

# Environmental Monitoring Report

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Semi-Annual Report  
March 2013

MON: Western Regional Road Corridor  
Development Project – Phase I

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**MINISTRY OF ROAD AND TRANSPORT OF MONGOLIA  
WESTERN REGIONAL ROAD CORRIDOR DEVELOPMENT PROJECT**

**ENVIRONMENTAL MONITORING  
INCEPTION REPORT**

**(Packages I & II and Package V)**

**Revised on March 2013**

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## **ABBREVIATION**

ADB- Asian Development Bank

CGGC -China Gezhouba Group Company

CJJC- China Jiangsu Jianda Construction

DEIA- Detailed Environmental Impact Assessment

EIA- Environmental Impact Assessment

EMP- Environmental Management Plan

EMOP- Environmental Monitoring Plan

KCI - Korea Consultants International Co. Ltd

MNE- Ministry of Nature and Environment

NBCC -Next Business Consulting Cooperation

PEMC- Project Environmental Monitoring Consultant

PIU- Project Implementation Unit

PSC- Project Steering Committee

SEIA- Summary Environmental Impact Assessment

## **BACKGROUND**

The Government of Mongolia, with financial support from ADB is upgrading the internal transport network in the western region to improve trade and transit links between Mongolia and neighboring countries. The total length of this road network is approximately 743 kilometers (km) and connects Yarant (at the Mongolia-Republic of China [PRC] border) and Ulaanbaishint (at the Mongolia-Russian Federation border).

In order to accomplish the work, the Western Regional Road Corridor Development Project (WRRCDR) is implementing in two phases. In the first phase of project, road construction is started in three parts of total 6 packages: Package 1 is 110.8 km road length from Bodonch Canyon to Baga Ulaan Pass; Package 2 includes 103.3 km road from Baga Ulaan Pass to Mankhan soum; and Package 5 includes road with 60 km length from Ulgii to Khashaat Pass.

With the road development is initiated, the project implementation unit of WRRCDR has hired environmental monitoring consultant for two years, whose aim is provide specialist environmental support to the PIU in the implementation of project environmental management and monitoring requirements during the construction of the project.

Current due diligence report was prepared by the consultant after his first visit to project sites.

## **OBJECTIVE**

To get familiarized with project sites along the project road alignment of Package 1, Package 2 and Package 5; and monitor current road construction activities in respect of environmental requirements of ADB and Government of Mongolia.

## **TIMING AND VISITED AREAS:**

23 - 27 October, 2012 for 6 days.

Visited areas:

- Ulgii, Bayanulgii aimag center
- Ulgii to Khashaat Pass (60 km along the Road alignment sites of package 5: camp, Bitumen batching plant, crushing plants, bridge construction; gravel quarry sites and cultural place at Tolbo Lake)

- Khovd, Khovd aimag center
- Khovd to Takhiurt (110.8 km and 103.3 km along the Road alignment of Package 1 and 2: road and bridge constructions; as well camps along Bodonch Canyon; camp and governor's office of Altai soum; Tsahiurt camp construction; )

## **OVERVIEW OF ENVIRONMENTAL PROTECTION REQUIREMENTS**

In accordance with the Environmental Assessment Guidelines (2003) and environmental safeguard policy (2002 and 2009) of the Asian Development Bank (ADB) , initial environmental impact assessment for the Western Regional Road Corridor Development Project was carried out in 2007 by the by the project preparatory technical assistance consultant (TERA International Group, Inc. 2007).

Environmental Safeguard Requirement of the Safeguard Policy Statement (2009) aims to ensure the environmental soundness and sustainability of the projects, and to support the integration of environmental considerations into the project decision-making process.

In order to implement any project, a project proponent should conduct studies and make relevant arrangements to meet the following requirements:

1. Conduct an Environmental assessment
2. Develop relevant environmental planning and management
3. Information disclosure to public
4. Consultation with stakeholders and ensure their full participation
5. Have a grievance redress mechanism
6. Monitoring and reporting
7. Revise for unanticipated environmental impacts
8. Conservation of Biodiversity and sustainable natural resources management
9. Pollution prevention and abatement
10. Protect Health and safety
11. Conservation of Physical cultural resources

The Summary Environmental Impact Assessment (SEIA) report identified expected positive and negative impacts due to road construction and operation. It also includes Environmental management plan (EMP) with actions to minimize and mitigate expected negative impacts. Monitoring types, methods, its timing, frequency, resources and responsible organizations were also defined within EMP.

Following this, and as required by the Environmental Impact Assessment Law of Mongolia, initial screening of the Western regional road corridor development proposal was carried out by the experts of the Ministry of Nature and Environment (MNE) of Mongolia with conclusion to make a detailed environmental impact assessment (DEIA).

Eco-Altai Co. Ltd., a MNE authorized EIA consulting company, has accomplished the DEIA and related EMP in 2009 with further MNE's approval. DEIA and EMP described in detail all the negative impacts of project and proposed actions for each of identified negative impact to minimize, mitigate or eliminate.

Similar to ADB safeguard policy, Environmental legislations of Mongolia require that all negative impacts anticipated from a project, should be thoroughly examined and assessed and relevant measures to minimize, mitigate and if possible eradicate identified negative impacts are proposed. In addition, EMP and M&E plans are setup to ensure minimal negative and maximum positive impacts as result of a project.

As indicated in the Mongolian environmental regulations and ADB requirements, DEIA and EMP are subject for consideration and compliance, while road construction and operation goes on.

## **MONITORING RESULTS**

As construction season is ending with coming cold winter, there was not much activity on the road construction sites along the project road alignment . Therefore, more attention was paid on environmental regulation compliance of campsites and other settings including crushing and bitumen plants, borrow pits.

- 1) First site I visited was contractor's camp of Package 5 -China Gezhouba Group Company (CGGCC) The camp is located in about 28 km to the south from Ulgii, Bayan Ulgii aimag center. About 40 peoples including, contractor's management work/live in this camp (N 48 43 5.3; E 89 57 24.9).

Description of camp in terms of resource use and conservation:

Water resources use: drinking and household water supply is from deep well inside camp area.

Energy: the camp is established to function during warm season. However, it was heated with electricity, which goes from a generator, mounted in the camp.

Soil: the camp area was set up in a plain steppe area, far from river and other water sources and paved with concrete to reduce the dust.

Solid waste and waste water: No treatment facility for waste water. Waste water and solid waste are commonly disposed through a canal with size of two meters in depth and width, which surrounds the camp area and is also used as a barrier against trespassing outsiders. During summer, when gets hot, waste water and solid waste disposed into canal can be a source of diseases and unpleasant odor.

2) Road construction

As there were not many activities except several bulldozers working on rehabilitation of borrow pits along the road alignment (N48 39 7.6; E89 58 16.3). The road base was built along the road alignment from Ulgii to Tolbo Lake. The work of restoration of borrow pit was at the technical rehabilitation stage: fill up the digged area with earth. There was not found topsoil piles to cover after the holes have been filled up. Once there is no topsoil conserved for biological rehabilitation, the constructor would need to recover the mined area into its natural condition through planting perennials and native grass.

3) Crushing and bitumen plants

As explained its field officer, the contractor has installed a newly obtained bitumen technology with emission control to avoid harmful emission to ambient air. When next construction season starts, its performance needs to be checked and if found effective, the project should encourage contractors use this type of bitumen technology.

4) Package 2 area. Camp construction site of contractor -China Jiangsu Jianda Construction (CJJC) Co.ltd. No road construction yet. Started preparation activity. The camp is now being constructed with company's workers and expected for operation by next work season. Drinking water is being transported from Tsahiurt River, which flows about 5 km from the location. Quality of drinking water would need to be tested in compliance with drinking water standard. The camp is located in relatively high elevation than the riverbed. As there is no hydrological study result, wastewater and solid waste disposal issue should be carefully considered and implemented to avoid surface and underground water pollution. Spills of lubricants are partially observed.

5) Package 1 area. The road construction is carried out by China Jiangsu Jianda Construction (CJJC) Co.ltd. Considerable activities have been taken place in this section of road alignment since last year. Currently, road base preparation is well progressed in most of Package 1 area and many bridges are either being newly constructed or reconstructed. The most difficult section of entire project's road alignment lies along Bodonch Canyon, which stretches about 80 km. It is also the most challenging location in terms of environmental constraints. Environmental problems addressed have been discussed in below sections:

a. Water quality.

Bodonch Canyon is home of rich wildlife and nationally and globally threatened species such as Argali sheep, ibex, and snow leopard. It also shelters about 30 herder households of Altai soum and 50 herder households of neighboring Must soum of Khovd aimag. They are constantly living along the Bodonch River and pastures along river basin are the main source of fodder for their herds.

All these inhabitants are using water for their all needs from Bodonch River, where road construction takes place. With this circumstance, construction activity should be well

planned and implemented in terms of avoiding fluid and oil spilling, chemicals and slurries into the River. While installing the poles of bridge and constructing culverts, slurry and chemicals may occasionally enter into water. These can enter into water during the rest time. Flash flood and heavy rain, which are quite frequent in Bodonch area, are also poses risk for river pollution.

During monitoring visit, there was no bridge construction activity. So, no constraints have been observed in this regard. In meeting with a local resident, she complained on water pollution. If take the habitat of local residents into consideration that they usually take their drinking water early in morning (about 4-7 AM), the bridge construction can be planned to break during this time. Thus, local residents can take their drinking water during this time, while construction can be continued with less time lost during warm construction season. This time slot is also watering time for most of wildlife and if the construction temporally stops with no noise, it will less impact these very shy animals.

b. Soil pollution

Soil pollution by household solid waste is common situation in all camping areas (Camp in Altai soum, Camps #28, 42, and 76), where consultant has visited. In areas far from surface water it poses less pollution. However, in limited space areas like in Bodonch canyon, all these solid waste pose serious pollution risk to River water. Oil and lubricant spills are unfortunately not being managed well in camping area. A short interview with an operator of diesel distribution vehicle regarding accidental oil spilling, did not bring a satisfaction. Temporal disposal area for solid waste and waste water should be selected considering the following factors: not to threat to underground water, away from flash flooding risk areas, and avoid open air disposal site (to barrier entrance of wild animals)

c. Noise level

A lot of blasting is required along the Bodonch Canyon road alignment. As required in EMP, blasting should be done with noise reduction techniques. There was no chance to meet the blasting team, but requirement remains in high alert as this is main disturbance factor for wildlife in this area. Especially, blasting in dark hours of day time or night time should be prohibited.

d. Growing tree removal

There are quite many cases, when growing old trees are required to either cut or replace. As noticed, contractor is also seriously taken care of this. All trees, which need replacement, were numbered and consulting with local people, where to move and plant. In meeting with Altai soum administration, it also interested in re-planting these removed trees in soum center. This activity can serve as a good initiative of cooperation between contractor and

local population to involve them in nature conservation. So, it needs professional or experienced people/approach for removing/replanting old but valuable for local community trees. While visiting local administration building, I have witnessed some not successful attempts for replanting old trees. Practical training is needed for this community as most of them have a little practice for cropping and vegetable growing.

e. Rehabilitation of slopes

As most of Bodonch Canyon have steep slopes, it needs careful approach for stabilizing the rocks and soil, after the making the space. Especially, slopes created by the constructor in dimension of 350 meter long and 20 meters wide (N46 4 42.7; E92 30 54.1 ) and 470 x 15 m (N46 5 46; E92 30 8.8) should be re-vegetated with native grasses and perennials. Thus, it can reduce landslide risks in this steep area.

f. Air quality

As the road alignment is stretches in semiarid zones of Mongolia, dust is considered to be a major polluting substance for air quality. Dust reduction activity is required all time during the road construction, it is especially true in nearby settlements and along the Bodonch Canyon. In confined space, effect of dust is much worse than open area. EMP has stated that trucks which transport earth should have cover, but no evidence was observed.

g. Solid waste and toxic and hazardous waste management.

Temporal construction camps that located nearby settlement, especially in soums are should make agreement with soum governments, to periodically dispose solid waste into soum designated disposal area. It is required by the Mongolian law on household waste disposal. Currently, there is no evidence is observed for such kind of cooperation. Although there is no hazardous and toxic waste are piled in project sites except used vehicle and truck tires, there is no clear plan and structure is introduced for proper disposal of this type of waste.

6) Fire and emergency safety

It is noticed in almost all camps that fuel storage tank and dispensers are located next to premises, where workers are sleep and rest during work break time. For safety reasons, fuel storage tanks, including dispensers would need to be relocated to a distance with limited access for entrance. Location of the fuel tanks should be selected far from flash flood and snow melting risky areas and with barriers from possible fire spreading due to an accident. As project area is very sunny throughout all season, especially in warm season, the storage tank should be painted with silver color that does not absorb but reflect solar energy.

- 7) While meeting face by face with contractors and discussing issues related with implementation of EMP, the consultant observed a weak knowledge of contractors on DEIA and especially content of Environmental management (EMP) and monitoring plans (EMOP).

This makes confusion and the highest priority both for environmental monitoring consultant and contractors is to have a consensus and same knowledge on these documents before next construction season starts.

In addition to above mentioned essential documents, the following work documents will be required from contractors and consultants:

- quarry and borrow pit management plan
- spill management plan
- construction camp management plan
- waste management plan
- reinstatement and revegetation management plan
- cultural heritage management plan and
- bridge construction method statements.

## **CONCLUSION**

Professionally developed construction plan and strict implementation of the environmental management plan by the civil work contractors will minimize the adverse impacts of road project. Without knowing impacts and its underlying causes, the constructors cannot build a sustainable road that promotes regional development and poverty reduction, while balancing environmental sustainability. The first visit findings demonstrate systematic and informed approach is needed for successful completion of this road project for its quality and long services in the western Mongolia.

## ACTIONS TO BE TAKEN FURTHER

The following actions in below table will be carried out before or first months of 2013 construction season in cooperation with contractors (actions are listed by order of priority):

No.	Actions*	Time frame	Responsible person
1	Make available the copies of DEIA report, EMP and EMOP of the Western Regional Road Corridor Development Project to civil works contractors in Chinese language, if possible	December 2012- January 2013	Project Environmental Monitoring Consultant (PEMC) together with PIU
2	Support for management staff of contractors for review and re-planning of 2013 construction plan in line of actions set forth in the EMP and EMOP	February 2013	PEMC and contractors
3	Organization of training for Contractors' management to upgrade their knowledge on environmental sustainability of road project, environmental monitoring indicators, performance indicators and M&E for EMP performance, monitoring checklist etc.	March 2013	PEMC and contractors
4	Review and discussion of revised/updated parts for environmental management of construction plan of contractors.	April 2013	PEMC and contractors
5	Training together with construction consultants of contractors' field staff on EMP implementation	May 2013	PEMC and consultants

Remarks: \* These planned actions are subject to review by PIU, project steering committee and ADB officers in charge of Western Regional Road Corridor Development Project and it should be discussed and agreed with contractors for their availability before the 2013 construction season.

## **APPENDICES**

### **Persons met**

1. Mr. Li Qin Yuan, Deputy Director, China Gezhouba Group Company (CGGC)
2. Mr. Chen Shi Bin, planning engineer, CGGC
3. Mr. Chimedregzen, Head of Consulting team, Next Business Consulting Cooperation (NBCC)
4. Mr. Bayanmunkh, Senior engineer, NBCC
5. Ms. Dolgormaa, Environmental inspector, Altai soum administration, Khovd Aimag
6. Ms. Ulziibayar, herder, Bodonch Bagh, Altai soum, Khovd Aimag
7. Mr. Chen Yang, Representative of Ulaanbaatar office, China Jiangsu Jianda Construction (CJJC)
8. Ms. Ulziibayar, Deputy director, Ulaanbaatar office, CJJC
9. Mr. Shi Jian Lin, Project manager, CJJC
10. Mr. Xu Hai Jun, Project deputy manager, CJJC
11. Mr. Eun Sang Lee, , Korea Consultants International Co. ltd (KCI)
12. Mr. Lee Sang Hun, team leader, KCI
13. Mr. Enkhbat, deputy team leader, KCI
14. Mr. Sun Yun Long, Package 2 camp manager at Tsahiurt, CJJC
15. Mr. Xue Hun Ben, logistics person, Altai camp, CJJC

**Photos taken**



Borrow pit rehabilitation process



Technical rehabilitation completed



Bitumen plant with emission control



A part of bitumen plant



Solid waste is an issue



Canals for waste disposals



Elm trees for removal in Bodonch Canyon



Bunch of elm and willows for removal



Excavators working on earth slope



Slopes need re-vegetation



View on Tsahiurt camp (Package 2 area)



Meeting with a contractor management



A diesel generator for electricity



View of construction work in Bodonch Canyon



Herders households located in between River and Road alignment



Water from river is used for sand washing in a Crushing plant



View in drinking water pump



Storage of construction materials

## **ADDITIONAL INFORMATION TO THE DUE DILIGENCE REPORT**

### **1. RESULTS OF REVIEW OF THE CHANGES IN ALIGNMENT**

In accordance with the recommendation given by Gen, environmental specialist EATC ADB, PEMC has reviewed changes of design of road alignment in Package I Temeen Huzuu to Baga ulaanb Pass (110.8 km). This actually was done based on available report “Review of Value Engineering” and the plans of drawings of the Contractor –China Jangsu Jianda Construction submitted by the supervising consultant-Korean Consultants International (KCI).

The proposal for change in original alignment was submitted by the contractor (CJJC) in May 2012 to the KCI for review and upon this, the supervising consultant has submitted reviewed Value of Engineering report to PIU on July 2012.

In accordance with the report, there proposed four changes with various reasons:

- 1) STA. 15+380~ STA.15 +600 (length 220m)
- 2) STA. 19+100~ STA.19 +380 (length 280m)
- 3) STA. 36+950~ STA.37 +540 (length 590m)
- 4) STA. 50+700~ STA.52 +020 (length 1,320m)

The reason of proposed change at 1) section STA. 15+380~ STA.15 +600 was justified by the contractor as to avoid cutting elm-grove and impacts to stream water. With this proposed change of alignment, the radius of alignment curve becomes from original 100 m to 75 m, which increases the distance between the alignment and current river bank. However, the change also proposes to change the current river stream. The existing drawings are not given proper information for justification of river diversion. There is also lack of information on the properties of soil, where the contractor proposes to divert the river stream. Unless properly explored, this proposed change may bring a risk of reduction of Bodonch River water flow through increased infiltration and increased water pollution by the soil erosion and sedimentation beneath water stream.

The reason of change of the section 2) STA. 19+100~ STA.19 +380 is the same as above. The proposed change of alignment makes crossing of the stream in two parts. Originally the alignment was along the stream. On order to avoid water pollution and damage of road by flooding, it would need to install either box or pipe culverts, where alignment crosses the river stream. The costs of culverts and its installation are not indicated in the cost comparison table given by the contractor.

The reason for change of alignment in section 3) STA. 36+950~ STA.37 +540 is to avoid the rock falling, as it goes along the foot of Cliff Mountain with loose rocks. PEMC has no objection to the change.

The section 4) STA. 50+700~ STA.52 +020 (length 1,320m) involves substantial alteration of the river current course with length of 1,320 m. The reason for change was due to a risk of falling rocks nearby cliffs along the alignment.

Again there is no hydrological and nor soil property studies have been done.

### *Conclusion*

As the design change of the three of four sections will directly impact the river water quality and quantity, additional measures should be taken to avoid the possible impacts to surface water.

First, a water quality consultant to be hired by the project should review the proposed changes of alignment of section 1) STA. 15+380~ STA.15 +600 (length 220m) and section 3) STA. 36+950~ STA.37 +540 (length 590m) in terms of stability and suitability of the soil along the proposed diversion line, review of construction method for river diversion and soil and slope stabilization. Upon review and recommendation of the water quality consultant, the supervising consultant and contractor should act to comply with the guidance set in the recommendations.

Second, water pollution measures like culvert installation should be carried out where alignment and stream crosses in section 2) STA. 19+100~ STA.19 +380 (length 280m)

PEMC has no objection to the change of the section 3) STA. 36+950~ STA.37 +540.

As reported by the contractor, heavy flooding occurred two times in July 2012 in project area around the Bodonch Canyon after the proposal to change the alignment was submitted. It would be required to know if these alignment changes are still valid.

## **2. SURFACE WATER CONSERVATION AND WATER POLLUTION REDUCTION**

As identified during the first visit to project site, one of major environmental direct impact during construction period is the pollution of drinking water. It was obvious especially in complex terrain area of Bodonch Canyon. All local herders with population of about 300 ( 80 households ) use their drinking water directly from the Bodonch River, which lies along the road alignment in length of about 90 kilometers. Local herders are the major sensitive receptor of this impact. The water pollution is caused by the following reasons during the construction phase:

- Cut and fill operation along the water stream
- Blasting of rocks and cliffs for widening for road alignment
- Accidental spills of oil and petroleum of construction machineries
- Leakage of waste water and solid waste of construction camps
- Diversion of water stream to construct the road

During the visit, there was no construction activity and PEMC was not able to monitor the impact of the construction to water stream. In camping areas there is a potential for water pollution by waste water and solid waste.

Following recommendations were given to Contractors to mitigate impacts to water quality:

- Number of water crossings should be as minimal as practical;
- Preventing susceptible to erosion alignments;
- Using materials excluding fine fractions around watercourses;
- Vegetative cover between a road and water bodies.

As stated in EIA document, PEMC requested the contractor to follow the instruction:

- The contractor to develop and implement contingency plans for control of oil and other dangerous substance spills (Spill Management Plan);
- Fuel storage, maintenance shop and vehicle cleaning areas would be stationed at least 300 m away from the nearest water body;
- Storm water drainage and retention basins would be constructed and a siltation fence (where a river/stream is nearby) would be installed prior to commencement of construction to control runoff water and sediment and prevent entry of contaminants into a water body;
- Oil and grease is likely to be discharged in the construction vehicle parking area, vehicle repair area, and workshops. All wastewater would be directed into an oil interceptor prior to discharge; and
- Existing water wells and springs would be clearly marked to prevent accidental damage from construction vehicles.
- To organize a public meeting among local herders-drinking water consumers in Bodonch Canyon area with a purpose to introduce the construction methods and schedule of operation (weekly and daily) along the water stream and agree with water consumers when drinking water would be accessible. The recommendation is no operation takes place during 4- 7 AM daily, which allows water consumers to take relatively clean water from the Bodonch River.

### **3. PUBLIC AND STAKEHOLDER CONSULTATION AND GRIEVANCE REDRESS**

The contractor has hired locally a person and appointed as a liaison officer for local relation. Unfortunately, PEMC could not meet with this person. As PEMC was informed by contractor, there is no major conflicting issue with local populations and complains due to project implementation, except safe drinking water and solid waste. A household in Bodonch Canyon has expressed a concern regarding pollution of drinking water and environmental inspector of Altai Soum about the risk of waste generated pollution of temporal camps along the Bodonch River. There is no clear public and stakeholder communication and Grievance Redress Mechanism yet in the place. Even though these issues were clearly indicated in the EIA/EMP. EIA/EMP of Package I proposed that PIU appoints a person for GRM. Whereas, EIA/EMP of Package II proposed PIU to establish a Public Compliance Center for GRM and

appoint staff from aimag PIU office. PEMC would need to consult with PIU/ADB and work for setting up and running an effective GRM in the first months of 2013 construction season.

#### **4. Health and safety**

During the first site visit, there was no major construction activity and therefore was not able to monitor rock blasting activity and associated arrangements related with health and safety. Bodonch Canyon is prone to flash flood and there is a moderate risk of rock falls. Current practice of camp management in regard to waste water and solid waste may pose a health risk for contractor's staff and pollution to surrounding environment and surface water. Recommendation was given to camp managers of Contractors CJC and CGGC to follow the EMP provisions related with health safety concerns. Regarding the posed risks, PEMC would need to pay attention on Contractor's efforts for ensuring health and safety during the construction season.

#### **5. A summary of findings of PEMC's first visit to project sites**

Analyzing the findings of Quick visit to project site, desk review of EIA/EMP and related documents and contractors' reports and its actual environmental performance as well as MOU of Loan/Grant review mission of October 2012 on the implementation of environmental specifications of the Grant 0107 and loan 2847, it found that there is a big difference in contracted documents and actual implementation. The contractor, in particular CJC, is not familiar or has not learned about the responsibilities for environmental performance as it is clearly indicted in ADB safeguard policy and project related EIA/EMP documents, in one hand. On the other hand, anticipated impacts of project activity during the contraction phase are considerable, considering the fragile and valuable ecosystem of the project site.

Therefore to change the situation and increasing environmental performance of the project (PIU, Consultant, Contractors and local authorities), the action plan is proposed in the next section.

## 6. Revised action plan

The following actions in below table will be carried out before or first months of 2013 construction season in cooperation with contractors (actions are listed by order of priority):

No.	Actions*	Time frame	Responsible person/organization
To improve Contractors' performance in minimizing project's environmental impacts			
	<ul style="list-style-type: none"> <li>• Assist in creating and running the structure for EIA/EMP development, implementation, training and monitoring (staff in charge of planning, implementation and performance)</li> <li>• Assist in environmental planning and management through advice, and review draft plans for:                             <ul style="list-style-type: none"> <li>○ Spill management</li> <li>○ quarry and borrow pit management</li> <li>○ construction camp management</li> <li>○ waste management</li> <li>○ reinstatement and revegetation management</li> <li>○ cultural heritage management</li> </ul> </li> </ul>	March and April 2013	PEMC and Supervising consultants and contractors
	Review and discussion of revised/updated parts for environmental management of construction plan of contractors.	April 2013	PEMC and contractors
	Training together with construction consultants for contractors' field staff on EMP implementation in Package I, II and V areas	May 15-20 2013	PEMC and consultants
Second field visit points			
	Highest priority of this planned visit is to assist and review of initial steps for implementation of related plans of EIA/EMP. These plans include remedial actions for waste management, water conservation, restriction of water stream alteration, water, air and soil pollution reduction, wildlife habitat		PEMC

	conservation etc. All details are indicated in original EM plans.		
	to identify sensitive areas and propose proactive corrective actions (demarcate those sensitive areas like tree groves, potential wildlife habitats, water wells, springs and drinking water spots and inform contractors and other stakeholders for monitoring)	May 2013	PEMC
	As one of highest receptors of project impacts, review of past, current and planned activities in the Bodonch Canyon related with water retraining, river bank engineering, slope stabilization, soil erosion. Review Blasting operations and arrangements for reducing impacts to wildlife.	May 2013	PEMC
<b>Stakeholder and Public consultation</b>			
	Assist in development and monitor implementation of a Co-ordinated public and stakeholder communication strategy	May –June 2013	In cooperation with PIU, Supervising engineer, and community outreach officers,
<b>Grievance redress Mechanism</b>			
	Set up and run an effective environmental Grievance Redress Mechanism (in compliance with EIA/EMP documents for both I and II packages) in the first months of 2013 construction season.	April -May 2013	EA/PIU/ADB/Local governments
<b>Capacity building of local authorities for project environmental performance monitoring</b>			
	Capacity building through training of aimag and soum level staff and protected area administration for environmental performance monitoring skill development	May-June 2013	PEMC, PIU, MEGD and its Khovd and BayanUlgii aimags' environmental departments
	Organization of training for Contractors' management to upgrade their knowledge on environmental sustainability of road project, environmental monitoring indicators, performance indicators and M&E for EMP performance, monitoring checklist etc.	April 2013	PEMC and contractors

Western Regional Road Corridor Development Project

Remarks: \* These planned actions are subject to review by PIU, project steering committee and ADB officers in charge of Western Regional Road Corridor Development Project and it should be discussed and agreed with contractors for their availability before the 2013 construction season.

