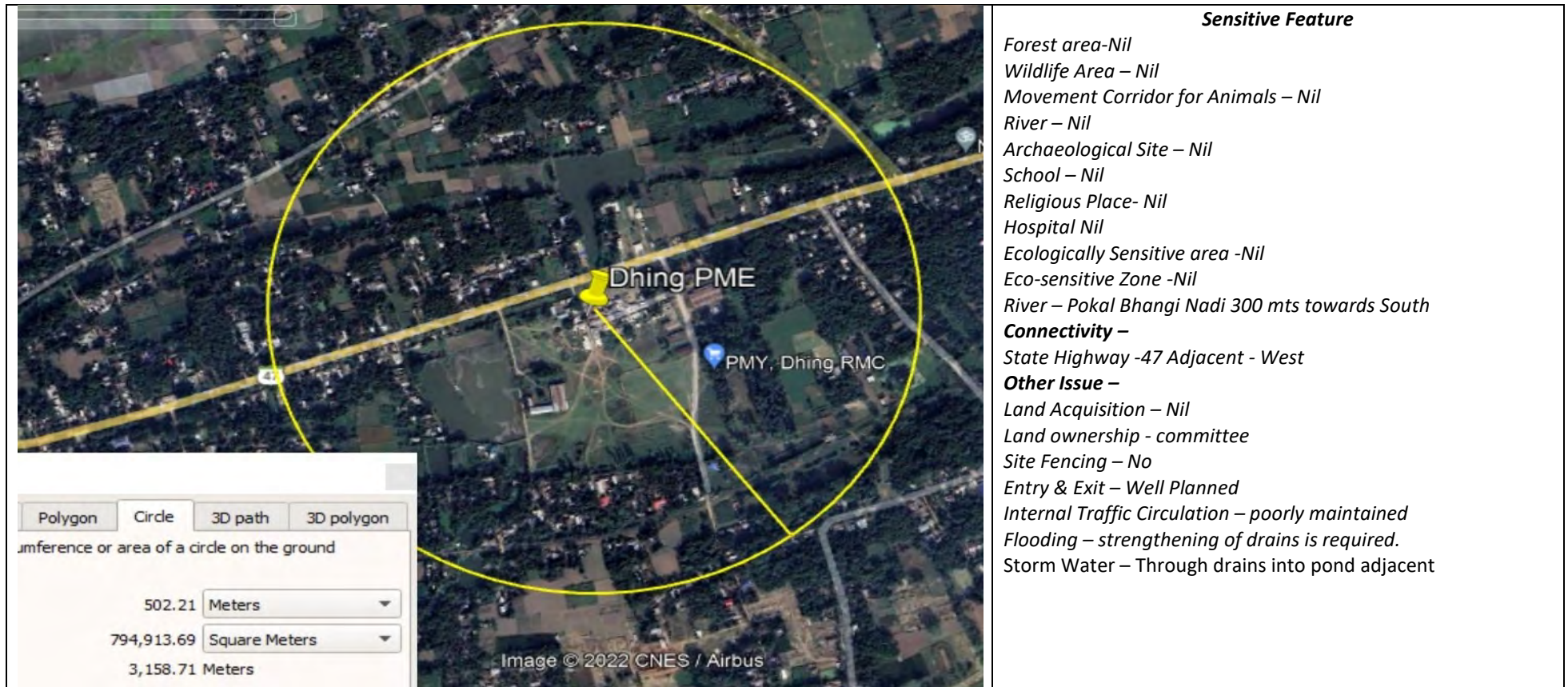
Urinal and toilets at the construction camps



Rest and fooding area for construction staff



Google Image with environmental Sensitive Feature within radius of 500 mts. OfDhing PMY (Under Construction) Market





FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit

Monitoring Construction of Dhing RMC – Domdomia Bazar (Under Construction), District Nagaon



Nala Adjacent to construction site polluted due to waste dumping



Pavers block within proposed market



COVID-19 awareness slogan at the labour camps



Stocking of cements bag on earthen surface



Temporary Labour rest room without proper fencing



Fire extinguisher need refilling.



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Consulting Services for Mid Term External
Environmental Audit



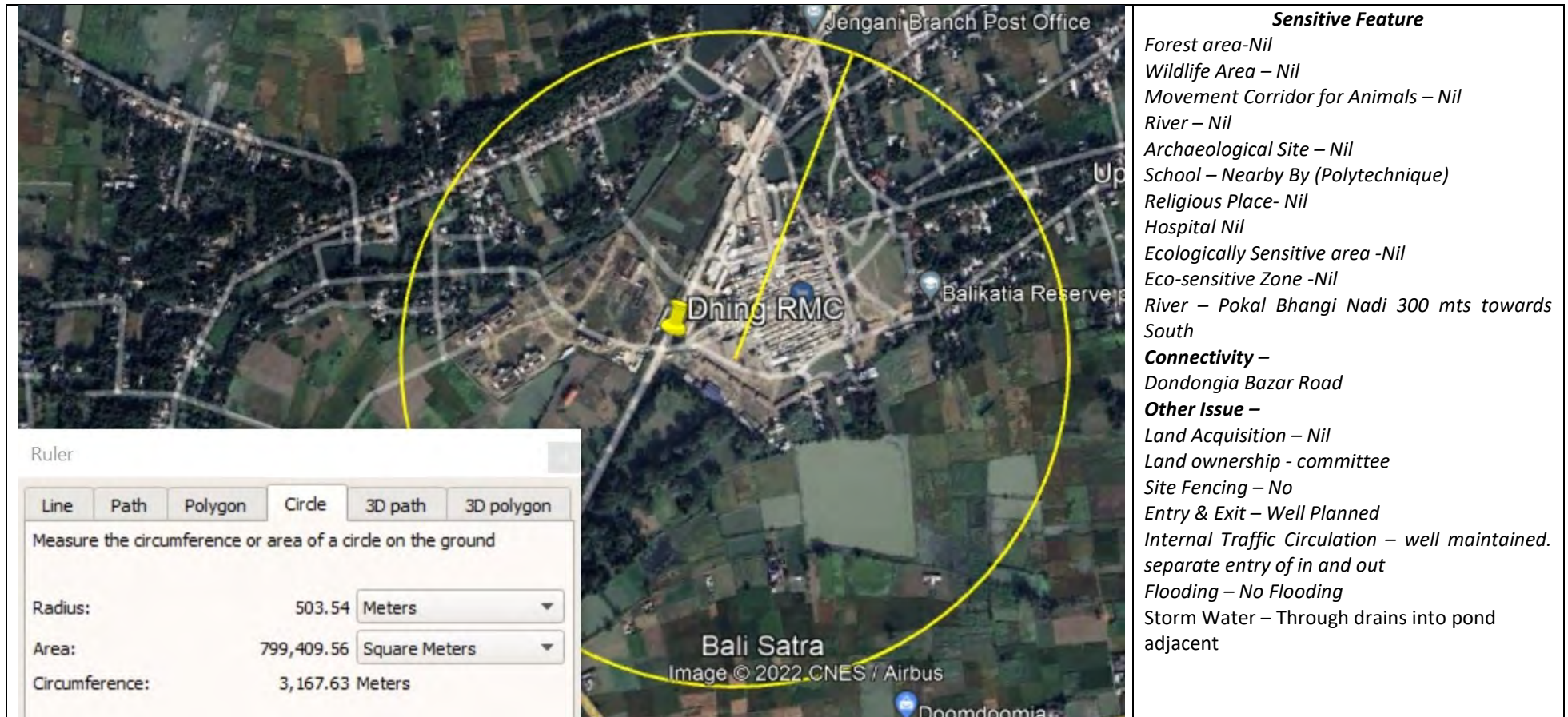
Loose wire and electric board on wooden wall of labour camps



Labours working at site with PPE Kits



Google Image with environmental Sensitive Feature within radius of 500 mts. Of Dhing RMC – Domdomia Bazar (Under Construction)





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

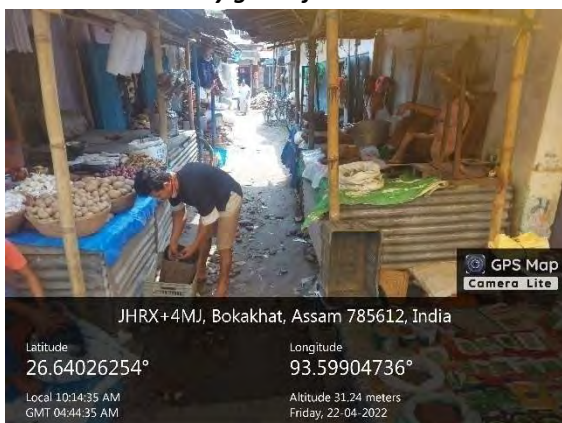
Monitoring Construction of Bokakhat Daily Market (Under Construction), District Golaghat



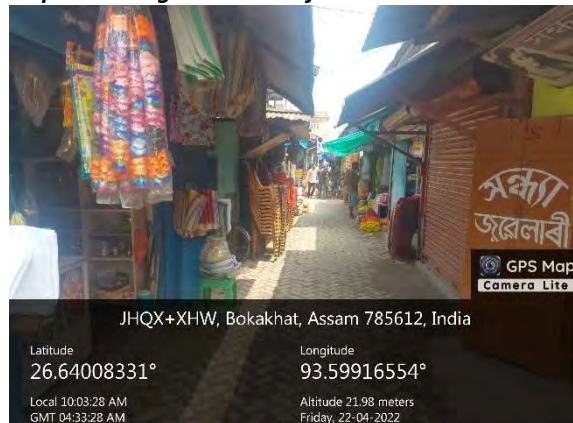
Entry gate of Market



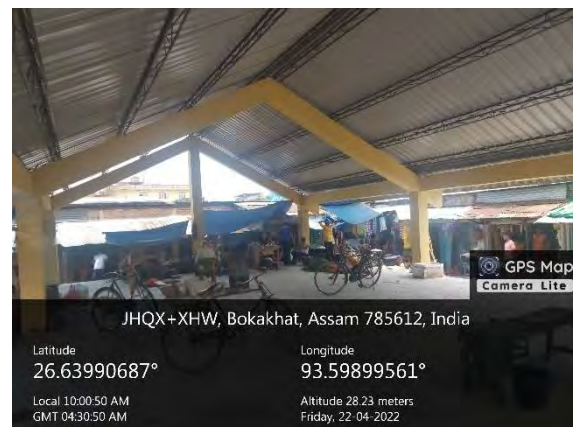
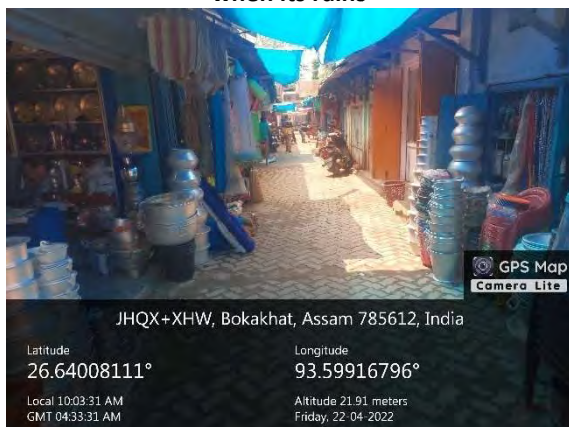
Proper drainage and electrification needs to be done



The uncompleted path inside the market. It get flooded when its rains



Flooding of shops reported. No side drains constructed



Jhorabari Rampur Anchalik market (Ongoing)



Construction Site



Temp. shifted Market



Labours working without proper PPEs



Warehouse at Pachim Boragaon



Underconstructed overhead tank & rainwater harvesting pit

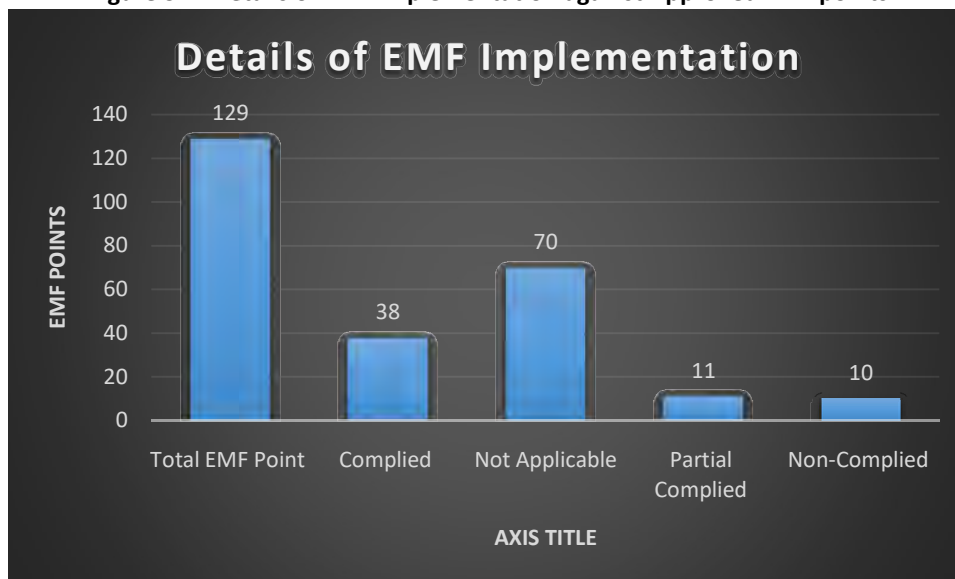


Grievance No displayed

3.9.3 Warehouse

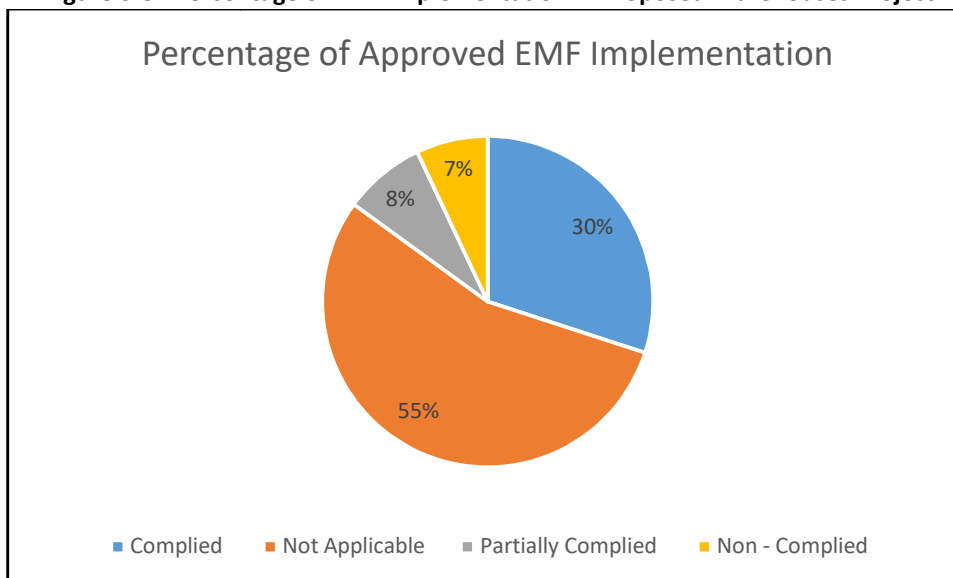
60. Under APART, warehouses have been proposed for storage of agriculture product for storage and supply to market on demands. Warehouses are proposed to storage of tarmaric, honey, grains, vegetable and other Agri products. In the proposed warehouses- Godown, office, Staff Quarter, Chowkidar Quarter, Toilets, Varandah, Yard, RCC Drain and rainwater harvesting structure has been proposed.
61. Under audit three projects has been screened for implementation against the approved EMF which is already in place and is part of contract document. These warehouses are located in Kamrup, Darang and Nagaon district. These warehouses are proposed within the existing warehouse, which involve demolition and re-construction of existing structures and construction of additional structure. The EMF checklist comprises 129 points against which the audit was carried out. The details of complied, Not Applicable, partially complied and non – compliance is given in graph below:

Figure 3-7: Details of EMF Implementation against Approved EMF points



62. Out of 100% considered for EMF Applicability, 55% are not applicable to the project, 30% of total EMF screening points are fully complied, 8% are partially complied and 7% are completely not complied. The figure below gives the distribution of EMF applicability with respect to projects. The brief summary of audit finding is discussed in Table 3-8. The detail EMF implementation audit finding project wise is given in Table .

Figure 3-8 : Percentage of EMF Implementation in Proposed Warehouses Project





FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit



Table 3-8: EMF Brief Summary of overall findings – Warehouse

| Sl.no | Project Audit | Observations |
|-------|---|---|
| 1. | Review of EMF Screening | EMF screening is in place and are being filled on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor. Need improvement in EMF screening appraisal. The filling of implementation Column in EMF Checklist need to be more appropriate. |
| 2. | Review of Consent compliance / Permission | Consent needs to be checked by the DCE before start of work. The warehouse Construction work need filling. Borrow earth approval is mandated by the MoEF&CC. |
| 3. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours under goes Rt-PCR test before engagement on assignment. |
| 4. | Solid waste Management | As per the Contract, solid waste management facilities have been proposed |
| 5. | warehouse Layout | Under Construction and as per the approved design as given in the contract and supervised by PWD. |
| 6. | Climate resilienceadaptation | The proposed upgradation and reconstruction of existingwarehouse has adopted climate resilience features. Like paver block internals roads, provision of solar lighting. Internal drains and peripheral drains considering rainfall, roof top design based on rainfall patterns. Replacement of existing roof with JSW colour coated profile sheet in place of traditional asbestos roof. Design of shades accounting wind direction. RCC mounted raised platform to prevent flooding, etc. |
| 7. | Labour Issues & Management | The labour camps need improvement. The number of labours per room should be as per the norms. Proper facilities for cooking and drinking water should be provided. |
| 8. | Borrow Earth and Construction Material | Gap in borrow earth and construction raw material source are major issues. The Source of Borrow earth, locations along with approval for extraction needs to be available with the contractor and DCE should see in the matter. |
| 9. | Major Environmental Issues | Asbestos waste generated from existing warehouse roof. The EMP needs to be prepared. The Contract EMP does not highlight about this hazardous waste. The EMP need to be prepared and approved from APART/ SPCB. Disposal should comply with SPCB norms. |
| 10. | Scope of Improvement | . There is no provision of tree plantation in contractor BoQ item. The DCE should prepare list of tree plantation for each tree felling involve. Safety should be implemented as per the Contract. Budgetary cost has been considered in the BoQ item of EMP. Needs implementation on contractor part. The labours reported at site not using appropriate safety PPE Kits |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Photographs of Site visits

Monitoring Renovation of Warehouse at village Nizkharupetia, District Darang



Unsegregated debris of dismantling of ware house



Construction and Demolation waste; broken asbestors sheet reported at dismentaling site.



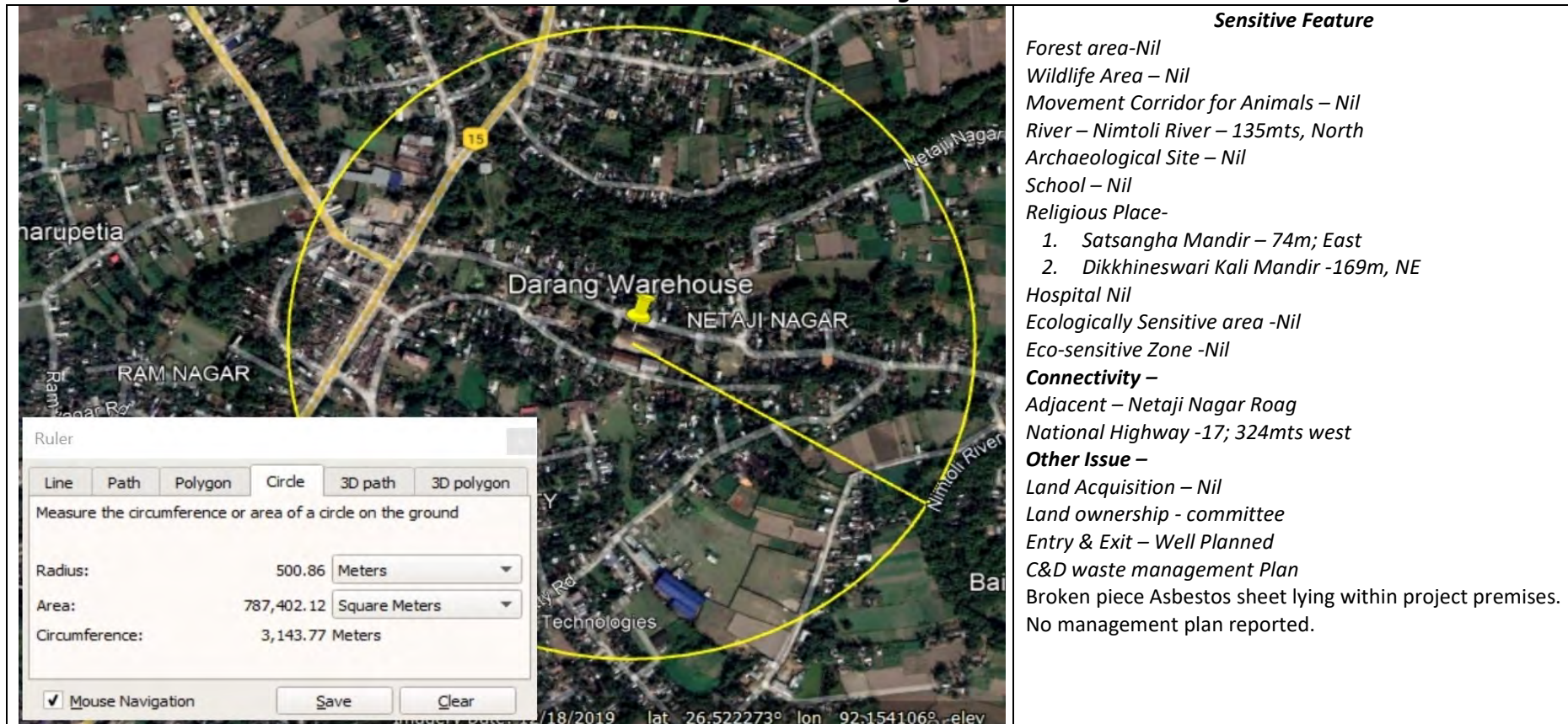
Workers carrying out dismantling work without adopting working at height safety procedure



Scrap metals spread all over dismantle warehouse



Google Image with environmental Sensitive Feature within radius of 500 mts. Renovation of Warehouse at village Nizkharupetia, Netaji Nagar District Darang





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Monitoring Renovation of Warehouse complex at Raha, Nagaon Darang



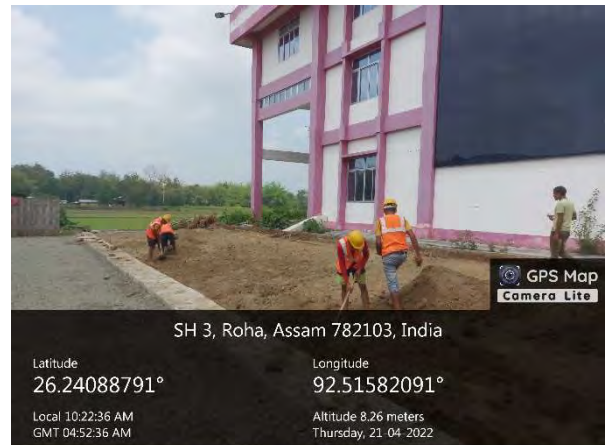
Labour working at height without proper scaffolding and platform. No safety belt



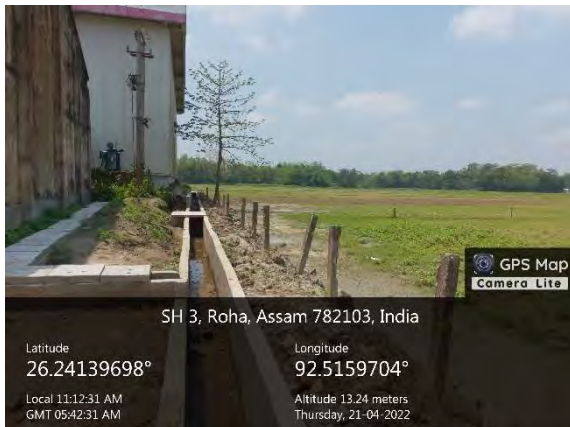
Raised platform of Warehouse without stairs to reach.



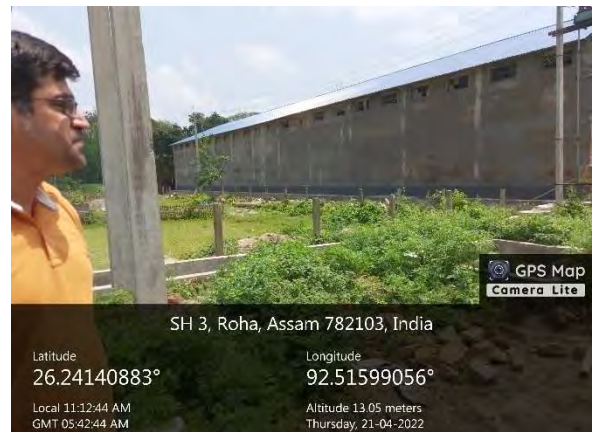
Asbestors stored at one place on earthen surface, for final disposal



Labour wearing PPE kit while working



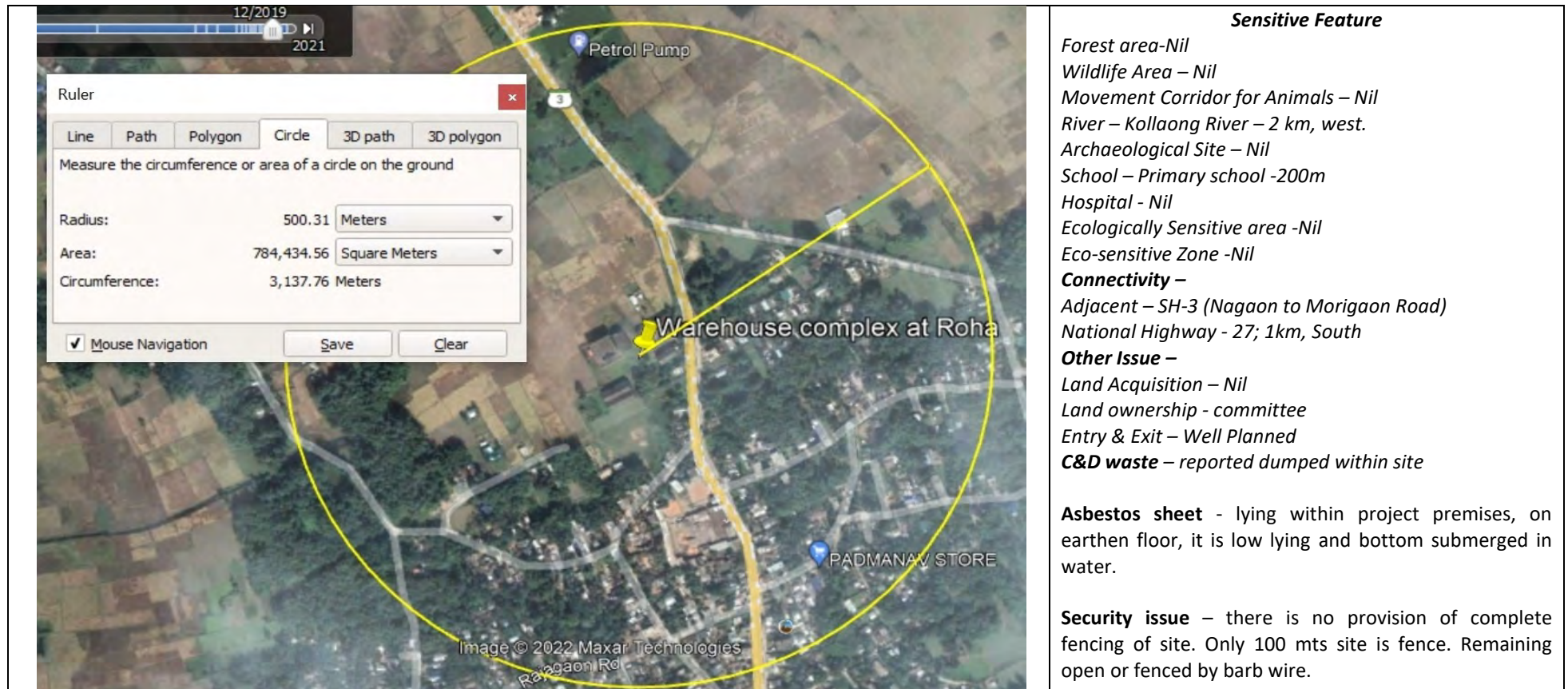
Peripheral drain & internal drains along road noticed for storm water



No peripheral fencing complete. The warehouse open from one side- site security issues



Google Image with environmental Sensitive Feature within radius of 500 m, Renovation of Warehouse complex at Roha District Nagaon

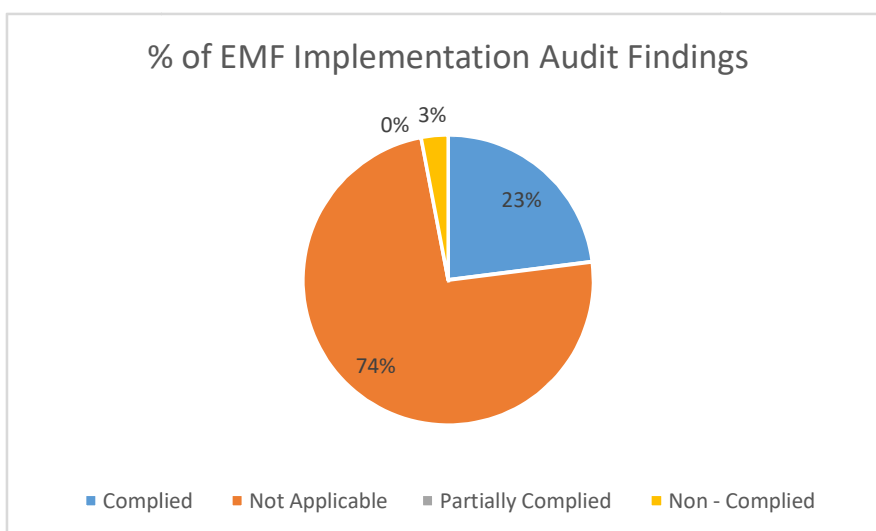




3.9.4 Renovation Building ATMA/DICC

63. The District Industries & Commerce Centres (DICCs) play a critical role in promotion and facilitation of private investments in the state. It forms the backbone of investment promotion and facilitation in the state of Assam. The DICCs play key areas in promotion of Micro and small enterprises (MSMEs) in the selected sector and districts. DICCs are also expected to play the role of coordination for Agri-enterprise cluster development wherever required, hence its role is multifunctional in nature.
64. Under APART Strengthening of DICC involves strengthening the DICC's Physical infrastructure (office/administrative set up), Construction of amicable workspaces for DICC staff to conduct business and Staffing and capacity building of existing staff. It provides additional resources with relevant skill, training and capacity building for the staff through exposure visits, training, etc. the DICCs are governed by Project Manager.
65. Under APART Renovation of office building, which comprises G.M Room, Conference Hall, Work Station, Establishment Branch and Toilets has been proposed. There are 4 (Four) DICC Buildings identified under Audit, which has completed construction Work. The detailed findings of EMF implementation for DICC are discussed in Table . . The Outcome of EMF implementation Audit finding is shown in Figure below:

Figure 3-9: Percentage of EMF Implementation Audit Findings

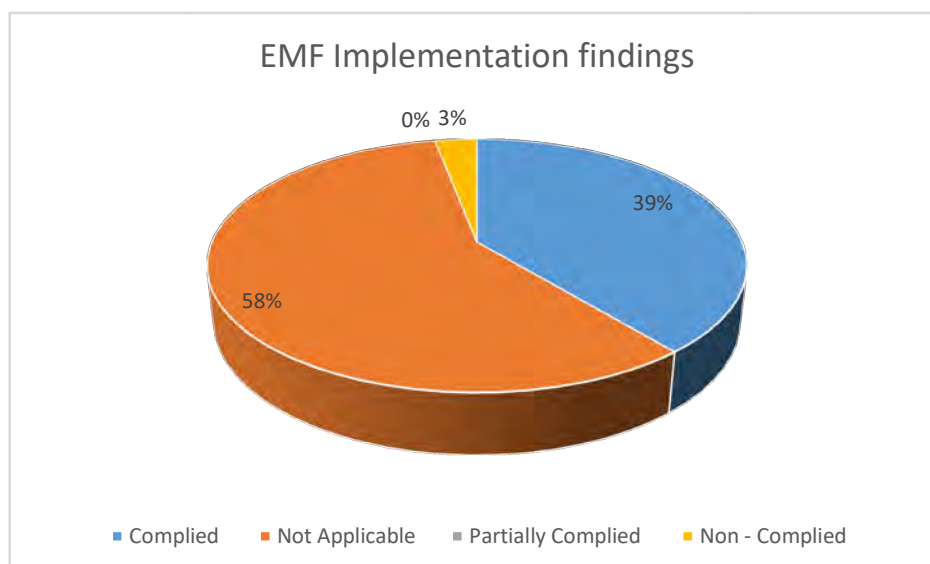


66. Agricultural Technology Management Agency (ATMA) was formed with scope for agro-advisories and value chain services. platform to bring together all the block level officers of Agriculture and allied sector under one roof. To involve the farmers to discuss their problems and to prepare the need-based plan to overcome the problems of agriculture and allied sector. As the farmers are involved in planning and decision-making process from block level onwards.



67. ATMA highlight climate change threats and changing market demand for agricultural commodities, promoting climate-resilient and sustainable crop-horticulture production systems around the identified commodities. It discusses on short spells of extreme precipitation and surge in flash floods, and intermittent long dry spells during monsoon, low lying flooding effecting paddy production due to submerged for longer duration, leading to decreased yield or crop failure.
68. ATMA will be the main implementing agency for all activities of this subcomponent; hence they will actively coordinate, guide and supervise the Service Provider in all aspects and provide the necessary information & inputs in every step. They will help the Service Provider in baseline survey, mobilization of farmers to form CIG/FIG/FPO etc. It is main implementing agency of this subcomponent at block level, so the overall responsibilities of implementation. Their role in addition to farmers selection, site for training and demonstration, but also responsible for success of the training and demonstration and overall successful implementation of all the activities. Hence to implement ATMA mission, APART has funded Renovation and Repair of District ATMA office.
69. Therefore, to identify the strength of EMF implementation against approved EMF checklist for construction and operation phase, 2 projects of ATMA was proposed. The Renovation and Repair of district ATMA office comprises of civil work of existing building, provision of computer with accessories, Photocopy and Furniture's (Table, Chair, Almirah, etc.). The finding of EMF implementation is discussed in figure below:

Figure 3-10: Percentage of EMF Implementation Finding for ATMA Buildings



70. With respect to the total number projects identified for Environmental Audit, 6 (Six) projects comprising 4 (four) under DICC and 2 (two) projects under ATMA are assessed. Out of 6 subproject 1 (one) project is



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

audited based on desk review. The DICC projects are located in districts Kamrup, Sonitpur, Barpeta and Golaghat. The ATMA is located in districts Barapeta and Nagaon.

71. All the project identified under audit are re-novation of the existing building, comprising repairs of roof, internal wall repairs, paintings, improvement of toilets, etc. No new construction or expansion of existing building is anticipated. Most of the site works are completed. The Standard EMF implementation for DICC is discussed in and for ATMA discussed in Table . The brief summary of EMF implementation findings for DICC & ATMA building is discussed in Table 3-9.

Table 3-9: EMF Brief Summary of overall findings – DICC & ATMA Building

| Sl.no | Project Audit | Observations |
|-------|---|---|
| 1. | Review of EMF Screening | EMF screening is in place and is being filled on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor. Need improvement in EMF screening appraisal. |
| 2. | Review of Consent compliance / Permission | Reported in practice during Audit. |
| 3. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours under goes Rt-PCR test before engagement on assignment. |
| 4. | Solid waste Management | All the solid waste is stored at designated location during construction phase. They will be sold to authorized vendor, as per government norms. |
| 5. | DICC & ATMA Layout | Construction and renovation work completed. They are as per approved design as given in the contract and supervised by PWD. |
| 6. | Climate resilience adaptation | The proposed upgradation and reconstruction of existing DICC & ATMA has adopted climate resilience features. Internal drains and peripheral drains considering rainfall, roof top design based on rainfall patterns. Replacement of existing roof with JSW colour coated profile sheet in place of traditional asbestos roof. Design of shades accounting wind direction. RCC mounted raised platform to prevent flooding, etc. |
| 7. | Labour Issues & Management | Local labour engaged. |
| 8. | Major Environmental Issues | No major environmental issues |
| 9. | Scope of Improvement | The Contract document item rate does not have budgetary note for Environmental Management. Though EMP is part of contract document. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Site Visit Photographs for DICC Photographs of DICC Building, Barpeta (Project Status: Operation Stage)



Interior of the DICC Building



Photographs of DICC Building, Sonitpur (Project Status: Operation Stage)



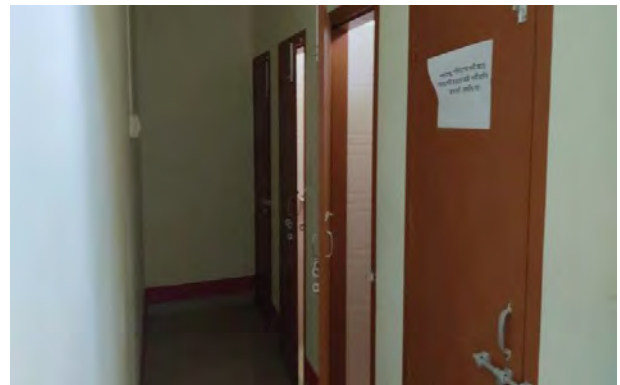
DICC Building, Tezpur (Sonitpur)



Consultation with DEC and DICC Officials



Interior of the DICC Building





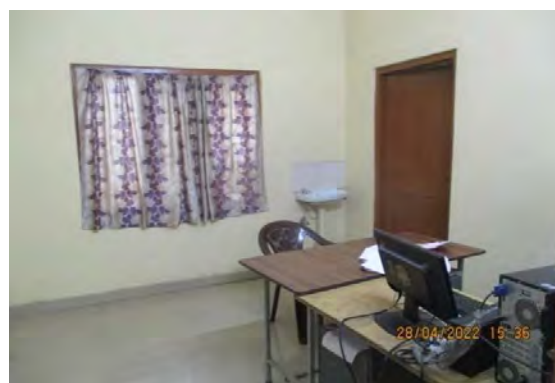
FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Site Visit Photographs for ATMA Audit Photographs of ATMA Building, District Barpeta



ATMA Building



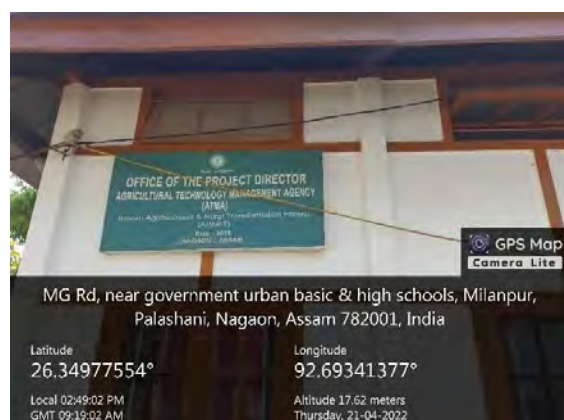
Interior of the ATMA Building



Consultation with District Agriculture Officer, Nodal Officer, DEC and other APART staffs



Audit Photographs of ATMA Building, District Nagaon



Renovated ATMA Building



Well planned landscaping at the periphery



FINAL REPORT Consulting Services for Mid Term External Environmental Audit



LED based lighting with large windows for proper air circulation and external light



Technology usage, application and farming technique on hoarding at entry gate

3.9.5 Farmer Producing Company (FPC)/ Common Service Centre (CSC)

72. PART has focus on value addition in the production and post-harvest segments of selected agricultural commodity value-chains. Hence facilitate agribusiness investments through inclusive business models, that provide opportunities to small farmers as well as stimulate the establishment of new small & medium agribusiness enterprises; and support resilience of agriculture production systems in order to better-manage the increasing production and risks associated with climate change, in the targeted districts adopting a cluster strategy, to generate economies of scale; promote vertical and horizontal links between local agricultural enterprises; enable diffusion of innovations; provide public support for services and infrastructure. Under this APART has proposed PFC/CSC in each cluster. Each PFC is design to cater with 500 farmers. The CSC is planned to provide increasing productivity of the commodity in the identified blocks by technological inputs, and (ii) improved post-harvest management, value addition and marketing of products. At CSC agricultural tools like harvester, Thresher, Tractor, Cultivator, Mini Paddy Rice Husk removal, etc are available to the farmers This can be lent by the farmers on need basis on minimum charges. .
73. Common Service Centres (CSCs) has been encouraging as a platform through which technology dissemination, product aggregation, finance linkages, Agro-Business linkage; Agro-Business strategies can be operationalized and integrated. Farmer Producer company/ Common Service Centre are the common component that involves all the Agri sectors i.e., Agri, Horti, fishery, Seri, dairy & piggery. During Audit stage, consultant has visited available 18 (eighteen) FPC/CSC locations in 11 (Eleven) districts. Out of Eighteen project sites, 1 site has been assessed based on the Desk review. Off the total audited projects, 2 projects have completed construction work and are under operation, 13 projects site selection completed and the remaining three project are under constructions



74. The percentage of CSC/FPC Complied is given in graph below. 5% of all the point mention in the EMF screening checklist are not complied. The detailed EMF implementation compliance pointwise for FPC/CSC and site visit details has been presented in Table . The brief summary of EMF implementation is discussed in Table 3-11.

Table 3-10 : Percentage of EMF Checklist implemented by the CSC/FPC

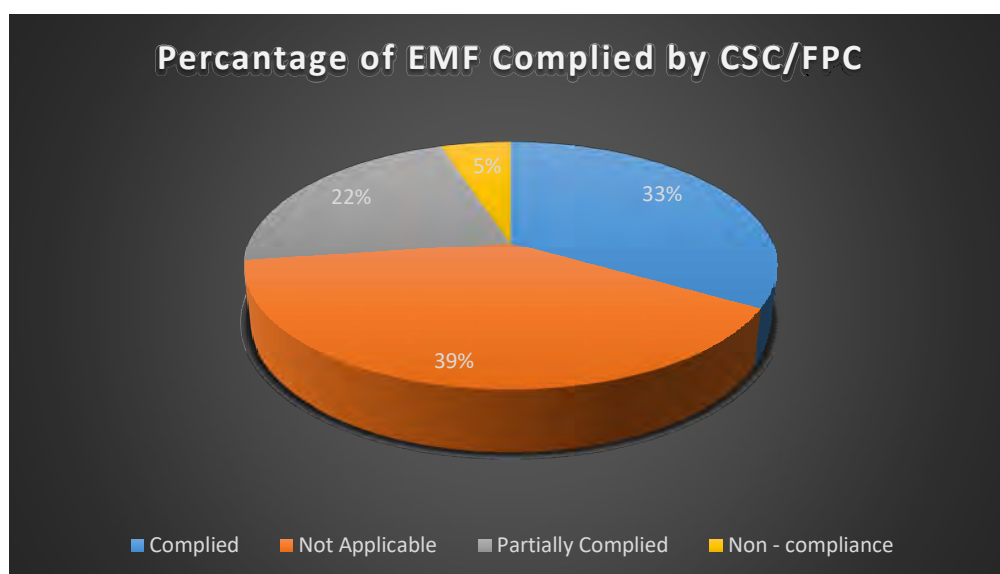




Table 3-11: EMF Brief Summary of overall findings – CSC/ FPC

| Sl.no | Project Audit | Observations |
|-------|---|---|
| 1. | Review of EMF Screening | EMF screening is in place and is being appraised on site during project visit by DEC. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor. Needs training for EMF screening appraisal. There is lacuna noticed in already filled EMF Screening checklist and verified on ground. signatures were missing a few times by the district environmental coordinators and many a places counter signature by project manager was missing. In few screening dates are missing. |
| 2. | Review of Consent compliance / Permission | Consent applicability need to be checked. CtE is required in all processing unit. The CtE need to be applied. Some project has received CtE before start of civil construction work. |
| 3. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours under goes Rt-PCR test before engagement on assignment. |
| 4. | Solid waste Management | No much waste is generated during construction phase, the waste generated are mostly inert waste which would be filled within sites. During operation phase the solid waste generated are mostly packaging material and process waste which are sold able in market. |
| 5. | FPC & CSC Layout | The design has been reviewed. The project which are operation meets with the approved layout plan |
| 6. | Climate resilience/adaptation | The proposed CSC/ FPC have adopted climate resilience features. Internal drains and peripheral drains considering rainfall, roof top design based on rainfall patterns. Use of JSW colour coated profile sheet in place of traditional asbestos roof. Design of shades accounting wind direction. RCC mounted raised platform to prevent flooding, etc. |
| 7. | Labour Issues & Management | Local labour engaged. During operation phase labours health guidelines should be developed. Medical check-up needs to be done by the contractor. PPE kits are provided to labours, specially face mask. Process dust at processing units is commonly reported. |
| 8. | Major Environmental Issues | Water discharge from plant premises. Domestic water source and quantity requirement. The CtE/CtO condition needs to be complied for the project. |
| 9. | Scope of Improvement | The Contract document item rate does not have budgetary note for Environmental Management. Though EMP is part of contract document. Plantation need to be carried as committed. Peripheral green belt needs to be done as per site layout plan. CtE application need to be excited by the contractor under DEC supervisions. The EMF Checklist and environmental monitoring should have details like dates, signed by DEC and counter signed by Project managers. Site specific information. |



Site Photographs for CSC/FPC

Site screening of Nabomilan Agro Producer Company Ltd, Sonitpur Jorhat

Photographs of FPC and Horticulture



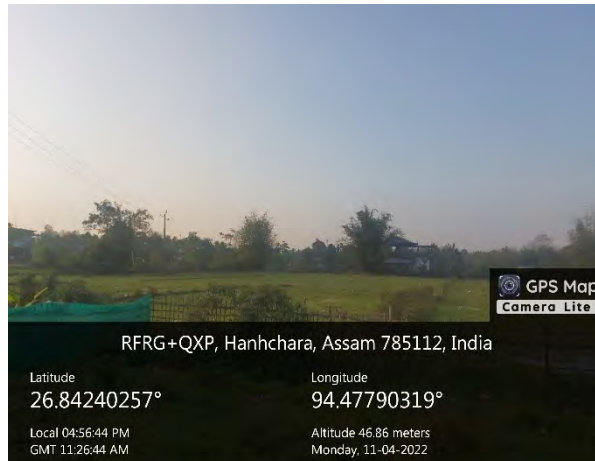
Consultation with the Ginger farmers and BODs of Nabomilan Agro Producer Company Ltd.



Proposed site for civil construction of FPC



Site screening of Jorhat AgroPvt. Ltd , District Jorhat



The panoramic view of project site



Village Road connecting Project site

Site screening of Janjiporia Agri-Hoti Farmers Producing Company , District Jorhat



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

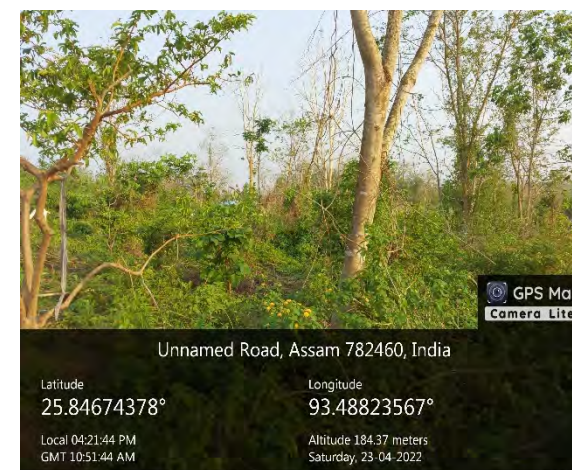
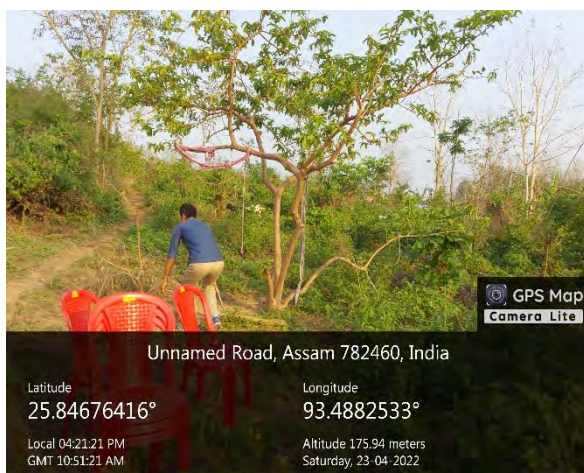


Tree and bamboo within the site location



Road connecting project site

Site screening of Karbi Anglong Agri - Horti Farmers Producing Company, District Karbi Anglong





FINAL REPORT
Consulting Services for Mid Term External
Environmental Audit

The proposed site is undulation land

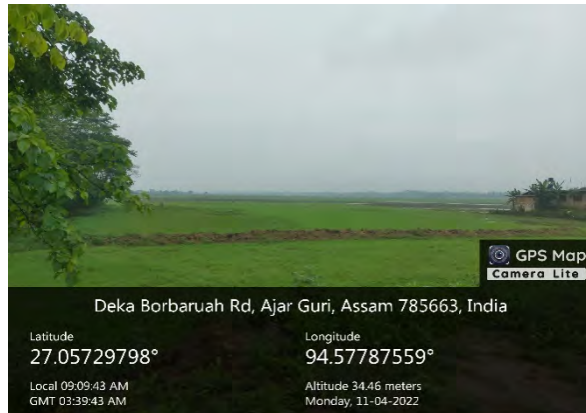
Tress and shrubs covered surface. Tree cutting will be involve



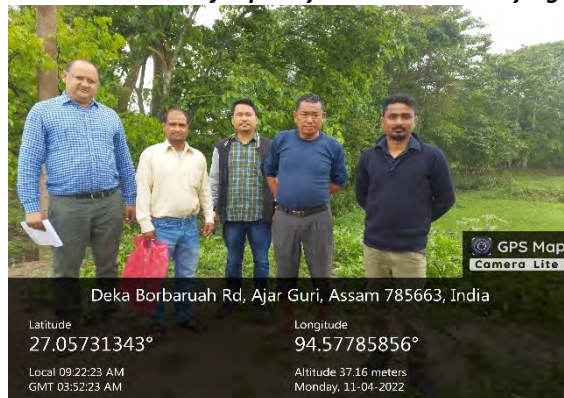
FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Site screening of Desangmukh Agri Producing Company, District Sibsagar



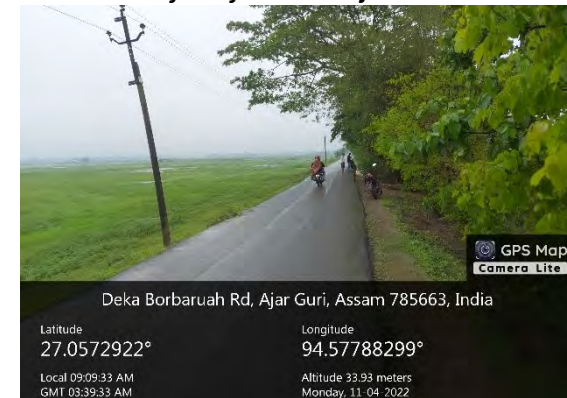
Site selected was used for paddy cultivation. Low lying area



Interaction with the Beneficiaries at site



View of site from the adjacent Road



Road Adjacent to FPC/CSC

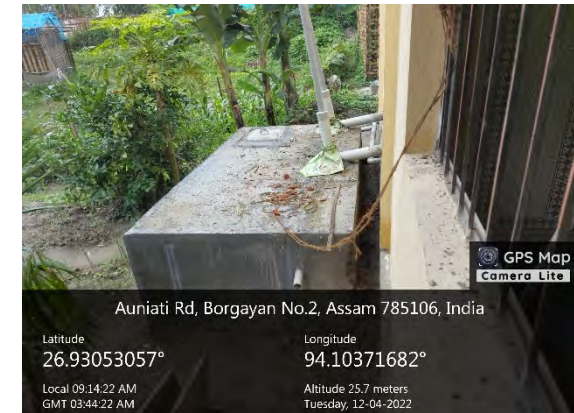
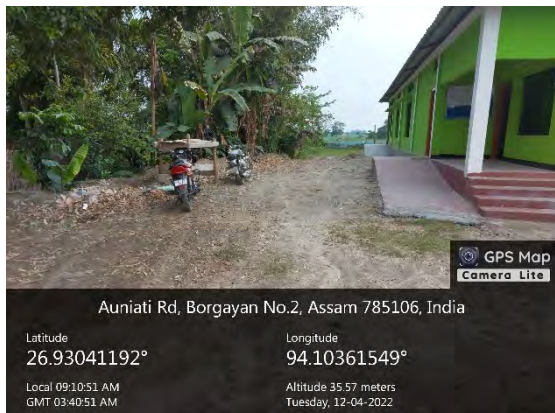
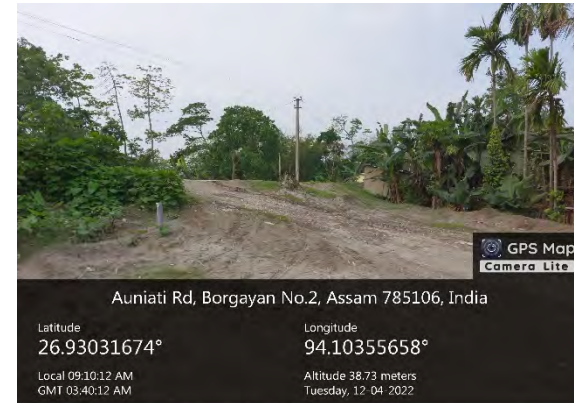
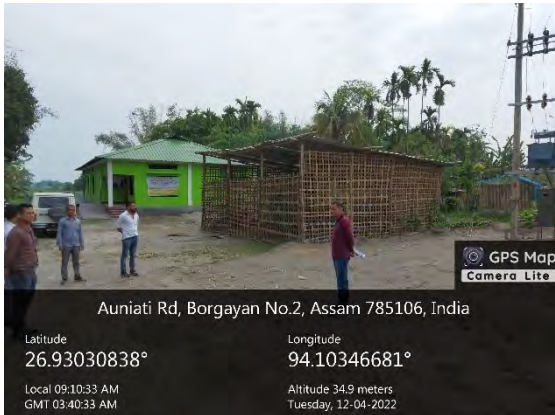
Site screening of Majuli River Bank Farmer Producing Company, District Majuli





FINAL REPORT

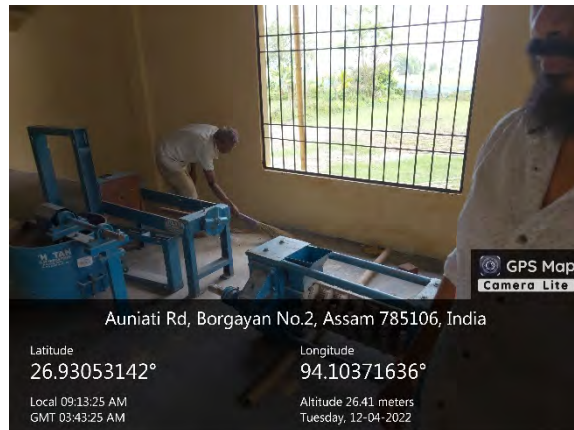
Consulting Services for Mid Term External Environmental Audit



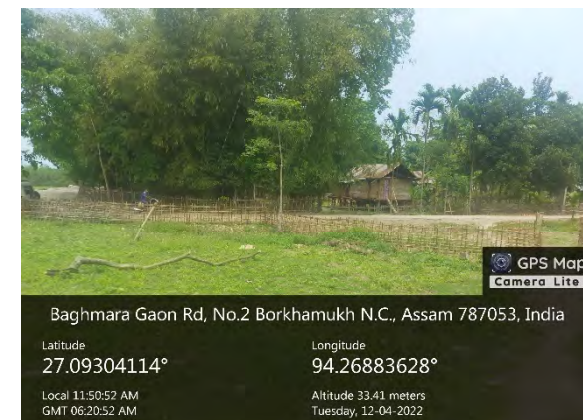


FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



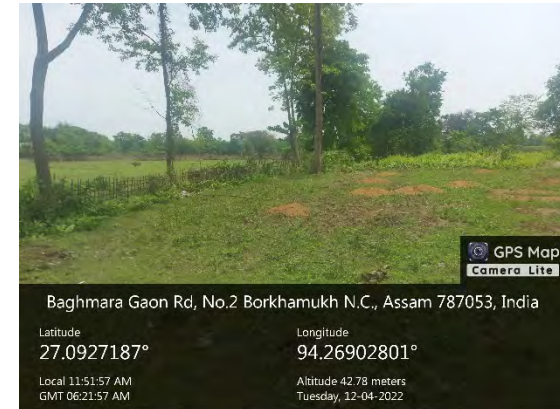
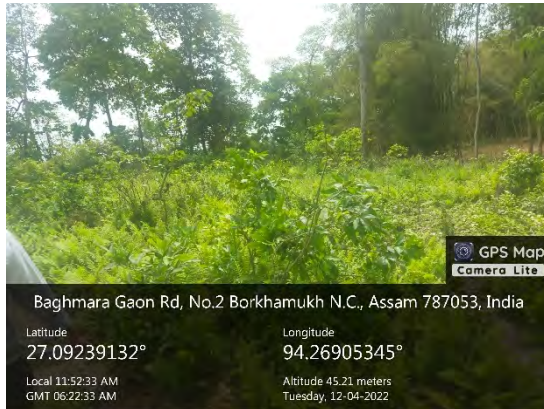
Site screening of Jengraimukh Agri horti Farmer Producing Company, District Majuli





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Farmer Producer Company



Uttarar Farm Producing Company – under construction



Operational Amlighat Banana Producer Company Limited.



Proposed site for Chengnoi Farm Producer Company Ltd.





**Existing building - for Borkhola Aquaculture Farmers
Producer Company Ltd.**



**Consultation with BODs of Narsinghpur Integrated
Farming Farmers Pvt. Ltd.**



**Proposed land for Borkhola Aquaculture Farmers Producer
Company Ltd.**

3.9.6 Dairy – Lab Renovation Under DDA

75. In the state of Assam, of the total volume of milk produced, around 60% gets consumed at the production level and only remaining 40% volume becomes available as marketable surplus. More than 90% volume is being collected by the players in the informal sector, mostly bulk aggregators locally known as “paikaria”.
76. Therefore, the share of marketable surplus being procured by organised/ formal players such as various cooperative milk unions (WAMUL), other village level DUSs and the Department of Dairy Development is restricted to less than 10% of marketable surplus. To meet the market demand WAMUL has proposed to expand the existing Milk Unit WAMUL from existing 60 TLPD to 150 TLPD to process the raw milk in Kamrup District. The proposed expansion is within the existing WAMUL premises. Besides, the infrastructure would be provided with production facilities of high value added products like curd, paneer, cream and ice cream etc. The Details of EMF implementation Audit is highlighted in Table .
77. To follow the food safety regulations (FSSA-2006), food traded by value chain periodically tested for quality and safety is a mandate. In order to build a food system that makes food safer, testing should be targeted, accurate and lead to appropriate action. With the mandate to check milk quality and to collect suspected milk samples from the market from time to time to test in their laboratories. The existing laboratories of DDD need to be strengthened, and capacity built for surveillance and response. To assess the Quality of Milk Dairy laboratory has been established in many districts in the state of Assam.



78. Under Dairy Components midterm environmental audit, 4 (four) projects under Lab renovation have been selected. The project involves funding for construction of Boundary wall, Electric connection (three phase), water connection, floor improvement, Regulated entry, laboratory equipment and chemicals for testing. These four projects are located in four district i.e. Kamrup, Nagaon, Golaghat and Cachar district. The Details of EMF implementation Audit is highlighted in



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

79. **Table** . The brief summary of overall findings is discussed in Table 3-12.

80. The proposed expansion is within the existing WAMUL premises.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Table 3-12: EMF Brief Summary of overall findings – Dairy

| Sl.no | Project Audit | Observations |
|-------|---|--|
| 10. | Review of EMF Screening | EMF screening is in place and is being appraised on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor. Needs training for EMF screening appraisal. There is lacuna noticed in already filled EMF Screening checklist and verified on ground. Signatures and dates are missing. |
| 11. | Review of Consent / Compliance / Permission | Applicability of CtE and CtO need to be checked. |
| 12. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours under goes Rt-PCR test before engagement on assignment. |
| 13. | Solid waste Management | No much waste is generated during construction phase, the waste generated are mostly inert waste which would be filled within sites. During operation phase the solid waste generated are mostly packaging material and process waste which are sold able in market. |
| 14. | Layout | The design has been reviewed. The construction is as per the approved layout. |
| 15. | Climate resilience/adaptation | The proposed CSC/ FPC has adopted climate resilience features. Internal drains and peripheral drains considering rainfall, roof top design based on rainfall patterns. HFL has been considered. Hence all operational structure level has been raised above the recorded flood level. |
| 16. | Labour Issues & Management | Valid labour licence for use of 100 labour obtained. The labour management needs improvement. need to provide cooking gas at onsite labour camps. The safety issues need to be taken care. Labours are working without PPE Kits. |
| 17. | Major Environmental Issues | The treated effluent from ETP would be source to STP for further treatment. The treated water should meet with the effluent discharge standards of CPCB if drains into existing Nala. The effluent testing should be carried out on regular basis. The proposed D.G sets should be provided with noise enclosures. |
| 18. | Scope of Improvement | The Contract document item rate does not have budgetary note for Environmental Management. Though EMP is part of contract document. Plantation need to be carried as committed. Peripheral green belt needs to be done as per site layout plan. CtE application needs to be expedited by the contractor under DEC supervisions. The EMF Checklist and environmental monitoring should have details like dates, signed by DEC and counter signed by Project managers. Site specific information. No construction phase monitoring reported. Labours safety issues need to be addressed. |

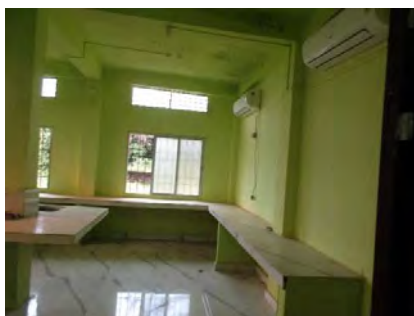


FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Audit Photographs for Lab Renovation Under DDA

Strengthening of existing Laboratory infrastructure of Dairy at Ghugnoor, Distict Cacher

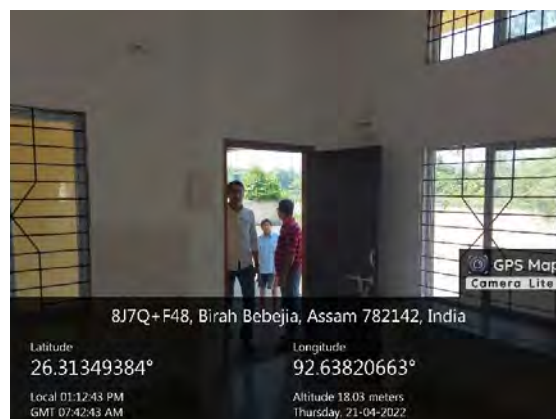


Laboratory infrastructure- at completion

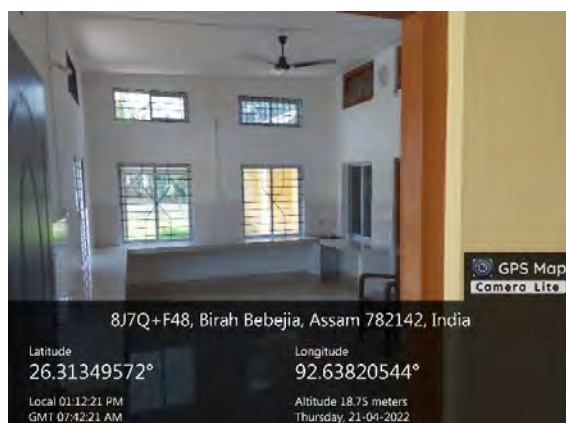
Site Photographs of newly extended Milk Testing Laboratory, Nagaon



Extended Milk Testing Laboratory



Lab well design with cross ventilation and light penetration inside the lab.



View of the complete labouratory room



Entry gate of milk processing plant with newly Lab under APART





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

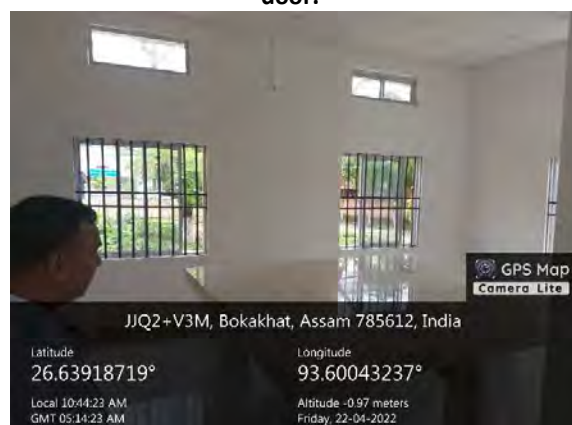
Site Photographs of Laboratory Strengthening in Dairy Development Department, Bokakhat, District Golaghat



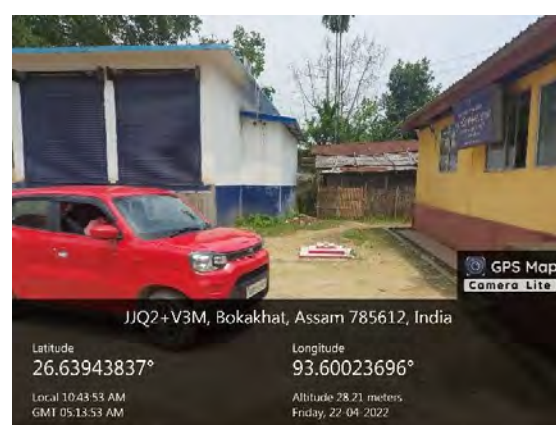
All door and window constructed of reinforce steel and door.



Front view of the Milk Testing Lab Bokakhat



Lab building with good cross ventilation and solar light penetration



Adequate parking provision in front of Bokakhat Lab.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Audit Photographs for Expansion of Existing Milk Unit WAMUL Screening photographs of the WAMUL plant at PanjabariKhanapara, Guwahati



Scrap metals lying on the floor in construction zone



Cut trench without side fencing



Working at height station not properly installed. Safety railing not installed



Excavator (JCB) without safety belts



Oil leakage from the dismentaling plant



Cut trench wall collapse, hazard issues

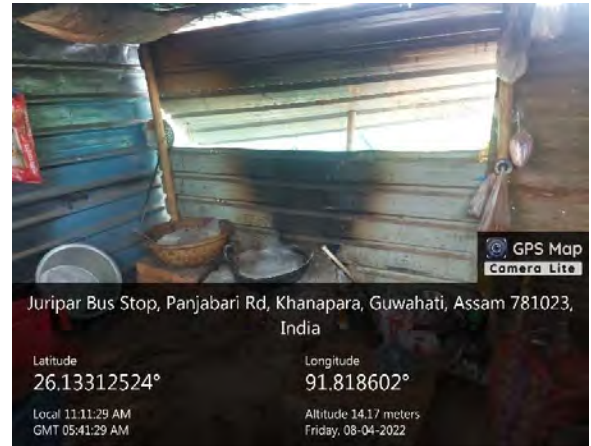


FINAL REPORT

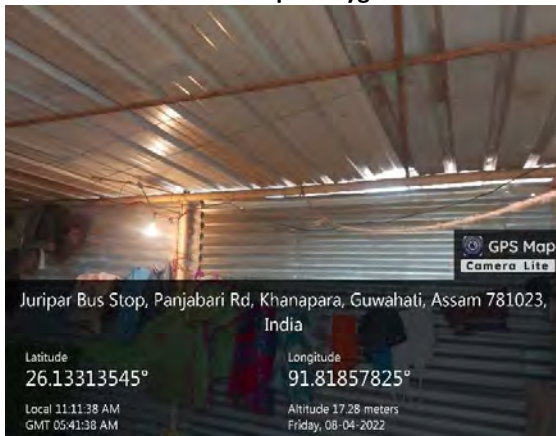
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Labour camp un-hyganic



Cooking in kitchen on fire wood



Loose wire in labour camps and in adjacent area



Worker working at height without safety belt



The site get flooded when it heavy rains. This is due to road in surrounding at bit higher.



Loose electric circuit in the project area



Google Image of Project site -WAMUL site with Site surrounding Features.





3.9.7 Piggery – AHVD Improve Bio-Security in Nucleus Pig Breeding Farm

81. In Assam, more than 90 per cent of the populations are non-vegetarian and pig is a major source of meat, hence, there is huge importance of pig in the socio-economic life of the people of the state. Assam is surrounded by other north eastern states of India with predominantly non-vegetarian and tribal population which is the unique advantage for pig husbandry. Except religious or social restriction on pork consumption in some community, Assam and the North Eastern Region (NER).
82. As compared to the other states of India, Assam and other NER states are performing well in pig production. Pig population in the NER is above 38.42 percent of country's total and in Assam it is 15.89 percent. The share of meat production from pig is 18730 Tones as against the total meat production of 46870 Tones in Assam during 2016-17.
83. Under Piggery Value Chain despite being small-scale production contributes significantly to the livelihood of the majority of pig-rearing households. There are indications that pig production is gaining popularity as a source of income generation in communities. With availability of breeding most of indigenous pigs have been replaced by crossbreeds. Crosses of the Large Black and Hampshire breed (and the Ghungroo in Kokrajhar) are preferred now over other pure exotic breeds. To maintain pig seed supply to the locals, nucleus pig breeding farm has been proposed.
84. Piggery Bio – Security is the Major Concern in Nucleus Pig Breeding Farm. The entry and exit needs to be well regulated and documented. This zone is prone to Viral and other diseases and can be wide spread in wild if proper preventive measures are not taken.
85. Under APART 5 projects has been funded out of which 4 project is in Kamrup district and 1 (one) in Karbi Anglong district. Environmental Audit was conducted for all the 5 (five) sites proposed under expansion/modernization. The expansion of piggery units is within the existing piggery units and mostly owned by the state Government.
86. The upgradation involves construction of Security room, Display room cum sell Booth, Entry gate with wheel bath, Quarantine shed, dress changing room, Godown, repairing flood of pig shed, wire netting of pig shed, manure pit, dead animal disposal pit, overhead tanks, approach road and boundary wall. The Implementation of EMF was keenly noticed and audited, seeing the site seriousness and bio-security measures adopted. The details of EMF implementation findings are discussed in Table. The brief summary of EMF findings is discussed in Table 3-13.



Table 3-13: EMF Brief Summary of overall findings – Piggery

| Sl.no | Project Audit | Observations |
|-------|---|--|
| 19. | Review of EMF Screening | EMF screening is in place and are being appraised on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor and stage of construction was noted. Each progress report highlights the issues which need to be implemented like construction debris, waste management, material stocking, PPE kit not provided to labour, provision of emergency contact number, provision of safe drinking water for labours, etc. There are no signature of DEC and project manager on the screening report. Training needs to be given for review and onsite filling of screening checklist. |
| 20. | Review of Consent compliance / Permission | CtE/CtO from SPCB is not required. |
| 21. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours under goes Rt-PCR test before engagement on assignment. |
| 22. | Solid waste Management | Waste management issues are reported in the screening reports prepared by DEC. Currently the operation pig farms has major issues of solid waste management. The sweeping material, discarded foods and pig dung are noticed dumped in organized manure. Need proper management. |
| 23. | Layout | The design has been reviewed. The construction is as per the approved layout. |
| 24. | Climate resilience/adaptation | The proposed pig farm has adopted climate resilience features. Internal drains and peripheral drains considering rainfall, roof top design based on rainfall patterns, cross wind structure for proper ventilation and cooling. Hence all operational structure level has been raised above the recorded flood level. The bio-security measures are well adopted. Entry at gate is well regulated. 72 hours time gap for visiting to pig farm. This is well regulated and strictly followed. |
| 25. | Labour Issues & Management | Staff and labours engaged in pig farms need to undergo health check-up. All the pig in the farms is vaccinated against Taenia solanum which causes cysticercosis in pigs. Later stage transmitted to workers during handling pig. |
| 26. | Major Environmental Issues | Green House gas emission from the decomposing manure at site. Waste and urine handling from the sty. They are reaching the land area, because most of the septic tanks and soak pits proposed are filled and are over flowing. Some of the soak pits are covered with extensive growth of grasses. The drains which connect sty with septic tanks are broken. The pig urine is spreading all over, resulting in foul smell. Pig dung are noticed dumped in an unorganized manner. |
| 27. | Scope of Improvement | The Contract document item rate does not have budgetary note for Environmental Management. Though EMP is part of contract document. The EMF Checklist and environmental monitoring should have details like dates, signed by DEC and |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| Sl.no | Project Audit | Observations |
|-------|---------------|---|
| | | <p>counter signed by Project managers. Site specific information. No construction phase baseline monitoring reported. Labours safety issues need to be addressed. Waste handling need to be strengthened. The soak pit and septic tanks need to be cleaned and if required addition should be constructed. Scope of setting biogas plant needs to be explore. All drains repairs work needs to be done.</p> <p>During audit some pigs are reported with Foot Mouth Disease (FMD), these need proper management. These are contagious viral disease which are not transmitted from pig to human. But it widely spread from pig to pig.</p> |



FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit

Site EMF Appraisal Photographs of Piggery Units

Photographs of Govt. Piggery Farm, ALPCo. Khanapara, Kamrup District



Bio-Security Measures Adopted at Entry Gate by providing water wheel deep with Potassium Permanganate as disinfectant.

Crack Drain at Pig sty, adjacent to pond. The urine and wash off water may reach the pond.



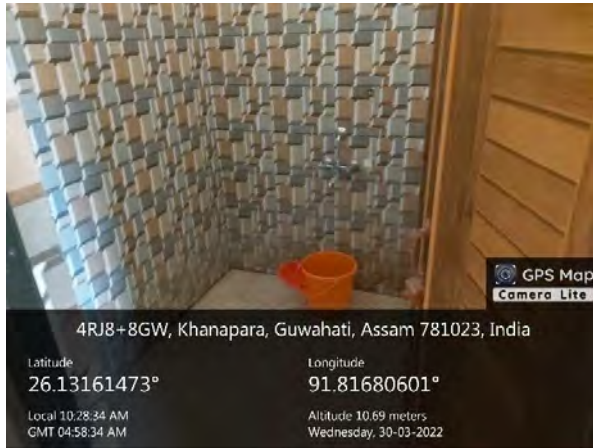
Dead Animal Disposal Pit within breeding farm

Piglet selling points.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



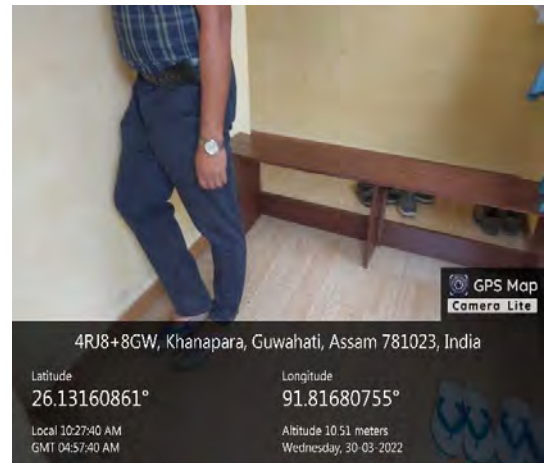
Proper bathroom at the entry gate to sty to take bath for workers and staff as bio – security measures.



Over head tanks for water supply with pig farm. To maintain good quality of water, filter has been installed.



Wire mesh wall adjacent to entry gate. The wall is as per design. need to strengthen the wall and also height of wall needs to be increase.

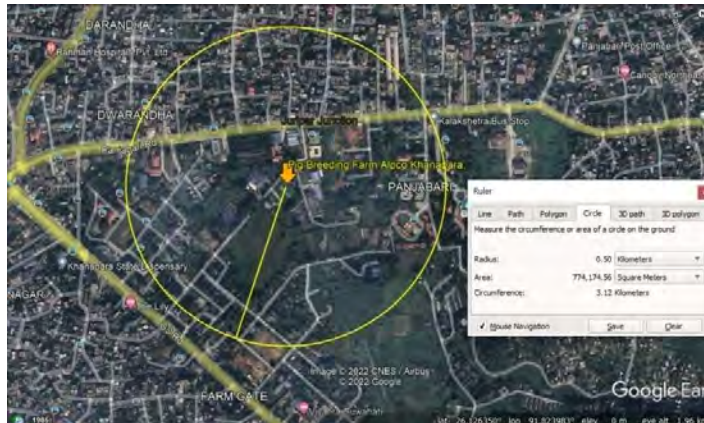


Shoes changing point, before entering into the pig sty, as a bio-security measures.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Project sensitivity:

Wildlife Area- Nil

Forest Area- Nil

River – Nil

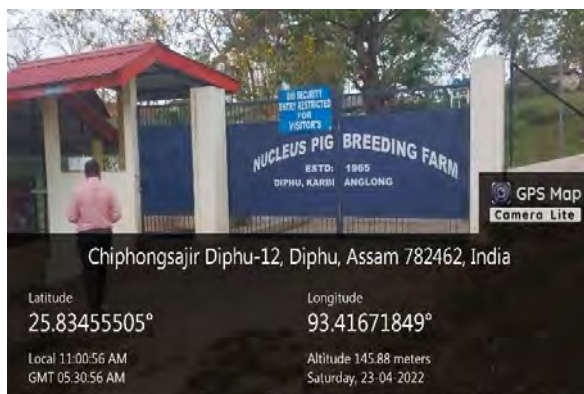
Natural Stream – at 50 meters towards south

Ecologically Sensitive Area – Nil

Eco – Sensitive Zone – Nil

Note: The project site is surrounded by the settlement and small-scale industrial units. It is located within premises of existing Assam Livestock and poultry breeding units.

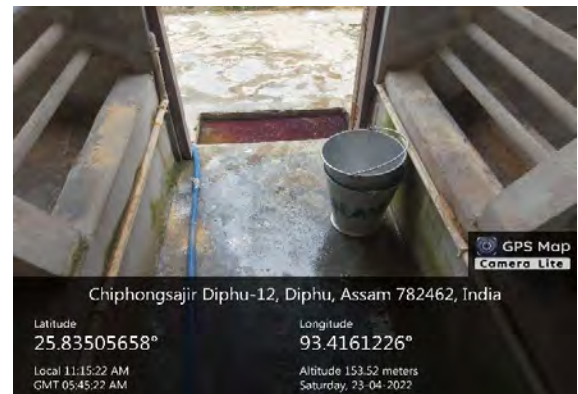
Government Pig Cum Poultry Farm Diphu, Karbi Anglong.



Restricted entry at the Diphu Pig Far,



Drains from sty leading into open surrounding area



Bio-security at the entry point of sty. Potassium Permanganate at entry gate. Shoes deep point.

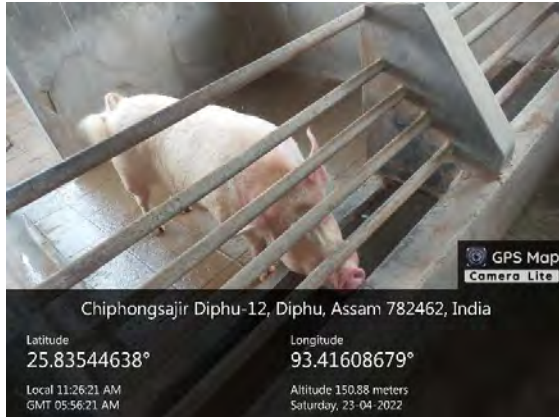


Dried Faecal matter lying adjacent to sty

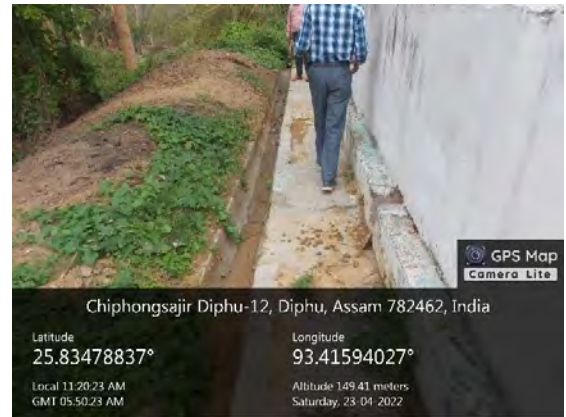


FINAL REPORT

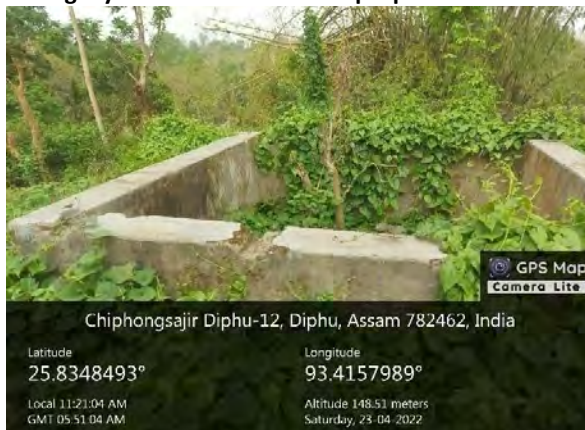
Consulting Services for Mid Term External Environmental Audit



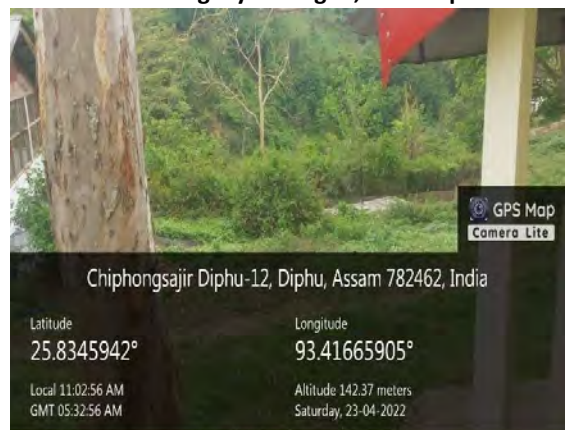
Pig sty well maintained with proper ventilation



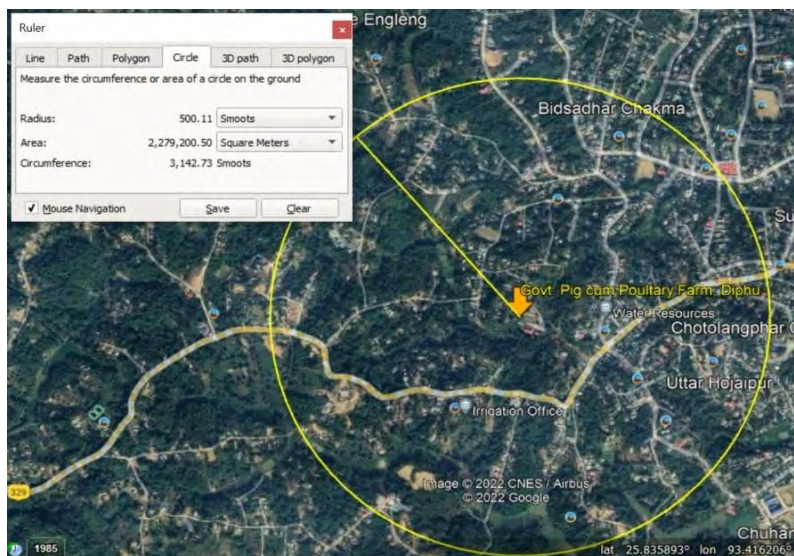
Drains surrounding sty damaged, need repairs work



Soak pits and septic tanks silted growth of shrubs noticed



Dead animal Disposal pits reported at one end of pig breeding farm.



Project sensitivity:

Wildlife Area- Nil

Forest Area- Nil

River – Nil

Natural Stream – at 50 meters towards south

Ecologically Sensitive Area – Nil

Eco – Sensitive Zone – Nil

Note: The project site is surrounded by the settlement and small-scale industrial units. It is located within premises of existing Assam Livestock and poultry breeding units, Diphu.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Government Pig Breeding Farm Khanapara, District Kamrup



Septic Tanks are silted. Growth of plan noticed



Soak pits silted growth of plant noticed



Fence wall appropriate to maintain the security of pig breeding farm



Potassium permanganate wheel deep as bio-security measures at main entrance gate



All internal roads well maintained

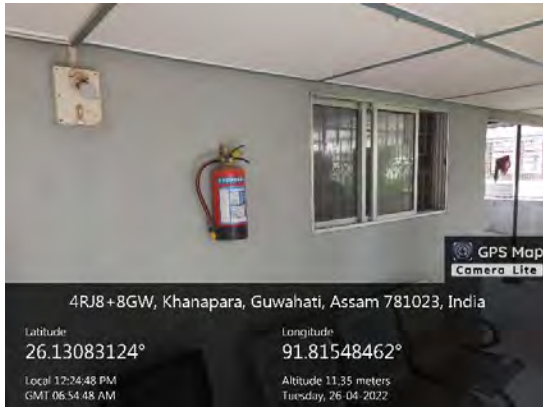


Application of bleaching powder and potassium permanganate at sty entry. Second level bio security measures.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



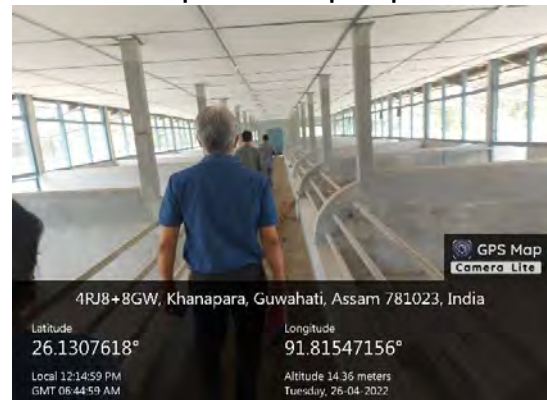
Fire extinguisher at Sty area to control fire incidence



Lines drains noticed all along the sty. These drains leads into water ponds within plant premises.



Carcass disposal tank within farms



Cells within the Sty well maintained with proper ventilation



Tree noticed all along the farm premises



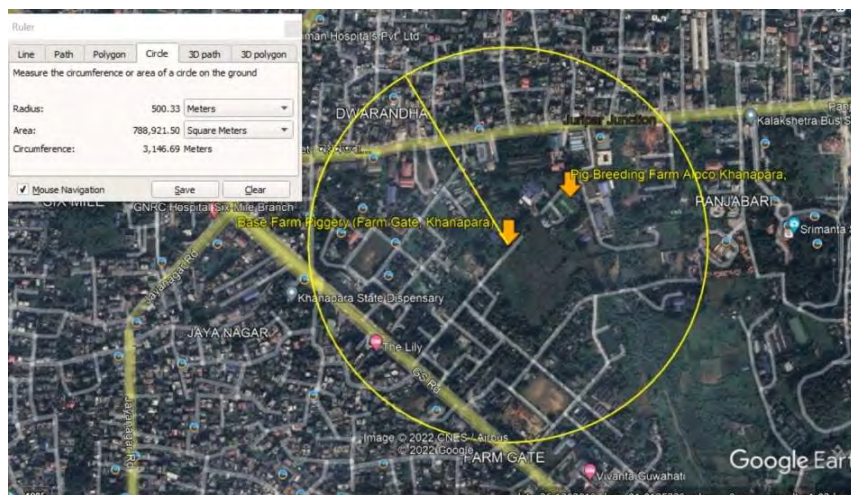
Soak pits silted, need de-silting on urgent bases.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Google Image of project site within 500 meters

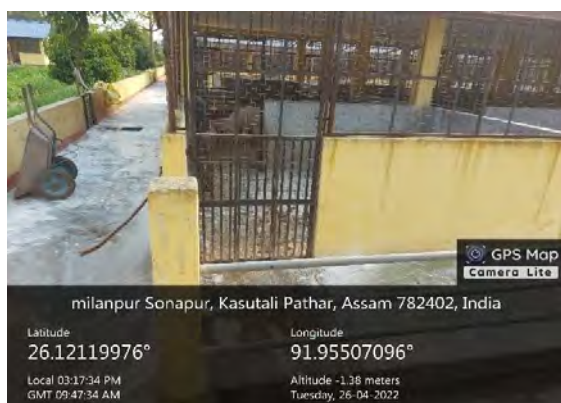


Project sensitivity:

Wildlife Area- Nil
Forest Area- Nil
River – Nil
Natural Stream – at 50 meters towards south
Ecologically Sensitive Area – Nil
Eco – Sensitive Zone – Nil

Note: The project site is surrounded by the settlement and small-scale industrial units.

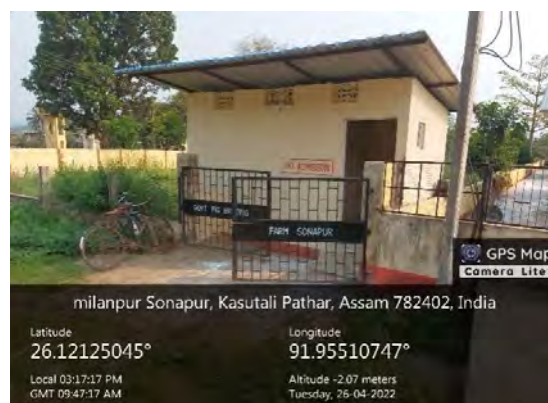
Photographs - Government Pig Breeding Farm, District Kamrup



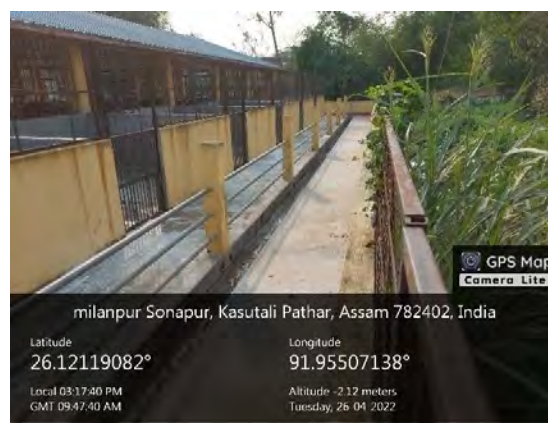
Application of bleaching powder along the sty to prevent vector borne diseases



Internal roads well developed



Entry gate to sty with entry restricted board.



Pig Sty with wire mesh to prevent birds entering into sty



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Drains noticed all along the sty



Bio-security by providing wheel deep for vehicles at entry gate of farm



Pig Fodder Cultivation within Pig Farm premises



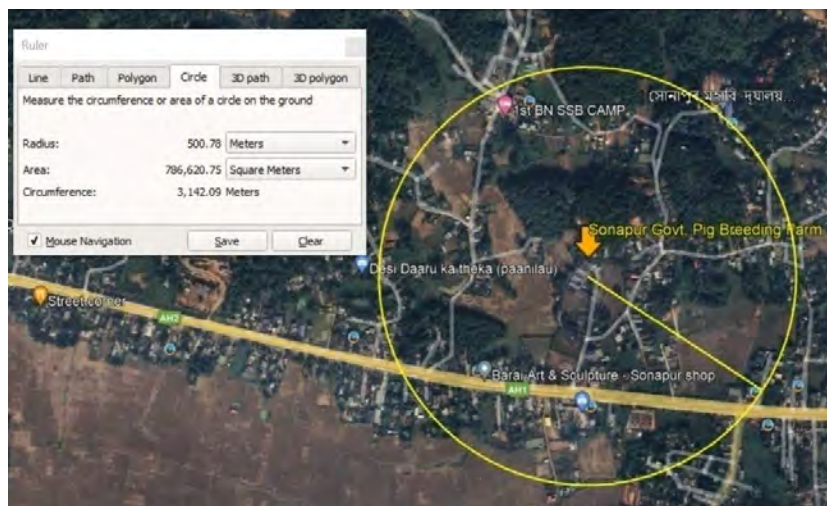
Selling point of piglets at entry gate to restrict the entry of people within farm premises



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Google Image of Sonapur Govt. Pig breeding Farm site within 500 meters



Project sensitivity:

Wildlife Area- Nil

Forest Area- Nil

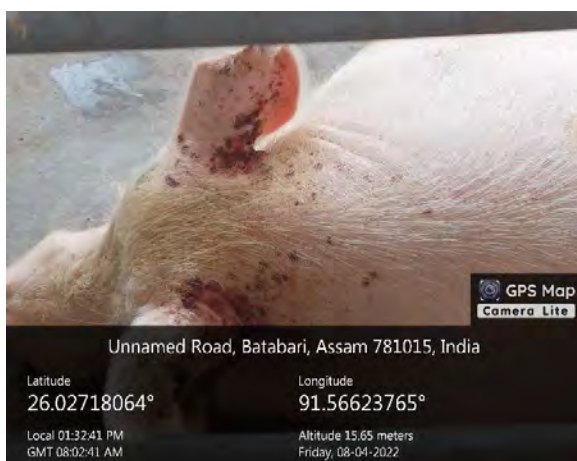
River – Nil

Natural Stream – at 50 meters towards south

Ecologically Sensitive Area – Nil

Eco – Sensitive Zone – Nil

Note: The project site is surrounded by the settlement, agricultural land and orchids



Foot Mouth Disease (FMD) infection reported within Rani Pig Breeding Farm



Carcass pit at dead pigs

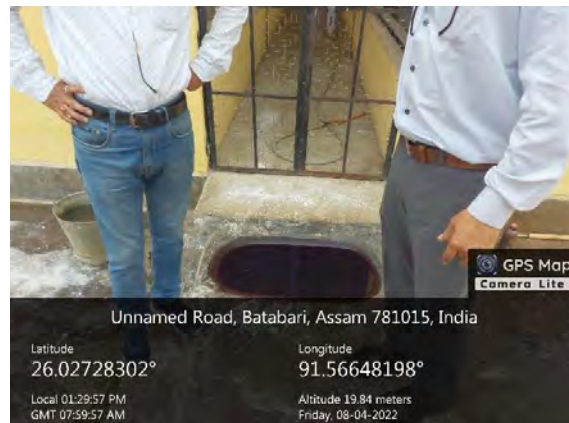


FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Bio-security measures at entry gate – wheel deep at entry gate of pig farm



Bio security measures at entry gate of sty – shoes deep



Entry restricted for piglets bayers and outsiders



Pig sty well maintained and with wire mesh to prevent bird entry into pig sty



Drains constructed along pig sty



Connecting road to pig sty quarantine centre poorly developed



FINAL REPORT

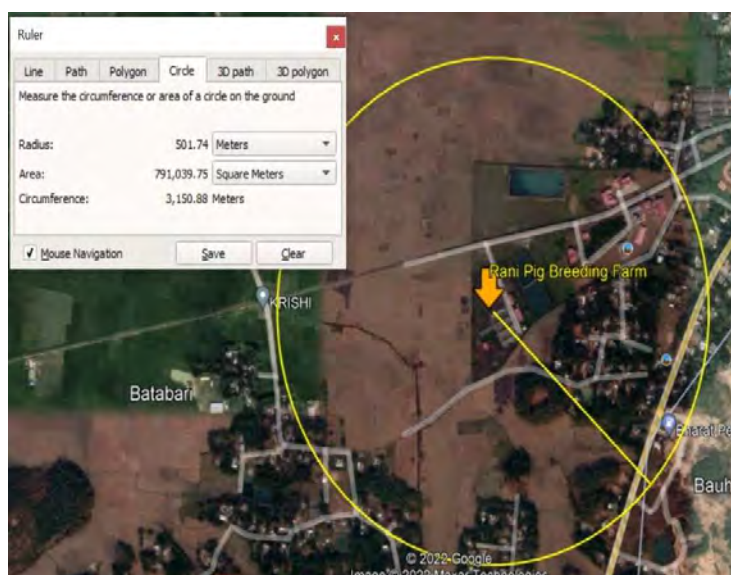
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Soak pit and septic tanks over flowing pollution soil and nearby water bodies



Purchase counter for piglets adjacent to entry gate to prevent people entering into farm premises.



Project sensitivity:

Wildlife Area- Nil
Forest Area- Nil
River – Nil
Natural Stream – at 50 meters towards south
Ecologically Sensitive Area – Nil
Eco – Sensitive Zone – Nil

Note: The project site is surrounded by the settlements and agricultural land

3.9.8 Fish Seed Multiplication Centre

87. Assam has become the first state in the Northeast region of India to attain self-sufficiency in fish seed production (5678 million fish seed fry in 2015-16 to 9519 million fish seed fries in 2019-20 with 67.65% growth) and supply to neighbouring North-Eastern states.
88. As the quality of fish seed depends on the scientific rearing practices followed in preparation and management of bloodstock pond. This make availability of quality fish seed in the State, the new concept of development of quality fish seed Farmers Producers Groups are adopted under the World Bank-funded project Assam Agri-business and Rural Transformation Project (APART), wherein a group of

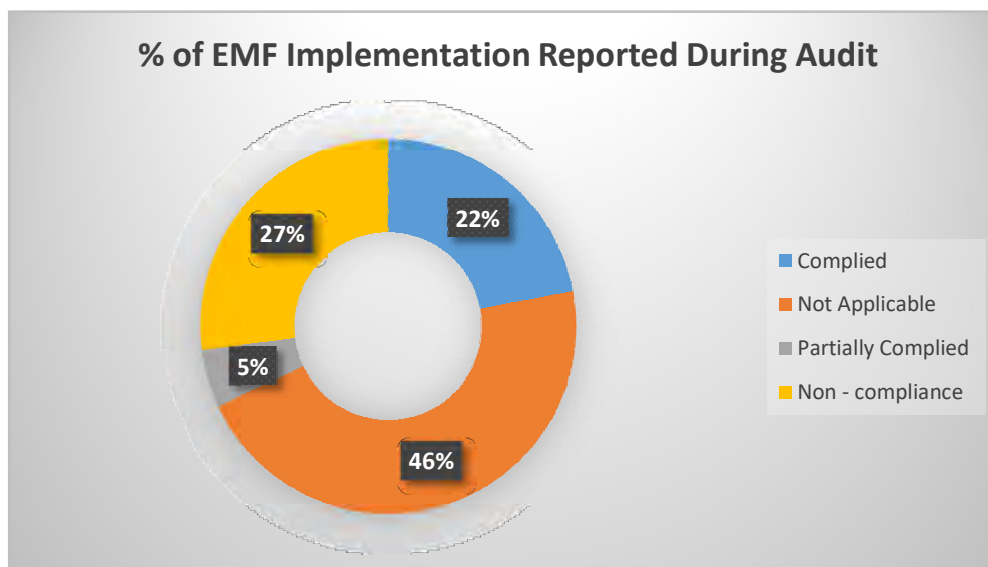


trained fish farmers are involved in the production of quality fish seeds of various cultivable fish species and cater to the needs of themselves, fellow farmers of the village and farmers of neighbouring villages in appropriate time and at affordable cost.

89. To meet the seed requirement, multiplication centre has been established under Government sector with all required infrastructure. The centre will procure pure strain seed of Jayanti Rohu, Gift Tilapia etc from outside the state and produce quality seed for distribution to hatchery operators for raining the seed into future brood stock. The activity will provide scope for quality brood supply to the hatchery owners and help them produce better quality seed for fish farming in the district/zone.

90. To meet the market demands for fish seeds (fish fry and Fingerling), APART has funded expansion of existing Fish seed multiplication units in the state of Assam. Under APART eight fish seed multiplication centres has been proposed. Most of which are already operational. The construction proposed under APART funds are waiting shed, upgradation of cemented tanks, internal roads, renovation of roof, renovation of mini bunds, installation of biosecurity measures, renovation of overhead tanks, chain link fencing in FRP hatchery. To review the EMF implementation during construction and operation phase, two project has been considered under environmental audit. They are in Kamrup District i.e., one in Rangia and other in Ulubari. Both the units are functional are is supplying fish seeds to the needy farmers. The detailed findings of EMF checklist implementation is given in Table . The implementation of EMF for both the projects are given in figure below:

Figure 3-11: Percentage of EMF implemented During Construction/ Operation Phase





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Table 3-14: EMF Brief Summary of overall findings – Fish Seed Multiplication

| Sl.no | Project Audit | Observations |
|-------|---|---|
| 1. | Review of EMF Screening | <p>EMF screening is in place and is being appraised on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation on the Part of Contractor and stage of construction was noted. Each progress report highlights the issues which need to be implemented like construction debris, waste management, material stocking, PPE kit not provided to labour, etc</p> <p>There are no signature of DEC and project manager on the screening report. Training needs to be given for review and onsite filling of screening checklist.</p> |
| 2. | Review of Consent / Compliance / Permission | CtE/CtO from SPCB is not required. |
| 3. | COVID -19 | COVID -19 State guideline are noticed in practice. It is properly implemented at labour camps, construction site, etc. the inducted labours under goes Rt-PCR test before engagement on assignment. |
| 4. | Solid waste Management | During Audit, asbestos sheet which are discarded from roof renovation are dumped at the hatchery building in an unscientific manner. The rearing ponds are also nearby. Needs proper management plan. |
| 5. | Layout | The design has been reviewed. The construction is as per the approved layout. The site fence is not completed. People from out entry to the Hatchery premises. |
| 6. | Climate resilience/adaptation | The proposed Fish multiplication centre has adopted climate resilience features. Internal drains and peripheral drains considering rainfall, roof top design based on rainfall patterns, hence all operational structure level has been proposed above the recorded flood level. The bio-security measures are well adopted. Entry at gate is well regulated. |
| 7. | Labour Issues & Management | All staff reported at site are mostly government staff. T |
| 8. | Major Environmental Issues | Algal bloom reported in the rearing ponds. This may be due to high level of nitrogen and phosphorus in soil. The dead fish carcass issue. Proper management plan needs to be developed. Asbestos storage issues. Water quality issues which are discharged into nearby natural drains. Cloth washing in one of the ponds was noticed by the local residence. This is due to incomplete fence. |
| 9. | Scope of Improvement | Water quality assessment of ground water and pond water. Cleaning of ponds and manual removal of algae. Complete construction of boundary wall. Prevention of water pollution from sewerage water. Development of manual for fish carcass handling. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Site EMF implementation Photographs

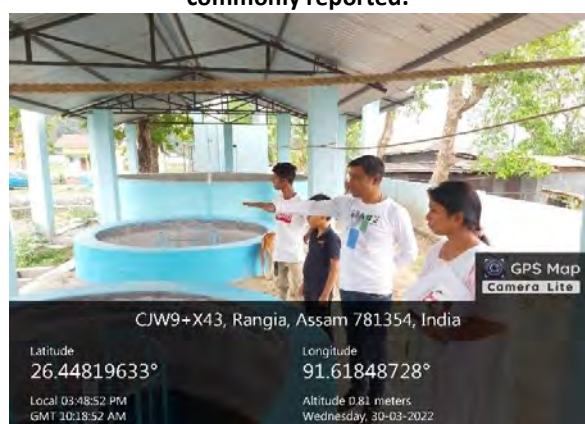
Audit Photographs of Fish Seed Multiplication Centre Rangia, Kamrup



No boundary wall towards the Hatchery, people from adjacent community enter the premises. Theft is commonly reported.



Due to theft, the hatchery pipes and motors are stolen.



Hatchery with all it's components



Cloths washing in the ponds of fish seed multiplication units



FINAL REPORT

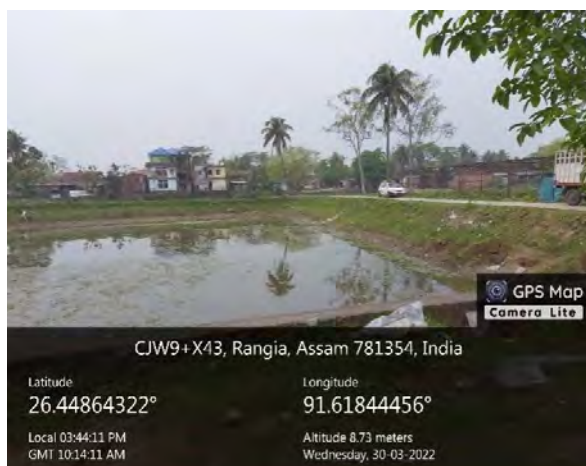
Consulting Services for Mid Term External Environmental Audit



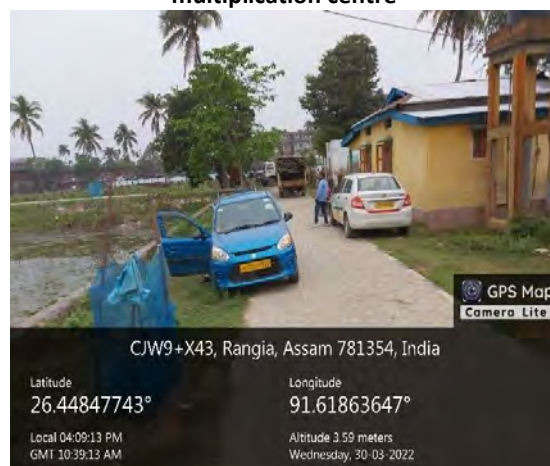
The rotating drum of the hatchery need repairs



Outsiders reported during audit within fish seed multiplication centre



Growth of hydrophytes within fish seed rearing ponds



Pavers block road within fish seed multiplication premises.



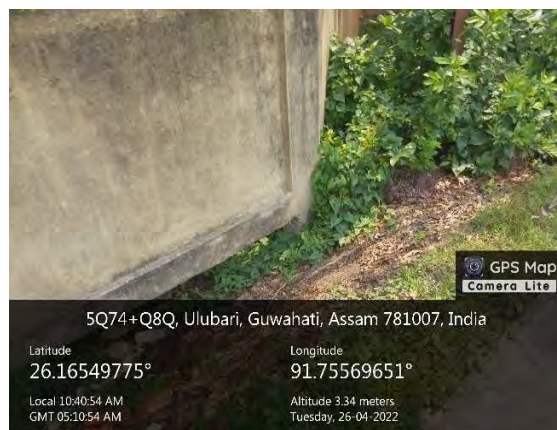
FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Audit Photographs of Ulubari Fish Seed Farm



Algal bloom within fish rearing ponds



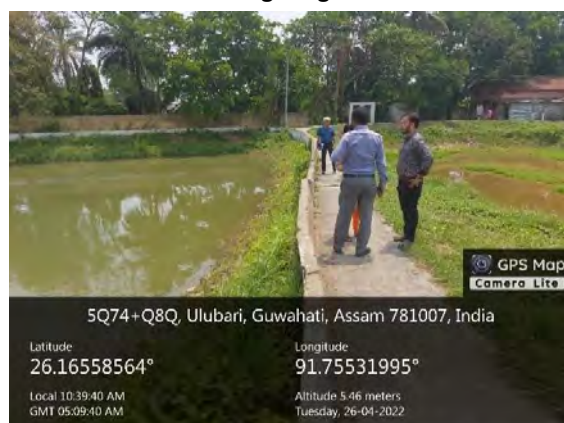
The boundary wall of Ulubari Fish Seed Farm damaged by the local residents



Discarded construction material stacked adjacent to the pond



The Renovated Hatchery with water shower and artificial lighting



Cracked Pavers block path and side railings adjacent to rearing ponds



FINAL REPORT

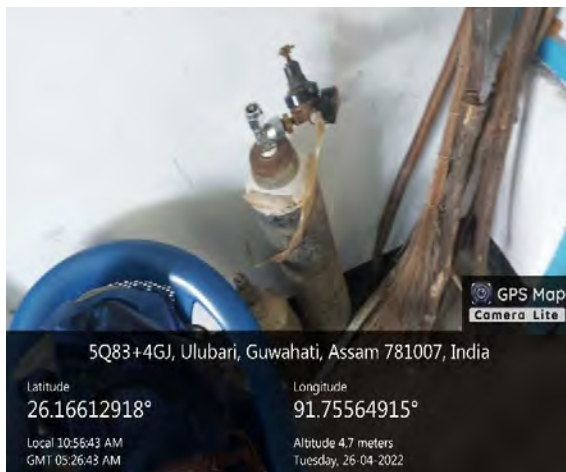
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Toilets for workers and site staff needs maintenance



Discarded asbestos sheet laying on the earthen floor. No preventive measures taken



Oxygen cylinder with proper safety nozzle and oxygen reader



Photograph of the site team, DEC and Audit team during site visit.



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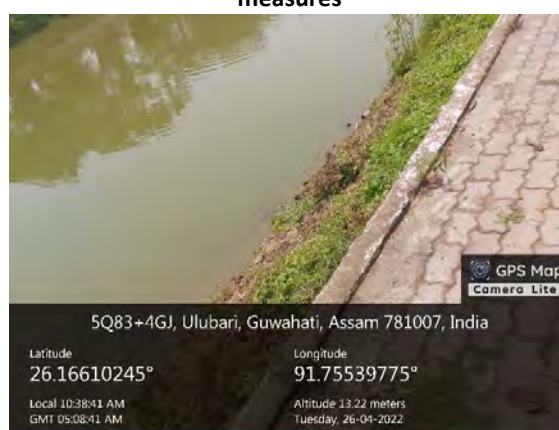
Plastic waste lying adjacent to rearing ponds



Hatchery within closure to maintain Bio Security measures



Vertical cut wall of the rearing ponds, needs slopy side wall



The edge of the paved road getting damaged due to sinking of underneath soil.

3.9.9 Agriculture

91. Agriculture is the dominant land use category in the state. It accounts for about for about 54.11 per cent of the total geographical area of the state. More than 80 per cent of the total population of Assam is dependent on agriculture. The agriculture and allied sector of plays a significant role in contributing support to more than 75 percent of the population of the State, providing employment opportunities to more than 50 percent of total workforce. With a rural based agrarian economy, agricultural sector, directly or indirectly supports majority of the rural households, both in terms of livelihood and employment opportunities.



92. Agriculture of Assam is mostly tradition based where it is characterized by certain key constraints in its structural transformation like - lack of proper storage facility, processing facilities of the food produced, constrained market access, fragmented supply chain of inputs, low level of private sector involvement, underdeveloped knowledge and awareness among the farming community on markets and climate change and poor post-harvest management practices.
93. Under APART, agriculture upliftment is major concern. To increase productivity and teach the local farmers FIG and farmers beneficiaries has been identified at district level. The FIGs or beneficiaries are made for one crop season. Under this programme farmers are provided with seed, fertilizer, organic manure, technical assistance, thus encouraging the farmers toward climate resilience farming. Selection of short variety crops, species which are hardy towards climate change and more productive.
94. Under EMF midterm Audit total number of 25 Agricultural demonstration projects was identified as per ToR. The audit team visited 8 (eight) sites and remaining 17 Agricultural demonstration projects had been audited based on earlier literature, findings, site selection reports and screening report furnished by the DEC. During audit most of the demonstration crops are harvested.
95. The desk review per centage is higher because audit was undertaken between intercropping season. Most of the sites under Agricultural demonstration are already harvested and no crop exists. It was noted that Agriculture demonstration exists for one cropping seasons. Each time new beneficiaries are selected to teach/ improve new individuals for seed selection, usage of fertilizer, pesticides, use of ecological sustainable technique to increase output with less environmental degradation. This selection methods would influence large number of farmers and would inculcate large number of them by the end of APART Missions. The detailed findings of EMF audit for Agriculture demonstration sector are provided in Table . The brief summary of EMF implementation for agriculture sector is given in Table 3-15.



Table 3-15: EMF Brief Summary of overall findings – Agriculture

| Sl.no | Project Audit | Observations |
|-------|-------------------------------|--|
| 1. | Review of EMF Screening | EMF screening is in place and is being appraised on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation. Agriculture demonstration and training was noted. Uses of PPE kits are encouraged. Training needs to be given to DEC to identify the EMF implementation at demonstration site and to fill the details correctly. Most of the EMF checklist does not have date entry. |
| 2. | Climate resilience adaptation | Selection of crop variety which are tolerant to climate changes like flood, wind, sudden rise in temperature, short duration. Variety which are pest resistance. |
| 3. | Major Environmental Issues | Agricultural runoff to nearby field. Application of fertilizer without soil health card. Burning of agricultural waste after harvesting. |
| 4. | Scope of Improvement | Use of local variety of crops, conversion of agricultural waste into organic manure. Soil test and soil health card for demonstration crops land. Drainage improvement. Prevention of agricultural runoff. |



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Demonstration – District Barapeta

Photographs of Agriculture Demonstration



Summer Paddy Demonstration, Dayal Das



Consultation with Dayal Das, DEC, DHC and ATM





Summer Paddy Demonstration, Siba Nath Bharali

**Consultation with Siba Nath Bharali, DEC, DHC and
ATM**

Agriculture Demonstration – District Barretta



Beneficiary Name: Kabutar Nessa Laskar



Beneficiary Name: Sippa Begum Laskar



Beneficiary Name: Muslima Begum Laskar



Rice stored in Bamboo storage in house



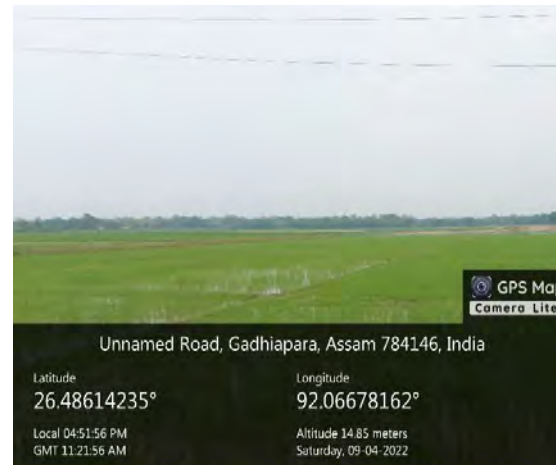
Farmer presenting Sample Bahadur Sub-1



Cultivated land after harvesting



Agriculture Demonstration – District Barpeta



Agriculture Demonstration on Boro Paddy

Agriculture Demonstration – District Nagaon



Boro Paddy Rice Cafeteria (Ten Variety of paddy planted. The site is temporally fenced



The furrow between two rice variety is not clearly demarked. It would help in regulating water level.



**Bamboo fencing of the Demonstration area – village
Goramaj**



**Good growth of Bina -II noticed without any type of
pest attack and yellow rust of paddy**

Agriculture Demonstration – District Goalpara



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Connecting road adjacent to Rice cafeteria demo



Project details available at rice cafeteria
demonstration





Site is irrigated by tube well and rain water.

The site is well fenced with rice variety details

Agriculture Demonstration Paddy @ Cachar



Beneficiary Name: Kabutar Nessa Laskar



Beneficiary Name: Sippha Begum
Laskar



Beneficiary Name: Muslima Begum
Laskar



Rice stored in Bamboo storage in house



Farmer presenting Sample Bahadur
Sub-1



Cultivated land after harvesting

3.9.10 Fishery:

96. Assam state fishery production has reaches up to 3.74lakhs MT in 2019-2020 from 2.9 lakhs MT during 2015-16. A rise of 26.87% in four years. The yawning demand-supply gap of 42 per cent in 2015-16, it has come down to mere 0.7 lakh metric tonnes in 2020-2021. Per capita fish consumption has risen from 8.5 kg per annum to 11.88 kg per annum. Fish seed production, too, has increased from 5,678 million to 9,886 million in the same corresponding period witnessing a rise of 74.11 percent.



97. Under APART funds has been allocated to encourage fishery at the grass root level. The beneficiaries are identified and with help of district fishery department, ATMA official and DEC. Under APART 80 per cent of budgets for bund development, making ponds are provided and remaining 20% has to be invested by beneficiaries . Under APART fish seed, technical support, supplement fish feed, etc is provided.
98. Based on the interaction with the farmers growth in fishery sector is noticed and productivity has increased resulting in economic benefits to the farmers.
99. With respect to the total number projects identified for Environmental Audit, 25 demonstration projects under Fishery (Polyculture, Paddy cum Fish, Beel) have been audited. These demonstrations are located across the district of Kamrup, Morigaon, Nalbari, Barapeta, Darang, Sonitpur and Goalpara in the state of Assam. All the projects are for the year 2021-22. Out of 25 demonstration projects 14 (fourteen) demonstrations are visited by the expert in presence of District fishery officer, DEC and Beneficiaries. The remaining 11 (eleven) is desk reviewed based on the documents and screening reports furnished by the DEC. The findings of the EMF Audits for Fishery Demonstration are discussed in



100. Table . . The % of EMF implemented in fishery sector are discussed in figure below.

101. The major EMF point which are not implemented are fish seed supply and quality of fish seed available in market, handling of dead and diseased fishes from ponds, waste generation and handling, health issues to farmers. There major finding is discussed in audit findings

Figure 3-12: % of EMF implemented in Fishery Sector

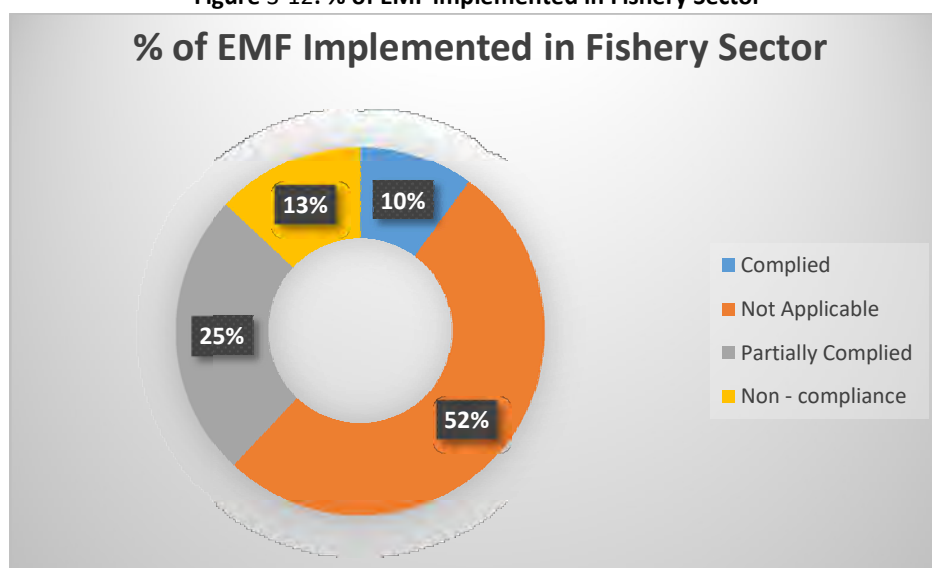




Table 3-16: EMF Brief Summary of overall findings – Fishery

| Sl.no | Project Audit | Observations |
|-------|-------------------------------|--|
| 5. | Review of EMF Screening | EMF screening is in place and is being appraised on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation. Fishery demonstration and training was noted. Training needs to be given to DEC to identify the EMF implementation at demonstration site and to fill the details correctly. The details beneficiaries, contact details, date, signature etc need to be on audit check list. |
| 6. | Climate resilience/adaptation | The selected fish species are hardy and tolerant to climate changes. Bunds are design in such a manner that in case for short spell pf rain flooding does not occurs. The rice variety selected for paddy-cum fish farming is short life and are climate resilience. They are pest tolerance. |
| 7. | Major Environmental Issues | Ponds drains and De-weeding of ponds. Application of DAP, Urea and fish supplement leading to algal bloom in ponds. Handling of diseased and dead fishes needs to be addresses. They should not be discarded in open. |
| 8. | Scope of Improvement | Technical support needs to be enhanced to fish farmers. More modern tool needs to be incorporated. Sensor based D.O sensor need to be supplied. Aeration for ponds need to be implemented. The depth, size, application of DAP, fertilisers, de-weeding need to be more scientific. The output of fish production needs to be quantified. Training needs to be given to identify beneficiaries for skill development. Availability of good quality fish seed should be made available to farmers on demands. |



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Consulting Services for Mid Term External
Environmental Audit

Demonstration Fishery (Polyculture, Paddy Cum Fish, Beel) Kamrup District



Plantation on the Bunds of Fish Farm



Company Board at the entry gate



The Depth of the Ponds needs to be checked



The dredge material used for ponds Bunds without soil testing



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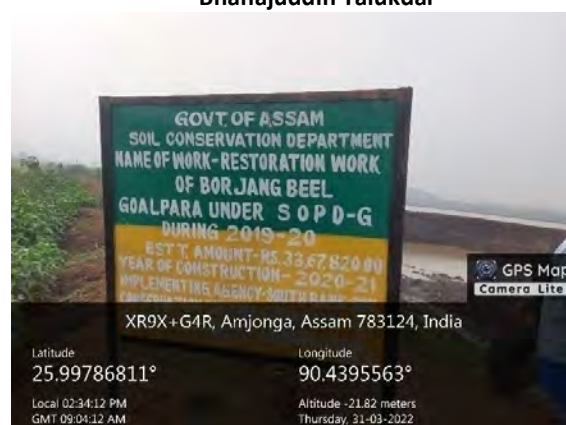
Goalpara District



Paddy Cum Fish –
Khalilur Rahman Mollah



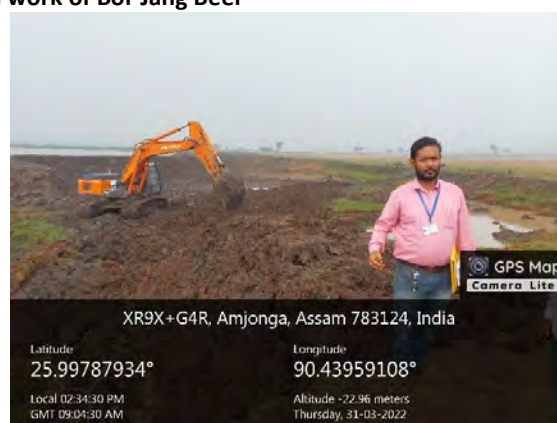
Paddy Cum Fish culture –
Bhahajuddin Talukdar



Development and Restoration work of Bor Jang Beel



Growth of Hydrophytes in Bor Jang Beel

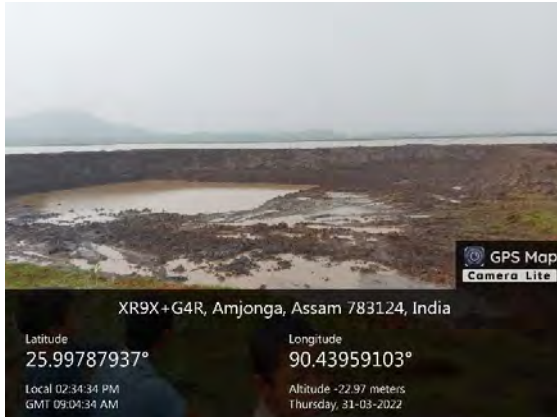


Creation of Fish Rearing Ponds



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Creation of Bunds along the beel to retain water



Connectivity very poor to Beel



Paddy Cum Fish Deminstration at Batabari Village



Plantation of Banana at Pond



IMC trap in the net during monitoring of fish



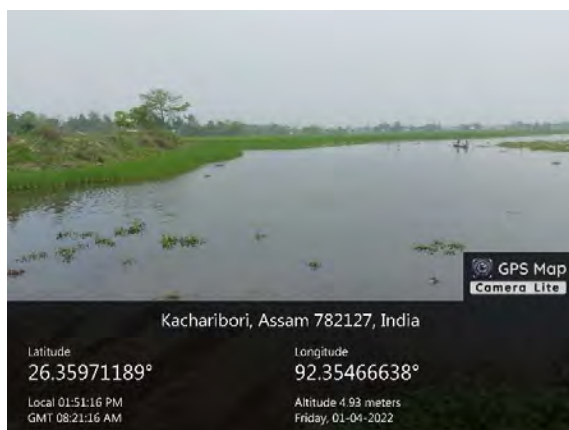
Paddy plantation for fish cultura



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Morigaon District



Mohmara Beel Surrounding by Paddy Field

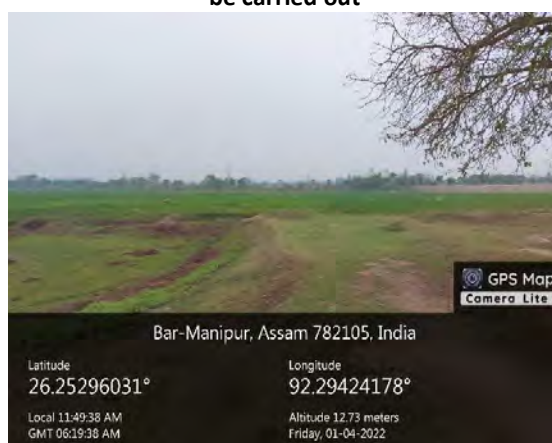


Growth of Hydrophytes reported in Mohmara Beel



Poor Condition of Connecting path to Mohmara Beel

Water Quality need to be checked, de-weeding needs to be carried out



Rearing pond construction work at Manipur Bill

Dried Manipur Bill





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Paddy Cultivation in Manipur Bill



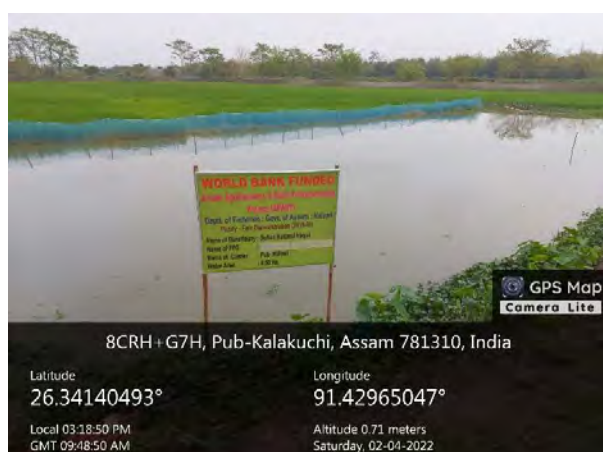
Depth of Raring Ponds need to be regulated.



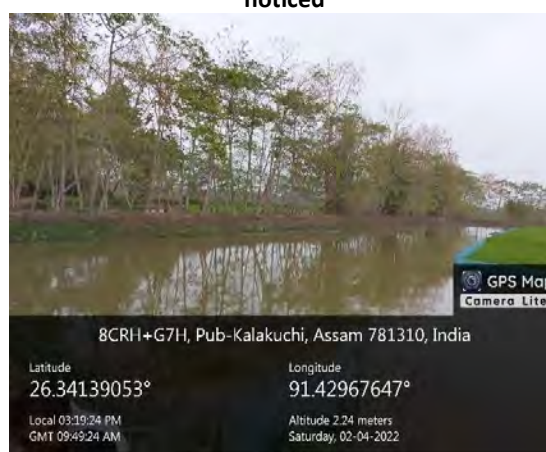
Afiz Ali – Paddy cum Fish Demonstration



Growth of Blue green Algae and Hydrophytes are noticed



Sultan Hakimul Haque – Daddy Cum fish Demonstration



Growth of Blue green Algae and Hydrophytes are noticed



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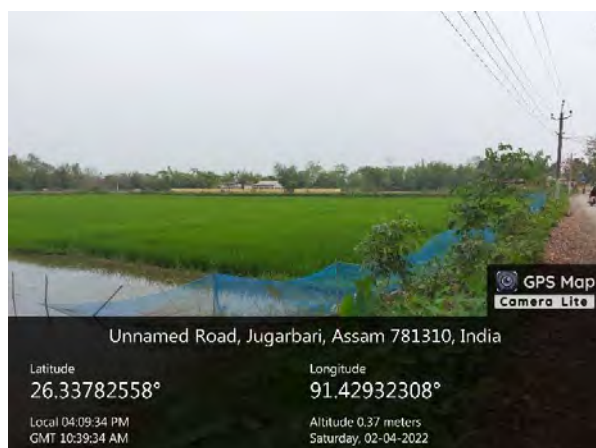
Consulting Services for Mid Term External Environmental Audit



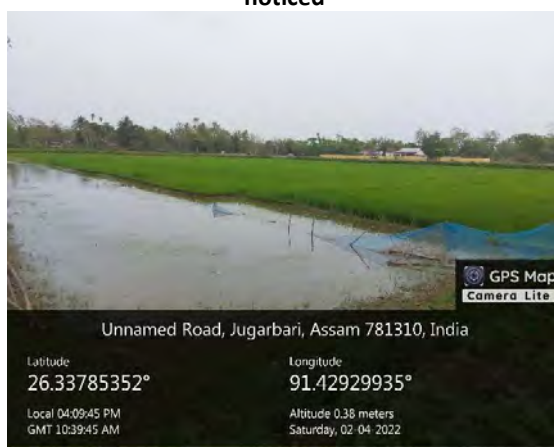
Rabijan – Daddy Cum fish Demonstration



Growth of Blue green Algae and Hydrophytes are noticed

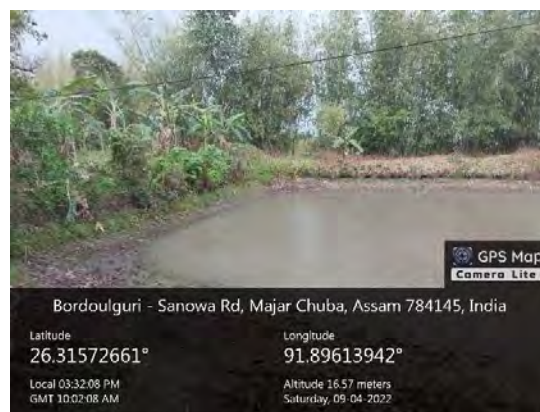


Paddy Cum Fish Demonstration Moinual Haque



Growth of algal Bollom and hydrophytes are noticed.

District Darang



District Sonitpur

Photographs of Paddy Cum Fish



Paddy cum Fish Demonstration, Gahur Ali



Consultation with fish farmer, DEC and Fishery consultants

3.9.11 Horticulture

102. Assam's agro-climatic conditions favour the growth of a variety of fruits and vegetables like coconut, banana, pineapple, orange, etc. Until recently, horticulture was practiced as a non-commercial activity. With adequate infrastructure and resources support, this sector has tremendous potential for growth in the coming years.
103. In the state of Assam Horticulture sector deals with following crops and variety. They are Fruits, Vegetable, Spices, Potato, Onion, Medicinal and aromatics and Mushroom.
104. Under APART Horticulture has been identified under commodities value chain, which is offering promising prospects for economic growth and poverty reduction. The project will support integrated development of climate resilient production of the selected horticulture, crop, spice and condiment value chains in the project districts. Rice, maize, mustard, banana, vegetables (brinjal, cauliflower, cabbage, tomato, potato, pumpkin), spices (ginger) and pulses (black gram, lentil, pea) are taken in to consideration for APART based on area and production in the project districts.



105. Under this mission APART has funded Horticulture sector, which involve provision of seeds, organic manure, pheromones, insect sticky boards (Yellow & Blue) and encourage integrated farming. This mission discourages use of pesticides.
106. Due to increasing climate change, threats and changing market demand for agricultural commodities, APART has promoted climate-resilient and sustainable crop-horticulture production systems. Only those species are selected which are tolerant to increasing incidence of short spells of extreme precipitation and surge in flash floods, and intermittent long dry spells during monsoon. Also, insect out break and tolerant variety to pest attack were considered.
107. Under Mid Term Environmental Audit 25 Horticulture demonstration project are identified which spread over 16 districts. Due to large number of Horticulture demonstrations available in the field, the audit team had carried out 35 site sampling. This comprises of 25 Horticulture Demonstrations as field visit and 10 site under Desk review. These demonstrations are located across the districts Nalbari, Barpeta, Darang, Goalpara, Cachar, Jorhat, Sibsagar and Biswanath. Under APART these projects are considered for financial year 2021-22. The findings of EMF framework Audit for projects implementation by the DEC, Beneficiaries and district horticulture department are discussed in Table .
108. The Implementation of EMF at ground level and as reported during midterm environmental audit is discussed in percentage, which is given graph below:

Figure 3-13: % of EMF implemented in Horticulture Sector (Based on Audit)

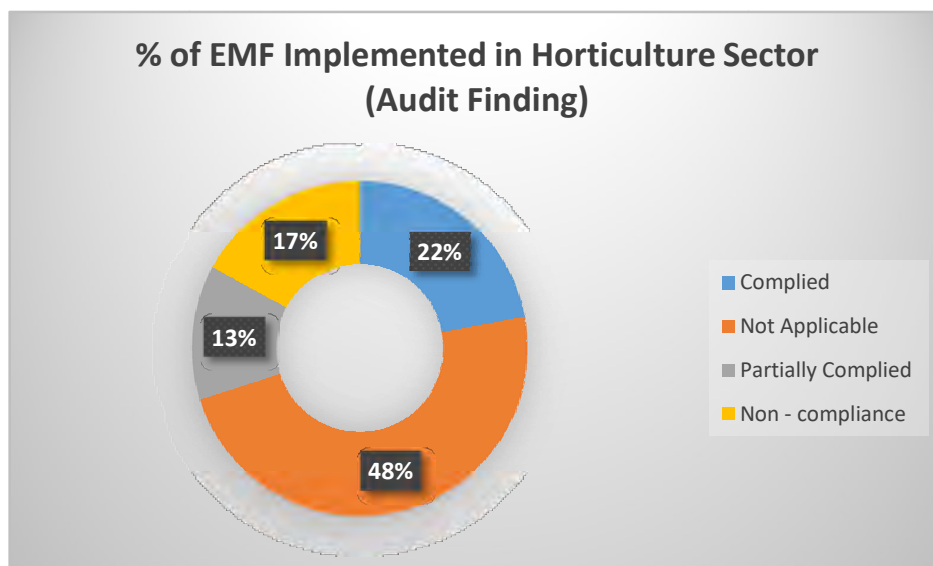




Table 3-17:EMF Brief Summary of overall findings – Horticulture

| Sl.no | Project Audit | Observations |
|-------|------------------------------|---|
| 1. | Review of EMF Screening | EMF screening is in place and is being appraised on site during project visit by DCE. The EMP screening report comprises photographs, with summary of additional recommendation. Agriculture demonstration and training was noted. Uses of PPE kits are encouraged. Training needs to be given to DEC to identify the EMF implementation at demonstration site and to fill the details correctly. Most of the EMF checklist does not have date entry. |
| 2. | Climate resilienceadaptation | Selection of crop variety which are tolerant to climate changes like flood, wing, sudden rise in temperature, short rain spell. Variety which are pest resistance etc are encourage |
| 3. | Major Environmental Issues | Agricultural runoff to nearby field. Application of fertilizer without soil health card. Burning of agricultural waste post harvesting. Use of pesticides to control pest. |
| 4. | Scope ofImprovement | Use of local variety of crops, conversion of agricultural waste into organic manure. Soil test and soil health card for demonstration crops land. Drainage network to drain excess water after short spell of rain. Minimize use of pesticide and encourage integrated farming. Use of PPE kits during application of pesticides. Provision of cold storage for vegetable and horticulture products at district level. Improvement in supply chain from farm to major markets in state. |



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Horticulture Demonstration Photographs

Horticulture Demonstration Photographs – Jorhat



Rajat Gogoi – Pamkin Demonstration



Maize Crop as Border Crop to trap insect



Debashwar Borah – Pumkin Demonstration



High Yield Pumkin Growth, good income to farmers



Kon Gogoi – Pumkin Demonstration



Pheromone Trap for insect pest



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Consulting Services for Mid Term External
Environmental Audit



Yellow and blue sticky trap at Tarun Gogoi



Growth of grass and weed are noticed due to rain and end of cropping season



Pumkin Demonstration of Bubai Borah



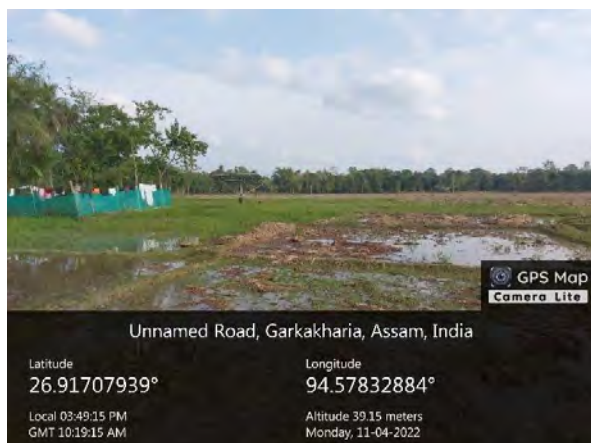
Pumkin crop with good yield as reported by the Beneficiaries



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Horticulture Demonstration Photographs – Sibsagar



Monhman Barua – Beneficiaries



Trishul – Potato storage at Monhman Barua House.



Damaged Royal Ball Cabbage due to Heavy rain and cropping season end.



Disang Sapory Group – Royal Ball Demonstration



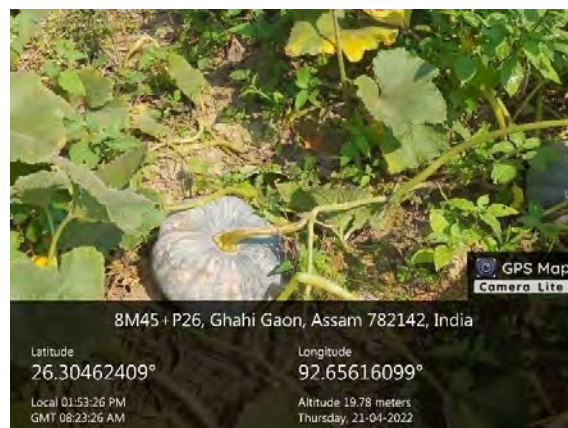
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Consulting Services for Mid Term External Environmental Audit

Horticulture Demonstration Photographs – Nagaon



Dilip Saikia Pumkin Demonstration



High yield pumpkin with good selflife reported



MalabikaSaikia – Pumpkin Demonstration



As reported by the beneficiaries, this variety has good size and better taste and pest resistance



FIG -Pumpkin Arjun Variety with Blue stick to trap insect



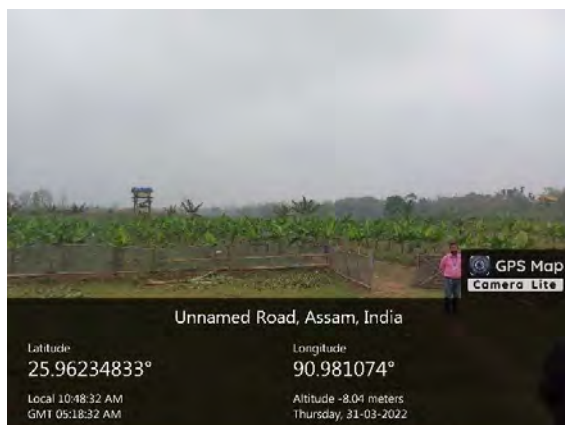
The pumpkin reported by the farmers has good yield, fast growth and pest resistance.



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Consulting Services for Mid Term External Environmental Audit

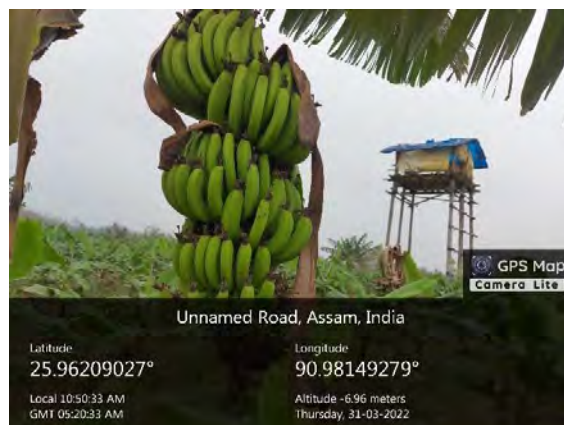
Horticulture Demonstration Photographs – Goalpara



Banana Beneficiaries- Debabrata Rabha



Banana culms discarded into the adjacent river



Matura Banana Demonstration without pest Attack



Banana Farm with temporary fence



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Horticulture Demonstration Photographs – Barapeta

Photographs of Horticulture Demonstration (Received from DEC)



Rabita Kalita, Climate Resilient Potato Demonstration



Paresh Kalita, Minimum Tillage Tomato Demonstration



Binoy Das, Minimum Tillage Tomato Demonstration



Sunil Deka, Zero Tillage Potato Demonstration



Dhanjit Kalita, Climate Resilient Pea Demonstration



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Horticulture Demonstration Photographs – Darang



Yellow Sticky Board to trap insects



Pheromone trap to attract insect



Pragati FIG demonstration



**Pumkins Variety with high yield
Seed g**



Potato Grown under net House



Beneficiaries CIP under Net House



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Storage of Potato by the farmers



Zero-tillage potato field after post harvesting - Aas AVCS -FPG

Horticulture Demonstration Photographs – Nalbari



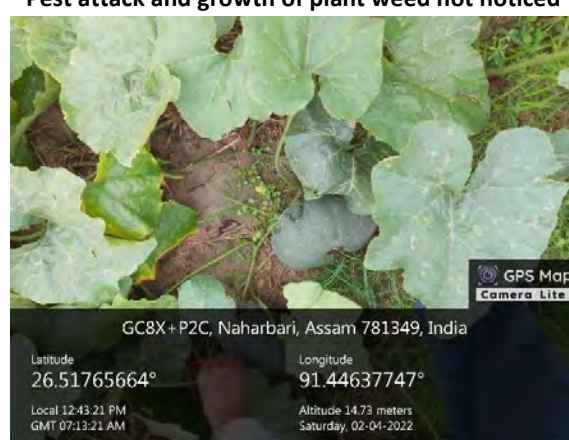
Pumpkin Demonstration – EW-137



Pest attack and growth of plant weed not noticed



No insect attack on leaves noticed



Pumpkin fruit reported to be high yield and better size



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Tillage Potato Demonstration



High production of potato reported by the farmers



Beneficiaries – Dinesh Rajbongsh



Pumpkin reported to be of good yield with no pest attack

3.9.12 Seri - Culture

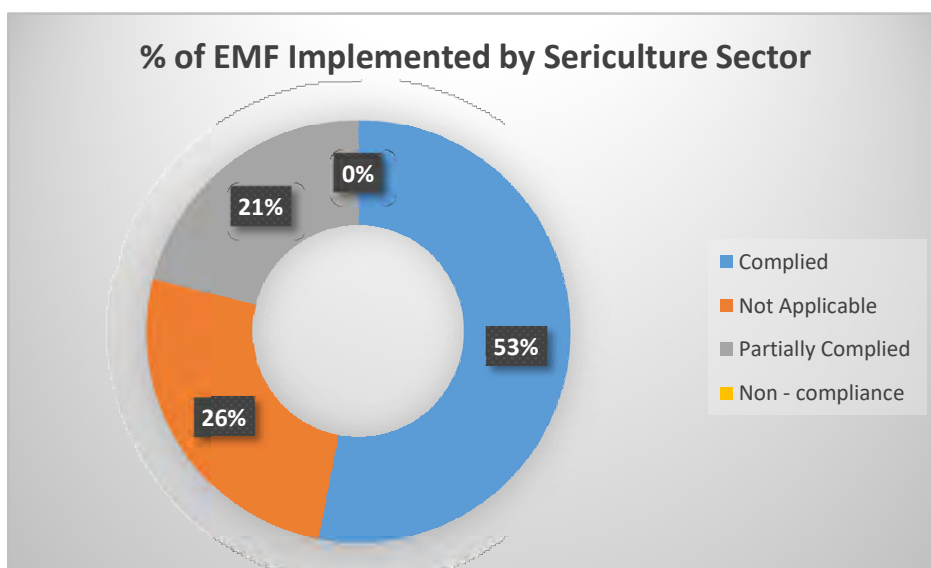
109. India is famous for good quality of silk all over the world. In India there are 6 (Six) state which are leading in Seri culture practices. State of Assam is at third place in raw silk production after Karnataka (lead) followed by Andhra Pradesh. In the financial year 2021 raw silk produced by Assam State is estimated to be 5000 metric Tons.
110. Seeing the state annual production and to bolster the traditional Seri-Culture practice the ARIAS Society under APART had taken up Seri-Culture as one of the audit components. Under audit 25 sites has been considered. It comprises Eri and Moga worm rearing, plantations, fencing, construction of silk work multiplication units, cage distribution for Eri worm rearing, fertilizers, etc. At each district level there is experts on APART side and district government officers who looks after seri culture. The beneficiaries under ARART are given financial assistance to fence the sites and under kind technical assistance, sapling, fertilizers, etc. are provided. Out of 25 sites selected which spread over district kamrup, Jorhar, Sibsagar





and Biswanath, 10 sites are visited and remaining 15 finding are based on desk review. The EMF implementation audit findings are given in **Table 4-3**. The Percentage of EMF checklist implemented in sericulture sector is given in figure below:

Figure 3-14: % of EMF Checklist implemented in Seri -Culture Sector





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Site Audit Photographs for Seri-Culture

Sericulture Demonstration – Kamrup District



Bamboo fence to safeguard the sapling at Raja Ram Rabha



Kesseru plant and Caster plantation farm for Eri Silk Worm rearing



Kesseru plant and Caster plantation farm for Eri Silk Worm rearing – Kapana Rabha



Eri Silk Worm rearing in the net to prevent from flies and birds



Eri silk cocoon – at beneficiaries Gonaram Rabha

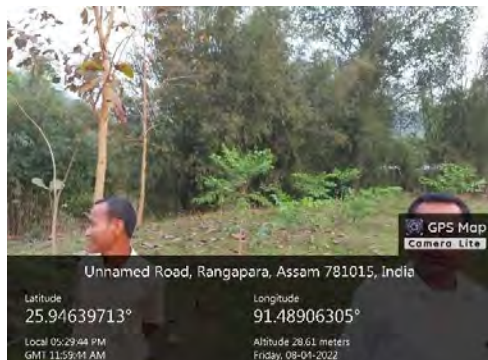


Kesseru plant and Caster plantation farm for Eri Silk Worm rearing



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Consulting Services for Mid Term External Environmental Audit



**Kessuru plant and Caster plantation farm for Eri Silk
Worm rearing – Anjana Rabha**



**Cocoon protected under net having pupa. This would
become adult moth and lay eggs.**



**Kessuru plant and Caster plantation farm for Eri Silk
Worm rearing – Namal Rabha**

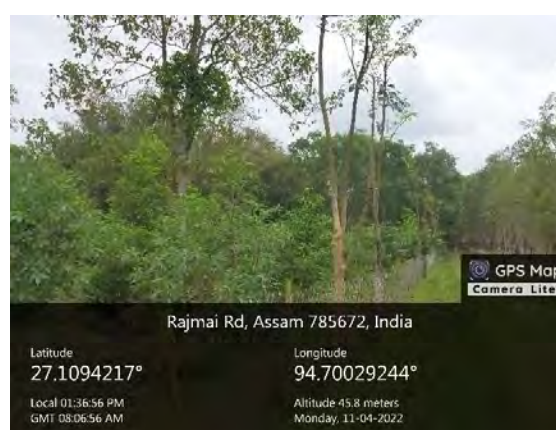


Bamboo fencing under APART funding

Sericulture Demonstration – Kamrup District



Som Tree Nursery – DebajitDehingia



Proper fencing of the nursery



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Consulting Services for Mid Term External Environmental Audit



Dipti Gogoi Nursery for Som Tree Plantation



Benificeries – Jatin Gogot; Silk worm rearing and Multiplication unit under construction



Silk Worm Multiplication unit – beneficiaries Atul Dehingia



4 SUMMARY OF AUDIT FINDINGS

111. The key audit findings along with major non-conformances to the EMF are presented in this section. The good practices observed during the Mid Term Environmental Audit are identified locations wise and is discussed in this subsequent section. There are many good practices and highlighting all of them is not possible. Few major good practices noted during audit findings are as follows:

4.1.1 Over all Good Practices

- During site visit and reviewing the document, it is perceived that an amount of performance security ESHS security has been kept with client as part of total payment to contractor; this would be paid to the contractor after fulfilling the ESHS compliance of the site as also obliged in the contract. This is very appreciative initiative in term of spreading awareness and importance of health and safety aspect on the construction sites.
- The entire project specific contract document found well complied with EMF provisions. The site screening exercise, community consultation, transect walk, initial visit has been well recorded and documented.
- The induction training given to DEC's, DHC, DSSC, Junior Engineer, etc. joining APART are well organized. The intermediate yearly trainings given to them as continuous process has enhance their skill and capability of handling diverse nature of project. During interaction the DEC, shown that they are capability towards initial site appraisal, site selection for demonstration, road inventory, project specific environmental issues, etc were well noted. Their understanding to the standard EMF, EMP and mitigation measures components wise were evaluated at the field during Mid Term Environmental Audit.
- The best procedure adopted to teach the local farmers is identifying anew individual at each demonstration. Each time new farmers are identified for Horticulture, Agriculture, Sericulture and Fishery Demonstration. These farmers are continuously interacting with respective district government exerts. Under ATMA, training is organized to teach the farmers new innovative technique, use of pesticides, fertilizers, bio-manure and how to control disease/ pest. This mission of APART, by the end of project duration would generate skill farmers at village level, block level and at district level, who can share their knowledge to non-demonstration farmers and would guide then to practice environmentally friendly farming technique with less involvement of fertilizer, pesticides, herbicides, proper seed selection, harvesting procedure, stocking, etc with less money involvement.
- It was also noted during Audit interactions that the overall income of the farmers has increased, they are now interested to adopt innovative technique, better seed selection, etc. they are now moving towards market demand supply adopted farming.
- Increase in fish production was noticed, compare to earlier. They are now adopted towards environmentally friendly fish farming.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

- The existing beels which were once good source of fishes to the locals are now dried up due to siltation, change in catchment area, intensive farming, anthropogenic activities, etc are now been taken up under APART. These beels under the supervision of district Fishery department – APART and local residence are now showing good sign of recovery. The best examples are Borjong Beel Development at Goalpara district. The depth of water during the lean period decreases to 1 to 1.5 feet. This depth is not suitable for fish growth. Under APART fund bunds development, rearing ponds are being developed. The hydrophytes removals engaging the local has been expedited. A village level committee has been formed who would manage the beel after restoration work is completed.
- The second-best example is Manipur Beel, District Morigaon, which has completely dried. It stretches over an area of 29 Ha, which is currently under paddy cultivation. Under APART funds, bunds have been proposed to retain the monsoon water and in addition fish rearing ponds has been proposed. This activity of APART would again restore the beel and would improve the local environment and ground water recharge.
- Under horticulture Demonstration, farmers were encouraged to follow pesticide free farming, provision of yellow and blue stick Board, Pheromone Traps are provided to beneficiaries.
- As an environmentally friendly horticulture practice use of chemical and herbicides are been restricted. Biological methods have been adopted. Provision of bio-compost manure, desire quantity of fertilizers, inter crop plantation, etc were encourage.
- Under dairy, renovation of existing labs would increase the milk sampling quality at the district level. This is currently under stress condition due to limited number of milk testing laboratory.
- In the piggery sector bio-security methods in from of primary screening at the entrance gate with Potassium permanganate in water was noticed. the same was noticed at entry point to piggery sty units. The piggery sector is providing good variety piglets to the farmers. These inbred piglets before sold to the farmers are tested against African Swine Fever (ASF) virus as a bio-security measures. The species under breeding i.e., Large white Yorkshire and Hampshire are more economically viable. There have good quality and quantity of meat and fast growing. They are resistance towards many pig diseases.
- The piggery units at Alpco Khanapara, Guwahati are well ventilated. The waste and urine are collected in urine ponds and then transferred to septic tanks. To enhance environmental condition bio gas plant provision has been proposed. This gas will be used for cooking. This would reduce Green House Gasses emissions.
- The FPC/CSC at Uttatan Krishi Producing Company Limited under APART fund has procured farm tools like tiller, thresher, Paddy thresher, Paddy hasket machine, etc. These tools availability for the locals on rent has ease the farming practice. Earlier there was no centralize farming tools available for the farmers. Under the same Farmer Producing company there are 1580 beneficiaries across 60 villages. It was noted during the audit, that the beneficiaries directly sold their farm products, and fetch them good price. The middle man involvement is almost negligible.



- Implementation of Bio-engineering measures like plantation of shrubs to prevent cutting of road embankment and stone pitching adjacent to cross drain structure was noticed at Bokora – Chitada road in Majuli district.
- Land lease, NOC from related department observed at many of the sites.
- The waste handling for market under construction is well planned. Vermi-compost pit has been proposed to convert organic waste into manure. RCC mounted waste drying bed has also been proposed and noted during site visit.
- To stop open defecation, all the proposed market are having separate toilets for Male and Female (6 in Number Each). These toilets are provided with soak pits and septic tanks.
- Safe drinking water with proper drinking facilities has been planned and noted during audit. A separate rest area has also been proposed for people visiting the market.
- At all proposed renovation of warehouse, rain water Harvesting has been considered in the lay out Plan. This would recharge the ground water.
- Proper Asbestos management plan was adopted for handling asbestos waste generated at Kamrup warehouse.
- Medical kits with appropriate medicine and date validity were noticed at most of the construction site.
- Integrated pest management was noticed for all horticulture sites. It is environmentally friendly practice. The farmers avoid use of chemical and pesticides to control pest.
- Yellow and blue Sticky boards and pheromone are installed within horticulture farms to attract insects and pests. An environmentally safe practice.

4.1.2 Component Wise Good Environmental Practices

A. Infrastructure (Road)

- Climate resilience road is constructed which include structures like culverts (cross drain structure) to prevent flooding, pavers block road which are tolerant towards water and heavy rains. Embankment stabilization by grassing,
- Stone pitching to prevent erosion at culverts and near other water bodies.
- Tree plantations
- Project information board at each road which have completed construction/ or are under construction.
- Provision of PPE Kits to labors, safe drinking water to labors. Provision of cooking gas at construction site.
- Concrete crash barrier at high embankment area



B. Market

- Provision of safe drinking water, toilets with septic tanks.
- Provision of vermi-composting to convert organic waste into manure
- Provision of climate resilience roof, cross wind raised platform, pavers block internal roads, drains
- Replacement of wood structure with metal structures.
- Provision of safety kits to labors, cooking gas, etc.
- Provision of dust bins and rest area
- Provision of solar lighting,
- Provision of emergency contact number at labor camps

C. Warehouse Construction work

- Provision of safe drinking water, toilets with septic tanks.
- Provision of climate resilience roof, cross wind raised platform, pavers block internal roads, drains
- Replacement of wood structure with metal structures.
- Provision of safety kits to labors, cooking gas, etc.
- Provision of solar lighting,
- Provision of emergency contact number at labor camps
- Peripheral green belt development
- Rain water Harvesting has been considered in the lay out Plan

D. ATMA/DICC

- Provision of Toilets with Septic Tanks.
- Provision of safe drinking water
- Use of energy saving fixtures like CFL bulb, low voltage fans, provision of large windows for external light reaching rooms.
- Use of lead-free paints
- Design as per climate resilience for roof top, drainage, approach road, etc.

E. Piggery – AHVD Improve Bio-Security in Nucleus Pig Breeding Farm

- In the piggery sector bio-security methods in form of primary screening at the entrance gate with Potassium permanganate in water was noticed.
- The piglets before sold to the farmers are tested against African Swine Fever (ASF) virus as bio-security measures.
- The species under breeding i.e., Large white Yorkshire and Hampshire are more economically viable.
- In piggery units at AlpcoKhanapara, Guwahati, the waste and urine are collected in urine ponds and then transferred to septic tanks. To enhance environmental condition bio gas plant provision has been proposed. This gas will be used for cooking. This would reduce Green House Gasses emissions.
- Three tier screening for staff before entry into the sty area.
- Proper landscaping is noticed
- The sty roof, design, cross wind structure, etc are design adopting the climate resilience features.
- The manure (dried dung) is used for growing pig fodder at Sonapur



F. Horticulture & Agriculture

- Use of pheromones to attract and trap insect which are pest to crops.
- Use of blue and yellow sticky board to insect trapping
- Integrated pest management by adopting border crop – maize and intercrop like French beans and marigold.
- Application of biopesticides like neem oil
- Use of vermicompost, rhizobium, micronutrient, etc
- Use of climate resilience variety of paddy, potato, tomatoes, pumpkins, cabbage, etc.
- Provision of storage facilities for storage of potato, paddy.

G. Sericulture

- Provision of 450 sapling of work fodder plant
- Provision of fertilizers and organic manure
- Use of work fecal matter as manure
- Provision of worm cage for rearing
- Funding for construction rearing silk worm to supply larvae to silk worm rearers.

Road – Good practices photographs



Project Information Board at approach of all roads constructed under APART



Pavers Block roads which are hard and eco-friendly



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Cross drain structure and stone pitching to prevent cutting and erosion



Tree plantation along operational roads



Cooking gas provided at labour camps in place of woods.



Septic Tanks toilets provided at labour camps





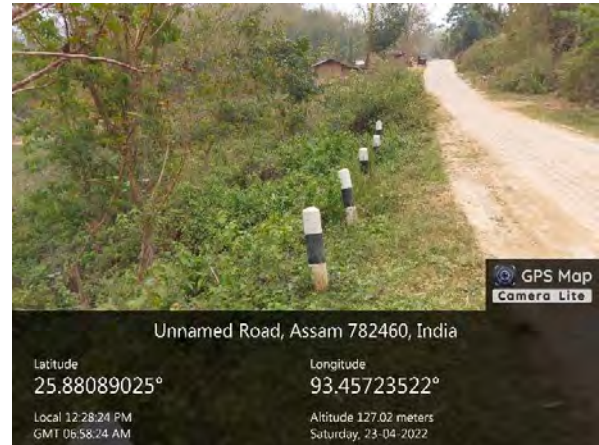
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Consulting Services for Mid Term External Environmental Audit

Medical kit at construction site and labour camps



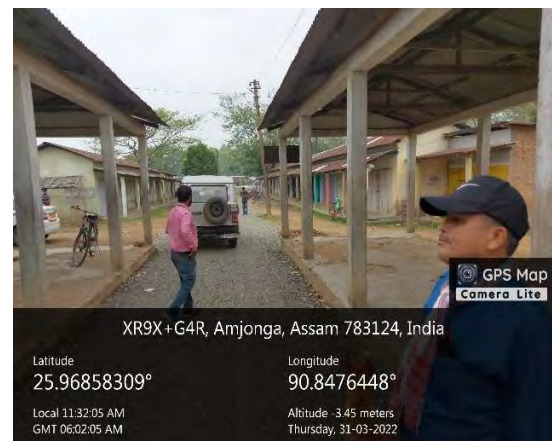
PPE kist for labours at road construction office



Minimize tree felling along road side under construction in Noagaon district

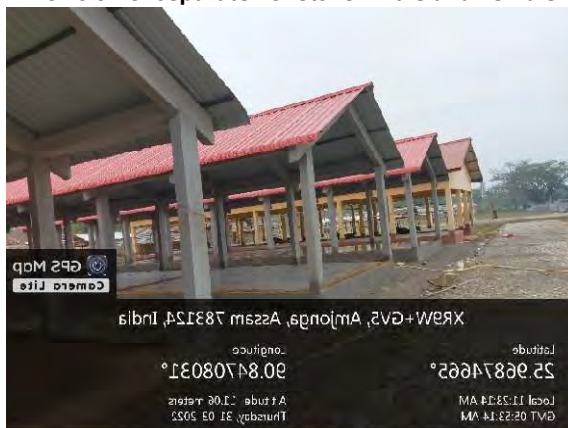
Concrete crash barrier along roads under operation in Karbi Anglong district

Good Practices – Photograph for Market Construction



Provision of separate Toilets for Male and Female

Well lines internal roads within shops





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Climate resilience roof top with metal roofing



Cross wind raised platform – Climate resilience structure



Working wearing PPE kits for construction work



Vermicomposting tank constructed at market area

Construction of lined internal drains



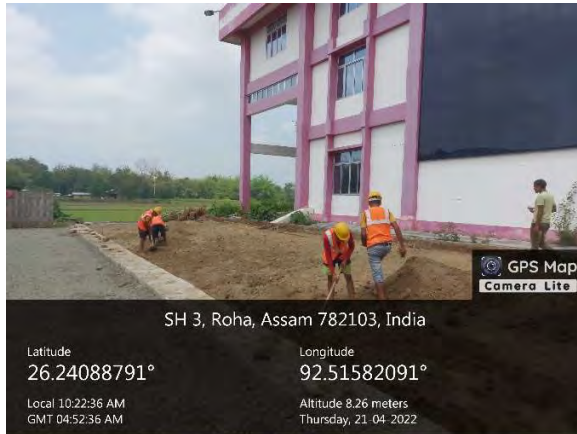
Provision of emergency contact number at labour camps



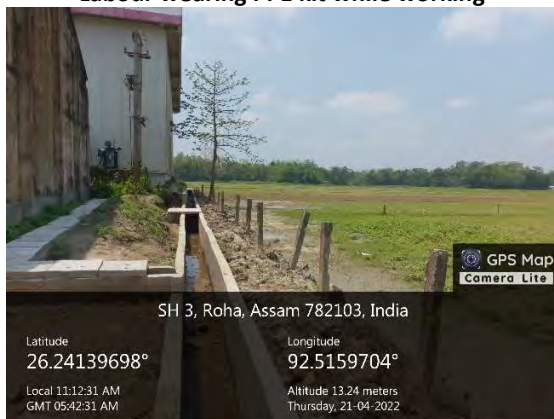
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Good Practices Photographs – Warehouse construction



Labour wearing PPE kit while working



Peripheral drain & internal for storm water

Raised platform of Warehouse.



Roofing of warehouse meeting climate resilience specification. Very high roof to maintain internal cooling



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Consulting Services for Mid Term External Environmental Audit

Good Practices for ATMA and DICC Buildings



Interior of the DICC Building glowing with external light



DICC Building, with paver block roads



Toilets with septic tanks



ATMA Building with climate resilience features



Lead free interior paintings



FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit

Good Practices photographs for Piggery Units *Photographs of Govt. Piggery Farm, ALPCo. Khanapara, Kamrup District*



Bio-Security Measures Adopted at Entry Gate by providing water wheel deep with Potassium Permanganate as disinfectant.



Dead Animal Disposal Pit within breeding farm



Piglet selling points.



Bio-security at the entry point of sty. Potassium Permanganate at entry gate. Shoes deep point.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Internal roads well developed



Pig Fodder Cultivation within Pig Farm premises



Drains noticed all along the sty



Selling point of piglets at entry gate to restrict the entry peoples within farm premises

Horticulture Demonstration Photographs – Jorhat



Rajat Gogoi – Pamkin Demonstration



Maize Crop as Border Crop to trap insect



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit



Pheromone Trap for insect pest



FIG -Pumpkin Arjun Variety with Blue stick to trap insect



Potato Grown under net House



Trishul – Potato storage at Monhman Barua House.



Yellow Sticky Board to trap insects



Rice cafeteria with 10 variety



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Good Practices Photographs - Sericulture Demonstration



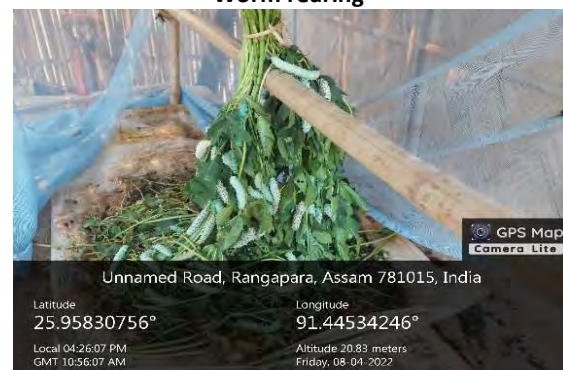
Bamboo fence to safeguard the sapling at Rajya Ram Rabha



Kesseru plant and Caster plantation farm for Eri Silk Worm rearing



Construction of Silk worm multiplication units



Eri Silk Worm rearing in the net to prevent from flies and birds

4.1.3 Safeguard Documentation

- The safeguards document is well documented.
- During site visits it was noted that the DEC's are using the standard EMF which is already approved by the World Bank for site identification, project screening during construction phase, midterm project appraisals etc, all the document are well preserved with the DEC.
- During Mid Term External Audit, while interacting with DEC's it was observed that they are well aware of all the safeguards documents component wise. They are carrying out screening using approved EMF, with specified format for specific components. They are very clear in their screening orientation which EMF format should be used for which stage and type of project.
- The DEC's are aware of CtE, CtO applicability, forest NoC, tree felling permission, GoA and Gol project specific notification. They are complying with the state regulatory requirement.



4.1.4 Summary of Audit Findings

Market – Ongoing/Completed

- Needs to improve fire safety issues. Except BechimariBazar Market under construction none of them are aware of the fire Hazard.
- Electrical hazard is well noted. Loose electrical wires are noted in the construction area and construction camps.
- Fencing of Market Place needed. People can move from all directions. Though entry and exits route has been proposed for vehicles.
- Working at height and improper scaffolding was noticed. The labors working at height without safety belts, boots and helmets noticed.
- The construction camps and labor camps need proper arrangement. Loose electrical wire is noticed. Cooking at labor camp with fire wood. The number of labors in each rooms exceed the permissible area/ per labor requirement. The overall sanitation at labor camp needs to take care.
- Safety alarm system needs to be installed.
- Market flooding has been reported by the shop keepers at GolaghatBokakhat daily Market. All the internal drains lead into the main drains. The main drain is part of National highway road, which deals with road storm water. When it rains, the drain gets choked due to excess storm water leading to backflow of storm water into market. This is resulting in flooding of Golaghat Bokakhat market.

Warehouse:

- Except Kamrup and Nagaon districts the warehouse proposed at Darang does not follows Asbestos Management Plan approved by ASPCB or APART. A well-defined SOP for Asbestos was prepared by APART. The DEC should look into the matter.
- Construction and Demolition waste at all sites need to be handled as per Construction& Demolition Waste Management Rules, 2016. They are reported within site unsegregated.
- The warehouse at Nagaon does not have complete fence from all sides. Under APART 100m fence has been proposed, the site is not secure. It is open for almost two sides.
- The workers working at height are not wearing safety belt. The scaffold and hand railing are not properly installed.
- Loose electrical wire is noticed.

Farmers Producing Company (FPC)/CSC



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

- The FPC needs to obtain Consent to Establish (CtE) and Consent to Operate from SPCB. Out of 18 PFC under audit, The FPC Uttaran Farm Production Company (Fish Feed), Uttaran Krishi Producer Company Ltd. Kamrup district has applied the CtE. The M/s TeteliaAgro Organic Producing Company Limited, Kamrup and Majuli River Bank Farmer Producing Company, Majuli had obtained the CtE. The DEC and FPC members are aware about the CtE/CtO process. They need to expedite the NoC process.
- After establishment of FPC, the FPC operators need to obtain Consent to operate from the State pollution Control Board.
- At PFC Amlighat Banana Producer Company, Kamrup, loose electric circuit was noticed. Electrical hazard needs to be fixed.
- Needs to strengthen process waste handling. Though most of the wastes are reusable form, but site-specific waste management plan needs to be prepared and approved.

Dairy – Lab Renovation/ Expansion of Existing WAMUL

- The CtE needs to be obtained for expansion of WAMUL milk processing unit prior to start of construction work. The CtE has been applied, but not yet obtained from PCBA. Construction work is under progress.
- Before start of production, the WAMUL need to Obtain Consent to Operate (CtO) from State pollution control Board.
- The working at height safety norm like provision of hand railing, safety belt, PPE kits need to be provided to workers. The EHS site officer should ascertain at all workers at site use PPE Kits.
- The confined space and deep trench cutting need proper fence and should comply with safety measures. The cut trench wall needs to be stabilized. Collapse of cut trench is noted. Action needs to be taken by the contractor.
- Construction site clearance and hygiene need to be maintained.
- The labor camp is poorly maintained. The overall hygiene needs to be improved. There should be proper toilets and bathing area.
- Wood based cooking was noticed at site labor camp. The contractor should provide LPG gas.
- Fire extinguisher at project site and labor camps needs to be provided.
- Loose electric wire noticed at construction site, labor camps and within the rest area of labor camp.

Roads





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

- The contractor procures borrow earth by opening new ponds for the locals. NoC from gram panchayat obtained. The contractor needs to have consent from the individual land owner.
-
- The Cut trench for construction of culverts for Rehabilitation of existing Komoldoipur to Goroimari Road (District Sibsagar) need barricade.
- The embankment at few locations washed off.e.g.Dilaji - Rongklarbong Road in district Karbi Anglong.
- Hamlai to longnit link road (Under Construction) at Karbi Anglong involve cutting of large number of trees. No tree numeration done; it is located in wooded area with thick tree growth.
- In Hamlai to longnit link road (Under Construction) at Karbi Anglong, the labour camps (Rest area) and toilets is located in wooded area. The toilets need to be either soak pit type or should have septic tanks. Wood based cooking noticed at construction sites.
- Mitigation measures to control dust needs more attention water sprinkling carried out but not at all the locations.
- At some of the sites the Labor noticed working without PPE kits.
- The source of quarry materialneeds to be from authorized vendor.

Piggery

- The piggery units at Govt. piggery farm at Rani Kamrup need strengthening to compact diseases. Mouth – Foot fungal disease was noted. The infected individuals need to be kept separately from the rest.
- The piggery units at Base Farm Piggery (Farm Gate, Khanapara), Rani Pig Breeding Govt. Farm and Govt. Pig cum Poultry Farm (Lumbring Road Dephu) Karbi Anglong have poor waste management practice. Pig faecal matter was noticed dumped in open.
- At the Diphu farm, holding tanks, septic tanks, waste water soak pits are all silted. No sty waste is being source to it. Instead, they are reaching low lying area.
- At base Farm, Khanapara adequate drainage is reported but issues lie with final out fall of sty drains.
- At Base Farm Govt. breeding farm, Khanapara, the effluent discharge from the sty goes into water pond within premises. the soak pits and septic tanks are all silted. The operator should de-silt the tanks. If possible construct new septic tanks with soak pit.
- The boundary wall of Diphu Farm, Karbi Angling was broken. Need reconstruction.

Horticulture and Agriculture





- Site drainage is major issues. When rains happen, the cultivated farms get inundated damaging the standing horticulture crops.
- Most of the site is rain fed, bunds need to be strengthened.
- The Banana Farm at Goalpara, village madangpII reported presence of elephant route. The elephant visits the sites. The cut banana culms are thrown in river adjacent to farm. This would result to damage to river aquatic habitat.
- During interaction it was noted that the farmers are not wearing complete PPE kits

Fishery Demonstration – Beel, paddy cum fish and Polyculture

- Growth of algal bloom is noticed in most of paddy-cum fish farming ponds. These are mostly due to poor maintenance of ponds, improper water circulation and high application of nitrogen and phosphorous as fertilizers.
- There is no ponds drains network to drain water.
- All the hydrophytes removed from the ponds are dumped along the pond's embankment. They again reach back into ponds with storm water.
- The infected dead fishes are discarded in open. SOP for handling dead fish needs to be prepared by APART and approved by district fishery officer
- During visit most of the ponds witness growth of Eichhornia crassipes. This would decrease fish growth and D.O level in ponds water. This would also result in ponds entering into eutrophication.
- Application of fertilizer as growth regulator has been noticed.
- All the ponds have steep cut side wall, no sloping of side noticed.
- The connectivity to Manipur Beel, BorjangBeel and MohmaraBeel need improvement. All-weather route does not exist.
- In Manipur Beel, death of small fishes reported in large number post monsoon by the locals. This is due to paddy cultivation in the beels by the locals. They are using herbicides and pesticides for control of weed and pest.

Fish Seed Multiplication Centre

- Rangia Fish Farm is receiving waste water from the nearby houses. They are creating water pollution
- Security is one of the major issues. The boundary wall is broken and local are noticed within multiplication unit.
- In the fish rearing ponds at Rangia Fish Farm, cloth washing activities are noticed.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

- Asbestos waste dumping was noticed adjacent to rearing ponds at Ulubari Fish Seed.
- Blue green algae growth was noticed during audit in the fish rearing ponds of Ulubari Fish Seed multiplication units.
- The oxygen cylinder reported at Ulubari Fish Seed multiplication units are not properly stored, the Oxygen meter is damaged and removed.

4.1.5 GAP Analysis/Reporting

112. During Mid Term Environmental Audit. Gap are reported in contract document BoQ item and Environmental Management plan budgeting for projects involving civil and construction work; gap are also notice in EMF implementation in all the Project components and subcomponent including horticulture, agriculture, fishery, sericulture, etc. The summary of Gap identification is given in

Table 4-1: Information on Gap Reporting in Each Project Components

| S.No | Project Components | Gap Analysis | Recommendations |
|------|--|--|--|
| 1. | Road, market, Warehouse, WAMUL, Piggery, Fish Multiplication Centre (Civil Work) | EMP as part of Contract document exists. Lacuna was noticed in implementation part. e.g., afforestation, handling of C&D waste, asbestos waste at warehouse etc. | Afforestation for each tree cut need to be implemented. Budget has been considered in BoQ item. Waste handling and disposal need strengthening. C&D waste can be used for filling works. |
| 2. | | The contract speaks about borrow earth, procurement of sand, gravels, quarry material etc. procurement from authorized vendor | The Contract does not speak about the location, source identified, etc. for borrow earth. The EMP in contract should have basic information. During Audit it is reported that borrow earth are taken from local villagers, but no contract reported. MoEF&CC guideline for borrow earth not fulfilled. Borrow management and closure plan needs to be developed and implemented by the contractor. The DEC should prepare borrow earth management plan and get it approved by the nodal/ |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Project Components | Gap Analysis | Recommendations |
|------|--------------------|--|--|
| | | | PWRD. The approved management plan needs to be implemented by the contractor. |
| 3. | | EMP for Asbestos waste handling is in place and approved by APART, but implementation needs to be strengthened | Asbestos handling should be as per CPCB guideline. The contractor is not allowed to dump asbestos waste in low-lying area. |
| 4. | | Occupational Health and Safety (OHS) is part of contract for most civil, work. But implementation on part of contractor is not Satisfactory. | OHS implementation needs improvement. register for Tool box talk, use of PPE kits etc. should be expedite. The DEC should check that the PPE kits are available with contractor. |
| 5. | | As per contract, the boundary wall needs to be provided for fish multiplication centre. The boundary wall at fish multiplication centre is not complete. | Need corrective action for fish multiplication centre. Outsider are reported within premises. |
| 6. | EMF Implementation | EMF training need to be pursued in a more focused way especially related to occupational health and safety of farmers and animal husbandry people. No health check-up record was found available in Pig farms of the workers working there | The half yearly health check-up for staff should be mandated for piggery sector. EMF training to farmers or sensitization on use of PPE kit by farmers should be expedited by DEC. |
| 7. | | Ensure that all checklists are dated and fully signed by DEC as well as Project managers or any other signatories as the case may be | During audit it was reported that EMF checklist or screening report are not signed by DEC and Project Manager. The date of audit is not cleared. |
| 8. | | Monitoring frequency must be clearly followed and all section of the sheet must be addressed by Yes, No or Not applicable and in Remark section, appropriate information should be clearly filled in for follow up | The monitoring frequency of EMF implementation checklist need filled. The audit stage for project should be spelled out by DEC. . On site training to DEC on filling EMF checklist should be considered. |
| 9. | | Use of banned pesticide is still an issue and can be treated as non-conformity of concern vis-à-vis EMF provisions. | Use of banned pesticides reported by the farmers specially in brinjal and cabbage demonstration. DEC should sensitize the |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Project Components | Gap Analysis | Recommendations |
|------|--------------------|--|---|
| | | | side effect of pesticides to farmers |
| 10. | | The awareness of EMF document as such was found low among stakeholders during audit | Awareness about EMF document need to be explained by DEC. It can be incorporated as part of contract in Agriculture and Horticulture sector. |
| 11. | | The contract document for horticulture and Agriculture should be more elaboration. It should have condition of Soil testing, restriction used of pesticides, and EMF point spelled out. | The contract should be more elaborative for fishery, horticulture and agriculture sector. Do and don't should be clearly spell out. |
| 12. | | The beel work lacks surface water and soil quality monitoring. | The restoration and rejuvenation of beels should have surface water quality and soil quality report before start of dredging work. During dredging, the D.O, TTS and Nitrogen and Phosphorous level in water need to be tested. |
| 13. | | The training and knowledge sharing to fishery beneficiary need to be improved. The district fishery officer & DC should visit the sites frequently. . Training on aquaculture and fishery is felt needed to DC and FIGs. | During audit it was felt that training in fishery sector is needed. In most district fishery expert needs to be appointed. |

4.1.6 Major Issues / Challenges

113. Assam Agribusiness and Rural Transformation Project (APART) has come up with a competitive funding mechanism for supporting innovative approaches to deliver financial services at a scale in the agribusiness sector in the state. To support ecosystem/mechanisms in the agricultural domain of the state APART has established the first of its kind initiative. This initiative has major issues and challenges.
114. The major issues are to target each project components which are climate resilience, eco-friendly, energy efficient, minimum water with no environmental pollution. During implementation, the major issues are to explain the project at the grass root level with available limited resource. The project is categorized in eight components, which span over sixteen districts in the states. Anew of its kind. During audit it is noted that there is one DEC in each district. He has to look into all the project components like roads, warehouse, market, agriculture, horticulture, fishery, etc. Even some DEC has to take care of more than one district. He has to carry out initial site screening, prepare screening report, forward to nodal office for approval. Coordinate between government department and beneficiary. The other issue is to





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

get the new farmers (beneficiary) accept the APART mission. They have to organize meeting, village level interaction engaging government department. Travelling to remote area for identifying new beneficiaries. Poor and non-accessible roads are also one of the challenged faced by the DEC's..

115. Project implementation during given time frame. Getting CtE/ CtO and other approval in given time limits. Resource identification and sourcing to construction site.
116. It was also observed during audit that district environmental coordinators find it difficult to motivate contractors for occupational health and safety measures such as PPEs since their direct interaction is limited and non-conformities raised during monthly monitoring are not closed due to this lack of communication. Perhaps a better coordination mechanism among contractor, implementing agency and DEC's can resolve these issues.
117. To Select demonstrationcrop species which are climate resilience, short life and with high yield and acceptable to farmers and consumers is also a major challenge.
118. Use of pesticides by beneficiary without informing concern District Coordinator. The farmers purchase these pesticides and herbicides without informing DC.
119. It was also observed t that monitoringEMF checklists on several occasions came out with non-conformities with respect to mentioned provisions. But there was no further information how they were closed. For instances, in case of question raised on disposal method of pesticide container waste, no clear answer emerged as to how disposal is done.
120. It was also observed that all stakeholdersrequire sensitisation on environmental safeguard provisions in a bit more elaborate and focused manner. The solution to all challenges is to increase number of DC at district level. More engagement with beneficiariesi.e., horticulture, agriculture and fishery. DEC for civil construction work should be separate and addition DEC should be appointed for non-civil construction work. District coordinator for fishery sector should be appointed in all district Training should be given to the contractors and their staff prior to start of civil construction work. Penalty clause in contract to be mandated for implementation of EMP and OHS. Awareness to farmers for discouraging pesticide usages.

4.1.7 Suggestive Measures and Action Plan

121. Based on the issues observed during the in audit, corresponding corrective measures to be taken by respective agencies is elucidated in **Table 4-2**.

Table 4-2: Major Environment Issues and Suggestive Measures: Action Plan

| Sl. No. | Observations | Env. Issues | Suggestive Measures | Responsible Agency | Supervision Responsibility |
|---------|---|-----------------------|--|--------------------|----------------------------|
| 1. | CTE /CTO for fish feed/ Paddy, oil extraction FPC | Regulatory compliance | CTE/CTO to be made available at all applicable area (fish feed,paddy processing units/ oil extraction units, milk processing | FPC/ DEC | DEC/ PWRD/ ARIASS |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| Sl. No. | Observations | Env. Issues | Suggestive Measures | Responsible Agency | Supervision Responsibility |
|---------|---|------------------|---|------------------------------|----------------------------|
| | | | units) need to be obtained | | |
| 2. | Accident reporting system to practice at contractor level | Safety risk | Accident reporting system, first aid case record to be maintained for active construction sites | DEC / Contractor | DEC/ PWRD/ ARIASS |
| 3. | Labour shed & hygiene | Labour welfare | Basic facility like sitting, gas fuel, toilet, hygiene at labour camp, implementation of COVID-19 protocol, etc. | Contractor | DEC/ PWRD/ ARIASS |
| 4. | Leftover C&D waste disposal at renovation sites | Waste management | Left over at renovation site is required to make the site properly restored at completion | Contractor | DEC/ PWRD/ ARIASS |
| 5. | Road cautionary signages | Road safety | Both side visible signages to be provided for narrow rural roads | Contractor | DEC/ PWRD/ ARIASS |
| 6. | IPM training at beneficiary level, about doses of fertilizer & pesticides at farm | IPM | IPM training to beneficiaries for using right doses of fertilizer, using organic manure, crop rotation with legume should be facilitated. Under APART IPM training are given, but need more strengthening. | Dist. Agriculture Dept. /DEC | DEC/ ARIASS |
| 7. | Training needs to be given to all beneficiaries under fishery | | | Dist. Fishery Dept. / DEC | DEC/ ARIASS |

Draft Action Plan

122. A draft Action Plan has been recommended based on the findings reported during Mid Term Environmental Audit. They are as follows:

- Implementation of approved EMF Monitoring Checklist:** APART should clearly spell out, the stages of project at which EMF monitoring checklist needs to be filled by the DEC. This is not clear. During training/ induction too DEC this need to be spelled out. E.g., for infrastructure sectors, EMF monitoring checklist need to be appraised during site selection, start of project, mid of project and at closure of construction stage and also during operation phase. Secondly more training need to be given to DEC, especially at demo site. The checklist should have dates, signature of DEC and counter sign by project manager. Clearly mention the stage at which EMF checklist has been filled. The DEC needs to implement and expedite the process.
- The Beneficiary of Horticulture and Agriculture should be discouraged to use pesticide. The District Horticulture and Agriculture Coordinator should implement this.

123. The contractors, beneficiary, etc need to be briefed about the requirement of EMF monitoring checklist implementation. It should be translated into local language and should be made part of all contract. i.e., horticulture, fishery, sericulture, agriculture, etc. English version of EMF checklist was





noted as part of contract document in civil construction work. District Coordinator and Project Manager are responsible for implementation.

124. Warehouse construction / renovation work, should have approved asbestos management plan. . The identification of disposal site should be done prior to start of dismantling work. DEC and Project Manager are responsible for implementation.
3. The solid waste management plan for piggery sector needs to be developed. Conversion of sty waste into organic manure need to be explores. The sewerage network within sty and connecting to septic tanks and soak pitneeds to be improved. De-silting of septic tanks should be done on priority. The establishment of Bio-methanation plant can be explore. This would reduce GHG emission into environment. DEC, Project manager and nodal office should be responsible for implementation. PCU should also intervene in this matter.
 4. The use of solar lighting system at all the civil construction site during operation phase should be encouraged in contract. The % of solar energy generation and usage within premises should be clearly mention.
 5. The quantity of borrow earth and source should be part of DPR. The borrow earth should be sourced from authorized vendor. The borrow earth management at site needs strengthening.Borrow earth closure plan needs to be developed complying with MoEF&CC guidelines. The DEC and Project manager along with PWRD should be responsible for implementation.
 6. The conversion of post-harvestleft out into organic manure should be encourage and should be added as part of contract. The burning of agriculture waste should be discouraged. Nodal officer and Project Manager at contract level and DEC should be responsible for implementation.
 7. The fishery sector needs more strengthening at the district level. Though improvement has been reported after implemented of APART demonstration. Most of the district does not have fishery District Coordinator. The appointment needs to be expedited. This would encourage interaction among the beneficiaries, DC and the district fishery officer. PCU and project managers should be responsible for implementation.
 8. Training to selected beneficiaries and to all fisheries DC at reputed fishery institute. The institute should have carried out similar work in aqua-culture and fish rearing. APART should intervene in this training.
 9. The boundary walls at fishery multiplication centre and at fish rearing ponds need to be expedited and made more secure. During audit presence of outsiders was noticed. Nodal officer and project manager should engage district authority to resolve these issues.



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

The EMP should be made site specific. It should be prepared after site visit. It should clearly spell out mitigations with appropriate budget. EMP and initial site screening should be prepared by the DEC and approve by project manager.

Annexures

Annexure 1: List of Environmental Awareness, Capacity Building and Trainings given under APART

| Sl. No. | Components/sub-components/activities | Target Group | Progress / timeline |
|---------|--|---|---|
| 1. | State level orientation program on environmental safeguard | Nominated Nodal Officer from all OPIUs, Nominated Nodal Officer for Environmental Safeguard from all OPIUs & PCU key staffs | 8th Nov. 2017 |
| 2. | Sensitization Training for compliance with Environmental Safeguard measures under APART | Nominated Nodal Officer from all OPIUs, Nominated Nodal Officer for Environmental Safeguard from all OPIUs & PCU key staffs, Representative from International Agencies | 12 th July 2018 |
| 3. | State level Inception Workshop at Guwahati | Secretaries from all CPIUs, Directors from All OPIUs, Nominated Nodal Officer from all OPIUs, Nominated Nodal Officer for Environmental Safeguard from all OPIUs | 22nd Feb. 2018 |
| 4. | Zonal level Inception Workshop for Zone 2 at Tezpur | Concerned officers from districts, Focal Officer for Environmental Safeguard | 28th Feb. 2018 |
| 5. | Zonal level Inception Workshop for Zone 1 at Jorhat | Concerned officers from districts, Focal Officer for Environmental Safeguard | 3rd Mar. 2018 |
| 6. | Zonal level Inception Workshop for Zone 3 at Guwahati | Concerned officers from districts, Focal Officer for Environmental Safeguard | 9th Mar. 2018 |
| 7. | Zonal level Inception Workshop for Zone 4 at Bongaigaon | Concerned officers from districts, Focal Officer for Environmental Safeguard | 6th Apr. 2018 |
| 8. | Orientation programme for Assam Agricultural University | Concerned officers from AAU, Officers from KVK & RARS | 23rd Mar. 2018 |
| 9. | Project Launch Workshop for Livestock Sector | Concerned officials of AHVD, DDD, ALPCO & WAMUL; State and District level | 29th Mar. 2018 |
| 10. | Strategic Orientation Workshop on Fish Value Chain | DFO, FEO, Nodal officer, Focal officer | 26th April 2018 |
| 11. | State Level Orientation Workshop on Fisheries | DFO, FEO, Nodal officer, Focal officer | 19th May 2018 |
| 12. | Orientation Training for Newly Joined District Environment Coordinator Gr.1 | Newly joined DEC (Gr.1) joined in Jan. 2019 | 21 st & 22 nd January 2019 + one day field training |
| 13. | Orientation Training for Newly Joined District Environment Coordinator Gr.2 | Newly joined DEC (Gr.2) joined in Apr. 2019 | 5 th & 6 th Apr. 2019 + one day field training |
| 14. | PWRD contractor's orientation training (road sector) | PWRD contractors who are working for APART | 7th Mar. 2019 |
| 15. | Workshop on disease preparedness for APART Agri. Horti. commodities | Officials from all CGIAR Institutes, Concerned officials from various OPIUs, DEC, DHC, Officials from PCU, Progressive farmers, etc. | 20th May 2019 |
| 16. | Training of DEC's for screening of 75 rural markets, including questionnaire survey on 20 points criteria for market selection | All DEC, DSSC, DHC, DAMC | 8 th Nov. 2019 |
| 17. | Orientation Program for DEC's on preparation of site specific EMP for market & warehouse | All DEC | 5 th Feb. 2020 |
| 18. | Review meeting on APART with | All Executive Engineers from PWRD and PWRD | 20 th Feb. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| Sl. No. | Components/sub-components/activities | Target Group | Progress / timeline |
|---------|---|--|----------------------------|
| | PWRD Engineers and Contractors | contractors who are working for APART | 2020 |
| 19. | Day long workshop for developing a conceptual framework and Coordination Guidelines on Integrated Pest Management (IPM) | Officials from all CGIAR Institutes, Concerned officials from various OPIUs, DEC, DHC, Officials from PCU, Progressive farmers, etc. | 4 th March 2020 |
| 20. | Orientation workshop for DEC's Group-3 (Virtual mode) | 5 DEC's | 11 th Aug. 2020 |
| 21. | Training on Statutory Environmental Norms with special emphasis on PCBA and Forest dept. requirements | All DEC's, APART key officials, Concerned OPIU officials, Officials and agencies responsible for FPC/CSC formation, etc. | 18th Mar. 2021 |
| 22. | Orientation of PWRD contractors on Safeguard norms | All PWRD contractors, PWRD engineers, DEC's, DSSCs, etc. | 19th Mar. 2021 |
| 23. | Workshop on Establishment of CHC through FPC and safeguard norms associated to this process | All FPC members, Concerned PCU officials, Concerned OPIU officials, etc. | 24th Aug. 2021 |
| 24. | Hands on training for learning techniques of soil and water testing with the help of portable kits | All DEC's, Agri engineer, etc. | 27th Sep. 2021 |
| 25. | Contractor's Orientation on Safeguard | All PWRD contractors working under APART | 5th Jan. 2022 |
| 26. | Induction training for Newly Joined District Environment Coordinator Gr.4 | Newly joined DEC (Gr.4) | 16th Mar. 2022 |
| 27. | Orientation Training for Newly Joined District Environment Coordinator Gr.4 & Refresher training for all DEC's | Newly joined DEC (Gr.4) joined in Apr. 2019 | 19th Apr. 2022 |



Table 1: EMF Compliance Audit Checklist as per Contractual Obligations: ROAD

| S.No | Districts | Karbi Anglong | | Golaghat | Nagaon | | Majuli | Sibsagar | | |
|------|--|---|---|---|---|---|--|---|-------------------------------|--|
| | Name of Project Site | Dilaji - Rongkharbong Road (Completed) | Hamlai to longnit link road (Under Construction) | Goroimari to NikoriGutung (construction) | PhapurKhaiti to Hugaltoi Road (construction) | Nanai Uriagaon to PachimJallah (completed) | Bokora to Chitadar Road (Completed) | Komoldoipur to Goroimari Road (construction) | Na Charingia Road (Completed) | OBSERVATION/ FINDINGS |
| | Environmental Concers (EMF IMPLEMENTATION) | | | | | | | | | |
| 1. | Alignment finalization & Site preparation | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | During DPR stage alignment finalization was done. It almost follows the existing road. Development within existing ROW. No Additional Land acquisitions. |
| 2. | Is transect walk conducted for finalizing the alignment? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 3. | Are consultations conducted with community village council before alignment finalisation | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | During Audit, it was confirmed by the villagers that consultation before start of work was conducted. Village level committee was also formed. |
| 4. | Suggestions received on the proposed alignment | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5. | Are suggestions received from community been incorporated into design | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The locations of culverts, ROW, alignment route, etc were consulted |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | with the community. Prior to start of work intimation was also given to all the individuals residing along the proposed Right of Way (ROW). |
| 6. | Are reasons for not incorporating suggestions been communicated to the community | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 7. | Environmental Clearances/NoC | | | | | | | | | Not Applicable |
| 8. | Environmental clearances to be obtained | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 9. | SPCB | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 10. | Water Resources | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 11. | APDCI/PHED etc. | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| | Relocation of Utility Services | | | | | | | | | |
| 12. | Type of loss with numbers | N.A | N.A | 3 | N.A | N.A | N.A | 2 | N.A | Goroimari to NikoriGutung - 3 electrical Pole shifting. Money Paid to Electricity Department. 15 - electric pole shifting |
| 13. | Loss of Common Property Resources | | | | | | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| 14. | Are provisions made to community losing common property or assets, if any | N.A | N.A | N.A | N.A | N.A | N.A | 1 | N.A | The temporary shop shifting. APRAT has arranged for shop shifting, and making new shop. He had been compensated and livelihood restore. |
| 15. | Are provisions for relocation of cultural properties been made | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 16. | Are provisions made for relocation of affected utilities | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 17. | Procedure followed for relocation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Material source identification, extraction and rehabilitation | | | | | | | | | |
| 18. | Is quarry material is being used from existing quarry | ✓ | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Source from Authorized vendor |
| 19. | Is material from existing quarries in sufficient quantities for the project | ✓ | X | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 20. | If answer to No. 5.2 is no, then are arrangements made for identification, extraction, rehabilitation of new quarries as per SPCB guideline | N.A | X | N.A | N.A | N.A | N.A | N.A | N.A | |
| 21. | Borrow Earth for road filling | ✓ | x | x | x | x | ✓ | X | x | The borrow earth are obtained from |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | the nearby villages. After obtaining NoC for Gram Panchyat. The land owner has provided the Borrow earth in exchange to convert the land into pond. But no written agreement noted between contactor/ PWRD and the local villagers. |
| 22. | Is the project area water scarce? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Water Bodies | | | | | | | | | |
| 23. | Does the alignment cut across or passing adjacent to water body? | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | N.A | Komoldoipur to Goroimari Road - road cross over seasonal Golahola Nala. Box Culvert has been proposed |
| 24. | Are consultation conducted with community for seeking consent and measures to be taken to mitigated impacts | N.A | N.A | ✓ | N.A | N.A | ✓ | ✓ | ✓ | |
| 25. | Are design/plan prepared indicating pond to be | N.A | N.A | ✓ | N.A | N.A | ✓ | ✓ | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | affected | | | | | | | | | |
| 26. | Are provisions made for control of pollution of pond water during construction | N.A | N.A | X | X | N.A | N.A | X | N.A | SOP to control water pollution noted as part of the contract document. But during audit siltation of water bodies has been noticed for project under construction at selected sites. The borrow earth was noticed reaching existing water ponds and seasonal nala. |
| 27. | Are provisions made for rehabilitation of the water body, if affected | N.A | N.A | X | X | N.A | N.A | X | N.A | SOP to prevent water pollution/ rehabilitation noted as part of contract document. Project under operation is noted to be rehabilitated but those under construction needs to be ensured. |
| | Slope Stability, Soil Erosion & Top soil conservation | | | | | | | | | |
| 28. | Are slope stabilization engineering Measures taken if | X | X | X | X | ✓ | ✓ | X | x | In most of the project under |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | included in the DPR | | | | | | | | | operation slope Stabilization was noticed. The project under construction needs to ensure the slope stabilization work. In the DPR provision and budget has been allocated. |
| 29. | Are erosion control measures taken if included in the DPR | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | In the DPR provision and budget has been allocated. |
| 30. | Are provisions made for conservation of topsoil in stockpiles | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The road proposed under APART are most existing village roads. These roads are fair weather designed. Now designed for all weather road. |
| | Drainage | | | | | | | | | |
| 31. | Are culverts at such locations designed to handle the afflux and to ensure that upstream areas do not get flooded and excessive scour caused on downstream nor fields affected | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Culverts has been proposed at all designated location, at drains, natural water flow during monsoon and also at locations proposed by the villagers |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | In case of Karbi Anglong, the number of culverts does not meet the regional topography. |
| 32. | Has provision been made for construction of temporary water diversion channel and local people are informed about it | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | N.A | The channel of water is not diverted. The construction of culverts is under taken during dry season, when these seasonal drains are dry. |
| 33. | Are provisions made for erection of safety devises, Deep excavation barrier, warning signs and warning posts at construction locations over drainage channels | N.A | N.A | N.A | N.A | N.A | ✓ | X | N.A | During Audit, the cut trench was not fence. There is a chance that villagers may fell into drains during night time. The contractor needs to install temporary fence, with caution sign. |
| | Protection of Forest & Plantation | | | | | | | | | |
| 34. | Are trees being cut by the project, if yes indicate number of trees felled | X | X | 7 Nos | N.A | N.A | N.A | 2 | N.A | |
| 35. | Is clearance from the forest department obtained | X | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| 36. | Is land identified for compensatory plantation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 37. | Amount of Compensation deposited to Forest Dept. | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 38. | No. of trees planted as per the compensatory afforestation plan and locations | X | X | N.A | N.A | N.A | N.A | ✓ | N.A | The contractor will plant ten times the tree cut along the proposed road |
| 39. | Is the maintenance of the compensatory afforestation plan done by the contractor? | X | X | N.A | N.A | N.A | | N.A | N.A | |
| | Historical/Heritage Site | | | | | | | | | |
| 40. | Any historical heritage exists on site? If yes, ensure appropriate measures taken to report it to District Authorities and preserve it | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 41. | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Natural Habitat | | | | | | | | | |
| 42. | Does any natural habitat exist along the project corridor | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 43. | Is identification of ecological features being done during transect walk | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 44. | Is Natural habitat Management Plan prepared | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| 45. | If yes, are all measures followed during implementation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Air Pollution Control | | | | | | | | | |
| | Are the construction sites watered to minimize dust generated? | N.A | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 46. | Are all vehicles carrying dusty loads covered/watered over prior to leaving the site? | N.A | X | ✓ | N.A | N.A | ✓ | ✓ | ✓ | |
| 47. | Are dust controlled during percussive drilling or rock breaking? | N.A | X | ✓ | N.A | N.A | N.A | N.A | N.A | |
| 48. | Are plant and equipment well maintained? (Any black smoke observed, please indicate the plant/equipment and location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Water Pollution Control | | | | | | | | | |
| 49. | Are there any wastewater discharged to the storm drains? | N.A | N.A | X | N.A | X | N.A | N.A | N.A | |
| 50. | Are sandbags/earth bund adopted to prevent washing away of sand/silt and wastewater to drains, catchpit, | X | X | X | X | X | ✓ | X | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | public road and footpath? | | | | | | | | | |
| 51. | Is domestic water directed to septic tanks or chemical toilets? | | X | N.A | N.A | N.A | N.A | N.A | N.A | |
| 52. | Others (please specify) | N.A | N.A | N.A | N.A | N.A | | N.A | N.A | |
| 53. | Noise Control | | | | | | | | | |
| | Are the Noisy construction activities be carried out during normal working hours? | N.A | X | N.A | N.A | N.A | N.A | N.A | N.A | |
| 54. | Any noise mitigation measures adopted (e.g., use noise barrier / enclosure)? | N.A | X | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Waste Management | | | | | | | | | |
| | Is the site kept clean and tidy? (e.g., litter free, good housekeeping) | | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 55. | Are separated labelled containers / areas provided for facilitating recycling and waste segregation? | | X | ✓ | x | ✓ | ✓ | X | x | No bins are being provided at the construction site |
| 56. | Are construction wastes / recyclable wastes and | ✓ | X | ✓ | N.A | N.A | N.A | ✓ | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | Name of Project Site | Dilaji - Rongklarbong Road (Completed) | Hamlai to longnit link road (Under Construction) | Goroimari to NikoriGutung (construction) | PhapuriKhaiti to Hugaltoli Road (construction) | Nanai Uriagaon to PachimJallah (completed) | Bokora to Chitadar Road (Completed) | Komoldoipur to Goroimari Road (construction) | Na Charingia Road (Completed) | OBSERVATION/ FINDINGS |
| | general refuse removed off site regularly? | | | | | | | | | |
| 57. | Are construction wastes collected and disposed of properly by licensed collectors? | ✓ | X | ✓ | N.A | N.A | N.A | ✓ | ✓ | |
| 58. | Are chemical wastes, if any, collected and disposed of properly by licensed collectors? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 59. | Are oil drums and plants/equipment's provided with drip trays? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 60. | Are drip trays free of oil and water? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 61. | Is there any oil spillage? Clean-up the contaminated soil immediately? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | Health Safety & Environment | | | | | | | | | |
| 62. | PPE is supplied appropriate to the task and the user | N.A | X | ✓ | x | x | ✓ | ✓ | ✓ | |
| 63. | Is the PPE provided by the contractor to all workers | ✓ | X | ✓ | x | x | ✓ | ✓ | ✓ | |
| 64. | First Aid Plan is displayed on notice board | | X | ✓ | x | x | ✓ | ✓ | ✓ | |
| 65. | Appropriate first aid kits are available and easily accessible with signs clearly visible | | X | ✓ | x | x | ✓ | ✓ | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Karbi Anglong | | Golaghat | Nagaon | | Majuli | Sibsagar | | |
|------|--|---|---|---|---|---|--|---|-------------------------------|---|
| | Name of Project Site | Dilaji - Rongklarbong Road (Completed) | Hamlai to longnit link road (Under Construction) | Goroimari to NikoriGutung (construction) | PhapuriKhaiti to Hugaltoli Road (construction) | Nanai Uriagaon to PachimJallah (completed) | Bokora to Chitadar Road (Completed) | Komoldoipur to Goroimari Road (construction) | Na Charingia Road (Completed) | OBSERVATION/ FINDINGS |
| 66. | First aid kits are checked regularly to ensure they are clean, orderly, fully stocked and not expired | | X | ✓ | x | x | ✓ | ✓ | ✓ | |
| 67. | Is portable drinking water facility provided to labour camp | N.A | N.A | ✓ | N.A | N.A | ✓ | N.A | N.A | Mostly local labours are engaged. They bring their own water and food. The contractor also arranges for safe drinking water at construction site. |
| 68. | Is sanitation facility provided to labour camp | N.A | X | ✓ | N.A | N.A | ✓ | N.A | N.A | Mostly local labours are engaged. |
| 69. | Is cooking facility provided to labour camp | N.A | X | ✓ | N.A | N.A | ✓ | N.A | N.A | Mostly local labours are engaged. However, for temporary arrangement no safe gas stove provided, wood has been observed in cooking. |
| 70. | All trenches and pits are provided with enclosures and caution boards Stocking of materials and wastes is not obstructing pathways used by community | N.A | X | N.A | N.A | N.A | ✓ | X | N.A | |
| | Resource Conservation | | | | | | | N.A | N.A | |
| 71. | Is water pipe leakage and wastage prevented? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 72. | Are diesel-powered plants and equipment's shut off | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Karbi Anglong | | Golaghat | Nagaon | | Majuli | Sibsagar | | |
|------|--|---|---|---|---|---|--|---|-------------------------------|---|
| | Name of Project Site | Dilaji - Rongklarbong Road (Completed) | Hamlai to longnit link road (Under Construction) | Goroimari to NikoriGutung (construction) | PhapuriKhaiti to Hugaltoli Road (construction) | Nanai Uriagaon to PachimJallah (completed) | Bokora to Chitadar Road (Completed) | Komoldoipur to Goroimari Road (construction) | Na Charingia Road (Completed) | OBSERVATION/ FINDINGS |
| | while not in use to reduce excessive use? | | | | | | | | | |
| 73. | Are energy conservation practices adopted? | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 74. | Are metal or other alternatives used to minimize the use of timber? | N.A | X | N.A | N.A | N.A | N.A | N.A | N.A | |
| 75. | Are materials stored in good condition to prevent deterioration and wastage (e.g., covered, separated)? | N.A | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 76. | Emergency Preparedness and Response | | | | | | | | | |
| 77. | Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed? | N.A | X | ✓ | x | x | ✓ | ✓ | ✓ | They are mostly noticed at construction site office. |
| 78. | Are accidents and incidents reported and reviewed, and corrective & preventive actions identified and recorded? | N.A | X | ✓ | x | x | ✓ | X | X | No. incident and incident reporting register maintained by the contractor. |
| 79. | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |

Note: ✓ - complied; ✗ - not complied; NA – not applicable





Table 2: B. EMF Compliance Audit Checklist as per Contractual Obligations: ROAD

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | |
|------|--|--|---|---|---|--|--|---|---|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | OBSERVATION/ FINDINGS |
| | Environmental Concerns (EMF IMPLEMENTATION) | | | | | | | | |
| 1. | Alignment finalization & Site preparation | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | During DPR stage alignment finalization was done. It almost follows the existing road. Development within existing ROW. No Additional Land acquisitions. |
| 2. | Is transect walk conducted for finalizing the alignment? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 3. | Are consultations conducted with community village council before alignment finalisation | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | During Audit, it was confirmed by the villagers that consultation before start of work was conducted. Village level committee was also formed. |
| 4. | Suggestions received on the proposed alignment | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5. | Are suggestions received from community been incorporated into design | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The locations of culverts, ROW, alignment route, etc were consulted with the community. Prior to start of work intimation was also given to all the individuals residing along the proposed Right of Way (ROW). |
| 6. | Are reasons for not incorporating suggestions been communicated to the community | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 7. | Environmental Clearances/NoC | | | | | | | | |
| 8. | Environmental clearances to be obtained | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|---|--|---|---|---|--|--|---|---|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| 9. | SPCB | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 10. | Water Resources | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 11. | APDCI/PHED etc. | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 12. | Relocation of Utility Services | | | | | | | | |
| 13. | Type of loss with numbers | N.A | N.A | 15 | N.A | 2 | N.A | N.A | Goroimari to NikoriGutung - 3 electricla Pole shifting. Money Paid to Electricity Department. 15 - electric pole shifing |
| 14. | Loss of Common Property Resources | | | | | | | | |
| 15. | Are provisions made to community losing common property or assets, if any | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The temporary shop shifting. APRAT has arranged for shop shifting, and making new shop. He had been compensated and livelihood restore. |
| 16. | Are provisions for relocation of cultural properties been made | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 17. | Are provisions made for relocation of affected utilities | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 18. | Procedure followed for relocation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 19. | Material source identification, extraction and rehabilitation | | | | | | | | |
| 20. | Is quarry material is being used from existing quarry | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Source from Authorized vendor |
| 21. | Is material from existing quarries in sufficient quantities | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|---|--|---|---|---|--|--|---|--|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| | for the project | | | | | | | | |
| 22. | If answer to No. 5.2 is no, then are arrangements made for identification, extraction, rehabilitation of new quarries as per SPCB guideline | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 23. | Borrow Earth for road filling | x | x | x | x | ✓ | ✓ | ✓ | The borrow earth are obtained from the nearby villages. After obtaining NoC for Gram Panchyat. The land owner has provided the Borrow earth in exchange to convert the land into pond. But no written agreement noted between contactor/ PWRD and the local villagers. |
| 24. | Is the project area water scarce? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 25. | Water Bodies | | | | | | | | |
| 26. | Does the alignment cut across or passing adjacent to water body? | N.A | N.A | N.A | N.A | ✓ | N.A | ✓ | Komoldoipur to Goroimari Road - road cross over seasonal Golahola Nala. Box Culvert has been proposed |
| 27. | Are consultation conducted with community for seeking consent and measures to be taken to mitigated impacts | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 28. | Are design/plan prepared indicating pond to be affected | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | |
| 29. | Are provisions made for control of pollution of pond water during construction | N.A | N.A | X | N.A | N.A | X | ✓ | Siltation of water bodies has been noticed during Audit. The borrow earth |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|--|--|---|---|---|--|--|---|---|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| | | | | | | | | | was noticed reaching existing water ponds and seasonal nala. The contractor has not taken appropriate measures |
| 30. | Are provisions made for rehabilitation of the water body, if affected | N.A | N.A | X | N.A | N.A | N.A | N.A | |
| 31. | Slope Stability, Soil Erosion & Top soil conservation | | | | | | | | |
| 32. | Are slope stabilization engineering Measures taken if included in the DPR | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Stone pitching and plantation to prevent slope from cutting noticed |
| 33. | Are erosion control measures taken if included in the DPR | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 34. | Are provisions made for conservation of topsoil in stockpiles | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The road proposed under APART are mostly existing village roads. These roads are fair weather designed. Now designed for all weather road. |
| 35. | Drainage | | | | | | | | |
| 36. | Are culverts at such locations designed to handle the afflux and to ensure that upstream areas do not get flooded and excessive scour caused on downstream nor fields affected | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Culverts has been proposed at all designated location, at drains, natural water flow during monsoon and also at locations proposed by the villagers |
| 37. | Has provision been made for construction of temporary water diversion channel and local people are informed about it | N.A | N.A | N.A | N.A | ✓ | N.A | N.A | The channel of water is not diverted. The construction of culverts is under taken during dry season, when these |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|---|---|--|--|--|---|--|---|--|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| | | | | | | | | | seasonal drains are dry. |
| 38. | Are provisions made for erection of safety devises, Deep excavation barrier, warning signs and warning posts at construction locations over drainage channels | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 39. | Protection of Forest & Plantation | | | | | | | | |
| 40. | Are trees being cut by the project, if yes indicate number of trees felled | 3 | N.A | N.A | 1 | N.A | N.A | N.A | |
| 41. | Is clearance from the forest department obtained | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 42. | Is land identified for compensatory plantation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 43. | Amount of Compensation deposited to Forest Dept. | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 44. | No. of trees planted as per the compensatory afforestation plan and locations | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The contractor will plant ten times the tree cut along the proposed road |
| 45. | Is the maintenance of the compensatory afforestation plan done by the contractor? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 46. | Historical/Heritage Site | | | | | | | | |
| 47. | Any historical heritage exists on site? If yes, ensure appropriate measures taken to report it to District | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|---|---|--|--|--|---|--|---|-----------------------|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| | Authorities and preserve it | | | | | | | | |
| 48. | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 49. | Natural Habitat | | | | | | | | |
| 50. | Does any natural habitat exist along the project corridor | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 51. | Is identification of ecological features being done during transect walk | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 52. | Is Natural habitat Management Plan prepared | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 53. | If yes, are all measures followed during implementation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 54. | Air Pollution Control | | | | | | | | |
| 55. | Are the construction sites watered to minimize dust generated? | ✓ | ✓ | ✓ | N.A | ✓ | ✓ | N.A | |
| 56. | Are all vehicles carrying dusty loads covered/watered over prior to leaving the site? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 57. | Are dust controlled during percussive drilling or rock breaking? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 58. | Are plant and equipment well maintained? (Any black smoke observed, please indicate the plant/equipment and location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 59. | Water Pollution Control | | | | | | | | |
| 60. | Are there any wastewater discharged to the storm drains? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 61. | Are sandbags/earth bund adopted to prevent washing | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|--|--|---|---|---|--|--|---|---|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| | away of sand/silt and wastewater to drains, catchpit, public road and footpath? | | | | | | | | |
| 62. | Is domestic water directed to septic tanks or chemical toilets? | N.A | ✓ | ✓ | N.A | N.A | N.A | N.A | |
| 63. | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 64. | Noise Control | | | | | | | | |
| 65. | Are the Noisy construction activities be carried out during normal working hours? | N.A | ✓ | ✓ | N.A | ✓ | ✓ | N.A | |
| 66. | Any noise mitigation measures adopted (e.g., use noise barrier / enclosure)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 67. | Waste Management | | | | | | | | |
| 68. | Is the site kept clean and tidy? (e.g., litter free, good housekeeping) | ✓ | ✓ | x | N.A | x | x | N.A | |
| 69. | Are separated labelled containers / areas provided for facilitating recycling and waste segregation? | N.A | ✓ | x | N.A | x | x | N.A | No bins are being provided at the construction site |
| 70. | Are construction wastes / recyclable wastes and general refuse removed off site regularly? | N.A | N.A | N.A | N.A | ✓ | ✓ | N.A | |
| 71. | Are construction wastes collected and disposed of properly by licensed collectors? | N.A | N.A | N.A | N.A | ✓ | ✓ | N.A | |
| 72. | Are chemical wastes, if any, collected and disposed of properly by licensed collectors? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 73. | Are oil drums and plants/equipment's provided with drip trays? | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|---|--|---|---|---|--|--|---|---|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| 74. | Are drip trays free of oil and water? | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | |
| 75. | Is there any oil spillage? Clean-up the contaminated soil immediately? | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | |
| 76. | Health Safety & Environment | | | | | | | | |
| 77. | PPE is supplied appropriate to the task and the user | ✓ | ✓ | ✓ | N.A | ✓ | ✓ | N.A | |
| 78. | Is the PPE provided by the contractor to all workers | ✓ | ✓ | ✓ | N.A | ✓ | ✓ | N.A | |
| 79. | First Aid Plan is displayed on notice board | ✓ | ✓ | ✓ | N.A | x | ✓ | N.A | |
| 80. | Appropriate first aid kits are available and easily accessible with signs clearly visible | ✓ | ✓ | ✓ | N.A | x | ✓ | N.A | |
| 81. | First aid kits are checked regularly to ensure they are clean, orderly, fully stocked and not expired | ✓ | ✓ | ✓ | N.A | x | ✓ | N.A | |
| 82. | Is portable drinking water facility provided to labour camp | N.A | ✓ | ✓ | N.A | ✓ | ✓ | N.A | Mostly local labours are engaged. They bring their own water and food. The contractor also arranges for safe drinking water at construction site. |
| 83. | Is sanitation facility provided to labour camp | N.A | ✓ | ✓ | N.A | ✓ | ✓ | N.A | Mostly local labours are engaged. |
| 84. | Is cooking facility provided to labour camp | N.A | ✓ | ✓ | N.A | × | × | N.A | Mostly local labours are engaged. However, for temporary arrangement no safe gas stove provided, wood has been observed in cooking. |
| 85. | All trenches and pits are provided with enclosures and caution boards Stocking of materials and wastes is not | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Darang | | Nalbari | Kamrup | | | OBSERVATION/ FINDINGS |
|------|--|---|--|--|--|---|--|---|--|
| | Name of Project Road | Construction of Deulgiri Oil Plam Road (Completed) | Nirikali to Patharighat Road (Construction) | Garukhuti to Gosala Road (Construction) | Satra Bara to Kadartal Gopal Mandir (screening) | Gakhora to Sokhurabori Road, Kamrup (Construction) | Bagibari to Kalangpar Market and Hahra Revenue Village Road, Kamrup (Construction) | Rongphor village Phulongaon to SonapurBurnihat PWD Road, Kamrup (Completed) | |
| | obstructing pathways used by community | | | | | | | | |
| 86. | Resource Conservation | | | | | | | | |
| 87. | Is water pipe leakage and wastage prevented? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 88. | Are diesel-powered plants and equipment's shut off while not in use to reduce excessive use? | N.A | ✓ | ✓ | N.A | ✓ | ✓ | N.A | |
| 89. | Are energy conservation practices adopted? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 90. | Are metal or other alternatives used to minimize the use of timber? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 91. | Are materials stored in good condition to prevent deterioration and wastage (e.g., covered, separated)? | N.A | ✓ | ✓ | N.A | ✓ | ✓ | N.A | |
| 92. | Emergency Preparedness and Response | | | | | | | | |
| 93. | Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed? | N.A | ✓ | ✓ | N.A | ✓ | ✓ | N.A | They are mostly noticed at construction site office. |
| 94. | Are accidents and incidents reported and reviewed, and corrective & preventive actions identified and recorded? | N.A | ✓ | ✓ | N.A | ✓ | ✓ | N.A | No. incident and incident reporting register maintained by the contractor. |
| 95. | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





Table 3: EMF Compliance Audit Checklist as per Contractual Obligations for Market Construction

| | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | |
|------|---|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|--|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Amjonga Market (Under Construction) | Bokakhat Daily Market | Dhing PMY (Under Construction) | Dhing PMY - Domdomia Bazar (Const.) | Bechimari Bazar Market | Jharobari (Rampur Anchalik) Market, Kamrup (Ongoing) | Ghilamara Weekly Market (Ongoing) - Desk Rev. | Bhawraguri Market Modernization (Ongoing) - Desk Rev. | OBSERVATION/ FINDINGS |
| | Site Preparation | | | | | | | | | |
| 2. | Is Environmental Screening conducted for finalizing the design? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 3. | Are consultations conducted with all stakeholders before alignment finalisation | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4. | Suggestions received on the final design? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5. | Are suggestions received from stakeholders been incorporated into design | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Yes, the market committee has reported that consultation has been. And all plan developed accordingly. |
| 6. | Are reasons for not incorporating suggestions been communicated to the stakeholders | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Environmental Clearances/NoC | | | | | | | | | |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
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| 7. | Environmental clearances to be obtained | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 8. | SPCB | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 9. | Water Resources | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 10. | APDCI/PHED etc. | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 11. | Forest | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Type of Ecosystem | | | | | | | | | |
| 12. | Type of Terrain (Plain/Hilly/Mountainous, etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Plain |
| 13. | Class of land (Agriculture/Non- agriculture/Residential/ Forest/ VGR /Jalatak/ any other water bodies/Barren land/open area, etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Non-residential & Non- agricultural |
| 14. | Located within or near to Forest/ Environmentally sensitive or critical habitats areas within 500m of the subproject location | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Not applicable |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
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| 15. | Connectivity to the sub-project location National Highway/State Highway/Any other Major Road/ Approach Road /Nearest Railway Station/Waterway, etc | NH-17 | SH-47 | SH-47 | ODR | NH-15 | Rural Road | N.A | State Highway | National Highway and State Highway |
| 16. | Is there any river, wetland/lakes/swamps/nallas/streams/ other water bodies beside or near to the sub-project location? (If yes, indicate the location) | N.A | ✓ | ✓ | x | ✓ | N.A | N.A | River Gurufela, approx. 150m from the market | X - Nall adjacent almost filled due to waste dumping |
| 17. | Are there any areas with landslide or erosion problems along or adjacent to the sub- project location? (If yes, indicate the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 18. | Is the sub-project location or adjacent area prone to flooding? (If yes, mention flood level and frequency) | N.A | X | N.A | N.A | N.A | N.A | N.A | N.A | X - the Market get flooded during rain due to poor existing drainage facility |
| 19. | Are there problems of water stagnation or logging and other drainage issues on or near to the sub-project location? | N.A | N.A | N.A | x | ✓ | N.A | N.A | N.A | X - Nall adjacent almost filled due to waste dumping |
| 20. | In case of existing structure, if any, Is there | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Gurufela | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|---|
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| | any river/nalla/stream/any other water body connected to the drainage of the structure? | | | | | | | | River | |
| 21 | Are there any faunal habitat areas, faunal breeding ground, bird migration area or other similar areas within 100m of the sub-project? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 22 | Are there any utility structures within the sub-project location? (If yes, mention the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 23 | Are there any sensitive structures within or near to the sub-project? (NoC to be obtained from adjoining sensitive structures like Hospital, PHC, School, Community Hall, Religious structures, community hall, residing household, etc. if any) | N.A | N.A | N.A | X | N.A | N.A | N.A | N.A | X- Polytechnique opposite to entry gate |
| | Relocation of Utility Services | | | | | | | | | |
| 24 | Type of loss with numbers | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | loss of Common property and resource | | | | | | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
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| 25 | Are provisions made to community losing common property or assets, if any | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 26 | Are provisions for relocation of cultural properties been made | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 27 | Are provisions made for relocation of affected utilities | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 28 | Procedure followed for relocation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Temporary Relocation | | | | | | | | | |
| 29 | Temporary relocation provided as per approved plan | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 30 | Majority of stakeholders agreed for temporary relocation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 31 | Basic facilities provided at temporary sheds (toilet, drinking water, etc) | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | N.A | There is provision of toilets, drinking water facilities, waiting area, waste collection and handling area. |
| | Material source identification, extraction and rehabilitation | | | | | | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
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| 32 | Is quarry material is being used from existing quarry | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Quarry material obtained from authorized vendor |
| 33 | Is the project area water scarce? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Water Bodies | | | | | | | | | |
| 34 | Does the alignment cut across or passing adjacent to water body? | N.A | N.A | N.A | X | N.A | N.A | N.A | N.A | X- Seasonal Drain which is impacted. The runoff water from the market area will be diverted into adjacent water bodies resulting in siltation, increase in organic content, The market contained shops like vegetable, meat shops, grocery, spices, etc. |
| 35 | Are consultation conducted with community for seeking consent and measures to be taken to mitigated impacts | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 36 | Are design/plan prepared indicating pond to be affected | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
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| 37. | Are provisions made for control of pollution of pond water during construction | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 38. | Are provisions made for rehabilitation of the water body, if affected | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No provision or silt traps has been proposed at drains confluence point with water bodies. |
| | Slope Stability, Soil Erosion & Top soil conservation | | | | | | | | | |
| 39. | Are slope stabilization engineering Measures taken if included in the DPR | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 40. | Are erosion control measures taken if included in the DPR | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 41. | Are provisions made for conservation of topsoil in stockpiles | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Drainage | | | | | | | | | |
| 42. | Are drains/culverts at such locations designed to handle the afflux and to ensure that areas do not get flooded | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Lined drains are proposed to be constructed to prevent the market from flooding. Some portion of line drains like meat shopd |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|--|
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| | | | | | | | | | | area has been constructed. |
| 43 | Has provision been made for construction of temporary water diversion channel and potential users are informed about it | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 44 | Are provisions made for erection of safety devises, Deep excavation barrier, warning signs and warning posts at construction locations | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Protection of Vegetation | | | | | | | | | |
| 45 | Are trees being cut by the project, if yes indicate number of trees felled | N.A | N.A | 2 Nos | N.A | N.A | 1 | N.A | N.A | No Compensatory plantation done. Contractor mention that plantation will be done after civil construction work |
| 46 | Is clearance from the forest department obtained | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 47 | Is land identified for compensatory plantation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 48 | Amount of Compensation deposited to | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|---|
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| | Forest Dept. | | | | | | | | | |
| 49. | No. of trees planted as per the compensatory afforestation plan and locations | N.A | N.A | X | N.A | N.A | X | N.A | N.A | No plantation carried out. Contractor has promised to do so after civil construction work is completed. |
| 50. | Is the maintenance of the compensatory afforestation plan done by the contractor? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Historical/Heritage Site | | | | | | | | | |
| 51. | Any historical heritage exists on site? If yes, ensure appropriate measures taken to report it to District Authorities and preserve it | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 52. | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Natural Habitat | | | | | | | | | |
| 53. | Does any natural habitat exist along the project | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No natural habitat exists. |
| 54. | Is identification of ecological features being done during transect walk | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Was carried out but no ecological feature reported |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|---|
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| 55 | Is Natural habitat Management Plan prepared | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 56 | If yes, are all measures followed during implementation | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Air Pollution Control | | | | | | | | | |
| 57 | Are the construction sites watered to minimize dust generated? | X | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | |
| 58 | Are all vehicles carrying dusty loads covered/watered over prior to leaving the site? | X | X | X | X | X | X | X | X | As noticed and reported, the vehicles carrying construction material are not covered. |
| 59 | Are dust controlled during percussive drilling or rock breaking? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 60 | Are plant and equipment well maintained? (Any black smoke observed, please indicate the plant/equipment and location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Water Pollution Control | | | | | | | | | |
| 61 | Are there any wastewater discharged to the storm drains? | ✓ | ✓ | ✓ | X | ✓ | ✓ | N.A | N.A | The toilets are provided with septic tanks and soak |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
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| | | | | | | | | | | pits. No waste water will be discharge |
| 62 | Are sandbags/earth bund adopted to prevent washing away of sand/silt and wastewater to drains, catchpit, public road and footpath? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 63 | Is domestic water directed to septic tanks or chemical toilets? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | The toilets are provided with septic tanks and soak pits. No waste water will be discharge |
| 64 | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Noise Control | | | | | | | | | |
| 65 | Are the Noisy construction activities be carried out during normal working hours? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | |
| 66 | Any noise mitigation measures adopted (e.g., use noise barrier / enclosure)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | |
| | Waste Management | | | | | | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
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| 67. | Is the site kept clean and tidy? (e.g., litter free, good housekeeping) | ✓ | X | X | X | X | X | ✓ | ✓ | X- the construction site needs appropriate hygiene and cleanness |
| 68. | Are separated labelled containers / areas provided for facilitating recycling and waste segregation? | X | X | X | X | X | X | X | X | Not available |
| 69. | Are construction wastes / recyclable wastes and general refuse removed off site regularly? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | No construction waste generated. All the C&D waste are used for road filling and raise platform filling. |
| 70. | Are construction wastes collected and disposed of properly by licensed collectors? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | |
| 71. | Are chemical wastes, if any, collected and disposed of properly by licensed collectors? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 72. | Are oil drums and plants/equipment's provided with drip trays? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 73. | Are drip trays free of oil and water? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 74. | Is there any oil spillage? Clean-up the contaminated soil immediately? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 75. | . If any asbestos roof material is replaced? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|---|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|---|
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| 76 | If yes, then what is the quantity of waste | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 77 | Whether the Guideline issued by the project is followed? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Health Safety & Environment | | | | | | | | | |
| 78 | PPE is supplied appropriate to the task and the used | ✓ | ✓ | X | ✓ | ✓ | ✓ | X | X | X- labours noticed working at height without safety belts |
| 79 | Is the PPE provided by the contractor to all workers | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | X | Contractor is providing PPE kits like helmets and gloves. |
| 80 | First Aid Plan is displayed on notice board | X | X | X | X | X | X | ✓ | ✓ | No First Aid Plan Displayed on Notice Board |
| 81 | Appropriate first aid kits are available and easily accessible with signs clearly visible | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | ✓ | N.A | |
| 82 | First aid kits are checked regularly to ensure they are clean, orderly, fully stocked and not expired | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | |
| 83 | Is portable drinking water facility provided to labour camp | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|--|
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| 84. | Is sanitation facility provided to labour camp | N.A | ✓ | ✓ | ✓ | N.A | ✓ | ✓ | ✓ | Majority of the labour engaged are from the local community. Few numbers of skilled labours from outside reside in labour camps. |
| 85. | Is cooking facility provided to labour camp | N.A | ✓ | ✓ | ✓ | N.A | ✓ | ✓ | ✓ | only for outside labours |
| 86. | All trenches and pits are provided with enclosures and caution boards Stocking of materials and wastes is not obstructing pathways used by community | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 87. | Is Covid-19 protocol followed by the contractor as mentioned in the EMP? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | The contractor has COVID-19 EMP. It is implemented and in place |
| | Resource Conservation | | | | | | | | | |
| 88. | Is water pipe leakage and wastage prevented? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 89. | Are diesel-powered plants and equipment's shut off while not in use to reduce excessive | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|--|--|--|--|
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| | use? | | | | | | | | | |
| 90 | Are energy conservation practices adopted? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | provision of Solar Lighting System |
| 91 | Are metal or other alternatives used to minimize the use of timber? | X | X | X | X | X | X | X | X | Use of timber was noticed at all construction site for Scaffolding and to support the concrete structure during construction phase |
| 92 | Are materials stored in good condition to prevent deterioration and wastage (e.g., covered, separated)? | ✓ | ✓ | ✓ | ✓ | ✓ | X | ✓ | X | |
| | Emergency Preparedness and Response | | | | | | | | | |
| 93 | Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed? | ✓ | ✓ | ✓ | X | ✓ | X | X | X | X- need filling and maintenance |
| 94 | Are accidents and incidents reported and reviewed, and corrective & preventive actions identified and recorded? | X | X | ✓ | ✓ | X | X | X | X | No accident or incident reporting followed by the contractor. No register maintained by the contractor, except Nagaon |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|--|---|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Amjonga Market (Under Construction) | Bokakhat Daily Market | Dhing PMY (Under Construction) | Dhing PMY - Domdomia Bazar (Const.) | Bechimari Bazar Market | Jharobari (Rampur Anchalik) Market, Kamrup (Ongoing) | Ghilamara Weekly Market (Ongoing) - Desk Rev. | Bhawraguri Market Modernization (Ongoing) - Desk Rev. | |
| | | | | | | | | | | district. |
| 95 | Others (please specify) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | Execution of Good Environmental Practices | | | | | | | | | |
| 96 | Whether following structures are part of the approved master plan? (Water harvesting structure, Vermi composting pit, solar panel, etc) | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | Vermi Composting pit has been proposed to convert organic waste into manure |
| 97 | Mention the execution status | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | under construction |
| 98 | Whether any deviation from the proposed design is happening | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| EMP Compliance Audit Checklist as per Contractual Obligations: Market | | | | | | | | | | |
| | Pre-Construction Phase | | | | | | | | | |
| 99 | Approvals/NOC Licenses and Permits/Insurance | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Committee land NoC obtained |
| 10 | Land Requirement | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Committee land |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Amjonga Market (Under Construction) | Bokakhat Daily Market | Dhing PMY (Under Construction) | Dhing PMY - Domdomia Bazar (Const.) | Bechimari Bazar Market | Jharobari (Rampur Anchalik) Market, Kamrup (Ongoing) | Ghilamara Weekly Market (Ongoing) - Desk Rev. | Bhawraguri Market Modernization (Ongoing) - Desk Rev. | |
| 10 | Water requirement | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | bore well |
| 10 | Drainage management | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Garland drain |
| 10 | Construction Phase | | | | | | | | | |
| 10 | Construction Material Requirement | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | authorized vendor |
| 10 | Slope Stability | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 10 | Erosion and sediment | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | all open space with Pavers block |
| 10 | Spoil Management | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 10 | Transportation and storage of construction materials | ✓ | ✓ | ✓ | ✓ | ✓ | x | ✓ | ✓ | Well-practiced. All transportations covered. |
| 10 | Air and Noise pollution and fugitive emission | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | not anticipated |
| 11 | Hunting and Poaching activities by construction workers | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not applicable |
| 11 | Waste management and minimization | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | Vermicompost pit has been constructed to convert |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|-------------------------|---|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|--|
| | Environmental Concerns (EMF IMPLEMENTATION) | Amjonga Market (Under Construction) | Bokakhat Daily Market | Dhing PMY (Under Construction) | Dhing PMY - Domdomia Bazar (Const.) | Bechimari Bazar Market | Jharabari (Rampur Anchalik) Market, Kamrup (Ongoing) | Ghilamara Weekly Market (Ongoing) - Desk Rev. | Bhawraguri Market Modernization (Ongoing) - Desk Rev. | |
| | | | | | | | | | | organic waste into bio manure |
| 11 | Occupational Health and Safety | X | X | X | X | ✓ | ✓ | X | X | Working at high safety not adopted |
| 11 | Use of wood as construction materials | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | wood is used as scaffold to work at height |
| 11 | Cooking and heating with firewood by construction workers | N.A | N.A | N.A | N.A | N.A | ✓ | N.A | N.A | |
| 11 | Influx of Migrant workers | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | local labours |
| Post-Construction Phase | | | | | | | | | | |
| 11 | Storage of chemicals, fertilizers, pesticides | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | This is market where no such articles will be sold |
| 11 | Storing equipment used for spraying and applying pesticides and fertilizers | N.A | N.A | N.A | N.A | N.A | ✓ | N.A | N.A | Not Applicable |
| 11 | Use of power | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Source of electricity - APDCL and Solar lighting |
| 11 | Use of water | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Borewell - for domestic water requirement and flushing |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Goalpara | Golaghat | Nagaon | | Darang | Kamrup | Lakhimpur | Kokrajhar | OBSERVATION/ FINDINGS |
|------|--|-------------------------------------|-----------------------|--------------------------------|-------------------------------------|------------------------|---|--|--|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Amjonga Market (Under Construction) | Bokakhat Daily Market | Dhing PMY (Under Construction) | Dhing PMY - Domdomia Bazar (Const.) | Bechimari Bazar Market | Jharobari (Rampur Anchalik) Market, Kamrup (Ongoing) | Ghilamara Weekly Market (Ongoing) - Desk Rev. | Bhawraguri Market Modernization (Ongoing) - Desk Rev. | |
| 12 | Hygiene practice | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Toilets for male and female with septic tanks and soak pits. Dry of waste pit, safe drinking water, rest area, proper traffic circulation in design |
| 12 | Maintenance and calibration of equipment and items used in the warehouse | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 12 | Maintenance of moisture level | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 12 | Basic amenities need for workers/labours | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Rest area, toilets, safe drinking water |

Note: ✓ - complied; ✗ - not complied; Partially complied; NA – not applicable





Table 4: EMF Compliance Audit Checklist as per Contractual Obligations for Warehouse

| | District | Nagaon | Darang | Kamrup | |
|------|---|-----------------------------------|--------------------------------------|---------------------------|---|
| S.No | Environmental Concers (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const. | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | OBSERVATION/ FINDINGS |
| | Site Preparation | | | | |
| 1 | Is Environmental Screening conducted for finalizing the design? | ✓ | ✓ | ✓ | Environmental Screening was done during site finalization |
| 2 | Are consultations conducted with all stakeholders before alignment finalisation | ✓ | ✓ | ✓ | stakeholder consultation was done with the locals |
| 3 | Suggestions received on the final design? | ✓ | ✓ | ✓ | yes |
| 4 | Are suggestions received from stakeholders been incorporated into design | ✓ | ✓ | ✓ | yes |
| 5 | Are reasons for not incorporating suggestions been communicated to the stakeholders | N.A | N.A | N.A | Not Applicable |
| | Environmental Clearances/NoC | | | | |
| 6 | Environmental clearances to be obtained | N.A | N.A | N.A | Environmental Clearance not required |
| 7 | SPCB | N.A | N.A | N.A | No processing. Only storage warehouse |
| 8 | Water Resources | N.A | N.A | N.A | Borewell |
| 9 | APDCI/PHED etc. | N.A | N.A | N.A | Not Applicable |
| 10 | Forest | N.A | N.A | N.A | No forest is within 2 km radius |
| | Type of Ecosystem | | | | |
| 11 | Type of Terrain (Plain/Hilly/Mountainous, etc.) | ✓ | ✓ | ✓ | Plat |
| 12 | Class of land (Agriculture/Non-agriculture/Residential/ Forest/ VGR /Jalatak/ any other water bodies/Barren land/open area, etc.) | ✓ | ✓ | ✓ | Non - agricultural Land |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | Darang | Kamrup | |
|------|---|---------------------------------------|---|------------------------------|---|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const.) | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | OBSERVATION/ FINDINGS |
| 13 | Located within or near to Forest/ Environmentally sensitive or critical habitats areas within 500m of the subproject location | ✓ | ✓ | ✓ | No forest within 2 km radius |
| 14 | Connectivity to the sub-project location National Highway/State Highway/Any other Major Road/ Approach Road /Nearest Railway Station/Waterway, etc | ✓ | ✓ | ✓ | State Highway and National Highway |
| 15 | Is there any river, wetland/lakes/swamps/nallas/streams/ other water bodies beside or near to the sub-project location? (If yes, indicate the location) | ✓ | ✓ | ✓ | not reported in adjacent or within site |
| 16 | Are there any areas with landslide or erosion problems along or adjacent to the sub-project location? (If yes, indicate the location) | N.A | N.A | N.A | not applicable |
| 17 | Is the sub-project location or adjacent area prone to flooding? (If yes, mention flood level and frequency) | ✓ | ✓ | ✓ | No flooding reported |
| 18 | Are there problems of water stagnation or logging and other drainage issues on or near to the sub-project location? | N.A | N.A | N.A | Not applicable |
| 19 | In case of existing structure, if any, is there any river/nalla/stream/any other water body connected to the drainage of the structure? | N.A | N.A | N.A | Not applicable |
| 20 | Are there any faunal habitat areas, faunal breeding ground, bird migration area or other similar areas within 100m of the sub-project? | N.A | N.A | N.A | not applicable |
| 21 | Are there any utility structures within the sub-project location? (If yes, mention the location) | N.A | N.A | N.A | Not Applicable |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | Darang | Kamrup | |
|------|---|-----------------------------------|--------------------------------------|---------------------------|--|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const. | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | OBSERVATION/ FINDINGS |
| 22 | Are there any sensitive structures within or near to the sub-project? (NoC to be obtained from adjoining sensitive structures like Hospital, PHC, School, Community Hall, Religious structures, community hall, residing household, etc. if any | ✓ | ✓ | | Not applicable. Nearest school is 200 teres and nearest temple 74 meters from Darang warehouse |
| | Relocation of Utility Services | | | | |
| 23 | Type of loss with numbers | N.A | N.A | N.A | Not Applicable |
| | loss of Common property and resource | | | | Not Applicable |
| 24 | Are provisions made to community losing common property or assets, if any | N.A | N.A | N.A | Not Applicable |
| 25 | Are provisions for relocation of cultural properties been made | N.A | N.A | N.A | Not Applicable |
| 26 | Are provisions made for relocation of affected utilities | N.A | N.A | N.A | Not Applicable |
| 27 | Procedure followed for relocation | N.A | N.A | N.A | Not Applicable |
| | Temporary Relocation | | | | Not Applicable |
| 28 | Temporary relocation provided as per approved plan | N.A | N.A | N.A | Not Applicable |
| 29 | Majority of stakeholders agreed for temporary relocation | N.A | N.A | N.A | Not Applicable |
| 30 | Basic facilities provided at temporary sheds (toilet, drinking water, etc) | N.A | N.A | N.A | Not Applicable |
| | Material source identification, extraction and rehabilitation | | | | |
| 32 | Is quarry material is being used from existing quarry | ✓ | ✓ | ✓ | The Quarry material is purchase from approved vendor. |
| 32 | Is the project area water scarce? | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | Darang | Kamrup | |
|------|---|--------------------------------------|---|------------------------------|--|
| S.No | Environmental Concers (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const. | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | OBSERVATION/ FINDINGS |
| | Water Bodies | | | | |
| 33 | Does the alignment cut across or passing adjacent to water body? | N.A | N.A | N.A | Not Applicable |
| 34 | Are consultation conducted with community for seeking consent and measures to be taken to mitigated impacts | N.A | N.A | N.A | Not Applicable |
| 35 | Are design/plan prepared indicating pond to be affected | N.A | N.A | N.A | Not Applicable |
| 36 | Are provisions made for control of pollution of pond water during construction | N.A | N.A | N.A | Not Applicable |
| 37 | Are provisions made for rehabilitation of the water body, if affected | N.A | N.A | N.A | Not Applicable |
| 38 | Slope Stability, Soil Erosion & Top soil conservation | | | | |
| 39 | Are slope stabilization engineering Measures taken if included in the DPR | N.A | N.A | N.A | Not Applicable |
| 40 | Are erosion control measures taken if included in the DPR | N.A | N.A | N.A | Not Applicable |
| 41 | Are provisions made for conservation of topsoil in stockpiles | N.A | N.A | N.A | it is renovation of existing warehouse. |
| | Drainage | | | | |
| 42 | Are drains/culverts at such locations designed to handle the afflux and to ensure that areas do not get flooded | ✓ | ✓ | ✓ | Drains along the road and along the periphery has been constructed to prevent site flooding during rain. All the storm water will be diverted into the proposed rainwater harvesting structure. Excess water will go into ponds located within plant premises. |
| 43 | Has provision been made for construction of temporary water diversion channel and potential users are informed about it | N.A | N.A | N.A | Not Applicable |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | Darang | Kamrup | |
|------|--|-----------------------------------|--------------------------------------|---------------------------|--|
| S.No | Environmental Concers (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const. | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | OBSERVATION/ FINDINGS |
| 44 | Are provisions made for erection of safety devises, Deep excavation barrier, warning signs and warning posts at construction locations | N.A | N.A | N.A | Not Applicable |
| | Protection of Vegetation | | | | |
| 45 | Are trees being cut by the project, if yes indicate number of trees felled | N.A | 1 | N.A | ten-time plantation has been proposed by the contractor. It will be planted within site. |
| 46 | Is clearance from the forest department obtained | N.A | N.A | N.A | Not Applicable, non-forest tree |
| 47 | Is land identified for compensatory plantation | N.A | N.A | N.A | Not Applicable |
| 48 | Amount of Compensation deposited to Forest Dept. | N.A | N.A | N.A | Not Applicable |
| 49 | No. of trees planted as per the compensatory afforestation plan and locations | N.A | N.A | N.A | Not Applicable |
| 50 | Is the maintenance of the compensatory afforestation plan done by the contractor? | N.A | N.A | N.A | Not Applicable |
| | Historical/Heritage Site | | | | |
| 51 | Any historical heritage exists on site? If yes, ensure appropriate measures taken to report it to District Authorities and preserve it | N.A | N.A | N.A | Not Applicable |
| 52 | Others (please specify) | N.A | N.A | N.A | Not Applicable |
| | Natural Habitat | | | | |
| 53 | Does any natural habitat exist along the project | N.A | N.A | N.A | Not Applicable |
| 54 | Is identification of ecological features being done during transect walk | N.A | N.A | N.A | Not Applicable |
| 55 | Is Natural habitat Management Plan prepared | N.A | N.A | N.A | Not Applicable |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | Darang | Kamrup | |
|------|--|-----------------------------------|--------------------------------------|---------------------------|---|
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| 56 | If yes, are all measures followed during implementation | N.A | N.A | N.A | Not Applicable |
| | Air Pollution Control | | | | |
| 57 | Are the construction sites watered to minimize dust generated? | ✓ | ✓ | ✓ | water sprinkling has been reported |
| 58 | Are all vehicles carrying dusty loads covered/watered over prior to leaving the site? | ✓ | ✓ | ✓ | all vehicle covered during raw material transport. Reported by contractor |
| 59 | Are dust controlled during percussive drilling or rock breaking? | N.A | N.A | N.A | Not Applicable |
| 60 | Are plant and equipment well maintained? (Any black smoke observed, please indicate the plant/equipment and location) | ✓ | ✓ | ✓ | There is regular servicing of D.G sets by licence vendor |
| | Water Pollution Control | | | | |
| 61 | Are there any wastewater discharged to the storm drains? | N.A | N.A | N.A | Not Applicable |
| 62 | Are sandbags/earth bund adopted to prevent washing away of sand/silt and wastewater to drains, catchpit, public road and footpath? | N.A | N.A | N.A | Not Applicable |
| 63 | Is domestic water directed to septic tanks or chemical toilets? | ✓ | ✓ | ✓ | the toilets constructed at site has septic tanks and soak pits |
| 64 | Others (please specify) | N.A | N.A | N.A | Not Applicable |
| | Noise Control | | | | |
| 65 | Are the Noisy construction activities be carried out during normal working hours? | ✓ | ✓ | ✓ | no such activities undertaken and D.G set provided with acoustic enclosures |
| 66 | Any noise mitigation measures adopted (e.g., use noise barrier / enclosure)? | ✓ | ✓ | ✓ | D.G sets with Acoustic enclosures |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | Darang | Kamrup | OBSERVATION/ FINDINGS |
|------|--|---------------------------------------|---|------------------------------|---|
| | Environmental Concens (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const.) | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | |
| 67 | On-site Handling of Hazardous waste | | | | |
| 68 | Are workers aware of impact due to asbestos dust and fibres? | x | x | x | The workers were not aware |
| 69 | Are the workers engaged in asbestos handling works working with proper Personal Protective Equipment? | X | X | ✓ | no. the contractor needs to expedite the process. They wore normal mask. |
| 70 | Are there any measures taken to reduced or to avoid generation of asbestos dust while handling waste onsite? | X | X | ✓ | No such management plan reported |
| 72 | Is the asbestos dust collection is carried by trained person? If yes, is he/she wearing proper PPE during collection? | X | X | X | No such procedure adopted |
| 73 | Approximate amount of asbestos waste to be disposed off | X | X | X | No quantification done |
| 74 | Storing of Hazardous waste | | | | |
| 75 | Are the asbestos wastes stored separately from other waste? | X | X | ✓ | No, they are lying with other waste |
| 76 | Is there any cover over the asbestos wastes? | X | X | ✓ | they remain open in project area |
| 77 | Is the asbestos waste storing site sufficiently barred to avoid crushing by any means? | X | X | ✓ | they remain open in project area |
| | Transportation of waste | | | | |
| 78 | Is transportation of asbestos waste is required from its source to disposal site? (If no, no need to fill other remarks of transportation of wastes) | N.A | X | N.A | In case of Nagaon site, the asbestoses would be disposed within the site. In case of Darang warehouse, they have already dumped the asbestoses waste in the low-lying area in an unscientific way |
| 79 | Is the waste transported in container? If yes, is the containers are air tight? | N.A | X | N.A | by open truck |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | Darang | Kamrup | |
|------|---|--------------------------------------|---|------------------------------|---|
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| 80 | If the asbestos wastes are transported by vehicles, is it covered enough to stopped the emission of dust during transportation? | N.A | X | N.A | by open truck |
| 81 | What are the measures taken to reduce the dust emission while transporting wastes? | N.A | X | N.A | no measure taken |
| 82 | Is the vehicle well demarked about what it contains while transporting? | N.A | X | N.A | No such procedure adopted |
| | Disposal of asbestos waste | | | | |
| 83 | Is the disposal site is identified/certified by SPCB/Municipalities board/Panchayat for disposal of asbestos wastes? | ✓ | X | ✓ | Final Disposal of asbestos was for Nagaon and Kamrup site was done as per the SOP prepared and approved by APART. The SOP for handling asbestos is based on the CPCB guidelines. |
| 84 | Is the disposal site accessible by the vehicles? | ✓ | ✓ | ✓ | |
| 86 | Is the excavated dug wet pit? | N.A | N.A | N.A | As per the audit the contractors are not aware of the Hazardous issues of Asbestos handling, storage and disposal. SOP for Disposal of handling of asbestos was reported. |
| 87 | Are asbestos wastes used for landfill? If yes described | N.A | N.A | N.A | |
| 88 | Is there any excavation dug to dispose the waste? Give location and dimension? | X | X | X | |
| 90 | Is the waste disposal site well demarcated? | X | X | X | |
| | Waste Management | | | | |
| 91 | Is the site kept clean and tidy? (e.g., litter free, good housekeeping) | X | X | X | construction material and C&D waste reported spread all over the site. No bins are provided. |
| 92 | Are separated labelled containers / areas provided for | X | X | X | |





| | District | Nagaon | Darang | Kamrup | |
|------|---|-----------------------------------|--------------------------------------|---------------------------|--|
| S.No | Environmental Concers (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const. | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | OBSERVATION/ FINDINGS |
| | facilitating recycling and waste segregation? | | | | |
| 93 | Are construction wastes / recyclable wastes and general refuse removed off site regularly? | X | X | X | |
| 94 | Are construction wastes collected and disposed of properly by licensed collectors? | X | X | X | |
| 95 | Are chemical wastes, if any, collected and disposed of properly by licensed collectors? | N.A | N.A | N.A | |
| 96 | Are oil drums and plants/equipment's provided with drip trays? | N.A | N.A | N.A | |
| 97 | Are drip trays free of oil and water? | N.A | N.A | N.A | |
| 98 | Is there any oil spillage? Clean-up the contaminated soil immediately? | N.A | N.A | N.A | |
| | Health Safety & Environment | | | | |
| 99 | PPE is supplied appropriate to the task and the user | ✓ | ✓ | ✓ | PPE kits are provided, but need to look into working at height safety features |
| 100 | Is the PPE provided by the contractor to all workers | ✓ | ✓ | ✓ | |
| 101 | First Aid Plan is displayed on notice board | ✓ | ✓ | ✓ | |
| 102 | Appropriate first aid kits are available and easily accessible with signs clearly visible | ✓ | ✓ | ✓ | |
| 103 | First aid kits are checked regularly to ensure they are clean, orderly, fully stocked and not expired | ✓ | ✓ | ✓ | |
| 104 | Is portable drinking water facility provided to labour camp | ✓ | ✓ | ✓ | |
| 105 | Is sanitation facility provided to labour camp | ✓ | ✓ | ✓ | |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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|------|--|--------------------------------------|---|------------------------------|---|
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| 106 | Is cooking facility provided to labour camp | N.A | N.A | N.A | mostly local labour is engaged |
| 107 | All trenches and pits are provided with enclosures and caution boards Stocking of materials and wastes is not obstructing pathways used by community | N.A | N.A | N.A | Not applicable |
| 108 | Is Covid-19 protocol followed by the contractor as mentioned in the EMP? | ✓ | ✓ | ✓ | |
| 109 | Resource Conservation | | | | |
| 110 | Is water pipe leakage and wastage prevented? | N.A | N.A | N.A | Not applicable |
| 111 | Are diesel-powered plants and equipment's shut off while not in use to reduce excessive use? | ✓ | ✓ | ✓ | |
| 112 | Are energy conservation practices adopted? | ✓ | ✓ | ✓ | solar lighting proposed for street lighting |
| 113 | Are metal or other alternatives used to minimize the use of timber? | ✓ | ✓ | ✓ | except for construction purpose, no timber is used. |
| 117 | Are materials stored in good condition to prevent deterioration and wastage (e.g., covered, separated)? | N.A | N.A | N.A | Not applicable |
| | Emergency Preparedness and Response | | | | |
| 114 | Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed? | ✓ | ✓ | ✓ | |
| 115 | Are accidents and incidents reported and reviewed, and corrective & preventive actions identified and recorded? | X | X | X | Not in practice |
| 116 | Others (please specify) | | | | |
| | Execution of Good Environmental Practices | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | Darang | Kamrup | |
|------|---|------------------------------------|--------------------------------------|---------------------------|-----------------------------------|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Warehouse Complex at Roha (Const.) | Warehouse Netaji Nagar Road (const.) | Warehouse Pachim Boragaon | OBSERVATION/ FINDINGS |
| 117 | Whether following structures are part of the approved master plan? (Water harvesting structure, Vermi composting pit, solar panel, etc) | ✓ | ✓ | ✓ | |
| 118 | Mention the execution status | ✓ | ✓ | ✓ | under construction, 80% completed |
| 119 | Whether any deviation from the proposed design is happening | N.A | N.A | N.A | Not applicable |
| | | | | | |
| | EMP Compliance Audit Checklist as per Contractual Obligations: Market | | | | |
| 120 | Post-Construction Phase | | | | |
| 121 | Storage of chemicals, fertilizers, pesticides | ✓ | ✓ | ✓ | will be done during operation |
| 122 | Storing equipment used for spraying and applying pesticides and fertilizers | N.A | N.A | N.A | Not applicable |
| 123 | | | | | |
| 124 | Use of power | ✓ | ✓ | ✓ | APDCL |
| 125 | Use of water | ✓ | ✓ | ✓ | Bore well within site |
| 126 | Hygiene practice | ✓ | ✓ | ✓ | well mention in EMP |
| 127 | Maintenance and calibration of equipment and items used in the warehouse | N.A | N.A | N.A | Not applicable |
| 128 | Maintenance of moisture level | N.A | N.A | N.A | Not applicable |
| 129 | Basic amenities need for workers/labours | ✓ | ✓ | ✓ | EMP is well elaborative. |
| | | | | | |





Table 5: Compliance to EMF Provisions for DICC

| S.No | Environmental Concens (EMF IMPLEMENTATION) | Kamrup | Sonitpur | Barpeta | Golaghat Renovation work in OPIU Office (DICC - Desk Rev.) | OBSERVATION/ FINDINGS |
|----------|--|--------|----------|---------|---|--|
| A | Environmental Approvals | | | | | |
| 1. | Environmental Clearance | N.A | N.A | N.A | N.A | EC not applicable |
| 2. | NoC form SPCB | N.A | N.A | N.A | N.A | Not Applicable |
| 3. | PHED | N.A | N.A | N.A | N.A | No shifting of water pipeline, etc |
| 4. | Tree Felling | N.A | N.A | N.A | N.A | No tree felling involved |
| 5. | Forest | N.A | N.A | N.A | N.A | No forest area within 1 km radius |
| 6. | Wildlife Habitat (Sanctuary/National Park) | N.A | N.A | N.A | N.A | No Sanctuary/ National Park within 5 km |
| 7. | Eco-Sensitive Zone | N.A | N.A | N.A | N.A | Project does not lay within such Boundary |
| 8. | Ecologically Sensitive Area | N.A | N.A | N.A | N.A | Project does not lay within such Boundary |
| 9. | Utility Shifting | N.A | N.A | N.A | N.A | Not involve |
| | Construction Phase | | | | | |
| | Site Screening | | | | | |
| 10. | Inclusion of solar passive features in the designs (optional - in case of construction of an additional room or closing the walls | N.A | N.A | N.A | N.A | The project involves renovation of existing building. They are no change in design |
| 11. | Fire safety (if not already existing) | ✓ | ✓ | ✓ | ✓ | Partially complied: exit gate, but no provision of fire extinguisher |
| 12. | Separate toilets for men and women with running water facility inside with septic tanks (in case of new toilets). Features such as holding | ✓ | ✓ | ✓ | ✓ | Separate toilets for men and women with water and septic tank facilities |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Kamrup | Sonitpur | Barpeta | Golaghat | |
|------|--|--------|----------|---------|---|--|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | | | | Renovation work in OPIU Office (DICC - Desk Rev.) | OBSERVATION/ FINDINGS |
| | bars for disable people and old persons | | | | | |
| 13. | Closed drains connected to a well-managed sewerage system | ✓ | ✓ | ✓ | ✓ | Yes |
| 14. | Safety features as applicable - parapet walls for the roof, grills for stair case etc. | N.A | N.A | N.A | N.A | |
| 15. | Non-use of lead paints, use of paints with low VOC. | ✓ | ✓ | ✓ | ✓ | use of no lead base paints and with Low VOC |
| 16. | Non-use of asbestos. Shift from OPC to PPC (cement) | ✓ | ✓ | ✓ | ✓ | Metal sheet roofing was done. |
| 17. | Structural stability certificate from PWD (if the buildings are too old) | ✓ | ✓ | ✓ | ✓ | Not available. But the construction was done under supervision of PWD. |
| | Construction work | | | | | |
| 18. | Transportation and Storage of construction Material - Nuisance to Public, Fugitive emissions | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 19. | Waste management and minimization - Impacts on land, water and visual impacts showing poor housekeeping practice | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| | Occupational Health and Safety | | | | | |
| 20. | Lack of safety tools | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 21. | Lack of safe construction practice | N.A | N.A | N.A | N.A | |
| 22. | Accidents occurring on site | N.A | N.A | N.A | N.A | |
| 23. | Site and task specific hazards | N.A | N.A | N.A | N.A | |
| 24. | Problem of noise | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Kamrup | Sonitpur | Barpeta | Golaghat | |
|------|--|--------|----------|---------|---|--|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | | | | Renovation work in OPIU Office (DICC - Desk Rev.) | OBSERVATION/ FINDINGS |
| | Waste Disposal | | | | | |
| 25. | Contamination of soil from toxic and Hazardous waste materials | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 26. | Decrease in water quality from sudden release or gradual seepage of leachate into nearby water courses | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 27. | Generation of foul and odour | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| | Use of Lavatory (Toilets) | | | | | |
| 28. | Contamination with the local water bodies and soil | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 29. | Generation of odour | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| | Post Construction Phase | | | | | |
| 30. | Use of Power - Over Consumption of power | X | X | X | X | Solar technologies not found; fluorescent lamp used instead of incandescent lights |
| 31. | Use of Water - Exploitation of Ground water resources | ✓ | ✓ | ✓ | ✓ | Water used in lavatories only |





Table 6: Compliance to EMF Provisions for ATMA

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta Agriculture Transformation Management Agency | Nagaon Agriculture Transformation Management Agency | OBSERVATION/ FINDINGS |
|----------|--|--|---|--|
| A | Environmental Approvals | | | |
| 1. | Environmental Clearance | N.A | N.A | EC not applicable |
| 2. | NoC form SPCB | N.A | N.A | Not Applicable |
| 3. | PHED | N.A | N.A | No shifting of water pipeline, etc |
| 4. | Tree Felling | N.A | N.A | No tree felling involves |
| 5. | Forest | N.A | N.A | No forest area within 1 km radius |
| 6. | Wildlife Habitat (Sanctuary/National Park) | N.A | N.A | No Sanctuary/ National Park within 5 km |
| 7. | Eco-Sensitive Zone | N.A | N.A | Project does not lay within such Boundary |
| 8. | Ecologically Sensitive Area | N.A | N.A | Project does not lay within such Boundary |
| 9. | Utility Shifting | N.A | N.A | Not involve |
| B | Site Screening | | | |
| 10. | Inclusion of solar passive features in the designs (optional - in case of construction of an additional room or closing the walls | N.A | N.A | The project involves renovation of existing building. They are no change in design |
| 11. | Fire safety (if not already existing) | ✓ | ✓ | Partially complied: two exitsgates, but no provision of fire extinguisher |
| 12. | Separate toilets for men and women with running water facility inside with septic tanks (in case of new toilets). Features such as holding bars for disable people and old persons | ✓ | ✓ | Separate toilets for men and women with water and septic tank facilities |
| 13. | Closed drains connected to a well-managed sewerage system | ✓ | ✓ | Yes |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta Agriculture Transformation Management Agency | Nagaon Agriculture Transformation Management Agency | OBSERVATION/ FINDINGS |
|----------|--|--|---|---|
| 14. | Safety features as applicable - parapet walls for the roof, grills for stair case etc. | N.A | N.A | |
| 15. | Non-use of lead paints, use of paints with low VOC. | ✓ | ✓ | use of no lead base paints and with Low VOC |
| 16. | Non-use of asbestos. Shift from OPC to PPC (cement) | ✓ | ✓ | Metal sheet roofing was done. |
| 17. | Structural stability certificate from PWD (if the buildings are too old) | ✓ | ✓ | Not available. But the construction was done under supervision of PWD. |
| C | Construction work | | | |
| 18. | Transportation and Storage of construction Material - Nuisance to Public, Fugitive emissions | ✓ | ✓ | Construction work is already complete. But reported that to control the fugitive emission - all vehicles have PUC certificate. D.G operation on lead free diesel and all vehicles was covered during transportation of construction material. |
| 19. | Waste management and minimization - Impacts on land, water and visual impacts showing poor housekeeping practice | ✓ | ✓ | The waste generated are mostly Construction and Demolition (C&D) Waste, are used for floor and internal path filling. Other solid waste like woods, metal scraps etc are stored within site at designated location. |
| D | Occupational Health and Safety | | | |
| 20. | Lack of safety tools | ✓ | ✓ | Use of PPE kits reported |
| 21. | Lack of safe construction practice | ✓ | ✓ | No |
| 22. | Accidents occurring on site | X | X | no reporting register |
| 23. | Site and task specific hazards | N.A | N.A | Not Applicable |
| 24. | Problem of noise | ✓ | ✓ | Not anticipated |
| E | Waste Disposal | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Barpeta | Nagaon | |
|--------------------------------|--|---|---|---|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Agriculture Transformation Management Agency | Agriculture Transformation Management Agency | OBSERVATION/ FINDINGS |
| 25. | Contamination of soil from toxic and Hazardous waste materials | N.A | N.A | Not Applicable |
| 26. | Decrease in water quality from sudden release or gradual seepage of leachate into nearby water courses | N.A | N.A | Not Applicable |
| 27. | Generation of foul and odour | N.A | N.A | Not Applicable |
| F | Use of Lavatory (Toilets) | | | |
| 28. | Contamination with the local water bodies and soil | N.A | N.A | Not Applicable |
| 29. | Generation of odour | N.A | N.A | Not Applicable |
| Post Construction Phase | | | | |
| 30. | Use of Power - Over Consumption of power | ✓ | ✓ | All fixtures and power equipment are energy efficient and star rated. The lighting of offices, hall, common area is through LED bulb. |
| 31. | Use of Water - Exploitation of Ground water resources | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

Table 7: Compliance Audit to EMF implementation of FPC/CSC

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|---|---|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|---|
| | Environmental Concens (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| A. Geographical Features, Site Information and generic description of Environment of the Sub-Project Location. | | | | | | | | | | | | | |
| Type of Ecosystem/Land Status | | | | | | | | | | | | | |
| | Project Status | Ongoing | completed | Ongoing | site selection completed | Completed | Ongoing | site identified | site identified | Planning Stage | site identified | site identified | |
| | Environmental Approvals | | | | | | | | | | | | |
| | Environmental Clearance | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | CtE | applied | Applied | Applied | obtained | Applied | under Process | Under Process | N.A | N.A | N.A | N.A | N.A - Under Planning Stage or CtE not required. |
| | Project location | | | | | | | | | | | | |
| 32. | Type of Terrain (Plain/Hilly/Mountainous, etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Undulating area | ✓ | ✓ | | Plain |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|---|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| 33. | Class of land (Agriculture/Non-agriculture/Residential/ Forest/ VGR /Jalatak/ any other water bodies/Barren land/open area, etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Non agricultural |
| 34. | Total Area of land under the Sub-project | 1.2 Bigha | 7056Sq. m | 2.5 Katta | 7 bigha 04 katta | 1bigha, 2 katta | 2 Bighas | 0.26 Ha | 3 bigha | 3 bigha | 3 bigas | | |
| 35. | Land Document and other relevant NoC for setting up the unit (Lease agreement copy, document from Circle office mentioning non-agricultural land, Trade License from Gaon Panchayat, or any other related document) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Land not yet finalized | ✓ | | Trade Licence NoC Obtained; Gram Panchayat NoC Obtained |
| 36. | Located within or near to Forest/ Environmentally sensitive or critical habitats areas within 500m of the subproject location | N.A | ✓ | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | N.A | | Yangli Farm - Forest area within 500mts Amlighat - Deepor Bell sanctuary within 500 mts. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|--|--|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| 37. | Surroundings of the sub-project location (North, South, East, West) | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Mixed land use. |
| 38. | Connectivity to the sub-project location National Highway/State Highway/Any other Major Road/ Approach Road /Nearest Railway Station/Waterway, etc. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | connecting road exists adjacent to project site |
| B. Specific description of the Sub-project Location Environment | | | | | | | | | | | | | |
| 39. | Are there any areas with landslide or erosion problems along or adjacent to the sub-project location? (If yes, indicate the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Not Applicable |
| 40. | Is there any river, wetland/lakes/swamps/nallas/s treams/ other water bodies beside or near to the sub-project location? (If yes, indicate the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | N.A | | Not Applicable |
| 41. | Is the sub-project location or adjacent area prone to flooding? (If yes, mention flood level and frequency) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Not Applicable |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|--|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| 42. | Are there problems of water stagnation or logging and other drainage issues on or near to the sub-project location? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Not Applicable |
| 43. | In case of existing structure, if any, is there any river/nalla/stream/any other water body connected to the drainage of the structure? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Not Applicable |
| 44. | Are there any faunal habitat areas, faunal breeding ground, bird migration area or other similar areas within 100m of the sub-project? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Not Applicable |
| 45. | Are there any utility structures within the sub-project location? (If yes, mention the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Not Applicable |
| 46. | Are there any sensitive structures within or near to the sub-project? (NoC to be obtained from adjoining sensitive structures like Hospital, PHC, School, Community Hall, Religious structures, community hall, residing household, etc. if any) | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | | Temple adjacent to proposed Chengnoi Farm Producer Company Ltd. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|-----------------------------|--|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|
| | Environmental Concens (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| C. Structure Details | | | | | | | | | | | | | |
| | For Existing Structure | | | | | | | | | | | | |
| 47. | Mention no. of units and specific uses of the utility of the existing structure/machineries), if any | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Concrete Building with Plinth Area 900 sq. ft. and a semi-permanent shed structure of 2000 sq. ft. |
| 48. | Source of water in case of existing structure | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Sourced from existing borewell | N.A | N.A | | not applicable |
| 49. | Source of Electricity in case of existing structure | N.A | N.A | N.A | N.A | N.A | N.A | N.A | APDCL | N.A | N.A | | Solar technology |
| 50. | Existing Facility(s) for Waste management (Mention types of waste and quantity generated/day) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | Kitchen waste are used in ponds |
| 51. | Existing Drainage provision | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Already provided in the building | N.A | N.A | | not applicable |
| For New Structure | | | | | | | | | | | | | |
| 52. | Infrastructure facilities | Feed | Banana | Feed | grain | grain | rice | Office, Fish | Office, | Office, | N.A | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|--|---|----------------------------------|--|---|---|---|--|--|--|-------------------------------------|-----------------------------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amilghat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| | (Mention type of facilities to be provided) | formulation and Storage Godown, toilets, | ripening unit | formulation and Storage Godown, toilets, | processing, flour mill, Paddy processing pulse making and grinding unit | processing, flour mill, Paddy processing pulse making and oil grinding unit | processing and vermi-compost packaging unit | Feed Mill, Electric Fish Dryer, fish prickle | Fish Feed Mill, Electric Fish Dryer | Godown , Toilet | | | |
| 53. | If the sub-project requires earth filling for construction work, Mention the source of the earth excavated for the purpose | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | | Borrow earth is required. Mostly procured from local vendor who are interested to convert the land into ponds |
| 54. | Source of water (Type of facilities to be made available) | Ground water/ tube well | Ground water/ tube well | Ground water/ tube well | Ground water/ tube well | Ground water/ tube well | Ground water/ tube well | Ground water/ tube well | Ground water/ tube well | Ground water/ tube well | N.A | | source: ground water source through borewell. |
| 55. | Source of Electricity (Mention type of facilities to be provided along with power capacity) (In case of Back-up power facility | APDCL | APDCL | APDCL | APDCL | APDCL | APDCL | APDCL | APDCL | APDCL | APDCL | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|---|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| | e.g., Genset, etc, mention the power and type of fuel, provision for its safe keeping) | | | | | | | | | | | | |
| 56. | Facilities for safe storage of raw material and finished products (Mention the facility(s) to be available) | Godown | Godown | Godown | Godown | Godown | Godown | Godown | Godown | Godown | N.A | Godown | |
| 57. | Waste Management (Mention type of facility(s) to be provided) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Construction and Demolition waste generated are used for site fillings. The recyclable waste like plastic bottles, plastic bags, cardboard box, etc. would be sold to authorized re-cyclers. |
| 58. | Drainage provision (If required, Mention type of system to be provided) | X | X | X | X | X | X | X | X | X | X | X | There is drainage provision within the sub-project |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|-------------------------------|--|--|--|--|---|---|-----------------------------------|-------------------------------------|--|--|--------------------------------------|-----------------------------------|--|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s Tetelia Agro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | Nabomilan Agro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| | | | | | | | | | | | | | premises. Final discharge of storm water or septic effluent discharge from site is not defined |
| D. Operational Details | | | | | | | | | | | | | |
| 59. | Type of Raw material to be used and their source (Mention requirement of quantity/day) | Dry fish, mineral oil, mustard oil, Paddy Husk, Soya bean, corn, etc | Raw Banana | Dry fish, mineral oil, mustard oil, Paddy Husk, Soya bean, corn, etc | rick, wheat, mustard, potato, | Rice, potato, garlic, wheat, mustard, etc | Paddy | Raw and dry fish | Raw and Dry fish | NA | NA | N.A | |
| 60. | What are the Machineries to be installed or used? (Mention the type of machinery(s) to be used, capacity or power of the machinery(s)) | mixer, grinder and packaging | Ripening Chamber and air circulating unit and ethylene | mixer, grinder and packaging | rice and flour mill and expeller mustard seed oil extractor | rice and flour mill and expeller mustard seed oil extractor | rice husk drinking machine | mixer, grinder and packaging | mixer, grinder and packaging | NA | NA | NA | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|--|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| | | | gas | | | | | | | | | | |
| 61. | Requirement of water per day (Mention specific purpose of water uses, whether domestic for office purpose/ or industrial uses e.g., Cleaning/ washing/ boiling/etc.) | X | X | X | X | X | X | X | X | NA | NA | | The quantity of daily water requirement is not estimated. Source of water - bore well |
| 62. | Waste generation (Mention quantity of solid/liquid waste generated per day) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | During operation phase the waste generated are packaging material, plastic bottles and card board box. These wastes are sold to authorized re-cyclers. |
| 63. | (In case of reuse of waste(s) such as animal feed for poultry, dairy, etc, mention the specific quantity generated/day) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | NA | NA | N.A | N.A | |
| 64. | Is there any provision to control dust/ reduce heat/ noise, etc (if | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | The complete units will be |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|---|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| | generated, mention the measure(s) to be undertaken to minimize effect, if any | | | | | | | | | | | | installed within big hall. No chance of process dust, notice, etc are anticipated |
| 65. | Is there provision for safe-water effluent discharge? (if yes, mention the discharge outlet or safe effluent management system, if any) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | The process does not generated any effluents. The expected effluent generated are from the toilets and domestic usage |
| 66. | Is there any use of additives/preservatives/chemicals for cleaning/processing/storage, etc in the unit? (If any, Mention the name of the additives/preservatives/chemicals, etc. and purpose of uses) | NA | NA | N.A | NA | NA | N.A | NA | NA | N.A | N.A | N.A | as per discussion no preservative is being used. |
| 67. | Is there any use of packaging material? (If yes, mention the | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | | Plastic bags and plastic bottles |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|--|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| | type of packaging material to be used) | | | | | | | | | | | | for oil. |
| 68. | What are the types of transporting vehicles to be used for transportation of unit's material or products? (Is the unit having space for parking facility?) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | Bolero -pickup, tempo, mini - truck, etc |
| 69. | Whether sub-project location has sufficient space for green belt? | X | X | X | X | X | X | X | X | X | X | X | The contract document EMP has included CPCB green Belt Development Plan. But due to area constrain, the most of the FPCs has proposed to carry out peripheral plantation along project boundary. In addition to this he has |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Districts | Kamrup | | | | | Morigaon | Nalbari | Cachar | | Sonitpur | Barpeta | OBSERVATION/ FINDINGS |
|------|---|---|----------------------------------|--------------------------------|--|--------------------------------------|-----------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|
| | Environmental Concerns (EMF IMPLEMENTATION) | Uttaran Farm Production Company (Fish Feed) | Amlighat Banana Producer Company | Bhallabari Fishery (Fish Feed) | M/s TeteliaAgro Organic Producing Company Limited. | Uttaran Krishi Producer Company Ltd. | Yangli Farm Producer Company Ltd. | Chengnoi Farm Producer Company Ltd. | Borkhola Aquaculture Farmers Producer Company Ltd. (Fishery) | Narsinghpur Integrated Farming Farmers Pvt. Ltd. (Paddy) | NabomilanAgro Producer Company Ltd. | Pahumara Farmer Producing Company | |
| | | | | | | | | | | | | | identified village council land , village road side to carry out substitution plantation. |
| 70. | Number of workers to be employed in the unit (Mention no. of skilled and unskilled workers) | 20 | 10 | 20 | 15 | 10 | 8 | 20 | 10 | 10 | N.A | | |
| 71. | What are the provision and precautionary measures to be taken for Occupational health and safety of workers? (If yes, mention the facilities to be provided and measures to be taken for safety of workers) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | During Audit it was noted that the OHSA issue lies with the community procurement. The contract document does not impose any condition to the operator about OHSA implementation . |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|---|---|--------------------------|--|--|-----------------------------------|--|---|--|--|
| S.N o | Environmental Concers (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri horti Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| A. Geographical Features, Site Information and generic description of Environment of the Sub-Project Location. | | | | | | | | | |
| Type of Ecosystem/Land Status | | | | | | | | | |
| | Project Status | Site selection completed | Site screening not done. | Site selection completed | Site selection completed | Constructio n almost completed | under screening stage | | |
| | Environmental Approvals | | | | | | | | |
| | Environmental Clearance | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| | CtE | X | N.A | X | N.A | Obtained | X | | N.A - Under Planning Stage |
| | Project location | | | | | | | | |
| 1 | Type of Terrain (Plain/Hilly/Mountainous, etc.) | ✓ | ✓ | undulating land | ✓ | Low lying area | ✓ | ✓ | Plain |
| 2 | Class of land (Agriculture/Non-agriculture/Residential/ Forest/ VGR /Jalatak/ any other water bodies/Barren land/open area, etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Non -agricultural |
| 3 | Total Area of land under the Sub-project | 3 Bigha | 1 Bigha | 3 bighas | 5.5 bighas | 1.2 Bigha | 1 bigha | 44 Bigha | |
| 4 | Land Document and other relevant NoC for setting up the unit (Lease agreement copy, document from | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Trade Licence NoC Obtained; Gram PanchayatNoC |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|------|---|----------------------|--|--|-----------------------------------|--|---|--|---|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Jorhat Agro Pvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri Horti Farmer Producing Company | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | Circle office mentioning non-agricultural land, Trade License from Gaon Panchayat, or any other related document) | | | | | | | | Obtained to establish the Company. They will be procuring locally produced raw material like cereals, honey, wheat rice, mustard, etc and process it. No licence for input supply is required. |
| 5 | Located within or near to Forest/ Environmentally sensitive or critical habitats areas within 500m of the subproject location | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | Yangli Farm - Forest area within 500mts Amlighat - Deepor Bell sanctuary within 500 mts. NOC is required if the project is located within notified Eco-sensitive Zone (ESZ). |
| 6 | Surroundings of the sub-project location (North, South, East, West) | ✓ | ✓ | jhum area | ✓ | ✓ | ✓ | ✓ | Mixed land use. |
| 7 | Connectivity to the sub-project location National Highway/State | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | connecting road exists adjacent to project |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | OBSERVATION/ FINDINGS |
|--|---|---------------------|--|--|-----------------------------------|--|--|--|--|
| | | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri horticulture Farmer Producing Company | Gohpur Fish Farmer Producer Company Ltd. | |
| | Highway/Any other Major Road/ Approach Road /Nearest Railway Station/Waterway, etc. | | | | | | | | site |
| B. Specific description of the Sub-project Location Environment | | | | | | | | | |
| 8 | Are there any areas with landslide or erosion problems along or adjacent to the sub-project location? (If yes, indicate the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 9 | Is there any river, wetland/lakes/swamps/nallas/streams/ other water bodies beside or near to the sub-project location? (If yes, indicate the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 10 | Is the sub-project location or adjacent area prone to flooding? (If yes, mention flood level and frequency) | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | The HFL level has been considered. The height of plant unit has been raised |
| 11 | Are there problems of water stagnation or logging and other drainage issues on or near to the sub-project location? | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | It lies in the flooding area, which is annual and occurs during monsoon. All |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|----------|--|---------------------|--|---|-----------------------------------|--|--|--|---|
| S.N o | Environmental Concens (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri hortia Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | | | | | | | | | measures have been taken by the contractor. |
| 12 | In case of existing structure, if any, is there any river/nalla/stream/any other water body connected to the drainage of the structure? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 13 | Are there any faunal habitat areas, faunal breeding ground, bird migration area or other similar areas within 100m of the sub-project? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 14 | Are there any utility structures within the sub-project location? (If yes, mention the location) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 15 | Are there any sensitive structures within or near to the sub-project? (NoC to be obtained from adjoining sensitive structures like Hospital, PHC, School, Community Hall, Religious structures, community hall, residing household, etc. if any) | N.A | N.A | Council Reserve Forest Nearby. The surrounding of project is tree | N.A | N.A | N.A | N.A | Temple adjacent to proposed Chengnoi Farm Producer Company Ltd. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|-----------------------------|--|---------------------|--|--|-----------------------------------|--|---|--|--|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri Horti Farmer Producing Company | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | | | | cover patch with Jhum Framing | | | | | |
| C. Structure Details | | | | | | | | | |
| | For Existing Structure | | | | | | | | |
| 16 | Mention no. of units and specific uses of the utility of the existing structure/machineries), if any | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | Concrete Building with Plinth Area 900 sq. ft. and a semi-permanent shed structure of 2000 sq. ft. |
| 17 | Source of water in case of existing structure | N.A | N.A | N.A | N.A | N.A | N.A | N.A | not applicable |
| 18 | Source of Electricity in case of existing structure | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | Solar technology |
| 19 | Existing Facility(s) for Waste management (Mention types of waste and quantity generated/day) | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | Kitchen waste are used in ponds |
| 20 | Existing Drainage provision | N.A | N.A | N.A | N.A | N.A | N.A | N.A | not applicable |
| | | | | | | | | | |
| For New Structure | | | | | | | | | |
| 21 | Infrastructure facilities (Mention | Factory | Factory | Factory | Not | Office, | Not Finalized | ✓ | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|----------|---|--|--|--|-----------------------------------|--|--|--|---|
| S.N o | Environmental Concens (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri hortia Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | type of facilities to be provided) | Shed, office, Godown, weight bridge, ramps and toilets | Shed, office, Godown, weight bridge, ramps and toilets | Shed, office, Godown, weight bridge, ramps and toilets | Finalized | Godown, Toilet and oil grinding unit | | | |
| 22 | If the sub-project requires earth filling for construction work, Mention the source of the earth excavated for the purpose | ✓ | N.A | N.A | ✓ | ✓ | N.A | N.A | Borrow earth is required. Mostly procured from local vendor who are interested to convert the land into ponds |
| 23 | Source of water (Type of facilities to be made available) | Ground water | Ground water | Ground water | Ground water | Ground water | Ground water | ✓ | source: ground water source through borewell. |
| 24 | Source of Electricity (Mention type of facilities to be provided along with power capacity) (In case of Back-up power facility e.g., Genset, etc, mention the power and type of fuel, provision for its safe keeping) | APDCL | APDCL | APDCL | APDCL | APDCL | APDCL | APDCL | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | OBSERVATION/ FINDINGS |
|------|---|---|--|--|-----------------------------------|--|---|--|---|
| | | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri Horti Farmer Producing Company | Gohpur Fish Farmer Producer Company Ltd. | |
| 25 | Facilities for safe storage of raw material and finished products (Mention the facility(s) to be available) | Godown | Godown and office | Godown and office | Not Finalized | Godown and office | Godown and office | Godown and office | |
| 26 | Waste Management (Mention type of facility(s) to be provided) | No waste will be generated. The rice husk and bran will be sold to poultry. | | X | Not Finalized | ✓ | Not Finalized | ✓ | Construction and Demolition waste generated are used for site fillings. The recyclable waste like plastic bottles, plastic bags, cardboard box, etc. would be sold to authorized re-cyclers. |
| 27 | Drainage provision (If required, Mention type of system to be provided) | X | X | X | Not Finalized | X | X | X | There is drainage provision within the plant premises. Final discharge of storm water or septic effluent discharge from site is not |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|-------------------------------|--|---|---|---|-----------------------------------|---|--|--|--------------------------|
| S.N o | Environmental Concens (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri horticulture Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | | | | | | | | | defined |
| D. Operational Details | | | | | | | | | |
| 28 | Type of Raw material to be used and their source (Mention requirement of quantity/day) | paddy | paddy | Paddy, Maize, ginger, pine apple, and other Agri Products. | Not Finalized | Mustard | Not Finalized | NA | |
| 29 | What are the Machineries to be installed or used? (Mention the type of machinery(s) to be used, capacity or power of the machinery(s)) | rice husk drinking machine | rice husk drinking machine | rice and flour mill and expeller mustard seed oil extractor | Not Finalized | mustard seed oil extractor | Not Finalized | ✓ | |
| 30 | Requirement of water per day (Mention specific purpose of water uses, whether domestic for office purpose/ or industrial uses e.g., Cleaning/ washing/ boiling/etc.) | 2000 lts/ per day for domestic usage and cleaning | 2000 lts/ per day for domestic usage and cleaning | X | Not Finalized | 2000 lts/ per day for domestic usage and cleaning | Not Finalized | N.A | |
| 31 | Waste generation (Mention quantity) | bran, husk | bran, husk | X | Not | mustard oil | Not Finalized | ✓ | No estimation of |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|----------|---|--|--|---|-----------------------------------|--|---|--|--|
| S.N o | Environmental Concns (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri horti Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | of solid/liquid waste generated per day) | and broken rice. Will be sold to poultry farmers | and broken rice. Will be sold to poultry farmers | | Finalized | cake sold in market | | | waste generated, type and even handling of waste has been quantified. |
| 32 | (In case of reuse of waste(s) such as animal feed for poultry, dairy, etc, mention the specific quantity generated/day) | | | bran, husk and broken rice. Will be sold to poultry farmers | | | Not Finalized | N.A | |
| 33 | Is there any provision to control dust/ reduce heat/ noise, etc (if generated, mention the measure(s) to be undertaken to minimize effect, if any | ✓ | ✓ | ✓ | Not Finalized | ✓ | Not Finalized | N.A | The complete units will be installed within big hall. No chance of process dust, notice, etc are anticipated |
| 34 | Is there provision for safe-water effluent discharge? (if yes, mention the discharge outlet or safe effluent management system, if any) | ✓ | ✓ | ✓ | Not Finalized | ✓ | Not Finalized | N.A | The process does not generate any effluents. The expected effluent generated are from the toilets and domestic usage |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|----------|---|---------------------|--|--|-----------------------------------|--|--|--|--|
| S.N o | Environmental Concens (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri hortia Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| 35 | Is there any use of additives/preservatives/ chemicals for cleaning/ processing/storage, etc in the unit? (If any, Mention the name of the additives/preservatives/chemicals, etc. and purpose of uses) | N.A | | N.A | Not Finalized | N.A | Not Finalized | N.A | As per discussion no preservative is being used. |
| 36 | Is there any use of packaging material? (If yes, mention the type of packaging material to be used) | N.A | N.A | N.A | | ✓ | Not Finalized | ✓ | Plastic bags and plastic bottles for oil. All the tetra pack and plastic are food graded and procured from licence vendor. |
| 37 | What are the types of transporting vehicles to be used for transportation of unit's material or products? (Is the unit having space for parking facility?) | ✓ | ✓ | ✓ | Not Finalized | ✓ | Not Finalized | ✓ | Bolero -pickup, tempo, mini -truck, etc |
| 38 | Whether sub-project location has sufficient space for green belt? | ✓ | ✓ | ✓ | Not Finalized | ✓ | Not Finalized | ✓ | The contract document EMP has included CPCB green Belt Development |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|----------|---|---------------------|--|--|--------------------------------------|---|---|---|--|
| S.N o | Environmental Concens (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri horti Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | | | | | | | | | Plan. But due to area constrain, the contractor has proposed to carry out peripheral plantation along project boundary. In addition to this he has identified village council land, village road side to carry out substitution plantation. |
| 39 | Number of workers to be employed in the unit (Mention no. of skilled and unskilled workers) | 30 | 30 | 50 | Not Finalized | 7 | Not Finalized | ✓ | |
| 40 | What are the provision and precautionary measures to be taken for Occupational health and safety of workers? (If yes, mention the facilities to be provided and | ✓ | ✓ | X | Not Finalized | ✓ | Not Finalized | ✓ | During Audit it was noted that the OHSA issue lies with the community procurement. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Jorhat | | Karbi Anglong | Sibsagar | Majuli | | Biswanath | |
|------|---|---------------------|--|--|--------------------------------------|---|---|---|--|
| S.No | Environmental Concns (EMF IMPLEMENTATION) | Jorhat AgroPvt. Ltd | Janjiporia Agri Horti Farmer Producing Company | Karbi Anglong Agri - Horti Farmers Producing Company | Desangmukh Agri Producing Company | Majuli River Bank Farmer Producing Company | Jengraimukh Agri horti Farmer Producing Compant | Gohpur Fish Farmer Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | measures to be taken for safety of workers | | | | | | | | The contract document does not impose any condition to the operator about OHSA implementation. |

Note: ✓ - complied; ☒ - not complied; NA – not applicable





Table 8: Compliance Audit to EMF implementation of Dairy Laboratory

| S.No | Environmental Concens (EMF IMPLEMENTATION) | Kamrup Strengthening of Laboratory | Nagaon Laboratory infrastructure of Dairy Birahbebezia | Golaghat Laboratory Strengthening - Bokaghat | Cachar Laboratory infrastructure of Dairy at Ghugnoor | OBSERVATION/ FINDINGS |
|------|--|---------------------------------------|---|---|--|---|
| A | Environmental Approvals | | | | | |
| 1. | Environmental Clearance | N.A | N.A | N.A | N.A | EC not applicable |
| 2. | NoC form SPCB | N.A | N.A | N.A | N.A | Not Applicable |
| 3. | PHED | N.A | N.A | N.A | N.A | No shifting of water pipeline, etc |
| 4. | Tree Felling | N.A | N.A | N.A | N.A | No tree felling involved |
| 5. | Forest | N.A | N.A | N.A | N.A | No forest area within 1 km radius |
| 6. | Wildlife Habitat (Sanctuary/National Park) | N.A | N.A | N.A | N.A | No Sanctuary/ National Park within 5 km |
| 7. | Eco-Sensitive Zone | N.A | N.A | N.A | N.A | Project does not lay within such Boundary |
| 8. | Ecologically Sensitive Area | N.A | N.A | N.A | N.A | Project does not lay within such Boundary |
| 9. | Utility Shifting | N.A | N.A | N.A | N.A | Not involve |
| 10. | Construction Phase | | | | | |
| 11. | Site Screening | | | | | |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | Nagaon | Golaghat | Cachar | OBSERVATION/ FINDINGS |
|------|--|-----------------------------|---|-------------------------------------|--|--|
| | | Strengthening of Laboratory | Laboratory infrastructure of Dairy Birahbebezia | Laboratory Strengthening - Bokaghat | Laboratory infrastructure of Dairy at Ghugnoor | |
| 12. | Inclusion of solar passive features in the designs (optional - in case of construction of an additional room or closing the walls | N.A | N.A | N.A | N.A | The project involves renovation of existing building. They are no change in design |
| 13. | Fire safety (if not already existing) | N.A | N.A | N.A | N.A | |
| 14. | Separate toilets for men and women with running water facility inside with septic tanks (in case of new toilets). Features such as holding bars for disable people and old persons | ✓ | ✓ | ✓ | ✓ | Separate toilets for men and women with water and septic tank facilities |
| 15. | Closed drains connected to a well-managed sewerage system | ✓ | ✓ | ✓ | ✓ | Yes |
| 16. | Safety features as applicable - parapet walls for the roof, grills for stair case etc. | N.A | N.A | N.A | N.A | |
| 17. | Non-use of lead paints, use of paints with low VOC. | ✓ | ✓ | ✓ | ✓ | use of no lead base paints and with Low VOC |
| 18. | Non-use of asbestos. Shift from OPC to PPC (cement) | ✓ | ✓ | ✓ | ✓ | Metal sheet roofing was done. |
| 19. | Structural stability certificate from PWD (if the buildings are too old) | ✓ | ✓ | ✓ | ✓ | Not available. But the construction was done under supervision of PWD. |
| | Construction work | | | | | |
| 20. | Transportation and Storage of construction Material - Nuisance to Public, Fugitive emissions | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | Nagaon | Golaghat | Cachar | OBSERVATION/ FINDINGS |
|------|--|-----------------------------|---|-------------------------------------|--|---|
| | | Strengthening of Laboratory | Laboratory infrastructure of Dairy Birahbebezia | Laboratory Strengthening - Bokaghat | Laboratory infrastructure of Dairy at Ghugnoor | |
| 21. | Waste management and minimization - Impacts on land, water and visual impacts showing poor housekeeping practice | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| | Occupational Health and Safety | | | | | |
| 22. | Lack of safety tools | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 23. | Lack of safe construction practice | N.A | N.A | N.A | N.A | |
| 24. | Accidents occurring on site | N.A | N.A | N.A | N.A | |
| 25. | Site and task specific hazards | N.A | N.A | N.A | N.A | |
| 26. | Problem of noise | N.A | N.A | N.A | N.A | |
| | Waste Disposal | | | | | |
| 27. | Contamination of soil from toxic and Hazardous waste materials | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 28. | Decrease in water quality from sudden release or gradual seepage of leachate into nearby water courses | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 29. | Generation of foul and odour | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| | Use of Lavatory (Toilets) | | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Kamrup | Nagaon | Golaghat | Cachar | |
|-------------------------|--|-----------------------------|---|-------------------------------------|--|---|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | Strengthening of Laboratory | Laboratory infrastructure of Dairy Birahbebezia | Laboratory Strengthening - Bokaghat | Laboratory infrastructure of Dairy at Ghugnoor | OBSERVATION/ FINDINGS |
| 30. | Contamination with the local water bodies and soil | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| 31. | Generation of odour | N.A | N.A | N.A | N.A | Not applicable at this stage (construction work finished) |
| Post Construction Phase | | | | | | |
| 32. | Use of Power - Over Consumption of power | ✓ | ✓ | ✓ | ✓ | Power will be supplied through APDCL. All lighting is LED Based and low voltage Fans. As per discussion the reffergator and chillers would be STAR rated. |
| 33. | Use of Water - Exploitation of Ground water resources | ✓ | ✓ | ✓ | ✓ | Bore well. Regulated water usage. Taps provided with aerator. |
| 34. | Contamination of soil from toxic and Hazardous waste materials | ✓ | ✓ | ✓ | ✓ | All the samples after testing would be source to the existing ETP installed at milk processing units. |
| 35. | Handling of sampled and tested Mill and milk product | ✓ | ✓ | ✓ | ✓ | All the sampled milk and remains of tested milk rejects would be sent to ETPs for treatment. |
| 36. | Storage and Labelling of Chemicals | ✓ | ✓ | ✓ | ✓ | The existing laboratory has proper SOP for storage and handling of chemicals. The same would be implemented. |



Table 9: Compliance Audit to EMF Implementation at WAMUL Milk Unit

| | | Kamrup | |
|------|--|--|---|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | Expansion of capacity of liquid milk plant | OBSERVATION/ FINDINGS |
| 1. | Village | Panjabani | |
| 2. | Block | Guwahati | |
| 3. | District: | Kamrup Metro | |
| 4. | Total Area | 8,836 Sqm. | |
| | Environmental Approvals | | |
| 5. | Environmental Clearance | | |
| 6. | Consent to Establish | ✓ | CtE applied dated 04 April, 2022 |
| 7. | Consent to operate | X | Pending |
| 8. | Wildlife Clearance | N.A | No wildlife area diversion involve. No wildlife area within 5 km radius |
| 9. | Forest Clearance | N.A | No forest land involved |
| 10. | Tree Felling Permission | N.A | Based on the Screening report prepared by APART and interaction with the contractor no tree felling is involve. |
| 11. | PHED | N.A | Not Involve |
| 12. | Utilities Shifting | N.A | Not Involve |
| 13. | Eco-sensitive Area | N.A | No Eco-sensitive area |
| | Dairy Processing Plant | | |
| 14. | What is the capacity of the milk processing plant? | 90 TLPD | |
| 15. | What is the amount of water required in the plant per day? | 120KLDP | The contractor needs to check for extraction of ground Water permission from SGWB |



| S.No | Environmental Concens (EMF IMPLEMENTATION) | Kamrup Expansion of capacity of liquid milk plant | OBSERVATION/ FINDINGS |
|------|--|--|---|
| 16. | What is the source of water? | Borewell | |
| 17. | What are the wastes generated by the plant per day? | X | The expected wate generated are food grade plastic, degraded milks, paper box and waste water from the process. |
| 18. | What is the generation point of the waste and its quantity? | X | Not estimated (comprise of solid and liquid waste) |
| 19. | Is there any facility to treat waste water | ✓ | ETP for liquid waste generated. |
| 20. | What is the capacity of Effluent Treatment Plant (ETP)? | 150 KLPD | |
| 21. | Is the waste being treated at intake point of ETP | ✓ | All the liquid waste generated from the process is sourced to ETP for treatment |
| 22. | Where is the treated waste water disposed? | ✓ | gardening and road washing. |
| 23. | s the electricity is sufficient or not? | ✓ | APDCL |
| 24. | What is the approximate power requirement of the plant in a day? | 3500 KWH/ day | |
| 25. | How many Diesels Generator (DG) sets are installed in the plant? | ✓ | 1 number |
| 26. | What is the capacity of these DGs? | ✓ | 500 KVA |



| | | Kamrup | |
|------|---|--|--|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | Expansion of capacity of liquid milk plant | OBSERVATION/ FINDINGS |
| 27. | How may hour the DGs operate in a day on an average? | ✓ | approx. 1 hour per day |
| 28. | What are the procedures followed to ensure quality of intake milk before processing and before packing? | ✓ | Adulteration, COB, Alcohol test, BR, FAT and SNF |
| 29. | Does the plant maintain daily record of its operation and maintenance? | ✓ | Yes |
| 30. | What is the action taken on the unsuitable milk? | ✓ | rejected |
| 31. | What is the capacity of boiler installed in your plant? | 2 ton/hour | |
| | Safety Issue | | |
| 32. | Is there is provision of adequate PPE Kits at Site | X | No labours at construction site are reported without PPE Kit |
| 33. | Is Tool Box Talk done every morning | X | not reported during labour interaction |
| 34. | Tool Box Talk - register maintain | X | not maintained |
| 35. | COVID-19 Management SOP | X | The Contract document has detailed SOP for COVID -19 implementation for project site. During Audit it was noted that the Contractor fails to implement COVID -19 protocol for the labours and other staff. |



| S.No | Environmental Concns (EMF IMPLEMENTATION) | Kamrup | OBSERVATION/ FINDINGS |
|------|---|--|---|
| | | Expansion of capacity of liquid milk plant | |
| 36. | Near Miss Reporting | X | not in practice |
| 37. | Safety Officer in- house | X | reported, but not present during Audit |
| 38. | Training to labours register | X | not maintained |
| 39. | Labour Licence | | obtained for 100 labours |
| 40. | SOP for Working at Height | X | No SOP for working at height |
| 41. | Electrical Safety Measures | X | loose wires noticed during audit |
| 42. | Fire Safety Measures | X | No fire extinguisher at labour camp |
| | Labour Camp | | |
| 43. | No of Labour Residing | ✓ | 70 to 100 |
| 44. | Provision of safe drinking Water | ✓ | Safe water is supplied by the contractor |
| 45. | Provision of Washroom and Toilets | X | poorly maintained |
| 46. | Provision of Adequate Cooking area | X | inadequate and uh-hygienic |
| 47. | provision of cooking gas/fire woods | X | fire wood reported for cooking during audit |
| 48. | adequate labour Camp | | |
| | Safety at Work Place | | |



| | | Kamrup | |
|--|--|--|--|
| S.No | Environmental Concns (EMF IMPLEMENTATION) | Expansion of capacity of liquid milk plant | OBSERVATION/ FINDINGS |
| 49. | safety measures for working at height | X | workers working at height without safety belt |
| 50. | Safety measures for working in confined space | X | No proper fencing of dug site |
| 51. | Safety measures at work station | X | site unorganized. Chance of accident is very high |
| 52. | provision of ladders and Barrications | X | labour noticed climbing using scaffold |
| Environmental Management Plan implementation for Pre-Construction, Construction and Operation Phase | | | |
| | Pre-Construction Phase | | |
| 53. | Loss of land and properties due to project development | N.A | within existing plant premises. no loss of private land is anticipated |
| 54. | Loss of residential places like house. | N.A | |
| 55. | Habitat modification of Flora and fauna | X | Site was covered with trees and shrubs. |
| 56. | Source of borrow earth and vendor | ✓ | Authorized vendor |
| | Construction Stage Impacts | | |
| 57. | Generation of noise from heavy machineries. | N.A | |
| 58. | Air pollution from the emission of dust particles and vehicular emissions. | N.A | All vehicles have PUC certificate |
| 59. | Effect on the ground water quality. | X | |



| | | Kamrup | |
|------|---|--|---|
| S.No | Environmental Concns (EMF IMPLEMENTATION) | Expansion of capacity of liquid milk plant | OBSERVATION/ FINDINGS |
| 60. | Degradation of soil quality | N.A | |
| 61. | Generation of construction and demolition wastes like, metal scrapers, bricks, cement, stones etc. | X | the C&D waste, metals scrap, bricks, empty cement bags are reported all over the construction site |
| 62. | Emission of noxious gases like methane, nitrous oxides is possible due to the enteric fermentation of manure when it is stored in the anaerobic condition | N.A | Not applicable |
| | Dairy Processing Impacts - (Industries) | | |
| 63. | Air Pollution and Odour Problem due to operation of the dairy processing plant | ✓ | <p>The plant is under construction stage, hence the operational issues cannot be audited. Based on the existing plant, it can be concluded that air pollution and odour problem will not be anticipated. During Audit, the existing plant was under running condition and no odour problem was noticed.</p> <p>The decomposed milk through defined system was dource to inhouse ETP plant, which treat the decompose milk and make the water to useable form. No foul smell was boticed near operational ETP plant.</p> <p>No noise was noticed during audit. All the components are design with low noise controller. The boilers and pumps are under enclosure.</p> |
| 64. | Air Pollution and Odour Problem due to Biological decomposition of milk derived organic matter. | ✓ | |
| 65. | Noise Generation due air discharges from drier stacks, Heater fans, Air supply fans Ventilation, Boilers, and Pumps | ✓ | |
| | Generation of waste water and other liquid wastes. | | |



| | | Kamrup | |
|------|---|--|--|
| S.No | Environmental Concns (EMF IMPLEMENTATION) | Expansion of capacity of liquid milk plant | OBSERVATION/ FINDINGS |
| 66. | Product losses from leaking equipment and pipelines, spills caused by equipment overflows and malfunctions and by poor Handling procedures. | ✓ | |
| 67. | The washing and cleaning out of product remaining in the tank, trucks, cans, piping | ✓ | |
| 68. | Splashing and container breakage in automatic packaging equipment | N.A | |
| | Operation Stage | | |
| 69. | Waste generated from Packaging of the dairy products. | ✓ | |
| 70. | Gas emissions from Storage of the products at cold storages/cooling units. | ✓ | The waste generated at the packaging units are food grade plastic bags cuttings. These are stored within the existing plant. Source to authorized recyclers. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Kamrup | |
|------|--|--|---|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | Expansion of capacity of liquid milk plant | OBSERVATION/ FINDINGS |
| | | | <p>The gas used in the cooling tower are Ammonia Gas. It is the most environmentally friendly refrigerant. It belongs to the group of so called "natural" refrigerants, and it has both GWP (Global Warming Potential) and ODP (Ozone Depletion Potential) equal to zero.</p> <p>The leakage can be detected if occur even in small quantity. Leak detector are installed in the exsiting units, with auto cut off. Third party safety audit are carried out of ammonia unit.</p> |

Note: ✓ - complied; ☒ - not complied; NA – not applicable





Table 10: Compliance to EMF implementation at Piggery Units

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | | | Karbi Anglong | OBSERVATION/ FINDINGS |
|------|---|--|---|-----------------------------------|-----------------------------------|--|---|
| | | Base Farm Piggery (Farm Gate, Khanapara) | Govt. Pig Breeding Farm, Alpco(Khanapara) | Govt. Pig Breeding Farm (Sonapur) | Rani Pig Breeding Govt. Farm | Govt. Pig cum Poultry Farm (Lumbring Road Dephu) | |
| 1 | Village | | Panjabari | Sonapur | Batabari | Lumbring | |
| 2 | Block | Khanapara | Khanapara | Demorica | | Diphu | |
| 3 | What type of farming do they practice? | Extensive | Extensive | Extensive | Extensive | Extensive | |
| 4 | What are the breeds they rear? | Hampshire & Large white Yorkshire | Hampshire & Large white Yorkshire | Hampshire & Large white Yorkshire | Hampshire & Large white Yorkshire | Large white Yorkshire | Under State Breeding Policy Assam, 2018; Import of exotic germplasm after all bio-security checking is recommended. Breeds of choice are Hampshire; Large Black and Large White Yorkshire has been recommended. . |
| 5 | Which breed is more economical and productive? | Large white Yorkshire | Large White Yorkshire | Large White Yorkshire | Large White Yorkshire | Large white Yorkshire | |
| 6 | What is the life time and time for slaughtering for the breed? | N.A | N.A | N.A | N.A | N.A | No Slaughter are being carried out |
| 7 | What type of farm it is? (Govt/Private) | ✓ | ✓ | ✓ | ✓ | ✓ | All Government Farm. |
| 8 | Area of the farm? | 14 Bighas | 3.5 Bighas | 5 Bighas | 10 Bigha | 122 Bigha | |
| 9 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | ✓ | ✓ | ✓ | ✓ | ✓ | No environmntall sensitive area like forest, biosphere reserve, wildlife Sanctuary, wetland, etc reported within 1 km radius |
| 10 | What pig breed is being reared? | Hampshire & Large white Yorkshire | Hampshire & Large white Yorkshire | Hampshire & Large white Yorkshire | Hampshire & Large white Yorkshire | Large white Yorkshire | |
| 11 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | Government Land |
| 12 | What types of feed they use? Do they meet their requirements | ✓ | ✓ | ✓ | ✓ | ✓ | The feed is supplied by government agency. The have three type of feeds - Creeping feed, Growing |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | | | Karbi Anglong | OBSERVATION/ FINDINGS |
|------|---|--|---|--------------------------------------|---------------------------------|--|---|
| | | Base Farm Piggery (Farm Gate, Khanapara) | Govt. Pig Breeding Farm, Alpco(Khanapara) | Govt. Pig Breeding Farm (Sonapur) | Rani Pig Breeding Govt. Farm | Govt. Pig cum Poultry Farm (Lumbring Road Dephu) | |
| | | | | | | | Feed and Finishing feed. The feed mostly comprises of protein, minerals and vitamins. Rice bran, broken rice, maize, soya-beans, cassava, vegetables, fish meal, ground nut cake |
| 13 | Use of Preservative in feed | ✓ | ✓ | ✓ | ✓ | X | At the Dihu pig farm use of tetracycline (antibiotic) has been reported to increase self-life of feeds. |
| 13 | From where do they buy feeds? | ✓ | ✓ | ✓ | ✓ | ✓ | Supplied by government agency. |
| 14 | Do they have proper facility for vaccination? | ✓ | ✓ | ✓ | ✓ | ✓ | Vaccination of pigs are being carried out by inhouse Veterinary doctor. |
| 15 | Do they have any facilities for artificial insemination? | N.A | N.A | N.A | N.A | N.A | No Artificial insemination practice are being noticed. |
| 16 | Are they aware of the diseases in pigs? | ✓ | ✓ | ✓ | ✓ | ✓ | There is a veterinary doctor and is aware of all pig related diseases |
| a | • Bacterial diseases: swine plague, swine erysipelas anthrax and inflectional abortions. | N.A | N.A | N.A | N.A | N.A | No incidence reported |
| b | • Viral origin diseases: swine fever, rind pest, foot and mouth disease, viral pneumonia and swine pox. | X | X | ✓ | ✓ | ✓ | African Swine Fever Virus reported. All the mature pigs and piglets are culled. In Assam State 12,000 pigs are Culled in September 2020. 80 piglets and 49 pigs are culled at Pig Breeding, AlpcoKhanapara. 217 piglets and 100 pigs are culled at Base Farm Govt. pig breeding farm Khanapara, Kamrup District |
| | Foot and Mouth Disease (Viral Origin) | N.A | N.A | X | X | X | Viral Disease |
| c | • Pigs also suffer from internal and external parasitism | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | | | Karbi Anglong | OBSERVATION/ FINDINGS |
|------|--|--|---|--------------------------------------|---------------------------------|--|--|
| | | Base Farm Piggery (Farm Gate, Khanapara) | Govt. Pig Breeding Farm, Alpco(Khanapara) | Govt. Pig Breeding Farm (Sonapur) | Rani Pig Breeding Govt. Farm | Govt. Pig cum Poultry Farm (Lumbring Road Dephu) | |
| 17 | What they do to the diseased dead pig? | X | X | ✓ | ✓ | ✓ | The ASF virus affected pigs are culled and buried in pits of depth 6ft after completing the disinfection process as recommended by state. The burial area is located within one corners of farm boundary and totally isolated. In addition, at other farm Dead animal disposal pits with proper RCC wall has been constructed. |
| 18 | What are the present waste management practices of the piggery farm in terms of: | | | | | | During audit no compost from manure has been reported. |
| a | • Waste collection method; and | X | ✓ | ✓ | X | X | Soak pit and Septic Tanks has been proposed. They are mostly filled. Faecal Matter and urine are noted overflowing within farm area. |
| b | • Waste treatment and disposal? | X | ✓ | ✓ | X | X | The pig litter, urine and wash off waste reached the soak pits proposed within the site. |
| 19 | How far is the nearby water body? (River or pond) | N.A | X | N.A | N.A | ✓ | Pond in adjacent used for fishing before pig sty constructed. Currently not in use as per audit findings. It is 1 to 1.5 meter apart from the constructed sty. The garland drain constructed along the sty are broken. The floor washing water or urine from Sty may reach the pond in adjacent. |
| 20 | What is the water requirement of for the farm? Do they meet their requirements? | ✓ | ✓ | ✓ | ✓ | ✓ | There is over head tanks which ranges between 1000lt to 2000lts. The source of water is through borewell located within farm. |
| 21 | Are there any impacts on the local flora and fauna from piggery? | N.A | N.A | N.A | N.A | N.A | No impact on flora and fauna are reported. |
| 22 | Were the farmers aware of diseases | N.A | N.A | N.A | N.A | N.A | No such disease reported by the farmers. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | | | Karbi Anglong | OBSERVATION/ FINDINGS |
|------|--|--|---|--------------------------------------|---------------------------------|--|---|
| | | Base Farm Piggery (Farm Gate, Khanapara) | Govt. Pig Breeding Farm, Alpco(Khanapara) | Govt. Pig Breeding Farm (Sonapur) | Rani Pig Breeding Govt. Farm | Govt. Pig cum Poultry Farm (Lumbring Road Dephu) | |
| | caused to them from piggery? Do they suffer from any of these diseases like: | | | | | | |
| a | • Respiratory problems: asthma, bronchitis | N.A | N.A | N.A | N.A | N.A | |
| b | • Gastrointestinal problems: diarrhoea | N.A | N.A | N.A | N.A | N.A | |
| c | • Any cases of, conjunctivitis, influenza, allergies, like tape worm, swine flu etc.? | N.A | N.A | N.A | N.A | N.A | |
| 23 | Do they have proper license for the slaughter house | N.A | N.A | N.A | N.A | N.A | No slaughter House. This is only pig multiplication centre were litter after 2 to 3 months are sold to farmers. |
| 24 | Prohibition of use of antibiotics to 'prevent' an early death of the pigs without proper medical guidance used | ✓ | ✓ | X | ✓ | X | In pig feed use of antibiotic like Tetracycline has been reported. |
| 25 | Minimization of GHG from project site | X | ✓ | X | X | X | No biogas plant has been proposed |
| 26 | Bio manure management for community or individual level Integrated Farming practices | X | N.A | ✓ | ✓ | X | No Bio manure management reported for community. Dried faecal matter is reported all over farm premises. |
| 27 | Establishment of biogas plant could a best way to manage the toxic gas and it generates the energy to fulfil the demand of day-to-day cooking fuel | X | ✓ | X | X | X | |
| 28 | Providing awareness and capacity building to the farmers, participating communities, local authorities, extension agents, development practitioners etc., on the promising | ✓ | ✓ | ✓ | ✓ | ✓ | Training is given to the pig farmers to make bio - manure from faecal matter. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | | | Karbi Anglong | OBSERVATION/ FINDINGS |
|------|--|--|--|-----------------------------------|------------------------------|--|--|
| | | Base Farm Piggery (Farm Gate, Khanapara) | Govt. Pig Breeding Farm, Alpo(Khanapara) | Govt. Pig Breeding Farm (Sonapur) | Rani Pig Breeding Govt. Farm | Govt. Pig cum Poultry Farm (Lumbring Road Dephu) | |
| | approaches to minimise environmental impacts due to pig farming | | | | | | |
| 29 | Ensure provision of proper drainage of facilities (ensure there is no stagnant water in the project site and its vicinities) | X | X | ✓ | X | X | At Base Farm Govt. breeding farm, Khanapara, the effluent discharge from the sty goes into water pond within plant premises. the soak pits and septic tanks are all silted. Dihu Farm, no proper drainage and urine from the sty are being noted flowing in the low-lying area. The septic tanks and soak pits are all filled and silted. The drainage connectivity within sty and soak pits are all broken. Major environmental issues. |
| 30 | Waste storages, sludge collection facilities controlled regularly to prevent insect attraction and breeding; | ✓ | ✓ | ✓ | X | X | Diphu farm, major issue |
| 31 | Inspect regularly workers health and hygiene | ✓ | ✓ | ✓ | ✓ | X | |
| 32 | Contingency plan for mass disposal of animal carcass in the event of disease or disaster | ✓ | ✓ | ✓ | ✓ | ✓ | Carcass pit are constructed at all sites. |
| 33 | Ensure provision of adequate drainage facilities | X | ✓ | ✓ | X | X | At base Farm, Khanapara adequate drainage are reported but issues lies with final out fall of sty drains. Diphu Farm: The drainage leads into open area within farm. Since the farm is on higher altitude and surrounding area is low, the waste effluent can reach the surround low line area, resulting in soil pollution. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | | | Karbi Anglong | OBSERVATION/ FINDINGS |
|------|---|--|---|--------------------------------------|---------------------------------|--|---|
| | | Base Farm Piggery (Farm Gate, Khanapara) | Govt. Pig Breeding Farm, Alpco(Khanapara) | Govt. Pig Breeding Farm (Sonapur) | Rani Pig Breeding Govt. Farm | Govt. Pig cum Poultry Farm (Lumbring Road Dephu) | |
| 34 | Ensure adequate design, installation, and maintenance of holding tanks, septic systems and wastewater soak pits | X | ✓ | ✓ | X | X | At the Diphu farm holding tanks, septic tanks, waste water soak pits are all silted. No sty waste is being source to it. Instead, they are reaching low lying area. |
| 35 | Provision to Control Chemical Contamination of Adjacent water bodies | X | ✓ | ✓ | ✓ | X | To control vector born and other infection bleaching powder are being used alongsty. These are contaminating the surrounding area. There is no provision to treat it and septic tanks and soak pits are all silted. |
| 36 | Bio-Security measures adopted for staff and workers | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 38 | Training to Workers and Staff on health related issues | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 39 | Vaccination and Routine Check-up for Staff | ✓ | ✓ | ✓ | ✓ | X | |
| | Slaughter Houses | | | | | | |
| 40 | What is the number of pigs being slaughtered per day? | N.A | N.A | N.A | N.A | N.A | Not Applicable. These are only pig Breeding centre, where pig is breed and piglets sold to the farmers. No Slaughter has been proposed |
| 41 | Is there any inspection and monitoring from veterinary department for, pre mortem and post mortem? | N.A | N.A | N.A | N.A | N.A | |
| 42 | Does the slaughter house have proper drainage facilities? | N.A | N.A | N.A | N.A | N.A | |
| 43 | Are there any treatment, management and recycling practices for the wastes generated? | N.A | N.A | N.A | N.A | N.A | |
| 44 | What they do to the unsold pork? | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | | | Karbi Anglong | OBSERVATION/ FINDINGS |
|------|--|--|---|--------------------------------------|---------------------------------|--|-----------------------|
| | | Base Farm Piggery (Farm Gate, Khanapara) | Govt. Pig Breeding Farm, Alpco(Khanapara) | Govt. Pig Breeding Farm (Sonapur) | Rani Pig Breeding Govt. Farm | Govt. Pig cum Poultry Farm (Lumbring Road Dephu) | |
| 45 | What is the daily water requirement of the slaughter house? | N.A | N.A | N.A | N.A | N.A | |
| 46 | What is the energy requirement of the slaughter house per day? | N.A | N.A | N.A | N.A | N.A | |
| 47 | Do the butchers use any Personal Protective Equipment? | N.A | N.A | N.A | N.A | N.A | |
| | | | | | | | |

Note: ✓ - complied; ☒ - not complied; NA – not applicable



Table 11: Compliance to EMF provisions for Fish seed Multiplication Centre.

| S.No | Environmental Concens (EMF IMPLEMENTATION) | Kamrup | | OBSERVATION/ FINDINGS | |
|------|---|------------------|------------------------|---|--|
| | | Rangia Fish Farm | Ulubari Fish Seed Farm | | |
| | Environmental Approvals | | | | |
| 1 | Environmental Clearance | N.A | N.A | No permission is required from Regulator authority. The project involves re-novation of the existing facilities. No new site has been proposed. | |
| 2 | NoC form SPCB | N.A | N.A | | |
| 3 | PHED | N.A | N.A | | |
| 4 | Tree Felling | N.A | N.A | | |
| 5 | Forest | N.A | N.A | | |
| 6 | Wildlife Habitat (Sanctuary/National Park) | N.A | N.A | | |
| 7 | Eco-Sensitive Zone | N.A | N.A | | |
| 8 | Ecologically Sensitive Area | N.A | N.A | | |
| 9 | Utility Shifting | N.A | N.A | | |
| | Site Screening | | | | |
| 10 | Inclusion of solar passive features in the designs (optional - in case of construction of an additional room or closing the walls | N.A | N.A | Only renovation of the existing building | |
| 11 | Fire safety (if not already existing) | X | X | There is Oxygen cylinders for oxygen filling in the fish seed packing plastic bag. Provision of fire extinguisher is required. Not reported | |



| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | OBSERVATION/ FINDINGS | |
|------|--|------------------|------------------------|--|--|
| | | Rangia Fish Farm | Ulubari Fish Seed Farm | | |
| 12 | Separate toilets for men and women with running water facility inside with septic tanks (in case of new toilets). Features such as holding bars for disable people and old persons | ✓ | ✓ | Toilets are provided for the workers and staff. Separate toilets are provided | |
| 13 | Closed drains connected to a well-managed sewerage system | N.A | N.A | This is hatchery system. The drainage is planned as per the design. | |
| 14 | Safety features as applicable - parapet walls for the roof, grills for stair case etc. | N.A | N.A | | |
| 15 | Non-use of lead paints, use of paints with low VOC. | ✓ | ✓ | No lead-based paints are being used | |
| 16 | Non-use of asbestos. Shift from OPC to PPC (cement) | ✓ | X | The asbestos used has been replaced by PPC cement and Steel type. The replaced asbestos is reported stocked in an unscientific manner. | |
| 17 | Structural stability certificate from PWD (if the buildings are too old) | N.A | N.A | it was re-novated under supervision of PWD and fishery department | |
| | Construction work | | | | |
| 18 | Transportation and Storage of construction Material - Nuisance to Public, Fugitive emissions | ✓ | ✓ | They are mostly stored within the site. During site visit, the renovation work is almost complete and the site is operational. | |



| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | OBSERVATION/ FINDINGS | |
|------|--|------------------|------------------------|---|--|
| | | Rangia Fish Farm | Ulubari Fish Seed Farm | | |
| 19 | Waste management and minimization - Impacts on land, water and visual impacts showing poor housekeeping practice | X | X | site is not properly or completely fenced. There are residents surrounding the site. Un authorized people enters the site. Throw their waste and even wash cloths in the ponds which are used for fish propagation. The unregulated entry should be restricted. this has also been reported in the screening report of the DEC concern. | |
| | Occupational Health and Safety | | | | |
| 20 | Lack of safety tools | ✓ | X | There should be fire extinguishers at each site | |
| 21 | Lack of safe construction practice | X | X | The fish rearing ponds are noted to have vertical cut side wall. If someone wants to get into the pond to collect the fish fry or fingerling there is chance of slip and fall. | |
| 22 | Accidents occurring on site | X | X | No Accident reporting noted | |
| 23 | Site and task specific hazards | X | X | At site there is oxygen cylinder. The air pressure oxygen regulator at the cylinder is missing. | |
| 24 | Problem of noise | N.A | N.A | | |
| | Waste Disposal | | | | |
| 25 | Contamination of soil from toxic and Hazardous waste materials | N.A | N.A | | |



| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | OBSERVATION/ FINDINGS | |
|------|--|------------------|------------------------|---|--|
| | | Rangia Fish Farm | Ulubari Fish Seed Farm | | |
| 26 | Decrease in water quality from sudden release or gradual seepage of leachate into nearby water courses | X | X | there is major issue of water quality in these ponds. Growth of blue green algae was commonly noticed. these are mainly due to nitrogen and phosphorous pollution. During consultation it was noticed that there is application of urea fertilized in these ponds. | |
| 27 | Generation of foul and odour | N.A | N.A | No smell was noticed during audit | |
| | Use of Lavatory (Toilets) | | | | |
| 28 | Contamination with the local water bodies and soil | N.A | N.A | there is provision of septic tanks and soak pits | |
| 29 | Generation of odour | N.A | N.A | No odour reported | |
| | Post Construction (Operation) | | | | |
| 30 | Use of Power - Over Consumption of power | ✓ | ✓ | APDCL | |
| 31 | Use of Water - Exploitation of Ground water resources | ✓ | ✓ | ground water usage is reported. But ground water quality testing not done. | |
| | Application of feed | ✓ | ✓ | fish feed is provided by the government approved agency | |
| 32 | Bio-security Measures | ✓ | ✓ | well adopted and practice at each fish multiplication centre. The left-over fish seedling is stacked in the pond within the premises. There is no link between pond and other water bodies from where these fish might reach rivers or streams and pose threat to the natural eco-system. | |



| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Kamrup | | OBSERVATION/ FINDINGS | |
|------|---|------------------|------------------------|--|--|
| | | Rangia Fish Farm | Ulubari Fish Seed Farm | | |
| 33 | Species of fish selected for breeding | ✓ | ✓ | The species of fish selected is determined by the government fishery department. The species of fish banned by the fishery department is not used in fish seed multiplication centre. Common carp, Indian Major Carp, Exotic Carp, grass carp and silver carp. | |
| 34 | Structural damaged | X | X | during Audit structural damaged was well noted. Cracks in internal path, side wall, cracks in internal drains, etc was noticed. | |
| 35 | fish carcass handling measures | X | X | As reported at the site, the dead fish carcass is discarded in surrounding area. No proper procedure exists to handle the carcass. | |
| 36 | Water Quality Assessment | X | X | No water quality assessment done. The water from hatchery and fish rearing pond are drained into nearby Nala. d | |
| 37 | Dissolve Oxygen measuring practice | X | X | No log book or measuring reported. | |
| | | | | | |

Note: ✓ - complied; ☒ - not complied; NA – not applicable



Table 12: Compliance to EMF Provisions for Agricultural Demonstration (Paddy)

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta | | | | | Cachar | | | | | Darang | | OBSERVATION/ FINDINGS |
|------|---|------------|--------------------|---------------------------|----------------------|----------------------|----------------------|--------------------|----------------------|----------------------|----------------------------------|---|-----------------------------|--|
| | | Dayal Das | Sibba Nath Bharali | Rajeda Khatun - Desk Rev. | Angad Deka Desk Rev. | Subash Deka Desk Rev | Kabutar Nessa Laskar | Sippa Begum Laskar | Muslima Begum Laskar | Farzana Begum Laskar | Rahim Uddin Laskar - Desk Review | Nefsa Agro Organic Farmer Producing Company | Manorma Devi - (Desk Rev.) | |
| | Name of Village | Palasartal | Keotkuchi | Rangia Gaon | Karakuchi | Bajkuchi | Neirgram -1 | Neirgram -1 | Neirgram -2 | Neirgram -2 | Neirgram -2 | Mazagaon | Paschim Chuba | |
| | Block | Barbeta | Barbeta | Sarukhetri | Sarukhetri | Bajali Dev Block | | | | | | Pub mangaldar | Sipajhar | |
| 1 | Area of the Demonstration Plot? | 0.2 Ha | 0.2 Ha | 0.30 Ha | 0.20 Ha | 0.30 Ha | 3 Bigha | 3 Bigha | 3 Bigha | 3 Bigha | 3 Bigha | 12 Bigha | 0.25 Ha | |
| 2 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | N.a | N.A | N.A | N.A | N.A | N.a | N.A | N.A | N.A | N.A | N.A | N.A | No environmental sensitive features within 5 km radius |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta | | | | | Cachar | | | | | Darang | | OBSERVATION/ FINDINGS |
|------|--|---------------------------------|--------------------|---------------------------|----------------------|----------------------|----------------------|--------------------|----------------------|----------------------|----------------------------------|--|-----------------------------|--|
| | | Dayal Das | Sibba Nath Bharali | Rajeda Khatun - Desk Rev. | Angad Deka Desk Rev. | Subash Deka Desk Rev | Kabutar Nessa Laskar | Sippa Begum Laskar | Muslima Begum Laskar | Farzana Begum Laskar | Rahim Uddin Laskar - Desk Review | NefsaAgro Organic Farmer Producing Company | Manorma Devi - (Desk Rev.) | |
| 3 | What crop variety will be cultivated under APART demonstration? | Bina-11 | Bina-12 | Ranjit Sub-1 | Bina-11 | Ranjit Sub-1 | Bahadur Sub-1 | Swarna Sub-1 | Ranjit Sub-1 | Ranjit Sub-1 | Bahadur Sub 1 | Bina -II | Bahadur Sub 1 | |
| 4 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Private/ farmer owned Land |
| 5 | How many times a year the farmers cultivate? | 2 times | 2 times | Two Crops | Two Crops | Two Crops | 2 times | 2 times | Two Crops | Two Crops | Two Crops | two Crop | two Crop | |
| 6 | What is the crop the famers cultivate? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Paddy |
| 7 | Do they cultivate any local varieties? | Sali Paddy Demonstration (ICMD) | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Bahadur, Ranjit, Glutinous rice, these are the local varieties |
| 8 | From where do they bring the seeds? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Provided by APART |
| 9 | Do the farmers use any types of fertilizers? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Urea, Potash, Micro-nutrient, Vermi-compost, Rhizobium, zinc, DAP, Sulphate, Potash, etc |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta | | | | | Cachar | | | | | Darang | | OBSERVATION/ FINDINGS |
|------|---|-----------|--------------------|---------------------------|----------------------|----------------------|----------------------|--------------------|----------------------|----------------------|----------------------------------|--|-----------------------------|---|
| | | Dayal Das | Sibba Nath Bharali | Rajeda Khatun - Desk Rev. | Angad Deka Desk Rev. | Subash Deka Desk Rev | Kabutar Nessa Laskar | Sippa Begum Laskar | Muslima Begum Laskar | Farzana Begum Laskar | Rahim Uddin Laskar - Desk Review | NefsaAgro Organic Farmer Producing Company | Manorma Devi - (Desk Rev.) | |
| 10 | What steps the farmers take in case of disease outbreak and pest attacks in crops? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Use of Pesticides not reported. No disease outbreak reported during interaction |
| 11 | Do they use pesticides? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Use of Pesticides; Not specified. Not reported by farmers. |
| 12 | Do they procure chemicals, fertilizers and pesticides from licensed seller? | X | X | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | Provided by APART Under emergency condition the farmers procure the pesticide from the local markets to control pest. |
| 13 | Do the farmers use personal protective equipment during handling and application of chemicals/pesticides/fertilizers? | X | X | X | X | X | X | X | X | X | X | X | X | The farmers are reported to use mask and eye protecting glass. But they are not using complete PPE kits. |
| 14 | Does the agricultural field have proper irrigation facility? | X | X | X | X | X | X | X | X | X | X | X | X | No, the farmers are dependent on rain. Whole area is rain fed. Limited bore well |
| 15 | What is the period of occurrence of flood in that area? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | N.A | N.A | May to Sept almost every year |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta | | | | | Cachar | | | | | Darang | | OBSERVATION/ FINDINGS |
|------|---|-----------|--------------------|---------------------------|----------------------|----------------------|----------------------|--------------------|----------------------|----------------------|----------------------------------|--|-----------------------------|--|
| | | Dayal Das | Sibba Nath Bharali | Rajeda Khatun - Desk Rev. | Angad Deka Desk Rev. | Subash Deka Desk Rev | Kabutar Nessa Laskar | Sippa Begum Laskar | Muslima Begum Laskar | Farzana Begum Laskar | Rahim Uddin Laskar - Desk Review | NefsaAgro Organic Farmer Producing Company | Manorma Devi - (Desk Rev.) | |
| 16 | Do the farmers practice fish cum rice cultivation? | X | X | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 17 | Do the farmers have proper storage facilities for the gains? | ✓ | ✓ | ✓ | ✓ | ✓ | X | X | X | X | X | X | X | storage facilities have been provided |
| 18 | Do the agricultural fields have proper drainage system? | X | X | X | X | X | X | X | X | X | X | X | X | No drainage system to drain out excess water |
| 19 | Do the farmers undergo any soil test? | X | X | X | X | X | X | X | X | X | X | X | X | No soil testing reported for project considered for Audit. Based on the desk review soil testing has been carried out for 10% of the total project under demonstration. |
| 20 | Do they follow integrated pest management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Practice of IPM implementation at farmers level noticed. |
| 21 | Are there any disturbances from wild animals or birds? | N.a | N.A | N.A | N.A | N.A | N.a | N.A | N.A | N.A | N.A | N.A | N.A | No |
| 22 | What are the common birds, insects, amphibians etc. found in the field. Any loss of commonly found species? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Mostly monkey and other livestock and some local birds like sparrow, parrots etc. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta | | | | | Cachar | | | | | Darang | | OBSERVATION/ FINDINGS |
|------|--|-----------|--------------------|---------------------------|----------------------|----------------------|----------------------|--------------------|----------------------|----------------------|----------------------------------|--|-----------------------------|--|
| | | Dayal Das | Sibba Nath Bharali | Rajeda Khatun - Desk Rev. | Angad Deka Desk Rev. | Subash Deka Desk Rev | Kabutar Nessa Laskar | Sippa Begum Laskar | Muslima Begum Laskar | Farzana Begum Laskar | Rahim Uddin Laskar - Desk Review | NefsaAgro Organic Farmer Producing Company | Manorma Devi - (Desk Rev.) | |
| 23 | Do they follow any type of waste management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | No significant waste generated, husk, straw was used as cattle feeding |
| 24 | Result in any type of human wildlife conflicts? | N.a | N.A | N.A | N.A | N.A | N.a | N.A | N.A | N.A | N.A | N.A | N.A | |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | | | | | | | | | | Goalpara | | | |
|------|---|--------------|----------|-----------------------------|-----------------------------|-------------------------|------------------------|---------------------------|-------------------------|-------------------------------|------------------------|------------------------------|---|------------------------------|--|
| S.No | Environmental Concers (EMF IMPLEMENTATION) | Purnima Deka | Jitu Ali | ParbriGourani – (Desk Rev.) | Anu KalitaSaikia (Desk Rev) | RimjimKakati (Desk Rev) | Saranga Jyoti Borkahat | Hamida Khatun (Desk Rev.) | Gourang Das (Desk Rev.) | Shri Basanta Chao (Desk Rev.) | Pradip Das (Desk Rev.) | Abdul Kudus - Rice Cafeteria | Suresh Chandra Das - Rice Cafeteria - Desk Rev. | NonigopalHajag – (Desk Rev.) | OBSERVATION/ FINDINGS |
| | Name of Village | Bogoriguse | Goramaj | Madaeosal | Sanchuwa | Sanchuwa | Sanchuwa | dakhinkalho wal | Kanuamari | Kanuamari | Sanaribali | Changpatag p | Changpata | Damahani | |
| | Block | Raha | Raha | Raha | Khagarijan | Khagarijan | Khagarijan | Rupahai | bajiagaon | bajiagaon | bajiagaon | Bashbari | Bashbari | Jaleshwal | |
| 1 | Area of the Demonstration Plot? | 2 Bigha | 2 Bigha | 2 bigha | 2 bigha | 2 Bigha | 2 Bigha | 2 Bigha | 2 Bigha | 2 Bigha | 2 Bigha | 2 bigha | 2 bigha | 0.3 ha | |
| 2 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | N.A | N.A | N.A | N.a | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.a | N.A | No environmental sensitive features within 5 km radius |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | | | | | | Goalpara | | | OBSERVATION/ FINDINGS |
|------|--|---|-----------|--------------------------------|--------------------------------|----------------------------|------------------------|---------------------------|-------------------------|----------------------------------|------------------------|--|--|---------------------------------|--|
| | | Purnima Deka | Jitu Ali | ParbriGourani – (Desk Rev.) | Anu KalitaSaikia (Desk Rev) | RimjimKakati (Desk Rev) | Saranga Jyoti Borkahat | Hamida Khatun (Desk Rev.) | Gourang Das (Desk Rev.) | Shri Basanta Chao (Desk Rev.) | Pradip Das (Desk Rev.) | Abdul Kudus - Rice Cafeteria | Suresh Chandra Das - Rice Cafeteria - Desk Rev. | NonigopalHajag – (Desk Rev.) | |
| 3 | What crop variety will be cultivated under APART demonstration? | Rice Cafeteria -10 varieties | Bina -II | Bina-II | Bina -ii | Bahadur Sab-1 | Bahadur Sab-1 | Ranjit Sub-1 | Ranjit Sub-1 | Bahadur Sab-1 | Bina-II | 10 Varsity - Bina-11, DRR-44, CR-311, CR-309, Bina-17, CR-310, 29, Joymoti, Dishang, L algonga | ICMD. Minikit | | |
| 4 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | private Land |
| 5 | How many times a year the farmers cultivate? | 2 times | Two Crops | Two Crops | Two Crops | two Crop | two Crop | Two Crops | Two Crops | two Crop | two Crop | Two Crops | two Crop | two Crop | |
| 6 | What are the crop the famers cultivate? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Paddy |
| 7 | Do they cultivate any local varieties? | Joha, Bora, Birohi, Sona Masuri, purabin, | | | | | | | | | | Black Rice | Summer Paddy and Winter Paddy | | Bahadur, Ranjit, Glutinous rice, These are the local varieties |
| 8 | From where do they bring the seeds? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Provided by APART |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | | | | | | Goalpara | | | OBSERVATION/ FINDINGS |
|------|--|--------------|----------|--------------------------------|--------------------------------|----------------------------|------------------------|---------------------------|-------------------------|----------------------------------|------------------------|---------------------------------|--|---------------------------------|---|
| | | Purnima Deka | Jitu Ali | ParbriGourani – (Desk Rev.) | Anu KalitaSaikia (Desk Rev) | RimjimKakati (Desk Rev) | Saranga Jyoti Borkahat | Hamida Khatun (Desk Rev.) | Gourang Das (Desk Rev.) | Shri Basanta Chao (Desk Rev.) | Pradip Das (Desk Rev.) | Abdul Kudus - Rice Cafeteria | Suresh Chandra Das - Rice Cafeteria - Desk Rev. | NonigopalHajag – (Desk Rev.) | |
| 9 | Do the farmers use any types of fertilizers? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Urea, Potash, Micro-nutrient, Vermi-compost, Rhizobium, zinc, DAP, Sulphate, Potash, etc |
| 10 | What steps the farmers take in case of disease outbreak and pest attacks in crops? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Use of Pesticides; Not specified |
| 11 | Do they use pesticides? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | No use of pesticides Not specified |
| 12 | Do they procure chemicals, fertilizers and pesticides from licensed seller? | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Provided by APART Under emergency condition the farmers procure the pesticide from the local markets to control pest. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | | | | | | Goalpara | | | OBSERVATION/ FINDINGS |
|------|---|--------------|----------|--------------------------------|--------------------------------|----------------------------|------------------------|---------------------------|-------------------------|----------------------------------|------------------------|---------------------------------|--|---------------------------------|--|
| | | Purnima Deka | Jitu Ali | ParbriGourani – (Desk Rev.) | Anu KalitaSaikia (Desk Rev) | RimjimKakati (Desk Rev) | Saranga Jyoti Borkahat | Hamida Khatun (Desk Rev.) | Gourang Das (Desk Rev.) | Shri Basanta Chao (Desk Rev.) | Pradip Das (Desk Rev.) | Abdul Kudus - Rice Cafeteria | Suresh Chandra Das - Rice Cafeteria - Desk Rev. | NonigopalHajag – (Desk Rev.) | |
| 13 | Do the farmers use personal protective equipment during handling and application of chemicals/pesticides/fertilizers? | X | X | ✓ | X | ✓ | ✓ | ✓ | X | ✓ | ✓ | X | X | X | The farmers are reported to use mark and eye protecting glass. But they are not using complete PPE kits. |
| 14 | Does the agricultural field have proper irrigation facility? | X | X | X | X | X | X | X | X | X | X | X | X | X | No, the farmers are dependent on rain. Whole area is rain fed. Limited bore well |
| 15 | What is the period of occurrence of flood in that area? | N.A | N.A | N.A | X | ✓ | X | X | N.A | X | N.A | ✓ | ✓ | X | May to Sept almost every year |
| 16 | Do the farmers practice fish cum rice cultivation? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 17 | Do the farmers have proper storage facilities for the gains? | X | X | X | X | X | X | X | X | X | X | X | X | X | storage facilities have been provided |
| 18 | Do the agricultural fields have proper drainage system? | X | X | X | X | X | X | X | X | X | X | X | X | X | No drainage system to drain out excess water |
| 19 | Do the farmers undergo any soil test? | X | X | X | X | X | X | X | X | X | X | X | X | X | No soil testing reported for |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | | | | | | Goalpara | | | OBSERVATION/ FINDINGS |
|------|---|--------------|----------|--------------------------------|--------------------------------|----------------------------|------------------------|---------------------------|-------------------------|----------------------------------|------------------------|---------------------------------|--|---------------------------------|--|
| | | Purnima Deka | Jitu Ali | ParbriGourani – (Desk Rev.) | Anu KalitaSaikia (Desk Rev) | RimjimKakati (Desk Rev) | Saranga Jyoti Borkahat | Hamida Khatun (Desk Rev.) | Gourang Das (Desk Rev.) | Shri Basanta Chao (Desk Rev.) | Pradip Das (Desk Rev.) | Abdul Kudus - Rice Cafeteria | Suresh Chandra Das - Rice Cafeteria - Desk Rev. | NonigopalHajag – (Desk Rev.) | |
| | | | | | | | | | | | | | | | project considered for Audit. Based on the desk review soil testing has been carried out for 10% of the total project under demonstration. |
| 20 | Do they follow integrated pest management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Practice of IPM implementation at farmers level noticed. |
| 21 | Are there any disturbances from wild animals or birds? | N.a | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No |
| 22 | What are the common birds, insects, amphibians etc. found in the field. Any loss of commonly found species? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Mostly monkey and other livestock and some local birds like sparrow, parrots etc. |
| 23 | Do they follow any type of waste management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | Burn | Burn | Burn | Burn | Burn | ✓ | ✓ | ✓ | No significant waste generated, husk, straw was |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | | | | | | Goalpara | | | OBSERVATION/ FINDINGS |
|------|--|--------------|----------|--------------------------------|--------------------------------|----------------------------|------------------------|---------------------------|-------------------------|----------------------------------|------------------------|---------------------------------|--|---------------------------------|---------------------------|
| | | Purnima Deka | Jitu Ali | ParbriGourani – (Desk Rev.) | Anu KalitaSaikia (Desk Rev) | RimjimKakati (Desk Rev) | Saranga Jyoti Borkahat | Hamida Khatun (Desk Rev.) | Gourang Das (Desk Rev.) | Shri Basanta Chao (Desk Rev.) | Pradip Das (Desk Rev.) | Abdul Kudus - Rice Cafeteria | Suresh Chandra Das - Rice Cafeteria - Desk Rev. | NonigopalHajag – (Desk Rev.) | |
| | | | | | | | | | | | | | | | used as cattle feeding |
| 24 | Result in any type of human wildlife conflicts? | N.a | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |

Note: ✓ - complied; ☒ - not complied; NA – not applicable

Table 13: Compliance to EMF provisions (Fishery)

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | Nalbari | | | |
|---------------------------|---|---------------------------------|----------------------------|------------------------------------|-------------------------|------------------------|---|---|--------------|--------------|------------------------|------------------------|------------------------|--|
| | Environmental Concers (EMF IMPLEMENTATION) | Uttaran Farm Production Company | BanglagharBeel (Desk rev.) | Paddy Cum Fish Culture (Desk Rev.) | BorjangBeel Development | Paddy Cum Fish Culture | Kalyan Paddy cum Fish Culture (Desk Rev.) | Kalyan Paddy cum Fish Culture (Desk Review) | Manipur Bill | Mohmara Bill | Paddy Cum Fish Culture | Paddy Cum Fish Culture | Paddy Cum Fish Culture | OBSERVATION/ FINDINGS |
| S.No | Name of the Beneficiary | | | | | Anowar Hussain | Khalilur Rahman Mollah | Bhahajuddin Talukdar | | | Sultan Hakimul Haque | Rabijan | Mafiz Ali | |
| Section A: Project Siting | | | | | | | | | | | | | | |
| | Village | | Bangalaghar | khopanikachi | | Batabari | Markula | Palasbari | Manikpur | Mohmara | Pub – Kalakuchi | | | |
| | Block | | Suwalhuchi | Hajo | | | Kharmuja | Kharmuja | Tharbandha | Loharighat | | | | |
| | Area of water Bodies (Ha.) | 6 Ha. | 10 ha | 8 Ha | 25 Ha | 0.7 | 0.4 | 0.4 Ha | 29 Ha | 35Ha | 0.5 | 0.5 | 0.5 | |
| 1 | Be located within or near environmentally sensitive areas like: | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No environmentally Sensitive area within 1 km Radius |
| | Intact natural forests | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No Forest area in adjacent or within the Project site. No forest diversion is involved |
| b | Wetlands | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | None of the identified project site is listed under wetland list of GoI and GoA. |
| C | Threatened species | N.A | N.A | N.A | X | N.A | N.A | N.A | N.A | X | N.A | N.A | N.A | Most of the fish species reported |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | GOALPARA | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | within the beels are Indian Major Carp, Panties sp., Circinus sp., Channa sp., etc. No threatened species of fishes are reported in the beels. Among aquatic bird's winter migrants like coot, migratory ducks, etc are reported. |
| D | Special area for protecting biodiversity | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | This beels are habitat for winter migratory birds. It is feed, roosting and breeding grounds for some of the species. Based on discussion with the district fishery department and expert of APART, about 20% of the area of the Beel is earmarked for Bio-diversity Conservation. |
| E | Cultural heritage site? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No cultural Heritage site within 1 km radius |
| 2 | Affect environmentally | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
|------|---|---------------------------------|-----------------------------|------------------------------------|--------------------------|------------------------|---|---|--------------|--------------|------------------------|------------------------|------------------------|---|
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| | sensitive areas or critical habitats – wetlands, woodlots, natural forests, rivers, etc.)? | | | | | | | | | | | | | |
| 3 | Affect the indigenous biodiversity (flora and fauna)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | In the Beels, the species of Hydrophytes reported are mostly water Hyacinth (<i>Eichhornia crassipes</i>). |
| 4 | Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The Species of fish proposed are IMC, which are already reported in this beels and commonly practice in pisciculture. |
| 5 | Affect the aesthetic quality of the landscape? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | it would improve aesthetic quality of the landscape |
| 6 | Cause soil erosion or degradation? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The bunds creation along ponds, and beels has been established. Growth of grasses was noticed on the bunds which were created six months ago. The new bunds created are all establishes |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | and inclined side wall are all stabilized. |
| 7 | Divert the water resource from its natural course /location? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 8 | Affect the migratory birds visiting that area? | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | Winter migratory birds are reported in these beels. There would be positive effect. The water depth in these beels would improve. The water hyacinth is also being removed in APART funds, which would allow the endemic hydrophytes to grow and provide proper habitat. |
| 9 | Have approach to roads and what is its quality? | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | ✓ | There is no proper approach to these Beel. Earthen path exists, but are not all-weather roads. |
| 10 | Have suitable area for construction purposes? | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | ✓ | ✓ | N.A | N.A | N.A | |
| Section B: Constructional Impacts(w.r.t Infrastructure requirements) | | | | | | | | | | | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| S.No | Name of the Beneficiary | | | | | Anowar Hussain | Khailur Rahman Mollah | Bhahajuddin Talukdar | | | Sultan Hakimul Haque | Rabijan | Mafiz Ali | |
| 11 | Noise from construction? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | no noise pollution is anticipated |
| 12 | Air pollution from the construction? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Air pollution not anticipated as construction involve creation of bunds. Soil is from site. Only JCB is involve. |
| 13 | Water pollution from the constructional activities? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not anticipated |
| 14 | Soil contamination and degradation due to construction? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not anticipated. Bund's development take place during lean period. |
| 15 | Risk and vulnerabilities related to occupational health and safety due to physical chemical and biological hazards during project construction and operation? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Anticipated |
| 16 | Large population influx during project construction and operation that cause increased burden on social | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not anticipated. For construction of bunds only community people are involved. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | infrastructure and services (such as water supply and sanitation systems)? | | | | | | | | | | | | | |
| 17 | Social conflicts if workers from other regions are hired? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Only local labour is involve |
| 18 | Any generation of construction and disposal wastes? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not anticipated |
| 19 | Overexploitation of the fish stocks and long-term degradation of resource base? | ✓ | X | ✓ | X | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | ✓ | During audit, it has been reported that there is no regulated fishing in the Beels. The mesh size for fish catching is not standardized. They use mosquito nets, fishing nets, bamboo made basket for fishing. The SOP restrict about the mesh size, season of fishing, and size of fish catch. The beel are under restoration stage as on date of audit and fishing has not been started. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| S.No | Name of the Beneficiary | | | | | Anowar Hussain | Khaliur Rahman Mollah | Bhahajuddin Talukdar | | | Sultan Hakimul Haque | Rabijan | Mafiz Ali | |
| 20 | Capture of non-target species and habitat damage through use of destructive fishing methods and gears? | ✓ | X | ✓ | X | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | ✓ | Use of chemicals and electrocution are not report for project under audit. The only mal-practices are unregulated mesh size. |
| 21 | Accidental damage? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 22 | Downstream water pollution from discharge of pond effluents with drain water? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not anticipated. No of the ponds are adjacent to seasonal streams, rivers, etc. |
| 23 | Reduction of water supplies from competing uses (e.g., irrigation or domestic)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Anticipated. These water bodies are rain fed. |
| 24 | Pollution from nearby aquatic environments by pond drainage and in adequate farm management? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not anticipated. The ponds drains are into the natural stream, which does not contain any hazardous chemicals. |
| 25 | Depletion of local fish population by stocking of wild fry/fingerlings in ponds? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not anticipated. The Fry/fingerlings in ponds are mainly mostly IMC, grass carp, common carp, etc. they are |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | mostly in practice decade. |
| 26 | Spread of diseases and parasites from exotic cultured species or escape of pond fish to wild? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | During audit, use of exotic species for pisciculture was not noticed. mostly Indian Major Carp are reported in practice. |
| 27 | Reduction of water available to downstream users during peak seasons? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Anticipated |
| 28 | Increased community health risks due to increased incidence or introduction of waterborne or water related diseases? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | there is chance of increase in mosquitos in the area due to pisciculture practice. Disease like malaria is reported during audit. |
| 29 | Risk to community health and safety due to transport, storage and use and/or disposal of materials likely to create physical chemical and biological hazards during construction and operation? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No Storage of fish catch are reported in the project area. The catch is mainly sold in the nearby market or supplies to vendors who supplies to big cities. No storage procedure is adopted. |
| 30 | What are the fish varieties | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Mostly Indian Major Carp, Silver |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | being cultured by the farmers/farm? | | | | | | | | | | | | | Carb, Grass Carp, |
| 31 | How often indigenous varieties are being cultured? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Under Pisciculture practice, they mostly use Indian Major Carp, Grass Carp, Silver carp, etc. |
| 32 | From where the seeds are brought? Were they able to meet their requirements? | X | X | X | X | X | X | X | X | X | X | X | X | fish seed are major issues reported during audit process. It has also been reported that the seed available by local suppliers are off poor quality. Some of them are even getting fish seed from orrisa and West Bengal. The Seed produced by the Local Hatchery does not meets with the demand -supply requirement. |
| 33 | What are the feed materials used? | ✓ | N.A | ✓ | N.A | ✓ | N.A | ✓ | N.A | N.A | ✓ | ✓ | ✓ | In the Beels, no additional feed is required. For ponds, fish feed are required, which is available in local market. Under APART project, fish feed is being |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | supplied. The composition of feeds is Oil cake (MOC), Domestic waste, Piggery waste, Godrej etc. |
| 34 | From where do they buy the feed materials | ✓ | N.A | ✓ | N.A | ✓ | N.A | ✓ | N.A | N.A | ✓ | ✓ | ✓ | fish feeds are easily available in the local markets. |
| 35 | Were they able to meet their feed requirements? If not, what are the alternative feeds used? | ✓ | N.A | ✓ | N.A | ✓ | N.A | ✓ | N.A | N.A | ✓ | ✓ | ✓ | easily available. |
| 36 | What is the most common natural risk occurring every year/half-year/seasonally? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No such incidence is reported during audit |
| 37 | What are the common diseases the fishes suffer from? Were they aware of the fish infections, caused by lice, worms, fungi, bacteria etc.? | X | X | X | X | X | Dropsy, Fin rot, Fibrosis, Leeches, Dermatormycosis, etc | | X | X | X | X | X | The common disease reported are fungal which mainly affect during winter season. Sometime attack of leach is also reported in fishes. APART expert along with district fishery officer take necessary action when such incidence |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | is reported. |
| 38 | What steps do they take in such cases? Are they provided with any remedial facilities in such cases? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | At the State level National Fishery Development Block (NFDB) exists. They look after Integrated Fish Diagnosis and remedial Measures. The expert of district fisher office and APART visit the site and provide necessary assistance. To control fish related diseases, APART organizes training for the beneficiaries. |
| 39 | What is the number of fishes dies every year due to disease, natural calamities or any other accidents? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | X | N.A | N.A | N.A | N.A | In Manipur Beel, every year death of large quantity of fishes are reported. This is mostly due to application of Endosulphan in the paddy. Which is cultivated in the beels. |
| 40 | What is done to the diseased dead fishes? | X | X | X | X | X | X | X | X | X | X | X | X | The fish farmers discard the dead fishes in the nearby area. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | Based on desk review SOP for handling dead fishes has been reported under APART mission. Which needs to be implemented by the individual farmers. |
| 41 | What are the other wastes generated from fishery? How they manage and dispose the wastes? | X | X | X | X | X | X | X | X | X | X | X | X | The other waste generated for the fishery are de-weeding and muck of ponds. These are mainly dumped on the pond bunds. |
| 42 | Do they apply any chemicals to overcome the accidents? / death of fishes | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | In form of chemical, they are applying lime. |
| 43 | What are the fertilizers or other chemicals use to increase the fodder growth in the area? | ✓ | ✓ | ✓ | ✓ | X | X | ✓ | X | | X | X | X | In case of paddy-cum fish farming, the farmers are applying fertilizer like Urea, DAP, Phosphate, super, etc. |
| 44 | From where do they buy these, chemicals, fertilizers, medicines? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | X | X | These chemicals are readily available in local market |
| 46 | How the cleanliness and oxygen level is maintained in | X | X | X | ✓ | ✓ | ✓ | ✓ | X | X | X | X | X | During audit, except Goalpara district, no oxygen level |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | GOALPARA | | | MORIGAON | | | Nalbari | | |
|------|--|---------------------------------|----------------------------|------------------------------------|-------------------------|------------------------|---|---|--------------|--------------|------------------------|------------------------|------------------------|---|
| | Environmental Concers (EMF IMPLEMENTATION) | Uttaran Farm Production Company | BanglagharBeel (Desk rev.) | Paddy Cum Fish Culture (Desk Rev.) | BorjangBeel Development | Paddy Cum Fish Culture | Kalyan Paddy cum Fish Culture (Desk Rev.) | Kalyan Paddy cum Fish Culture (Desk Review) | Manipur Bill | Mohmara Bill | Paddy Cum Fish Culture | Paddy Cum Fish Culture | Paddy Cum Fish Culture | OBSERVATION/ FINDINGS |
| S.No | Name of the Beneficiary | | | | | Anowar Hussain | Khailur Rahman Mollah | Bhahajuddin Talukdar | | | Sultan Hakimul Haque | Rabijan | Mafiz Ali | |
| | the pond water? | | | | | | | | | | | | | monitoring reported by fish farmers. Based on desk review, under APART D.O meters are being provided at district level and training are also given at the field level to the beneficiaries. |
| 47 | Is there any monitoring program running to check the quality of aquaculture water? | X | X | X | ✓ | ✓ | ✓ | ✓ | X | X | X | X | X | Except Goalpara district, the selected project under audit/ Beneficiaries does not report water quality check practices. But based on desk review, aquaculture practices have been reported for other projects. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| S.No | Name of the Beneficiary | | | | | Anowar Hussain | Khaliur Rahman Mollah | Bhahajuddin Talukdar | | | Sultan Hakimul Haque | Rabijan | Mafiz Ali | |
| 48 | Do any migratory birds visit the site? | N.A | N.A | N.A | ✓ | N.A | N.A | N.A | ✓ | ✓ | N.A | N.A | N.A | Winter migratory birds are reported in these beels. Few among them are Siberian ducks, Greater Adjutant Stork, Whistling Teal, Open Billed Stork, etc. Most of them are listed under IUCN Red Data Book. |
| 49 | What are the types of local bird species found in that area? | N.A | N.A | X | ✓ | N.A | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | Egrets, Pond Herons, Storks, Cormorants, darter, coot, kingfisher etc. |
| 50 | What are the types of water flora found in that area and how they are managed during fish farming? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | <i>Eichhornia crassipes</i> , <i>Pistia stratiotes</i> , <i>Ottelia alismoides</i> , <i>Lemma minor</i> , <i>Potamogeton crispus</i> , <i>Vallisneria spiralis</i> , <i>Hydrilla verticillata</i> , <i>Ipomoea reptans</i> , <i>Nymphaea alba</i> , <i>Nymphaea rubra</i> and <i>Sagittaria sagittifolia</i> , etc. in the Beel. In the man ponds growth of Blue |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | <i>green algae, and Eichhornia Crassipes, are dominant species. Followed by others</i> |
| 51 | Are there any cases of disease contamination from diseased fish to local animals and birds? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 52 | Are they aware of the advance technologies and methods in fish farming? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | It was reported during discussion that they know about some of the advance technologies like integrated fish farming, D.O level sensor, aeriator, etc. But practice at ground level not reported. |
| 53 | Are they getting satisfactory results in case of productivity by their present farming techniques and methods? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | As per audit findings, their fishery output in term of productivity/ income has comparatively increase. |
| 55 | What is the condition of road to the market? | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | ✓ | Most of the Ponds are located near the village roads. The distance varies between |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | GOALPARA | | | | MORIGAON | | | Nalbari | | |
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| | | | | | | | | | | | | | | adjacent to 100 meters. The connectivity to the beels is very poor. There exists village earthen path, which is muddy. |
| 56 | Are the farmers aware of their health and what are the type of medical facilities are being provided? | X | X | X | X | X | X | X | X | X | X | X | X | The fish farmers are not aware of health-related issues associated with pisciculture. No medical facilities are being provided. |
| Fishery Whole Sale Market | | | | | | | | | | | | | | |
| 57 | What are the types of wastes generated at the market? | Not Applicable | | | | | | | | | | | | The Waste generated from the fish markets are plastics, unwanted fish parts like blood, skin, kills, belly material, etc. |
| 58 | Where the wastes are disposed? | | | | | | | | | | | | | In the waste bins located in market area or any waste land, unauthorized dumping area in market outskirts. |
| 59 | Are there any waste management practices followed? | | | | | | | | | | | | | Not noticed during audit. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | GOALPARA | | | MORIGAON | | | Nalbari | | |
|------|--|---------------------------------|----------------------------|------------------------------------|-------------------------|------------------------|---|---|--------------|--------------|------------------------|------------------------|------------------------|---|
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| 60 | Is the market provided with well drainage facility? | | | | | | | | | | | | | No |
| 61 | What are the cleaning agents/detergents used for cleaning and disinfecting the market? | | | | | | | | | | | | | The seller has his own cold storage units. No cold storage facilities for fishes reported in project district. This may be because of high demand for fished and less supply. |
| 62 | Is there any cold storage/ware house/ice plant near the market? | | | | | | | | | | | | | In the target district, no cold storage for fishes is reported. Though ice plant is reported in most of the district |
| 63 | What are the pest management practices followed at the market? | | | | | | | | | | | | | No pest management practice noted with respect to fish market. Some time when the markets smell, they dust it with bleaching power and with lime as well. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
|---|---|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--|
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| Name of the Beneficiary | | Nabarupa Meenpalan Got | Maharati FPG | Bherbher FPG | Nabarupa FPG | Ghaur Ali | Simon Munda | Budharam | Rajesh Orang | Sahidul Islam | Mazida Begum | Chan Banu | Jabed Ali | |
| Section A: Project Siting | | | | | | | | | | | | | | |
| | Village | bordoulguri | Bolipota | Bherbher | Kamarpura | Gudamghat | | | | | | | | |
| | Block | | | | | Balipara | | | | | | | | |
| | Area of water Bodies (Ha.) | 0.45 | 5.5 | 4.7 | 3.35 | 0.6 | 0.4 | 0.7 | 0.4 | 0.8 | 1 | 0.8 | 0.6 | |
| 1 | Be located within or near environmentally sensitive areas like: | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No environmentally Sensitive area within 1 km Radius |
| | Intact natural forests | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No Forest area in adjacent or within the Project site. No forest diversion is involved |
| b | Wetlands | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | None of the identified project site is listed under wetland list of GoI and GoA. |
| C | Threatened species | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Most of the fish species reported within the beels are Indian Major Carp, Punties sp., |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Darang | | | | Sonitpur | | | | | | | | |
|---|---|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|---|
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| | Name of the Beneficiary | Nabarupa Meenpalan Got | Maharati FPG | bherbher FPG | Nabarupa FPG | Ghaur Ali | Simon Munda | Budharam | Rajesh Orang | Sahidul Islam | Mazida Begum | Chan Banu | Jabed Ali | |
| | | | | | | | | | | | | | | Cirrhinus sp., Channa sp., etc. No threatened species of fishes are reported in the beels. Among aquatic birds winter migrants like |
| d | Special area for protecting biodiversity | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | This beels are habitat for winter migratory birds. It is feed, roosting and breeding grounds for some of the species. |
| E | Cultural heritage site? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No cultural Heritage site within 1 km radius |
| 2 | Affect environmentally sensitive areas or critical habitats – wetlands, woodlots, natural forests, rivers, etc.)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 3 | Affect the indigenous biodiversity (flora and fauna)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | In the Beels, the species of Hydrophytes reported are |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
|---|---|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|---|
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| Name of the Beneficiary | | Nabarupa Meenpalan Got | Maharati FPG | bherbher FPG | Nabarupa FPG | Ghaur Ali | Simon Munda | Budharam | Rajesh Orang | Sahidul Islam | Mazida Begum | Chan Banu | Jabed Ali | |
| | | | | | | | | | | | | | | mostly water Hyacinth (<i>Eichhornia crassipes</i>). |
| 4 | Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly? | N.a | N.a | N.a | N.a | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The Species of fish proposed are IMC, which are already reported in this beels and commonly practice in piciculture. |
| 5 | Affect the aesthetic quality of the landscape? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | it would improve aesthetic quality of the landscape |
| 6 | Cause soil erosion or degradation? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The bunds creation along ponds, and beels has been established. Growth of grasses was noticed on the bunds which were created six months ago. The new bunds created are all establishes and inclined side wall are all vertical . |
| 7 | Divert the water resource from its | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
|--|---|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--|
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| | natural course /location? | | | | | | | | | | | | | |
| 8 | Affect the migratory birds visiting that area? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Winter migratory birds are reported in these beels. There would be positive effect. The water depth in these beels would improve. The water hyacinth is also being removed in APART funds, which would allow the endemic hydrophytes to grow and provide proper habitat. |
| 9 | Have approach to roads and what is its quality? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | There is no proper approach to these Beel. Earthen path exists, but are not all-weather roads. |
| 10 | Have suitable area for construction purposes? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | |
| Section B: Constructional Impacts(w.r.t Infrastructure requirements) | | | | | | | | | | | | | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Darang | | | | Sonitpur | | | | | | | | |
|----|---|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--|
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| 11 | Noise from construction? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | no noise pollution is anticipated |
| 12 | Air pollution from the construction? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | Air pollution not anticipated as construction involve creation of bunds. Soil is from site. Only JCB is involve. |
| 13 | Water pollution from the constructional activities? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | Not anticipated |
| 14 | Soil contamination and degradation due to construction? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | Not anticipated. Bund's development take place during lean period. |
| 15 | Risk and vulnerabilities related to occupational health and safety due to physical chemical and biological hazards during project construction and operation? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | Not Anticipated |
| 16 | Large population influx during project construction and operation | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | Not anticipated. For construction of bunds only |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
|---|--|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------|
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| | that cause increased burden on social infrastructure and services (such as water supply and sanitation systems)? | | | | | | | | | | | | | community people are involved. |
| 17 | Social conflicts if workers from other regions are hired? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | Only local labour is involve |
| 18 | Any generation of construction and disposal wastes? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | Not anticipated |
| 19 | Overexploitation of the fish stocks and long-term degradation of resource base? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| 20 | Capture of non-target species and habitat damage through use of destructive fishing methods and gears? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| 21 | Accidental damage? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | |
| 22 | Downstream water pollution from | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | Not anticipated. No of the |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
|---|---|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--|
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| | discharge of pond effluents with drain water? | | | | | | | | | | | | | ponds are adjacent to seasonal streams, rivers, etc. |
| 23 | Reduction of water supplies from competing uses (e.g., irrigation or domestic)? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | Not Anticipated. These water bodies are rain fed. |
| 24 | Pollution from nearby aquatic environments by pond drainage and in adequate farm management? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | Not anticipated. The ponds drains are into the natural stream, which does not contain any hazardous chemicals. |
| 25 | Depletion of local fish population by stocking of wild fry/fingerlings in ponds? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | Not anticipated. The Fry/fingerlings in ponds are mainly mostly IMC, grass crap, common carp, etc. they are mostly in practice decade. |
| 26 | Spread of diseases and parasites from exotic cultured species or escape of pond fish to wild? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | During audit, use of exotic species for pisciculture was not noticed. mostly Indian Major |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
|---|---|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--|
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| | | | | | | | | | | | | | | Carp are reported in practice. |
| 27 | Reduction of water available to downstream users during peak seasons? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | Not Anticipated |
| 28 | Increased community health risks due to increased incidence or introduction of waterborne or water related diseases? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | there is chance of increase in mosquitos in the area due to pisciculture practice. Disease like malaria is reported during audit. |
| 29 | Risk to community health and safety due to transport, storage and use and/or disposal of materials likely to create physical chemical and biological hazards during construction and operation? | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | NA | NA | NA | No Storage of fish catch are reported in the project area. The catch is mainly sold in the nearby market or supplies to vendors who supplies to big cities. No storage procedure is adopted. |
| 30 | What are the fish varieties being | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Mostly Indian Major Carp, Silver |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
|---|--|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--|
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| Name of the Beneficiary | | Nabarupa Meenpalan Got | Maharati FPG | bherbher FPG | Nabarupa FPG | Ghaur Ali | Simon Munda | Budharam | Rajesh Orang | Sahidul Islam | Mazida Begum | Chan Banu | Jabed Ali | |
| | cultured by the farmers/farm? | | | | | | | | | | | | | Carb, Grass Carp, |
| 31 | How often indigenous varieties are being cultured? | N.A | N.A | N.A | N.A | Twice | Twice | Twice | Twice | Twice | Twice | Twice | Twice | Under Pisciculture practice, they mostly use Indian Major Carp, Grass Carp, Silver carp, etc. The indigenous fishes reported in the beels are Mystus sp., Puntius sp., Clarias sp., Channa, etc. |
| 32 | From where the seeds are brought? Were they able to meet their requirements? | X | X | X | X | Ghoramari, Sonitpur | | | | | | | | Fish seed are major issues reported during audit process. It has also been reported that the seed available by local suppliers are off poor quality. Some of them are even getting fish seed from orrisa and West Bengal. The Seed produced by the Local Hatchery does not |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
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| Environmental Concerns (EMF IMPLEMENTATION) | | Fishry Demonstration | Polyculture Demonstration | Polyculture Demonstration | Polyculture Demonstration | Paddy Cum Fish Culture | Paddy Cum Fish Culture (Desk Rev.) | Paddy Cum Fish Culture (Desk Rev.) | Paddy Cum Fish Culture (Desk Rev.) | Paddy Cum Fish Culture (Desk Rev.) | Paddy Cum Fish Culture (Desk Rev.) | Paddy Cum Fish Culture (Desk Rev.) | Paddy Cum Fish Culture (Desk Rev.) | |
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| | | | | | | | | | | | | | | meets with the demand -supply requirement. |
| 33 | What are the feed materials used? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | In the Beels, no additional feed is required. For ponds, fish feed are required, which is available in local market. Under APART project, fish feed are being supplied. The composition of feeds is Oil cake (MOC), Domestic waste, Piggery waste, Godrej etc. |
| 34 | From where do they buy the feed materials | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | fish feeds are easily available in the local markets. |
| 35 | Were they able to meet their feed requirements? If not, what are the alternative feeds used? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | easily available. |
| 36 | What is the most common natural | N.A | N.A | N.A | N.A | Seepage | | | | | N.A | N.A | N.A | No such incidence is reported |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
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| | risk occurs every year/half-year/seasonally? | | | | | | | | | | | | | during audit |
| 37 | What are the common diseases the fishes suffer from? Were they aware of the fish infections, caused by lice, worms, fungi, bacteria etc.? | Dropsy, Fin rot, vibriosis, Leeches, Dermatomycoosis, etc | | | | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | The common disease reported are fungal which mainly affect during winter season. Sometime attack of leach is also reported in fishes. APART expert along with district fishery officer take necessary action is when such incidence is reported. |
| 38 | What steps do they take in such cases? Are they provided with any remedial facilities in such cases? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | N.A | N.A | At the State level National Fishery Development Block (NFDB) exists. They look after Integrated Fish Diagnosis and remedial Measures. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | The expert of district fisher office and APART visit the site and provide necessary assistance. To control fish related diseases, APART organizes training for the beneficiaries. |
| 39 | What is the number of fishes dies every year due to disease, natural calamities or any other accidents? | X | X | X | X | Approx. 1-5%, occasionally | | | | | | | | No Quantification done at the farmer's level. the death is reported in countable number. |
| 40 | What is done to the diseased dead fishes? | X | X | X | X | Not Specified | | | | | | | | The fish farmers discard the dead fishes in the nearby area. Based on desk review SOP for handling dead fishes has been reported under APART mission. Which needs to be |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | implemented by the individual farmers. |
| 41 | What are the other wastes generated from fishery? How they manage and dispose the wastes? | X | X | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | | | | The other waste generated for the fishery are de-weeding and muck of ponds. These are mainly dumped on the pond bunds. |
| 42 | Do they apply any chemicals to overcome the accidents? | Lime | Lime | Lime | Lime | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | In form of chemical, they are applying lime mostly |
| 43 | What are the fertilizers or other chemicals use to increase the fodder growth in the area? | X | X | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | In case of paddy-cum fish farming, the farmers are applying fertilizer like Urea, DAP, Phosphate, super, etc. |
| 44 | From where do they buy these, chemicals, fertilizers, medicines? | X | X | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | These chemicals are readily available in local market |
| 46 | How the cleanliness and oxygen level is maintained in the pond | X | X | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | During audit, no oxygen level monitoring reported by fish |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| Name of the Beneficiary | | Nabarupa Meenpalan Got | Maharati FPG | bherbher FPG | Nabarupa FPG | Ghaur Ali | Simon Munda | Budharam | Rajesh Orang | Sahidul Islam | Mazida Begum | Chan Banu | Jabed Ali | |
| | water? | | | | | | | | | | | | | farmers. Based on desk review, under APART D.O meters are being provided at district level and training are also given at the field level to the beneficiaries. |
| 47 | Is there any monitoring program running to check the quality of aquaculture water? | X | X | X | X | X | X | X | X | X | X | X | X | The selected project under audit/ Beneficiaries does not report such incidence of water quality check. But based on desk review, aquaculture practices have been reported for other projects. |
| 48 | Do any migratory birds visit the site? | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Winter migratory birds are reported in these beels. Few |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| District | | Darang | | | | Sonitpur | | | | | | | | OBSERVATION/ FINDINGS |
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| | | | | | | | | | | | | | | among them are ducks, Greater Adjutant Stork, Whistling Teal, Open Billed Stork, etc. Most of them are listed under IUCN Red Data Book. |
| 49 | What are the types of local bird species found in that area? | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Egrets, Pond Herons, Storks, Cormorants, darter, coot, kingfisher etc. |
| 50 | What are the types of water flora found in that area and how they are managed during fish farming? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | <i>Eichhornia crassipes</i> , <i>Pistia stratiotes</i> , <i>Ottelia alismoides</i> , <i>Lemma minor</i> , <i>Potamogeton crispus</i> , <i>Vallisneria spiralis</i> , <i>Hydrilla</i> sp., <i>Ipomoea reptans</i> , <i>Nymphaea alba</i> , <i>Nymphaea rubra</i> and <i>Sagittaria sagittifolia</i> , etc. in the Beel. In the man ponds growth |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | of Blue green algae, and Eichhornia Crassipes, are dominant species. Followed by others |
| 51 | Are there any cases of disease contamination from diseased fish to local animals and birds? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not Applicable |
| 52 | Are they aware of the advance technologies and methods in fish farming? | X | X | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | It was reported during discussion that they know about some of the advance technologies like integrated fish farming, D.O level sensor, aerators, etc. But practice at ground level not reported. |
| 53 | Are they getting satisfactory results in case of productivity by their | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | As per audit findings, their fishery output in term of |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | Name of the Beneficiary | Nabarupa Meenpalan Got | Maharati FPG | Bherbher FPG | Nabarupa FPG | Ghaur Ali | Simon Munda | Budharam | Rajesh Orang | Sahidul Islam | Mazida Begum | Chan Banu | Jabed Ali | |
| | present farming techniques and methods? | | | | | | | | | | | | | productivity/ income has comparatively increase. |
| 55 | What is the condition of road to the market? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Most of the Ponds are located near the village roads. The distance varies between adjacent to 100 meters. The connectivity to the beels is very poor. There exists village earthen path, which is muddy. |
| 56 | Are the farmers aware of their health and what are the type of medical facilities are being provided? | X | X | X | X | X | X | X | X | X | X | X | X | The fish farmers are not aware of health-related issues associated with pisciculture. No medical facilities are being provided. |
| Fishery Whole Sale Market | | | | | | | | | | | | | | |
| 57 | What are the types of wastes generated at the market? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | The Waste generated from the fish markets are plastics, un- |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | wanted fish parts like blood, skin, kills, belly material, etc. |
| 58 | Where the wastes are disposed? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | In the waste bins located in market area or any waste land, unauthorized dumping area in market outskirts. |
| 59 | Are there any waste management practices followed? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | Not noticed during audit. |
| 60 | Is the market provided with well drainage facility? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | No |
| 61 | What are the cleaning agents/detergents used for cleaning and disinfecting the market? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | The seller has his own cold storage units. No cold storage facilities for fishes reported in project district. This may be because of high demand for fished and less supply. |
| 62 | Is there any cold storage/ware | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | In the target district, no cold |





| | District | Darang | | | | Sonitpur | | | | | | | | |
|----|--|------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|---|
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| | house/ice plant near the market? | | | | | | | | | | | | | storage for fishes is reported. Though ice plant is reported in most of the district |
| 63 | What are the pest management practices followed at the market? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | No pest management practice noted with respect to fish market. Some time when the markets smell, they dust it with bleaching power and with lime as well. |

Note: ✓ - complied; ✗ - not complied; NA – not applicable (These points are not attracted by the project).

Table 15 EMF Compliance for Horticulture Demonstration



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Sivsagar | | | | | Jorhat | | | | | Goalpara | | | |
|------|---|--------------------------|------------------|---|---|---|---------------------|--------------------|------------|------------|----------|-------------------|----------------------------------|--------------------------|--|
| S.No | Environmental Concers (EMF IMPLEMENTATION) | DisangSapory Group | Monhman Barua | Chalajan FIG | holagan FIG (Desk Review) | Holajan FIG (Desk Review) | Rajat Gogoi | Debashwar Borah | BubaiGogoi | TarunGogoi | KoNGogoi | Debabrata Rabha | Manikanta Rabha – Desk Review | Jafar Ali Desttop Review | OBSERVATION/ FINDINGS |
| 1 | Name of Village | Lijiribari | Mogorahat Chama | Dulaka sharia | | | Malow Khat | | | | | madan gpll | Madan g | Takimari | |
| 2 | Block | Sivsagar | Goisagar | Goisagar | | | Dhekorgorah | | | | | Rangjuli | | Lakhipur | |
| 4 | Area of the Demonstration Plot? | 0.45 Ha | 1 bighas | 3 bighas | 0.45Ha | 0.45Ha | 0.15Ha | 0.15 Ha | 0.15 Ha | 0.15 | 0.15 Ha | 5 bigha | 0.15 Ha | 0.15 | |
| 5 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | elephant corridor | | N.A | No environmental sensitive features within 5 km radius |
| 6 | What crop variety will be cultivated under APART demonstration? | Royal Ball-BC-51 cabbage | Trishul – Potato | Zero – tillage Potato-Kufri Surya Variety | Zero – tillage Potato-Kufri Surya Variety | Zero – tillage Potato-Kufri Surya Variety | Pumpkin – Arjuna-F1 | Pumkin – AVPU-1391 | | | | Banana – G-9 | Banana -G9 | Brinjal-VNR 212 | Pumkin hybrid variety; Open Pollinated Varieties & Cabbage |
| 7 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | Private Land | | | | | Private Land | | | | | Private land | Private land | Private Land | |
| 8 | How many times a year the farmers cultivate? | Two Crops | | | | | | | | | | one crop | one crop | two Crop | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Sivsagar | | | | | Jorhat | | | | | Goalpara | | | OBSERVATION/ FINDINGS |
|------|--|--------------------|---------------|--------------|---------------------------|---------------------------|-------------|-----------------|------------|------------|----------|---------------------------|-------------------------------|--------------------------|---|
| | | DisangSapory Group | Monhman Barua | Chalajan FIG | holagan FIG (Desk Review) | Holajan FIG (Desk Review) | Rajat Gogoi | Debashwar Borah | BubaiGogoi | TarunGogoi | KoNGogoi | Debabrata Rabha | Manikanta Rabha – Desk Review | Jafar Ali Desttop Review | |
| 9 | What are the crop the famers cultivate? | Paddy & Vegetable | | | | | | | | | | N.A | N.A | Rice; Musturd ; Brinjal | |
| 10 | Do they cultivate any local varieties? | No | | | | | | | | | | N.A | N.A | N.A | |
| 11 | From where do they bring the seeds? | Provided by APART | | | | | | | | | | APART | APART | APART | The seed are provided to all beneficiaries by APART |
| 12 | Do the farmers use any types of fertilizers? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Urea, Potash, Micro-nutrient, Vermi-compost, Rhizobium, provided under APART |
| 13 | What steps the farmers take in case of disease outbreak and pest attacks in crops? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Urea SSP MOP | Urea SSP MOP | Urea; DAP; MOP;Zinc | to prevent pest attack integrated farming. Maize as border crops; French bean as intercrop and Marigold as trap crop. No disease outbreak reported. |
| 14 | Do they use pesticides? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Prophe x Super (wedicide) | N.A | ✓ | Trichoderma – Bio fungal Agent improves photosynthetic efficiency, enhance nutrient uptake and increase nitrogen use |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | | efficiency in crops; Redomil Gold – Fungicide. This is Toxic to aquatic organism. Runoff from the field to any water bodies are hazardous to aquatic fauna. &Neem Oil |
| 15 | Do they procure chemicals, fertilizers and pesticides from licensed seller? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | the fertilizers and pesticides are provided under APART. Under emergency condition the local procure the Pesticide from local market to control the pest. |
| 16 | Do the farmers use personal protective equipment during handling and application of chemicals/pesticides/fertilizers? | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The farmers are provided with Mask, gloves, glass & Boots as PPE Kit during application of Fertilizers and Pesticides |
| 17 | Does the agricultural field have proper irrigation facility? | X | X | X | ✓ | ✓ | X | X | X | X | X | X | X | X | No, the farmers are dependent on rain. Whole area is rain fed. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| 18 | What is the period of occurrence of flood in that area? | X | X | X | N.A | N.A | X | X | X | X | X | N.A | N.A | N.A | Flooding happens due to rain. Poor farm drainage practice. |
| 19 | Do the farmers practice fish cum rice cultivation? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 20 | Do the farmers have proper storage facilities for the products? | ✓ | ✓ | ✓ | X | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | X | X | X | storage facilities have been provided |
| 21 | Do the agricultural fields have proper drainage system? | X | X | X | X | X | X | X | X | X | X | X | X | X | No drainage system to drain out excess water |
| 22 | Do the farmers undergo any soil test? | X | X | X | X | X | X | X | X | X | X | X | X | X | Not for project under Audit. Based on desk review about 10% of all horticulture demonstration project under go soil testing. |
| 23 | Do they follow integrated pest management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Yes, they use integrated cropping patter, Pheromone, Blue and yellow sticky trap |
| 24 | Are there any disturbances from wild animals or birds? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Not applicable |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Sivsagar | | | | | Jorhat | | | | | Goalpara | | | OBSERVATION/ FINDINGS |
|------|---|--------------------|---------------|--------------|---------------------------|---------------------------|-------------|-----------------|------------|------------|----------|-----------------|-------------------------------|--------------------------|---|
| | | DisangSapory Group | Monhman Barua | Chalajan FIG | holagan FIG (Desk Review) | Holajan FIG (Desk Review) | Rajat Gogoi | Debashwar Borah | BubaiGogoi | TarunGogoi | KoNGogoi | Debabrata Rabha | Manikanta Rabha – Desk Review | Jafar Ali Desttop Review | |
| 25 | What are the common birds, insects, amphibians etc. found in the field? Any loss of commonly found species? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Myna, Crow, heron, etc. |
| 26 | Do they follow any type of waste management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | ✓ | ✓ | After harvesting, the remains are converted into bio-manure. Mainly practice by the farmers. Banana Culm's are cut and thrown into adjacent river. this is polluting river water. |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | EMP & Mitigation Adapted | | | | | | | | | | | | | | |
| | Site Selection (Land Requirement) | | | | | | | | | | | | | | |
| 28 | Habitat modification | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 29 | Effect to the local flora and faun | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | X | X | N.A | located on elephant Corridor. Only chance of crop damage by the elephants. No regulatory issues. |
| 30 | Change in land use pattern | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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|--------------------------|---|--------------------|---------------|--------------|---------------------------|---------------------------|-------------|-----------------|------------|------------|----------|-----------------|-------------------------------|--------------------------|--|
| | | DisangSapory Group | Monhman Barua | Chalajan FIG | holagan FIG (Desk Review) | Holajan FIG (Desk Review) | Rajat Gogoi | Debashwar Borah | BubaiGogoi | TarunGogoi | KoNGogoi | Debabrata Rabha | Manikanta Rabha – Desk Review | Jafar Ali Desttop Review | |
| | | | | | | | | | | A | | | | | |
| 31 | Land and soil surveys | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 32 | Conflict with small land holder farmers over land resources | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| Preparation Stage | | | | | | | | | | | | | | | |
| 33 | Soil erosion | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 34 | Loss of biodiversity | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 35 | Disruption of hydrological cycle | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 36 | Increase stream sedimentation and damage to aquatic ecosystem | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 37 | Air and Noise pollution caused by heavy machineries | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 38 | Contamination of soil due to oil leakage from machineries | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 39 | Soil compaction due to Heavy Machine | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 40 | Increased use of pesticides/ fertilizers could | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | For APART projects, the quantity of fertilizers is |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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|------|---|--------------------|---------------|--------------|---------------------------|---------------------------|-------------|-----------------|------------|------------|----------|-----------------|-------------------------------|--------------------------|--|
| | | DisangSapory Group | Monhman Barua | Chalajan FIG | holagan FIG (Desk Review) | Holajan FIG (Desk Review) | Rajat Gogoi | Debashwar Borah | BubaiGogoi | TarunGogoi | KoNGogoi | Debabrata Rabha | Manikanta Rabha – Desk Review | Jafar Ali Desttop Review | |
| | lead to issues related to storage, handling, application and disposal | | | | | | | | | | | | | | decided by the Horticulture expert. Mostly Bio manure are used. Use of pesticides are avoided |
| 41 | probability of pesticides and fertilizers flowing into food chain and posing a health risks/ hazard | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 42 | If appropriate variety of crop (Cereals, Pulses, Fruits and Vegetables) with respect to the particular season and climatic zone | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The crop variety seed are being provided by state Agriculture department. |
| 43 | Use of chemicals in the waterlogged paddy field may create GHG emission (N2O) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No Paddy Cultivated |
| 44 | Crop rotation problem | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | under APART only one cropping is funded to the benefices. Next year new benefices. In case of FID remains, same crop rotation is practice. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Sivsagar | | | | | Jorhat | | | | | Goalpara | | | |
|--------|---|--------------------|---------------|--------------|---------------------------|---------------------------|-------------|-----------------|------------|------------|----------|-----------------------|-------------------------------|--------------------------|--|
| S.No . | Environmental Concers (EMF IMPLEMENTATION) | DisangSapory Group | Monhman Barua | Chalajan FIG | holagan FIG (Desk Review) | Holajan FIG (Desk Review) | Rajat Gogoi | Debashwar Borah | BubaiGogoi | TarunGogoi | KoNGogoi | Debabrata Rabha | Manikanta Rabha – Desk Review | Jafar Ali Desttop Review | OBSERVATION/ FINDINGS |
| | Post Harvesting | | | | | | | | | | | | | | |
| 45 | Vehicular emission during transportations of row products | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 46 | Marketing resource local or centralized | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Darangi ri; Rangjul i | Darang iri; Rangjul i | ✓ | They sold their products in local market at village cluster and at district level. |



FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta | | | | | | | | | | Darang | | | OBSERVATION/ FINDINGS |
|------|--|---|---|---|---|---------------------------------|------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------|---------------|---------------------------------------|--|
| | | DhanjitKalita, Climate Resilient Pea Demonstration | RabitaKalita, Climate Resilient Potato Demonstration | Binoy Das, Minimum Tillage Tomato Demo | Paresh Kalita, Minimum Tillage Tomato Demo | Sunil Deka, Zero Tillage Potato | Himanikalita- Desk Rev | Gautam Sarma – Desk Rev | Jitumanikalita Desk Rev | Sunil Sarma – Desk Rev | Kamal Pathak – Desk Rev | Pragati FIG | Aas AVCS -FPG | Na-SurujAgro Producer Company Ltd. | |
| 1 | Name of Village | Dharmatala | Kuvara | Kuvara | Kuvara | Bajkuchi | Barbang (Kuvara) | Dharmtola | | | Borsubha | Titkuchi | Patgirichuba | Titkuchi | |
| 2 | Block | Bajali Dev. Block | Bajali Dev. Block | Bajali Dev. Block | Bajali Dev. Block | Bajali Dev. Block | Bajali Dev. Block | Bajali Dev. Block | | | Gomaphulbari | Sipajhar | Sipajhar | Sipajhar | |
| 4 | Area of the Demonstration Plot? | 0.2 Ha | 1 Ha | 0.1 Ha | 0.2 Ha | 0.15Ha | 1 Ha | 0.20 Ha | | | 0.15 | 0.25Ha | 0.25Ha | 0.25 Ha | |
| 5 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No environmental sensitive features within 5 km radius |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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|----------|--|---|---|--|--|---------------------------------|-----------------------------------|---|---------------------------|------------------------|--|-----------------|-----------------|-------------------------------------|---|
| | | Dhanjit Kalita, Climate Resilient Pea Demonstration | Rabita Kalita, Climate Resilient Potato Demonstration | Binoy Das, Minimum Tillage Tomato Demo | Paresh Kalita, Minimum Tillage Tomato Demo | Sunil Deka, Zero Tillage Potato | Himanik Kalita - Desk Rev | Gautam Sarma - Desk Rev | Jitumanik Kalita Desk Rev | Sunil Sarma - Desk Rev | Kamal Pathak - Desk Rev | Pragati FIG | Aas AVCS - FPG | Na-Suruj Agro Producer Company Ltd. | |
| 6 | What crop variety will be cultivated under APART demonstration? | Rachana | Lady Rosetta | Trishul | Trishul | Chibsora-3 | Zero Tillage Potato Demonstration | Pea Demonstration (Climate Resilient Technology and Marketled Production) | | | Pumpkin Demo, Climate resilient technology | Arjuna F1 | Kufri Surya | Kufri Pokhr aj | Pumkin hybrid variety; Open Pollinated Varieties & Cabbage |
| 7 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | |
| 8 | How many times a year the farmers cultivate? | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | |
| 9 | What are the crop varieties the famers cultivate? | Local varieties | Local varieties | Local varieties | Local varieties | Hybrid varieties | Local varieties | Local varieties | Local varieties | Local varieties | Hybrid varieties | Local varieties | Local varieties | Hybrid varieties | Different farmers are using different variety. Mostly uses local variety, except few farmers which uses hybrid variety. |
| 10 | Do they cultivate any local varieties? | Yes | Yes | Yes | Yes | Hybrid | Paddy | | | | Mustard hybrid | Yes | Yes | Hybrid | Yes they cultivate local variety. Some |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | | farmers prefer hybrid variety to increase productivity. |
| 11 | From where do they bring the seeds? | Arranged by themselves, Stored from Past year, from other farmers or Dept. of Agriculture | Arranged by themselves, Stored from Past year, from other farmers or Dept. of Agriculture | Arranged by themselves, Stored from Past year, from other farmers or Dept. Of Agriculture | Arranged by themselves, Stored from Past year, from other farmers or Dept. Of Agriculture | Arranged by themselves, Stored from Past year, from other farmers or Dept. Of Agriculture | APART | APART | APART | APART | APART | APART | APART | APART | The seed are provided to all beneficiaries by APART |
| 12 | Do the farmers use any types of fertilizers? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Urea, Potash, Micro-nutrient, Vermi-compost, Rhizobium, |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | | provided under APART |
| 13 | What steps the farmers take in case of disease outbreak and pest attacks in crops? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | to prevent pest attack integrated farming. Maize as border crops; French bean as intercrop and Marigold as trap crop. No disease outbreak reported. |
| 14 | Do they use pesticides? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Moximate Diethane, Malathon | Trichoderma – Bio fungal Agent improves photosynthetic efficiency, enhance nutrient uptake and increase nitrogen use efficiency in crops; Redomil Gold – Fungicide. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Barpeta | | | | | | | | | | Darang | | | |
|----------|---|---|---|---|---|---------------------------------|------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------|----------------|---------------------------------------|---|
| S.N o | Environmental Concerns (EMF IMPLEMENTATION) | DhanjitKalita, Climate Resilient Pea Demonstration | RabitaKalita, Climate Resilient Potato Demonstration | Binoy Das, Minimum Tillage Tomato Demo | Paresh Kalita, Minimum Tillage Tomato Demo | Sunil Deka, Zero Tillage Potato | HimaniKalita- Desk Rev | Gautam Sarma – Desk Rev | JitumaniKalita Desk Rev | Sunil Sarma – Desk Rev | Kamal Pathak – Desk Rev | Pragati FIG | Aas AVCS - FPG | Na-SurujAgro Producer Company Ltd. | OBSERVATION/ FINDINGS |
| | | | | | | | | | | | | | | | This is Toxic to aquatic organism. Runoff from the field to any water bodies are hazardous to aquatic fauna. & Neem Oil. Use of pesticides are discouraged under APART. But when insect attack reaches uncontrol. The farmers use these pesticides in scientific manner. They use PPE Kits and avoid rainy days. |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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|----------|---|--|--|---|--|---------------------------------|----------------------------|-------------------------|----------------------------|------------------------|-------------------------|-------------|----------------|--|---|
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| 15 | Do they procure chemicals, fertilizers and pesticides from licensed seller? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The fertilizer and pesticides are provided under APART to the framers. During emergency condition, the farmers procure the pesticide from the local market to control the pest. |
| 16 | Do the farmers use personal protective equipment during handling and application of chemicals/pesticides/fertilizers? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The farmers are provided with Mask, gloves, glass & Boots as PPE Kit during application of Fertilizers and Pesticides |
| 17 | Does the agricultural field have proper irrigation facility? | X | X | X | X | X | X | X | X | X | X | X | X | X | No, the farmers are dependent on rain. Whole |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | | area is rain fed. |
| 18 | What is the period of occurrence of flood in that area? | ✓ | ✓ | ✓ | ✓ | ✓ | X | X | X | X | X | ✓ | ✓ | ✓ | Flooding happens due to rain. Poor farm drainage practice. |
| 19 | Do the farmers practice fish cum rice cultivation? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 20 | Do the farmers have proper storage facilities for the products? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | storage facilities have been provided |
| 21 | Do the agricultural fields have proper drainage system? | X | X | X | X | X | X | X | X | X | X | X | X | X | No drainage system to drain out excess water |
| 22 | Do the farmers undergo any soil test? | X | X | X | X | X | X | X | X | X | X | X | X | X | The project considered for Audit does not have the soil test report. But the desk review shows that 10% of the |



FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit

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| | | | | | | | | | | | | | | | total demonstration has soil test report. |
| 23 | Do they follow integrated pest management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Yes, they use integrated cropping patter, Pheromone, Blue and yellow sticky trap |
| 24 | Are there any disturbances from wild animals or birds? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Not applicable |
| 25 | What are the common birds, insects, amphibians etc. found in the field? Any loss of commonly found species? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Myna, Crow, heron, etc. |
| 26 | Do they follow any type of waste management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | After harvesting, the remains are converted into bio-manure. Mainly practice |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

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| | | | | | | | | | | | | | | | by the farmers. |
| EMP & Mitigation Adapted | | | | | | | | | | | | | | | |
| 28 | Habitat modification | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 29 | Effect to the local flora and faun | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | located on elephant Corridor. No issue only chance of crop being raid by elephant. |
| 30 | Change in land use pattern | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 31 | Land and soil surveys | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 32 | Conflict with small land holder farmers over land resources | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| Preparation Stage | | | | | | | | | | | | | | | |
| 33 | Soil erosion | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 34 | Loss of biodiversity | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 35 | Disruption of hydrological cycle | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 36 | Increase stream sedimentation and | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External
Environmental Audit

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| | damage to aquatic ecosystem | | | | | | | | | | | | | | |
| 37 | Air and Noise pollution caused by heavy machineries | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 38 | Contamination of soil due to oil leakage from machineries | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 39 | Soil compaction due to Heavy Machine | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 40 | Increased use of pesticides/ fertilizers could lead to issues related to storage, handling, application and disposal | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | For APART projects, the quantity of fertilizers is decided by the Horticulture expert. Mostly Bio manure are used. Use of pesticides are avoided |
| 41 | probability of pesticides and fertilizers flowing into | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.N o | Environmental Concerns (EMF IMPLEMENTATION) | Barpeta | | | | | | | | | | Darang | | | OBSERVATION/ FINDINGS |
|----------|---|---|---|--|--|---------------------------------|----------------------------|-------------------------|----------------------------|------------------------|-------------------------|-------------|----------------|-------------------------------------|--|
| | | Dhanjit Kalita, Climate Resilient Pea Demonstration | Rabita Kalita, Climate Resilient Potato Demonstration | Binoy Das, Minimum Tillage Tomato Demo | Paresh Kalita, Minimum Tillage Tomato Demo | Sunil Deka, Zero Tillage Potato | Himanika Kalita - Desk Rev | Gautam Sarma - Desk Rev | Jitumanika Kalita Desk Rev | Sunil Sarma - Desk Rev | Kamal Pathak - Desk Rev | Pragati FIG | Aas AVCS - FPG | Na-Suruj Agro Producer Company Ltd. | |
| | food chain and posing a health risks/ hazard | | | | | | | | | | | | | | |
| 42 | If appropriate variety of crop (Cereals, Pulses, Fruits and Vegetables) with respect to the particular season and climatic zone | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The crop variety seed are being provided by state Agriculture department. |
| 43 | Use of chemicals in the waterlogged paddy field may create GHG emission (N2O) | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No Paddy Cultivated |
| 44 | Crop rotation problem | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | under APART only one cropping is funded to the benefices. Next year new benefices. In case of FID remains, same crop rotation is practice. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | Barpeta | | | | | | | | | | Darang | | | |
|-----------------|---|---|---|---|---|---------------------------------|--------------------------|-------------------------|---------------------------|------------------------|-------------------------|-------------|---------------|--|--|
| S.N o | Environmental Concerns (EMF IMPLEMENTATION) | DhanjitKalita, Climate Resilient Pea Demonstration | RabitaKalita, Climate Resilient Potato Demonstration | Binoy Das, Minimum Tillage Tomato Demo | Paresh Kalita, Minimum Tillage Tomato Demo | Sunil Deka, Zero Tillage Potato | HimanikaKalita- Desk Rev | Gautam Sarma – Desk Rev | JitumanikaKalita Desk Rev | Sunil Sarma – Desk Rev | Kamal Pathak – Desk Rev | Pragati FIG | Aas AVCS -FPG | Na-SurujaAgro Producer Company Ltd. | OBSERVATION FINDINGS |
| Post Harvesting | | | | | | | | | | | | | | | |
| 45 | Vehicular emission during transportations of row products | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 46 | Marketing resource local or centralized | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | They sold their products in local market at village cluster and at district level. |

| S.No | District | Nagaon | | | | Sonitpur | Darang | | | Nalbari | | | OBSERVATION/ FINDINGS |
|------|-----------------|-----------------|--------------|-----------------------------|-----------------------------|---------------|-------------|---------------|-------------------------------------|------------------|----------------|----------------|-----------------------|
| | | Malabika Saikia | Dilip Saikia | FIG - Pumpkin Arjun Variety | FIG – Pumpkin Arjun Variety | | Pragati FIG | Aas AVCS -FPG | Na-Suruj Agro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | |
| 1 | Name of Village | Dakarghat | | Borj oha | Sialmari | Chengeli mari | Titkuchi | Patgirich uba | Titkuchi | Namati | Naharta ri | Naharta ri | |
| 2 | Block | Pakhimora | | | | Balipara | Sipajh | Sipajhar | Sipajhar | Publna | Borigog | Nalbari | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | | | | | Sonitpur | Darang | | | Nalbari | | | |
|------|---|----------------------------|------------|---------------------------|----------------------------|--|--|-----------------|-----------------|------------------------------------|------------------|------------------|------------------|---|
| S.No | Environmental Concens (EMF IMPLEMENTATION) | MalabikaSaikia | DilipSakia | FIG -Pumkin Arjun Variety | FIG – Pumkin Arjun Variety | FIG – Cabbage (Green Express Variety) (Desktop Review) | DigantaBhuyan | Pragati FIG | Aas AVCS -FPG | Na-SurujAgro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | OBSERVATION/ FINDINGS |
| | | | | | | | | ar | | | bari | Banbag | | |
| 4 | Area of the Demonstration Plot? | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.25 Ha | 0.25Ha | 0.25Ha | 0.25 Ha | 0.15Ha | 0.15Ha | 0.2 Ha | |
| 5 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | N. A | N. A | N. A | N.A | N.A | Yes | N.A | N.A | N.A | N.A | N.A | N.A | No environmental sensitive features within 5 km radius |
| 6 | What crop variety will be cultivated under APART demonstration? | Pumpkin – Mahabali Variety | | Pumpkin Arjun variety | | Cabbage | Ginger (Nadiya variety) | Arjuna F1 | Kufri Surya | KufriPokhraj | EW -137 Pumpkin | | Potato – ANUPA | Pumpkin hybrid variety; Open Pollinated Varieties & Cabbage |
| 7 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | Private Land | | | | | Own Patta Land | Own Land | Own Land | Own Land | Own Land | Own Land | Own Land | |
| 8 | How many times a year the farmers cultivate? | Two Crop | | | | | 2 Times | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | Two Crops | |
| 9 | What are the crop varieties the famers cultivate? | Paddy & Vegetable | | | | Paddy & Vegetable | Turmeric, Maize, Pineapple , Cabbage, Carrot, etc. | Local varieties | Local varieties | Hybrid varieties | Local varieties | Hybrid varieties | Hybrid varieties | |
| 10 | Do they cultivate any local varieties? | No | | | | No | ✓ | Yes | Yes | Yes | Yes | Yes | Yes | |
| 11 | From where do they bring the | Provided by APART | | | | APART | Locally | APAR | APART | APART | APART | APART | APART | The seed are |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | Sonitpur | Darang | | | Nalbari | | | OBSERVATION/ FINDINGS |
|------|--|-----------------|-------------|---------------------------|----------------------------|--|--------------------------|-------------|---------------|-------------------------------------|------------------|----------------|----------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | Malabika Saikia | Dilip Sakia | FIG -Pumkin Arjun Variety | FIG – Pumkin Arjun Variety | FIG – Cabbage (Green Express Variety) (Desktop Review) | Diganta Bhuyan | Pragati FIG | Aas AVCS -FPG | Na-Suruj Agro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | |
| | seeds? | | | | | | | T | | | | | | provided to all beneficiaries by APART |
| 12 | Do the farmers use any types of fertilizers? What are those? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Urea, Potash, Micro-nutrient, Vermi-compost, Rhizobium, provided under APART |
| 13 | What steps the farmers take in case of disease outbreak and pest attacks in crops? | ✓ | ✓ | ✓ | ✓ | DAP, Urea, SSP, Potash | Application of pesticide | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | to prevent pest attack integrated farming. Maize as border crops; French bean as intercrop and Marigold as trap crop. No disease outbreak reported. |
| 14 | Do they use pesticides? What are those? | ✓ | ✓ | ✓ | ✓ | Neem oil, Trical | Indofil M-45 | N.A | N.A | Moximate Diethane, Malathion | N.A | N.A | N.A | Trichoderma – Bio fungal Agent improves photosynthetic efficiency, enhance nutrient uptake and increase nitrogen use efficiency in crops; Redomil Gold – Fungicide. This is |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | Sonitpur | Darang | | | Nalbari | | | OBSERVATION/ FINDINGS |
|------|--|----------------|------------|------------------------------|-------------------------------|--|----------|-------------|---------------|--|------------------|----------------|----------------|--|
| | | MalabikaSaikia | DilipSakia | FIG -Pumkin Arjun Variety | FIG – Pumkin Arjun Variety | FIG – Cabbage (Green Express Variety) (Desktop Review) | | Pragati FIG | Aas AVCS -FPG | Na-SurujAgro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | |
| | | | | | | | | | | | | | | Toxic to aquatic organism. Runoff from the field to any water bodies are hazardous to aquatic fauna. & Neem Oil. Used in control manner under emergency condition. Farmers uses PPE kits and avoid rainy day. Use of pesticides discourage by APART. |
| 15 | Do they procure chemicals, fertilizers and pesticides from licensed seller? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | N.A | Local Market |
| 16 | Do the farmers use personal protective equipment during handling and application of chemicals/pesticides/fertilizers ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | X | X | X | X | X | The farmers are provided with Mask, gloves, glass & Boots as PPE Kit during application of Fertilizers and Pesticides |
| 17 | Does the agricultural field have proper irrigation facility? | X | X | X | X | X | X | X | X | X | X | X | X | No, the farmers are dependent on rain. |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | Sonitpur | Darang | | | Nalbari | | | OBSERVATION/ FINDINGS |
|------|---|----------------|------------|------------------------------|-------------------------------|--|---------------|-------------|---------------|--|------------------|----------------|----------------|---|
| | Environmental Concerns (EMF IMPLEMENTATION) | MalabikaSaikia | DilipSakia | FIG -Pumkin Arjun Variety | FIG – Pumkin Arjun Variety | FIG – Cabbage (Green Express Variety) (Desktop Review) | DigantaBhuyan | Pragati FIG | Aas AVCS -FPG | Na-SurujAgro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | |
| | | | | | | | | | | | | | | Whole area is rain fed. |
| 18 | What is the period of occurrence of flood in that area? | N. A | N. A | N. A | N.A | N.A | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Flooding happens due to rain. Poor farm drainage practice. |
| 19 | Do the farmers practice fish cum rice cultivation? | N. A | N. A | N. A | N.A | N.A | X | N.A | N.A | N.A | N.A | N.A | N.A | |
| 20 | Do the farmers have proper storage facilities for the products? | X | X | X | X | X | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | storage facilities have been provided |
| 21 | Do the agricultural fields have proper drainage system? | X | X | X | X | X | ✓ | X | X | X | X | X | X | No drainage system to drain out excess water |
| 22 | Do the farmers undergo any soil test? | X | X | X | X | X | ✓ | X | X | X | X | X | X | Of the total project under horticulture demonstration, 10% under goes soil testing under APART. This finding is based on the Desk review. |
| 23 | Do they follow integrated pest management practices? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Yes, they use integrated cropping patter, Pheromone, Blue and yellow sticky trap |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | Sonitpur | Darang | | | Nalbari | | | OBSERVATION/ FINDINGS |
|-------------------------------------|---|----------------|------------|---------------------------|----------------------------|--|---------------|-------------|---------------|------------------------------------|------------------|----------------|----------------|--------------------------|
| | Environmental Concens (EMF IMPLEMENTATION) | MalabikaSaikia | DilipSakia | FIG -Pumkin Arjun Variety | FIG – Pumkin Arjun Variety | FIG – Cabbage (Green Express Variety) (Desktop Review) | DigantaBhuyan | Pragati FIG | Aas AVCS -FPG | Na-SurujAgro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | |
| 24 | Are there any disturbances from wild animals or birds? | N. A | N. A | N. A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Not applicable |
| 25 | What are the common birds, insects, amphibians etc. found in the field? Any loss of commonly found species? | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Myna, Crow, heron, etc. |
| 26 | Do they follow any type of waste management practices? | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| EMP & Mitigation Adapted | | | | | | | | | | | | | | |
| 28 | Habitat modification | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 29 | Effect to the local flora and faun | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 30 | Change in land use pattern | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 31 | Land and soil surveys | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 32 | Conflict with small land holder farmers over land resources | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| Preparation Stage | | | | | | | | | | | | | | |
| 33 | Soil erosion | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 34 | Loss of biodiversity | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 35 | Disruption of hydrological cycle | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 36 | Increase stream sedimentation and damage to aquatic | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | District | Nagaon | | | | | Sonitpur | Darang | | | Nalbari | | | OBSERVATION/ FINDINGS |
|------|---|----------------|-------------|---------------------------|----------------------------|--|---------------|-------------|---------------|------------------------------------|------------------|----------------|----------------|--|
| | Environmental Concerns (EMF IMPLEMENTATION) | MalabikaSaikia | DilipSaikia | FIG -Pumkin Arjun Variety | FIG – Pumkin Arjun Variety | FIG – Cabbage (Green Express Variety) (Desktop Review) | DigantaBhuyan | Pragati FIG | Aas AVCS -FPG | Na-SurujAgro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | |
| | ecosystem | | | | | | | | | | | | | |
| 37 | Air and Noise pollution caused by heavy machineries | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 38 | Contamination of soil due to oil leakage from machineries | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 39 | Soil compaction due to Heavy Machine | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 40 | Increased use of pesticides/ fertilizers could lead to issues related to storage, handling, application and disposal | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | For APART projects, the quantity of fertilizers is decided by the Horticulture expert. Mostly Bio manure are used. Use of pesticides are avoided |
| 41 | probability of pesticides and fertilizers flowing into food chain and posing a health risks/ hazard | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 42 | If appropriate variety of crop (Cereals, Pulses, Fruits and Vegetables) with respect to the particular season and climatic zone | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The crop variety seed are being provided by state Agriculture department. |
| 43 | Use of chemicals in the waterlogged paddy field may create GHG emission (N2O) | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | No Paddy Cultivated |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | District | Nagaon | | | | | Sonitpur | Darang | | | Nalbari | | | |
|------|---|----------------|------------|---------------------------|----------------------------|--|---------------|-------------|---------------|------------------------------------|------------------|----------------|----------------|---|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | MalabikaSaikia | DilipSakia | FIG -Pumkin Arjun Variety | FIG – Pumkin Arjun Variety | FIG – Cabbage (Green Express Variety) (Desktop Review) | DigantaBhuyan | Pragati FIG | Aas AVCS -FPG | Na-SurujAgro Producer Company Ltd. | Dinesh Rajbongsh | Prahald Sarkar | Hemanta Sarkar | OBSERVATION/ FINDINGS |
| 44 | Crop rotation problem | N. A | N. A | N. A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | under APART only one cropping is funded. Next year beneficiaries in case of FIG remains same crop rotation is practice. |
| | Post Harvesting | | | | | | | | | | | | | |
| 45 | Vehicular emission during transportations of row products | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 46 | Marketing resource local or centralized | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | They sold their products in local market at village cluster and at district level. |

Note: ✓ - complied; ☒ - not complied; NA – not applicable

Table 4-3 EMF Compliance Audit for Seri-Culture Demonstration

| | | | | | | | | | |
|--|--|--------|--|--|--|--|--|--------|--|
| | | KAMRUP | | | | | | Jorhat | |
|--|--|--------|--|--|--|--|--|--------|--|





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Rajya Ram Rabha | Kalpana Rabha | Gonaram Rabha | Anjana Rabha | Namal Rabha | Jebulem Sangma - Desk review | Subhas Chandra Rabha - Desk Rev. | Jebulun Sangha - Desk Rev. | Gandheswar Rabha Desk Rev. | Junu Sangma -desk rev. | Amia Gogoi - Desk Rev | Dipti Kachri - Desk rev | Dipu Mori Gogoi - Desk Rev. | PronitaGogoi - Desk Rev | Tutumaiphukan - desk rev. | OBSERVATION/ FINDINGS |
|------|---|-------------------|------------------|------------------|------------------|------------------|------------------------------|----------------------------------|----------------------------|----------------------------|------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------------|---------------------------|
| 1 | Village | Saru rani | Mani kpur | 1 No. bage n | 1 No Bage n | 2 No. Bage n | Balba ri | Hahi m | Salba ri | Tilapa ra | Balba ri | Mora ngaon | Kach ukhat | Sonar igaon | Deog haria | Noraga on | |
| 2 | Block | Cha yani Bard uar | Chay aniBar duar | Chay aniBar duar | Chay aniBar duar | Chay aniBar duar | Boko | Boko | Boko | Boko | Boko | Selen ghat | Titab ar | Backc hung | Titab ar | Chipah ikhola | |
| 3 | Type of Project | ERI | ERI | ERI | ERI | ERI | Muga | Muga | Muga | Muga | Muga | Eri | Eri | Eri | Eri | Eri | |
| 4 | Area of the plantation Plot? | 0.5 Acer | 48 Bigha | 1 Acer | 1 Acer | | 1 Acer | 1 Acer | 1 Acer | 1 Acer | 1 Acer | 2 Bigha ⁴ | 2 Bigha | 2 Bigha | 2 Bigha | 2 Bigha | |
| 5 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | N.A | X | N.A | N.A | N.A | X | X | N.A | N.a | X | N.A | N.A | N.A | N.A | N.A | Near Notified Forest Area |
| 6 | What plant variety will be cultivated under APART demonstration? | Kess eru | Kesse ru | Kesse ru | Kesse ru | Kesse ru | Kesse ru | Kesse ru | Kesse ru | Kesse ru | Kesse ru | Kesser u | Kesse ru | Kesse ru | Kesse ru | Kesser u | |
| 7 | Type of silk worm will be reared under | Eri | Eri | Eri | Eri | Eri | Muga | Muga | Muga | Muga | Muga | Eri | Eri | Eri | Eri | Eri | |

⁴1 bigha is 14400 sq.ft in Assam State.





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | | | | | | | Jorhat | | | | | | |
|------|---|-------------------|---------------|---------------|--------------|-------------|---------------------------------|-------------------------------------|----------------------------|-------------------------------|------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------------|---|--|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Rajya Ram Rabha | Kalpana Rabha | Gonaram Rabha | Anjana Rabha | Namal Rabha | Jebulem Sangma - Desk review | Subhas Chandra Rabha - Desk Rev. | Jebulum Sangha - Desk Rev. | Gandheswar Rabha Desk Rev. | Junu Sangma -desk rev. | Amia Gogoi - Desk Rev | Dipti Kachri - Desk rev | Dipu Mori Gogoi - Desk Rev. | PronitaGogoi - Desk Rev | Tutumaiphukan - desk rev. | OBSERVATION/ FINDINGS | |
| | APART? (Eri/Muga) | | | | | | | | | | | | | | | | | |
| 8 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | Patt a Land | Patta Land | Patta Land | Patta Land | Patta Land | Patta Land | Patta land | Patta Land | Patta Land | Patta Land | ✓ | ✓ | ✓ | ✓ | ✓ | Patta land | |
| 9 | How many times a year the farmers rear | 4to 5 | 4 to 5 | 4 to 5 | 4 to 5 | 4 to 5 | 3 to 4 | 3 to 4 | 4 to 5 | 3 to 4 | 4 to 5 | 4 to 5 | 4 to 5 | 4 to 5 | 4 to 5 | 4 to 5 | | |
| 10 | What are the disturbances faced by Farmers in culturing the worms/from pests/insects/animals/ birds/tree? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Birds, application of pesticides, herbicides and flies | |
| 11 | What action has been taken in case of such disturbances? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | Eri worm are rare inside house or bamboo mounted cage with mosquitoes nets. | |
| 12 | What are the common birds, insects, | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | common crow, bat, owl, | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | | | | Jorhat | | | | | | | | |
|------|---|-----------------|---------------|---------------|--------------|-------------|---------------------------------|-------------------------------------|----------------------------|-------------------------------|------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------------|---|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Rajya Ram Rabha | Kalpana Rabha | Gonaram Rabha | Anjana Rabha | Namal Rabha | Jebulem Sangma - Desk review | Subhas Chandra Rabha - Desk Rev. | Jebulun Sangha - Desk Rev. | Gandheswar Rabha Desk Rev. | Junu Sangma -desk rev. | Amia Gogoi - Desk Rev | Dipti Kachri - Desk rev | Dipu Mori Gogoi - Desk Rev. | PronitaGogoi - Desk Rev | Tutumaiphukan - desk rev. | OBSERVATION/ FINDINGS |
| | amphibians etc. found in the field. Any loss of commonly found species? | | | | | | | | | | | | | | | | common hawk |
| 13 | Do the farmers use chemicals, pesticides and fertilizers? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | small of Urea and DAP. No pesticides are used |
| 14 | What are those (formaldehyde, bleaching powder, hydrogen peroxide, etc.)? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | they use bleaching powder |
| 15 | From where do they buy the pesticides and what is the amount required? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | N.A | The application of pesticides is not reported. The worm is highly sensitive to these chemicals. The application of these chemical in field, even far from the |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | | | | Jorhat | | | | | | | | |
|------|--|-----------------|---------------|---------------|--------------|-------------|---------------------------------|-------------------------------------|----------------------------|-------------------------------|------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------------|---|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Raiya Ram Rabha | Kalpana Rabha | Gonaram Rabha | Anjana Rabha | Namal Rabha | Jebulem Sangma - Desk review | Subhas Chandra Rabha - Desk Rev. | Jebulun Sangha - Desk Rev. | Gandheswar Rabha Desk Rev. | Junu Sangma -desk rev. | Amia Gogoi - Desk Rev | Dipti Kachri - Desk rev | Dipu Mori Gogoi - Desk Rev. | PronitaGogoi - Desk Rev | Tutumaiphukan - desk rev. | OBSERVATION/ FINDINGS |
| | | | | | | | | | | | | | | | | | raring area kills them. |
| 16 | Do the farmers have proper storage facility for the chemicals? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | N.A | |
| 17 | Do they use any Personal Protective Equipment at the time of handling the chemicals? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 18 | When and what are the types of wastes (both solid and liquid) generated during the entire process? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | remains of leaves and faecal matter |
| 19 | What is the amount of waste generated in a day? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | small amount; not quantified |
| 20 | Where the wastes are being disposed? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The waste is used as manure |
| 21 | What cleaning agents and disinfectants are used by the farmers? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | lime and bleaching powder |
| 22 | Do the farmers | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | | | | | | Jorhat | | | | | | | |
|------|---|-----------------|---------------|---------------|--------------|-------------|---------------------------------|-------------------------------------|----------------------------|-------------------------------|------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------------|--------------------------|--|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Raiya Ram Rabha | Kalpana Rabha | Gonaram Rabha | Anjana Rabha | Namal Rabha | Jebulem Sangma - Desk review | Subhas Chandra Rabha - Desk Rev. | Jebulun Sangha - Desk Rev. | Gandheswar Rabha Desk Rev. | Junu Sangma -desk rev. | Amia Gogoi - Desk Rev | Dipti Kachri - Desk rev | Dipu Mori Gogoi - Desk Rev. | PronitaGogoi - Desk Rev | Tutumaiphukan - desk rev. | OBSERVATION/ FINDINGS | |
| | practice dyeing? | | | | | | | | | | | | | | | | | |
| 23 | What types of chemicals are used in dyeing? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | |
| 24 | What is the source of energy used for cocoon boiling? Were they able to meet the requirement? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | |
| 25 | From where do they collect it (in case of fire woods)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | |
| 26 | What is the source of water they use? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | well | |
| 27 | What is the amount required daily and were they able to meet the daily requirements? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | |
| 28 | Where the boiled water is disposed and what is the amount disposed daily? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | | |
| 29 | Do they follow the | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| | | KAMRUP | | | | | | | | | | Jorhat | | | | | | |
|------|--|-----------------|---------------|---------------|--------------|-------------|---------------------------------|-------------------------------------|----------------------------|-------------------------------|------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------------|--|--|
| S.No | Environmental Concerns (EMF IMPLEMENTATION) | Rajya Ram Rabha | Kalpana Rabha | Gonaram Rabha | Anjana Rabha | Namal Rabha | Jebulem Sangma - Desk review | Subhas Chandra Rabha - Desk Rev. | Jebulun Sangha - Desk Rev. | Gandheswar Rabha Desk Rev. | Junu Sangma -desk rev. | Amia Gogoi - Desk Rev | Dipti Kachri - Desk rev | Dipu Mori Gogoi - Desk Rev. | PronitaGogoi - Desk Rev | Tutumaiphukan - desk rev. | OBSERVATION/ FINDINGS | |
| | safety techniques like wearing masks and gloves during the process? | | | | | | | | | | | | | | | | | |
| 30 | Dimension of the rearing house? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | For Eri -12ft by 16.5 ft. | |
| 31 | Does the processing house have proper ventilation and high stack facility? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 32 | Are the farmers aware of their health and what are the types of medical facilities provided? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The Farmers are well aware | |
| 33 | Number of Sapling planted for Feeding silk worm | 450 | 400 | 400 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 250 | 450 | 450 | Kesseru saplings Tree and fencing cost provided by APART | |
| 34 | other species of plant for feeding | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | caster, Mulberry | |



FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | SIVSAGAR | | | | | Biswanath | | | | | OBSERVATION/ FINDINGS |
|------|---|---------------|-------------|-----------------|---------------------------|------------------|---------------------|---------------------|-----------------------|-----------------------|---------------------------|---------------------------|
| | | Atul Dehingia | latinGagot | DebajitDehingia | Nitya Nandr – Desk Review | Smt. Dipti Gogot | RunuSaikia Desk Rev | BinuGogoi Desk Rev. | Sumi Dadhara Desk Rev | Rashmita Das Desk Rev | Runu Borah Gogoi Desk Rev | |
| 1 | Village | DhyanDehingia | Dhyargangao | Kacheripotha | Gumutha | Dhiyan | Bhirgaon | Dakhin Moral gaon | Dakhin Moral gaon | Dakhin Moral gaon | Moral gaon | |
| 2 | Block | Demow | Demow | Demow | Khulurea | Demow | Biswanath | Biswanath | Biswanath | Biswanath | Biswanath | |
| 3 | Type of Project | Muga | Muga | Muga | Muha | Muga | Eri | Eri | Eri | Eri | Eri | |
| 4 | Area of the plantation Plot? | 1 Acer | 1.1 Acer | 1 Acer | 1 acer | 1.1 Acer | 2 Bigha | 1.7 Bigha | 1.5 Bigha | 1.5 Bigha | 1.5 Bigha | |
| 5 | Is the plot located within or near to any environmentally sensitive area like notified forest area, biosphere reserve, wildlife sanctuary, wetland, etc.? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | Near Notified Forest Area |
| 6 | What plant variety will be cultivated under APART demonstration? | Som Tree | som tree | som tree | som tree | som | Kesseru | Kesseru | Kesseru | Kesseru | Kesseru | |
| 7 | Type of silk worm will be reared under APART? (Eri/Muga) | Muga | Muga | Muga | Muga | Muga | Eri | Eri | Eri | Eri | Eri | |
| 8 | Status of Land ownership? (Patta land, Lease land, Exonia, Govt. Land, Etc.) | Patta land | Patta land | Patta Land | Patta land | Patta Land | ✓ | ✓ | ✓ | ✓ | ✓ | Patta land |
| 9 | How many times a year the farmers rear | 4 to 5 | 4 to 5 | 4to 5 | 4 to 5 | 4to 5 | 7 times | 7 times | 7 times | 7 times | 7 times | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | SIVSAGAR | | | | | | Biswanath | | | | OBSERVATION/ FINDINGS |
|------|---|---------------|-------------|------------------|----------------------------|------------------|----------------------|---------------------|-----------------------|-----------------------|---------------------------|---|
| | | Atul Dehingia | Jatin Gagot | Debajit Dehingia | Nitya Nandri - Desk Review | Smt. Dipti Gogot | Runu Saikia Desk Rev | Binu Gogoi Desk Rev | Sumi Dadhara Desk Rev | Rashmita Das Desk Rev | Runu Borah Gogoi Desk Rev | |
| 10 | What are the disturbances faced by Farmers in culturing the worms/from pests/insects/animals/birds/tree? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Birds, application of pesticides, herbicides and flies |
| 11 | What action has been taken in case of such disturbances? | N.A | N.A | N.A | N.A | N.A | NA | NA | NA | NA | NA | Eri worm are rare inside house or bamboo mounted cage with mosquitos' nets. |
| 12 | What are the common birds, insects, amphibians etc. found in the field. Any loss of commonly found species? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | common crow, bat, owl, common hawk |
| 13 | Do the farmers use chemicals, pesticides and fertilizers? | NA | NA | NA | NA | NA | ✓ | ✓ | ✓ | ✓ | ✓ | small amount |
| 14 | What are those (formaldehyde, bleaching powder, hydrogen peroxide, etc.)? | NA | NA | NA | NA | NA | ✓ | ✓ | ✓ | ✓ | ✓ | they use bleaching powder |
| 15 | From where do they buy | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | The |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | SIVSAGAR | | | | | | Biswanath | | | | OBSERVATION/ FINDINGS |
|------|--|---------------|-------------|-----------------|----------------------------|------------------|----------------------|---------------------|-----------------------|-----------------------|---------------------------|--|
| | | Atul Dehingia | Jatin Gagot | Debjit Dehingia | Nitya Nandri - Desk Review | Smt. Dipti Gogoi | Runu Saikia Desk Rev | Binu Gogoi Desk Rev | Sumi Dadhara Desk Rev | Rashmita Das Desk Rev | Runu Borah Gogoi Desk Rev | |
| | the pesticides and what is the amount required? | | | | | | | | | | | application of pesticides are not reported. The worm is highly sensitive to these chemicals. The application of these chemical in field, even far from the raring area kills them. |
| 16 | Do the farmers have proper storage facility for the chemicals? | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| 17 | Do they use any Personal Protective Equipment at the time of handling the chemicals? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 18 | When and what are the types of wastes (both solid and liquid) generated during the entire process? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | remains of leaves and faecal matter |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | SIVSAGAR | | | | | | Biswanath | | | | OBSERVATION/ FINDINGS |
|------|---|---------------|-------------|------------------|----------------------------|------------------|----------------------|---------------------|-----------------------|-----------------------|---------------------------|------------------------------|
| | | Atul Dehingia | Jatin Gagot | Debajit Dehingia | Nitya Nandri - Desk Review | Smt. Dipti Gogot | Runu Saikia Desk Rev | Binu Gogoi Desk Rev | Sumi Dadhara Desk Rev | Rashmita Das Desk Rev | Runu Borah Gogoi Desk Rev | |
| 19 | What is the amount of waste generated in a day? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | small amount; not quantified |
| 20 | Where the wastes are being disposed? | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | manure |
| 21 | What cleaning agents and disinfectants are used by the farmers? | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | lime and bleaching powder |
| 22 | Do the farmers practice dyeing? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 23 | What types of chemicals are used in dyeing? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 24 | What is the source of energy used for cocoon boiling? Were they able to meet the requirement? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 25 | From where do they collect it (in case of fire woods)? | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |
| 26 | What is the source of water they use? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | well |
| 27 | What is the amount required daily and were they able to meet the daily requirements? | ✓ | ✓ | ✓ | ✓ | ✓ | N.A | N.A | N.A | N.A | N.A | |
| 28 | Where the boiled water is disposed and what is the amount disposed | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | |





FINAL REPORT

Consulting Services for Mid Term External Environmental Audit

| S.No | Environmental Concerns (EMF IMPLEMENTATION) | SIVSAGAR | | | | | Biswanath | | | | | OBSERVATION/ FINDINGS |
|------|--|---------------|-------------|------------------|----------------------------|------------------|----------------------|---------------------|-----------------------|-----------------------|---------------------------|--|
| | | Atul Dehingia | Jatin Gagot | Debajit Dehingia | Nitya Nandri - Desk Review | Smt. Dipti Gogot | Runu Saikia Desk Rev | Binu Gogoi Desk Rev | Sumi Dadhara Desk Rev | Rashmita Das Desk Rev | Runu Borah Gogoi Desk Rev | |
| | daily? | | | | | | | | | | | |
| 29 | Do they follow the safety techniques like wearing masks and gloves during the process? | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 30 | Dimension of the rearing house? | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | N.A | N.A | ✓ | For Eri -12ft by 16.5 ft. |
| 31 | Does the processing house have proper ventilation and high stack facility? | N.A | N.A | N.A | N.A | N.A | ✓ | ✓ | N.A | N.A | ✓ | |
| 32 | Are the farmers aware of their health and what are the types of medical facilities provided? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | The Farmers are well aware |
| 33 | Number of Sapling planted for Feeding silk worm | 300 | 450 | 450 | 450 | 450 | N.A | N.A | N.A | N.A | N.A | kesserusapling gSom Tree and fencing cost provided by APART |
| 34 | other species of plant for feeding | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | N.A | castor, Mulberry |

Note: ✓ - complied; ✗ - not complied; NA – not applicable

