

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA  
MINISTRY OF HIGHWAYS  
SRI LANKA

ROAD DEVELOPMENT AUTHORITY

SUPPLEMENTARY ENVIRONMENTAL ASSESSMENT  
AND  
UPDATING OF  
THE ENVIRONMENTAL MANAGEMENT PLAN  
SOUTHERN TRANSPORT DEVELOPMENT PROJECT



*ADDENDUM*

**Response of University of Moratuwa Study Team for PMU/RDA and  
PMU/ADB Comments on the Final Report of Supplementary  
Environmental Assessment Study (Section 1 and 2) and Updating  
Environmental Management Plan of STDP**

UNIVERSITY OF MORATUWA  
SRI LANKA

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**Response of University of Moratuwa Study Team for PMU/RDA and PMU/ADB Comments on the Final Report of Supplementary Environmental Assessment Study (Section 1 and 2) and Updating Environmental Management Plan of STDP submitted by UOM in September 2006.**

1. *Comment of PMU/RDA: A section of mitigatory measures was included, complying with the TOR of the study. Mitigatory measures were focused mainly on hydrological impacts, impacts on road trace design, impacts on water quality and quantity, impacts on air quality noise and vibration , impacts on floods and drainage pattern, stability of slopes, impacts on exploitation handling, transportation and storage of construction materials, impacts on spoil and construction waste disposal, impacts on work camp operation and location, impacts on loss of vegetation cover of the area for temporary work space, safety precautions for workers and general public, impacts on wetlands, impacts on bio-diversity, impacts on social and socio-economic, impacts on institutional status and impacts on garbage disposal and traffic conditions.*

*Mitigatory measures section was not in the 'final draft report' which was not commented by MC with their previous comments, since following comments are important and researcher will have to consider them carefully.*

*Very valuable mitigatory measures which were not in the previous EMP, also included by the researcher. Among them mitigatory measures for hydrological impacts, water quality impacts ground water quality impacts, soil erosion/surface run-off impacts, exploitation handling and transportation and storage of construction materiel impacts are important.*

- 1.1 *Most of the mitigatory measures are satisfactorily proposed in consideration with current status in the project areas. It would have been beneficial to the project especially for JBIC section and future projects, if the study team concentrated on new mitigatory measures for controlling unnecessary public complaints on impacts of rock blasting, compaction vibrations and damaging paddy fields. It is very important to find alternative solutions as mitigatory measures to control these unnecessary public obstructions which have already caused delays of construction activities.*

*The report could have assessed existing environmental laws and regulations and mitigatory measures recommended by CEA and GSMB/ITI for rock blasting and compaction vibration effects for general public close to highway and necessity of establishing new systems/laws and regulations within the section of the 'mitigatory measures for social impacts of pre-construction stage'.*

- **Response of UOM**

Review of laws & regulations is a task that requires to be taken as a special task as it needs legal competence. From the point of view of the environmental professionals in the team, the existing laws are sufficient to deal with the impacts. The dedication by the contractor/consultant/RDA in this regard needs to be drastically improved and the planning well ahead is lacking in RDA/consultant. Each party should possess competent Environmental Officers to monitor/execute mitigatory measures and this has been identified and recognized from time to time. Also the coordination between stakeholders & other line agencies has been not up to the desired levels and hence the issues have got aggravated.

The conditions laid down by the Central Environmental Authority at the time of approving the Project appear to be based on interim standards on noise and vibrations, and the guidelines for rock blasting stipulated by the GSMB. However, at the stage of implementation, some of these conditions may not be strictly adhered to, due to the practical difficulties faced by the contractor, or due to poor machinery/ workmanship or other problems. It is very important that the relations between the contractor and the public are maintained at a satisfactory level, in order to avoid delays in the work due to public obstruction. Since the activities of the JBIC section have not commenced yet, it is timely to look at ways of avoiding these obstructions. According to the United States Department of Transportation - Federal Highway Administration, 'The contracting agency should also take an active role in insuring that the communication lines are open and the public is properly informed of upcoming construction activity. This may be accomplished by seeing to it that all questions and inquiries from the general public are courteously and reasonably responded to.' Early communication is very important. This may be done by distribution of leaflets giving the relevant information such as the times of operation of blasting, compaction and other activities during the days, and also the approximate period during which these activities will continue. In areas where there is extensive rock blasting, such as those experienced in the ADB section, it would be better if a meeting is called where the contractor will be available with the expert on blasting, who would be required to answer the queries of the affected public, regarding the anticipated drilling and blasting operations themselves and the likely impacts on property.

It may be that the contractor should be made solely responsible to resolve all damage claims resulting from the drilling and blasting operations, and following from such, the contractor should take adequate insurance cover before commencement of such activities. All necessary repair or replacement work should begin immediately and be completed as soon as practical.

However some additional comments on mitigatory measures are as follows, Only concern, that is raised related to the earth is the slope stability, for which mitigatory measures are outlined in the EMP.

With regards to surface water and groundwater quantity, adequate mitigatory action has been proposed in the report to suit the observed impacts at that stage (years 2005 & Early 2006). Embankment of the ADB section is complete in most of the sections now. It is difficult to comment on new issues without adequate on site knowledge about current problems. The project will go on for some years and issues continue to crop up.

For the JBIC section, Hydrological studies have been done by SLLRDC recently and adequate openings have been provided for flood passage without backwater and there will be no major alteration to surface or groundwater quantities. Channel improvements have been proposed for flood alleviation. These channels can retain water replenishing the groundwater table. See descriptions under “Floods/Hydrology & Drainage Pattern”.

In case of Surface Water and Groundwater Quality, there had been several complaints on turbidity issues on both surface and ground water bodies while the construction is in progress. However most of them could be minimized if the mitigatory measures are applied correctly. In accordance to EIA regulations one could not curtail the likely complaints made by the public. It is mandatory to inquire these complaints whether they are true or not.

For Air and Noise environments, it is not legally possible to curtail the public complaints by EIA conditions. It is the right of the affected to make any complaints but the project proponent has to have a mechanism to evaluate them scientifically so that they can be compensated accordingly. In other words, EIA report can not dictate terms on the unnecessary or necessary public complaints.

With respect to Floods/Hydrology and Drainage Patterns approvals for all drainage structure openings should be obtained from the Irrigation Department, Provincial Irrigation Engineer and their suggestions should be incorporated. The upstream & lead way drainage paths should be properly connected. This may require contractual provisions to act outside the ROW. If it is found through detailed hydrological studies that new openings are required to ease flooding those should be provided.

In the JBIC section, there are social complaints regarding aggravation of flooding because of the highway at Kahathuduwa (5+000- 6+000), Panape (16+000-18+000). The consultant has sought the approval from SLLRDC(Sri Lanka Land Reclamation and Development Corporation) & the Department of Irrigation for the final opening sizes. SLLRDC has granted the approval for the final opening sizes and there are some revisions to the original design.

One of the salient features of this design is the channel improvement which extends beyond the ROW. RDA is in the process of obtaining extra funds to implement the flood alleviation measures. Consultant has held many discussions and site visits with the affected parties and for the places mentioned above people have expressed their general concurrence. Many meetings were held with the stakeholders and the, politicians & the District Secretary and the respective Divisional Secretaries. The proposed measures such as larger structure openings & channel improvement are acceptable to public if these measures are implemented. It should be noted that there is no social concurrences to the road construction without channel improvements.

Even though there are no strong social protests it has been noted that hydrological studies have been conducted to cover the entire JBIC section. Irrigation Department has instructed to increase the width of the bridge span from 220m to 310m to reduce the upstream backwater effects. However such actions are on going.

Critical flooding also takes place at Welipenna, Parew Ganga & Bentota Ganga. It has been reported that SLLRDC approval has been granted for the bridges and culverts in these areas.

Following are the key measures suggested through flood studies done for the JBIC section (2007 January) and these are similar to the environmental observations and analysis of the team and included in the Final report.

- Enlarged culvert & bridge openings to avoid extra backwater effects.
- Channel improvement from upstream to downstream (even outside ROW).
- Improvement to upstream & downstream road bridges outside ROW.
- Provision of adequate free board to the culverts in flood prone areas.
- Provision of additional culverts to ensure sheet flow.
- Recommendations to provide additional culverts for irrigation purposes.
- Recommend bridges instead of culverts at places such as Kurundugahahethekma.

Detailed mitigatory measures are provided in the report. If soil wash offs to the paddy areas are due to negligence of the contractor the relevant environmental officers should act to monitor such activities.

In the JBIC section, Construction has not started at a large scale. In most of the places only the pilot road has been constructed. The exposed earth surface in most places remains visible. However the contractor has taken general precautionary measures such as provision of local drainage connections to the streams to avoid drainage congestion. No large scale erosion problems has been observed and also there had been no complaints from farmers as yet.

In relation to the Irrigation and flood protection structures, the proponent, consultant & the contractor should liaise with the Irrigation Department, provincial irrigation engineer, commissioner of agrarian services department etc., to propose suitable mitigatory measures. It is pertinent to handle public complaints through the Divisional Secretary who could coordinate between the stakeholders & officers of the line agencies.

Farmers may request new openings to take water to paddy areas and also to use as access. These have to be provided by giving due consideration to such complaints and after a careful detailed studies. Decisions should be taken through a consultative process.

In the case of JBIC section, Some irrigation schemes are under irrigation department and some are under the provincial irrigation department (Western & Southern Province). In this section, in addition to the SLLRDC approval, approvals are been

sought from both the Irrigation Department & Provincial Irrigation Engineer. As stated earlier it has been noted that Irrigation Department has granted approval for most of the major irrigation schemes and Provincial Irrigation Engineer has issued a no objection letter to some segments. However the proponent need to look through the proposed works with great care as there may be some aspects which had been overlooked.

The project developer is obliged to follow the rules and regulations of CEA, GSMB/ITI and other general rules of the government with regard to land acquisition, resettlement etc. and hence this is a must in the case of the social environment too. In this project the resettlement activities have been completed but delays have taken place due to public objections at some sections of the road. From a socio-economic environmental view, these delays have been classified as unnecessary because simple management tasks discussed throughout the report and in the previous reports could have avoided such results.

It is important that the project developer takes sufficient action to convince public about the nature of existing rules and regulations which can be imposed in different stages of development project. In the programs of public awareness, the aspect of obtaining the support of Divisional secretaries and Grama Niladharies should be incorporated. From the study it was identified that such public awareness campaigns should have taken better efforts to include awareness attempts on:

- Rules and regulations available for land acquisition
- The regulations of resettlement
- The rules and regulation of the quarrying and blasting etc., and
- other legal needs

Once the communities are well aware of the rules and regulation and the need of the development project, the likelihood public disturbances due to ignorance of the rules and regulations can be minimized.

It is well known and also it was observed in the ADB section that social negotiation is the best solution to manage these types of problems and create conducive environment for the implementation of the project in the area where concerned parties are living. The appropriate strategy is to establish a team of social scientists who are well trained to mobilize communities and other stakeholders and raise their awareness on the impact of development project. This team can work in parallel to the construction team. The construction team also need to be trained to deal with public in places where they are carrying out development interventions. This type of socio-technical approach will help to create favorable environment for the construction crew to develop effective rapport with the local communities and this the team has felt as an area that has to be strengthened in the project.

The rules and regulations existing in Sri Lanka on rock blasting, noise, vibration etc., should be well briefed to the public concerned. The public complaints should not be neglected and the project developer should take actions to listen to the problems and to effect early action. There had been a tendency to implement one sided solutions instead of consultative action. The public should be informed about the grievance

making procedure in place for the project and the institutional mechanism developed for public to take up their grievances.

*1.2 Suitability of current baseline locations which were selected using combined trace or requirement of new locations considering deviations for regular monitoring of water, noise and air was not explained separately.*

- **Response of UOM**

The expectation to specify new critical locations in the final trace for water quality, noise etc., has to be dealt separately. The exact locations in the new deviations have to be selected by the committee appointed by CEA on monitoring. The locations described in the EMP seem to be adequate but the CEA can come up with any additional locations if they think necessary. The critical aspects along the traces were indicated in the report. Identifying and specifying exact locations is not within the TOR of the EA. This could be done by the relevant expert in the monitoring team based on our study.

*1.3 New inclusions and modifications in consideration with recent experiences within the section of mitigation measures of the EMP are satisfactory. Some inclusions into the pre-construction stage are very important. Impacts on hydrological changes were studied very practically. But mitigatory measures for recently encountered impacts in ADB section such as dumping unsuitable soils, public complaints/protests against rock blasting and compaction vibrations and access problems were also not considered adequately.*

- **Response of UOM**

To check recent trends fresh knowledge regarding the site is necessary. This is not possible as the time of field work elapsed years ago and the consultant/RDA cannot expect the EA consultant to treat the problems cited after the field work was completed. However even after the scheduled field work was over some special efforts were taken to include the drainage and water quality issues raised by the public. The above sections included additional information.

In the case of dumping unsuitable soils, main type of unsuitable soil present along the road trace consists of organic soils removed during ground improvement phase of the project. Due to the high compressibility and low strength of organic (peaty) soils, load carrying capacity of these soils is very low. As such dumping sites should be selected away from areas, where future development activities are anticipated. Moreover, water flowing through peaty deposits may be polluted and, therefore, the dumping sites should be situated well away from drinking water sources. Dumping soil should be transported to the dumpsite after allowing it to dray sufficiently to prevent spilling during hauling. Peaty soils become very weak and starts flowing when saturated. Therefore, infiltration of rainwater should be minimized as much as possible at the dumpsite by providing a proper drainage system. Moreover, sides of the soil dump should be analyzed for stability and the sides should be designed to prevent slope failures with a reasonable factor of safety.

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It is important not to dump the peat material excavated from the abandoned paddy fields in areas where irrigation or agricultural activities are carried out. Or even built up or residential areas should not be reclaimed with this material as it contains high acidity. These materials so excavated have to be made use either to fill in the areas with similar soil types or could be used to construct noise barriers in sensitive areas. The material excavated should not be stocked even at the temporary dump areas for longer period to get exposed to rainfall so that the acidic run-off may pollute the nearby productive lands.

The impacts due to dumping unsuitable soils has mainly taken place owing to negligence of the contractor and due to the absence of suitable supervision and monitoring. The relevant environmental officers should monitor the construction process & take appropriate action. New site inspection knowledge would shed more light on the issues to comment adequately on the question.

The rock blasting in the project area and for construction has raised many public complaints/protests, It should be noted that particularly at main quarry sites, test blasts are to be carried out in order to address the problems associated especially with the neighbors and accordingly appropriate measures need to be taken. Compensation packages need to be worked out to provide suitable solutions to the public concerns. However, the project proponent needs to be made to understand that it is not possible to address the public complaints on rock blasting issues only through a one off environmental assessment. Such assessments need to be made at regular intervals.

When blasting is carried out, energy left over from rock breaking processes by blasting is transmitted to surrounding areas as elastic waves. As these waves travel they displace particles in their paths giving rise to particle velocities. Generally interval timing devices, called Delays, are used in blasting operations to distribute the total amount of explosives detonated in a given time. The purpose of using Delays is to control vibrations and to increase fragmentation. As stated in the Interim standards for Noise and Vibration by CEA, given in the Table A1.28 of the Annexes, the peak particle velocity is closely related to the damage caused to different types of structures by wave propagation due to blasting. Other than structural damage, the vibration created by blasting may cause inconvenience to the occupants in buildings near by, as given in Table A1.30 of the Annexes. The peak Particle Velocity (V) per Delay is related to the weight of explosives and the other parameters through the following empirical equation proposed by Oriard's:

$$V = K \left( \frac{D}{\sqrt{W}} \right)^{-1.6}$$

Where *K* – Site specific constant  
*D* – Distance to the point under consideration from the blasting location  
*W* – Weight of explosives

It is evident from the above equation that the peak particle velocity depends on the weight of explosives used per explosion and other site specific parameters such as

soil type, confinement of the blasting hole etc. Once the Peak Particle Velocity (PPV) is measured in the site using a small test blast, the above equation can be used to develop attenuation curves. Thereafter, the equation could be used to limit the particle velocity near surrounding structures to limit structural damage. However, a human is sensitive to PPV in the order of 0.1 mm/sec, which is much less than the PPV that would cause damage to any near by structure or would cause inconvenience to the occupants of the near by residential buildings. Therefore, people must be made aware, through appropriate means, the difference between the human perception to vibration and the damage caused by such vibration.

Moreover, the blasting procedure should be designed by well experienced persons so that damage caused to near by structures and the inconvenience caused to the occupants of the near by structures is minimum. In addition, existing cracks and other damages of the near by structures should be surveyed before implementation of the actual blasting operation and convince the people that any damages is assessed and compensated for. In the ADB section and the JBIC section there is on going blasting monitoring by technical personnel.

When construction of base and sub-base of the expressway is in progress, vibration issues related to compaction are very likely to occur. In such cases the interim standard given by CEA needs to be followed in order to find out whether there is an issue on vibration. Accordingly, either compensation or rectification has to be done by the contractor.

The allowable Peak Particle Velocity (PPV) for different types of structures based on frequency of vibration is given in Annexes. Compaction vibration is a major issue if very heavy rollers or vibratory rollers are used for soil compaction. The amount of ground vibration decreases with the distance from the compaction point. Therefore, soil compaction away from residential areas will not pose any direct effect on structures in the vicinity. To avoid the concern of the people regarding vibration, soil compaction may be carried out near residential areas using relatively smaller rollers without vibration. Near existing structures use of more efficient rollers, such as sheep's foot rollers and padded rollers without vibration, is desirable. If the above mitigatory measures are not economically feasible near such structures, existing cracks and other damages of the structures should be surveyed before actual compaction process begins. This had not been practiced in the case of ADB section and it is recommended that this be done ahead of construction for the JBIC section. People should be compensated for any damage caused by ground vibration due to construction activities. It is normal practice that the contractors obtain a suitable insurance cover for probable damages caused due to construction activities. A look into this has to be included in the proponents agenda and the consultant should be requested to make recommendations for suitable action.

*1.4 The researcher's concentration on the feasibility of road trace design is not very specific. Guidelines for keeping a sufficient buffer zone for the both sides of the highway, impacts of latest UDA regulation on areas adjacent to ROW, feasibility of proposed drainage system, lack of unsuitable soil dumping areas, rock blasting sites close to settlements and typical flood prone sections (Imaduwa, Kananke, Angulugaha, Weniwekola, Kahathuduwa, Panape Ela )*

*could have been considered. It is necessary to find mitigatory measures during pre-construction stage. Researcher's professional recommendations as mitigatory measures for these issues are also very valuable.*

- **Response of UOM**

Identification of a buffer zone should be done after consultation of all the relevant line agencies. The line agencies relevant for drainage, irrigation & flood protection schemes are Irrigation Department, Provincial Irrigation Engineer. Provisions of the Flood protection ordinance, Agrarian Services Act, Irrigation Ordinance, SLLRDC Acts (Recent amendments regarding declaration of retention areas) could be used.

Feasibility of the road trace design needs to be considered in physical, financial and economic terms. The team has carried out the environmental assessment of the final road trace. The team has not considered evaluating the guidelines of the environmental authorities or the planning authorities of the country and this is felt as a specific exercise of the project proponent if identified necessary. However feasibility of proposed drainage system, lack of unsuitable soil dumping areas, rock blasting sites close to settlements and typical flood prone sections have been addressed in the environmental assessment report. Though felt that the issues identified after the field work needs to be addressed separately, some comments on the those that have recently been identified by the RDA are as given below.

The feasibility of the proposed drainage system depends on the adopted design method. It is understood that Irrigation Department has not granted approval for some structures although they have been constructed. Generally opening sizes of the larger structures on flood plains should be decided using hydraulic modeling.

There are social complaints regarding aggravation of flooding because of the highway at Kahathuduwa (5+000- 6+000), Panape (16+000-18+000). The consultant PCI has sought the approval from SLLRDC & the Department of Irrigation for the final opening sizes. SLLRD based their model studies on the previous JICA study for the Colombo Metropolitan Environmental Improvement Project. SLLRC has granted the approval for the final opening sizes and there are some revisions to the original design.

One of the salient features of this design is the channel improvement which extends beyond the ROW. RDA is in the process of obtaining extra funds to implement the flood alleviation measures. Consultant has held many discussions and site visits with the affected parties and for the places mentioned above people have expressed their general concurrence. Many meetings were held with the stakeholders and the, politicians & the District Secretary and the respective Divisional Secretaries. The proposed measures by the SLLRDC (i.e. larger structure openings & channel improvement) are acceptable to public if these measures are implemented. It should be noted that there is no social concurrences to the road construction without channel improvements.

Even though there are no strong social protests SLLRDC has conducted hydrological studies to cover the entire JBIC section. Modelling has been used only for the

critically flooded stretches and for other stretches general hydraulic calculations have been performed assuming free flow criteria through the culverts.

Consultant has performed backwater calculations for Kalu Ganga Bridge and the calculations have been submitted to the Irrigation Department for approval. Irrigation Department has given instructions to increase the width of the bridge span from 220m to 310m to reduce the upstream backwater effect to about 7.4 inches for 100year flood. However this matter has still not reached a final stage because of the additional costs.

Critical flooding also takes place at Welipenna (45+000- 46+000), Parew Ganga (52+000) & Bentota Ganga (52+500- 56+500). SLLRDC has granted approval for the bridges and culverts in these areas and SLLRDC studies confirmed that most of the provided spans to the bridges are satisfactory.

Following are the key measures suggested through SLLRDC flood studies. (Ref. SLLRDC flood study reports)

- Enlarged culvert & bridge openings to avoid extra backwater effects.
- Channel improvement from upstream to downstream (even outside ROW) e.g. Kahathudues- Kalu Ganga Athu Oya from Sandathenna to Bolgoda lake & link channels, Panape Ela from Panape to Bolgoda Ganga.
- Improvement to upstream & downstream road bridges outside ROW. E.g. Rilawala Bridge at Colombo-Horana Road.
- Provision of adequate free board to the culverts which are in flood prone areas. E.g. culverts at Panape.
- Provision of additional culverts to conduct sheet flow.
- Recommendations to provide additional culverts for irrigation purposes.
- Recommend bridges instead of culverts at Kurundugahahethekma 66+325.

Lack of unsuitable soil dumping areas needs to be looked at carefully for suitable selection and this has to be done with proper identification of environmental impacts. Peaty soils, generated due to soil improvement along the road trace, should be safely disposed to suitable dumpsites. Following factors should be considered in selecting dumping sites:

- Anticipated future development activities near the dumpsite, as the peaty soil is a very weak foundation material for transferring any superstructure loads.
- Possibility of providing drainage out of the dumpsite area as the sides of the saturated peaty soil dumps will become unstable.
- As the water passing through the soil dump is polluted, the dumpsites should be located well away from drinking water sources.
- Possibility of minimizing erosion of the dumped soil out of the dumpsite as eroded peaty soil may pollute near by water bodies and agricultural lands.
- It should also be noted here that the peaty soils should be allowed to dry sufficiently before transporting to the dumpsite to avoid spilling.

Energy generated, due to sudden expansion of the air inside a confined space as a result of burning of explosives, is used in rock blasting to break intact rock. The energy left after breaking the rock adjacent to the blast point is propagated into the surrounding area as ground vibration. The ground vibration is damped out with the distance and thus the effects of vibration due to blasting.

As stated in the Interim standards for noise and vibration by CEA, given in the Annexes, the Peak Particle Velocity is closely related to the damage caused to different types of structures by wave propagation due to blasting. Other than structural damage, the vibration created by blasting may cause inconvenience to the occupants in buildings near by, as given in the Annexes. A human is sensitive to Peak Particle Velocity (PPV) in the order of 0.1 mm/sec, which is much less than the PPV that would cause damage to any near by structure or would cause inconvenience to the occupants of the near by residential buildings. Considering the above facts, following mitigatory measures are suggested:

- Public awareness campaign to educate the concerned people about the difference between the human perception to vibration and structural damage caused by vibration.
- Efficient use of explosives in a delayed sequence to maximum utilization of the energy due to blasting for fragmentation of the rock and thus minimize the waste of energy due to propagation of elastic waves, noise etc.
- As it is not possible to control vibration within very close proximity to the blasting location, structures that are near the vicinity of the blasting point should be surveyed for existing cracks and other damages to establish a reference for damage assessment due to blasting operation.

The rock blasting sites selected close to the human settlements have created some problems to the communities. Many of the problems complained is a mixture of actual and perceived problems of the communities living close to the rock blasting sites. The project developer has established monitoring programs to address the community complaints on the rock blasting . The community complaints include:

- Disturbances to the routine life activities
- Disturbances to the school children doing studies during night
- The negative impact on the houses due to vibration
- Dust due to quarrying

The communities have got accustomed to making complaints to the monitoring team of the project developer. It is also necessary to establish a Grievances Redress Committee (GRC) and educate the affected communities to take up their complaints to such committees. The Divisional secretaries of the relevant division could be utilized for the leadership of the GRC. As the public of administrative divisions do recognize the leadership of the DS in the area, the confidence of the APs will be boosted by such an action. However, the complaints of the communities with respect to the negative impacts of rock blasting should be given higher priorities by the project developer. If the solutions acceptable to both parties through discussion are

worked out, then the unnecessary delays in project implementation cited commonly as due to community objections may be minimized. The social negotiation process should be worked out to practice during the project implementation process to minimize delays due to environmental issues.

Baseline flooding is prevalent in many low lying areas along the trace. Flooding cannot be mitigated through highway construction & provision of openings. However wherever possible, the openings are recommended to be designed to allow free flow without any backwater effect. Separate flood control measures should be adopted to mitigate flooding which had been prevalent in the area even prior to the construction commenced.

*1.5 The environmental impact management system explained here is not very practical. Responsibilities of each party are not clear. A proper system could have been selected by the researcher using ADB guide lines or comments made by ADB-SLRM. It seems that the section of 'description of the responsibilities and authorities for implementation of mitigation measures and monitoring arrangements' was not preceded by a proper study on the current status.*

- **Response of UOM**

The report does not contain a section on “Environmental Impact Management System” and therefore the comment of PMU is not specific. However guessing from the attempt taken by the PMU/RDA/ADB, the team wishes to direct the attention to the Chapter on “ Institutional Requirements and Monitoring Programme” and the Sections on “Description of the Responsibilities and Authorities for Implementation of Mitigation Measures and Monitoring Requirements” and “Description of Responsibilities for Reporting and Review” in which the team’s expert recommendation is presented. These have been presented keeping in line with the TOR. It requires significant changes to the present management system of the project and especially the PMU. If the PMU has identified the proposal is not practical within the prevailing system, then this is in accordance with the recommendation of the team. In case of such a situation the PMU requires to effect early action to change its structure to suit the recommendations and also to select appropriate person(s) to lead relevant sections.

*1.6 New inclusions in the 'Environmental Monitoring section' of the EMP are very important. New sections for water quality, sediment quality, and groundwater quality have been included inconsideration with current hydrological impacts. Some more new sections were also included for exploitation handling, transportation and storage of construction materials, slope stability and keeping buffer zone during operation.*

- **Response of UOM**

The team has noted the comments and agrees with the statements above.

2. ***Comment of PMU/RDA:*** *An expected analysis on differences of impacts and mitigatory measures between the final trace and the combined trace was not systematically carried out. The main purpose of the study was to cover the requirement of environmental assessment and mitigation along the deviations from the combined trace.*

- **Response of UOM**

The team as agreed at the commencement and as reported during interim meetings, first identified the significant deviations and the critical points in their expert opinion. The team then identified the matrix for environmental assessment on the similar lines of the previous studies and accepted practices. Then the team identified the existing environment through field visits and stakeholder responses. This enabled the associated locations to be described and assessed accordingly. The impacts and the mitigation followed by the Management Plan has indicated the methods and results after the environmental analysis by each expert and assessed as a multidisciplinary team. This has been clearly indicated in both the reports. The team has had a significant number of meetings with the PMU/RDA/Donor but has agreed upon the system adopted for the assessment. The PMU to look at the contents pages to identify the sequence of analysis and presentation of results of the environmental assessment.

3. ***Comment of PMU/RDA:*** *It was a development in the final report that the study team has concentrated satisfactorily on actual examples using current construction impacts in the ADB section. Special issues related to hydrological impacts and flood and drainage impacts were considered comparing current status.*

- **Response of UOM**

The team has noted the comments and agrees with the statements above.

- 3.1 *Proper social inquires were not carried out using current status in the field to assess impacts and find alternative solutions for public complaints on impacts on rock blasting, compaction vibration and indirect impacts for APs in boundaries of the ROW.*

- **Response of UOM**

Main concern of the AP's are the vibration and noise created due to rock blasting and the safety of their houses. As it has been pointed out previously, response of the vibration near the blasting site is high and it attenuates with the distance and this attenuation depends on the type of soil, weight of explosives used, delay pattern used etc. However, it should be accepted that near the blasting site, the noise and vibration levels might be higher than the limits specified in the interim standard of the CEA. Therefore, these AP's should be compensated after assessing the effects of blasting on them or their properties. However, the main reason for the public complains is the

human perception to vibration. As it has been written earlier, a human is sensitive to Peak Particle Velocity (PPV) in the order of 0.1 mm/sec, which is much less than the PPV that would cause damage to any near by structure or would cause inconvenience to the occupants of the near by residential buildings.

Social inquiries were carried out in the field to assess the impacts. The homes of the affected people were visited and the crack survey activities were monitored. As the solution the study identifies the need to establish a proper system of social negotiations to manage these problems. It is also necessary to create a conducive environment for the implementation of the project in the areas where affected parties are living. As indicated previously detailed studies need to be done to identify the issues and incorporated mitigatory actions. This can not be done through a limited Environmental Assessment and hence the deployment of a special team as suggested previously is emphasized. The technical teams also need to be made aware of the social problems faced by the public and hence the project proponents approach needs to be a socio-technical. The rules and regulations existing in Sri Lanka on rock blasting, noise, vibration etc., should be well briefed to the public concerned. The public complaints should not be neglected and the project developer should take actions to listen to the problems and to effect early action. As indicated previously, there had been a tendency to implement one sided solutions instead of consultative action. The public should be informed about the grievance making procedure in place for the project and the institutional mechanism developed for public to take up their grievances.

Compaction vibration becomes a major public issue if very heavy rollers or vibratory rollers are used for soil compaction. If the construction methodology or the type of equipment used is not changed considering the suitability to the locations, then vibration due to compaction becomes a major social issue.

During the study the public who were living or engaged in activities close to the road were surveyed. According to the community members living in the close proximity of the new road, the vibrations due construction and compaction do create disturbances. These physical activities carried out do not create significant physical damages to the houses in the nearby areas according to the members of the same community. The noise and dust are the major problems faced by the community in the vicinity of the road. The noise and dust are real problems also to the vulnerable groups such as infants, school children and senior citizens in the community

*4. **Comment of PMU/RDA:** An analysis was not included in the report to review public protests from Akmeemana and Gelanigama area against road traces to ensure that there were serious environmental changes between the final and the combined trace. The necessity of this was mentioned with previous comments for draft reports.*

- **Response of UOM**

During the latter part of the study it was revealed that most of their social protests have diminished. However there are concerns regarding flooding in the JBIC Section, extraction of water to paddy areas, minor access problems at sporadic places etc.

These are presently being addressed. At Panape the public have consented to a proposed solution by the proponent which is a road with channel improvements as the remedy to the flood problem.

The EA was undertaken at a time the road trace had already been deviated and at a time even some construction activities of the deviated section had begun. The community in the vicinity were interviewed randomly and individually. Also informal discussions were discussed with people in Akmeemana and Galanigama who were opposed to the project. The community protests were due to the negative impacts on their dwellings and also problems related to their land properties. The local population were of the opinion that the trace was deviated due to social problems but the communication with the project personnel and some documentations indicated to a reason which was put forth as action to avoid critical wetlands.

The main method used to analyze the issues raised by the people was the assessment of details collected by interviews and discussions with the communities living around the combined and final road traces. The same issues were taken up with the RDA officers working in the area to have their opinion.

*5. **Comment of PMU/RDA:** An analysis on impacts of resettlement of APs in the new environment was not carried out although it was requested in previous comments. There are some misunderstandings among resettlers on valuation system of their agricultural lands and commercial units, delays of implementation of income restoration programme, difficulties they faced to complete construction of their houses as well as infrastructure in resettlement sites, unavailability of required portions of lands etc. Researcher's comments on those issues could have been benefited for future planning similar projects.*

- **Response of UOM**

The project developer has played some role in post resettlement actions with the communities resettled in RDA sponsored sites. The affected communities had been provided with training on entrepreneurship development and other livelihood reestablishment activities. A development credit program had been initiated to use as revolving funds to start income generation activities. Though initial actions have been taken to motivate the resettled communities for income generation activities, the field work revealed that it has not yet been implemented at satisfactory level. The project developer with the support of monitoring and other consultants needs to develop comprehensive and practical programs with definite targets and objectives to assist the APs to plan and implement livelihood development activities. The line agencies and other potential private parties should be coordinated by the project proponent to ensure active involvement in the livelihood development assistance programs targeted for each area. Simultaneously it is important to pay attention on APs who resettled in lands which they found on their own. Further work should be initiated to identify how the affected livelihood systems of the APs have been re-established.

The persons interviewed on the post-resettlement issues and their present resettlement sites are included in the following table.

<b>Name</b>	<b>Position/office</b>	<b>Address/resettlement site</b>
K. Wijesekara	Community leader	Pathiraja Resettlement-Kurundugahahatapma
M.H.M. Gunasekara	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
E.H.Premarathna	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
K.R. Ranjith Weerasingha	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
H.G. Anulawathi	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
K.K. Rasha Ranasingha	Resettled business man	Roshan Motors Kurundugahahatapma
P. Mahinda Kumarasingha	Resettled business man	Kumarasiri Electrical- Kurundugahahatapma
Nandasena Nanayakka	Resettled business man	Nandasena Stores- Kurundugahahatapma
H.L.Siris	Resettled person	Kandewattagoda Imaduwa
Y.P.Piyathilaka	Resettled person	Kiriwanahena-Halpe
P.H. Eden	Resettled person	Kiriwanahena-Halpe
P.H. Chndrakanthi	Resettled person	Kiriwanahena-Halpe
D.Wickramanayaka	Resettled person	Wanawela-Imaduwa
W.Nanayakkara	Resettled person	Pethikgoda-Imaduwa
K.D. Elame	Resettled person	Pahalagedara-Imaduwa
M.H.A. Lalith Sampath	Resettled person	Batgodakanda-Deegoda Road
K.L.W. Ratnasiri	Resettled person	Batgodakanda-Deegoda Road
K.L.M. Piyadarsani	Resettled person	Batgodakanda-Deegoda Road
A.Suranga	Resettled person	Kailawatta-Devata
M.M. Sunil	Resettled person	Kailawatta-Devata
I.V. Jayaratna	Resettled person	Talgasmulla-Wanchawela
H.G. Hendrik appu	Resettled person	Talgasmulla-Wanchawela
H.Samarawickrama	Resettled person	Deegoda Road-Dickkumbura
H.G. Piyasena	Resettled person	Gurugewatta-Wanchawela
L.S. Chaminda	Resettled person	Godagama-Akurassa Road

Discussions were carried out with the people in Pathiraja resettlement site (Table above). There are some unsolved complaints/issues in resettlement sites of the RDA such as the water supply, access roads. Some APs resettled are not satisfied with the environment and other facilities in the resettlement sites. It is the strong opinion of the team that many of these problems can be solved through organized and structured social negotiations along with adequate interactions with affected persons. If the required infrastructure facilities have not yet been established in the resettlement sites, then the problems associated with such delays should be well informed to the APs and reasonable efforts need to be taken to make the APs understand and agree for such delays and the reasons.

The availability of land suitable and acceptable to the APs to construct the required number of houses was cited as a problem during this study. The most effective action proposed to mitigate this impact is to seek the support of the Grama Niladharis and Divisional Secretaries in finding suitable lands from the unutilized state lands. At the same time the project developer may require to make attempts with the support from APs to find private land which could be purchased for the establishment of resettlement sites.

The difficulties to find suitable land acceptable to APs was raised by the RDA officers working in the area, the communities resettled in the Pathiraja

resettlement site, and also the local government officers such as GNs. The sociologist and his field team discussed this issue with persons resettled in Pathiraja site. The issue of unhappiness of the APs on the extent of land given to them for home garden has been identified as a common issue in most of the resettlement sites. The main concern of the APs was their need to obtain sizeable lands since they had been previously living in large extents of home gardens in which sufficient space to cultivate seasonal and perennial crops.

The study identified that there was no properly developed program for monitoring the efforts extended to reestablish the affected livelihoods of the people who resettled in their own identified(preferred) locations. The project proponent should ensure careful and systematic programs to monitor the process and the activities in the post-resettlement phase of the affected APs who resettled in their preferred locations. The APs interviewed during the study are in the list mentioned below.

Name	Position/office	Address
K.K. Rshan Ranasingha	Resettled businessman	Roshan Motors Kurundugahahatapma
P. Mahinda Kumarasingha	Resettled businessman	Kumarasiri Electrical- Kurundugahahatapma
Nandasena Nanayakka	Resettled businessman	Nandasena Stores- Kurundugahahatapma
H.L.Siris	Resettled person	Kandewattagoda Imaduwa
Y.P.Piyathilaka	Resettled person	Kiriwanahena-Halpe
P.H. Eden	Resettled person	Kiriwanahena-Halpe
P.H. Chndrakanthi	Resettled person	Kiriwanahena-Halpe
D.Wickramanayaka	Resettled person	Wanawela-Imaduwa
W.Nanayakkara	Resettled person	Pethikgoda-Imaduwa
K.D. Elame	Resettled person	Pahalagedara-Imaduwa
M.H.A. Lalith Sampath	Resettled person	Batgodakanda-Deegoda Road
K.L.W. Ratnasiri	Resettled person	Batgodakanda-Deegoda Road
K.L.M. Piyadarsani	Resettled person	Batgodakanda-Deegoda Road

6. **Comment of PMU/RDA:** *It seems that the researcher could have organized their presentation here with prioritizing impacts and mitigatory measures with the special consideration on deviations. It was not satisfactorily carried out. Also the system of presentation introduced by ADB-SLRM with their comments (point no.75) could have been useful.*

- **Response of UOM**

The team has noted the comment. It is interesting to note the nature of assessment desired by the PMU, though not specifically indicated in the TOR. If prioritization was desired then, the analysis and approach as the reviewer would probably understand, differ from that of the present one which is indicated in the TOR. However the relevance matrix approach is the commonly accepted EA methodology by the present day environmental managers. The details have to be worked out using the EA as a base document. It is known as too ambitious to expect such details from the EA at the final stage of a report when the methodologies have been discussed and proceeded. Therefore it may be prudent for the PMU to assess the comment “unsatisfactory” without taking a good look at the identified objectives of the work, and then effect action to take corrective measures.

7. **Comment of PMU/RDA:** *Researcher's concentration on Galle port access road (GAR) is not sufficient. Under the section 2.1(i) of the TOR of this study Gall port access road for the study is included.*

*Recently there were public complaints on access, rock blasting etc.from the GAR.*

- **Response of UOM**

The Study has carried out the environmental assessment of the GPA as per the section 2.1 TOR and reported accordingly. The field work and visits were carried out by the team to execute the reported work which was as per the TOR, and discussed and agreed at the interim meetings. The team while carrying out the analysis found the details as adequate to present the environmental assessment as per TOR. The following are the comments of the team on the recent issues which has been indicated above. It is also necessary for the PMU to note the recentness of the remarks as the PMU is aware, most of the field work of the team was completed prior to the interim stoppage of work due to an order by the PMU. The additional comments regarding the above are as follows.

In case of social assessment, as the GPA is comparatively short, walk-through surveys were done by talking to community members. The issue of public protest was discussed with such community members met at the walk through surveys. The GPA runs across a rural area though it is close to Gall urban center. Some people living in the lands close to construction sites are disturbed due to dust, noise and other disturbances created by the construction activities. Similar to the main trace, this community too is not happy about the disturbances to their routine activities. . However complete unhappiness about the project was not reflected during the interviews. The community perceive the likelihood of positive benefits such as better access, increased property values etc., that would be achieved once the road is completed.

Rock blasting activities are mainly concentrated in the road trace within the initial sections of the GPAR, as it passes through the high grounds. The elastic waves propagate from the blasting point outwards, due to energy left after fragmentation of the rock. The elastic waves thus propagates, impart velocity to particles in its path, causing ground vibration. Structural damage and human discomfort due to blasting is felt due to the particle velocity that is generated. Therefore, the Peak Particle Velocity (PPV) is considered as a measure of the structural damage and the human discomfort due to ground vibration. The Interim standards for Noise and Vibration by CEA, given in the Annexes, has specified the peak particle velocity not to damage different types of structures by wave propagation due to blasting. Other than structural damage, the vibration created by blasting may cause inconvenience to the occupants in buildings near by, as given in the Annexes. Therefore, it is the responsibility of the contractor to plan the blasting operations within the stipulated limits not to cause structural damage to structures and not to create discomfort for the people occupying the buildings. If these limits are exceeded, the contractor should pay compensation to the Affected Persons depending the degree of damage/discomfort caused. However, as a human is sensitive to Peak Particle Velocity (PPV) in the order of 0.1 mm/sec, which is much less than the PPV that would cause damage to any near by structure or would cause inconvenience to the occupants of the near by residential buildings.

People should be educated about the difference between the human perception to vibration and structural damage caused by vibration. They should be convinced by citing examples of the structures near blasting sites, which were not damaged due to blasting.

Some description on the existing environment of the land use pattern, land tenure, and settlement pattern are as follows.

The residences located along the ROW of the Galle Port Access Road have been evacuated and relocated in a RDA created resettlement site called Batagodakanda in Akmeemana DS division. The home gardens of these houses were grown with coconut and other perennial and semi-perennial crops such as Banana. The compensation packages paid to each householder was included all the affected properties in the home gardens. The area in the vicinity of the road is fully utilized for various socio-economic development works such as housing, business centers and so on. The categories of land use observed in the immediate vicinity of the road include, Buildings, highlands cultivated with perennial crops, very negligible percentage of unutilized highlands, small percentage of paddy lands and also wetlands. This is quite similar to the main expressway tract. The land use pattern existed in the ROW area has been affected. The residences and other shops were removed and the land use in the immediate vicinity is not yet changed. However it could be anticipated that the land use in the land belt along the road may change significantly with the road construction.

More than 75% of the lands used for residences are freehold titled lands. The rest has LDO permits. The cultivated highlands and uncultivated highlands hold LDO permits. The paddy land owners have freehold titles with traditional tenure pattern. However these paddy fields are small in size and most of them are fallow as at present. The 90% of small area fallen under wetlands are government land but the rest are private lands that have become wetlands due to stormwater stagnation problems. The land affected and evacuated hold freehold titles and LDO permits.

There are no housing schemes to be affected due to improvements of the road. Since the Galle access road is a project designed to expand the existing road there will not be serious change of the settlement pattern such as physical separation of villages and other settlement and so on.

During the construction stage dust, noise and other construction related disturbances will be potential problems.

In the post construction stage much positive impacts can be expected due to improved and effective access to Galle town. The traditional people (perception of a few individuals of old generation) living along the road are not happy about the change of the traditional nature of the environment in the immediate vicinity of the existing road. It is a rural road running through some rural areas except a small stretch close to the Galle town.

8. **Comment of PMU/RDA:** *It was also found that general descriptions for some sections of analysis have included in both reports without considering indigenous socio-economic or physical features relevant to the area under the study. As examples, some sections in JBIC report can be mentioned such as Positive externalities on Agriculture and Fisheries (5-39) Tourism (5-39) Structures (5-41) Business volumes and Tax revenues (5-42). Some anticipated environmental impacts in JBIC section are also included identically in ADB section without considering indigenous features of the JBIC section. The sections of 'some other aspects of impacts on Rural economy' are same in both reports and no proper comparison in consideration with deviations of both sections which would be useful to update EMP, SIA and RIP.*

- **Response of UOM**

Although ADB and JBIC sections are considered as two parts in the report, socio economic status, agriculture and livelihood and general lifestyle of the people along the trace in terms of a socio economic analysis is homogeneous. As the trace traverse through mainly abandoned paddy lands, marginal paddy lands, mixed-gardens, tea, rubber, cinnamon and coconut plantations the anticipated impact of the proposed activities are the same as the productivity of agricultural activities does not have significant difference in the same climatological region. However, specific locations: as examples, coir industry in Galle port access road, sedge and handicrafts in Rantotuwila area of Bentara Ganga valley, Fishing in Bentara Rantotuwila and Panape area, vegetable growing in Godagama, etc., have been mentioned separately.

Impact of rural economy in both sections could be indicated as follows.

As the road transect through several suburban areas in both sections, impact of the road in rural economy is the same. For an example, negative impacts due to blocking and damaging road structures in the rural areas during the construction period (experiencing now in Akmeemana, Walahanduwa, Deegoda, Kokmaduwa) will be a problem in the construction phase in JBIC section also from Kottawa to Dodangoda. Positive impacts of the proposed road in the operational phase will be high in areas of interchanges in both sections due to creating and enhancing business activities in both sections.

The study paid attention on the following socio-economic and physical features in the local area. The following features will have impacts as result of the project during its construction and post-construction phases:

- The communities living in the close proximity of the trace (ROW) of the proposed road (interviews with individual community members randomly met in the walk through surveys along the road trace).
- The impact on farmers and other traders once the road is implemented- positive/negative impacts on their livelihood systems (interviewed with such groups )
- The impact of the proposed road on the access facilities of the sub-roads connected to the SH. (About 30 such sub-roads were observed by the field study team).

- Impact of social relations of the communities living in the villages through which the proposed SH runs. ( About 57 villages located in 12 DS divisions)

The proposed project will contribute significantly to the local economy in the long run. The value of land will go up. The traders and other businessmen would have easy access to Colombo and other urban areas. The tendency for population increase in the local area due to the proposed project would rise significantly. There will not be significant differences of the impact of both deviations on the local economy except that the impact on the built up properties in the previous trace and the deviated trace. The study revealed that the deviated traces led to avoiding sensitive biological and socio-economic features in the area

9. ***Comment of PMU/RDA:*** *It is also found that some differences are in both reports on statistics of resettled families. Differences are in the same report on the same topic. (pages 5-29 and 6-1JBIC report.) The figures of resettlement are to be re-checked with relevant officials of PMU/STDP.*

- **Response of UOM**

In the ADB section, the proposed project created negative impact on 718 houses located on the ROW. Out of 718 building structures 40 were not occupied by the people and they were partially constructed buildings, not made ready for the use of socio-economic purposes. In total 678 families were resettled under the resettlement program of the project. Out of 678, 220 were resettled in RDA created resettlement sites while 458 got resettled in the locations they preferred with their own initiation (using the cash compensation paid by the project).

In case of the JBIC, the following are the data obtained from two RDA project offices located in the project area (Bandaragama and Dodangoda).

The number of families to be displaced was 584 at the present condition and the progress achieved by the month of August 2005 with regard to relocation of affected people is as follows: Some work has been already completed to resettle 220 affected families in 13 resettlement sites. ( about 170 families have been already settled in these 13 sites). Only 584 of 597 houses are occupied by people and therefore, they would be relocated. The other 13 houses affected were just physical structures partially constructed or not occupied by people. The owners of these 13 houses will be given compensation although there is no need to relocate people (but the structures will be demolished to acquire lands to carry out project construction work).

**10. Comment of PMU/RDA:** *It is necessarily needed to know the differences of social impacts and mitigation measures between the combined and the final trace to update SIA, RIP and RAP. Considerable systematic descriptions were not included in reports in relation to the above.*

- **Response of UOM**

In the ADB section, the deviation of the road has also helped to avoid critical wetlands which is concern of the CEA . The compensation for the affected families and land has been already completed and also affected families have already been resettled. The impact of proposed road on the social environment (combined and final trace) are as follows.

<b>The impact</b>	<b>Combined trace</b>	<b>Final trace</b>
Impact on land	the extent of land to be acquired for the road used was little lower than the final trace	About 132 ha of paddy land and 341ha of other highlands have been acquired
Impact on land tenure	Some plots of land cultivated got physically separated creating problems on the land tenure and user rights and access to land. The road trace was designed through a significant wetland and therefore, deviation was proposed	The similar impacts on the land tenure due to final trace. The final trace resulted to avoid most critical wetlands due to the decision taken for deviation.
The affected families	The affected families in combined trace is little more than 678	678 families were directly affected.
The affected houses	Little les than 718	718 houses affected (out of which 40 were non-occupied buildings).

Social Impacts and Mitigation Measures in the Combined Trace of the JBIC section could be described as follows. The number of properties to be affected is less in combined trace when compared to negative effects on properties of the original trace demarcated for the highway. The combined trace too created some social problems due to its trace running through sensitive locations. Therefore, the final trace was selected to minimize the negative impacts on properties in the social environment.

**11. Comment of PMU/ADB:**

*Comments raised during the time of submission of the Interim Report have not been adequately addressed. It is recommended that the team checks the draft final report against each of the comments made at the submission of interim report. Specifically with respect to the social assessment – please refer to the comments made on the social section. Although the **socio-economic** section is well presented the following details have to be included in the **social assessment**:*

- **Response of UOM**

The sociologist and the field team carried out rapid assessment using the following methods:

<b>Methods</b>	<b>Locations visited/ agencies met</b>	<b>Issues observed</b>	<b>Time spent</b>
Reconnaissance visits by the EIA team	Entire combined trace and the deviations	Trace has been cleared by acquiring land and other houses	28-10-2005
Reconnaissance visits by the sociologist and his Assistants	Entire combined trace and the deviations	Trace has been cleared by acquiring land and other houses. Some APs had not yet been resettled but they have been and given alternative housing in other locations	30 -10-2005
Interviews with the managers of two RDA field engineers ( Managers of the tow offices)	RDA field offices- Pinnawela and Kurundugahahatap ma	Though resettlement and land acquisition process was over many APs used to visit the offices to discussed about the unsolved resettlement issues and compensation	Two meetings in each office (2 days- 2-1— 2005 -3-10-2005)
Interviews with group monitoring the resettlement process- Sarath Halgama, Y. Renuka and M.S.R de Silva ( group meeting)	RDA site offices in Kurundugahahatap ma and Pinnawela	Issues regarding post- resettlement activities of the RDA established resettlement sites- Low priority in monitoring the impact on APs	4-10-2005
Interviews with team leader of Halcrow and the environmental monitoring consultant of the same ( Mr. K.M. Gunaratna)	In the Halcrow consultants' office	The frequent complaints regarding the impact of construction sites ( quarry blasting and other construction activities ) on the communities living around such sites, problems regarding lack of systematic monitoring and also lack of proper forum for the affected public to take up their grievances	7-10-2005 and 9-10-2005
Interviews with offices of Imaduwe DS office	Imaduawe	Some resettlement related problems come to the attention of the DS offices, able to understand the roles played by the DS office in implementing LARC committee decisions	13-102005
Meeting with Statistical officers in Galle and Matara District secretariats	Galle and Matara	To obtain relevant demographic information on the affected DS divisions	14-10-2005
Focus group discussions with community groups	Scatted locations along the combined trace and the final trace- The locations include Kurundugahahatap ama, Kiriwanahwena, Wanawela, Pethikgoda, Pahagedera,	Majority of APs are (more than 95%) satisfied with the compensation package, but not with the facilities in RDA created resettlement sites. The main complaint was inadequacy of the extent of land allocated for the home gardens allocated to them. The issues related to disturbances due to construction and other blasting sites	16-10-2005 27-10-2005

	Batagodakanda, Kailawatta, Talgasmulla, Deegoda, Gurugewatta, Godagama- Akurassa		
Interviews with APs ( the names are mentioned in a table mentioned above in this addendum)	In the same locations mentioned able	The same issues discussed	During the same period

## **12. Comment of PMU/ADB:**

*Methodology adopted for social assessment and consultation process should be described. Also, please provide list of persons consulted during the survey for the Supplementary Assessment.*

### **• Response of UOM**

The likelihood social impacts due to southern expressway have been assessed in several studies carried out since end of 1990s. Therefore, the current study attempted at providing supplementary information on the social impacts of the ongoing development project. The two sections of the road (ADB funded and JBIC funded sections) are in two different stages of their development and therefore, an attempt was taken to identify the actual social issues prevailing in the project area. For example the people in the ADB section have some experience on the construction activities of the road because some activities such as site clearing. Land cutting and filling have been carried out in some stretches of the proposed road. In the JBIC section no significant activities on construction have been carried out but in both sections evacuation of affected persons and other properties have been completed. In this context the study was carried according to the TOR provided by the proponent.

Social impact of the proposed road has been studied by various parties in various stages (since 1995) and the TOR did not require a conventional social impact analysis since it was to be carried out separately and the social environmental specialist in the team was to obtain information from the separate study. The evacuation/ resettlement processes also has been substantially completed in both sections of the project (ADB and JABIC) and hence the study resorted to rapid assessment methods to find out the current issues. The methods followed to obtain necessary information/data are included in the following Table

## Fieldwork Methods

<b>Information</b>	<b>Methods</b>	<b>Source</b>
Sample of problematic incidents on evacuation and compensation issues	Walkthrough surveys along sample stretches of the road	Affected community members
Basic socio-economic information of the affected communities	Walkthrough surveys and Focus Group discussions with communities affected and other communities in the neighborhood	Communities, Grass root level officers (GNs and Samurdhi Niyamakasa)
Community satisfaction survey on evacuation and compensation process already implemented.	Meetings with relevant people and also government officers in the respective areas (GNs)	-Do-
Basic socio-economic information of the affected communities in deviations and Galle access road	Focus group discussions (Household surveys will not be required because the affected people have been already identified, paid compensation and evacuated)	Communities affected.
Information about social impact, nature of mitigatory actions developed	Review of available documents especially on social impact assessment (evacuation and resettlement process)	Documents available

The following sources were used to collect secondary information on the exactly affected social environment (affected communities and other properties due to land acquisition and other development interventions)

- Divisional secretary offices ( visited only to two Divisional secretary offices to see what type of roles the DS offices had played/ also currently playing on implementation of mitigation measures and also monitoring the implications of the mitigation process- The two DS divisions visited include, Imaduwa and Kadawathsathara)
- Halcrow/ECL consultancy office
- RDA Project offices at Habaragala ( Pinnawela) and Kurundugahahatapma

The persons attached to these offices were interviewed to understand their experience and perceptions on the social impacts created by the ongoing project and also their interpretations and ideas on the mitigatory measures presently being implemented. Various community members affected (already resettled in various locations and also the communities living in the areas located in the vicinity of the road stretch).

### Interviewed Personnel in the ADB Section

Name	Position/office	Address
Sarath Halgama	Environmental monitoring officer	RDA office -Kurundugahahatapma
Y.Renuka	Social impact monitoring officer	RDA office -Kurundugahahatapma
M.S.R. de Silva	Resettlement monitoring officer	RDA office -Kurundugahahatapma
Assistant divisional secretary	Imaduwa DS office	Imaduwa DS office
Administrative officer	Imaduwa DS office	Imaduwa DS office
Land officer	Imaduwa DS office	Imaduwa DS office
Statistical officer	Matara Kachcheri	Statistical Department-Matara
Statistical officer	Galle Kachcheri	Statistical Department-Galle
K. Wijsekera	Community leader	Pathiraja Resettlement-Kurundugahahatapma
M.H.M. Gunasekara	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
E.H.Premarathna	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
K.R. Ranjith Weerasingha	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
H.G. Anulawathi	Resettled person	Pathiraja Resettlement-Kurundugahahatapma
K.K. Roshan Ranasingha	Resettled business man	Roshan Motors Kurundugahahatapma
P. Mahinda Kumarasingha	Resettled business man	Kumarasiri Electrical-Kurundugahahatapma
Nandasena Nanayakka	Resettled business man	Nandasena Stores-Kurundugahahatapma
H.L.Siris	Resettled person	Kandewattagoda Imaduwa
Y.P.Piyathilaka	Resettled person	Kiriwanahena-Halpe
P.H. Eden	Resettled person	Kiriwanahena-Halpe
P.H. Chndrakanthi	Resettled person	Kiriwanahena-Halpe
D.Wickramanayaka	Resettled person	Wanawela-Imaduwa
W.Nanayakkara	Resettled person	Pethikgoda-Imaduwa
K.D. Elame	Resettled person	Pahalagedara-Imaduwa
M.H.A. Lalith Sampath	Resettled person	Batgodakanda-Deegoda Road
K.L.W. Ratnasiri	Resettled person	Batgodakanda-Deegoda Road
K.L.M. Piyadarsani	Resettled person	Batgodakanda-Deegoda Road
A.Suranga	Resettled person	Kailawatta- Devata
M.M. Sunil	Resettled person	Kailawatta-Devata
I.V. Jayaratna	Resettled person	Talgasmulla- Wanchawela
H.G. Hendrik appu	Resettled person	Talgasmulla-Wanchawela
H. Samarawickrama	Resettled person	Deegoda Road-Dickkumbura
H.G. Piyasena	Resettled person	Gurugewatta-Wanchawela
L.S. Chaminda	Resettled person	Godagama-Akurassa Road
Kasun	Environmental monitoring officer	RDA-Kurundugahahatapma
K.M. Gunaratne	Environmental monitoring consultant	Halcrow consultants

### Interviewed Personnel in the JBIC Section

Name	Position/office	Address
Resettlement officer	RDA	Bandaragama
Resettlement officer	RDA	Dodangoda
Assistant planning director	DS office	Maharagama
Assistant planning director	DS office	Homagama
Director planning	District secretariat	Kalutara
Statistical officer	-do-	Kalutara
W.D. Karolis	Community leader	No 17, Brahamanagama
U.Gunathilaka	Community leader	No 64, Hiripitiya
A.H. Deraniyagala	Community leader	171/6 A, Hiripitiya
P.Jayasena	Community leader	185/4, Diyagama
P.Kularathna	Community leader	185/5, Diyagama
K.D. Ramani	Community leader	185/6, Diyagama
R.D. Karunadasa	Community leader	185/7, Diyagama
M.S.Perera	Community leader	185/16, Diyagama
Yasapala Vitanage	Community leader	185/46, Diyagama
Geetha Priyangani	Community leader	185/30, Diyagama
H.Chndrasena	Community leader	School Road, Weniwalkola
M.Sirisena	Community leader	School Road, Weniwalkola
S.A. Sarath	Community leader	School Road, Weniwalkola
R.Siripala	Community leader	Godigamuwa, Gonawila
L.Anurasiri	Community leader	Vidiyagoda, Bandaragama
W.W.C.P.Silva	Community leader	Galahigama, Bandaragama
T.A. Lionel	Community leader	Galahigama, Bandaragama
K.Premasiri	Community leader	Diyagama,
H.Leelawathi	Community leader	Kimmanthudawa, Bandaragama
H.Karunarathna	Community leader	Randegoda, Arakagoda
Hebert Alwis	Community leader	Palpola, Galpatha
G.D.David Perera	Community leader	Batagoda, Galpatha
M.Thialkarathna	Community leader	No1, Diyagama, Galpatha
S.A. Punayadasa	Community leader	No104, Diyagama, Galpatha
A.A. Lionel	Community leader	Gangaboda road, Diyagama
A.A.Handi Singhno	Community leader	Gangaboda road, Diyagama
G.D. David Perera	Community leader	New Sattle watta, Dombagoda
M.D. Ranjith Premalal	Community leader	Ukwatta, Kotalawela
Ajith Kumara	Community leader	No11, Pemruk Watta
M.Jayanantha Rodrigo	Community leader	Sapugahawatta, Dodangoda
K.E.Gunarathna	Community leader	Sapugahawatta, Dodangoda
Ajith Paragama	Community leader	No 7, Edward watta, Etorawila
A.K. Sunil Santha	Community leader	Munamalwatta, Walagedara
Vini Jayaratna	Community leader	
H. Hamine	Community leader	Elikahenawatta, Navadawela
B.H. Kamalawathi	Community leader	Elikahenawatta, Navadawela
K.D. Sirisoma	Community leader	Atakotta, Navadagala
Nimal Sirithunga	Community leader	Atakotta, Navadagala
O.K.D. Chularatha	Community leader	Atakotta, Navadagala
H.Ratnapala	Community leader	Atakotta, Navadagala
B. Shelton De Silva	Community leader	Atakotta, Navadagala

### **13. Comment of PMU/ADB:**

*Section 4.3.1.3 refers that the main reason for the deviation of the trace was the objection of residents who owned valuable houses. This is a serious comment and if true, the comment should be substantiated (this comment was made by us at the stage of submission of Interim Report as well – comment No. 41). Elsewhere in the report, statements are made that road trace was deviated to accommodate the CEA requirements in avoiding wetlands. Since this is a public report, such statements as included in the socio assessment should be made only if there is sufficient evidence to prove it.*

- **Response of UOM**

The main reason for deviation of the trace has been documented as it was done to avoid sensitive wetlands in the combined trace (previous trace). The CEA has expressed its concerns on this issue. It is a fact that sensitive wetlands have been avoided and social problem areas have been avoided in the final trace. However some community personnel and officials during informal discussions indicated that they were of the opinion that the main reason for the deviation of the trace was the objection of the residents who owned valuable property. In case that this has to be substantiated better then the proponent needs to commence a special study as this cannot be taken up as an environmental assessment.

### **14. Comment of PMU/ADB:**

*Chapter 4 does not include a social assessment for the Galle Access road. Also in Chapter 5 in sections discussing impacts on land use pattern, Land tenure, Settlement pattern, social structure etc., (5.3.1.1 – 5.3.2.10) states that characteristics along Galle Port Access are very similar to the main trace. This seems unlikely and such statements need to be substantiated.*

- **Response of UOM**

With compared to the ADB section the GPA is different in terms of the socio-economic environment existing in the area. This is a road that is being used by people at present. The communities are semi-urban and not rural as seen in most of the places of ADB section. The Communities in the GPA area have easy access to Galle and most of them are involved in livelihood activities connected with the Galle urban center. The disturbances to the communities during construction stage of this road are more significant than the ADB section. The ADB section of the road is a new trace that does not fall on existing roads in most cases. Therefore, these sections are not heavily used by the communities for their day today livelihood activities. The GPA is being used daily by the people in the local area to reach Galle town. Therefore, delays in improving the GPA will create significant impact on the current road users. Detailed information is mentioned above under item number 7. Therefore the indicated statement in the sections mentioned need to be changed by the contents of this chapter.

**15. Comment of PMU/ADB:**

*Section 4.1.2.4 states that groundwater parameters in GPA were similar to that of ADB section. The ground water quality results have not been included in the annex please provide details of test results, which led to making the observation that ground water quality is similar to ADB section.*

- **Response of UOM**

No separate measurements of ground water were made in the GPA section. It was mainly due to the fact that the water quality in the area was more or less same as that in ADB section (The studies done on Galle Harbour Expansion Project). The area towards Galle comprises brackish water while the wells in the hinterland suffer from fecal contamination (based on earlier experience). Hence no drastic differences are expected in the GPA section when compared to ADB section.