



Environmental Monitoring Report

Project Number: 47273

Loan Numbers: Tranche 1 – 3171

Tranche 2 – 3221 /3222

Tranche 3 – 3325 /3326

Annual Report

January to December 2016

SRI: Integrated Road Investment Program PIC 01 – Southern Province

Prepared by the Road Development Authority, Ministry of Higher Education and Highways for the Asian Development Bank.

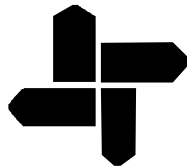
This environmental management and monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the "terms of use" section on ADB's website.¹ In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

Asian Development Bank

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

Ministry of Higher Education & Highways

Road Development Authority



Asian Development Bank Funded
Integrated Road Investment Program

iRoad – Southern Province

ADB Loan No - 3171

ANNUAL ENVIRONMENT COMPLIANCE MONITORING REPORT

2016

Submission Date: 20 March 2017

Prepared by:

MGC-ECL (JV)

Submitted to:

Ministry of Higher Education & Highways
Road Development Authority



MGC - ECL JOINT VENTURE



TABLE OF CONTENTS

LIST OF ABBREVIATIONS	05
1. INTRODUCTION	07
1.1 The project	08
1.2 Conventional Road Contractors (CRCs)	08
1.3 Objectives and the Outline of the Project	08
1.4 Supervision, Responsibilities and Staffing, for Environmental Safeguard Implementation	12
1.5 Purpose of the Report	13
2. PROGRESS OF CIVIL WORKS	14
2.1 Civil works progress	15
3. COMPLIANCE WITH ENVIRONMENT SAFEGUARD REQUIREMENTS	35
3.1 Environmental Safeguard Compliance Monitoring Complying with Environmental Assessment Review Framework (EARF)	36
3.2 Environment safeguards with compliance respect to Facility Administration Manual (FAM)	37
4. MONITORING OF ENVIRONMENTAL COMPLIANCE AT FILED LEVEL	38
4.1 Staffing of Environment and Safety Officers	39
4.2 Review and Approval of EMAP/SSEMAP	41
4.3 Preparing of Environmental Monitoring Checklist (EMC)	41
4.4 Establishing of public notice	49
4.5 Consultation, information Disclosure and Grievance Redress Mechanism	50
4.6 Environmental Monitoring Structure and Site Inspection	51
5. ISSUES OBSERVED AND STATUS OF COMPLIANCE	54
6. PUBLIC CONSULTATIONS AND INFORMATION DISSEMINATION	61

7. PROGRAMS AND ACTIVITIES TO ENHANCE ENVIRONMENT	63
7.1 Tree planting programs	64
7.2 School awareness programs conducted	68
7.3 Environmental friendly design changes	69
8. CONCLUSION AND RECOMMENDATIONS	71

List of Figures

Figure 01. Staff allocation for monitoring of environment safeguard and road safety.	13
Figure 02. The flow chart shows of the GRM process adapted in to the iROAD(SP).	51
Figure 03. Mr. Saranga pointed out environmental issues at M2 package.	52
Figure 04. Progress review meeting held for contractors on environmental safeguards.	52
Figure 05. Turfing in G2 package to prevent soil erosion.	59
Figure 06. Watering at M2 package to minimizing the dust generation.	59
Figure 07. Carefully constructed and maintained shoulder at H2 package.	59
Figure 08. Siltation tank been established at batching plant H3 package.	60
Figure 09. G2, public awareness for the villages regarding iROAD(SP) project.	62
Figure 10. H3, public awareness for road users regarding public complain procedures.	62
Figure 11. M2, Tree planting program, Bopitiya Kanishta Vidyalaya.	66
Figure 12. H2, Tree planting program, Habaraththawala Maha Vidyalaya, Ridiyagama.	66
Figure 13. G3, Tree planting program, Karadeniya public library.	67
Figure 14. M3, Tree planting program, Ganegoda Purana Rajamaha Viharaya.	67
Figure 15. School program conducted at M1, Paragala Kanishta Vidyalaya.	68
Figure 16. School program conducted at M2, Bopitiya Maha Vidyalaya.	68
Figure 17. G2, RD ID 37, soil erosion protection by constructed a cascade drainage path system.	69
Figure 18. G2, RD ID 16, Fish ladder construed for migratory fish.	69
Figure 19. H1, RD ID 13, conserved a tree by diverting the drainage pathway.	69
Figure 20. M1, RD ID 14, Protection was given to an earth slipped location.	69
Figure 21. G1, Paddy field and the stream protected by provide a concrete drainage.	69
Figure 22. G2, RD ID 12, Soil erosion minimized by provide a concrete access pathway.	69
Figure 23. G2, RD ID 16, Prevent soil erosion by providing a concrete drain.	70
Figure 24. H1, RD ID 29, conserved a large Nuga tree by changing the centerline.	70

List of Maps

Map 01.1 Locations of 201.3 Km (66 nos.) roads in Galle District.	09
Map 01.2 Locations of 217.5Km (67 nos.) roads in Matara District.	10
Map 01.3 Locations of 165.69Km (52 nos.) roads in Hambantota District.	11

List of Tables

Table 1.1 CRCs in Galle District.	09
Table 1.2 CRCs in Matara District.	10
Table 1.2 CRCs in Hambantota District.	11
Table 2.1 Overall progress	16
Table 2.2 Contractor submittals	18
Table 2.3 G1 Asphalt progress bar chart	19
Table 2.3.1: G1 Detail Physical Progress on Road Works	
Table 2.4 G2 Asphalt progress bar chart	20
Table 2.4.1: G2 Detail Physical Progress on Road Works	21
Table 2.5: M1 Asphalt Progress Bar Chart	22
Table 2.5.1: M1 Detail Physical Progress on Road Works	23
Table 2.6: M2 Asphalt Progress Bar Chart	24
Table 2.6.1: M2 Detail Physical Progress on Road Works	25
Table 2.7: M3 Asphalt Progress Bar Chart	26
Table 2.7.1: M3 Detail Physical Progress on Road Works	27
Table 2.8: H1 Asphalt Progress Bar Chart	28
Table 2.8.1: H1 Detail Physical Progress on Road Works	29
Table 2.9: H2 Asphalt Progress Bar Chart	30
Table 2.9.1: H2 Detail Physical Progress on Road Works	31
Table 2.10: H3 Asphalt Progress Bar Chart	32
Table 2.10.1: H3 Detail Physical Progress on Road Works	33
Table 03. Details of the staffing and training conducted for the PIU and PIC.	40
Table 04. Details of the staffing and training conducted for the contractors.	41
Table 05: Summary of EMAP/SSEMAP and EMC completed approved by PIC shows road ID's (January to December 2016)	42
Table 06: Summary of License and approvals for materials (January to December 2016)	43
Table 07. Monthly monitoring schedule for iROAD SP by PIC team.	53
Table 08: Issues observed and mitigated (January to December 2016)	55
Table 09. Status of tree removal and re-planting in each contractor package.	64
Table 10: Summary of tree planting program conducted.	64
Table 11: Summary of school education awareness program conducted.	68

LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AIDS	Acquired Immunodeficiency Syndrome
ARE	Assistant Resident Engineer
CEA	Central Environmental Authority
CRCs	Conventional Road Contracts
CSD	Context Sensitive Design
DE	Design Engineer
DPM	Deputy Project Manager
EARF	Environmental Assessment and Review Framework
ECOP	Environmental Code of Practice
EMAP	Environmental Management Action Plan
EMC	Environmental Monitoring Checklist
EMP	Environmental Management Plan
EO	Environmental Officer
ES	Environmental Specialist
ESDD	Environmental & Social Development Division
FFPO	Fauna & Flora Protection Ordinance
GAP	Gender Action Plan
GIS	Geographical Information System
GND	Grama Niladari Division
GoSL	Government of Sri Lanka
GRM	Grievance Redress Mechanism
HIV	Human Immunodeficiency Virus
IA	Implementation Agency
IEE	Initial Environmental Examination
iROAD(SP)	Integrated Road Investment Program Southern Province
LARP	Land Acquisition and Resettlement Plan
ME	Material Engineer
ME&RE	Ministry of Environment & Renewable Energy
MMF	Multi-tranche Financing Facility
MOHEH	Ministry of Higher Education & Highways
MOHPS	Ministry of Highways, Ports and Shipping
NEA	National Environmental Act
OPRC	Output & Performance Based Road Contracts
PAA	Project Approving Agency
PE	Project Engineer
PIC	Project Implementation Consultants
PIU	Project Implementation Unit
PLE	Planning Engineer
PM	Project Manager
PPT	Power Point Presentation

PRDA	Provincial Road Development Authority
PS	Pradeshiya Sabha
RDA	Road Development Authority
RE	Resident Engineer
RF	Resettlement Framework
RRDSE	Rural Road Design & Safety Engineer
RSA	Road Safety Audits
SE	Site Engineer
SGRS	Social Gender Resettlement Specialist
SLRM	Sri Lanka Resident Mission
SO	Safety Officer
SPS	Safeguard Policy Statement
TL	Team Leader
TO	Technical Officer
TOR	Terms of Reference

1. Introduction

1.1 The Project

The Asian Development Bank's (ADB's) Multi tranche Financing Facility (MFF) for the Integrated Road Investment Program (iRoad) provides loans to Sri Lanka in an aggregate amount of up to \$800 million equivalent. The GOSL will provide counterpart financing of \$106 million for feasibility study and engineering, tax and duties, and part of the contingency. The MFF will comprise a series of loans, to improve the access routes between rural areas and socioeconomic centers, in tranches. The investment program comprises five projects to be implemented between 2014 and 2024. Project 1 is in Southern Province with an estimated cost of \$118 million, with ADB financing \$100 million and GOSL providing the balance \$18 million in counterpart funds.

The Loan and project agreements for project 1 became effective on 07 January 2015. The Project in Southern Province will improve and maintain 560 km of rural access roads, including 510 km of local roads and 50 km of provincial roads and a further 20 km of national roads. The rural access roads will be improved to all-weather standards, and be maintained for three years. The national roads will also be improved, and maintained for three years. The national roads will connect the rural access roads to adjacent socioeconomic centers.

1.2 Conventional Road Contracts (CRCs)

The 560 km of rural roads and 20 km of national roads covering the districts of Galle, Matara and Hambantota have been packaged in to three Contract Packages in each district resulting in nine Contract Packages in Southern Province.

The three (3) CRCs in Galle, Matara and Hambanthota Districts are listed in Table 1.1-1.3. The local roads have been identified as Provincial Road Development Authority (PRDA) or Pradeshiya Sabha (PS) and the national roads as RDA.

1.3 Objectives and Outline of the Project

The broad objective of this project is to improve the existing road surface to all-weather road surface in rural areas of Sri Lanka, so that rural population can be conveniently involved in the nationwide economic and social development.

As per the updated (FAM) of 1 October 2015 project 1 in Southern Province includes three components:

(a) Improvement of 560 Km of rural access roads to all weather standards and 20 Km of national roads, and maintained for a period of three years, under nine CRC.

(b) Capacity development: This includes building the capacity of road agencies, including Ministry of Higher Education and Highways (MOHEH), RDA and provincial and local road agencies, on road asset management, project management, and contract administration.

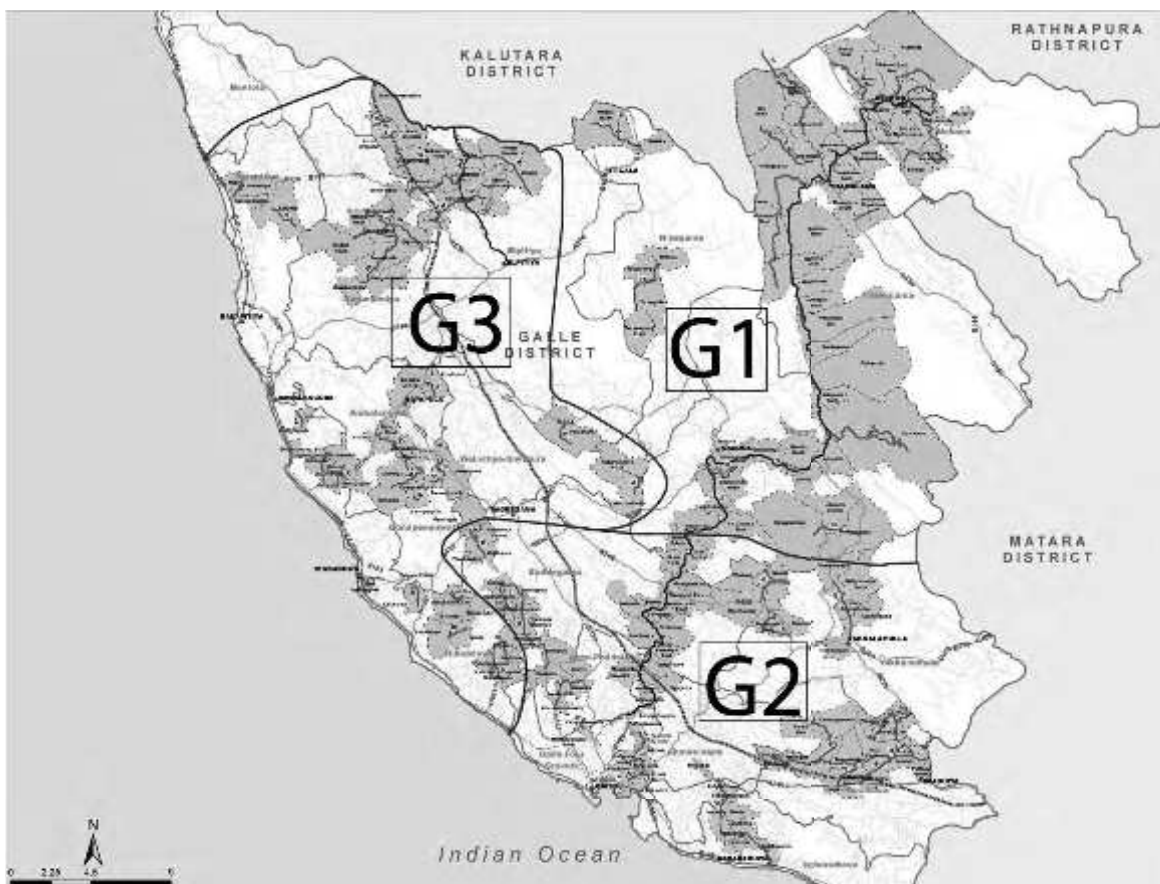
(c) Project preparation of following tranches.

The three (3) CRCs in Galle District are listed in Table 1.1.

Table 1.1: CRCs in Galle District

No.	Contractor	Accepted Contract Amount (LKR)	Commencement Date	RDA (km)/ (nos.)	PRDA (km)/ (nos.)	PRDA & PS (km)/ (nos.)	PS (km)/ (nos.)	Total (km) / (nos.)
G1	K. D. Ebert & Sons Holdings(Pvt) Ltd	1,458,055,706.14	18.05.2015	-	2.8/1	-	61.8/14	64.6/15
G2	K. D. A. Weerasinghe & Co(Pvt) Ltd	1,483,136,252.40	18.05.2015	-	15.6/3	3.0/1	47.5/18	66.1/22
G3	K. D. A. Weerasinghe & Co(Pvt) Ltd	1,733,440,933.20	18.05.2015	9.4/1	2.2/1	15.5/3	43.5/24	70.6/29
Sub Total Galle District		4,674,632,891.74	-	9.4/1	20.6/5	18.5/4	152.8/56	201.3/66

The locations of the 201.3 km (66 nos.) roads in Galle District are shown in **Map 1.1** below.



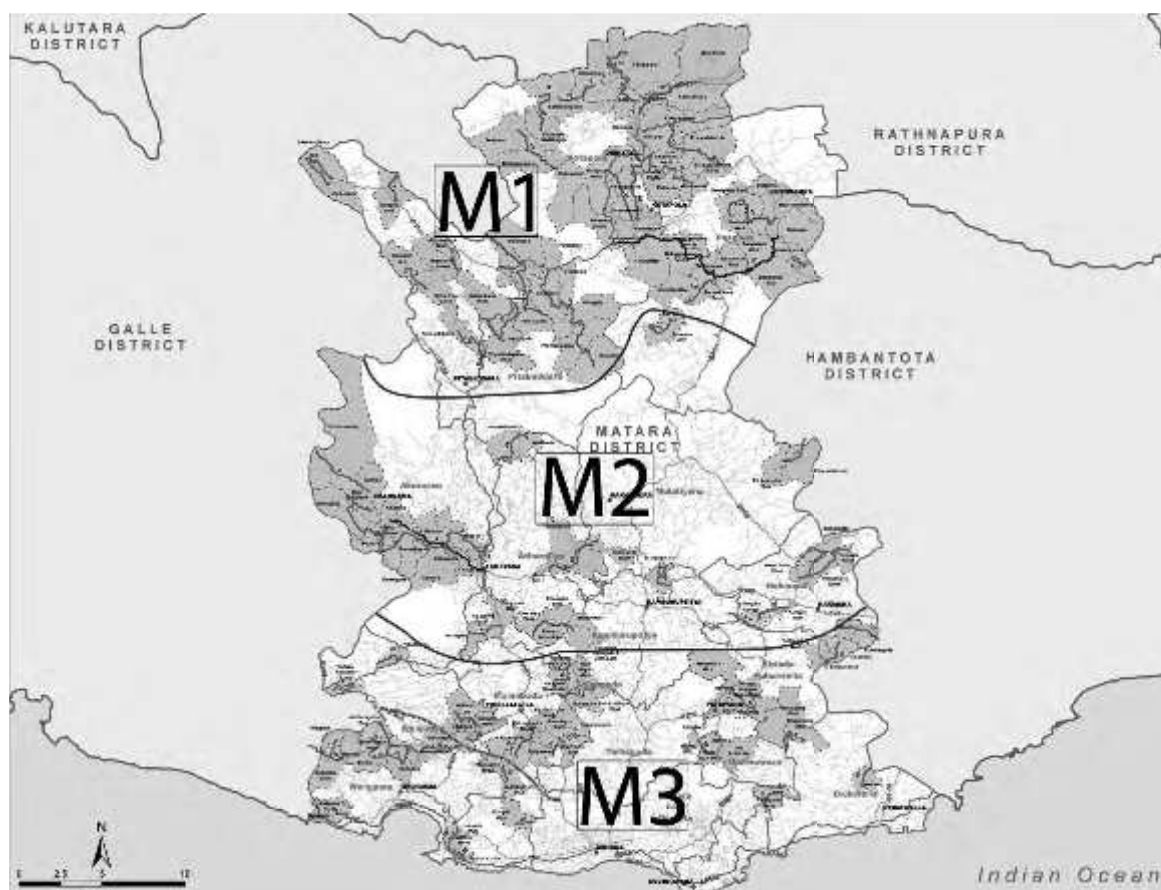
Map 1.1: Locations of 201.3km (66 nos.) roads in Galle District

The three (3) CRCs in Matara District are listed in Table 1.2.

Table 1.2: CRCs in Matara District

No.	Contractor	Accepted Contract Amount (LKR)	Commencement Date	RDA (km)/ (nos.)	PRDA (km)/ (nos.)	PRDA & PS (km)/ (nos.)	PS (km)/ (nos.)	Total (km) / (nos.)
M1	CML-MTD Construction Ltd	2,315,346,953.44	18.05.2015	6.3/1	30.1/5	-	61.6/16	98.0/22
M2	K. D. Ebert & Sons Holdings (Pvt) Ltd	1,803,301,712.60	18.05.2015	7.2/1	8.8/2	-	48.9/16	64.9/19
M3	K. D. Ebert & Sons Holdings (Pvt) Ltd	1,207,599,780.58	18.05.2015	-	4.8/2	-	49.7/23	54.5/25
Sub Total Matara District		5,326,248,446.62	-	13.5/2	43.7/9	-	160.2/55	217.4/66

The locations of 217.4km (66 nos.) roads in Matara District are shown in **Map 1.2** below.



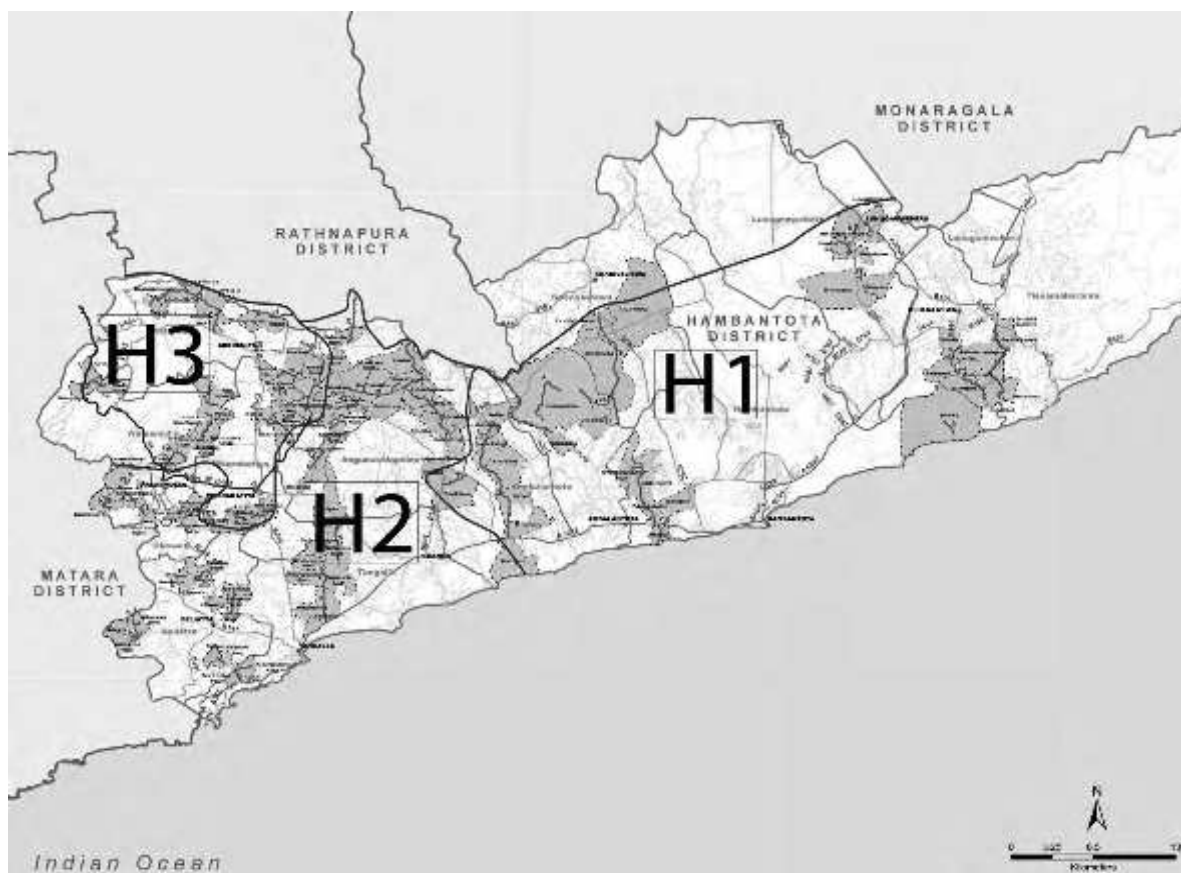
Map 1.2: Locations of 217.4km (66 nos.) roads in Matara District

The three (3) CRCs in Hambantota District are listed in Table 2.3.

Table 1.3: CRCs in Hambantota District

No.	Contractor	Accepted Contract Amount (LKR)	Commencement Date	RDA (km)/(nos.)	PRDA (km)/(nos.)	PRDA & PS (km)/(nos.)	PS (km)/(nos.)	Total (km)/(nos.)
H1	K. D. A. Weerasinghe & Co (Pvt) Ltd	1,583,594,552.40	18.05.2015	-	19.3/4	-	47.6/15	66.9/19
H2	CML-MTD Construction Ltd	1,210,330,393.84	18.05.2015	-	15.1/1	-	42.0/17	57.1/18
H3	RR Construction (Pvt) Ltd	1,052,141,503.89	18.05.2015	-	8.8/1	-	32.8/13	41.6/14
Sub Total Hambantota District		3,846,066,450.13	-	-	43.2/6	-	122.4/45	165.6/51

The locations of 165.6km (51 nos.) roads in Hambantota District are shown in **Map 1.3** below.



Map 1.3: Locations of 165.6km (51 nos.) roads in Hambantota District

1.4. Supervision, Responsibilities and Staffing, for Environmental Safeguard Implementation

The Project Implementation Unit (PIU) under RDA, MOHEH is responsible for overall conduction of environmental assessments, implementation and monitoring of environment safeguards for specific project roads under the investment program. Within RDA there is a separate unit, the Environment and Social Development Division (ESDD) to cover social and environment safeguards. ESDD was established in response to capacity building needs identified in earlier ADB projects such as the Southern Transport Development Project. This division comprises of approximately 7 environment safeguard officers and 9 social safeguard officers who are well experienced in implementing ADB projects. The division is responsible for developing manuals and guidelines, providing assistance in conduction of proper safeguard assessments, and implementation and monitoring of environment and social safeguards in accordance with environmental policies of GoSL and donor agencies.

However since ESDD is responsible for all projects under RDA and given the large scale of the investment program this division does not have adequate time and resources to implement and monitor safeguards for the investment program. Therefore, a separate safeguards team dedicated to the investment program has been created (Environment and social unit-ESU) within the PIU for managing safeguards. ESDD provides technical support and monitor the implementation of safeguards under the investment program on bi-annual basis as necessary.

The safeguards team was comprised of sufficient social and environment safeguards officers as necessary to cover the quantum and geographic distribution of works in all provinces under the investment program. The safeguards team (fig. 01) supported by a team of environmental consultants under the Project Implementation Consultants (PIC) daily monitors the implementation of EMAP and compilation of monitoring checklists and reports.

Detailed safeguards training workshops conducted for the PIU, safeguards team, SAPE and PIC to clarify the roles and responsibilities of each party, method of consultation and record keeping and reporting requirements before the conduction of environmental assessment studies for each tranche. After the award of civil works contract and before the start of physical works training workshops were conducted for the PIU, safeguards team, PIC and contractor on roles and responsibilities of each party for Environmental Management Action Plan (EMAP) implementation and monitoring methods, record keeping and reporting requirements. Thereafter other subject specific or on the job training organized by the PIU and PIC on a need basis.

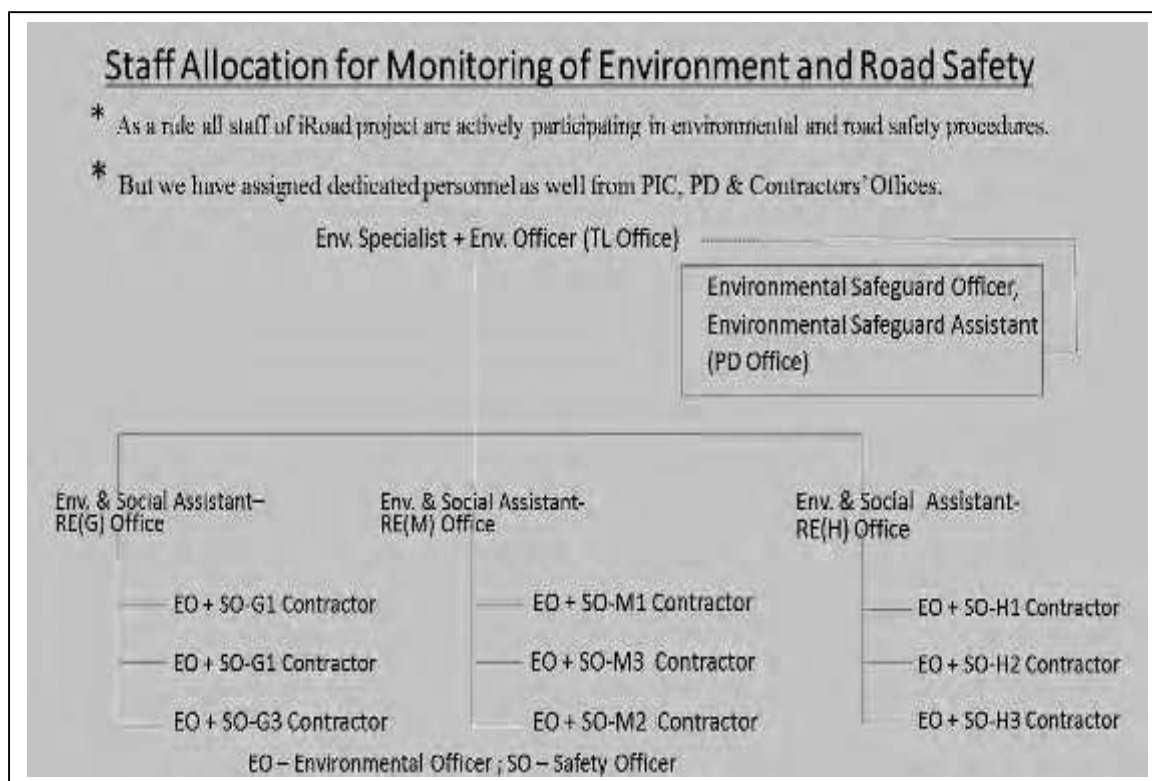


Figure 01. Staff allocation for monitoring of environment safeguard and road safety.

1.5. Purpose of the Report

Environmental Assessment and Review Framework (EARF) which has been prepared during the Project Preparatory Technical Assistance (PPTA) sets out guidelines and procedures that need to be complied under environmental safeguards of the project. As section VII of EARF on “Monitoring and Reporting”, it is required to prepare an annual monitoring report on the progress of environmental safeguards compliance of the project.

This report is prepared to serve as the annual monitoring report on environmental safeguards and the reporting period is from 1st January to 31st December 2016.

2. Progress of Civil Works

2.1 Civil Works Progress

The overall progress of the contracts to the end of December 2016 is shown in Table 2.1.

The status of various Contractor submittals required for compliance with the Contract is listed in Table 2.2.

Summaries of activities and progress in each Contract Package are provided in sub-sections 2.3 to 2.10.

Table 2.1: Overall Progress

Contract No.	Description	Length of Road (km)	Contractor	Commencement Date	Scheduled Completion Date /3 Yr Maintenance	Accepted Contract Amount (Rs. Mil)	Days Worked	Period Elapsed (%)	% Physical Progress		% Financial Progress	
									Target	Actual	Target	Actual
G1	Rehabilitation/ Improvements of 65 Km of rural roads in the Galle District - Contract 1 including Performance Based Maintenance for three years	64.6	K.D.Ebert & Sons Holdings (Pvt.) Ltd	18-May-15	18-May-17 / 18-May-20	1,458.06	562	81.2%	85.1%	60.0%	84.8%	64.8%
G2	Rehabilitation/ Improvements of 63 Km of rural roads in the Galle District - Contract 2 including Performance Based Maintenance for three years	66.1	K.D.A. Weerasinghe & Co (Pvt) Ltd	18-May-15	18-May-17 / 18-May-20	1,483.14	562	81.2%	76.1%	76.3%	76.9%	77.3%
G3	Rehabilitation/ Improvements of 74 Km of rural roads in the Galle District - Contract 3 including Performance Based Maintenance for three years	70.6	K.D.A. Weerasinghe & Co (Pvt) Ltd	18-May-15	18-May-17 / 18-May-20	1,733.44	562	81.2%	69.0%	81.3%	71.7%	87.5%
M1	Rehabilitation/ Improvements of 98 Km of rural roads in the Matara District - Contract 1 including Performance Based Maintenance for three years	98.0	CML-MTD Construction Ltd	18-May-15	18-May-17 / 18-May-20	2,315.35	562	81.2%	90.2%	84.9%	89.7%	94.7%
M2	Rehabilitation/ Improvements of 66 Km of rural roads in the Matara District - Contract 2 including Performance Based Maintenance for three years	64.9	K.D.Ebert & Sons Holdings (Pvt.) Ltd	18-May-15	18-May-17 / 18-May-20	1,803.30	562	81.2%	92.1%	78.0%	87.6%	58.5%

M3	Rehabilitation/ Improvements of 56 Km of rural roads in the Matara District - Contract 3 including Performance Based Maintenance for three years	54.5	K.D.Ebert & Sons Holdings (Pvt.) Ltd	18-May-15	18-May-17 / 18-May-20	1,207.60	562	81.2%	84.5%	71.2%	91.9%	79.2%
Contract No.	Description	Length of Road (km)	Contractor	Commencement Date	Scheduled Completion Date /3 Yr Maintenance	Accepted Contract Amount (Rs. Mil)	Days Worked	Period Elapsed (%)	% Physical Progress		% Financial Progress	
H1	Rehabilitation/ Improvements of 72 Km of rural roads in the Hambantota District - Contract 1 including Performance Based Maintenance for three years	69.2	K.D.A. Weerasinghe & Co (Pvt) Ltd	18-May-15	18-May-17 / 18-May-20	1,583.59	562	81.2%	68.6%	59.1%	71.8%	71.4%
H2	Rehabilitation/ Improvements of 60 Km of rural roads in the Hambantota District - Contract 2 including Performance Based Maintenance for three years	56.2	CML-MTD Construction Ltd	18-May-15	18-May-17 / 18-May-20	1,210.33	562	81.2%	85.0%	85.0%	85.2%	72.0%
H3	Rehabilitation/ Improvements of 42 Km of rural roads in the Hambantota District - Contract 3 including Performance Based Maintenance for three years	41.6	R.R Construction (Pvt.) Ltd	18-May-15	18-May-17 / 18-May-20	1,052.14	562	81.2%	78.3%	86.5%	75.0%	67.3%
Total		585.7				13,846.95			81.7%	75.9%	81.9%	76.0%


Table 2.2: Contractor Submittals

Description	G1	G2	G3	M1	M2	M3	H1	H2	H3
Work Program / Cash Flow	Approved on 06-Nov-2015	Approved on 12-Nov-2015	Approved on 12-Nov-2015	Approved on 30-Nov-2015	Approved on 06-Nov-2015	Approved on 06-Nov-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015
Method Statements excluding Bridges	Approved on 06-Nov-2015	Approved on 12-Nov-2015	Approved on 12-Nov-2015	Approved on 30-Nov-2015	Approved on 30-Nov-2015	Approved on 30-Nov-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015
Method Statement for Bridges	Submitted (3Nos)	Submitted (2Nos)	Submitted (5Nos)	To be Submitted (3 No)	NA	NA	To be Submitted (2Nos)	To be Submitted (3Nos)	NA
Quality Assurance Plan	Approved on 06-Nov-2015	Approved on 12-Nov-2015	Approved on 12-Nov-2015	Approved on 22-Oct-2015	Approved on 22-Oct-2015	Approved on 22-Oct-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015
Environmental Management Action Plan	Final Report Approved on 21-Sep-2015	Final Report Approved on 06-Nov-2015	Final Report Approved on 22-Oct-2015	Final Report Approved on 28-Sep-2015	Final Report Approved on 19-Oct-2015	Final Report Approved on 02-Oct-2015	Final Report Approved on 17-Sep-2015	Final Report Approved on 14-Sep-2015	Final Report Approved on 17-Sep-2015
Safety Plan	Approved on 06-Nov-2015	Approved on 12-Nov-2015	Approved on 12-Nov-2015	Approved on 22-Oct-2015	Approved on 22-Oct-2015	Approved on 22-Oct-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015	Approved on 17-Nov-2015

NA – Not Applicable

Table 2.3: G1 Asphalt Progress Bar Chart

Serial No	DSD	Road ID	Road Name	Road Category	Length (km)	Progress up to End of December 2016										
						1km	2km	3km	4km	5km	6km	7km	8km	9km	10km	
1	Neluwa	1	Mavita - Dooliella Road	PS	6.2											
2		2	Batuwangala - Ehalapitiya	PS	1.1											
3		3	Madagama - Ihalamadagama - Puswelkada - Madeegama - Bopagoda	PS	7.3											
4		4	Danawala - Mawita	PS	3.7											
5	Tawalama	5	Batahena - Kudagalpola - Habarakada	PS	9.6											
6		6	Dharmapala Vidyalaya - Dunhena	PS	1.2											
7		7	Habarakada - Ibbawala Yattapatha	PS	2.9											
8		8	Kumburagoda - Mandalapura	PS	6.4											
9		9	Halwitigala - Janapadaya - Tawalama Mukalana	PRDA	2.8											
10		11	Mandalapura 12th mile post	PS	1.8											
11	Niyagama	28	Kimbulawala - Porawagama Road	PS	3.9											
12		29	Hattaka - Pityagala North Sasanathilaka Mawatha	PS	3.4											
13	Nagoda	30	Kurupanawa Maliban Junction - Old Samurddhi Building Via Polkella	PS	1.2											
14		31	Udugama - Kothalawala Rd	PS	8.0											
15		32	Udugama - Aluthwatta	PS	5.1											
TOTAL					64.6											

 Road Works in Progress (60.6km / 13Roads)



 Asphalt Completed (28.8km)

Table 2.3.1: G1 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length km	Clearing and Grubbing, km	Excavation for Widening, km	Embankment for Widening, km	Sub-Base for Widening, km	GS Shoulder km	Aggregate Base Course, km	MC 30 Prime Coat km	Asphalt Wearing Course km
Neluwa	PS	1	6.2	6.2	6.2	5.8	6.1	5.6	6.0	5.7	5.6
	PS	2	1.1	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1
	PS	3	7.3	7.4	7.4	3.5	6.8	2.7	6.8	6.4	6.4
	PS	4	3.7	3.7	3.7	3.5	3.7	2.2	3.7	3.7	3.7
Tawalama	PS	5	9.6	9.6	9.6	5.0	4.5	4.7	4.8	4.3	4.2
	PS	6	1.2	1.2	1.2	-	-	-	-	-	-
	PS	7	2.9	2.9	2.9	0.3	-	-	-	-	-
	PS	8	6.4	6.4	6.4	4.8	4.1	3.2	4.1	3.8	3.8
	PRDA	9	2.8	0.2	0.2	-	-	-	-	-	-
	PS	11	1.8	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7
Niyagama	PS	28	3.9	3.8	3.7	3.1	2.5	1.2	2.0	2.0	1.9
	PS	29	3.4	3.5	3.5	0.8	1.2	-	-	-	-
Nagoda	PS	30	1.2	1.2	1.2	0.9	0.7	0.6	0.5	0.4	0.4
	PS	31	8.0	8.1	8.1	0.8	0.1	0.8	-	-	-
	PS	32	5.1	3.9	3.5	2.8	0.7	2.8	-	-	-
Totals:			64.6	60.9	60.3	34.0	33.1	26.3	30.7	29.2	28.8
% of Completion:				94.4%	93.5%	52.8%	51.3%	40.8%	47.5%	45.2%	44.7%

Table 2.4: G2 Asphalt Progress Bar Chart

Serial No	DSD	Road ID	Road Name	Road Category	Length (km)	Progress up to End of December 2016							
						0km	2km	3km	4km	5km	6km	7km	8km
1	Habaraduwa - Imaduwa	12	Mayakaduwa - Kombala Temple - Wadiyadeniya - Hiranpandala	PS	0.8	<div></div>							
2		13	Kabarasgala Badipita Puswellakula Hengaswita Galpottatha Kombala Junction School 10th mile post thuyabarahena Rd	PS	7.1	<div></div>							
3		14	Taramulla - Allalegoda Rd	PS	2.3	<div></div>							
4		15	Gallatiya - Jayasumanaramaya, Goviyapana Junction	PS	1.5	<div></div>							
5		16	Pargiri hena -Mayakaduwa	PRDA	5.8	<div></div>							
6		17	Tiyangoda - Lannudura - Pitiduwa	PRDA/PS	3.0	<div></div>							
7		18	Dodanpe - Padunoruwa	PS	2.0	<div></div>							
8		19	Kombala - Halamulla - Niriwella	PS	3.5	<div></div>							
9		20	Mayakaduwa - Wadiyakanda, Makaduwa Temple	PS	5.2	<div></div>							
10	Bope - Poddala	22	Hapugala - Eriyagaha Junction	PRDA	2.9	<div></div>							
11		23	Eelirisinghe Mawatha - Navinna	PS	0.9	<div></div>							
12	Akmeemara	24	Kapuhempala, Ambalamakanda, Hiridumpala, Haliwala	PS	1.8	<div></div>							
13		25	Poorwaratta Road Bataduwa	PS	2.0	<div></div>							
14		26	Bataduwa - Sudarmaramaya Rd	PS	1.0	<div></div>							
15		27	Hiyara East - School Road via Kaluwala Badipita Hawpe	PS	1.2	<div></div>							
16	Yakkalamulla	33	Yakkalamulla Via Udumala gala to Nakiyadeniya	PS	3.9	<div></div>							
17		34	Jarabitha Tea Factory - Nawunupala School via Muslim Janapathaya	PS	3.3	<div></div>							
18		35	Newala Community Hall to Goluwanal hena via Ellagawa	PS	5.1	<div></div>							
19	Baddegama	36	Wackwella - Ginnaallegaha	PRDA	6.9	<div></div>							
20		37	K. G. Palis Mawatha	PS	2.0	<div></div>							
21		38	Waulagala - Batakatiya	PS	2.0	<div></div>							
22		39	Nagashandiya - Halpathota	PS	1.1	<div></div>							
TOTAL					66.1								

 Road Works in Progress (62.0km / 19 Roads)


 Asphalt Completed (4.1km)

Table 2.4.1: G2 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length (km)	Clearing and Grubbing (km)	Excavation for Widening (km)	Embankment for Widening (km)	Sub-Base for Widening (km)	Earthen Shoulder (km)	Aggregate Base Course (km)	MC 30 Prime Coat (km)	Asphalt Wearing Course (km)	Concrete Pavement (km)
Habaraduwa - Imaduwa	PS	12	0.8	0.9	0.9	-	0.9	-	0.9	0.7	0.7	0.2
	PS	13	7.1	7.1	7.1	0.3	7.1	-	7.0	7.0	6.6	0.4
	PS	14	2.3	2.3	0.2	-	-	-	-	-	-	0.3
	PS	15	1.5	1.5	1.5		1.5		1.5	1.5	1.5	
	PRDA	16	5.8	5.8	5.8	3.5	5.8	3.5	5.1	5.1	5.1	
	PRDA/PS	17	3.0	3.1	3.1	1.5	3.1	1.0	3.1	3.1	3.1	
	PS	18	2.8	1.3	1.3	-	1.3	-	1.3	1.3	1.3	
	PS	19	3.5	3.4	3.4	-	3.4	-	3.4	3.4	2.7	0.6
Bope - Poddala	PS	20	5.2	1.4	1.4	-	1.4	-	1.4	1.4	1.4	
	PRDA	22	2.9	2.9	2.9	2.8	2.9	2.9	2.9	2.9	2.9	
Akmeemana	PS	23	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	
	PS	24	1.8	1.8	1.8	-	1.8		1.8	1.8	0.7	
	PS	25	2.0	-	-	-	-	-	-	-	-	
	PS	26	1.0	-	-	-	-	-	-	-	-	
Yakkalamulla	PS	27	1.2	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	
	PS	33	3.9	4.0	4.0		4.0		4.0	4.0	3.2	0.8
	PS	34	3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.2	
	PS	35	5.1	1.8	-	-	-	-	-	-	-	
Baddegama	PRDA	36	6.9	7.0	7.0	7.0	7.0	7.0	7.0	6.7	6.7	
	PS	37	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
	PS	38	2.0	0.6	0.6	-	-	-	-	-	-	
	PS	39	1.1	-	-	-	-	-	-	-	-	
Total:			66.1	52.2	48.2	22.5	47.4	18.5	46.5	46.0	42.8	2.3
% Completed:				78.9%	73.0%	34.0%	71.8%	27.9%	70.3%	69.6%	68.2%	

Table 2.5: M1 Asphalt Progress Bar Chart

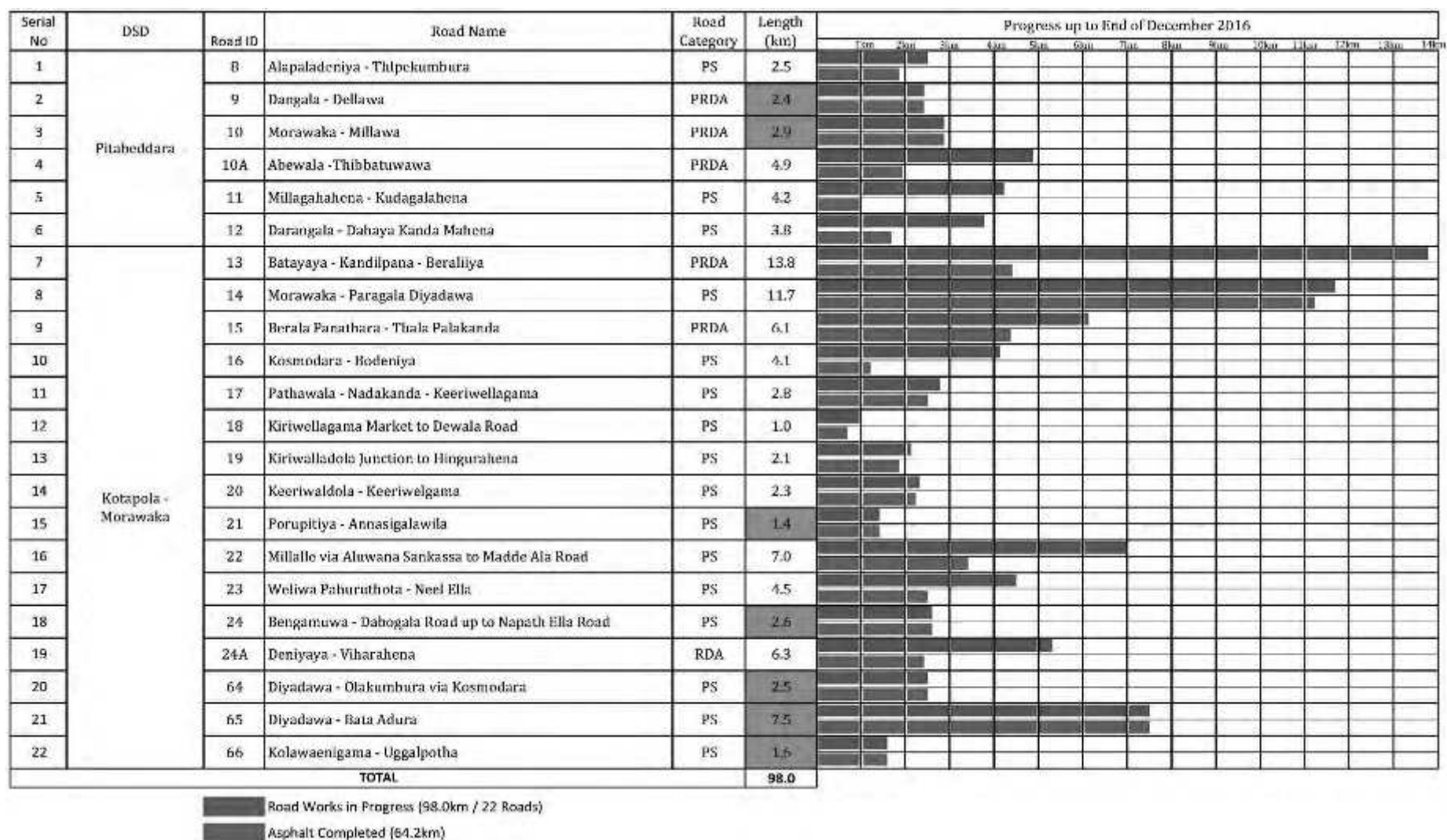



Table 2.5.1: M1 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length (km)	Clearing and Grubbing (km)	Excavation for Widening (km)	Embankment for Widening (km)	Sub-Base for Widening (km)	Earthen Shoulder (km)	Aggregate Base Course (km)	MC 30 Prime Coat (km)	Asphalt Wearing Course (km)
Pitabeddara	PS	8	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0	1.9
	PRDA	9	2.4	2.4	2.4	2.4	2.4	2.2	2.4	2.4	2.4
	PRDA	10	2.9	2.9	2.9	2.9	2.9	2.0	2.9	2.9	2.9
	PRDA	10A	4.5	4.9	4.9	4.5	2.6	-	2.6	1.9	1.9
	PS	11	4.0	4.0	4.0	3.0	2.2	-	2.2	1.0	1.0
	PS	12	3.0	3.7	3.5	2.7	3.0	-	3.0	2.2	1.7
Kotapola-Morawaka	PRDA	13	9.5	11.5	11.5	4.0	5.0	2.8	5.0	4.1	4.4
	PS	14	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
	PRDA	15	6.0	6.1	6.1	4.6	4.6	2.6	4.6	4.4	4.4
	PS	16	3.5	3.5	3.5	1.8	1.8	-	1.8	1.7	1.2
	PS	17	2.8	2.8	2.8	2.5	2.5	2.0	2.5	2.5	2.5
	PS	18	1.2	1.2	1.2	0.8	0.8	-	0.8	0.7	0.7
	PS	19	2.1	2.1	2.1	2.1	1.9	1.5	1.9	1.9	1.9
	PS	20	2.3	2.3	2.3	2.3	2.2	2.1	2.2	2.2	2.2
	PS	21	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	PS	22	5.5	5.5	5.5	3.2	3.8	1.0	3.8	3.6	3.4
	PS	23	4.2	4.2	4.0	3.5	2.5	2.0	2.5	2.5	2.5
	PS	24	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	RDA	24a	5.7	6.0	6.0	2.1	2.6	-	2.6	2.5	2.4
	PS	64	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	PS	65	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	PS	66	1.6	1.6	1.6	1.6	1.6	1.3	1.6	1.6	1.6
Totals:			98.0	92.4	92.0	71.6	69.5	46.7	69.5	65.2	64.2
% of Completion:				94.3%	93.9%	73.1%	70.9%	47.6%	70.9%	66.6%	65.5%

Table 2.6: M2 Asphalt Progress Bar Chart

Serial No	BSD	Road ID	Road Name	Road Category	Length (km)	Progress up to End of December 2016							
						1km	2km	3km	4km	5km	6km	7km	8km
1	Akuressa	1	Kohugoda Road	PS	5.5								
2		2	Poramba School - Diyatalpe Junction via Hikkoda Road	PS	3.7								
3		3	Iluppella - Mahingoda - Bopitiya Road	PS	5.3								
4		4	Akuressa - Katanavila Road	RDA	7.2								
5		5	Paraduwa - Pahuranwila Road	PS	2.4								
6		6	Bangama Junction - Dola Mawatha Road	PS	2.5								
7	Athuraliya	7	Sri Sudarshi Pirivena Junction to Bibulewela Shramadana Road	PS	3.8								
8	Pasgoda	40	Urawa - Pilikannahena Thalagashenna Rotuba Road	PS	2.6								
9		41	Lew Pothideniya Road	PS	2.7								
10		42	Urubokka - Pothideniya Road	PRDA	6.5								
11	Mulatiyana	49	Atapettukanda Hendiya - Pothuvila Road	PS	1.5								
12		50	Wilpita - Illegashena via Ransagoda Galpothitha Junction	PS	7.9								
13	Malimboda	51	Agawaththa Thalagahagoda for Jayawardhana Road	PS	1.1								
14		52	Ogaspe Junction to Maligathenna Aththuduwa Road	PS	0.8								
15		53	Pahattu Kade to Nagoda via Welihinda Junction	PS	0.9								
16		54	Sulthangoda Kotavila via Kirimatimulla Road(1.3km)	PS		Omitted							
17		55	Sulthangoda - Welihinda Road	PS	1.3								
18	Hakmana	56	Kongala D. C. Aheywuckrama Road	PS	2.4								
19		57	Obadakanda Badahadda Road	PS	4.5								
20		57A	Thumbe - Kongala Road	PRDA	2.3								
TOTAL					64.9								

 Road Works in Progress (46.6km / 14 Roads)


 Asphalt Completed (36.3km)

Table 2.6.1: M2 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length (km)	Clearing and Grubbing (km)	Excavation for Widening (km)	Embankment for Widening (km)	Sub-Base for Widening (km)	Earthen Shoulder (km)	Aggregate Base Course (km)	MC 30 Prime Coat (km)	Asphalt Wearing Course+Concrete Pavement (km)
Akuressa	PS	1	5.5	-	-	-	-	-	-	-	-
	PS	2	3.7	3.7	3.7	3.3	3.3	1.5	3.6	3.0	3.2
	PS	3	5.3	4.8	4.8	3.2	3.5	0.6	3.3	3.2	3.1
	RDA	4	7.2	7.2	7.2	7.1	6.9	1.7	6.9	6.9	6.8
	PS	5	2.4	2.3	2.3	2.0	2.0	0.1	1.9	1.9	1.8
	PS	6	2.5	2.6	2.6	2.6	2.6	0.7	2.6	2.6	2.6
Athuraliya	PS	7	3.8	3.8	3.8	3.4	1.8	1.2	2.5	2.3	2.3
Pasgoda	PS	40	2.6	-	-	-	-	-	-	-	-
	PS	41	2.7	2.7	2.7	2.7	2.7	2.4	2.6	2.6	2.6
	PRDA	42	6.5	6.5	6.5	6.5	6.5	5.9	6.5	6.5	6.5
Mulatiyana	PS	49	1.5	-	-	-	-	-	-	-	-
	PS	50	7.9	-	-	-	-	-	-	-	-
Mabimboda	PS	51	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	PS	52	0.8	-	-	-	-	-	-	-	-
	PS	53	0.9	0.9	0.5	0.5	-	-	-	-	-
	PS	54	-	Omitted							
	PS	55	1.3	1.2	0.5	0.2	-	-	-	-	-
Hakmana	PS	56	2.4	2.4	2.4	2.4	2.4	1.1	2.4	2.1	2.4
	PS	57	4.6	4.6	4.0	4.0	4.0	2.8	1.8	1.8	1.8
	PRDA	57A	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3
Totals:			64.9	46.0	44.4	41.2	39.0	21.1	37.4	36.1	36.5
% of Completion:				70.9%	68.4%	63.5%	60.1%	32.5%	57.6%	55.6%	56.2%

Table 2.7: M3 Asphalt Progress Bar Chart

Serial No	DSD	Road ID	Road Name	Road Category	Length (km)	Progress up to End of December 2016				
						1km	2km	3km	4km	5km
1	Weligama - Welipitiya	25	Kananke - Polhene - Nagashena - Puhulhene Road	PS	2.1					
2		26	Dehigahahena - Udukawa	PS	2.5					
3		27	Deruwala - Kapuwatta Jaya Wijayagama	PS	2.2					
4		28	Yatipila - Udalahena - Henwala	PS	1.8					
5		29	Upupila Junction - Udupila Vihandagoda	PS	1.3					
6		30	Ibbawala - Panchaliya - Andugoda	PRDA	2.3					
7		31	Ibbawala - Ranamaduuraagama	PS	1.3					
8		32	Welipitiya Junction - Addarawela	PS	2.3					
9		33	Jahuregoda - Bodirukkaramaya	PS	2.3					
10		34	Pathegama - Kudalumulla for Kurubawila - Pitaduwa Thdukola Gammadda	PS	2.3					
11		35	Jamburagoda Heelelgoda Junction - Bodduwa	PS	1.9					
12		36	Kananke police station Dewelagoda	PS	1.6					
13		37	Kotavila Kudawella Sulthanagoda	PS	2.0					
14		38	Udukawa Baduravila Rd	PS	1.4					
15		39	Welipitiya Junction - Munamalpe Udukawa	PRDA	2.5					
16	Kamburupitiya	43	Baragammulla Moragasmandiya	PS	2.8					
17		44	Narangalgoda - Palliya Gedara	PS	2.3					
18	Kirinda - Puhulwella	45	10th Mile Post - Hakmana Gedara Kade	PS	3.4					
19		46	Karatota School - Gewal Dahaya	PS	2.5					
20		47	Kubalgoda Seelaratana Mawatha	PS	1.7					
21	Thihagoda	48	Samagi Mawatha via Siridewapriya Mawatha	PS	2.7					
22	Devinuwara	58	Sri Piyarathna Mawatha [Kakuluwangoda Mawatha]	PS	1.9					
23		59	Ashokarama Rd	PS	1.7					
24	Dickwella	60	Degigewatta Hakalamulla	PS	1.3					
25		61	Kaluhena Kolaniya Rd	PS	4.4					
TOTAL					54.5					

Road Works in Progress (48.6km / 23Roads)

Asphalt (including Concrete Pavement) Completed (37.3km)

Table 2.7.1: M3 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length (km)	Clearing and Grubbing (km)	Excavation for Widening (km)	Embankment for Widening (km)	Sub-Base for Widening (km)	Earthen Shoulder (km)	Aggregate Base Course, (km)	MC 30 Prime Coat (km)	Asphalt Wearing Course (km)	Concrete Pavement (km)
Weligama – Welipitiya	PS	25	2.1	2.1	2.1	-	2.1	-	2.1	0.6	0.6	1.5
	PS	26	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	0.1
	PS	27	2.2	2.2	2.2	1.3	2.2	1.6	2.2	2.2	2.2	-
	PS	28	1.8	1.8	1.8	0.3	1.8	-	1.8	1.8	1.6	-
	PS	29	1.3	1.3	0.6	-	0.6	-	0.4	0.4	0.3	-
	PRDA	30	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.1	2.1	0.2
	PS	31	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	-
	PS	32	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.1	2.1	0.2
	PS	33	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0.7	0.7	1.6
	PS	34	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9	1.9	0.4
	PS	35	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.4	1.4	0.4
	PS	36	1.6	1.6	1.6	-	1.6	0.7	1.6	1.6	1.6	-
	PS	37	2.0	2.0	2.0	0.5	2.0	0.2	2.0	1.4	1.4	0.6
	PS	38	1.4	1.4	1.4	1.1	1.4	0.1	1.4	0.9	0.9	0.4
	PRDA	39	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.3	2.3	0.2
Kamburupitiya	PS	43	2.8	1.6	0.6	-	-	-	-	-	-	-
	PS	44	2.3	2.3	2.3	1.3	1.2	-	1.0	-	-	0.6
Kirinda – Puhulwella	PS	45	3.4	-	-	-	-	-	-	-	-	-
	PS	46	2.5	-	-	-	-	-	-	-	-	-
	PS	47	1.7	1.7	1.7	1.7	1.7	1.4	1.7	1.7	1.6	-
Thihagoda	PS	48	2.7	2.7	2.8	2.4	1.6	-	0.6	-	-	-
Devinuwara	PS	58	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.5	0.4
	PS	59	1.7	1.8	1.3	1.6	1.3	1.1	1.3	1.3	1.1	-
Balapitiya	PS	60	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.1	-
	PS	61	4.4	4.4	4.4	4.4	4.4	0.9	4.3	3.7	2.6	-
Total			54.5	47.4	45.2	35.0	42.3	25.1	40.8	32.6	30.7	6.6
% of Completion:				86.9%	82.9%	64.2%	77.6%	46.0%	74.9%	59.8%	68.5%	

Table 2.8: H1 Asphalt Progress Bar Chart

Serial No	DSID	Road ID	Road Name	Road Category	Length (km)	Progress up to End of December 2016										
						0km	1km	2km	3km	4km	5km	6km	7km	8km	9km	10km
1	Hambanthota	8	Boralukanda Junction Uda Beragama / Maha Ara Junction	PRDA	3.2											
2		9	4 Ela / School Road	PS	0.9											
3		10	Boondala / Meda Para	PS	1.5											
4		11	Boralukanda Cooperative / Boralukanda Handiya (Laksiri Road)	PRDA	0.8											
5		12	Godawaya Junction / Temple Road	PS	1.6											
6		13	Manchipawa Layma Handiya Road	PS	0.8											
7	Tissa	14	Magama Road	PRDA	8.0											
8		15	Nadigamvila Vithapura Road	PS		Omitted as previously asphalted.										
9		16	Sabapathikade / Gonamuwa Hospital Road	PS	1.9											
10		17	Ikkapallama School Road	PS	1.9											
11	Lamugamwehera	18	Diya Badiya Road	PS	1.1											
12		19	Weeravila Ara 01st Cross Road	PS	1.2											
13		20	Itanwewa 02nd Cross Road	PS	0.6											
14		21	Piyapala Mawatha	PS	2.2											
15	Ambalanthota	26	Erminiya / Hadunkatuwa Road	PS	3.6											
16		27	Thuduwa Mulla / Habarakathawala Goda Koggala Road	PS	6.8											
17		28	Hathagala Handiya / Deniya Pinama / Athbatuwa / Hanunkatuwa	PS	9.7											
18		29	Ridiyagama Livestock Farm / Gangawalana Road	PS	7.6											
19		30	Ridiyagama / Kahabodawila / Thuduwa Mulla Road (1km belong to PRDA)	PS/PRDA	6.2											
20	Sooriyawewa	36	Koggala Sooriyawewa Road	PRDA	7.3											
TOTAL					66.9											



 Road Works In Progress (61.8km / 15 Roads)
  Asphalt Completed (40.5km)

Table 2.8.1: H1 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length (km)	Clearing and Grubbing (km)	Excavation for Widening (km)	Embankment for Widening (km)	Sub-Base for Widening (km)	Earthen Shoulder (km)	Aggregate Base Course (km)	MC 30 Prime Coat (km)	Asphalt Wearing Course (km)
Hambantota	PRDA	8	3.2	3.2	3.2	3.2	3.2	0.5	2.9	2.8	2.7
	PS	9	0.9	0.9	0.9	0.9	0.9	0.6	0.9	0.9	0.9
	PS	10	1.5	1.5	1.5	1.5	1.5	1.2	1.4	1.2	1.1
	PRDA	11	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	PS	12	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	PS	13	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Tissa	PRDA	14	8.0	6.0	4.3	3.9	3.8	0.5	3.6	3.1	3.1
	PS	15	Omitted								
	PS	16	1.9	1.6	1.3	1.3	1.3	1.3	1.3	1.1	1.0
	PS	17	1.9	-	-	-	-	-	-	-	-
Lunugamvehera	PS	18	1.1	-	-	-	-	-	-	-	-
	PS	19	1.2	-	-	-	-	-	-	-	-
	PS	20	0.6	-	-	-	-	-	-	-	-
	PS	21	2.2	-	-	-	-	-	-	-	-
Ambalamtota	PS	26	3.6	3.0	1.3	1.3	1.1	-	-	-	-
	PS	27	6.8	-	-	-	-	-	-	-	-
	PS	28	9.7	6.6	5.6	5.5	5.5	5.5	5.5	5.1	5.0
	PS	29	7.6	9.0	8.2	8.1	8.1	6.1	8.1	7.6	7.6
	PS/PRDA	30	6.2	6.1	5.8	5.8	5.6	-	5.4	5.1	5.1
Sooriyawewa	PRDA	36	7.3	-	-	-	-	-	-	-	-
Total:			66.9	54.9	48.5	47.5	46.9	26.6	44.5	41.2	40.5
% of Completion:				82.0%	72.5%	70.9%	70.2%	39.7%	66.4%	61.7%	60.5%

Table 2.9: H2 Asphalt Progress Bar Chart

Serial No	DSD	Road ID	Road Name	Road Category	Length (km)	Progress up to End of December 2016															
						1km	2km	3km	4km	5km	6km	7km	8km	9km	10km	11km	12km	13km	14km	15km	16km
1	Beliatta	1	Pattiyawela - Pallattara	PS	3.9																
2		2	Upasakagoda well - Water Tank	PS	1.2																
3		3	Edirisinghe Mawatha	PS	1.2																
4		4	Polapathe watta road	PS	1.0																
5		5	Siyabalapa hena	PS	1.3																
6		6	Anamaduwa - Aranwela	PS	1.9																
7		7	Pattiyawela - Tharapeliya	PS	1.1																
8	Angunukolape lassa	22	Uswewa - Binkama Road	PRDA	15.1																
9		23	Dambarella Co-op - Kanabandi Area	PS	4.5																
10		24	Gajanayakagama Debokkawa junction - Gajanayakagama junction	PS	2.0																
11		25	Uswewa via Pahalagama sooriya pokuna junction	PS	6.4																
12	Thangalla	33	Pattiyapola - Marakolliya	PS	3.1																
13		34	Kadurupokuna - Seenimodara road	PS	2.6																
14		35	Pattiyapola - Akkarawela Thalunna	PS	4.2																
15	Okewella	41	Pallekanda junction - Udahatana Gambaddala	PS	1.1																
16		42	Sumihirigama Co-op city - Kulula Mandiya Hena Mahamadiththa	PS	1.9																
17		43	Kadigantuwa Palamkada to Ekamuthu mawatha to Batalawatta	PS	3.7																
18		44	Gonadenihena kanda via Rajapaksha mawatha	PS	0.9																
TOTAL					57.1																




 Road Works in Progress (49.7km / 12 Roads)
 Asphalt Completed (44.8km)

Table 2.9.1: H2 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length (km)	Clearing and Grubbing (km)	Excavation for Widening (km)	Embankment for Widening (km)	Sub-Base for Widening (km)	Earthen Shoulder (km)	Aggregate Base Course (km)	MC 30 Prime Coat (km)	Asphalt Wearing Course & Concrete Pavement (km)
Beliatta	PS	1	3.9	3.9	3.9	3.9	3.9	3.0	3.9	3.9	3.9
	PS	2	1.2	-	-	-	-	-	-	-	-
	PS	3	1.2	1.3	1.0	0.7	0.4	0.4	0.4	0.4	0.4
	PS	4	1.0	0.6	0.6	0.5	-	-	-	-	-
	PS	5	1.3	-	-	-	-	-	-	-	-
	PS	6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	PS	7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Angunukolapelassa	PRDA	22	15.1	15.1	15.1	15.1	15.1	14.5	15.1	15.1	15.1
	PS	23	4.5	4.5	4.5	4.5	4.5	3.7	4.5	4.3	4.3
	PS	24	2.0	1.9	1.9	1.9	1.9	0.9	1.8	1.3	1.3
	PS	25	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Tangalle	PS	33	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
	PS	34	2.6	2.6	2.6	2.6	2.6	2.5	2.6	2.6	2.6
	PS	35	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Okewella	PS	41	1.1	-	-	-	-	-	-	-	-
	PS	42	1.9	-	-	-	-	-	-	-	-
	PS	43	3.7	2.4	1.4	1.4	1.2	0.9	1.1	0.7	0.7
	PS	44	0.9	-	-	-	-	-	-	-	-
Total:			57.1	48.9	47.6	47.1	46.2	42.6	46.0	44.9	44.8
% of Completion:				85.6%	83.3%	82.5%	81.0%	74.5%	80.6%	78.6%	78.5%

Table 2.10: H3 Asphalt Progress Bar Chart

Serial No	DSD	Road ID	Road Name	Road Category	Length (km)	Progress up to End of December 2016								
						1km	2km	3km	4km	5km	6km	7km	8km	9km
1	Katuwana	31	Thorakolayaya - Gammampara Road	PS	3.0	<div></div>	<div></div>	<div></div>						
2		32	Welipitiya Ambagasara via Siyarapitiya Road	PRDA	6.8	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
3	Walasmulla	37	Ela Banteka Para	PS	4.6	<div></div>	<div></div>	<div></div>	<div></div>					
4		38	Bariyar Junction to Galwadiya 4th Mile Post	PS	2.6	<div></div>	<div></div>	<div></div>						
5		39	Warapitiya Hospital to Karadeniya Road	PS	3.2	<div></div>	<div></div>	<div></div>						
6		40	School to Ela Banteka Para	PS	2.3	<div></div>	<div></div>	<div></div>						
7	Weeraketiya	45	Kakunayaya Market to Bhuweliara Road	PS	1.1	<div></div>	<div></div>							
8		46	Maregawa Road	PS	0.8	<div></div>	<div></div>							
9		47	Kudabibula Lidagawa Road	PS	1.1	<div></div>	<div></div>							
10		48	Okandayaya Lidagawa Road	PS	1.5	<div></div>	<div></div>							
11		49	Gonadeniya / Kaluwagaha yaya / Talawa Road	PS	5.2	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>				
12		50	Perahara Mawatha / Mulkirigala School Road	PS	1.4	<div></div>	<div></div>							
13		51	Katuwewa to Mulgirigala School Road	PS	2.8	<div></div>	<div></div>	<div></div>						
14		52	Wataranuma Road	PS	3.3	<div></div>	<div></div>	<div></div>	<div></div>					
TOTAL					41.6	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

 Road Works in Progress (41.6km / 14 Roads)


 Asphalt Completed (34.7km)

Table 2.10.1: H3 Detail Physical Progress on Road Works

D.S.D	Road Category	ROAD ID No	Length (km)	Clearing and Grubbing (km)	Excavation for Widening (km)	Embankment for Widening (km)	Sub-Base for Widening (km)	Earthen Shoulder (km)	Aggregate Base Course (km)	MC 30 Prime Coat (km)	Asphalt Wearing Course (km)
Katuwana	PS	31	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	PRDA	32	8.8	8.2	8.2	7.2	7.2	3.0	6.5	5.4	4.8
Walasmulla	PS	37	4.6	4.5	4.5	4.5	4.5	4.2	4.5	4.4	4.3
	PS	38	2.6	2.6	2.6	2.4	2.4	-	2.4	2.4	2.4
	PS	39	3.2	2.7	2.7	2.5	2.5	1.2	2.3	2.0	2.0
	PS	40	2.3	2.3	2.3	1.5	1.4	1.4	1.4	1.4	1.4
Weeraketiya	PS	45	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	PS	46	0.8	0.8	0.8	0.8	0.8	-	0.8	0.8	0.8
	PS	47	1.1	1.0	1.0	0.9	0.9	-	0.9	0.9	0.9
	PS	48	1.5	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4
	PS	49	5.2	5.2	5.2	5.2	5.2	4.7	5.2	5.2	5.2
	PS	50	1.4	1.9	1.9	1.4	1.4		1.4	1.4	1.4
	PS	51	2.8	2.8	2.8	2.8	2.8	2.5	2.8	2.8	2.8
	PS	52	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Total:			41.6	40.6	40.6	37.9	37.8	25.8	36.9	35.4	34.7
% of Completion:				97.6%	97.6%	91.0%	90.8%	61.9%	88.6%	85.0%	83.3%

3. Compliance with Environment Safeguards Requirements Respect to Loan Documents

3.1 Environmental Safeguard Compliance Monitoring Complying with Environmental Assessment Review Framework (EARF)

Environmental safeguard is one of the major compulsory component of the iROAD(SP) project and the EARF has been prepared to guide selection, screening, categorization, impact assessments, project implementation and monitoring of environment safeguards according to requirements of the GoSL as well as the ADB Safeguard Policy Statement (SPS) for succeeding tranches and their project roads under the investment program. Following requirements must be fulfilled in the as the part of the project;

1. The National Environment Act (NEA) No. 47 is the key environmental policy framework, which is administered through the Central Environment Authority (CEA) of the Ministry of Mahaweli Development and Environment.
2. Ensure that the Project is complying with ADB's SPS (2009) (TOR 15b (ii)) & EARF for the iROAD project.
3. Assist and guide the Implementing Agency (IA) to ensure compliance of environmental and social safeguards (TOR 15b (ii)).
4. If required, collect baseline data to prepare a Land Acquisition and Resettlement Plan (LARP) and other impact assessments carried out in accordance with ADB's SPS (2009) and relevant laws and regulations of the host country (TOR 15 b (iii), (iv) & (v)).
5. If land donation is necessary, assist IA to prepare and supervise the implementation of the land donation and title transfer process as per Resettlement Framework (RF) (TOR 15 b(iii), (iv) & (v)) .
6. Help the Government in establishing a Grievance Redress Mechanism (GRM) and in its proper functioning and management (TOR 15b (vi)).
7. Monitor the implementation of gender action plan and ensure activities are carried out as planned and relevant baseline and monitoring database collected (TOR 15b (vii)).
8. Carryout the following duties related environmental safeguard: (a) ensure that all the environmental mitigation measures required to be implemented are incorporated in the Contract documents; (b) supervise and monitor the implementation of Environmental Management Plan (EMP); and (c) in the event of occurrence of any unexpected environmental impacts, coordinate with the Contractor and Employer to ensure that necessary mitigation measures are implemented; (d) provide technical advice to the Contractors, if necessary; (e) prepare periodic monitoring reports monthly and annually and submit to IA; and (f) facilitate grievance redress in the case of environmental related issues (TOR 15b (viii)).
9. Monitor Contractors compliance with and performance of required actions regarding Human Immunodeficiency Virus (HIV) / Acquired Immunodeficiency Syndrome (AIDS), human trafficking and labour core standards in accordance with the contract documents, such as awareness and education of labourers and workers (TOR 15b(vii) & (ix)). These requirements are fulfilled during either SAPE work stage or being complied with during construction stage.

3.2 Environment safeguards with compliance respect to Facility Administration Manual (FAM)

According to the guidelines set in Facility Administration Manual (FAM), no widening and no roads falling inside protected areas included in the project in SP.

The PIC ensured that all environment safeguard requirements under the program have implemented as required by the EARF, respective province level IEE included a standard environmental management plan (EMP), and environmental monitoring plan (EMOP). Environment checklists has completed for each road accordance with the actual physical progress. The contractor who is responsible for preparing the final detailed design of the roads, has prepared contract package specific EMPs, EMAPs, SSEMAPs and EMOPs based on the final detailed design and subjected to approved by the PIC and PIU. A provincial level IEER and a standard EMP has been prepared for SP. Contractors have prepared SSEMAPs and EMCs as required.

According to the the EMOP plan for monitoring various environment quality parameters and checked the effectiveness of the EMP. It was comprised of activities on tested quality of air, water, noise through laboratory tests and physical monitoring of problems of soil erosion, tree plantations and habitat enhancement activities carried out and occupational health and safety issues. Quality testing of air, water, noise, fauna and flora has outsourced by the contractor to recognized and approved laboratories. Pre- construction stage sampling were completed.

All required clearances, permits and licenses as applicable must have obtained by the project implementation unit (PIU) before start of construction works in the respective road sections. Permits, licenses etc. for activities such as operation of asphalt plants, quarries, borrow areas etc. have been obtained by the contractor before the implementation of the respective construction activity. RDA has obtained a conditional concurrence from CEA for SP project (Table 06.).

4. Monitoring of Environmental Compliance at Field Level

4.1 Staffing of Environment and Safety Officers

Staffing of contractor's environment and safety officers were done in systematically manner. Firstly, Curriculum Vitas (CV's) of environment and safety officers were approved by the PIC. Then PIC has given an induction to all officers regarding environmental safeguards. Finally, onsite trainings were carried out in their related contract packages. Following tables, 03 & 04 are show the recruited environment and safety officers of PIU, PIC and of each contactor packages.

Table 03. Details of the staffing and training conducted for the PIU and PIC.

Institution	Officer's Name	Designation	Mobilize Date	Demobilize Date	# Awareness Programs Participated (workshops and special meetings reg. environment safeguards)
RDA-PD office	Mis. Madushani Silva	Environment safeguard assistant	23.06.2016	-	3
PIC-TL office	Mr. Roshan K Rodrigo	Environmental Specialist	02.07.2015	-	4
	Mr. Amith Bandara	Environment officer	18.08.2015	-	7
PIC-RE-G office	Mr. Nalaka Siriwardena	Env. Assistant	05.02.2016	01.07.2016	3
	Miss. Sawini Sewwandi	Env. Assistant	01.07.2016	-	5
PIC-RE-M	Miss. Thakshila Shipadi	Env. Assistant	03.02.2016	-	6
PIC-RE-H	Miss. Lakmini Wickramasinghe	Env Assistant	17.03.2016	03.08. 2016	6
	Miss. Anuradha Wijesinghe	Env Assistant	03.08. 2016	30.09.2016	1
	Miss. S. Munasinghe	Env Assistant	01.12.2016	31.12.2016	1

Table 04. Details of the staffing and training conducted for the contractors.

Contract Package	Officer's Name	Designation	Mobilize Date	Demobilize Date	# Awareness Programs Participated (workshops and special meetings reg. environment safeguards)
G1	Mr. Udara Senananyake	Env & Safety Officer	24.09.2015	18.11.2016	7
	Mr. S.H.P.Udayanga	Env & Safety Officer	18.11.2016	-	3
G2	Mr. T.P Tharanga	Env & Safety Officer	23.09.2015	-	7
G3	Mr. Rasanga Weligala	Env & Safety Officer	24.09.2015	12.09.2016	5
	Mr. Mathisha Menuka	Env & Safety Officer	12.09.2016	31.12.2016	1
	Mr. I.V.Samantha kumara	Safety Officer	02.06.2015	-	4
M1	Mr. Ajith Kumara Ranaweera	Env Officer	23.09.2015	-	7
	Mr. P.D.N.N.Janaka	Safety Officer	06.06.2016	-	3
M2	Mr. R. Dayarathne	Env Officer	10.07.2015	03.01.2016	4
	Mr. M.A.S Maddumage	Env Officer	03.01.2016	18.11.2016	3
	Mr. M. S. Mohomad Fasly	Env Officer	18.11.2016	-	2
	Mr. O.M Senarathne	Safety Officer	02.09.2016	31.12.2016	3
M3	Mr. Prasanna Gunasekara	Env Officer	23.09.2015	-	7
	Mr. P.D.S Nissanka	Safety Officer	02.06.2015	27.02.2016	3
H1	Mr. Manjula Andrahendri	Env & Safety Officer	23.09.2015	-	7
H2	Mr. Roshan Wejesuriya	Env & Safety Officer	23.09.2015	-	7
H3	Mr. Chaturanga Hatnagoda	Env & Safety Officer	23.09.2015	08.08.2016	6

	Mr. Chaminda Pushpakumara	Env & Safety Officer	08.08.2016	-	2
--	------------------------------	-------------------------	------------	---	---

4.2 Review and Approval of EMAP/SSEMAP

General format for EMAP/SSEMAP were distributed among contactors and informed them to fill up information requested by PIC. After received drafted EMAP/SSEMAP reports, it was commented and reviewed by PIC Environmental Specialist (ES). Final EMAP/SSEMAP reports were approved by PIC/ES for construction activities (Table 05).

4.3 Preparing of Environmental Monitoring Checklist (EMC)

EMC's were prepared for each road in pre-construction and construction stages for all contact packages. Pre-construction stage EMC's were approved for all roads in each packages. Construction stage EMC's were prepared in four segments according to road construction physical progress, which was 25%, 50%, 75% and 100% (Table 05).

Table 05: Summary of EMAP/SSEMAP and EMC completed approved by PIC shows road ID's (January to December 2016)

Package	EMAP	SSEMAP	EMC					Post- Construction
			Pre- Construction	Construction stage				
					25%	50%	75%	
G1	Approved for all roads	1,2,3,4,5,6,7,8,9 11,28,29,30,31,&32	Approved for all roads	1,2,3,4,8, 11 & 28	1,2,3,4 &11	1,2,4 &11	None	None
G2	Approved for all roads	12,13,14,15,16,17 18,19,20,22,23,33 34,35,36 &37	Approved for all roads	12,13,16,22 23,36 &34	None	None	None	None
G3	Approved for all roads	40,41,42,44,44A, 48,49,51,52,53,54 56,57,58,59,60,61 62,63,64,65,66 & 67	Approved for all roads	40,41,42,43 44,44A,49,51 52,53,54,56 59, 64,65,66 & 67	40,41,42,44 44A,49,52,53 54,56,59,64, 65,66 & 67	40,41,42,44 49,53,56,59,64 65, 66 & 67	None	None
M1	Approved for all roads	8,9,10,10A,11,12 13,14,15,16,17,18 19,20,21,22,23,24 24A,64,65 &66	Approved for all roads	8,10,13,14,21 23,24,64,65 & 66	14,21,24,65, &66	None	None	None
M2	Approved for all roads	2,3,4,5,6,7,41,42 51,56,57 & 57A	Approved for all roads	2,3,4,5,6,7,41 42,50,51,56 57 &57A	2,4,5,41,42,50 51,56 & 57A	2,4,5,41,56, & 57A	None	None
M3	Approved for all roads	30,31,32,33 & ,39	Approved for all roads	26,36,37,38 60 & 61	26,37,38,59 & 61	26	None	None
H1	Approved for all roads	8,9,10,11,12,13,14 28,29,30 & 36	Approved for all roads	8,9,11,12,13 28 & 29	8,9,11,12,13 28 & 29	11,12 &13	None	None
H2	Approved for all roads	1,2,3,4,5,6,7,22,23 24,25,33,34,35,43	Approved for all roads	1,6,7,22,23,24 25,33,34,35 & 43	1,6,7,22,23,25 33,34 & 35	1,6,7,22,23,25 33,34 &35	None	None
H3	Approved for all roads	45,46,47,48,49, 50 51,52,31,32,37,38 39 &40	Approved for all roads	31,45, 49 &51	31,45, 49 &51	45	None	None

Table 06: Summary of License and approvals for materials (January to December 2016)

Package	Material/Plant	Location	Ownership	Capacity /Extent/ Source	Details of the neighboring lands	Approvals
G1	Soil	Pamankada, Neluwa (Selected location)	Ms. Latha Athapattu	01 acre	North-Home garden, East-Natural Stream called Ranketa Ela, South-Home garden, West Neluwa -Palawatta main road	Approval Obtained by CEA
	Sand	Diganawatta, Hiniduma	G L Damith Rangana	Ging Gaga (500 m from location to both direction)	North-Small Tea land ,East-Home garden, South-Tea Land, West -Ging Gaga embankment	AL/B/MT/173/LR/03 expire on 16.09.2016, contractor has applied for extention.
	Metal	Thudugala Estate,Thudugala Dodangoda	M/S Metal Quarry Sunbee Granite Project (Pvt) Ltd	16 acres	North-small water fall, East-Forest area , South-Asplt plant & crusher, West-Rubber estate	(No:00376) expired on 23.06.2016, contractor has applied for extention.
	ABC	Thudugala Estate,Thudugala Dodangoda	K D Ebert & Sons Holding (Pvt) Ltd	3.5 acres	North-Quarry, East-Naboda-Dodangoda Road, South-Palm oil plantation, West-Rubber plantation	Request for renewal (04481)
		Thudugala Estate,Thudugala Dodangoda	K D Ebert & Sons Holding (Pvt) Ltd	3.5 acres	North-Quarry, East-Naboda-Dodangoda Road, South-Plam oil plantation, West -Rubber plantation	(No: 05067) expire on 15.03.2016, contractor has applied for extention.
	Concrete	Not operate as a batching plant. Use concrete mixtures by manually.				
	Water	Batuwangala-Ehalapitiya Road, 2nd Natural Stream Just pass the School	Divisional Secretariat	Small stream	North-Batuwangala-Ehalapitiya Road & Small Tea land, East -Batuwangala-Ehalapitiya Road, South-Private road, West -Paddy field	Approval received from Divisional Secretary
		Neluwa-Palawatta road, Pamankada.	Divisional Secretariat	Natural Stream	North-Home garden , East - Batuwangala- Ehalapitiya Road,	Approval received from Divisional Secretary

		Near our stock yard		called Rankata Ela	South-Private road, West - Paddy field	
		Mavita -Doolialla Road at 1st small bridge	Divisional Secretariat	Natural stream	North- Small tea lands, East - Road, South-Mavita -Doolialla road, West -Small tea land	Approval received from Divisional Secretary
	Disposal sites	Sites were selected where the community and privet need fulfill of their will. Consent letters were taken before dump soil.				
G2	Soil	Akmeemana	Akmeemana Pradeshiya sabhawa	0.5 acre	Road Abandoned land Barron land Disturbed forest	Approvals in progress
	Metal	Batapola	KDA Weerasinghe	2.5 acre	Disturbed forest Abandoned land	Approved and expire on 13/08/2016, contractor has applied for extention.
	Asphalt	Batapola	KDA Weerasinghe	2.5 acre	Disturbed forest Abandoned land	Approved and expire on 13/08/2016, contractor has applied for extention.
	ABC	Batapola	KDA Weerasinghe	2.5 acre	Disturbed forest Abandoned land	Approved and expire on 13/08/2016, contractor has applied for extention.
	Disposal	Sites were selected where the community and privet need fulfill of their will. Consent letters were taken before dump soil.				
G3	Metal	Neboda Quarry	KDA Weerasinghe	3 acres	Rubber plantations and scrublands	Approved and expire on 16/02/2016, contractor has applied for extention.
		Batapola Quarry	KDA Weerasinghe	-	Cinnamon plantations	Approved and expire on 13/08/2016, contractor has applied for extention.
	ABC	Kumbaduwa Crusher Plant	KDA Weerasinghe	1.2 acres	Private Paddy field lands, approximately 100m away from the Quarry site	Approved and expire on 26/08/2016, contractor has applied for extention.
		Neboda Quarry	KDA Weerasinghe	3 acres	Rubber plantations and scrublands	Approved and expire on 16/02/2016, contractor has applied for extention.

		Batapola Quarry	KDA Weerasinghe	-	Cinnamon plantations	Approved and expire on 13/08/2016, contractor has applied for extension.
	Asphalt	Neboda Quarry	KDA Weerasinghe	3 acres	Rubber plantations and scrublands	Approved and expire on 16/02/2016, contractor has applied for extension.
		Batapola Quarry	KDA Weerasinghe	-	Cinnamon plantations	Approved and expire on 13/08/2016, contractor has applied for extension.
	Concrete	Kurudugaha hathakma Batching Plant & Precast yard	KDA Weerasinghe	2.1 acres	Most of surrounding area is Cinnamon lands and Ambalangoda side of the land is having a bare land	Approval obtained
	Water	Nearby 7/7 Bridge at Elpitiya - Awiththawa road	Government reserved area	Natural stream	Bare land and some paddy field area at down stream	Approval obtained by DS
	Disposal	Sites were selected where the community and private need fulfill of their will. Consent letters were taken before dump soil				
M1	Soil	Paragala School Ground	Ministry of Education (Provincial Council)	50P	Road, school garden and tea estate	Approval granted by CEA
	ABC	Lakshawaththa, Thudugala, Dodangoda	CML-MTD	-	Bare lands	Approved and expire on 28/01/2016, contractor has applied for extension.
		Samodagama Bandiyakanda, Hambantota	CML-MTD	-	Bare lands	Approved and expire on 11/02/2016, contractor has applied for extension.
		Dankaluwa Pitabeddara	S. Kaluarachchi	-	Isolated forest area	Approved and expire on 11/03/2016, contractor has applied for extension.
		Mawaralawatte, Mawarala	S.I Witharana	-	Tea estate and isolated forest area	Approved and expire on 18/02/2016, contractor has applied for extension.

		Kalugalwilahena Kiriwelkale Darangala	M.P Sarathchandra	-	Cinnamon garden	Approved and expire on 18/05/2016, contractor has applied for extension.
	Asphalt	Hambanthota	CML-MTD	-	Bare land	Approval obtained
		Dodangoda	CML-MTD	-	Bare land	Approval obtained
	Concrete	Produce on site by mixtures				
	Disposal	Sites were selected where the community and private need fulfill of their will. Consent letters were taken before dump soil				
M2	Soil	Eramudugoda State (G.S.Division) Neraluwa Village	N.W.Gunasekara	2.3 acres	Road and bare lands	Approval obtained
	Metal	Bangama, Akuressa	Upali Kodagoda	10 acres	Barren lands	Approval obtained
	ABC	Pallaththara	A.M.Kapila Priyadarshana	3 acres	Barren lands	Approved and expire on 12/09/2016, contractor has applied for extension.
	Asphalt	Modarawana, Beliatta.	K.D.Ebert & Sons Holding (pvt) Ltd	6.1 acres	Coconut and scrublands	Approval obtained
	Concrete	Eramudugoda State (G.S.Division) Neraluwa Village	N.W.Gunasekara	2.3 acres	Scrublands and road	
	Water	Akuressa Katanvila Road 3+300	Irrigation department	River cannel	Bare lands	Irrigation department consent letter
	Disposal	Sites were selected where the community and private need fulfill of their will. Consent letters were taken before dump soil				
M3	Soil	Kokmaduwa	Private	-	Bare land	Approval obtained
	Metal	Welipitiya	Game Metal Crusher	-	Bare land	Approved and expire on 10/12/2017
	ABC	Neboda	KDESH	2 acres		Approved
		Beliatta	Private (Kapila Metal Crusher)	2 acres	Coconut plantation	Approved
	Asphalt	Neboda	KDESH	2 acres		Approved

	Disposal	Sites were selected where the community and private need fulfillment of their will. Consent letters were taken before dump soil				
H1	Soil	Hatagala temple, Hungama	Hatagala temple	1.5 acres	Temple, road and secondary forest	Day permits by DS
	Metal	Rathna construction metal crusher, NO 09, Mayurapura, Hambantota	K.G. Rathna kumara, Rathna Metal Crusher, Bata ata, Hungama	2 acres	N-State land, E-State land, S-Metal quarry W-state land	Approved and expire on 23/03/2016, contractor has applied for extension.
		Kariyamadiththa, Thalawa, Nugekoratuwa, Angunakolapellasa	Kamal Dharmajith Samarasinghe, Sinhagiri, Thalawa, Kariyamadiththa	1.5 acres	N-State land, E-State land, S-Access road, W-state land	Approved and expire on 28/09/2016, contractor has applied for extension.
	ABC	Rathna construction metal crusher, NO 09, Mayurapura, Hambantota	K.G. Rathna kumara, Rathna Metal Crusher, Bata ata, Hungama	2 acres	N-State land, E-State land, S-Metal quarry W-state land	Approved and expire on 21/01/2016, contractor has applied for extension.
		Kariyamadiththa, Thalawa, Nugekoratuwa, Angunakolapellasa	Kamal Dharmajith Samarasinghe, Sinhagiri, Thalawa, Kariyamadiththa	1.5 acres	N-State land, E-State land, S-Access road, W-state land	Approved and expire on 18/09/2015 (applied for extension)
	Asphalt	Rathna construction metal crusher, NO 09, Mayurapura, Hambantota	K.G. Rathna kumara, Rathna Metal Crusher, Bata ata, Hungama	2 acres	N-State land, E-State land, S-Metal quarry W-state land	Approved and expire on 31/12/2015, contractor has applied for extension.
	Disposal	Sites were selected where the community and private need fulfillment of their will. Consent letters were taken before dump soil				
H2	Soil	Debokkawa	Mr. Chinthaka	4 acres	Scrublands	Approval given by DS.

		Uswewa Binkama, Adjust land to B/Gurugodalla W.K.V	Hanguranketha, Weerasinghe Kanishta Vidyalaya	1 acre	North-Gurugodalla School, South-Houses, East-Priavte land, not functioning West-100m away small stream	Approval have been received from Pradeshiya saba
	Metal	Samodhagama, Mahawali land, Bondiya Kandha.	C.K Dissanayake	2 acres	There is no residence in the circular area with the radius of 500m (forest area)	Approved and expire on 31/12/2015, contractor has applied for extension.
	Concrete	K.A.P.M Weerasena, Kaluwalawewa Road, Bolhida, Koggala, Ambalanthota	CML-MTD Construction LTD.	-	There is no any houses in the circular area with the radius of 100m (duff area)	Approval obtained
	Asphalt	K.A.P.M Weerasena, Kaluwalawewa Road, Bolhida, Koggala, Ambalanthota	CML-MTD Construction LTD.	-	There is no any houses in the circular area with the radius of 100m (duff area)	Approved and expire on 31/12/2016, extension applied
	Disposal	Sites were selected where the community and private need fulfillment of their will. Consent letters were taken before dump soil				
H3	Soil	Debokkawa	Mr. Chinthaka	4 acres	Scrublands	Approval given by DS.
	Metal	Maha ellala, Hambanthota	Chanaka metal crusher	1 acre	surrounding area covered with scrub forest	Approved and expire on 03/11/2015, applied for extension.
	ABC	Ellalla, Hambanthota	Tharaka dilshan	1 acre	Surrounding area covered with secondary forest	Approved and expire on 11/03/2016, contractor has applied for extension.
	Asphalt	Buweli ara	RRC	10 acres	Surrounding area covered with secondary forest	Approved and expire on 12/03/2016, contractor has applied for extension.
	Concrete	Buweli ara	RRC	10 acres	Surrounding area covered with secondary forest	Approval obtained
	Disposal	Sites were selected where the community and private need fulfillment of their will. Consent letters were taken before dump soil				

4.4 Establishing of public notice

- Public awareness

In addition to the community awareness meetings held at the commencement of the project, a public notice developed in local language was displayed at community-attracted places in the project area. The main purpose of the notice was to create awareness among communities on the project, understand to what extent the community can involve in project activities and how to make complains, suggestions, grievances and requests to the project. The public notice brought the key information about the project and contact numbers of relevant officers of the project whom to be contacted regarding social and environment issues.

- Channels of receiving public Grievances

A system of channels has been established to receive public suggestions, requests, complaints and grievances by the project. The public was clearly informed that they can follow any of the following channels in submitting their complaints/ grievances/ suggestions or requests to the project.

- Complaints & suggestion boxes

Availability of complain & suggestion box at the site has been identified as one of the effective methods to share views of communities prior to the designing stage. Complaint & suggestion boxes were installed at Contractor's site offices in all Contract packages and public are expected to put their written grievances in to the Complaint & Suggestion box. Complains/ suggestions are collected from the box at the end of each day.

- Office of Grama Niladhari (GN)

Grama Niladhari is the Government Administrative Officer at Grama Niladhari Division (GND). GN also plays the role of the Chairman of the Grievance Redress Committee (GRC) established under the project at GND level. A public notice also displayed at each GND offices in the project area.

- Office of the Divisional Secretary

Divisional Secretary (DS) is the Government administrative officer at Divisional Level. DS is also plays the role of chairman of Grievance Redress Committee (GRC) established under the project at Divisional Secretary level (DSD)). A public notice also displayed at each GND offices in the project area.

In addition to the above channels, all the field staff of the project is instructed to accept public grievances and hand them over to the Project Engineer (PE)/ Environment Officer (EO) /Social Safeguard Officer (SSO) of PIU on the same day or in failing which the following day for further action.

- Maintenance of Records for Public Grievances

Maintenance of relevant records considered as a prime requirement. All the received complaints/suggestions were registered at the Project Manager's office of the Contractors and attended.

It was evident that this mechanism is very effective and shown better results. All the grievances received were classified according to the nature.

Grievances from the affected people on social and environmental issues during project implementation addressed mainly through the existing local administrative system. Depending on the nature and significance of the grievances or complaints, grievances addressed at three levels. The first is at the grass roots level where complaints are directly received and addressed by the contractor, PIC or PIU representative on site.

Grievances, which were simple but still, cannot be addressed at the grass roots level addressed at the Grama Niladhari Division (GND) level. More complex grievances, which cannot be addressed at the GND level, addressed at the Divisional Secretariat Division (DSD) level. There was a Grievance Redress Committee (GRC) at the GND and DSD levels.

Composition of GND level the GRC members were Grama Niladhari of the area (Chairman), Representative of PIU (Secretary), Representative of Supervision Consultant (Member), Representative of Contractor (Member), A community member/religious leader (Member), Woman representative from the local community (Member), Composition of DSD Level GRC members are Divisional Secretary of the area (Chairman), Representative of PIU (Secretary), Grama Niladhari (Member), Representative of Supervision Consultant (Member), Representative of Contractor (Member), Representative of a social organization (NGO/CBO) of the area (Member), A community member/religious leader (Member) and Woman representative from the local community (Member).

To make the GRM process gender responsive the GRC include one woman member to represent the local community women. Further, when grievances or complaints are submitted to the GRC, both women and men complainants are treated equally and necessary measures are taken to address the grievance in the best way possible. This system followed the guidelines given in the EARF.

Recommended steps with timeline on the operation of the GRM was provided figure 02. In addition a complaints contact person was designated within the PIU to help address all concerns and grievances of the local communities and affected parties. Contact details of this person was provided in the project information display board that is placed at the project site. The flow chart of the GRM is presented in figure 02.

4.5 Consultation, information Disclosure and Grievance Redress Mechanism

The public consultation and information disclosure is an important part of the environmental safeguard requirements under ADB SPS (2009). In addition the NEA of GoSL also considers stakeholder engagement as a key element for successful management of environmental impacts.

Meaningful public consultations held early on and continuously throughout the project development stage to allow the incorporation of relevant views of the stakeholders in the final project road design, mitigation measures, implementation issues, and enhance the distribution of benefits. Stakeholders included project beneficiaries, local affected people, government bodies, and non-governmental organizations. The consultations must encourage participation of women and vulnerable groups (handicapped people, senior citizens, schoolchildren) and engage as many stakeholders as possible.

Consultations has carried out in an environment free of influences and done during conduction of transect walks while completing the environment checklists and/or through focus group discussions and/or household level or key person interviews which starts with the description of the project road design and initial identification of potential impacts. Feedback and recommendations received during the consultations have addressed and where relevant incorporated in the Detail Design Stage.

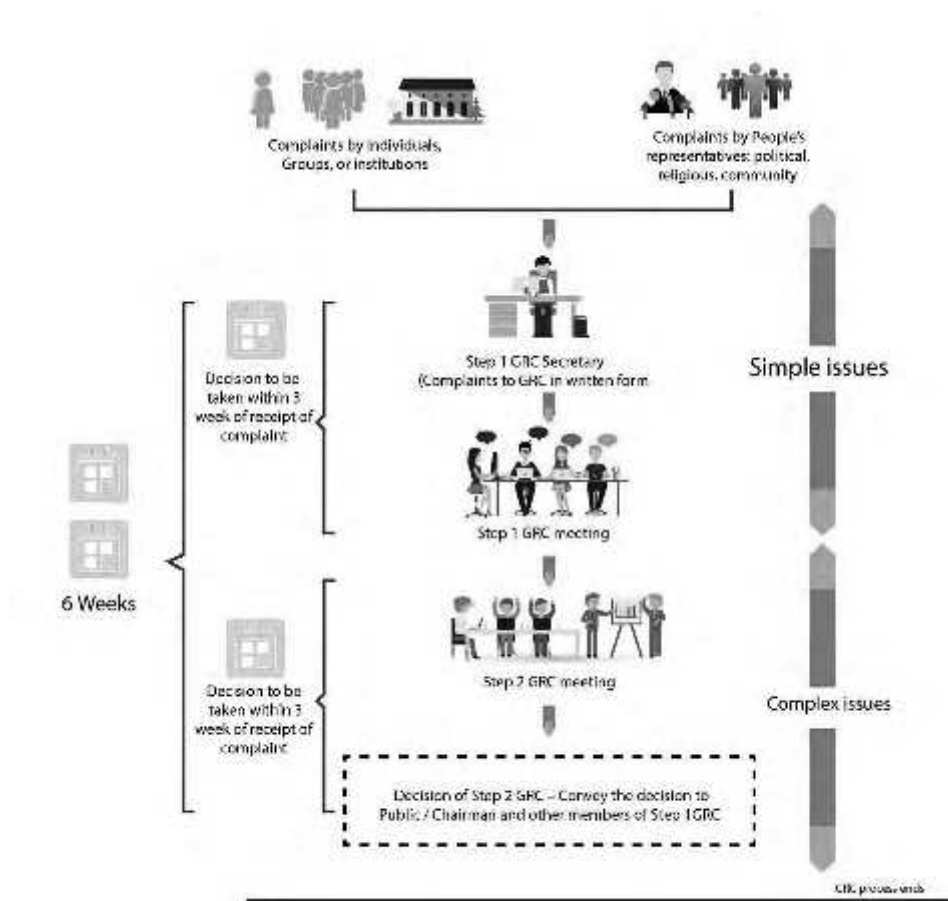


Figure 02. The flow chart shows of the GRM process adapted in to the iRoad(SP).

4.6 Environmental Monitoring Structure and Site Inspection

Daily monitoring was done in each contract package by environmental specialist (PIC), environment officer (PIC) and environmental and safety officers (15 nos., contractor).

Regular site inspections (every 4-6 week) were jointly conducted by ADB representative, RDA- ESDD team (Social and environment officer, hydrologist and monitoring officer) and PIC team Environmental specialist, Environment officer and Social, Gender and Resettling Specialist. At the end of the inspection progress, review meetings were held. Three special progress review meetings were held for the reporting period (21 Jan 2016, 21 Nov 2016 & 22 Dec 2016).



Figure 03. Mr. Saranga pointed out environmental issues at M2 package.



Figure 04. Progress review meeting held for contractors on environmental safeguards.

Table 07. Monthly monitoring schedule for iROAD SP by PIC team.

Contract Package	# of roads	Approximate Length (Km)	# of days of monitoring
G1	15	64	2
G2	22	63	2
G3	29	73	3
M1	22	98	4
M2	20	66	3
M3	25	56	3
H1	20	72	3
H2	18	60	3
H3	14	42	2

5. Issues Observed and Status of Compliance

Table 08: Issues observed and mitigated (January to December 2016)

Construction Activity	Impact	Location (Road ID and package)	Mitigation measure/s adopted	Mitigation measure/s proposed in the SSEMAP	Monitoring indicator	Recommendations by PIC	Effectiveness	Example/s
Roadside vegetation clearing.	Soil erosion, sedimentation, damage and displacement of native flora and fauna.	All construction started roads.	Minimized of clearing vegetation, proposed environmental friendly designs, fauna and flora translocation, established of nurseries for very important plants, planting activities.	Minimize tree removing & replanting trees 1:3 ratio for removing, Spreading water as required & removal of debris by manual, Reuse of soil as possible	Demarcation of very important areas regarding fauna and flora, number of plants relocated and replanted, nurseries establishments, design changes of the road works.	Daily monitoring of environmental sensitive sites, design changes accordance with design engineers and the community representatives, discussion at GRC regarding land donations where the roads are narrow for road construction.	Contractors have given information to PIC regarding important fauna and flora locations and protected such areas as much as possible. Locations identified for plant nurseries.	Figure 03
Extraction of embankment materials.	Vegetation damaged, dust generation,	G1, M1, M2, H1, H2 and H3	Top soil of burrow areas and any other productive stripped to a specified depth of 150mm and	Suitable type of excavation is implemented in burrow pits and	Pre identification of important vegetation types.	Daily monitoring of the sensitive and problematic sites.	Environmental officers were not received complains on such kind of impacts.	Figure 04

	sedimentation, earth slips,		only the required quantity stored as stock piles, During dry season, water bowsers were employed for watering in dust-generated areas as required. Cut done with slope and stepwise in order to maintain soil stabilization.	roadside edges, the matters related to soil erosion has highly considered by adopting main & lateral drains, retaining walls or gabions or turfing with grass according to the necessity or requirement depending on the specific site conditions.	Demarcation of soil extarction and cutting areas. Photographic monitoring of erosion and earth slip prone areas.		GRC has received comparatively less complains and suggestions.	
Sub base preparation, shoulders construction, ABC laying and compaction,	Roadside dust generation, air pollution at conected areas.	All constructi on started roads. Specially M2, M3 and G1 packages.	Completed some road construction activities such as shoulder construction, sub preparation and ABC compaction in a short period. Frequently wetted the dust generative surfaces.	Appling of water as required	Public complain system established such as GRC and complaint boxed established at site and public level places.	Daily monitoring of the sensitive and problematic sites.	No or less dust observed at site.	Figure 5

Plant operation	Dust generation, noise, surface and ground water pollution	All	<p>Covered the land fully by using corrugated sheets.</p> <p>Constructed "wind & dust barrier" using plants, which were growing rapidly around the land.</p> <p>A wet system was functioned in the plant. Dust generated with the water was deposited in the settling tanks.</p> <p>Reused the water.</p> <p>The generator has been fixed in a soundproof cabin and outlet of the silencer is</p>	<p>Covering all the materials delivering vehicles to avoid spillage, All vehicles and equipment used in construction shall be fitted with exhaust silencers.</p> <p>During routine servicing operations, the effectiveness of exhaust silencers shall be checked and</p>	<p>Regular inspections carried out by the Environmental and public liaison officer to monitor the progress of the EMAP.</p>	<p>Daily monitoring of the sensitive and problematic sites.</p>	<p>Direct complains received to RDA, PIC and contractor.</p>	Figure 6
-----------------	--	-----	---	--	---	---	--	----------

			15m. It has directed upwards the cabin. Generators fixed with in a concrete floor by 6" thickness insulating rubber Electric motors installed with machine. Controlled the vibration/noise from vehicles and at unloading.	if found to be defective shall be replaced.				
--	--	--	---	---	--	--	--	--



Figure 05. Turfing in G2 package to prevent soil erosion.



Figure 06. Watering at M2 package to minimizing the dust generation.



Figure 07. Carefully constarcted and maintained shoulder at H2 package.



Figure 08. Siltaion tank been established at batching plant H3 package.

6. Public Consultations and Information Dissemination

In addition to the community awareness meetings held at the commencement of the project, a public notice developed in local language is being displayed at community attracted places including Grama Niladhari (GN) offices and Divisional Secretariats (DS) in the project area. The main purpose of the notice is to create awareness among communities on the project, understand to what extent the community can involve in project activities and how to make complaints, suggestions, grievances and requests to the project. The public notice gives the key information about the project and contact numbers of relevant officers of the project who are to be contacted regarding social and environment issues (figs 07-08).



Figure 09. G2, public awrness for the villages regarding iROAD(SP) project.



Figure 10. H3, public awrness for road users regarding public complain procedures.

7. Programs and activities to enhance Environment

7. 1 Tree planting programs

A total number of 29 tree-planting programs were conducted across the Southern Province, mainly focused on public places such as schools, libraries and community grounds. Planted trees were maintained by the schoolchildren and the public under the supervision of contractor's representative (Environmental officer). All plants were tagged for monitoring purpose; this was monitored by the PIC, Environmental Specialist (Table 09) (figs 09-12).

Table 09. Status of tree removal and re-planting in each contractor package.

Package	# of Tree removed	# Tree planted
G1	125	115
G2	24	12
G3	51	96
M1	1400	520
M2	316	350
M3	723	335
H1	1	10
H2	88	40
H3	131	80
Total	2757	1513

Table 10: Summary of tree planting program conducted.

Package	Location	Date	Description
G1	Mandalapura Maha Vidyalaya	07/11/2016	# of plants planted 60
	Halvitigala Saripuththra Maha Viddyalaya	21/11/2016	# of plants planted 55
G2	G/Ginimellagaha School	20/06/2016	# of plants planted 5
	G/Hapugala Primary School	25/06/2016	# of plants planted 5
G3	Karandeniya Public library	11/08/2016	# of plants planted 55
	Ganegoda Maha Vidyalaya	21/10/2016	# of plants planted 97
M1	Paragala School	03/06/2016	# of plants planted 30
	Morawaka School	03/06/2016	# of plants planted 70
	Viharahena Temple and School	03/06/2016	# of plants planted 175
	Development Office premeses	02/06/2016	# of plants planted 35

	Community Base Society, Thanipita	02/06/2016	# of plants planted 125
	Porupitiya School	03/06/2016	# of plants planted 30
M2	Bangama bypass lane	10/02/2016	# of plants planted 68
	Bangama bypass lane	11/02/2016	# of plants planted 60
	MR/Bopitiya Vidyalaya	08/07/2016	# of plants planted 60
	Athuraliya Sri Sudarshi Pirivena	30/08/2016	# of plants planted 61
	MR/Bopitiya Kanishta Vidyalaya	25/08/2016	# of plants planted 65
	MR/Bopitiya Kanishta Vidyalaya	31/10/2016	# of plants planted 36
M3	Weligama Welipitiya AGA Division	08/01/2016	# of plants planted 85
	MR/Denipitiya Maha Vidyalaya	08/01/2016	# of plants planted 25
	Weligama Welipitiya AGA Division	04/02/2016	# of plants planted 150
	Ganegoda Temple	14/02/2016	# of plants planted 100
H1	H/Habaraththawala Maha Vidyalaya	25/11/2016	# of plants planted 15
H2	Kadurupokuna Rajapaksha Vidyalaya	02/05/2016	# of plants planted 10
	Galkema Prurana Temple	30/06/2016	# of plants planted 15
	Eramini Yaya Youth Centre	04/10/2016	# of plants planted 13
H3	Kudabibula Temple	11/11/2016	# of plants planted 09
	H/Kudabibula Junior School	11/11/2016	# of plants planted 08
	Kudabibula Water Catchment Area and Ground	14/11/2016	# of plants planted 19

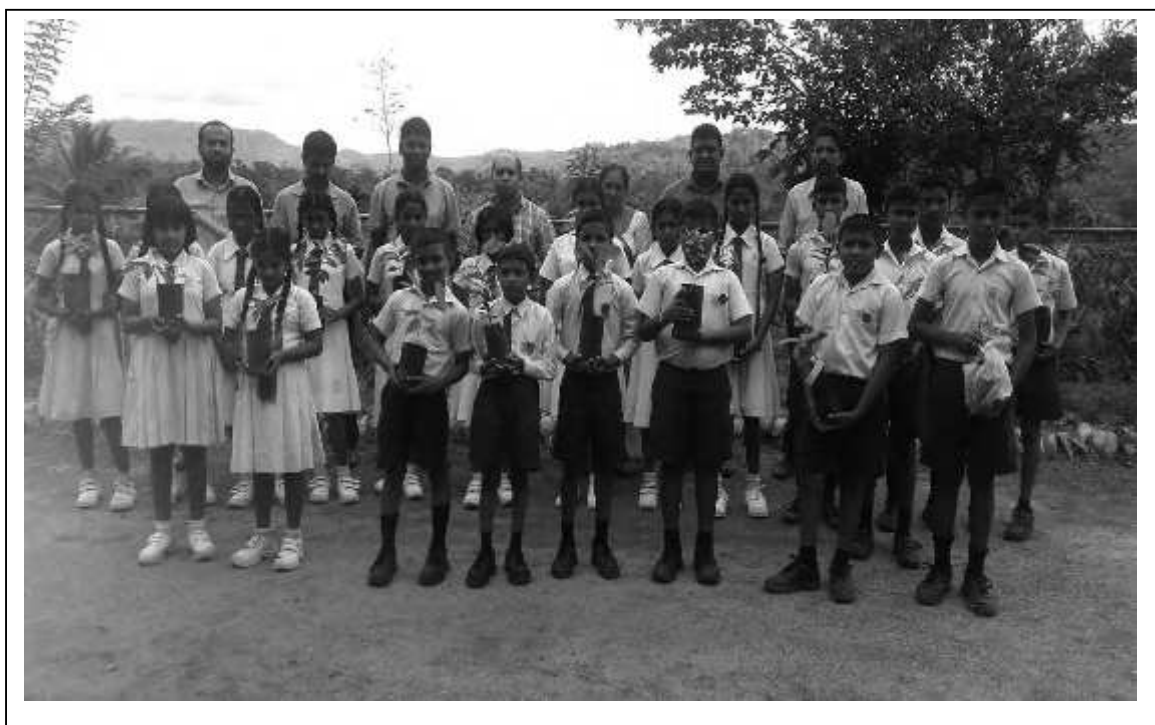


Figure 11. M2, Tree planting program, Bopitiya Kanishta Vidyalaya.



Figure 12. H2, Tree planting program, Habaraththawala Maha Vidyalaya, Ridiyagama.



Figure 13. G3, Tree planting program, Karandeniya public library.



Figure 14. M3, Tree planting program, Ganegoda Purana Rajamaha Viharaya.

7.2. School awareness programs conducted

Four school education awareness programs were conducted in M1, M2 and H3 packages. Target school children were class 6-11 (figs 13-14)

Table 11: Summary of school education awareness program conducted.

Package	Location	Description
M1	Paragala Kanishta Vidyalaya	Delivered a speech on rain forest of Sri Lanka
M2	Bopitiya Maha Vidyalaya	Delivered a speech on rain forest of Sri Lanka, and snake of Sri Lanka
	Bopitiya Maha Vidyalaya	Road construction and forest conservation
H3	Kudabibula Temple	Snake of Sri Lanka



Figure 15. School program conducted at M1, Paragala Kanishta Vidyalaya



Figure 16. School program conducted at M2, Bopitiya Maha Vidyalaya

7.3. Environmental friendly design changes

Some contractors have changed their design that suit to the existing environmental condition and enhance the environmental conditions. Followings are some of examples (figs. 15-22).



Figure 17. G2, RD ID 37, soil erosion protection by constructed a cascade drainage path system.



Figure 18. G2, RD ID 16, Fish ladder construed for migratory fish.



Figure 19. H1, RD ID 13, conserved a tree by diverting the drainage pathway.



Figure 20. M1, RD ID 14, Protection was given to an earth slipped location.



Figure 21. G1, Paddy field and the stream protected by provide a concrete drainage.



Figure 22. G2, RD ID 12, Soil erosion minimized by provide a concrete access pathway.



Figure 23. G2, RD ID 16, Prevent soil erosion by providing a concrete drain.



Figure 24. H1, RD ID 29, conserved a large Nuga tree by changing the centre line.

8. Conclusion and recommendations

The iRoad(SP), have 9 contact packages, which are distributed from coastal to highlands of the Southern Province, Sri Lanka. The iROAD(SP) was the pilot project, which was the CSD concept, has been practicing and applying through above contact packages. The CSD concept was new and it was successfully introduced to the project by conducting several CSD related workshops and onsite practical sessions.

Environmental safeguard is the major component of the iROAD(SP) project, its compliance with Sri Lankan law and ADB safeguard policies. Regular monitoring of environmental conditions and compliances of the Southern Province road construction sites were enable to protect and conserve unique ecosystems. Education and awareness programs conducted to public were kept the safeguard of the environment.

Following are recommend to the iROAD(SP) to keep up its quality and assurance of the environmental safeguard.

- Regular monitoring of the road construction sites that the contractors are compliance with approved EMAP.
- Education and awareness programs to public on environment safeguard.
- Record keeping and reporting of environmental related activities.
- Dissemination of the knowledge.
- Onsite training programs regarding environment safeguard to the staff were very successful and need to conduct in a regular manner.
- Additional environmental officers/ assistants based in district level were useful to close monitor of contractor activities and recommended.
- Education awareness program for school children were very successful and recommend continuing that kind of programs.
- Regular progress monitoring was very essential to keep all project staff on track regarding environmental safeguards.
- Changed designs appropriate to the site conditions were able to conservation of roadside vegetation's and as well as protection of some important microhabitats.
- Record keeping such as SSEMAPs' and EMCs' were helpful to monitor environmental conservation progress in each road. This also supported to taken some of critical decisions where the problems occurred.