Appendix 4

Results of Dug Well Inventory Survey,

Water Quality Testing for Drinking Purpose,

and

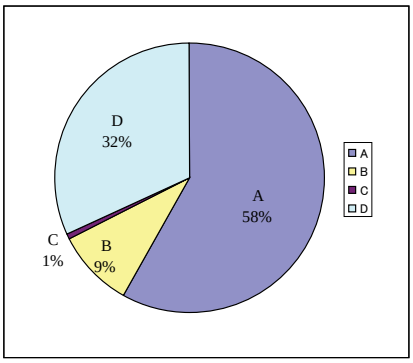
Water Source

I. Summary of Dug Well Inventory Survey

A dug well inventory survey was conducted to understand the present situation of the water supply in the target area. This section provides a summary of the survey.

(1) Progress of Dug Well Cleaning

There are 289 dug wells identified in the target villages, out of which 195 wells (67%) have been cleaned. Out of the cleaned wells, 168 wells (58%) are being used for drinking purposes. Among the 94 not-cleaned wells (33%), two (2) wells are being used for drinking purposes (Figure 1).



A	58%	Cleaned	Drinking
B	9%	Cleaned	Non-drinking
C	1%	Not-Cleaned	Drinking
D	32%	Not-Cleaned	Non-drinking

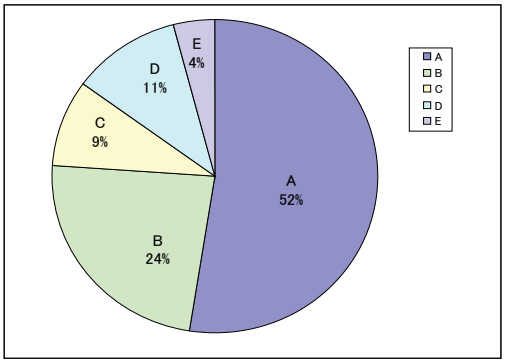
(JICA Project Team 2010)

Figure 1 Present Usage of Dug Wells

(2) Salinity

Out of the 168 cleaned wells, 128 wells (76%) are being used for drinking purposes. All of these 128 wells are of EC=2,000 μS /cm or less, which is considered to be a practical threshold for drinking water (Figure 2).

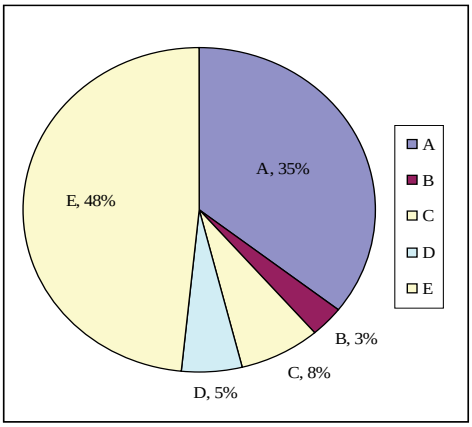
Out of the 94 un-cleaned wells (33%), 57 wells (61%) are of EC=2,000 μS /cm or more, and 45 wells (48%) are of EC=3,000 μS /cm or more. Many of the wells were not cleaned due to the undrinkably high salinity level (Figure 3). On the other hand, 36 of the un-cleaned wells (38%) are of EC=2,000 μS /cm or less, which is possibly due to the fact that some wells are seriously damaged or there are no users near the wells.



A	EC<1,500	52%
B	1,500<EC<2,000	24%
C	2,000<EC<2,500	9%
D	2,500<EC<3,000	11%
E	3,000 <EC	4%

(JICA Project Team 2010)

Figure 2 Salinity of Water in Cleaned Dug Wells



A	EC<1,500	35%
B	1,500<EC<2,000	3%
C	2,000<EC<2,500	8%
D	2,500<EC<3,000	5%
E	3,000 <EC	48%

(JICA Project Team 2010)

Figure 3 Salinity of Water in Not-Cleaned Dug Wells

II. Summary of Water Quality Testing for Drinking Purposes

(1) Introduction

The maximum three (3) water samples were taken from dug wells in the villages, totaling 82 water samples for water quality testing for drinking purposes. The water samples were taken principally from cleaned wells, but water samples in one village were taken from un-cleaned wells because three cleaned wells were not available there. As a result, 66 water samples were from cleaned wells and the other 16 from un-cleaned wells.

The testing items were principally based on the Sri Lanka Guideline SLS614: 1983 part 1 &2.

Water qualities for drinking purposes are categorized into (1) Health Significance and (2) Acceptability. The observations of the water quality testing are summarized as follows.

(2) Health Significance

(a) Fluoride

Excessive fluoride was identified in the water samples from the villages listed in Table below. In particular, water from Pali Aru, Parasankulam and Kannaddy may have to be re-checked for confirmation, and if the re-testing has similar results, water from these wells shall not be used for drinking purposes.

Furthermore, water from the tube well to be drilled in Parasankulam may show similar water quality, which may cause the Project to be re-evaluated. Another water source may have to be considered for Parasankulam.

Wells with Excessive Fluoride in Water

Well No.	DS Division	GN Division	Village	Cleaned/Not-Cleaned	F (mg/L)
PA/PA/13	Manthai West	Pali Aru	Pali Aru	Cleaned	1.54
PA/TT/01	Manthai West	Pali Aru	Theththavaady	Cleaned	2.42
PS/PS/01	Madhu	Parasankulam	Parasankulam	Cleaned	2.00
PS/PS/03	Madhu	Parasankulam	Parasankulam	Cleaned	2.52
PS/PS/05	Madhu	Parasankulam	Parasankulam	Cleaned	1.71
PS/SP/06	Madhu	Parasankulam	Sinna Valayankaddu & Periya Valayankaddu	Cleaned	1.78
KN/CL/22	Manthai West	Kannaddy	Chalampan	Cleaned	1.63
TV/TV/02	Manthai West	Thevanpiddy	Thevanpiddy	Not-Cleaned	1.80
IL/IL/22	Manthai West	Illupaikadavai	Illupaikadavai	Not-Cleaned	1.80
IL/IL/23	Manthai West	Illupaikadavai	Illupaikadavai	Not-Cleaned	1.84

(JICA Project Team 2010)

(b) Other chemical substances for health concerns

No other excessive substances for health concerns were identified.

(3) Bacteriological items: E. coliform:

WHO guideline (2004) shows that the E. coliform shall not be included in treated water, but no guideline is shown for un-treated water.

The E. coliform was identified in the four wells listed in Table below. In particular, in the listed three wells in Vilathikulam GN Division E. coliform was identified, which may imply that there is a social habit in the area such that toilets are located near the wells.

The water of the wells from which E. coli was identified shall be chlorinated.

Wells with E. coliform in Water

Well No.	DS/AGA Division	GN Division	Village	Cleaned/Not-Cleaned	E-Coli (Corony)
VT/VT/06	Madhu	Vilathikulam	Vilathikulam	Cleaned	2
VT/AI/01	Madhu	Vilathikulam	Ampadda	Cleaned	6
VT/AI/02	Madhu	Vilathikulam	Ampadda	Cleaned	1
CK/CK/02	Nanaddan	C. Kaddaiadampan	C. Kaddaiadampan	Cleaned	1

(4) Acceptability

Providing safe water throughout the year will be of paramount importance for rural water supply, and it is therefore the user's acceptability of the water with excessive substances regarding the acceptability for immediate use; thereafter water quality shall be improved as the social conditions develop year to year.

(5) Phosphate (PO_4^{-3})

Phosphates usually originate from the decomposition of organisms in nature. Other sources originate from human activities, including domestic waste water, industrial waste water, and chemical fertilizers.

The water from one not-cleaned well in Illupaikadavai contains PO_4^{-3} exceeding the Sri Lankan Guideline value of 2mg/L, which may indicate the contamination by domestic waste water such as soap, shampoo, detergent, or something else. The other five cleaned (5) wells in Madhu and Manthai West DS Division also show higher values of phosphates, which also may indicate the contamination by domestic waste water.

Dug Wells with Phosphates over 1.0 mg/L

Well No.	DS Division	GN Division	Village	Cleaned/Not-Cleaned	T-P (mg/L)
VN/SW/01	Manthai West	Vellankulam	Sewa Village	Cleaned	1.56
PA/MN/01	Manthai West	Pali Aru	Moonrampiddy	Cleaned	1.31
PS/SP/08	Madhu	Parasankulam	Velayankaddy & Periya	Cleaned	1.20
PS/SP/31	Madhu	Parasankulam	Velayankaddy & Periya	Cleaned	1.39
PS/SP/32	Madhu	Parasankulam	Velayankaddy & Periya	Cleaned	1.94
IL/IL/22	Manthai West	Illupaikadavai	Illupaikadavai	Not-Cleaned	2.75
IL/IL/23	Manthai West	Illupaikadavai	Illupaikadavai	Not-Cleaned	1.84
AN/AN/01	Manthai West	Anthoniyarpuram	Anthoniyarpuram	Not-Cleaned	1.61

III. Water Source

From the results of the inventory survey of the dug wells whose results are annexed, water quality testing and preliminary review of the hydro-geological conditions, water sources that can be used for drinking purposes without major water treatment are limited to the groundwater in the Madhu area of the basement rock, the western hilly area of the limestone terrain and the area very close to the Giants Tank. In other areas the groundwater will be excessively saline.

However, it should be noted that the groundwater in the Madhu area may have excessive amounts of fluoride in it. Groundwater from the areas close to the Giants tank is not believed to be contaminated by agro-chemicals though close monitoring will be necessary.

Recommended options for the water sources are shown in the table below.

Issues Identified and Preliminary Recommendations - Water Source

Location	Elevation (m)	Geology	Aquifer	Water Quality	Yield	Evaluation, Recommendations
Coastal Low Land	Lower that 10m	Limestone	Porous Limestone	High salinity	Good (high salinity)	- Not suitable for domestic use due to salinity. - Urgent countermeasures are required. - A regional piped water supply system is recommended as an ultimate solution with water sources in the hilly area.
Coastal Low Land (Rice Ball)				- Occasionally lower salinity due to dilution by surface water. - Excessive pumping may increase salinity. - Possible contamination by agro-chemical and/or pesticides, bacteria coliform.	- Yield of lower salinity water is limited depending on the recharging conditions from tanks and/or rivers. - Yield is limited in dry seasons	(Water with lower salinity) - Acceptable for domestic use for the time being - A regional piped water supply system is recommended as an ultimate solution, with water sources from tube wells near the Giants Tank; water treatment facilities may be recommended.
Western Part of Hilly Area	15m~40m	Limestone	Porous Limestone	Moderate Salinity.	- Abundant in the western edge of the hilly area	- Good for domestic use - Proper water supply facilities are recommended with the water sources of tube wells within villages.
Eastern Part of Hilly Area	Around 35m	Basement Rock (Schist)	Weathered Rock	- Dug-well water: Low salinity - Tube-well water: salinity unknown	- Limited yield from dug-wells, - Yield from tube wells depends on geological conditions.	- Dug-Well: Good in quality, scarcity in yield in dry seasons - Proper water supply facilities are recommended with water sources from tube wells within the villages.

Appendix 5

Issues and Findings on Environmental and Social Considerations

TABLE OF CONTENTS OF APPENDIX 5

List of Annexes

Issues and Findings on Environment and Social Consideration

1. Introduction

The purpose of the environmental and social considerations work in this project is to evaluate adverse social and environmental impacts which will be expected to be caused by the proposed Pilot Projects, and examine countermeasures against the adverse impacts and monitor the construction and operation of facilities/activities from viewpoints of the environmental and social considerations. The series of site reconnaissance were conducted by the JICA Project Team during the field surveys after selection of the candidate Pilot Projects for the selected target villages.

This appendix presents the following issues: (i) legal framework on environmental and social considerations, (ii) necessary environmental procedures for the Pilot Projects under MANREP, (iii) expected environmental impacts for the Pilot Project of Small-scale Infrastructure Rehabilitation (SSIR) and Community-based Activities (CBA) as of October 2010, (iv) monitoring results, (v) recommendations on pilot projects of Small-scale Infrastructure Rehabilitation and Community-based Activities and (vi) land issues appeared during the project implementation.

The findings and considerations of the preliminary environmental assessment are examined based on the analysis of the information collected from the field reconnaissance by undertaking a site inspection for all the candidate pilot projects. Secondary information supplemented by the social surveys and the basic designs of facilities of each pilot project was also used.

Currently the construction / re-construction / rehabilitation of small-scale infrastructure rehabilitation are underway by the sub-contracted Contractors and the Community-based Activities are underway by the sub-contracted NGOs. Based on these conditions, the results of the preliminary environmental assessment of the proposed small-scale infrastructures were considered and utilized in the detailed designs of the pilot projects to mitigate the negative impacts to the environment.

2. Legal Framework on Environmental and Social Considerations

2.1 Legislations, Standards and Regulations regarding Environmental and Social Consideration

In 1980, the National Environmental Act (NEA) was enacted to serve as the main legislation for environmental protection, being amended by Act No 47 of 1980, Act No 56 of 1988 and Act No 53 of 2000. In 1983, the provision for the environmental assessment of development projects

was included in the NEA. The Central Environmental Authority (CEA) was established in August 1981 under the provision of the NEA No. 47 of 1980 and was given wider regulatory powers under the National Environment (Amendment) Acts No. 56 of 1988 and No. 53 of 2000. Other legislations which relate to regulations on the Environmental Impact Assessment (EIA) process are the Coast Conservation Act (CCA), amended Fauna and Flora Protection Ordinance, and the National Heritage and Wilderness Act.

The CEA has issued two guidelines for implementing the EIA Process: No.1: A General Guide for Project Approving Agencies (PAA) (2003) and No.2: A General Guide for Conducting Environmental Scoping (1995).

2.2 EIA under the NEA

Part IV C of the NEA includes a provision for the EIA process. This applies only to "Prescribed Projects" which have been specified by the Minister in charge of the environment and is implemented through designated PAAs. Depending on the significance of the anticipated impacts, there are two types of reports submitted for approval, i.e. the Initial Environmental Examination (IEE) and the EIA.

Also the amended NEA stipulates to acquire the Environmental Protection License (EPL) and observe the standards and criteria regarding discharge of waste and emission of noise to regulate the discharge of waste into the environment.

2.3 EIA under the CCA

The legal requirement for an EIA was first introduced by the Coast Conservation (Amendment) Act (CCA) No. 57 of 1981. This applies to the projects within the Coastal Zone. In relation to the Act, the Director Coast Conservation has the discretion to identify which projects should follow the EIA process. The CCA does not specify the criteria on which such discretion would be exercised.

2.4 EIA under the Fauna and Flora (Amended) Act No 49 of 1993

The issue of EIA is addressed in the 1993 amendment to the Fauna and Flora (Protection) Ordinance. Under this enactment, a prior written approval from the Director of Wildlife is necessary for any development activities within one mile (1.6 km) of the boundary of any national reserves and mandates that such projects should undergo the EIA process in terms of the National Environmental Act (NEA).

2.5 Environmental Protection License (EPL)

Provisions regarding pollution control in Sri Lanka are found in the NEA No. 47of 1980 as amended by acts No. 56 of 1988 and No. 53 of 2000. These provisions are contained in Part IV

A “Environmental Protection” and Part IV B “Environmental Quality”. Part IV A dealing with Environmental Protection seeks to regulate the discharge of waste into the environment by means of EPLs. The broader formwork of the Environmental Protection License procedure is set out in the NEA and supplemented by the National Environmental (Protection and Quality) regulations (No. 01 of 1990, No. 1159/22 of 2000 and No. 1 of 2008).

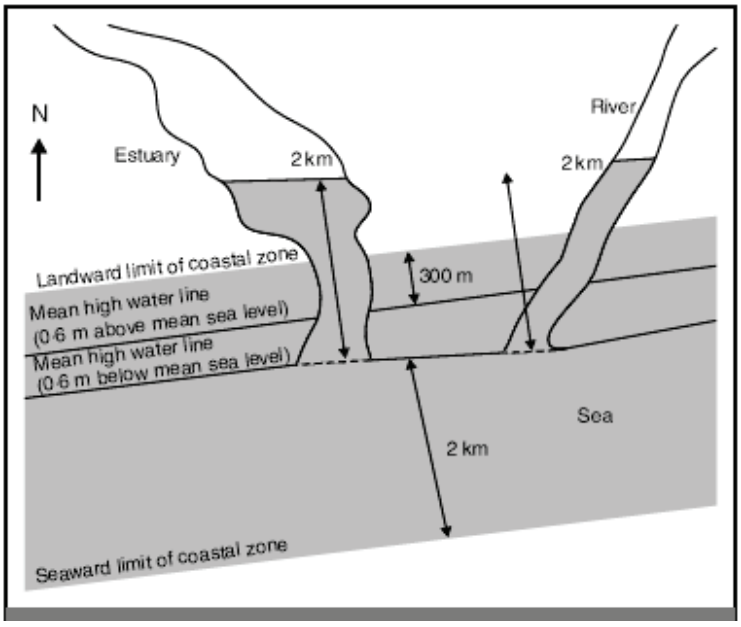
3. Prescribed Projects and the Concerned Areas

3.1 Selection of Prescribed Projects under the NEA

Only “prescribed projects” are required to be subjected to IEE / EIA under the NEA. The prescribed projects requiring an IEE / EIA under the provision of the NEA are stipulated in three (3) parts notified in the Gazetta Extra Ordinary No. 772/22, which are amended into Gazette Extra Ordinary No. 1104/22 (Nov, 1999) under the Order under Section 23Z in July, 1993, Part I: 31 types of the projects which might have an impact to the environment with specified magnitude, Part 2: 20 types of industries which might have an impact to the environment with specified magnitude falling within a declared environmentally sensitive area, and 3) ten (10) types of environmentally sensitive areas (see Annex 1).

3.2 Concerned Areas and the Prescribed Projects under CCA

The “Coastal Zone” is defined in the CCA No.57 of 1981 as the following (Figure 3.1):



Source: Modified based on the information in the Coast Conservation Act

Figure 3.1 Legal Boundary of the Coastal Zone of Sri Lanka

- The area lying within a limit of 300m landward of the Mean High Water Line (MHWL) and a limit of two (2) km seaward of the Mean Low Water Line (MLWL)

- In the case of rivers, streams, lagoons, or any other body of water connected to the sea either permanently or periodically, the landward boundary extends to a limit of two (2) km measured perpendicular to the straight base line drawn between the natural entrance points thereof and includes the waters of such rivers, streams and lagoons or any other body of water so connected to the sea.

The development activities in the coastal zone which require obtaining a permit from the Coast Conservation Department (CCD) are summarized into two (2) types of activities: 1) the development activities which require a major permit, and 2) the development activities which require a minor permit (see Annex 2).

3.3 Concerned Areas and the Prescribed Projects under the Fauna and Flora Ordinance

Under the Flora and Fauna Protection Ordinance, as amended by Act Nos. 44 of 1964, 1 of 1970, 49 of 1993 and 22 of 2009, the Department of Wildlife Conservation classifies Sri Lankan protected areas into eight (8) categories, according to their objectives; 1) strict nature reserves, 2) national parks, 3) nature reserves, 4) jungle corridors, 5) refuges, 6) marine national parks, 7) buffer zones, and 8) sanctuaries (see Annex 3).

3.4 Prescribed Projects which need an EPL

The NEA and the National Environmental (Protection and Quality) regulations (No. 01 of 1990, No. 1159/22 of 2000 and No. 1 of 2008) determine the activities for which the EPL is required, being activities which involve or results in discharging, depositing or emitting waste into the environment.

The activities (industries) for which an EPL is required are classified under three (3) lists, depending on the air pollution potential: Part A: 80 numbers of significantly high polluting industrial activities, Part B: 33 numbers of medium-level polluting activities, and Part C: 25 low polluting industrial activities (see Annex 4).

4. EIA Operating Procedures

There are two kinds of operating procedures for environmental assessment: (1) that which is conducted by PAA under the CEA in accordance with NEA, and (2) that which is conducted by the CCD for the projects in the coastal zone.

4.1 Operating Procedures of EIA under CEA

The procedures of the environmental assessment conducted by PAA under the CEA in accordance with NEA are shown in Figure 4.1.

(1) Preparation and Submission of Preliminary Information Report

The Project Proponent (PP) is required to prepare and submit the Preliminary Information Environmental scoping.

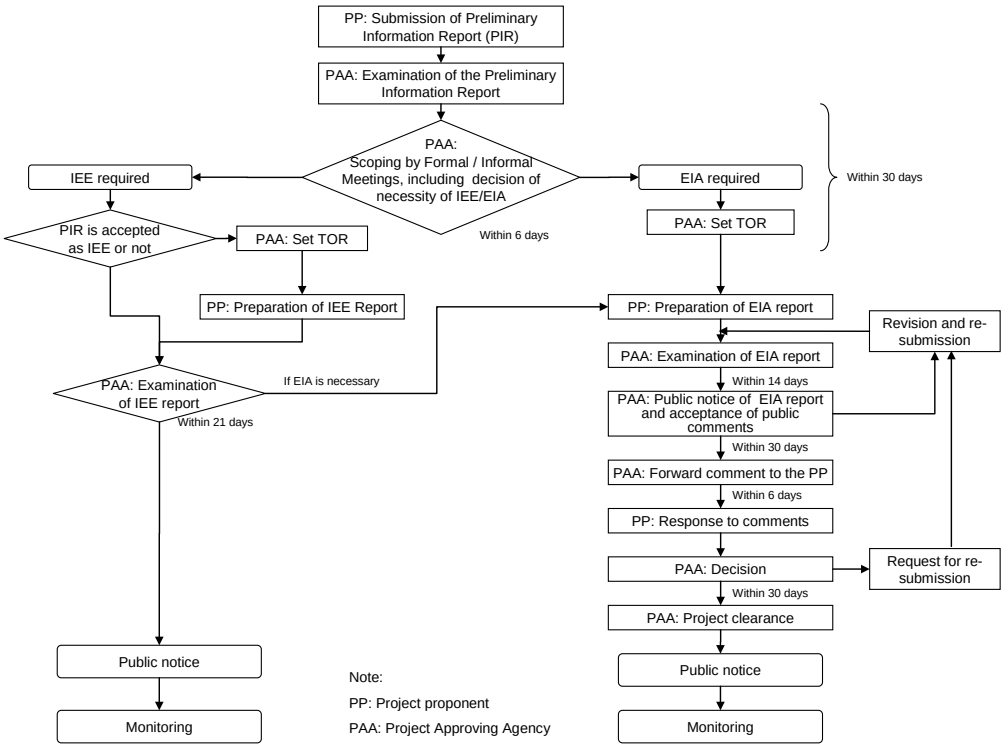
When a prescribed Preliminary Information Report is referred to CEA, the CEA will decide a suitable PAA. Then PAA will conduct environmental scoping on the proposed projects by means of formal meetings and informal meetings and Terms of Reference (TOR) for the EIA/IEE will be issued to the PP.

(2) EIA / IEE report preparation

The PP has the responsibility to prepare the EIA / IEE report and to submit to the PAA for evaluation. Preparation of EIA reports may require the services of a team of consultants as many specialized areas have to be covered.

(3) Public participation and evaluation of the report

On receipt of an EIA report, it will be subjected to an adequacy check in order to ensure that the TOR issued by the PAA has been met. The public is allowed to submit queries and observations within 30 days, after which the PAA and CEA review the EIA report. If there are any public comments on the EIA report, they will be sent to the PP for response. IEE reports are not required to be opened for public comments and are thus subjected to technical evaluation only.

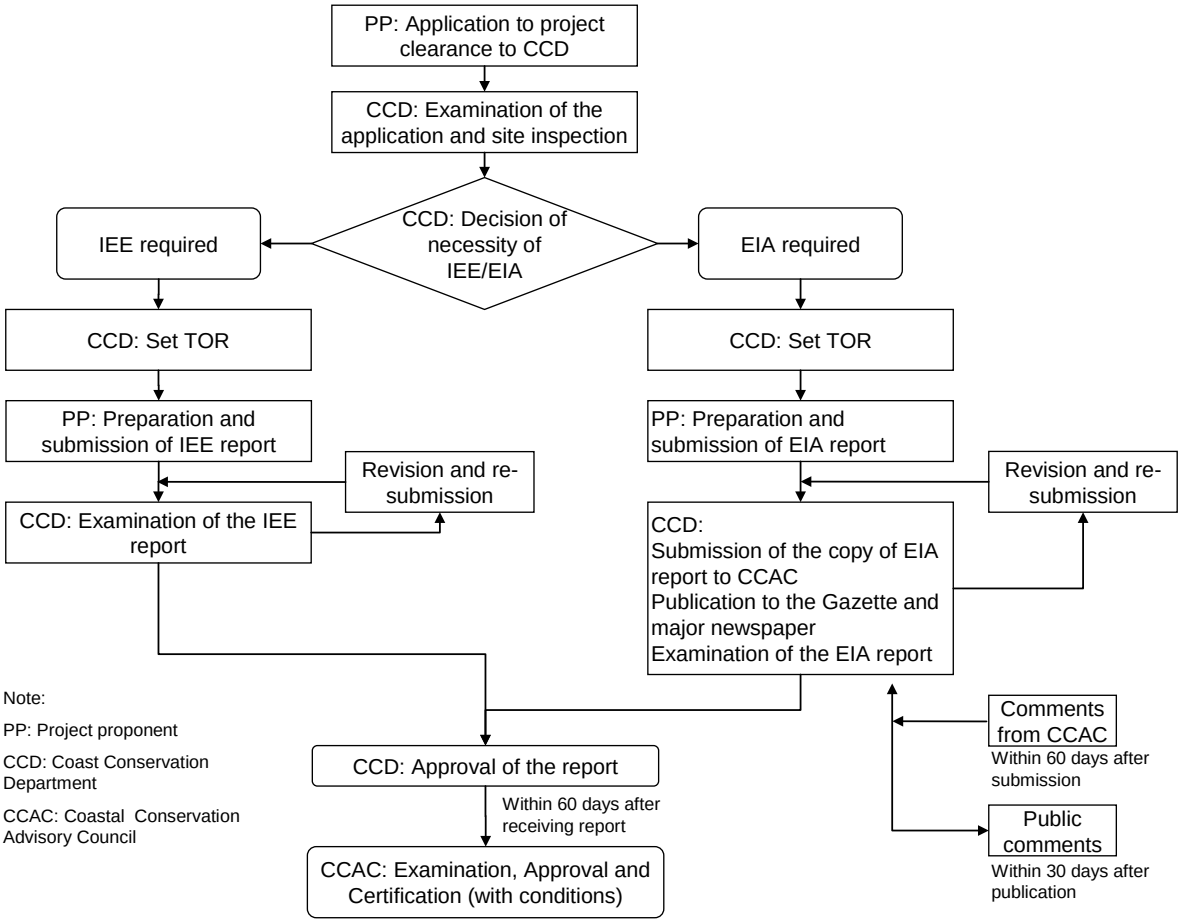


Source: Based on the Guidance for Implementing the Environmental Impact Assessment Process No. 1 A General Guide for Project Approving Agencies (PAA), 2003, CEA.

Figure 4.1 Flowchart of the Operating Procedures of EIA under CEA

4.2 Operating Procedures of EIA under CCA

CCD conducts the necessary procedures on the environmental assessment for the development projects along the coastal areas, as stipulated in the CCA No. 57. The procedure of the environmental assessment is shown in Figure 4.2.

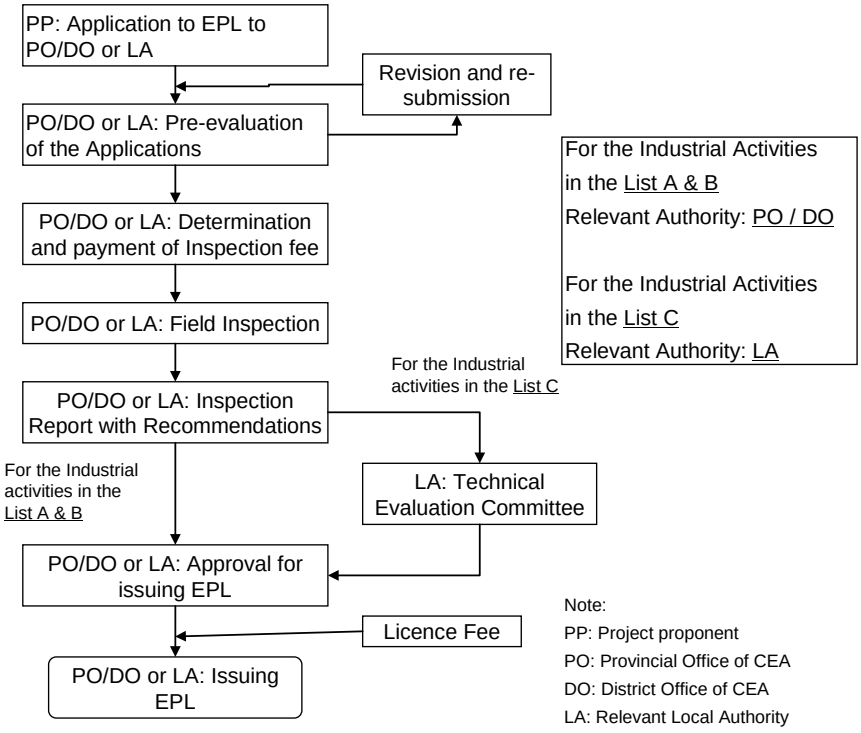


Source: Based on the Coastal Zone Management Plan, 1997, CCD

Figure 4.2 Flowchart of the Operating Procedures of EIA under CCD

4.3 Operating Procedures of EPL under NEA

Environmental Protection Licenses (EPL) for industries in “List A” and “List B” in Gazette Notification No:1533/16 dated 25.01.2008 is issued by the relevant Provincial/District offices of the CEA, while EPL in “List C” is issued by the relevant Local Authority. The procedures of issuing the EPL are shown in Figure 4.3.



Source: Based on the information from CEA

Figure 4.3 Flowchart of the Operating Procedures of EPL under NEA

5. Environmental Procedures for MANREP Activities

5.1 Environmental Procedures for Prescribed Projects under the National Environmental Act

According to the District Environment Officer in Mannar District and regulations on environmental assessment in Sri Lanka, there is no need to proceed in Environmental Impact Assessment (EIA) / Initial Environmental Examination (IEE) procedures for the Pilot Projects planned in MANREP, except for one Pilot Project, i.e. construction of fish fry rearing ponds, because 1) the location of new construction (re-construction at a different site) of the fishery cooperative society building with fish fry rearing ponds at Sirukkulam village is adjacent to one of the sanctuaries, the Giants Tank sanctuary, and 2) other facilities to be newly constructed or reconstructed/rehabilitated are small-scale facilities. For construction of fish fry rearing ponds, the Environmental Clearance Certificate (ECC) should be obtained. Therefore, the JICA Project Team assisted the Project Proponent to proceed in obtaining the ECC, beginning from preparing and submitting the Preliminary Information Reports for the fish fry rearing ponds.

Sirukkulam FCS was planned to be the Project Proponent for the fish fry rearing ponds. Until now, several discussions with the FSC were conducted, and the chairman of the FCS, as the Project Proponent, undertook the necessary procedures to obtain the ECC for the fish fry rearing ponds with assistance from the JICA Project Team.

The application format, together with the necessary documents, were prepared and submitted to the Central Environmental Authority (CEA) Eastern Regional Office in Kantale through the District Environmental Officer in Mannar District at the end of November 2010. After a document review and site inspection by CEA Regional Office on December 2010, the ECC for the fish fry rearing ponds was obtained in January 2011 with recommendations (see **Annex 5**).

The necessary documents to be prepared for the application of an ECC are as follows:

- Application form for Environmental Clearance Certificate (ECC)
- Approval letter from the Divisional Secretary
- Consent letter from the Department of Irrigation
- Survey Plan
- Copy of Project Proposal

However, the construction of fish fry rearing ponds was postponed in August 2011, because of the land issues, which are mentioned below (see **Annex 5**).

5.2 Environmental Procedures for Prescribed Projects that Need Environmental Protection Licenses (EPL)

According to the lists of industries which need an EPL and discussions with the District Environmental Officer in Mannar District, it is required to obtain the Environmental Protection License (EPL) for the following projects listed in the long lists of the Pilot Projects: 1) re-construction of rice mill (capacity is more than 5,000 kg/day) at Illupaikadavai village, 2) new construction (re-construction at different site) of rice mill (capacity is more than 5,000 kg/day) at Vaddakandal village as with Nedunkandal village and 3) re-construction of bakery building at Illupaikadavai village. Among those facilities listed above, only the bakery was constructed under MANREP. Therefore, the JICA Project Team is assisting the Project Proponent to conduct the necessary procedures to obtain the EPL for the bakery before commencement of operation of the bakery. Several site inspections were conducted by the District Environmental Officer to receive the recommendations to apply the EPL.

Illupaikadavai FCS is the Project Proponent for the bakery and the FCS asked to the WRDS to select the trainees on the bakery activity. Several meetings with FSC, WRDS and the JICA Project Team were conducted, and the chairman of the FCS, as the Project Proponent, undertook the necessary procedure to obtain the EPL with assistance from the JICA Project Team. In order to obtain some of the necessary documents; Business Registration and Trade License, several site inspections were conducted by PHI officers to receive recommendations to apply / obtain the Trade License. Due to the recommendations from PHI, the JICA Project Team revised the designs of the bakery to install additional windows / exhaust fans, ceiling, net for steel grills, and so on to fulfill the requirements. After receiving approval from PHI and also obtaining the

Trade License and Business Registration, an application of EPL was submitted to the Central Environmental Authority (CEA) Eastern Regional Office in Kantale through the District Environmental Officer in Mannar District in January 2012, and it is now under examination of the application.

The necessary documents to be prepared for the application of an EPL are as follows:

- Application form for Environmental Protection License (EPL) (see **Annex 6**)
- Business Registration
- Trade License
- Deed / Authorized letter on land
- Site maps

5.3 Prescribed Projects under CCA

As with all the Pilot Projects, there is no need to apply permissions to CCD, with the exception of one new construction of the storage for fishery cooperative society building. In the coastal zones, the work includes re-construction and rehabilitation of the existing damaged facilities at the same locations. Although the small-sized storage for fishery cooperative society building will be newly constructed at Thevanpiddy village about 50m far from the coastline of a lagoon, there is no need to apply to CCD for permission since the size of the storage is less than 1,000 Sq Ft.

5.4 Prescribed Projects under the Fauna and Flora Ordinance

There are two (2) sanctuaries in the project area, namely Madhu Road Sanctuary and Giant's Tank Sanctuary. One village, namely Cheddiyarmagan Kaddaiadampan, is located within the Giant's Tank Sanctuary. However, as all the works planned as the Pilot Projects for that village are only re-construction and rehabilitation of the existing damaged facilities, there is no need to get permission from the Department of Wildlife.

6 Expected Environmental Impacts for Pilot Project of Small-scale Infrastructure Rehabilitation

6.1 JICA Guidelines for Environmental and Social Considerations

“Scoping” of the environmental and social (negative) effects of the Project was conducted to provide an initial identification of the main potential impacts of the Project, in order to narrow down the issues requiring further study. The scoping was conducted with reference to the JICA Guidelines for Environmental and Social Considerations (2004). For the scoping assessment, 31 potential negative environmental impact items were ranked from ‘A-‘(negative) to ‘blank’ (no impact expected) depending on their significance, in accordance with the rating criteria listed below. Separate scoping tables have been completed for the types of works categorized

below.

Rating Criteria

- A+/-: Significant positive/negative impact is expected.
- B+/-: Some positive/negative impact is expected to some extent.
- C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact can be clarified as the study progresses)
- D/Blank: No impact is expected.

6.2 Categorization of the Pilot Projects of Small-scale Infrastructure Rehabilitation as of October 2010

Facilities proposed as the Pilot Projects are categorized from the viewpoints of environmental and social considerations as follows:

Table 6.1 Types of the Proposed Pilot Projects of Small-scale Infrastructure Rehabilitation from the Viewpoints of Environment and Social Considerations

Category	Type of Work	SR	Selected Facilities	Location
Rehabilitation of Connectivity	Rehabilitation	1	Internal road, bridge with flood dike	At the same right-of-way
Improving Water Supply Conditions	New Construction	2	Tube well	After the results of the water source surveys
	Rehabilitation	3	Tube well and village water supply system	At the same location
Improving Basic Social Services	New Construction	4	Market	At the same location
	Re-construction	5	Community hall / MPH, preschool, primary school, cooperative shop / MPCS, fishery coop. society	At the same location
		6	Fishery coop society (fish fry rearing ponds)	New construction at the different location
	Rehabilitation	7	Community hall / MPH, Preschool, Bakery	At the same location
		8	Irrigation tank	At the same right-of-way

Source: JICA Project Team

6.3 Summary of the Expected Environmental Impacts of the Pilot Projects of the Small-scale Infrastructure Rehabilitation as of October 2010

Based on the detailed designs of small-scale infrastructure rehabilitation by the JICA Project Team, the preliminary environmental assessment of the proposed small-scale infrastructures was conducted by the JICA Project Team at October 2010. For the detailed designs of each small-scale infrastructure, therefore, the following negative impacts and assumed mitigation measures should be taken into consideration to mitigate the negative impacts to the environment.

The expected environmental impacts by the types of the works as of October 2010 are shown in **Annex 7**.

Table 6.2 Expected Environmental and Social Impacts of the Proposed Pilot Projects of Small-scale Infrastructure Rehabilitation as of October 2010 (Provisional)

No	Significant Negative Impacts	Ranking			Description	Selected Activities*
		P	C	O		
	Social Environment					
1	Involuntary Resettlement	D			Involuntary resettlement is not likely to happen because 1) most of the pilot projects are rehabilitation / re-construction at the same location, 2) the lands have been already arranged by the local governments for the new construction.	1, 2, 3, 4, 5, 6, 7, 8
2	Local Economy such as Employment & Livelihood, etc.			B+	Overall, positive impacts on regional economic activities would be expected since the pilot projects aim at rehabilitating and facilitating the regional economic activities. The extent of impacts is unknown at this stage.	1, 2, 3, 4, 5, 6, 7, 8
3	Land Use & Utilization of Local Resources	B-		B-	Some negative impact might be generated, depending on the location of the tube wells.	2
				D	No impacts are identified.	1, 3, 4, 5, 6, 7, 8
4	Social Institutions such as Split of Communities			B+	Internal development in the village and improvement of living environments would positively affect social institutions such as regional severance and improvement of lifestyle.	1, 2, 3, 4, 5, 6, 7, 8
5	Existing Social Infrastructures & Services such as Traffic / Existing Public Facilities		B-		Traffic might be disrupted during construction phase	1, 8
				B+	Positive impacts on existing social infrastructures and services are expected especially in economic activities and living environment.	1, 2, 3, 4, 5, 6, 7
6	The poor, indigenous and ethnic people			B+	Positive impacts on socially vulnerable groups such as women-headed households are expected since the Pilot Projects aim at sound rehabilitation and development especially in transportation, water supply, community-based activities, education, economic activities, living environment.	1, 2, 3, 5, 6, 7, 8
		B-		B-	However, some negative impact might be generated, depending on the usage rights of the market.	4
7	Misdistribution of Benefit & Damage			B+	Positive impacts on equal distribution of benefits would be expected due to the improvement in internal infrastructure and social facilities;	1, 2, 3, 4, 5, 6, 7, 8
		B-		B-	Some people would benefit more the public services and goods, and the others would benefit less depending on the location or type of the public services/goods.	4
8	Cultural Heritage		D		No major cultural heritages to be affected by the Pilot Projects are identified in the project areas.	1, 2, 3, 4, 5, 6, 7, 8
9	Local Conflicts of Interest	B-		B-	There could be conflicts of interest between the beneficiaries and project-affected persons, especially in the usage rights of the market	4
				D	No impacts are identified.	1, 2, 3, 5, 6,

No	Significant Negative Impacts	Ranking			Description	Selected Activities*
		P	C	O		
						7, 8
10	Water Usage or Water Rights & Rights of Common		B-	B-	Some negative impacts might be generated, depending on the water usage from the tube wells and water supply systems and irrigation tanks	2, 3, 8
				D	No impacts are identified.	1, 4, 5, 6, 7
11	Sanitation		B-	B-	Sanitation could worsen in & around the construction site during construction activities and the operation phase in case of inadequate management of the waste and inadequate usage of tube well and water supply systems.	2, 3, 4, 5, 6
				D	No impacts are identified.	1, 7, 8
12	Hazards(Risk) Infectious Diseases such as HIV/AIDS			B+	Positive impacts on water-borne diseases would be expected due to the planned water supply system.	2, 3
				D	No impacts are identified.	1, 4, 5, 6, 7, 8
13	Occupational Safety and Health	D			No impacts are identified.	1, 2, 3, 4, 5, 6, 7, 8
	Natural Environment					
14	Topography & Geographical Features		B-		Construction of the facilities could affect topography and geographical features to some extent.	1, 4, 6, 8
			D		No impacts are identified.	2, 3, 5, 7
15	Soil Erosion		B-		Soil erosion from the exposed surface might cause blocking of the drainage canals and silting of paddy fields. For some villages in the coastal zone, soil erosion from the exposed surface might generate soil flows into the sea/lagoon.	1, 8
			D		No impacts are identified.	2, 3, 4, 5, 6, 7
16	Groundwater		B-	B-	Construction could affect the groundwater quality during construction phase. Groundwater might be decreased during the operation phase of tube wells and water supply system.	2, 3, 6
			D	D	No impacts are identified.	1, 4, 5, 7, 8
17	Hydrological Situation			B-	Hydrological situation might be changed during the operation phase of tube wells and water supply system.	2, 3
				D	No impacts are identified.	1, 4, 5, 6, 7, 8
18	Coastal Zone (Mangroves, Coral Reefs, Tidal Flats, etc.)		B-		Flowing soils could happen during rehabilitation of the internal roads along the coastal areas.	1
			D		No impacts are identified.	2, 3, 4, 5, 6, 7, 8
19	Fauna, Flora and Biodiversity		B-		Some new construction works would affect fauna, flora and biodiversity depending on the design and location.	4, 6
			D		As most of the facilities will be rehabilitated / reconstructed at the existing locations, there are no negative impacts on fauna, flora and biodiversity.	1, 2, 3, 5, 7, 8
			D	D	One pilot project site is located nearby the Giants Tank Sanctuary and the Asian Elephants (*Elephas maximus*) are reported to inhabit the sanctuary. However, there are quite limited negative impacts on elephant habitation and ecology, because the site is far from their habitats and all of the Pilot Projects for the site are reconstruction works of the damaged	One site

No	Significant Negative Impacts	Ranking			Description	Selected Activities*
		P	C	O		
					existing facilities and conducted within the village boundaries.	
20	Meteorology		D	D	No impacts are identified.	1, 2, 3, 4, 5, 6, 7, 8
21	Landscape		D	D	No impacts are identified.	1, 2, 3, 4, 5, 6, 7, 8
22	Global Warming		D	D	No impacts are identified.	1, 2, 3, 4, 5, 6, 7, 8
	Pollution					
23	Air Pollution		B-	B-	Negative impacts on air quality would occur by 1) construction machinery for rehabilitating / constructing / re-constructing, 2) increased vehicles for the haulage of the construction materials and 3) increased vehicles on rehabilitated internal roads. However, the specific extent is not known at this stage.	1, 4, 5, 6, 7, 8
			D	D	No impacts are identified.	2, 3
24	Water Pollution	B-	B-	B-	Water pollution would worsen, if appropriate wastewater treatment management is not developed especially in the fish fry rearing ponds and market and if there is inadequate usage of tube wells and water supply systems. However, the extent is not known.	2, 3, 4, 6
			D	D	No impacts are identified.	1, 5, 7, 8
25	Soil Contamination			B-	Soil could be contaminated by wastewater and solid waste if appropriate treatment facilities are not equipped, especially in the fish fry rearing ponds and market. However, the extent is not known.	6
				D	No impacts are identified.	1, 2, 3, 4, 5, 7, 8
26	Waste		B-	B-	Overall, an increase of solid waste is expected due to the increase of community-based activities. Waste would increase during the construction and operation phases in case of inadequate management of the waste.	4, 5, 6, 7, 8
				D	No impacts are identified.	1, 2, 3
27	Noise and Vibration		B-	B-	Negative impacts on noise and vibration would occur by 1) construction machinery for rehabilitating / constructing / re-constructing, 2) increased vehicles for the haulage of the construction materials and 3) increased vehicles on rehabilitated internal roads. However, the specific extent is not known at this stage.	1, 4, 5, 6, 8
			D	D	No impacts are identified.	2, 3, 7
28	Ground Subsidence			B-	Ground subsidence might occur during the operation phase in case of over-exploitation of groundwater	2, 3, 6
				D	No impacts are identified.	1, 4, 5, 7, 8
29	Offensive Odor			B-	Offensive odors might be generated from the waste / waste water during the operation phase.	4, 5, 6
				D	No impacts are identified.	1, 2, 3, 7, 8
30	Bottom Sediment		B-	B-	As waste water will be stored in the existing ponds temporarily for the fish rearing ponds, bottom sedimentation is planned to occur.	6
				D	No impacts are identified.	1, 2, 3, 4, 5,

No	Significant Negative Impacts	Ranking			Description	Selected Activities*
		P	C	O		
						7, 8
31	Accidents		B-	C-	Car accidents would occur more often due to the increase in construction machinery during construction phase.	1, 2, 3, 4, 5, 6, 7, 8

Note: P: Planning phase, C: Construction phase, and O: Operation phase, PP: Project Proponent
* Selected Facilities: refer to the "SR" in Table 6.1.
Source: JICA Project Team

7 Expected Environmental Impacts for the Pilot Project of Community-based Activities

7.1 Categorization of the Pilot Projects of Community-based Activities as of October 2010

Community-based Activities proposed as the Pilot Projects are categorized from the viewpoints of environmental and social considerations as follows:

Table 7.1 Types of the Proposed Pilot Projects of Community-based Activities from the Viewpoints of Environment and Social Considerations

Category	Type of Work	SR	Selected Activities	Remarks
Off-site training	Strengthening of CBO	1	Study tour Training for financial management Construction skill training	-
	Microfinance	2	Microfinance	-
On-site training on production of materials	Income generation activity	3	Cement block making Mat weaving	Small hut will be constructed for cement block production and mat weaving.
		4	Bakery	Bakery building will be re-constructed under the pilot project for small-scale infrastructure
On-site training on production and distribution of materials	Agriculture	5	Paddy reactivation OFC cultivation reactivation Poultry reactivation	Small nurseries will be constructed. Hatching machines will be installed. Paddy seed packets, saplings and vegetable seeds and chicks will be distributed.
	Fishery	6	Dry fish production training	-
		7	Fish fry / fingerlings rearing	Fish fry rearing ponds will be constructed under the Pilot Project for small-scale infrastructure

Source: JICA Project Team

7.2 Expected Environmental Impacts for the Pilot Projects of Community-based Activities as of October 2010

In order to assess likely significant environmental and social impacts, likely environmental and social impacts for the pilot projects of community-based activities as of October 2010 were preliminarily identified as shown in Table 7.2.

The environmental and social impact items were ranked A to D in the following table based on the available secondary data collected until October 2010 in accordance with the JICA Environmental and Social Considerations Guideline (2004).

Among the Pilot Projects listed in Table 3, the expected environmental and social impacts during the planning, construction and operation phases for the Pilot Projects on bakery activity (SR 4 in Table 7.1) and fish fry / fingerlings rearing activity (SR 7 in Table 7.1) are examined in Table 2 above, because the facilities for these activities are constructed under the pilot projects for small-scale infrastructures.

The expected environmental impacts by the types of works are shown in **Annex 8**.

Table 7.2 Expected Environmental and Social Impacts of the Pilot Projects of Community-based Activities as of October 2010

No	Likely Impacts	Ranking			Description	Selected Activities*
		P	C	O		
	Social Environment					
1	Involuntary Resettlement	D			No impacts are identified.	1, 2, 3, 5, 6
2	Local Economy such as Employment & Livelihood, etc.			B+/B-	Overall, positive impacts on regional economic activities would be expected since the pilot projects aim at enhancing the capability of the community. However, some negative impacts would be generated, depending on the inequality to participate in the training.	1, 2, 3, 5, 6
3	Land Use & Utilization of Local Resources			D	No impacts are identified.	1, 2, 3, 5, 6
4	Social Institutions such as Split of Communities			B+/B-	Enhancement of capability of the community would positively affect social institutions such as regional severance and improvement of lifestyle. However, some negative impacts would be generated, depending on the inequality to participate in the training.	1, 2, 3, 5, 6
5	Existing Social Infrastructures & Services such as Traffic / Existing Public Facilities			B+	Positive impacts on existing social infrastructures and services are expected especially in economic activities and living environment.	1, 2, 3, 5, 6
6	The poor, indigenous and ethnic people			B+/B-	Positive impacts on socially vulnerable groups such as women-headed households are expected since the pilot projects aim at enhancement of capability of the community members. However, some negative impact might be generated, depending on inequality to participate in the training.	1, 2, 3, 5, 6
7	Misdistribution of Benefit & Damage			B+/B-	Positive impacts on equal distribution of benefits would be expected due to the enhancement of capability of the community; however, some people would benefit more from the public services and goods, and others would benefit less depending on the location or type of the public services/goods.	1, 2, 3, 5, 6

No	Likely Impacts	Ranking			Description	Selected Activities*
		P	C	O		
8	Cultural Heritage	D	D		No major cultural heritages to be affected by the pilot projects are identified in the project areas.	1, 2, 3, 5, 6, 7
9	Local Conflicts of Interest	B-		B-	There could be conflicts of interest between the beneficiaries and project-affected persons, depending on inequality to participate in the training.	1, 2, 3, 5, 6
10	Water Usage or Water Rights & Rights of Common			D	No impacts are identified.	1, 2, 3, 5, 6
11	Sanitation			B-	Sanitation might worsen during the operation phase in case of inadequate management of the waste and poultry manure.	3, 5, 6
				D	No impacts are identified.	1, 2
12	Hazards(Risk) Infectious Diseases such as HIV/AIDS			D	Positive impacts on water-borne diseases would be expected due to the planned water supply system.	1, 2, 3, 5, 6
13	Occupational Safety and Health			D	No impacts are identified.	1, 2, 3, 5, 6
	Natural Environment					
14	Topography & Geographical Features			D	No impacts are identified.	1, 2, 3, 5, 6
15	Soil Erosion			D	No impacts are identified.	1, 2, 3, 5, 6
16	Groundwater			D	No impacts are identified.	1, 2, 3, 5, 6
17	Hydrological Situation			D	No impacts are identified.	1, 2, 3, 5, 6
18	Coastal Zone (Mangroves, Coral Reefs, Tidal Flats, etc.)		D	D	No impacts are identified.	1, 2, 3, 5, 6
19	Fauna, Flora and Biodiversity		D	D	No impacts are identified.	1, 2, 3, 5, 6
20	Meteorology		D	D	No impacts are identified.	1, 2, 3, 5, 6
21	Landscape		D	D	No impacts are identified.	1, 2, 3, 5, 6
22	Global Warming		D	D	No impacts are identified.	1, 2, 3, 5, 6
	Pollution					
23	Air Pollution		B-		Negative impacts on air quality would occur by construction machinery for rehabilitating / constructing / re-constructing. However, the extent of the impacts would be quite small, because the facilities to be constructed are quite small.	3
			D	D	No impacts are identified.	1, 2, 5, 6
24	Water Pollution		B-	B-	Water pollution would worsen, if appropriate wastewater treatment management is not developed especially in the fish fry rearing ponds and poultry cages. However, the extent is not known.	3, 5
			D	D	No impacts are identified.	1, 2, 6
25	Soil Contamination		D	D	No impacts are identified.	1, 2, 3, 5, 6
26	Waste			B-	Overall, an increase of solid waste is expected due to the increase of community-based activities.	3, 5, 6
			D	D	No impacts are identified.	1, 2

No	Likely Impacts	Ranking			Description	Selected Activities*
		P	C	O		
27	Noise and Vibration		B-		Negative impacts on noise and vibration would occur by 1) construction machinery for rehabilitating / constructing / re-constructing and 2) increased number of vehicles for the haulage of the construction materials. However, the specific extent is not known at this stage.	3,
			D	D	No impacts are identified.	1, 2, 5, 6
28	Ground Subsidence		D	D	No impacts are identified.	1, 2, 3, 5, 6
29	Offensive Odor			B-	Offensive odors might be generated from the waste / waste water during the operation phase.	5, 6
			D	D	No impacts are identified.	1, 2, 3
30	Bottom Sediment			D	No impacts are identified.	1, 2, 3, 5, 6
31	Accidents			B-	Car accidents would occur more often due to the increase in construction machinery during construction phase.	3, 5
				D	No impacts are identified.	1, 2, 6

Rating: A: Serious impact is expected.
B: Some impact is expected.
C: Extent of impact is unknown (Examination is needed. Impacts may become clearer as study progresses).
D: No impact is expected. IEE/EIA is not necessary.
* Selected Activities: refer to the SR in Table 7.1 and SR 4 and 7 are excluded in this table, because the evaluations of these activities have been already conducted in Table 6.1 above.
Note: P: Planning phase, C: Construction phase, and O: Operation phase
Source: JICA Project Team

8 Land Issues which appeared during the implementation of the Project

At the times of preparing the Progress Reports and Interim Report, there could not been confirmed the land issues for the construction / re-construction sites, because i) as most of the works are re-construction / renovation of the damaged existing facilities, the JICA Project Team confirmed to the local authorities; i.e. GA, AGA, and so on, the land status of the designated sites for the projects, and ii) for the new construction, the JICA Project Team made designs and plans of the facilities after confirming the land status of the designated sites and obtaining the approval for using the lands from the authorities; i.e. GA, Irrigation Department, and so on.

However, there have appeared land issues for the construction / re-construction sites after formulating construction plans by the JICA Project Team and before/after commencing the constructions of the specific facilities at the specific sites by the Contractors.

As of January 2012, all the land issues which have appeared by December 2011 have been already resolved after consultation and coordination within related stakeholders; i.e. local authorities, land right asserters, JICA Project Team, and JICA, if necessary, and re-confirmations of the deeds and previous land rights before the conflicts. Those land issues caused postponing and recommencing construction, selecting alternative lands, and cancelling the construction, depending on the situations (see **Table 8.1** and **Annex 9**).

Table 8.1 Summary of land issues appeared during the project implementation

Facility and Status	Locations	Land Issues	Countermeasures taken	Current Status of the Land and the Project
New construction of the Chick Breeding Farm facilities at the new allocated land	Cheddiyarmagan Kaddaiadampan, Cheddiyarmagan Kaddaiadampan GN Division, Nanaddan Division	● The some person claimed the ownership of the planned site for the chick breeding farm.	● The JICA Project Team confirmed that the concerned person does not have a deed and discussed with the concerned person and GN and agreed upon the land issues to construct the facilities at the site. ● The JICA Project Team installed the project signboard for recurrence prevention	● Construction has been already completed by the Contractor and the trainings have been commenced at the planned site.
New construction of the Market building at the new allocated land	Vellankulam, Vellankulam, GN Division, Manthai West AGA Division	● The small offertory box was set at the corner of the planned site by some villager. The concerned person did not recognize that the land was allocated for the project.	● The JICA Project Team confirmed that the concerned person does not have a deed ● GN and the concerned person submitted a letter to AGA on no objection to move the offertory box to other places ● The JICA Project Team installed the project signboard for recurrence prevention	● The offertory box was moved to the adjacent land outside of the project site. ● Construction has been commenced at the planned site by the Contractor.
Rehabilitation of the damaged Community Center building at the same location	Parasankulam, Parasankulam, GN Division, Madhu AGA Division	● The land was claimed to be owned by private individuals and the center was being encroached by them, even though the facility was initially constructed during the MANRECAP period (more than 5 years ago).	● The JICA Project Team confirmed that the concerned person have had the land deed on the specific area before, even though the deed has been expired technically and the community center building was constructed more than five years ago. ● The Local Authority, AGA, provides the alternative land for the newly construction of the community center nearby.	● The alternative land has been allocated by AGA for the project. ● The construction of the Community Center has been commenced by the Contractor at the alternative land newly allocated by AGA.
New construction of the Fish Fry Rearing Ponds at the new allocated land	Sirukkulam, Parapankandal GN Division, Mannar Town DS Division	● The small hut was built by some illegal settler inside the planned area after deciding to construct the fish rearing ponds at the site.	● The villagers negotiated with the hut's owner to offer the alternative land in the village to resettle, but the owner denied moving. ● The hut was demolished according to the regulations and laws in Sri Lanka by DS after failures of negotiations with hut's owner.	●
		● The hut's owner sent the claim letters to the President Office, human-right groups, JICA, and so on. ● JICA claimed to the JICA Project Team about demolishment of the hut without agreement with the hut's owner and also delayed information from the JICA Project Team	● Information on land issues were compiled by the JICA Project Team and submitted to JICA. ● Basically, the village community and the local authorities conducted negotiations and actions, so that those information were delayed to be informed to the JICA Project Team.	● The JICA Project Team decided to postpone constructing the fish rearing ponds by the time of resolving the land issue.
		● The GA had a meeting with illegal settler of the hut and his accompanying persons on the land issues. ● The GA explained that the hut's owner could not have a land at that site based on the regulations in Sri Lanka. ● The owner recognized that he could not have a land	● During the meeting among GA, JICA and the JICA Project Team, JICA mentioned that if the trainings on fish rearing could not be conducted by using the facility, it would be very difficult for JICA to agree to conduct only construction of the facility. ● Under this circumstance, the JICA Project Team proposed to conduct any possible livelihood activities for the villages, besides the fish	● Finally, the JICA Project Team decided to reluctantly give up constructing Fish Fry Rearing Ponds and to drop training of fly rearing from the community assisting activities, according to the JICA's suggestion.

Facility and Status	Locations	Land Issues	Countermeasures taken	Current Status of the Land and the Project
		there and offered to GA to give him a favor on acquiring the alternative land to settle.	rearing, such as delivery of some numbers of chicks to all the villagers to supplement the incomes. ● GA and the JICA Project Team, together with JICA representative, explained to the villagers results and reasons that 1) cancellation of construction of fish fry rearing ponds, 2) cancellation of trainings on fish fry rearing, and 3) proposal to distribute chicks to all the villagers as the supplement income sources. ● GA also added that GA would try to find funds to construct the facilities and also funds for the trainings from donors other than JICA. The villagers at last agreed the cancellation of the construction of the facilities and trainings.	● The JICA Project Team has distributed chicks to all the villagers.
New construction of Community Center and repair of the Village Internal Roads	Theththavaady, Pali Aru GN Division, Manthai West AGA Division	● RDS chairman of the village explained to the JICA Project Team that i) the big landholder in the village came back to the village and ii) he requested to the villagers to retire from the village. RDS also expressed that eight families out of 25 had already transferred to other places because of flood problem last year. Accordingly, RDS requested to the JICA Project Team to stop the SSIR construction and ask to GA on resettled sites. ● On the other hand, representatives of the remained 17 families explained to the JICA Project Team that i) they did not know the big landholder came to the village, ii) they had deeds for their lands which were issued by the land officer during LTTE period, then requested to continue the construction.	● The JICA Project Team confirmed the eligibilities of the deeds of the concerned person and villagers. ● The AGA also confirmed the land issues, such as the eligibilities of the land deeds of the villagers, existence of the big landholder, and so on. ● After several meetings with local authorities; GA, AGA, GN, big landholder's inheritor and the JICA Project Team, all of them agreed that the land claimed by the big landholder's inheritor are not overlapped with the proposed land for the new Community Center and repair of the Village Internal Roads.	● The Contractor will commence the construction of the Community Center by February 2012 and repair of the Village Internal Roads has been already commenced..
Re-construction of the Community Center building at the same location	Anthoniyapuram, Anthoniyapuram GN Division, Manthai West AGA Division	● Although the damaged Community Center was planned to be re-constructed by the JICA Project Team, some NGO has started to rehabilitate this building to be the Fisherman's Resting Center.	● AGA decided to allocate the alternative lands for construction of the Community Center at this village. ● The alternative land has been allocated by AGA for the project.	● The Contractor will commence the construction of the Community Center by February 2012.

Source: JICA Project Team

9 Revision of the Expected Impacts for the Pilot Projects

9.1 Revision of the Expected Impacts for the Pilot Projects of Small-scale Infrastructure Rehabilitation

As described in above section, several land issues were appeared after assessing the expected impacts for the Pilot Projects of Small-scale Infrastructure Rehabilitation at October 2010. Therefore, during the field surveys in 2011, lists of the expected impacts should have been reviewed and revised based on the survey results and results of arrangements and negotiations with the relevant stakeholders.

The highlighted columns in Table 9.1 show the specific impacts which should have been added / revised. Other impacts in Table 2 are not revised after review.

Table 9.1 Revised Expected Environmental and Social Impacts of the Proposed Pilot Projects of Small-scale Infrastructure Rehabilitation based on October 2010 as of January 2011 (Provisional)

No	Significant Negative Impacts	Ranking			Description	Selected Activities*
		P	C	O		
	Social Environment					
1	Involuntary Resettlement	B-	B-		Involuntary resettlement could be happened because 1) many refugees have started to come back to their home towns after ending the conflicts, 2) many people lost the land deeds / land certificates of their lands during the conflicts, 3) many people were transferred to other places from areas of conflicts on orders from LTTE, and 4) there are discrepancies between land deeds issued during LTTE period and pre-conflict periods. Even though 1) most of the pilot projects are rehabilitation / re-construction at the same location, and 2) the lands have been already arranged by the local governments for the new construction, there could be asserters for the lands.	1, 2, 3, 4, 5, 6, 7, 8
4	Social Institutions such as Split of Communities			B+	Internal development in the village and improvement of living environments would positively affect social institutions such as regional severance and improvement of lifestyle.	1, 2, 3, 4, 5, 6, 7, 8
		B-	B-		There could be split of communities because 1) many refugees, including the former big landholders, have started to come back to their home towns after ending the conflicts, 2) many people were transferred to other places from areas of conflicts on orders from LTTE during the conflicts, and 4) there are discrepancies between land deeds issued during LTTE period and pre-conflict periods.	1, 2, 3, 4, 5, 6, 7, 8
9	Local Conflicts of Interest	B-		B-	There could be conflicts of interest between the beneficiaries and project-affected persons, especially in the usage rights of the market	4
		B-	B-		There could be conflicts of land issues because 1) many refugees have started to come back to their home towns after	1, 2, 3, 4, 5, 6, 7, 8

No	Significant Negative Impacts	Ranking			Description	Selected Activities*
		P	C	O		
					ending the conflicts, 2) many people lost the land deeds / land certificates of their lands during the conflicts, 3) many people were transferred to other places from areas of conflicts on orders from LTTE, and 4) there are discrepancies between land deeds issued during LTTE period and pre-conflict periods. Even though 1) most of the pilot projects are rehabilitation / re-construction at the same location, and 2) the lands have been already arranged by the local governments for the new construction, there could be asserters for the lands.	

Note: P: Planning phase, C: Construction phase, and O: Operation phase,
* Selected Facilities: refer to the "SR" in Table 6.1.
Source: JICA Project Team

9.2 Revision of the Expected Impacts for the Pilot Projects of Community-based Activities

As described in above section, several land issues were appeared after assessing the expected impacts for the Pilot Projects of Community-based Activities at October 2010. Therefore, during the field surveys in 2011, lists of the expected impacts should have been reviewed and revised based on the survey results and results of arrangements and negotiations with the relevant stakeholders.

The highlighted columns in Table 9.2 show the specific impacts which should have been added / revised. Other impacts in Table 4 are not revised after review.

Table 9.2 Revised Expected Environmental and Social Impacts of the Proposed Pilot Projects of Community-based Activities based on October 2010 as of January 2011 (Provisional)

No	Likely Impacts	Ranking			Description	Selected Activities*
		P	C	O		
	Social Environment					
1	Involuntary Resettlement				No Impacts are identified.	1, 2, 6
		B-	B-		Involuntary resettlement could be happened because 1) many refugees have started to come back to their home towns after ending the conflicts, 2) many people lost the land deeds / land certificates of their lands during the conflicts, 3) many people were transferred to other places from areas of conflicts on orders from LTTE, and 4) there are discrepancies between land deeds issued during LTTE period and pre-conflict periods. Even though 1) most of the pilot projects are rehabilitation / re-construction at the same location, and 2) the lands have been already arranged by the local governments for the new construction, there could be asserters for the lands.	3, 5 (4, 7)

No	Likely Impacts	Ranking			Description	Selected Activities*
		P	C	O		
4	Social Institutions such as Split of Communities			B+ / B-	Enhancement of capability of the community would positively affect social institutions such as regional severance and improvement of lifestyle. However, some negative impacts would be generated, depending on the inequality to participate in the training.	1, 2, 3, 5, 6
		B-	B-		There could be split of communities because 1) many refugees, including the former big landholders, have started to come back to their home towns after ending the conflicts, 2) many people were transferred to other places from areas of conflicts on orders from LTTE during the conflicts, and 4) there are discrepancies between land deeds issued during LTTE period and pre-conflict periods.	3, 5 (4, 7)
9	Local Conflicts of Interest	B-		B-	There could be conflicts of interest between the beneficiaries and project-affected persons, depending on inequality to participate in the training.	1, 2, 3, 5, 6
		B-	B-		There could be conflicts of land issues because 1) many refugees have started to come back to their home towns after ending the conflicts, 2) many people lost the land deeds / land certificates of their lands during the conflicts, 3) many people were transferred to other places from areas of conflicts on orders from LTTE, and 4) there are discrepancies between land deeds issued during LTTE period and pre-conflict periods. Even though 1) most of the pilot projects are rehabilitation / re-construction at the same location, and 2) the lands have been already arranged by the local governments for the new construction, there could be asserters for the lands.	3, 5 (4, 7)

Note: P: Planning phase, C: Construction phase, and O: Operation phase
* Selected Activities: refer to the "SR" in Table 7.1.
Source: JICA Project Team

10 Recommendations on Pilot Projects of Small-scale Infrastructure Rehabilitation

10.1 Recommendations on Pilot Projects of Small-scale Infrastructure Rehabilitation

The following proposed Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP) shall be considered to avoid the negative impacts on the social environment, natural environment, and pollution by the construction/ re-construction/ rehabilitation of the facilities.

For negative impacts on the social environment in particular, mutual agreements shall be reached among the villagers to avoid unnecessary conflicts or inequality of usage of the facilities from the planning phase.

For negative impacts on the natural environment and pollution, the proposed EMP shall be considered to mitigate the negative influences to the natural environment and pollution during the planning, construction and operation phases.

10.2 Proposed Outlines of the Environmental Management Plan (EMP) as of October 2010

The outline of EMP is suggested as shown Table 10.1 and the mitigation measures by the types of the works are shown in **Annex 7**. Shown below is the minimum management plan. The outline shall be verified by the Environmental Officer of the District, and the EMP shall be finalized by the consultant based on the site inspections, the outcomes of detailed designs and any future conditions from CEA through the District Environmental Officer.

Table 10.1 Proposed Outline of the Environmental Management Plan (EMP) for the Pilot Projects of Small-scale Infrastructure Rehabilitation as of October 2010 (Provisional)

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Responsible Org	Selected Facilities*
		P	C	O				
	Social Environment							
3	Land Use & Utilization of Local Resources			B-	Sufficient consultation on location of tube well shall be conducted in terms of technical issues and mutual agreement within the village.	PP/ MANREP	PP/ MANREP	2, 3
5	Existing Social Infrastructures & Services such as Traffic / Existing Public Facilities		B-		Provide sufficient staff to control traffic during construction and detours access to existing social infrastructures such as schools, churches, and hospitals.	Contractor	MANREP	1, 8
6	The poor, indigenous and ethnic people			B-	Mutual agreement within the village shall be taken on the usage rights of the market during the planning phase	PP/ MANREP	PP/ MANREP	4
7	Misdistribution of Benefit & Damage	B-		B-	Mutual agreements within the village are needed. Special attention shall be given to the vulnerable, such as the lower-income residents, the elderly, disabled, women and children if any.	MANREP/ PP	MANREP/ PP	4
9	Local Conflict of Interests	B-		B-	Mutual agreements within the village are needed. Special attention shall be given to the vulnerable, such as the lower-income residents, the elderly, disabled, women and children if any.	MANREP/ PP	MANREP/ PP	4
10	Water Usage or Water Rights & Rights of Common			B-	Appropriate water use in accordance with the water rights and the current use of downstream users.	PP	PP/ MANREP	2, 3, 8
11	Sanitation		B-	B-	Provide appropriate waste water treatment facility, toilet and waste collection at the workers' camps and project site.	Contractor	PP/ MANREP	2, 3, 4, 5, 6
	Natural Environment							
14	Topography & Geographical Features		B-		Appropriate designs of each facility are needed.	Contractor	MANREP	1, 4, 6, 8
15	Soil Erosion		B-		Stabilizing slopes of the tanks, canals and	Contractor	MANREP	1, 8

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Responsible Org	Selected Facilities*
		P	C	O				
					road sides.			
16	Groundwater		B-	B-	Appropriate operation of water intake and discharge during operation.	Contractor	PP/ MANREP	2, 3, 6
17	Hydrological Situation			B-	Appropriate operation of water intake and discharge during operation.	PP	PP/ MANREP	2, 3
18	Coastal Zone (Mangroves, Coral Reefs, Tidal Flats, etc.)		B-		Stabilizing slopes of the road sides.	Contractor	MANREP	1
19	Fauna, Flora and Biodiversity		B-		Appropriate management of fauna and flora at the new construction site, if any.	Contractor	MANREP	4, 6
	Pollution							
23	Air Pollution		B-	B-	To mitigate dust during construction, periodically sprinkle water on the line, earth mixing sites and temporary roads where these are close to the communities.	Contractor/ PP	MANREP/ PP	1, 4, 5, 6, 7, 8
			B-	B-	Adopt low air pollution emitting equipment, vehicles and methodology for construction, if available.	Contractor/ PP	MANREP/ PP	1
			B-	B-	Provide temporary barriers or screens during construction, if necessary. Equipment and vehicles shall be well-maintained to keep air pollution at a minimum.	Contractor/ PP	MANREP/ PP	1
24	Water Pollution	B-			Appropriate methodology of waste water treatment shall be designed.	MANREP	MANREP	2, 3, 4, 6
			B-	B-	Appropriate methodology of waste water treatment shall be developed during construction and operation to avoid soil contamination.	Contractor/ PP	MANREP/ PP	2, 3, 4, 6
25	Soil Contamination	B-			Appropriate methodology of waste water treatment shall be designed.	MANREP	MANREP	4, 6
			B-	B-	Appropriate methodology of waste water treatment shall be developed during construction and operation to avoid soil contamination.	Contractor/ PP	MANREP/PP	4, 6
26	Waste		B-		Rubbish, waste surplus and debris will be cleared from the site and disposed of in an appropriate manner during construction.	Contractor	MANREP	4, 5, 6, 7, 8
				B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	PP	4, 5, 6, 7, 8
27	Noise and Vibration		B-		Adopt low noise and vibration emitting equipment, vehicles and methodology for construction, if available.	Contractor	MANREP	1, 4, 5, 6, 8
			B-		Avoid nighttime construction activities near communities.	Contractor	MANREP	1, 4, 5, 6, 8
			B-		Provide temporary barriers or screens during construction, if necessary.	Contractor	MANREP	1, 4, 5, 6, 8
			B-		Noise and vibration standards of industrial	Contractor	MANREP	1, 4, 5, 6, 8

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Responsible Org	Selected Facilities*
		P	C	O				
					enterprises shall be enforced to protect construction workers. If there is loud noise, earplugs shall be worn, and working time shall be limited.			
			B-		Equipment and vehicles shall be well-maintained to keep their noise/vibration at a minimum.	Contractor	MANREP	1, 4, 5, 6, 8
29	Offensive Odor			B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	PP/ MANREP	5, 6
30	Bottom Sediment			B-	Bottom sediment in the ponds shall be cleaned up when necessary.	PP	PP/ MANREP	6
31	Accidents		B-		Provide a perimeter fence around the irrigation tanks especially on the residential side.	Contractor	MANREP	8
			B-		Provide signs and warning systems at the construction sites.	Contractor	MANREP	1, 2, 3, 4, 5, 6, 7, 8
			B-		During construction, the contractor needs to comply with Sri Lankan and international laws and regulations on working conditions.	Contractor	MANREP	1, 2, 3, 4, 5, 6, 7, 8
			B-		Provide information and education on the safety measures during construction.	Contractor	MANREP	1, 2, 3, 4, 5, 6, 7, 8
			B-		A system of containment to be implemented in case of spills or leakages during construction phase.	Contractor	MANREP	8

Note: P: Planning phase, C: Construction phase, and O: Operation phase, PP: Project Proponent
* Selected Facilities: refer to the "SR" in Table 6.1.
Source: JICA Project Team

10.3 Revised Proposed Outlines of the Environmental Management Plan (EMP) as of January 2011

As described in above section, several land issues were appeared after assessing the EMP for the Pilot Projects of Small-scale Infrastructure Rehabilitation at October 2010. Therefore, during the field surveys in 2011, the EMP should have been reviewed and revised based on the survey results and results of arrangements and negotiations with the relevant stakeholders.

The highlighted columns in Table 10.2 show the specific impacts of which proposed EMP contents should have been added / revised. Other impacts in Table 8 are not revised after review.

Table 10.2 Revised Proposed Outline of the Environmental Management Plan (EMP) for the Pilot Projects of Small-scale Infrastructure Rehabilitation as of January 2011 (Provisional)

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Responsible Org	Selected Facilities*
		P	C	O				
	Social Environment							
1	Involuntary Resettlement	B-	B-		Further confirmation on land deeds on the planned sites and sufficient consultations and arrangements with land asserters (if any) on land status.	LA/ MANREP	LA/ MANREP	1, 2, 3, 4, 5, 6, 7, 8
4	Social Institutions such as Split of Communities	B-	B-		Further confirmation on land deeds on the planned sites and sufficient consultations and arrangements with land asserters (if any) on land status.	LA/ MANREP	LA/ MANREP	1, 2, 3, 4, 5, 6, 7, 8
9	Local Conflict of Interests	B-		B-	Mutual agreements within the village are needed. Special attention shall be given to the vulnerable, such as the lower-income residents, the elderly, disabled, women and children if any.	MANREP/ PP	MANREP/ PP	4
		B-	B-		Further confirmation on land deeds on the planned sites and sufficient consultations and arrangements with land asserters (if any) on land status.	LA/ MANREP	LA/ MANREP	1, 2, 3, 4, 5, 6, 7, 8

Note: P: Planning phase, C: Construction phase, and O: Operation phase, PP: Project Proponent, LA: Local Authorities

* Selected Facilities: refer to the "SR" in Table 6.1.

Source: JICA Project Team

10.4 Proposed Outlines of the Environmental Monitoring Plan (EMoP) for Pilot Projects of Small-scale Infrastructure Rehabilitation as of October 2010

The outline of EMoP is suggested as shown below. This is the minimum monitoring plan. The outline shall be verified by the Environmental Officer of the District, and the EMoP shall be finalized by the consultant based on the site inspections, the outcomes of detailed designs and any future conditions from CEA through the District Environmental Officer.

Table 10.3 Proposed Outline of the EMoP for Pilot Projects of Small-scale Infrastructure Rehabilitation as of October 2010 (Provisional)

No.	Significant Negative Impacts	Proposed EMoP		Selected Facilities*
		Internal Monitoring	External Monitoring	
24	Water Pollution	Water quality of tube wells and village water supply system shall be monitored by PP on regular basis.	Water quality of tube wells and village water supply system shall be monitored by CEA District Office after operation.	2, 3
25	Soil Contamination	Soil contamination in the ponds shall be monitored by PP on regular basis.		6
26	Waste	Appropriate water disposal shall be monitored by PP on regular basis.	Appropriate water disposal shall be monitored by CEA District Office after	4, 5, 6, 7, 8

			operation..	
30	Bottom Sediment	Bottom sediment in the ponds shall be monitored by PP on regular basis.		6

Note: * Selected Facilities: refer to the "SR" in Table 6.1.
Source: JICA Project Team

10.5 Monitoring Results under the Environmental Management Plan (EMP) for Pilot Projects of Small-scale Infrastructure Rehabilitation

Based on the proposed Environmental Management Plan (EMP), revised EMP, and also Environmental Monitoring Plan (EMoP) above, the JICA Project Team conducted monitoring during the construction of the proposed facilities by January 2012.

As mentioned in the following table, almost all the issues to be concerned have been or are being taken into consideration during the planning and construction phases. However, many wastes and litters are found to be scattered around the pumping wells after used by the villagers. In case of the buildings to be constructed / rehabilitated, waste and litters are being cleared at almost all the buildings after completion of construction, re-construction and rehabilitation. Therefore, it is recommended to facilitate users / villagers to keep clean and use the constructed facilities / buildings in appropriate manners.

Table 10.4 Monitoring Results based on the Environmental Management Plan (EMP) for the Pilot Projects of Small-scale Infrastructure Rehabilitation as of January 2012

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Selected Facilities*	Monitoring Results
		P	C	O				
Social Environment								
3	Land Use & Utilization of Local Resources			B-	Sufficient consultation on location of tube well shall be conducted in terms of technical issues and mutual agreement within the village.	PP/ MANREP	2, 3	The locations of new tube wells were decided among the consultations with stakeholders.
5	Existing Social Infrastructures & Services such as Traffic / Existing Public Facilities		B-		Provide sufficient staff to control traffic during construction and detours access to existing social infrastructures such as schools, churches, and hospitals.	Contractor	1, 8	Necessary detours were / being provided for the renovation, especially for the repair of irrigation tank bund and internal roads
6	The poor, indigenous and ethnic people			B-	Mutual agreement within the village shall be taken on the usage rights of the market during the planning phase	PP/ MANREP	4	The construction of the facility, market, has not yet been completed, so the facility has not yet been used.
7	Misdistribution of Benefit & Damage	B-		B-	Mutual agreements within the village are needed. Special attention shall be given to the vulnerable, such as the	MANREP/ PP	4	The construction of the facility, market, has not yet been completed, so

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Selected Facilities*	Monitoring Results
		P	C	O				
					lower-income residents, the elderly, disabled, women and children if any.			the facility has not yet been used.
9	Local Conflict of Interests	B-		B-	Mutual agreements within the village are needed. Special attention shall be given to the vulnerable, such as the lower-income residents, the elderly, disabled, women and children if any.	MANREP/ PP	4	The construction of the facility, market, has not yet been completed, so the facility has not yet been used.
10	Water Usage or Water Rights & Rights of Common			B-	Appropriate water use in accordance with the water rights and the current use of downstream users.	PP	2, 3, 8	No significant impacts occur.
11	Sanitation		B-	B-	Provide appropriate waste water treatment facility, toilet and waste collection at the workers' camps and project site.	Contractor	2, 3, 4, 5, 6	No significant impacts occurred during the construction phase.
	Natural Environment							
14	Topography & Geographical Features		B-		Appropriate designs of each facility are needed.	Contractor	1, 4, 6, 8	No significant impacts occurred during the construction phase.
15	Soil Erosion		B-		Stabilizing slopes of the tanks, canals and road sides.	Contractor	1, 8	No significant impact by construction during dry season
16	Groundwater		B-	B-	Appropriate operation of water intake and discharge during operation.	Contractor	2, 3, 6	Appropriate measures were conducted for installing the pumps
17	Hydrological Situation			B-	Appropriate operation of water intake and discharge during operation.	PP	2, 3	No significant impacts occurred
18	Coastal Zone (Mangroves, Coral Reefs, Tidal Flats, etc.)		B-		Stabilizing slopes of the road sides.	Contractor	1	No significant impact by construction because there are limited soil runoff into the sea during dry-season construction. .
19	Fauna, Flora and Biodiversity		B-		Appropriate management of fauna and flora at the new construction site, if any.	Contractor	4, 6	No significant impact by construction.
	Pollution							
23	Air Pollution		B-	B-	To mitigate dust during construction, periodically sprinkle water on the line, earth mixing sites and temporary roads where these are close to the communities.	Contractor/ PP	1, 4, 5, 6, 7, 8	Water was sprinkled periodically during the rehabilitation of the tank bund.
			B-	B-	Adopt low air pollution emitting equipment, vehicles and methodology for construction, if available.	Contractor/ PP	1	No impact occurs because the sites are a bit far from the residential areas.
			B-	B-	Provide temporary barriers or screens during construction, if necessary. Equipment and vehicles shall be	Contractor/ PP	1	Temporary barriers were installed by yellow tapes for nearby

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Selected Facilities*	Monitoring Results
		P	C	O				
					well-maintained to keep air pollution at a minimum.			the residential areas.
24	Water Pollution	B-			Appropriate methodology of waste water treatment shall be designed.	MANREP	2, 3, 4, 6	Drainages and septic tanks were planned in the designs.
			B-	B-	Appropriate methodology of waste water treatment shall be developed during construction and operation to avoid soil contamination.	Contractor/ PP	2, 3, 4, 6	Drainages and septic tanks were planned in the designs.
25	Soil Contamination	B-			Appropriate methodology of waste water treatment shall be designed.	MANREP	4, 6	Drainages and septic tanks were planned in the designs.
			B-	B-	Appropriate methodology of waste water treatment shall be developed during construction and operation to avoid soil contamination.	Contractor/ PP	4, 6	Drainages and septic tanks were planned in the designs.
26	Waste		B-		Rubbish, waste surplus and debris will be cleared from the site and disposed of in an appropriate manner during construction.	Contractor	4, 5, 6, 7, 8	Rubbish and waste were not cleared during the construction. However, those rubbish and waste were cleared by the end of the construction.
				B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	4, 5, 6, 7, 8	The rubbish and waste are being collected and cleared by PP according to the appropriate manners at almost the facilities. However, many litters are still scattered especially around the pumping wells.
27	Noise and Vibration		B-		Adopt low noise and vibration emitting equipment, vehicles and methodology for construction, if available.	Contractor	1, 4, 5, 6, 8	No impact occurs because the sites are a bit far from the residential areas.
			B-		Avoid nighttime construction activities near communities.	Contractor	1, 4, 5, 6, 8	No nighttime works.
			B-		Provide temporary barriers or screens during construction, if necessary.	Contractor	1, 4, 5, 6, 8	The contractors do not use the machines with loud noises.
			B-		Noise and vibration standards of industrial enterprises shall be enforced to protect construction workers. If there is loud noise, earplugs shall be worn, and working time shall be limited.	Contractor	1, 4, 5, 6, 8	No impact occurs.
			B-		Equipment and vehicles shall be	Contractor	1, 4, 5, 6, 8	Most of the equipment

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Selected Facilities*	Monitoring Results
		P	C	O				
					well-maintained to keep their noise/vibration at a minimum.			and vehicles are maintained.
29	Offensive Odor			B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	5, 6	The rubbish are being collected and cleared by PP according to the appropriate manners.
30	Bottom Sediment			B-	Bottom sediment in the ponds shall be cleaned up when necessary.	PP	6	No impact occurs.
31	Accidents		B-		Provide a perimeter fence around the irrigation tanks especially on the residential side.	Contractor	8	Perimeter tapes are provided around the construction sites; especially buildings, excavation areas, and so on.
			B-		Provide signs and warning systems at the construction sites.	Contractor	1, 2, 3, 4, 5, 6, 7, 8	Warning signs are provided at the entrances of the sites
			B-		During construction, the contractor needs to comply with Sri Lankan and international laws and regulations on working conditions.	Contractor	1, 2, 3, 4, 5, 6, 7, 8	The contractors comply with Sri Lankan regulations on working conditions.
			B-		Provide information and education on the safety measures during construction.	Contractor	1, 2, 3, 4, 5, 6, 7, 8	Information on the safety measures are being provided by the contractors.
			B-		A system of containment to be implemented in case of spills or leakages during construction phase.	Contractor	8	Spills or leakages are not occurred during the construction periods.

Note: P: Planning phase, C: Construction phase, and O: Operation phase, PP: Project Proponent
* Selected Facilities: refer to the "SR" in Table 6.1.
Source: JICA Project Team

11 Recommendations on Pilot Projects of Community-based Activities

11.1 Recommendations on Pilot Projects of Community-based Activities

The following proposed Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP) shall be considered to avoid the negative impacts on the social environment, natural environment, and pollution by the construction/ re-construction/ rehabilitation of the facilities.

For negative impacts on social environment in particular, mutual agreements shall be reached among the villagers to avoid unnecessary conflicts or inequality on usage of the facilities from the planning phase.

For negative impacts on the natural environment and pollution, the proposed EMP shall be

considered to mitigate the negative influences to the natural environment and pollution during the planning, construction and operation phases.

11.2 Proposed Outlines of the Environmental Management Plan (EMP) for the Pilot Projects of Community-based Activities as of October 2010

The outline of EMP is suggested as shown in Table 11.1 and the mitigation measures by the types of the works are shown in **Annex 8**. Shown below is the minimum management plan. The outline shall be verified by the Environmental Officer of the District, and the EMP shall be finalized by the consultant based on the site inspections, the outcomes of detailed designs and any future conditions from CEA through the District Environmental Officer.

Table 11.1 Proposed Outline of the EMP for the Pilot Projects of Community-based Activities as of October 2010 (Provisional)

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Responsible Org	Selected Activities*
		P	C	O				
	Social Environment							
2	Local Economy such as Employment & Livelihood, etc.			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	MANREP/ PP	1, 2, 3, 4, 5, 6
4	Social Institutions such as Split of Communities			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	MANREP/ PP	1, 2, 3, 4, 5, 6
6	The poor, indigenous and ethnic people			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	MANREP/ PP	1, 2, 3, 4, 5, 6
7	Misdistribution of Benefit & Damage			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	MANREP/ PP	1, 2, 3, 4, 5, 6
9	Local Conflict of Interests	B-		B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	MANREP/ PP	1, 2, 3, 4, 5, 6
11	Sanitation			B-	Provide appropriate waste water treatment facility, toilet and waste collection at the workers' camps and project site.	Contractor	PP/ MANREP	3, 4, 5, 6
	Pollution							
23	Air Pollution		B-		Adopt low air pollution emitting equipment, vehicles and methodology for construction, if available.	Contractor/ PP	MANREP/ PP	3, 4
			B-		Provide temporary barriers or screens during construction, if necessary. Equipment and vehicles shall be well-maintained to keep air pollution at a minimum.	Contractor/ PP	MANREP/ PP	3, 4
24	Water Pollution		B-	B-	Appropriate methodology of waste water	MANREP	MANREP	3, 5

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Responsible Org	Selected Activities*
		P	C	O				
					treatment shall be designed.			
			B-	B-	Appropriate methodology of waste water treatment shall be developed during construction and operation to avoid soil contamination.	Contractor/ PP	MANREP/ PP	
26	Waste			B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	PP	3, 4, 5, 6
27	Noise and Vibration		B-		Adopt low noise and vibration emitting equipment, vehicles and methodology for construction, if available.	Contractor	MANREP	3, 4,
			B-		Avoid nighttime construction activities near communities.	Contractor	MANREP	3, 4
			B-		Provide temporary barriers or screens during construction, if necessary.	Contractor	MANREP	3, 4
			B-		Noise and vibration standards of industrial enterprises shall be enforced to protect construction workers. If there is loud noise, earplugs shall be worn, and working time shall be limited.	Contractor	MANREP	3, 4
			B-		Equipment and vehicles shall be well-maintained to keep their noise/vibration at a minimum.	Contractor	MANREP	3, 4
29	Offensive Odor			B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	PP/ MANREP	5, 6
31	Accidents		B-		Provide signs and warning systems at the construction sites.	Contractor	MANREP	3, 4, 5
			B-		During construction, the contractor needs to comply with Sri Lankan and international laws and regulations on working conditions.	Contractor	MANREP	3, 4, 5
			B-		Provide information and education on the safety measures during construction.	Contractor	MANREP	3, 4, 5
			B-		A system of containment to be implemented in case of spills or leakages during construction phase.	Contractor	MANREP	3, 4, 5

Note: P: Planning phase, C: Construction phase, and O: Operation phase, PP: Project Proponent
* Selected Activities: refer to the "SR" in Table 7.1.
Source: JICA Project Team

11.3 Revised Proposed Outlines of the Environmental Management Plan (EMP) as of January 2011

As described in above section, several land issues were appeared after assessing the EMP for the Pilot Projects of Community-based Activities at October 2010. Therefore, during the field surveys in 2011, the EMP should have been reviewed and revised based on the survey results and results of arrangements and negotiations with the relevant stakeholders.

The highlighted columns in Table 11.2 show the specific impacts of which proposed EMP contents should have been added / revised. Other impacts in Table-8 are not revised after review.

Table 11.2 Revised Proposed Outline of the Environmental Management Plan (EMP) for the Pilot Projects of Community-based Activities as of January 2011 (Provisional)

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Responsible Org	Selected Activities*
		P	C	O				
	Social Environment							
1	Involuntary Resettlement	B-	B-		Further confirmation on land deeds on the planned sites and sufficient consultations and arrangements with land asserters (if any) on land status.	LA/ MANREP	LA/ MANREP	3, 5, (4, 7)
4	Social Institutions such as Split of Communities			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	MANREP/ PP	1, 2, 3, 4, 5, 6
		B-	B-		Further confirmation on land deeds on the planned sites and sufficient consultations and arrangements with land asserters (if any) on land status.	LA/ MANREP	LA/ MANREP	3, 5, (4, 7)
9	Local Conflict of Interests	B-		B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	MANREP/ PP	1, 2, 3, 4, 5, 6
		B-	B-		Further confirmation on land deeds on the planned sites and sufficient consultations and arrangements with land asserters (if any) on land status.	LA/ MANREP	LA/ MANREP	3, 5, (4, 7)

Note: P: Planning phase, C: Construction phase, and O: Operation phase, PP: Project Proponent, LA: Local Authorities

* Selected Activities: refer to the "SR" in Table 7.1.

Source: JICA Project Team

11.4 Proposed Outlines of the Environmental Monitoring Plan (EMoP) for the Pilot Projects of Community-based Activities as of October 2010

The outline of EMoP for the Pilot Projects of Community-based Activities is suggested as shown below. This is the minimum monitoring plan. The outline shall be verified by the Environmental Officer of the District, and the EMoP shall be finalized by the consultant based on the site inspections, the outcomes of detailed designs and any future conditions from CEA through the District Environmental Officer.

Table 11.3 Proposed Outline of the EMoP (Provisional) for the Pilot Projects of Community-based Activities as of October 2010

No.	Significant Negative Impacts	Proposed EMoP		Selected Activities*
		Internal Monitoring	External Monitoring	
26	Waste	Appropriate waste disposal shall be monitored by PP on regular basis.	Appropriate waste disposal shall be monitored by CEA District Office after operation..	3, 4, 5, 6

Note: * Selected Activities: refer to the "SR" in Table 7.1.
Source: JICA Project Team

11.5 Monitoring Results under the Environmental Management Plan (EMP) for Pilot Projects of Community-based Activities

Based on the proposed Environmental Management Plan (EMP) and revised EMP, and also Environmental Monitoring Plan (EMoP) above, the JICA Project Team conducted monitoring during the construction and operation phases by January 2012.

Table 11.4 Monitoring Results based on the Environmental Management Plan (EMP) for the Pilot Projects of Community-based Activities as of January 2012

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Selected Activities*	Monitoring Results
		P	C	O				
	Social Environment							
2	Local Economy such as Employment & Livelihood, etc.			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	1, 2, 3, 4, 5, 6	Trainees were selected by the adequate methods mutually agreed within the village.
4	Social Institutions such as Split of Communities			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	1, 2, 3, 4, 5, 6	Trainees were selected by the adequate methods mutually agreed within the village.
6	The poor, indigenous and ethnic people			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	1, 2, 3, 4, 5, 6	Trainees were selected by the adequate methods mutually agreed within the village.
7	Misdistribution of Benefit & Damage			B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	1, 2, 3, 4, 5, 6	Trainees were selected by the adequate methods mutually agreed within the village.
9	Local Conflict of Interests	B-		B-	Mutual agreement within the village shall be reached on the selection methods to join in the activities during the operation phase	MANREP/ PP	1, 2, 3, 4, 5, 6	Trainees were selected by the adequate methods mutually agreed within the village.
11	Sanitation			B-	Provide appropriate waste water	Contractor	3, 4, 5, 6	Appropriate waste

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Selected Activities*	Monitoring Results
		P	C	O				
					treatment facility, toilet and waste collection at the workers' camps and project site.			water drainage and toilet with septic tank were installed to the specific facilities.
	Pollution							
23	Air Pollution		B-		Adopt low air pollution emitting equipment, vehicles and methodology for construction, if available.	Contractor/ PP	3, 4	No impact occurs.
			B-		Provide temporary barriers or screens during construction, if necessary. Equipment and vehicles shall be well-maintained to keep air pollution at a minimum.	Contractor/ PP	3, 4	Temporary barriers were installed by yellow tapes for nearby the residential areas.
24	Water Pollution		B-	B-	Appropriate methodology of waste water treatment shall be designed.	MANREP	3, 5	Appropriate waste water treatments were installed.
			B-	B-	Appropriate methodology of waste water treatment shall be developed during construction and operation to avoid soil contamination.	Contractor/ PP		Appropriate waste water treatments were installed.
26	Waste			B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	3, 4, 5, 6	Rubbish and waste surplus are being collected by the trainees.
27	Noise and Vibration		B-		Adopt low noise and vibration emitting equipment, vehicles and methodology for construction, if available.	Contractor	3, 4,	No impact occurs because the sites are a bit far from the residential areas.
			B-		Avoid nighttime construction activities near communities.	Contractor	3, 4	No nighttime works
			B-		Provide temporary barriers or screens during construction, if necessary.	Contractor	3, 4	Machines with loud noise were not used for construction.
			B-		Noise and vibration standards of industrial enterprises shall be enforced to protect construction workers. If there is loud noise, earplugs shall be worn, and working time shall be limited.	Contractor	3, 4	No impact occurs.
			B-		Equipment and vehicles shall be well-maintained to keep their noise/vibration at a minimum.	Contractor	3, 4	Most of equipment and vehicles are maintained.
29	Offensive Odor			B-	Rubbish, waste surplus will be cleared from the site and disposed of in an appropriate manner during operation.	PP	5, 6	The rubbish are being collected by PP and the trainees according to the appropriate manners.
31	Accidents		B-		Provide signs and warning systems	Contractor	3, 4, 5	Perimeter tapes are

No	Significant Negative Impacts	Ranking			Proposed EMP	Implementing Org.	Selected Activities*	Monitoring Results
		P	C	O				
					at the construction sites.			provided around the construction sites, if necessary.
			B-		During construction, the contractor needs to comply with Sri Lankan and international laws and regulations on working conditions.	Contractor	3, 4, 5	The contractors comply with Sri Lanka regulations on working conditions.
			B-		Provide information and education on the safety measures during construction.	Contractor	3, 4, 5	Information on the safety measures are being provided by the contractors.
			B-		A system of containment to be implemented in case of spills or leakages during construction phase.	Contractor	3, 4, 5	Spills or leakages are not occurred during the construction period.

Note: P: Planning phase, C: Construction phase, and O: Operation phase, PP: Project Proponent
* Selected Activities: refer to the “SR” in Table 7.1.
Monitoring results for SR 4 and 7 are mentioned in Table 10.4 above.
Source: JICA Project Team

Appendix 5

Annex 1

Lists of the Projects which the Environmental Assessment are needed

Lists of the Projects which the Environmental Assessment are needed

Part I: The projects which might have an impact to the environment with specified magnitude

Projects and Undertakings if Located Wholly Or Partly Outside the Coastal Zone as defined by Coast Conservation Act. No 57 of 1981.

1. All river basin development and irrigation projects excluding minor irrigation works (as defined by Irrigation Ordinance chapter 453).
2. Reclamation of Land, wetland area exceeding 4 hectares.
3. Extraction of timber covering land area exceeding 5 hectares
4. Conversion of forests covering an area exceeding 1 hectare into non-forest uses.
5. Clearing of land areas exceeding 50 hectares.
6. Mining and Mineral Extraction
- Inland deep mining and mineral extraction involving a depth exceeding 25 meters
- Inland surface mining of cumulative areas exceeding 10 hectares
- All off shore mining and mineral extractions
- Mechanized mining and quarrying operations of aggregate, marble, limestone, silica, quartz, and decorative stone within 1 kilometer of any residential or commercial areas.
7. Transportation Systems
- Construction of national and provincial highways involving a length exceeding 10 kilometers
- Construction of railway lines
- Construction of airports
- Construction of airstrips
- Expansion of airports or airstrips that increase capacity by 50 percent or more.
8. Port and Harbour Development
- Construction of ports
- Construction of harbours
- Port expansion involving an annual increase of 50% or more in handling capacity per annum.
9. Power Generation and Transmission
- Construction of hydroelectric power stations exceeding 50 Megawatts.
- Construction of thermal power plants having generation capacity exceeding 25 Megawatts at a single location or capacity addition exceeding 25 Megawatts to existing plants.
- Construction of nuclear power plants.
- All renewable energy based electricity generating stations exceeding 50 Megawatts.
10. Transmission Lines
- Installation of overhead transmission lines of length exceeding 10 kilometers and voltage above 50 Kilovolts.
11. Housing and Building
- Integrated multi-development activities consisting of housing, industry, commercial infrastructure covering a land area exceeding 10 hectares.
12. Resettlement
- Involuntary resettlement exceeding 100 families other than resettlement effected under emergency situations.
13. Water Supply
- All ground water extraction projects of capacity exceeding ½ million cubic meters per day
- Construction of water treatment plants of capacity exceeding ½ million cubic meters
14. Pipelines
- Laying of gas and liquid (excluding water) transfer pipelines of length exceeding 1 kilometer
15. Hotels
- Construction of Hotels or holiday resorts or projects which provide recreational facilities exceeding 99 rooms or 40 Hectares, as the case may be.
16. Fisheries
- Aquaculture development projects of extent exceeding 4 hectares
- Construction of fisheries harbours
- Fisheries harbour expansion projects involving an increase of 50% or more in fish handling capacity per annum.
17. All Tunnelling Projects
18. Disposal of Waste
- Construction of any solid waste disposal facility having a capacity exceeding 100 tons per day.

- Construction of waste treatment plants treating toxic or hazardous waste.

19. Development of all Industrial Estates and Parks exceeding an area of 10 hectares.
20. Iron and Steel Industries

- Manufacture of iron and steel products of production capacity exceeding 100 tons per day using iron ore as raw material
- Manufacture of iron and steel products of production capacity exceeding 100 tons per day using scrap iron as raw material

21. Non-Ferrous Basic Metal Industries

- Smelting of aluminium or copper or lead of production capacity exceeding 25 tons per day.

22. Basic Industrial Chemicals

- Formulation of toxic chemicals of production capacity exceeding 50 tons per day.
- Manufacture of toxic chemicals of production capacity exceeding 25 tons per day.

23. Pesticides and Fertilizers

- Formulation of pesticides of combined production capacity exceeding 50 tons per day.
- Manufacture of pesticides of combined production capacity exceeding 25 tons per day.

24. Petroleum and Petrochemicals

- Petroleum refineries producing gasoline, fuel oils, illuminating oils, lubricating oils and grease, aviation and marine fuel and liquefied petroleum gas from crude petroleum.
- Manufacture of petro-chemicals of combined production capacity exceeding 100 tons per day from raw materials obtained from production processes of oil refinery or natural gas separation.

25. Tyre and Tube Industries

- Manufacture of tyre and tubes of combined production capacity exceeding 100 tons per day from natural or synthetic rubber.

26. Sugar Factories

- Manufacture of refined sugar of combined production capacity exceeding 50 tons per day.

27. Cement and Lime

- Manufactures of Cement.
- Manufacture of lime employing kiln capacity exceeding 50 tons per day.

28. Paper & Pulp

- Manufacture of paper or pulp of combined production capacity exceeding 50 tons per day

29. Spinning, Weaving and Finishing of Textiles

- Integrated cotton or synthetic textile mils employing spinning, weaving, dyeing and printing operations together, of combined production capacity exceeding 50 tones per day.

30. Tanneries and Leather Finishing

- Chrome tanneries of combined production capacity exceeding 25 tons per day.
- Vegetable (bark) of combined production capacity exceeding 50 tons per day.

Provided however, where the projects and undertaking set out in items 20 to 30 are located within Industrial Estates and parks as described at (19) above, the approval shall not be necessary under the provisions of Part IV C of the Act.

31. Industries which involve the manufacture, storage or use of Radio Active Materials as defined in the Atomic Energy Authority Act No. 19 of 1969 or Explosives as defined in the Explosives Act, No. 21 of 1956, excluding for national security reasons.

Part II: The industries which might have an impact to the environment

32. All projects and undertaking listed in Part I irrespective of their magnitudes and irrespective of whether they are located in the coastal zone or not, if located wholly or partly within the areas specified in Part III of the Schedule

The following industries if located wholly or partly within the areas specified in part III of the Schedule:

33. Iron and Steel.
34. Non-Ferrous Basic Metal.
35. Basic Industrial Chemicals.
36. Pesticides and Fertilizer.
37. Synthetic Resins, Plastic materials and Man-made Fibres
38. Other Chemical Products.
39. Petroleum and Petro-chemical products.
40. Tyres and Tubes.

41. Manufacturing and Refining of Sugar.
42. Alcoholic Spirits.
43. Malt Liquors and Malt.
44. Cement and lime.
45. Non-metallic Mineral Products.
46. Paper, Pulp and Paperboard.
47. Spinning, Weaving and Finishing of Textiles.
48. Tanneries and Leather Finishing.
49. Shipbuilding and Repairs.
50. Railroad Equipment.
51. Motor Vehicles.
52. Air Craft.

Part III: The environmentally sensitive areas

1. Within 100 m from the boundaries of or within any area declared under -

- the National Heritage Wilderness Act No. 3 of 1988,
- the Forest Ordinance (Chapter 451].
- whether or not such areas are wholly or partly within the Coastal Zone as defined in the Coast Conservation Act, No. 57 of 1981.

2. Within the following areas whether or not the areas are wholly or partly within the Coastal Zone:

- any erodable area declared under the Soil Conservation Act (Chapter 450).
- any Flood Area declared under the Flood Protection Ordinance (Chapter 449) and any flood protection area declared under the Sri Lanka Land Reclamation and Development Corporation Act, No.15 of 1968 as amended by Act, No. 52 of 1982.
- 60 meters from the bank of a public stream as defined in the Crown Lands Ordinance (Chapter 454) and having a width of more than 25 meters at any point of its course.
- any reservation beyond the full supply level of a reservoir.
- any archaeological reserve, ancient or protected monument as defined or declared under the Antiquities Ordinance (Chapter 188).
- any area declared under the Botanic Gardens Ordinance (Chapter 446).

Source: Gazette Extra Ordinary No. 1104/22, 1999, Sri Lanka

Appendix 5

Annex 2

Lists of the Development Activities which Require Obtaining Permit from Coast Conservation Department (CCD)

Lists of the Development Activities which Require Obtaining Permit from Coast Conservation Department (CCD)

(1) The development activities in the coastal zone which require obtaining a major permit
1. Dwelling houses and related structures of total floor area 1,000 sqf (93 m^2) or more
2. Tourism, commercial and industrial structures
3. Recreation / sports structures
4. Harbour structures and navigational channels
5. Roads, bridges and railway lines
6. Public and religious structures
7. Shoreline protection works
8. Sewage treatment facilities and ocean outfalls
9. Aquaculture facilities
10. Waste water discharge facilities
11. Disposal of solid wastes
12. Dredging, filling landscaping and grading
13. Removal of sand, sea shells or vegetation
14. Mining and reclamation
15. Removal of corals for research
16. Breaching of sand bars
17. Reclamation
18. Installation of oil, air, water pipes and electricity lines
19. Any other development activity that will alter the physical nature of the coastal zone
(2) The development activities in the coastal zone which require obtaining a manor permit
1. Dwelling houses and related structures of total floor area less than 1,000 sqf (93 m^2) (Beyond 100m / 200m buffer zone)
2. Small scale commercial structures of total floor area less than 350 sqf (32.5m^2) (Beyond 100m / 200m buffer zone)
3. Removal of sand up to two cubes from locations previously specified by the CCD
4. Removal of sand bars to prevent floods

Source: Coast Conservation Department

Appendix 5

Annex 3

Lists of the Protected Areas which are classified by the Department of Wildlife Conservation

Lists of the Protected Areas which are classified by the Department of Wildlife Conservation

1. Strict Natural Reserves (SNR): SNRs are protected as pure natural systems and human activities are highly restricted. Research is allowed in SNRs under the supervision of Department of Wildlife Conservation staff and with the prior approval of the Director. People cannot live within SNR.

2. National Parks (NP): National Parks are areas in which the public is allowed to view and study wildlife. Rules and regulations are applied for the protection of wildlife and their habitats. People cannot live within NP.

3. Nature Reserves (NR): Wildlife viewing and studying are restricted in these areas. However, as in SNRs, scientific research is encouraged under the supervision of Department of Wildlife Conservation staff. These areas differ from SNRs in that traditional human activities are allowed to continue, but people cannot live within NR.

4. Jungle Corridors (JC): Jungle Corridors are designed to provide a protected physical link between two protected areas to facilitate the movement of elephants. People must not live within such corridors.

5. Refuges (no longer used).

6. Marine National Park (MNP): Marine National Parks are the areas of sea together with an adjoining coastal belt primary of marine natural resources such as coral reefs, sea grass, beds or any other ecosystem. Studying and observation of such natural resources are permitted.

7. Buffer Zones (BZ): Semi-protected areas established between protected areas and the surrounding lands.

8. Sanctuaries - Sanctuaries ensure the protection of wildlife on private lands, i.e., those outside the normal control of the State. The level of protection is the same as for a Nature Reserve. In Sanctuaries, habitat protection and human activities are allowed to occur simultaneously and people are allowed to live in Sanctuaries. No permission from the Department of Wildlife Conservation is required to enter these lands.

Source: Flora and Fauna Protection Ordinance, as amended by Act Nos. 44 of 1964, 1 of 1970, 49 of 1993 and 22 of 2009

Appendix 5

Annex 4

Lists of the Prescribed Activities for which an Environmental Protection License (EPL) is Required

Lists of the Prescribed Activities for which an Environmental Protection License (EPL) is Required

Part I: Significantly high polluting industrial activities

1. Chemicals manufacturing or formulating or repacking industries.
2. Soaps, detergents, softener or any other cleansing preparations manufacturing industries having a production capacity of 1,000 kilograms per day or more.
3. Bulk petroleum Liquid or liquefied petroleum gas storage or filling facilities having a total capacity of 150 or more metric tons excluding vehicle fuel filling stations.
4. Industries involved in the use of fibreglass as a raw material where 10 or more workers are employed.
5. Synthetic rubber, natural rubber manufacturing or processing or rubber based industries excluding industries which manufacture less than 100 kilograms of ribbed smoke rubber sheets per day
6. Activated carbon or carbon black manufacturing industries or charcoal manufacturing industries having a production capacity one or more metric ton per batch.
7. Industries involved in manufacturing, extracting or formulating Ayurvedic, Indigenous medicinal products where 25 or more workers are employed.
8. Chemical fertilizer manufacturing, formulating, processing or repacking Industries.
9. Pesticides, insecticides, fungicides and herbicides manufacturing, formulating or repacking industries.
10. Oil (mineral oil or petroleum) refineries.
11. Dye and dye intermediate manufacturing or formulating industries
12. Paints (emulsion or enamel), inks, pigments, varnish, polish manufacturing or formulating industries.
13. Petrochemical (basic or intermediates) manufacturing or formulating industries.
14. Industrial gas manufacturing, processing or refilling industries.
15. Asphalt processing plants
16. Industries involved in the manufacture of polymers or polymer based products (i.e. polyethylene, polyvinyl chloride (PVC), polyurethane, polypropylene, polyester, nylon, polystyrene, resins, fibreglass or other man made fibres etc.) or polymer or polymer based products recycling industries.
17. All types of tyres, tubes manufacturing or tyre retreading industries.
18. Industries involved in manufacturing or reconditioning of batteries.
19. Any industry involved in the use of asbestos fibres as a raw material.
20. Industries involved in manufacturing, extracting or formulating pharmaceuticals or cosmetic products including intermediates.
21. Adhesives manufacturing industries excluding natural gums.
22. Match sticks manufacturing industries and explosives manufacturing or formulating industries.
23. Batik industries where 10 or more workers are employed.
24. Textile processing (i.e. bleaching, dyeing, printing) industries or garment washing industries or textile sand blasting industries or commercial laundries where 10 or more workers are employed.
25. Tanneries
26. Leather finishing industries having effluent generating operations.
27. Jute processing industries.
28. Industries involved in bleaching or dyeing of natural fibre or natural fibre based industries where 25 or more workers are employed.
29. Power looms having 25 or more machines or power looms with sizing activities
30. Sugar manufacturing industries or sugar refineries.
31. Fermentation industries (Distilleries, Breweries) or alcoholic beverages bottling plants or bottling plants having bottle washing operations.
32. Food manufacturing and processing industries including bakery products and confectioneries where 25 or more workers are employed
33. Abattoirs.
34. Coconut oil or cinnamon oil extraction industries where 25 or more workers are employed.
35. Plants or animal oil/fats extraction industries having production capacity of 10 litres or more per day excluding coconut oil and cinnamon oil extraction industries.
36. Instant tea or coffee processing industries
37. Non-alcoholic beverages manufacturing industries where 25 or more workers are employed.
38. Desiccated coconut mills or coconut processing industries where 10 or more workers are employed.
39. Rice mills having wet process and having a production capacity of 5,000 kilograms or more per day.
40. All hatcheries or poultry farms having 2,500 or more birds or piggery, cattle, goats farms having animals 50 or more or having rating* for mixed farming 2,500 or more.

*Rating for Mixed Farming = No. of Birds + 50 x (No. of Pigs + No. of Cattle + No. of Goats)

41. Animal feed manufacturing industries having a capacity of 25 or more metric tons per day.
42. Cigarettes or other tobacco products manufacturing industries where 50 or more workers are employed.
43. Industries involved in Surface treatment of metal or plastic including electroplating, galvanizing and powder coating industries.
44. Iron and steel mills.
45. Foundries with any type of furnaces.
46. Non-ferrous metal processing industries including secondary process, smelting and recovery of metals.
47. Metal fabricating industries or machinery, machinery parts or hardware items or electrical and electronic goods and equipment manufacturing or assembling industries where 25 or more workers are employed. (Including lathe workshops, welding shops, spray painting industries).
48. Cement industries (clinker grinding, manufacturing or repacking)
49. Concrete batching plants having a production capacity of 50 or more cubic meters per day.
50. Glass or glass based product manufacturing industries.
51. Lime kilns having a production capacity of 20 or more metric tons per day.
52. Ceramic industries where more than 25 or more workers are employed.
53. Mechanized mining activities with multi bore hole blasting or single bore hole blasting activities with production capacity having 600 or more cubic meters per month.
54. Crushing or processing of non-metallic minerals (i.e. limestone, dolomite, apatite, rock phosphate, sand stone, feldspar, quartz, ilmenite, rutile, zircon, mica, graphite, kaolin, etc.) excluding lime shell and granite crushing activities.
55. Granite boulders, making or processing industries (extracting, blasting, slicing, polishing).
56. Granite crushing (Metal crushing) industries having a total production capacity of 25 or more cubic meters per day.
57. Common wastewater or sewage treatment plants.
58. Incinerators having a feeding capacity of 5 or more metric tons per day.
59. Water treatment plants having a treatment capacity of 10,000 or more cubic meters per day.
60. Municipal solid waste and other solid waste composting plants having a capacity of 10 or more metric tons per day.
61. Solid waste recovery/recycling or processing plants having a capacity of 10 or more metric tons per day.
62. Solid waste disposal facility having a disposal capacity of 10 or more metric tons per day.
63. All toxic and hazardous waste treatment facility or disposal facilities or recycling /recovering or storage facilities.
64. Industries involved in chemical or oil treatment and preservation of wood excluding Boron treatment.
65. Saw mills having a milling capacity of 50 or more cubic meters per day or wood based industries where 25 or more workers are employed.
66. Hotels, guest houses, rest houses having 20 or more rooms.
67. Hostels and similar dwelling places where occupancy level is exceeding 200 or more.
68. Health care service centres generating infectious wastes, including medical laboratories and research centres.
69. Automobile or bicycle manufacturing or assembling industries.
70. Vehicle service stations or container yards having vehicle service activities excluding three wheeler and motor cycles services and interior cleaning.
71. Railway workshops or all bus depots having vehicle servicing activities.
72. All vehicle emission testing centres.
73. Electrical power generating utilities excluding standby generators or hydro or solar or wind power generation.
74. Printing presses with lead smelting or newspaper printing or printing process which generates wastewater or colour photographs processing centres.
75. Paper and Pulp Industries or corrugated cartons manufacturing industries.
76. Any industry where 200 or more workers per shift are employed.
77. Industrial Estates approved under the part IVC of the National Environmental Act including Katunayake and Biyagama Export Processing Zone.
78. Zoological gardens.
79. Transmission towers providing facilities for telecommunication and broadcasting.
80. Any industry not included above which discharges 10 or more cubic meters of wastewater per day or using toxic chemicals in its process.

Part B: Medium level polluting activities

1. Soaps, detergents, softener or any other cleansing preparations manufacturing industries having a production capacity less than 1,000 kilogram per day.
2. Bulk petroleum liquid storage facilities excluding filling stations or liquefied petroleum gas (LP gas) storage or filling facilities having a total capacity less than 150 metric tons.
3. Industries involved in the use of fibre glass as a raw material where less than 10 workers are employed.
4. Ribbed smoke rubber sheets manufacturing industries having a production capacity of more than 50 kilograms per day and less than 100 kilograms per day.
5. Activated carbon or carbon black manufacturing industries or charcoal manufacturing industries having a production capacity less than one metric ton per batch.
6. Industries involved in manufacturing, extracting or formulating Ayurvedic Indigenous medicinal products where more than 10 workers and less than 25 workers are employed.
7. Batik industries where less than 10 workers are employed.
8. Commercial laundries where less than 10 workers are employed.
9. Leather finishing industries having dry process operations.
10. Natural fibre based industries where less than 25 workers are employed excluding industries involved in bleaching or dyeing of natural fibre.
11. Power looms having less than 25 machines.
12. Hand looms or knitting or embroidery industry having more than 10 looms.
13. Garment industries where 25 or more workers and less than 200 workers per shift are employed.
14. Sugar cane based industries excluding sugar factories or sugar refineries
15. Food manufacturing and processing industries including bakery products and confectioneries where 5 or more workers and less than 25 workers are employed.
16. Cinnamon oil extracting industry where less than 25 workers are employed.
17. Rice mills having wet process with a production capacity of less than 5,000 kilograms per day.
18. Grinding mills having production capacity of more than 1000 kilograms per month.
19. Poultry farms having 250 or more and less than 2,500 birds or piggery, cattle, goats farms having animals 5 or more and less than 50 or having rating* for mixed farming 250 and less than 2,500.
    * Rating for Mixed Farming = No. of Birds + 50 x (No. of Pigs + No. of Cattle + No. Goats)
20. Animal feed manufacturing industries, having a capacity of less than 25 metric tons per day.
21. All ice manufacturing industries.
22. Metal fabricating industries or machinery, machinery parts or hardware items or electrical and electronic goods and equipment manufacturing or assembling industries where less than 25 workers are employed. (Including lathe workshops, welding shops, spray painting industries).
23. Concrete batching plants having a capacity less than 50 cubic meters per day.
24. Single borehole blasting with industrial mining activities using explosives, having a production capacity of less than 600 cubic meters per month.
25. Granite crushing (Metal crushing) industries having a total production capacity of less than 25 cubic meters per day excluding manual crushing operations using hand tools
26. Municipal solid waste and other solid waste composting plants (excluding household composting) having a capacity of less than 10 metric tons per day.
27. Solid waste recovery/recycling or processing plants having a capacity of less than 10 metric tons per day.
28. Solid waste disposal facility having a disposal capacity of less than 10 metric tons per day.
29. Hostels and similar dwelling places where occupancy level of 25 or more boarders and less than 200 borders.
30. Vehicle repairing and maintaining garages including spray painting or mobile air-conditioning activities.
31. Recycling or recovering centres of refrigerants from air-conditioners or refrigerators.
32. Three wheeler or motor cycle servicing activities or vehicle interior cleaning activities.
33. Any Industry not included above which discharges 3 or more and less than 10 cubic meters of industrial processing wastewater per day.

Part C: Low polluting industrial activities

1. All vehicle filling stations (liquid petroleum and liquefied petroleum gas).
2. Manufacturing of candles where 10 or more workers are employed.
3. Coconut oil extraction industries where 10 or more workers and less than 25 workers are employed.
4. Non-alcoholic beverages manufacturing industries where 10 or more workers and less than 25 workers are employed.
5. Rice mills having dry process operations.
6. Grinding mills having production capacity of less than 1000 kilograms per month.
7. Tobacco barns.
8. Cinnamon fumigating industries with sulphur fumigation having capacity of 500 or more kilogram per batch.
9. Edible salt packing and processing industries.
10. Tea factories excluding instant tea processing.
11. Concrete pre-cast industries.
12. Mechanized cement blocks manufacturing industries.
13. Lime kilns having a production capacity of less than 20 metric tons per day.
14. Plaster of Paris industries where less than 25 workers are employed.
15. Lime shell crushing industries.
16. Tile and brick kilns.
17. Single borehole blasting with artis nary mining activities using explosives, having capacity of less than 600 cubic meters per month.
18. Saw mills having a milling capacity of less than 50 cubic meters per day or Industries involved in Boron treatment of wood or timber seasoning.
19. Carpentry workshops which use multipurpose carpentry machine or wood based industries where more than 5 workers and less than 25 workers are employed.
20. Residential hotels, guest houses, rest houses with 05 or more and less than 20 rooms.
21. Vehicle repairing or maintaining garages excluding spray-painting or mobile air-conditioning activities.
22. Repairing, maintaining or installation centres of refrigerators and air-conditioners.
23. Container yards excluding where vehicle servicing activities are carried out.
24. All electrical and electronic goods repairing centres where more than 10 workers are employed.
25. Printing presses and letter press machines excluding lead smelting.

Source: Gazette Notification No. 1533/16, 2008, Sri Lanka

Appendix 5

Annex 5

Environmental Clearance Certificate (ECC) for Fish Fry / Fingerlings Rearing Ponds

(1) Environmental Clearance Certificate (ECC) for Fish Fry / Fingerlings Rearing Ponds

05/01 2011 12:51 FAX 0262234488 CEA EPO MANNAR 002/002

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மத்திய சுற்றாடல் அதிகாரசபை
Central Environmental Authority

Your Ref.
Our Ref. EA/TC/07/02/02/2010
Date 05.01.2011

"පරිසර පියස", 104, දෙවනිකුල් කොබ්බෙකඩුව මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.
"பரிசர பியச", 104, டெ கிரில் கொப்பேகடுவ மாவத்தை, பத்தரமுல்ல, ஸ்ரீ லங்கா.
"Parisara Piyasa", 104, Denzil Kobbekaduwa Mawatha, Battaramulla, Sri Lanka.
Eastern Provincial Office, Priyantha Mawatha, Kantale. T.P. 0262234488

Chairman,
Mannar Pradeshiya Sabha,
Mannar.

ENVIRONMENTAL RECOMMENDATION FOR THE PROPOSED COMMUNITY-BASED FISH FRY/FINGERLINGS REARING PRODUCTION PROJECT AT SIRIKKULAM VILLAGE, PARAPPANKANDAL, MANNAR.

This has reference to your application of Basic Information Questionnaire submitted to this Authority on 24.11.2010 by Mr.A.Lowrance Croos, President of Parappankandal Fresh water Fishermen's Co-operative Society regarding the above matter.

Environmental Approval for the above project is hereby granted subject to the proper implementation of the following conditions which should be strictly adhered to by the developer to abate environmental impacts/ pollution which may arise due to the construction and operation of the above project.

CONDITIONS:

1 General

1.1 The farm should be sited in the location of permission given by the Director General of the Irrigation Department letter No. AM/DD/(AM)/Rvau/Res and dated 18/10/2010.

1.2 Noise level at the boundaries of the premises due to the operation of this farm should be maintained at or below 55dB (A) during the daytime (between 0600 hrs and 1800 hrs).

1.3 Noise level at the boundary of the Land during construction stage should be maintained at or below 75dB (A) during day time (i.e. from 0600 hrs to 2100 hrs).

1.4 Adequate mitigatory measures should be adopted to control the excessive noise and vibration generated from the machineries.

1.5 Required approvals should be obtained from the Divisional Secretary, Pradeshiya Sabha and relevant agencies.

1.6 Any additional conditions stipulated by the Central Environmental Authority as and when required for controlling any kind of pollution/environmental damage created by the activities of proposed project shall be strictly adhered to.

1.7 Existing trees should be preserved as a buffer zone to mitigate the impacts of the pollution.

1.8 A permit should be obtained for the excavation and transport of excavated soil from the Geological Survey & Mines Bureau under the provisions of the mining and mineral Act No. 33 of 1992.

Chairman	Tel: : 2872361, 2872348 Fax : 2872347	Director General	Tel. : 2872359 Fax : 2872608	Gen. Office	Tel. : 2872278, 2872263, 2873447-49, 011 7877277-280 Hot Line : 2688999
Deputy Director General	IERD, Admin & Finance Division Tel. : 2865296 Fax : 2872601	Envt. Pollution Control Division Tel : 2873453 Fax : 2872605		Envt. Mgt. & Assess. Division Tel : 2872385 Fax : 2872296	Envt. Edu. & Awareness Division Tel : 2872297 Fax : 2872609
Directors Tel Fax	2872607 (Admin) 2872201 (IERD), 7877290 (Fin ance) 2872601 (Admin), 2872603 (Fin ance)	2873452 (EPC), 2872606 (Lab) 2872402 (WM)		2872346 (NRM), 2876643 (EIA) 2867263 (R&SP)	2867266 (EEA) Fax : 2872609	2872604 (Legal) Dir. (Western Province) Tel : 2862831 Fax : 2865295

පරිසර අමාත්‍යාංශය | சுற்றாடல் அமைச்சு | Ministry of Environment

1.9 Land excavation at the proposed site should not affect the neighbouring lands and their properties. Special attention should be paid on the aspect of this surrounding paddy lands, irrigation channels and natural drainage pattern of the area.

1.10 Transporting of the excavated materials on the public roads should conform to the requirements of the RDA and Local Authority.

1.11 Excavation should be done leaving suitable reservation area (at least 3m wide land area) from the boundary of the proposed site.

1.12 Conditions stipulated by the Irrigation Department by the letter No. AM/DD/(AM)/Rvau/Res and dated 18/10/2010 for the proposed project shall be strictly adhered to.

2. Storm water management

2.1 Storm Water Management Plan should be prepared in consultation with the Irrigation Department and implemented in the site.

2.1 Natural drainage network of the area should not be obstructed by any activity of the project.

2.2 Suitable soil conservation measures should be adopted during and after the construction activities.

3. Solid waste management

3.1 Solid wastes should not be burnt in open area at any time.

3.2 Waste disposal methods should be implemented with the assistance and approval of the relevant Local Authority.

3.3 All attempts should be establish disposal system within the site to dispose biodegradable waste.

3.4 Solid wastes shall not be disposed into a water body or at a site where it is likely to enter a water body.

4. Polythene or polythene products 20 microns (20μm) or less in thickness shall not be used for industrial activities or domestic activities.

5. Waste Water Generation

5.1 Wastewater generated from the settlement tanks shall conform to the General Standards for Discharge of Effluents for the Irrigation purpose of the Central Environmental Authority prior to discharge.

5.2 Wastewater generated from the domestic activities shall not be freely discharged into the environment and such wastewater shall only be released into a properly constructed septic tank/soakage pit.

6. Visual Environment

6.1 Suitable landscaping methods should be adopted in order to improve aesthetic quality of the site.

6.2 Visual aspects should be enhanced by planting native species.

7. The health and safety of the workers shall be ensured as stipulated in the Factory Ordinance.

8. This Environmental Clearance is issued to carry on only the permitted activities stated therein; It shall not and is not intended to confer the recipient thereof any right to assert ownership to the land where the permitted activities are carried on.

9. This Environmental recommendation is valid for sitting above project only within one year from the date of issue.

M. Sivakumar
Director - Eastern Province
Central Environmental Authority
Eastern Provincial Office, Kantale

M. Sivakumar,
Director,
Central Environmental Authority,
Eastern Provincial Office,
Priyantha Mawatha,
Kantale.

Cc; 1. Director General, Irrigation Department.

2. Mr. Mr.A.Lowrance Croos,
President,
Parappankandal Fresh water Fishermen's Co- operative Society,
Sirikkulam, Parappankandal.

(2) Letter on giving up construction of fish fry / fingerling ponds submitted by the Project Team

මන්නාරම් දිස්ත්‍රික්කයේ නැවත පදිංචි කළ ප්‍රජාව සඳහා කඩිනම් ප්‍රතිසංස්කරණ සැලසුම් කිරීමේ සංවර්ධන වෘාපෘතිය – "මැන්රෙප්"
மன்னார் மாவட்டத்தில் அபிவிருத்திக்கான திட்டமிடல் மற்றும்
மீள் குடியமர்ந்த சமூகத்துக்கான புனரமைப்புத் திட்டம் – "மன்ரிப்"
Project for Development Planning & Rehabilitation of Resettlement Community in Mannar District – "MANREP"
Project Office: District Secretariat, Kachcheri, Mannar
Tel: (+94) - 023-2250067, Fax: (+94) – 023-2250067, E-mail: manrep1@sltnet.lk
Colombo Office: c/o. Ministry of Economic Development, Regional Development Division, 177, Galle Road, Colombo-03
Tel: (+94) 077 6738859, E-mail: manrep2@sltnet.lk

Ref. No.: MRP/GA-333/11
Date: 6th Sep. 2011

Mr. N. Vethanayahan
Government Agent / District Secretary
Kachcheri, Mannar

Dear Sir,

Sub.: Construction of Fish Pond at Sirukkulam

The construction of Fish Pond for fly / fingerings rearing at Sirukkulam was suspended due to the land issue since 23rd July (MRP/Civil-2-012/11). The intensive actions have been taken by JICA and the District Secretary to settle the issue.

However, the issue has not been settled as of the end of August and time for the construction become very limited since the construction shall be completed and training of fly / fingerings rearing shall be conducted before Maha rains.

The Contractor, the Squire Mech Engineering (Pvt.) Ltd., delays the irrigation rehabilitation works so far, which should be completed also before Maha rain. In this circumstance, we consider that if we order to resume the Fish Pond construction now, it may cause failure of both construction of irrigation works and fish pond as the Contractor's field management is assessed to be not capable to complete the both works before Maha.

Taking the facts into account, we are in the position to propose reluctantly to give up the Fish Pond construction and to drop training of fly / fingerings rearing of tank fishes from the community assisting activities. This agonizing proposal is considered on the basis that the major household in the area is paddy cultivation while the fishing in the tank is their subsidiary income, and we should not put risk on irrigation.

Thanking you for your understanding and concurrence, we are.

Faithfully yours,

佐野幸規

Yukinori Sano
Project Manager
The MANREP Project Team

Copy to: 1. Mr. H. Adachi, Representative, JICA Sri Lanka Office
2. Director (Donor Coordination), Ministry of Economic Development
3. PMAI
4. Project File

Appendix 5

Annex 6

Application Form for

Environmental Protection License (EPL) for Bakery Building

(1) Application for a Environmental Protection Licence (EPL) for a Bakery at Illupaikadavai

NATIONAL ENVIRONMENTAL ACT NO. 47 OF 1980

ENVIRONMENTAL PROTECTION LICENCE APPLICATION

Application No. .....

Date .....

Sector ( )

Category ( )

Name of Industry: Bakery

Type of Industry: ~~Manufacture~~/~~Assembly~~/~~Formulation~~/~~Repacking~~/ Processing/~~Other~~ (specify)/

Name of Applicant: Illupaikadavai Fishermen Co-op Society (FCS). (Registration No. MN/245 of 19/06/1989)

Postal Address: Illupaikadavai village. Illupaikadavai GN Division, Manthai west AGA Division. (See Attachment 1 to 3)

Telephone No.: 023 - 4901076 (Mr. N. Thaventhiran, President of FCS)

1 GENERAL DESCRIPTION OF INDUSTRY

1.1 Nature of Industry: Bakery

1.2 Location of Industry:
(Location map and a clear route sketch with land marks to the site to be annexed)

Address: Illupaikadavai village, Illupaikadavai GN Division, Manthai west AGA Division.

1.3 Name of local authority: PS Manthai west, Mannar.

1.4 Is the site within an Approved Industrial Zone? NO

1.5 Amount of Capital Investment:

Local: Approx. 1.4 Million SLR.

Foreign: None

1.6 Date of commencement of operation: Scheduled to commence on January, 2012.

1.7 Number of Shifts/Day and Times: Two(2) shifts per day with 6 hours per shift.

1.8 Number of Workers in Each Shift: Three (3) workers(trainees) per shift at the beginning.

1.9 A List of permits obtained from Local or State Authorities Permitting the Establishment and Operation of the Industry.
(Please attach photocopies): (See attachment 4 to 6)

	Name	Date of Issue	Date of Expiry
a	Business Registration	19/01/2012	
b	Trade Licence	11/01/2012	31/12/2012
c	Authouization Letter on Land	26/09/2011	
d			
e			

1.10 Land use of the area within five km radius — Residential/Commercial/Agricultural/Open Space/Public Area/Marshy Land/Salt Marshy Land/Mangrove/Natural Reserve/Other (specify):
Residential/Agricultural/Open space/Public Area/Marshy Land/- Mangrove.

1.11 List of existing Industries/Institutions/Agricultural land within two km radius:
Residences Primary health clinic, FCS Rest house, Churches, Elementary - School, agricultural Lands, Irrigation tanks, Roads

1.12 Land available for treatment plant: No need for treatment Plant

2 MANUFACTURING PROCESS

2.1 List of main manufactured products and capacities:
50 nos. bread per day.
40 nos. buns per day.
40 nos curry buns per day.

2.2 List of by-products:

Baking cake and biscuits..

2.3 Process Details:

2.3.1 A brief description of the processes used (attach process flow diagram):

1. Stir and Mix Raw Materials: yeast, Flour, Milk, etc.
2. Beat and knead the dough well.
3. Place the dough in a warm Place about 1 hour.
4. Divide the dough into Small Pieces and Place into the Loaf Pans.
5. Bake in the oven For 1 to 1.5 hours or until Golden brown.

2.3.2 Raw materials used:

(State item wise quantity/day at all stages of manufacture)

Wheat Flour : 15kg/day.
Yeast : 5kg/day
HYco (Local Margarine) : 0.5 kg/day
water : 5l/day
Salt (Powder) : 225g/day.
Coconut oil : 1.5L/day
Sugar : 0.5kg/day (For Sweet b

2.3.3 Chemicals Used:

Chemical Name	*Trade Name*	*Quantity Day (in kg)*	*Purpose for which it is used*
No chemicals are used.			

2.3.4 Precautionary measures adopted in the transport and handling of any hazardous/toxic/flammable/explosive material:

LPG will be used For the gas baking oven.

2.3.5 Storage facilities for hazardous/toxic/flammable/explosive materials:

Partitioned Space For Storage of LPG tank.

(3)

2.3.6 Do you have adequate fire fighting equipment? Yes.

2.3.7 If so, details of such equipment:
water tanks/buckets which are set nearby the gas baking ov

3 WATER

3.1 Water Requirement

Processing:	5 m³/day
Cooling:	m³/day
Washing:	85 m³/day
Domestic:	m³/day

3.2 Source of water:

1 Public Supply

2 Ground Water (Wells, springs)

3 Surface Water (Stream, river)
4. Via Bowser. Stored in the Plastic tanks.

3.3 Total daily discharge — m³/day: 90 M³/day.

3.4 Method of discharge: Open Channel/Pipeline/Covered Drains/Other:

3.5 Final point of discharge of waste water: Agricultural land/Marshy land/Sewer/Lake/River/Ela/Estuary/Sea/Other:

3.6 What other specific toxic substances are discharged? (Specify nature and concentration — *e.g.:* Inorganics and Organics including Pesticides, Organic Chlorine Compounds, Heavy Metals, etc.)
No toxic substances.

3.7 Methods of treatment of Waste Water (Diagrams of Treatment Process to be included):
N/A

3.8 Methods adopted for recording characteristics of waste water before and after treatment:
N/A

3.9 Give details of water re-cycling, if any:

(4)

4 SOLID WASTE

4.1 Type and Nature of Solid Wastes:
Empty sacks and Packages of raw materials.

4.2 Total quantity of solid waste — kg/day: 1—2 kg/day (negligible)

4.3 Methods of disposal of solid wastes — Municipal Collection System/~~Land Fill~~/ Incineration ~~Composting~~/~~Sold~~/~~Re-cycle~~:

5 ATMOSPHERIC EMISSIONS

Is there emission to the Atmosphere: ~~Yes~~/No — if 'Yes' complete the following:

5.1 Possible emissions:

a Oxides of Nitrogen —

b. Oxides of Sulphur —

c. Dust and Soot —

d. Any other —

5.2 Number of Stacks/Chimneys : None

Height:

6.0 Does your industry cause odour problems? If 'Yes':

Source: Smell of baking bread.

Method of abatement: Negligible.

7 NOISE POLLUTION

7.1 Does your industry cause noise pollution: ~~Yes~~/No:

7.2 If 'Yes', source:

Method of abatement:

8 ENERGY REQUIREMENTS

8.1 Total Energy Consumption:

a. In-plant generation (in kw/h): 0·2 kw/h

b. Public supply (in kw/h): null

(5)

8.2 Details of Machinery used in the Industry and their Horse Power Ratings:

Gas baking oven with 50,000 BTU/hr.
Generator for gas baking oven with 2.1 KVA rated output

8.3 Types of Fuel Used: Gas baking oven.

a. Purpose: LPG for operating the gas oven.

b. Daily consumption: 5 kg/day (1.2 kg/hr x 4 hours/day)
Generator for gas baking oven: (a) Purpose : kerosene for operating the generator.
(b) daily consumption :- 8 litre/day (2 oil.iter/hr x 4 hours/day)

9 RECYCLING/REUSE

9.1 Possible salvage of any waste material for reuse:

Specify: None.

10 EXPANSION OF INDUSTRY

Describe your plans for future expansion of the industry. State whether proposed expansion will alter the manufacturing process, raw material usage and finished products.

No plan to expand the facility for baking. However, baking activities might be expanded after marketing of the products (bread, buns, etc) In that case. volumes of raw materials and finished products will be increased by increasing the working time.

I hereby certify that the particulars furnished by me in this application are true and correct. I am aware that if any particulars herein are found to be false or incorrect, my application will be refused and the licence, if issued, will be cancelled.

M. Thavarajah
Signature of applicant

Date.....

(6)

.....
தலைவர்
இலுப்பைக்கடவை
மீனவர் கூட்டுறவுச் சங்கம்

ADDITIONAL INFORMATION REQUIRED FROM UTILIZING CHEMICALS INDUSTRIES

Detailed information on the following has to be provided:

1 A site map extending 1/4 mile beyond the boundaries of the property depicting the facility, the discharge points for effluents, wells, springs and other surface water bodies and drinking water wells.

2 A description of the procedures, structures and equipment used at the facility to:

i prevent hazards in transport and unloading operations of chemicals:

ii prevent undue exposure of personnel to chemicals (protective clothing etc.).

3 A description of

(i) precautions to prevent accidental fires resulting from storage of chemicals

(ii) available fire fighting equipment

(iii) training of personnel in fire fighting.

4 A description of storage system for bulk chemicals prior to use in the industrial process.

5 A description of recovery methods of used chemicals if any.

(7)

FOR OFFICIAL USE ONLY

Licence Application No. .....

Sector ( )

Category ( )

1 Date of receipt of application: .....

2 Reference Plans, Reports and other documents received:

3 If any additional information was requested, details of such requests: .....

.....

4 If the observation of any other Agency was requested, details of such requests .....

.....

5 Whether a Licence is granted: Yes / No

6 If a Licence is granted:

a Number of the Licence: .....

b Date of Licence: .....

c Validity period: .....

d Date of expiry: .....

e Conditions attached (if any)

.....

7 If Licence is refused, reasons for refusal:

.....
Signature and Designation
of Authorised Officer

Date.....

(8)

United Merchants Ltd.

(2) Business Registration for a Bakery at Illupaikadavai

வியாபாரப் பெயர்க்கட்டளைச்சட்டம் (அத்.149)
தனிப்பட்டவரின் பதிவுச்சான்றுப் பத்திரம்

சான்றுப்பத்திர இல MW/1004

2012 ஜனவரி 19 ம் திகதியன்று ***MW/1004*** இலக்கத்தின்கீழ் மன்னார் பரிபாலனப்பகுதி வியாபாரப் பெயர் பதிவாளர் கந்தோரில் வியாபாரப் பெயர்க்கட்டளைச்சட்டம் (அத்.149தின்படி) அளிக்கப்பட்டுள்ள மேல்வரும் அறிக்கை பதிவுசெய்யப்பட்டதென இத்தால் நான் அத்தாட்சிப்படுத்துகின்றேன்.

01. வியாபாரப் பெயர்	"கலைவாணி வெதுப்பகம்"
02 .வியாபாரத்தின் பொதுத்தன்மை	பான், பணிஸ் உற்பத்தி
03. வியாபாரம் நடத்தப்படும் பிரதான இடம்	இலுப்பைக்கடவை
04. 1918ம் ஆண்டு நவம்பர் மாதம் 7ம் திகதிக்குப்பின குறித்த வியாபாரம் தொடங்கப்படடதாயின் அவ்வாறு தொடங்கப்பட்ட திகதி	**2012.01.19**
05. குறித்த வியாபாரத்திற்கு வேறு பெயர் அல்லது பெயர்கள் உண்டானால், அவை	–
06. தனிப்பட்டவரின் தற்போதைய முழுப்பெயர்	தலைவர், இலுப்பைக்கடவை மீனவர் கூட்டுறவுச் சங்கம்
07. தனிப்பட்டவரின் முந்திய பெயர் எதுவுமுண்டானால் அம்முழுப்பெயர்	.....
08. தனிப்பட்டவரின் சொந்த தேசம் (சாகியம்)	இலங்கை தமிழ்
09. தனிப்பட்டவர் தற்போது கொண்டுள்ள பிரதேசம் வேறானால் பிறந்த பொழுது கொண்டுள்ள சொந்தப்பிரதேசம்	.....
10. தனிப்பட்டவரின் வழக்கமான வசிப்பிடம்	இலுப்பைக்கடவை
11. தனிப்பட்டவருக்கு வேறு தொழில் (எதுவுமுண்டானால்) அது	.....

வியாபாரப் பெயர்பதிவு –உதவி அரசாங்க அதிபர் பணிமனை, மாந்தை மேற்கு
2012ம் ஆண்டு ஜனவரி 19ந் திகதியிடப்பட்டது.

.....
வியாபாரப் பெயர்ப் பதிவாளருக்காக.

முக்கிய கவனிப்பு – மேற்கூறிய விபரங்களில் மாற்றம் எதுவும் ஏற்பட்டால் 14 நாட்களுக்குள் அறிவிக்கப்படவேண்டும். தாமதப்படுத்தப்படும் ஒவ்வொரு நாளுக்கும் அபராதம் 1 ரூபா ஆகும்

பிரதி *1.. உதவி இறைவரி ஆணையாளர் – தகவலுக்காக*
2. வியாபாரப் பதிவுக்கோவை
3. செயலாளர், மாந்தை மேற்கு பிரதேச சபை
4. தொழில் திணைக்களம், மன்னார்

S.Ranjithkumar
Accountant
Asst.Govt.Agent Office
Mantai West

(Translation of Business Registration into English)

Business Names Ordinance (Chapter 149)

Application for the Registration of an Individuals

Certificate No. : MW/1004

This is to certify and endorse that on 19th January 2012 under MW/1004 in accordance with Mannar Business Names Ordinance (Chapter 149) and confined within the sectorial limits, the undermentioned application has been registered:

01. Business name	" Kalaivani Bakery "
02. General nature of the Business	Bread, Buns production
03. The Principal Place of Business	Illupaikadavai
04. The date of commencement of the business, if the business commenced after 7th November 1981	2012.01.19
05 Any Other business Name under which the Business is carried on	-
06. The present Name (in full) of the Individual	President, Fishermen Cooperative Society, Illupaikadavai
07. Any former Name (in full) of the individual	-
08. The Nationality of the Individual	Sri Lankan Tamil
09. The Nationality of the origin of the Individual if not the same as the present Nationality	-
10. The usual residence of the Individual	Illupaikadavai
11. The other Business occupation (if any)	-

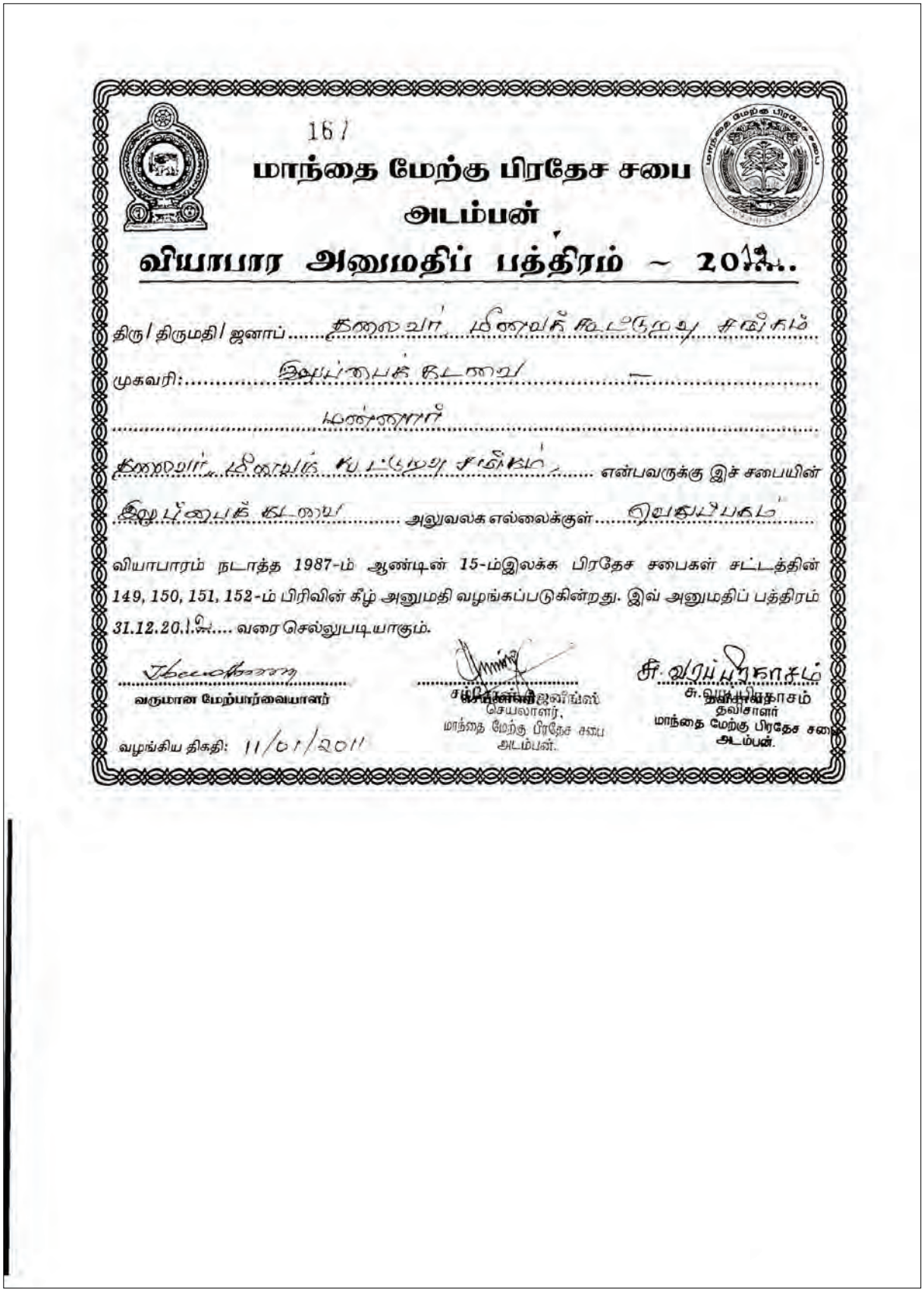
Registration of Business Name – Assistant Government Agent's , Secretariat, Manthai West
Dated in the Year 2012 January 19th

Sgd. S. Ranjith Kumar
.....
Accountant, AGA's Office,
Manthai West,
For: The Registrar of Business Names

Notice: If there are any changes to be made in the above mentioned , it should be informed within 14 days, a penalty of Rs. 1.00 will be charged for each day beyond the 14 day period.

Copies to : 1. Assistant Commissioner of Revenue - for information
2. File for Registration of Business Name
3. Secretary, Predeshiya Saba, Manthai West
4. Labour Department, Mannar

(3) Trade Licence in 2012 for a Bakery at Illupaikadavai



167

மாந்தை மேற்கு பிரதேச சபை

அடம்பன்

வியாபார அனுமதிப் பத்திரம் ~ 2012..

திரு/திருமதி/ஜனாப் கனைவர் மனைவி கூட்டுறவு சங்கம்

முகவரி: இலுப்பைக் கடவை —

மன்னார்

கனைவர் மனைவி கூட்டுறவு சங்கம் என்பவருக்கு இச் சபையின்

இலுப்பைக் கடவை அலுவலக எல்லைக்குள் பிலுப்பிபகுதி

வியாபாரம் நடாத்த 1987-ம் ஆண்டின் 15-ம்இலக்க பிரதேச சபைகள் சட்டத்தின் 149, 150, 151, 152-ம் பிரிவின் கீழ் அனுமதி வழங்கப்படுகின்றது. இவ் அனுமதிப் பத்திரம் 31.12.2012.... வரை செல்லுபடியாகும்.

வருமான மேற்பார்வையாளர்

செயலாளர்,
மாந்தை மேற்கு பிரதேச சபை
அடம்பன்.

சி. ஜெயபாலகாசம்
தவிசாளர்
மாந்தை மேற்கு பிரதேச சபை
அடம்பன்.

வழங்கிய திகதி: 11/01/2011

மாந்தை மேற்கு பிரதேச சபை

Manthai West Pradeshiya Sabha

அடம்பன்

தொலைபேசி இல: 0233233742 / 0233233627
தொலைநகல் இல:

Adampan

T.P No: 0233233742 / 0233233627
Fax No:

எனது இல்:
My No : NP/14/42(4)/Busi/2012

தங்கள் இல:
Your No:

திகதி:
Date: 11-01-2012

திரையர்
மீனவர் கூட்டுறவு சங்கம்
இயக்கச்சி கடலை

வியாபார அனுமதி

மேற்படி முகவரியைச் சேர்ந்த திரையர் மீனவர் கூட்டுறவு சங்கம்
என்பவர் இயக்கச்சி கடலை —
எனும் இடத்தில் நடைபெறும் —
வியாபாரம் செய்வதற்கு 2012 ம் ஆண்டு டிசம்பர் மாதம் 31 ம் திகதி வரைக்குமான வியாபார அனுமதி எம்மால் வழங்கப்பட்டுள்ளது என்பதை தெரிவித்துக் கொள்கின்றேன்.

செயலாளர்,
மாந்தை மேற்கு பிரதேசசபை,
அடம்பன்

சம்சோன் [illegible]
செயலாளர்,
மாந்தை மேற்கு பிரதேச சபை
அடம்பன்.

(Translation of Trade Licence into English)

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MANTHAI WEST PREDESHIYA SABA

ADAMPAN

TRADE LICENSE - 2012

Mr/Mrs/Janab : President, Fishermen Cooperative Society

Address : Illupaikadavai

Mannar

In accordance with Predeshiya Saba 1987 –No 15 Ordinance, Division 149, 150, 151, 152, permission is granted to **The President, Fishermen Cooperative Society to operate** a **Bakery** and sales within Predeshiya Sabah's **Illupaikadava**i boundary. This License is valid till **31.12.2012.**

Sgd. Jabir	Sgd. S. Jennings	S.Varaprakasam
.....	.....	.....
Revenue Officer	Secretary Manthai West Predeshiya Saba Adampan	Chairman Manthai West Predeshiya Sabah Adampan

Date of Issue : 11/01/2012

(Translation of Trade Licence into English)

Manthai West Predeshiya Saba
Adampan

Telephone No: 0233233742/0233233627

Reference No : NP/14/42(A) Busi/2012 Date : 11-01.2012

President
Fishermen Cooperative Society
Illupaikadavai

Permission for Trade

This is to inform that we are issuing a Trade License till the end of 31st December 2012 to The President, Fishermen Cooperative Society residing at Illupaikadavai to operate a Bakery and do the sales of its products.

Sgd. S. Jennings
Secretary,
Manthai West, Predeshiya Saba
Adampan

Franked

(4) Authorization Letter on Land from AGA, Manthai West for a Bakery at Illupaikadavai

MW/L/I.F/119

Assistant Government Agent

Manthai West

01.02.2012

The Director

Central Environmental Authority

Eastern Provincial Office

Kanthale

Conformation of State Land at Illupaikadavai

This is to conform that the alienated to establish a bakery at Illupaikadavi in the Manthai West AGA's Division in Mannar District is a state land, and it has been alienated to FCS,Ilupaikadavi for their activities.

.....

Assistant Government Agent,
Manthai West.

Adampan

Copy

1.FCS –Illupailkadavai

Appendix 5

Annex 7

Expected Environmental Impacts for Pilot Project of Small-scale Infrastructure Rehabilitation as of October 2010

Expected Environmental Impacts for Pilot Project of Small-scale Infrastructure Rehabilitation as of October 2010

(1) Categorization of the Pilot Projects of Small-scale Infrastructure Rehabilitation

Facilities proposed as the Pilot Projects are categorized from the viewpoints of environmental and social considerations as follows:

Table 1 Types of the Proposed Pilot Projects from the Viewpoints of Environment and Social Consideration

Category	Type of Work	SR	Selected Facilities	Location
Rehabilitation of Connectivity	Rehabilitation	1	Internal road, Bridge with flood dike	At the same right-of-way
Improving Water Supply Conditions	New Construction	2	Tube well	After the results of the water source surveys
	Rehabilitation	3	Tube well and village water supply system	At the same location
Improving Basic Social Services	New Construction	4	Market	At the same location
	Re-construction	5	Community hall / MPH, Pre-school, Primary school, Cooperative shop / MPCS, Fishery Coop. Society	At the same location
		6	Fishery Coop Society (fish fry rearing ponds)	New construction at the different location
	Rehabilitation	7	Community hall / MPH, Pre-school, Bakery	At the same location
		8	Irrigation tank	At the same right-of-way

Source: JICA Project Team

(2) Expected Environmental Impacts by the Type of the Work of October 2010

All the expected environmental impacts by the types of the work below are examined results as of October 2010. Therefore, information / data obtained after October 2010 are not reflected to the results below.

1) Rehabilitation of connectivity (Rehabilitation)

The Pilot Projects in the long list include (a) rehabilitation of about 26 km of internal roads in 14 of the target villages, and (b) rehabilitation of bridge with flood dike at one (1) village. The road improvement works will be done within the existing right-of-way, and will constitute (a) improvement of road surface paved by gravel, and (b) installation of adequate drainage structures, including improvement to culverts and causeways for rehabilitation of internal roads, and (c) dismantling of some portions of existing structure, (d) rehabilitation of the bridge, and (e) restoration of the existing flood dikes along the river for the bridge.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment														Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning				B+																												
	Construction					B-									B-	B-			B-				B-				B-				C-
	Operation		B+		B+	B+	B+	B+																			B-				C-

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are dust generation, noise generation, erosion, disruption of traffic and accidents. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the Impacts	Assumed Mitigation Measures
5.Existing Social Infrastructures & Services	Traffic might be disrupted during construction phase	Traffic management measures along the roads, such as detours
15. Soil Erosion	Soil erosion from the exposed surface might cause blocking of the drainage canals and silting of paddy fields. For some villages in the coastal zone, soil erosion from the exposed surface might generate soil flows into the sea/lagoon.	Temporary and permanent erosion prevention measures
23. Air Pollution	Dust will be generated during the haulage of the construction materials from the exposed areas	Covering the materials during transportation
27. Noise & Vibrations	Noise and vibrations will be generated during the construction phase.	
31. Accidents	Accidents due to the heavy machines might occur during construction phase.	Adequate traffic management measures

Source: JICA Project Team

In addition, in the case of the internal roads to be rehabilitated in the coastal zone, such as in Anthoniyarpuram and Illupaikadavai villages, more attention should be taken to not damage the coastlines and flow of the earth into the sea/lagoon areas.

2) Improving Water Supply Conditions (New Construction)

The Pilot Projects include new construction of five (5) tube wells and water supply system in the five (5) target villages.

The construction of water supply system works will be done within the common lands in each village, and will constitute (a) digging of tube wells, and (b) construction of storage structures, and (c) construction of village water supply systems.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment														Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning			B-	B+																											
	Construction											B-					B-															B-
	Operation		B+		B+	B+	B+	B+			B-	B-					B-	B-						B-				B-				

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are water rights and land use, water pollution and ground subsidence during the operation phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
3.Land Use & Utilization of Local Resources	Some negative impact might be generated, depending on the location of the tube wells	Mutual agreement within the village shall be taken on the location of the tube wells during the planning phase
10.Water Usage or Water Rights & Rights of Common	Some negative impact might be generated, depending on the water usage from the tube wells	Mutual agreement within the village shall be taken on the water usage of the tube wells during the planning phase
11.Sanitation	Inadequate usage of tube well might worsen sanitation conditions during the operation phase.	Adequate usage measures among the villages
16. Groundwater	Groundwater might be decreased during the operation phase	Detailed water source survey shall be conducted at the planning phase
17. Hydrological Situation	Hydrological situation might be changed during the operation phase	Detailed water source survey shall be conducted at the planning phase
24. Water Pollution	Inadequate usage of tube well might generate water pollution during the operation phase	Adequate usage measures among the villages
28. Ground Subsidence	Ground subsidence might occur during the operation phase in case of over-exploitation of groundwater	Detailed water source survey shall be conducted at the planning phase
31. Accidents	Accidents might happen during construction phase	Adequate construction management measures

Source: JICA Project Team

3) Improving Water Supply Conditions (Rehabilitation)

The Pilot Projects include rehabilitation of seven (7) tube wells in the four (4) target villages and water supply systems in the four (4) target villages.

The rehabilitation of water supply system works will be done within the common lands in each village, and will constitute (a) rehabilitation of tube wells, including storage facilities, and (b) rehabilitation of village water supply systems.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment														Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning			B-	B+																			B-				C-			
	Construction																B-							B-							B-
	Operation		B+		B+	B+	B+	B+			B-	B-					B-	B-						B-				B-			

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are water rights, water pollution and ground subsidence during the operation phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
10.Water Usage or Water Rights & Rights of Common	Some negative impact might be generated, depending on the water usage from the tube wells and water supply system	Mutual agreement within the village shall be taken on the water usage of the tube wells and water supply system during planning phase
11.Sanitation	Inadequate usage of tube wells and water supply system might worsen sanitation conditions during operation phase.	Adequate usage measures among the villages
16. Groundwater	Groundwater might be decreased during the operation phase	Detailed water source survey shall be conducted at the planning phase
17. Hydrological Situation	Hydrological situation might be changed during operation phase	Detailed water source survey shall be conducted at the planning phase
24. Water Pollution	Inadequate usage of tube well and water supply system might generate water pollution during the operation phase.	Adequate usage measures among the villages

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
28. Ground Subsidence	Ground subsidence might occur during the operation phase in case of over-exploitation of groundwater	Detailed water source survey shall be conducted at the planning phase
31. Accidents	Accidents might happen during construction phase	Adequate construction management measures

Source: JICA Project Team

4) Improving Basic Social Services (New Construction)

The Pilot Project includes new construction of one (1) market in one (1) target village.

The construction of market work will be done within the common land in the village, which has been already decided by the local government, and will constitute (a) construction of the market facility.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment													Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning					B+	B-	B-		B-																						
	Construction											B-												B-	B-		B-	B-				B-
	Operation		B+			B+	B+	B+		B-		B-			B-									B-	B-		B-					

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are usage rights of the market, sanitation and waste during the operation phase, and dust generation and accidents during the construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
6.The poor, indigenous & ethnic people	Some negative impact might be generated, depending on the usage rights of the market	Mutual agreement within the village shall be taken on the usage rights of the market during the planning phase
7.Misdistribution of Benefit & Damage	Some negative impact might be generated, depending on the usage right of the market	Mutual agreement within the village shall be taken on the usage rights of the market during the planning phase
9.Local Conflict of Interest	Some conflicts might happen, depending on the usage rights of the market	Mutual agreement within the village shall be taken on the usage rights of the market during the planning phase
11.Sanitation	Sanitation might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on sanitation and waste management shall be considered

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
23. Air Pollution	Dust will be generated during the haulage of the construction materials	Covering the materials during transportation
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
27. Noise & Vibration	Noise and vibrations will be generated during the construction phase	Adequate measures on noise shall be considered
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

5) Improving Basic Social Services (Re-Construction at the Same Location)

The Pilot Projects include re-construction of two (2) community halls/MPH, three (3) pre-schools, one (1) cooperative shop, one (1) MPCS, and one (1) fishery cooperative society building in seven (7) target villages.

The re-construction works will be done within the same locations on which the existing buildings stand in the village common lands, and will constitute (a) dismantling some portions of the damaged buildings, and (b) re-construction of the buildings.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment														Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning																																
	Construction											B-											B-	B-		B-	B-				B-
	Operation		B+			B+	B+	B+				B-												B-		B-			B-		B-

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are usage pollution and waste during the operation phase, and dust generation and accidents during the construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
11.Sanitation	Sanitation might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on sanitation and waste management shall be considered
23. Air Pollution	Dust will be generated during the haulage of the construction materials	Covering the materials during transportation
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increas during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
27. Noise & Vibrations	Noise and vibrations will be generated during the construction phase.	Adequate measures on noise shall be considered
29. Offensive Odor	Offensive odor might be generated from the waste / waste water during the operation phase.	Adequate measures on waste management and waster water management shall be considered.
31. Accidents	Accidents might be happened during the construction phase.	Adequate construction management measures

Source: JICA Project Team

6) Improving Basic Social Services (Re-Construction at the Different Location)

The Pilot Projects include re-construction of one (1) fishery cooperative society building, including fish fry rearing ponds in one (1) target villages.

The re-construction works will be done at the new location, which has already been decided and allocated by the local governments, from the viewpoints of the same concepts of the former existing facilities, and will constitute (a) construction of the buildings.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment														Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning																																
	Construction											B-			B-		B-						B-	B-		B-	B-				B-
	Operation		B+		B+		B+	B+				B-					B-							B-	B-	B-	B-	B-	B-	B-	B-	B-

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are water pollution, soil contamination and bottom sedimentation during the operation phase, and dust generation and accidents during

the construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
11.Sanitation	Sanitation might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on sanitation and waste management shall be considered
16. Groundwater	Groundwater might decrease during the operation phase	Detailed water source survey shall be conducted at the planning phase
23. Air Pollution	Dust will be generated during the haulage of the construction materials	Covering the materials during transportation
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
25. Soil Contamination	Soil could be contaminated by wastewater and solid waste, if appropriate treatment facilities are not equipped, especially in the fish fry rearing ponds and market. However, the extent is not known.	Adequate measures on waste management and wastewater and solid waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
27. Noise & Vibration	Noise and vibrations will be generated during the construction phase	Adequate measures on noise shall be considered
28. Ground Subsidence	Ground subsidence might occur during the operation phase in case of over-exploitation of groundwater	Detailed water source survey shall be conducted at the planning phase
29. Offensive Odor	Offensive odor might be generated from the waste/wastewater during the operation phase	Adequate measures on waste management and wastewater management shall be considered
30. Bottom Sedimentation	As waste water will be stored in the existing ponds temporarily for the fish rearing ponds, bottom sedimentation is planned to be occurred. .	Bottom sediment in the ponds shall be cleaned up when necessary.
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

For the construction of fish fry rearing ponds, the Environmental Clearance Certificate (ECC) should be obtained.

7) Improving Basic Social Services (Rehabilitation of the Buildings)

The Pilot Projects include rehabilitation of nine (9) community halls/MPHs, two (2) pre-schools and one (1) bakery in ten (10) target villages.

The rehabilitation works will be done at the same locations on which the existing buildings stand in the village common lands, and will constitute (a) dismantling some portions of the damaged buildings, and (b) rehabilitation of the buildings.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment														Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning																																
	Construction																						B-	B-		B-					B-
	Operation		B+		B+		B+	B+																B-		B-					

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are water pollution and waste during the operation phase, and dust generation and accidents during the construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
23. Air Pollution	Dust will be generated during the haulage of the construction materials	Covering the materials during transportation
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

For the bakery rehabilitation, the Environmental Protection Licenses (EPL) should be obtained.

8) Improving Basic Social Services (Rehabilitation of the Irrigation Tanks)

The Pilot Projects include rehabilitation of ten (10) irrigation tanks, including the irrigation canals in ten (10) target villages.

The rehabilitation works will be done along the same right-of-ways of the existing tank bunds and irrigation canals and at the same locations of the sluice gates for the canals in the village common lands, and will constitute (a) dismantling some portions of the damaged facilities, and (b) rehabilitation of the facilities.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated negative environmental impacts are summarized as follows:

	Impact	Social Environment													Natural Environment									Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning																															
	Construction					B-					B-				B-	B-								B-			B-	B-				B-
	Operation		B+		B+		B+	B+			B-													C-	C-		B-	B-				B-

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are water usage right during operation phase, and dust generation and accidents during construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
10.Water Usage or Water Rights & Rights of Common	Some negative impact might be generated, depending on the water usage from the canals	Mutual agreement within the village shall be taken on the water usage of the canals during the planning phase
15. Soil Erosion	Soil erosion from the exposed surface might generate blocking the drainage canals and silting of paddy fields	Temporary and permanent erosion prevention measures
23. Air Pollution	Dust will be generated during the haulage of the construction materials	Covering the materials during transportation
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
27. Noise & Vibrations	Noise and vibrations will be generated during the construction phase	Adequate measures on noise shall be considered
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

Appendix 5

Annex 8

Expected Environmental Impacts for Pilot Project of Community-based Activities as of October 2010

Expected Environmental Impacts for Pilot Project of Community-based Activities as of October 2010

(1) Categorization of the Pilot Projects of Community-Based Activities

Community-Based Activities proposed as the Pilot Projects are categorized from the viewpoints of environmental and social considerations as follows:

Table 1 Types of the Proposed Pilot Projects of Community-Based Activities from the Viewpoints of Environment and Social Consideration

Category	Type of Work	SR	Selected Activities	Remarks
Off-site training	Strengthening of CBO	1	Study tour Training for financial management Construction skill training	-
	Micro finance	2	Micro finance	-
On-site training on production of materials	Income generation activity	3	Cement block making Mat weaving	Small hut will be constructed for cement block production and mat weaving.
		4	Bakery	Bakery building will be re-constructed under the pilot project for small-scale infrastructure
On-site training on production and distribution of materials	Agriculture	5	Paddy reactivation OFC cultivation reactivation Poultry reactivation	Small nurseries will be constructed. Hatching machines will be installed. Paddy seed packet, saplings and vegetable seeds and chicks will be distributed.
	Fishery	6	Dry fish production training	-
		7	Fish fry / fingerlings rearing	Fish fry rearing ponds will be constructed under the pilot project for small-scale infrastructure

Source: JICA Project Team

Among the pilot projects listed in Table 1, the expected environmental and social impacts during planning, construction and operation phase for the pilot projects on bakery activity (SR 4 in Table 1) and fish fry / fingerlings rearing activity (SR 7 in Table 1) are examined at Table 2 in the Summary, because the facilities for these activities will be constructed under the pilot projects for small-scale infrastructures.

(2) Expected Environmental Impacts by the Type of the Work of October 2010

All the expected environmental impacts by the types of the work below are examined results as of October 2010. Therefore, information / data obtained after October 2010 are not reflected to the results below.

1) Off-site training (Strengthening of CBO)

The Pilot Projects include three (3) CBO-strengthening activities to strengthen the CBO capability in all the target villages.

The activities will constitute (a) study tour, (b) training in financial management and (c) construction skill training.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated environmental impacts are summarized as follows:

SR 1
Category 1 Off-site training
Type of Works 1 Strengthening of CBO & Micro finance
Location
Selected Facilities Study tour, training for financial management and construction skill training

	Impact	Social Environment													Natural Environment								Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning									B-																					
	Construction																														
	Operation		B+/B-		B+/B-	B+	B+/B-	B+/B-		B-																					

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are inequality to join in the activities during the operation phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
2.Local Economy such as Employment & Livelihood, etc.	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
4. Social Institutions such as Split of Communities	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
6.The poor, indigenous & ethnic people	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
7.Misdistribution of Benefit & Damage	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
9. Local Conflict of Interest	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase

Source: JICA Project Team

2) Off-site training (Micro finance)

The activity will constitute (a) microfinance activity in in ten (10) target villages with past experience of micro finance activity.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated environmental impacts are summarized as follows:

SR 2
Category 1 Off-site training
Type of Works 2 Strengthening of CBO & Micro finance
Location
Selected Facilities Microfinance

	Impact	Social Environment													Natural Environment								Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning									B-																					
	Construction																														
	Operation		B+/B-		B+/B-	B+	B+/B-	B+/B-		B-																					

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are inequality to join in the activities during the operation phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
2.Local Economy such as Employment & Livelihood, etc.	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
4. Social Institutions such as Split of Communities	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
6.The poor, indigenous & ethnic people	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
7.Misdistribution of Benefit & Damage	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
9. Local Conflict of Interest	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase

Source: JICA Project Team

3) On-site training on production of materials (Income generation activity: Cement block making and Mat weaving)

The Pilot Projects will constitute (a) cement block making in two (2) target villages and (b) mat weaving in one (1) target village.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated environmental impacts are summarized as follows:

SR 3
Category 2 On-site training on production of materials
Type of Works 1 Income generation activity
Location
Selected Facilities Cement block making and mat weaving

	Impact	Social Environment													Natural Environment								Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning									B-																					
	Construction																						B-	B-			B-				B-
	Operation		B+/B-		B+/B-	B+	B+/B-	B+/B-		B-		B-												B-		B-					

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are inequality to join in the activities and some items on sanitation and waste during the operation phase, and pollution on air and water, noise & vibration and accident during construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
2.Local Economy such as Employment & Livelihood, etc.	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
4. Social Institutions such as Split of Communities	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
6.The poor, indigenous & ethnic people	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
7.Misdistribution of Benefit & Damage	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
9. Local Conflict of Interest	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
11.Sanitation	Sanitation might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on sanitation and waste management shall be considered

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
27. Noise & Vibration	Noise and vibrations will be generated during the construction phase	Adequate measures on noise shall be considered
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

4) On-site training on production of materials (Income generation activity: Bakery)

The Pilot Projects will constitute (a) bakery activity in one (1) target village.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated environmental impacts are summarized as follows:

SR 4
Category 2 On-site training on production of materials
Type of Works 1 Income generation activity
Location
Selected Facilities Bakery

	Impact	Social Environment													Natural Environment								Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning									B-																				
	Construction																						B-				B-				B-
	Operation		B+/B-		B+/B-	B+	B+/B-	B+/B-		B-		B-														B-					

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are inequality to join in the activities and some items on sanitation and waste during the operation phase, and pollution on air and water, noise & vibration and accident during construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
2.Local Economy such as Employment & Livelihood, etc.	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
4. Social Institutions such as Split of Communities	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
6.The poor, indigenous & ethnic people	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
7.Misdistribution of Benefit & Damage	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
9. Local Conflict of Interest	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
11.Sanitation	Sanitation might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on sanitation and waste management shall be considered
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
27. Noise & Vibration	Noise and vibrations will be generated during the construction phase	Adequate measures on noise shall be considered
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

5) On-site training on production and distribution of materials (Agriculture)

The Pilot Projects include three (3) agriculture activities, constituting (a) paddy reactivation, (b) OFC cultivation reactivation and (c) Poultry reactivation. The Pilot project of paddy reactivation will be conducted in 16 target villages, home gardening in OFC cultivation reactivation in three (3) villages, nursery establishment in two (2) villages, and poultry reactivation in three (3) villages.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated environmental impacts are summarized as follows:

SR 5
Category 3 On-site training on production and distribution of materials
Type of Works Agriculture
Location
Selected Facilities Paddy reactivation, OFC cultivation reactivation and poultry reactivation

	Impact	Social Environment													Natural Environment										Environmental Pollution									
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning									B-																							
	Construction																							B-									B-
	Operation		B+/B-		B+/B-	B+	B+/B-	B+/B-		B-		B-												B-		B-			B-			

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are inequality to join in the activities and some items on sanitation and waste during the operation phase, and water pollution and accident during construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
2.Local Economy such as Employment & Livelihood, etc.	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
4. Social Institutions such as Split of Communities	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
6.The poor, indigenous & ethnic people	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
7.Misdistribution of Benefit & Damage	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
9. Local Conflict of Interest	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
11.Sanitation	Sanitation might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on sanitation and waste management shall be considered
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

6) On-site training on production and distribution of materials (Fishery: Dry fish production training)

The Pilot Project will constitute (a) Dry fish production training activity in four (4) fishing villages.

As the results of the preliminary environmental assessment of the proposed projects, the anticipated environmental impacts are summarized as follows:

SR 6
Category 3 On-site training on production and distribution of materials
Type of Works Fishery
Location
Selected Facilities Dry fish production training

	Impact	Social Environment													Natural Environment								Environmental Pollution								
		1.Involuntary Resettlement	2.Local Economy such as Employment & Livelihood, etc.	3.Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5.Existing Social Infrastructures & Services	6.The poor, indigenous & ethnic people	7.Misdistribution of Benefit & Damage	8.Cultural Heritage	9.Local Conflict of Interest	10.Water Usage or Water Rights & Rights of Common	11.Sanitation	12.Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Occupational Safety and Health	14. Topography & Geographical Features	15. Soil Erosion	16. Groundwater	17. Hydrological Situation	18. Coastal Zone	19. Fauna, Flora & Biodiversity	20. Meteorology	21. Landscape	22. Global Warming	23. Air Pollution	24. Water Pollution	25. Soil Contamination	26. Waste	27. Noise & Vibration	28. Ground Subsidence	29. Offensive Odor	30. Bottom Sediment	31. Accidents
Phase	Planning									B-																					
	Construction																														
	Operation		B+/B-		B+/B-	B+	B+/B-	B+/B-		B-		B-														B-			B-		

A+/-: Significant positive/negative impact is expected.
B+/-: Some positive/negative impact is expected to some extent.
C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
Blank: No negative impact is expected.
N/A: Not applicable

The main environmental impacts of this category are inequality to join in the activities and some items on sanitation and waste during the operation phase, and water pollution and accident during construction phase. The anticipated negative impacts and their supposed mitigation measures are summarized as follows:

Anticipated Negative Impacts	Descriptions of the impacts	Assumed Mitigation Measures
2.Local Economy such as Employment & Livelihood, etc.	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
4. Social Institutions such as Split of Communities	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
6.The poor, indigenous & ethnic people	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
7.Misdistribution of Benefit & Damage	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
9. Local Conflict of Interest	Some negative impact might be generated, depending on the selection methods to join in the activities.	Mutual agreement within the village shall be taken on the selection methods to join in the activities during the operation phase
11.Sanitation	Sanitation might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on sanitation and waste management shall be considered
24. Water Pollution	Water quality might worsen during the operation phase in case of inadequate management of the waste	Adequate measures on water pollution and waste management shall be considered
26. Waste	Waste might increase during the operation phase in case of inadequate management of the waste	Adequate measures on waste management shall be considered
29. Offensive Odor	Offensive odor might be generated from the waste / waste water during the operation phase.	Adequate measures on waste management and waster water management shall be considered.
31. Accidents	Accidents might happen during the construction phase	Adequate construction management measures

Source: JICA Project Team

Appendix 5

Annex 9

Land Issues Appeared during the Project Implementation

Land issues appeared during the project implementation

Facility Name and Status	Location	Land Issues			Countermeasures taken	Current status of the land and the project
		Occurrence period	Land issues at the time of occurrence of the issues	Status of land and the project at the occurrence of the issue		
New construction of the Chick Breeding Farm facilities at the new allocated land	Cheddiyarmagan Kaddaiadampan, Cheddiyarmagan Kaddaiadampan GN Division, Nanaddan Division	May, 2011	✓ The some person claimed the ownership of the planned site for the chick breeding farm.	● The construction of the chick breeding farm at the site was approved by AGA and villagers ● Construction was approved by related organizations	● The JICA Project Team reported to the administrative; DS, and discussed on the issues ● The JICA Project Team confirmed that the concerned person does not have a deed ● The JICA Project Team discussed with the concerned person and GN and agreed upon the land issues to construct the facilities at the site. ● The JICA Project Team installed the project signboard for recurrence prevention	● Construction of the Chick Breeding Farm was commenced after the agreement between the GN and the concerned person at the planned site. ● Construction has been already completed by the Contractor and the trainings have been commenced.
New construction of the Market building at the new allocated land	Vellankulam, Vellankulam, GN Division, Manthai West AGA Division	May to August, 2011	✓ The small offertory box was set at the corner of the planned site by some villager. The concerned person did not recognize that the land was allocated for the project.	● The land is prepared by the GA for the market and the land is owned by the government. ● The construction of the market at the site was approved by AGA and villagers ● Construction was approved by related organizations	● The JICA Project Team collected information from the concerned person, other villagers and armies. ● The JICA Project Team reported to and discussed with the local authorities; AGA, GN ● The JICA Project Team confirmed that the concerned person does not have a deed ● The JICA Project Team discussed with GN and the concerned person ● GN and the concerned person submitted a letter to AGA on no objection to move the offertory box to other places ● The JICA Project Team installed the project signboard for recurrence prevention	● The offertory box was moved to the adjacent land, where are outside of the project site, in accordance with the agreement with the concerned person, villagers and armies. ● Construction has been commenced at the planned site at the Contractor.
Rehabilitation of the damaged	Parasankulam, Parasankulam,	July to August,	✓ Community Center has been planned to be rehabilitated at	● The rehabilitation of the Community Center at the site	● The JICA Project Team reported to and discussed with the local authorities;	● The alternative land has been allocated by AGA for the

Facility Name and Status	Location	Land Issues			Countermeasures taken	Current status of the land and the project
		Occurrence period	Land issues at the time of occurrence of the issues	Status of land and the project at the occurrence of the issue		
Community Center building at the same location	GN Division, Madhu AGA Division	2011	the same location. ✓ The land was claimed to be owned by private individuals and the Community Center was being encroached by them, even though the facility was initially constructed during the MANRECAP period (more than 5 years ago).	was approved by AGA and villagers ● The rehabilitation was approved by related organizations	AGA, GN ● The JICA Project Team confirmed that the concerned person have had the land deed on the specific area before, even though the deed has been expired technically and even though the Community Center building was constructed more than five years ago. ● The Local Authority, AGA, provides the alternative land for the newly construction of the Community Center nearby.	project. ● The construction of the community center has been commenced by the Contractor at the alternative land newly allocated by AGA.
New construction of the Fish Fry Rearing Ponds at the new allocated land	Sirukkulam, Parapankandal GN Division, Mannar Town DS Division	From January to the end of July, 2011	✓ The small hut was built by some illegal settler inside the planned area after deciding to construct the fish rearing ponds at the site.	● The construction of the fish rearing ponds at the site was approved by AGA and villagers ● Construction was approved by related organizations ● The target land, which is adjacent to the Giant tank, is managed by the Irrigation Department, according to the regulations of the Irrigation Department. ● The land has been allocated by the Irrigation Department for constructing the fish rearing ponds.	● The villagers negotiated with the hut's owner to offer the alternative land in the village to resettle, but the owner denied moving. ● GA ordered to DS to negotiate with the owner to resettle to another area, but the owner did not respond to any inquiries. ● The hut was demolished according to the regulations and laws in Sri Lanka by DS.	●
		July, 2011	✓ The hut's owner sent the claim letters to the President Office, human-right groups, JICA, and so on. ✓ JICA claimed to the JICA Project Team about demolishment of the hut	● It was confirmed that the hut's owner did not have a land deed for the target area for the fish fry rearing ponds. ● As the owner has the land in the Mannar town, he cannot have other lands within the 10 miles	● Information on land issues were compiled by the JICA Project Team and submitted to JICA. ● Basically, the village community and the local authorities conducted negotiations and actions, so that those information were delayed to be	● The JICA Project Team decided to postpone constructing the fish rearing ponds by the time of resolving the land issue.

Facility Name and Status	Location	Land Issues			Countermeasures taken	Current status of the land and the project
		Occurrence period	Land issues at the time of occurrence of the issues	Status of land and the project at the occurrence of the issue		
			without agreement with the hut's owner and also delayed information from the JICA Project Team	radius areas, according to the regulation of the former Northern East Province.	informed to the JICA Project Team.	
		From the end of July to the end of August, 2011	✓ JICA sent a letter to GA to take adequate measures according to the JICA Environmental and Social Considerations Guideline.	● The JICA Project Team together with AG and DS re-confirmed with the Irrigation Department the legal basis that the land is under jurisdiction of the Irrigation Department.	● GA sent a letter to the hut's owner to set a meeting to solve the issues. ● The colonel attended the meeting on behalf of the owner and promised to accompany with him to the next meeting. ● The owner and the colonel did not appear to the 2nd and 3rd meetings, because hut's owner was out of Sri Lanka.	● GA sent a letter to JICA on the communication proceedings with the owner, and requests to restart the project. ● The JICA Project Team decided to postpone constructing the fish rearing ponds by the time of resolving the land issue.
		From the end of September to beginning of October, 2011	✓ The GA had a meeting with illegal settler of the hut and his accompanying persons on the land issues. ✓ The GA explained that the hut's owner could not have a land at that site based on the regulations in Sri Lanka. ✓ The owner recognized that he could not have a land there and offered to GA to give him a favor on acquiring the alternative land to settle.	● As the land issues were not solved by the end of August, 2011, time for the construction became very limited since the construction should have been completed and training of fly / fingerings rearing should have been conducted before Maha rains. ● Also the Contractor delayed the irrigation rehabilitation works, which should be completed also before Maha rain. ● In this circumstance, if the JICA Project Team would order to resume the Fish fry rearing pond construction at that time, it might cause failure of both construction of irrigation works and fish pond as the	● During the meeting among GA, JICA and the JICA Project Team, GA raised request to re-commence the fish rearing pond construction, however, JICA mentioned that if the trainings on fish rearing could not be conducted by using the facility, it would be very difficult for JICA to agree to conduct only construction of the facility. ● Finally, the GA and the JICA Project Team agreed not to construct the fish fry rearing ponds, according to the JICA's suggestion. ● Under this circumstance, the JICA Project Team proposed to conduct any possible livelihood activities for the villages, besides the fish rearing. Then after, the JICA Project Team proposed delivery of some numbers of chicks to all the villagers to supplement the	● The JICA Project Team decided to reluctantly give up constructing fish fry rearing ponds and to drop training of fly / fingerings rearing of tank fishes from the community assisting activities, according to the JICA's suggestion.. ● The JICA Project Team has distributed chicks to all the villagers.

Facility Name and Status	Location	Land Issues			Countermeasures taken	Current status of the land and the project
		Occurrence period	Land issues at the time of occurrence of the issues	Status of land and the project at the occurrence of the issue		
				Contractor's field management was assessed to be not capable to complete the both works before Maha.	incomes which are expected by the fish fry rearing. ● GA and the JICA Project Team, together with JICA representative, explained to the villagers results and reasons that i) cancellation of construction of fish fry rearing ponds, ii) cancellation of trainings on fish fry rearing, and iii) proposal to distribute chicks to all the villagers as the supplement income sources. ● GA also added that GA would try to find funds to construct the facilities and also for the trainings from donors other than JICA. The villagers at last agreed the cancellation of the construction of the facilities and trainings.	
New construction of Community Center and repair of the Village Internal Roads	Theththavaady, Pali Aru GN Division, Manthai West AGA Division	Mid of September, 2011	✓ RDS chairman of the village visited at the JICA Project Office with The JICA Project Team Facilitator on the mid of September. He mentioned that i) the big landholder in the village came back to the village and ii) he requested to the villagers to retire from the village. RDS also expressed that eight families out of 25 had already transferred to other places because of flood problem last year. Accordingly, RDS requested to The JICA Project Team to stop the SSIR construction	● Rehabilitation of the community center and village roads at the village were approved by GN and villagers ● Rehabilitation works were approved by related organizations ● The JICA Project Team requested to the contractor to construct those facilities as soon as possible to complete construction before Maha season	● The JICA Project Team reported to and discussed with the local authorities; AGA, GA ● The JICA Project Team is confirming the eligibility of the deed of the concerned person and villagers. ● The JICA Project Team is facilitating AGA and villagers to discuss on this issue. ● AGA is confirming the concerned big landholder at this village. ● The JICA Project Team asks to AGA to confirm the land issues, such as the eligibility of the land deed of the villagers, existence of the big landholder, and so on. ● The JICA Project Team ordered to the	● GN confirmed that 25 families had been allocated 1 ac highland and 1 ac paddy per family in 2005, and the big landholder who had those lands in 1970s claimed some portion of the land might be overlapped with his lands. GN also confirmed that there are no land disputes among the families and the big landholder. ● GN also requested AGA MW to certify and confirm to declare that this village is free of any land disputes. ● GN and AGA confirmed that

Facility Name and Status	Location	Land Issues			Countermeasures taken	Current status of the land and the project
		Occurrence period	Land issues at the time of occurrence of the issues	Status of land and the project at the occurrence of the issue		
			and ask to GA on resettled sites. ✓ On the other hand, representatives of the remained 17 families out of 25 families came to the Project Office to explain that i) they did not know the big landholder came to the village, ii) they had deeds for their lands which were issued by the land officer during LTTE period, then requested to continue the construction.		contractor to postpone in construction of the community center and village roads by the time of settlement of the land issue.	the lands for the Community Center and Village Internal Roads are not overlapped with the lands for which the land owner claimed after series of consultations with the land owner and villagers.
	Theththavaady, Pali Aru GN Division, Manthai West AGA Division	Begging of December, 2011	-	-	● After several meetings with local authorities; GA, AGA, GN, big landholder's inheritor and the JICA Project Team, all of them agreed the land claimed by the big landholder's inheritor are not overlapped with the proposed land for the new Community Center and repair of the Village Internal Roads.	● The Contractor will commence the construction of the Community Center by February 2012 and repair of the Village Internal Roads has been already commenced.
Re-construction of the Community Center building at the same location	Anthoniyapuram, Anthoniyapuram GN Division, Manthai West AGA Division	September, 2011	✓ Originally, the damaged Community Center was planned to be re-constructed by the JICA Project Team at the same site. However, some NGO has started to rehabilitate this building to be the Fisherman's Resting Center.	● The reconstruction of the community center at the site was approved by GN and villagers ● Re-construction works were approved by related organizations	● The JICA Project Team reported to and discussed with the local authorities; AGA, GA ● The JICA Project Team is facilitating AGA and villagers to discuss on this issue. ● AGA decided to allocate the alternative lands for construction of the community center at this village.	● The alternative land has been allocated by AGA for the project. ● The Contractor will commence the construction of the Community Center by February 2012.