

# Environmental Monitoring Report

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September 2011

## IND: North Eastern Region Capital Cities Development Investment Program-Water Storage Tanks in Greater Aizawl Planning Area

Prepared by State Investment Programme Management & Implementation Unit (SIPMIU),  
Aizawl for the Government of India and the Asian Development Bank.

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# **Environmental Monitoring Report**

**Month Year: September 2011**

Subproject Name : Construction of Water Storage Tanks in Greater  
Aizawl Planning Area  
Project No. : 35290-01  
Subproject Town : Aizawl  
Tranche : 1  
Sector : Water Supply

## **India: Northeastern Region Capital Cities Development Investment Program**

**Prepared by  
State Investment Program Management & Implementation Unit (SIPMIU)**

This report has been submitted to ADB by SIPMIU of the Government of Mizoram and is made publicly available in accordance with ADB's public communications policy (2005), it does not necessarily reflect the views of ADB

## **TABLE OF CONTENTS**

<b>DEVELOPMENT INVESTMENT PROGRAM</b>	<b>1</b>
<b>I. INTRODUCTION</b>	<b>3</b>
<b>A. BACKGROUND</b>	<b>3</b>
<b>B. PROJECT PURPOSE</b>	<b>3</b>
<b>C. PROJECT PROFILE</b>	<b>3</b>
<b>TABLE 1: SUB-PROJECT STATUS - TRANCHE 1 (UPTO 30.09.2011)</b>	<b>4</b>
<b>III. ENVIRONMENTAL PROCEDURE REVIEW</b>	<b>7</b>
<b>A. ENVIRONMENTAL LEGAL REQUIREMENTS</b>	<b>7</b>
<b>B. COMPLIANCE WITH ENVIRONMENTAL REGULATIONS</b>	<b>7</b>
<b>C. COMPLIANCE OF ENVIRONMENTAL LOAN COVENANTS</b>	<b>8</b>
<b>D. ENVIRONMENTAL ORGANIZATION AND MANAGEMENT</b>	<b>9</b>
Figure 1: Institutional Responsibility- Environmental Organisation SIPMIU	10
<b>IV. IMPLEMENTATION STATUS OF MITIGATION MEASURES</b>	<b>11</b>
<b>TABLE 3: COMPLIANCE STATUS WITH ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS AS STIPULATED IN THE ENVIRONMENTAL DOCUMENTATION – TRANCHE 1</b>	<b>11</b>
<b>V. ENVIRONMENTAL MONITORING AND EVALUATION</b>	<b>11</b>
<b>TABLE 4: DIRECTIONS AND SUGGESTIONS</b>	<b>14</b>
<b>TABLE 5: ACTION PLAN CONSIDER FOR SATISFACTORY ENVIRONMENTAL COMPLIANCE</b>	<b>15</b>
<b>ANNEXURE - 1</b>	<b>16</b>
<b>APPLICATION OF EMP (UPTO SEPTEMBER 2011)</b>	<b>16</b>
<b>ANNEXURE-2: INSTRUCTIONS FOR CONTRACTOR- ENVIRONMENTAL SAFEGUARD</b>	<b>18</b>

## I. INTRODUCTION

### A. Background

State Investment Programme Management & Implementation Unit (SIPMIU) Aizawl, Mizoram is intended to optimize social and economic development in Aizawl city in the State. This will be achieved through investments in urban infrastructure i.e water supply; sewerage and sanitation; and solid waste management. SIPMIU will also provide policy reforms to strengthen urban governance, management, and support for urban infrastructure and services. The assistance will be based on the State-level framework for urban reforms, and institutional and governance reforms recommended by the Government of India (GoI) through the Northeastern Region Capital Cities Development Investment Program (NRCCDIP).

1. Tranche-1 ie. Water supply sub-project is being implemented since beginning of 2010, and will be funded by a loan via the Multi-tranche Financing Facility (MFF) of the ADB. The Executing Agency (EA) is the State Investment Programme Management & Implementation Unit (SIPMIU). Currently Tranche-I is in construction stage and Tranche-II is in preparation and finalization of DPR.

### B. Project Purpose

2. State Investment Programme Management & Implementation Unit (SIPMIU) will improve infrastructure through the development, design and implementation of different of subprojects viz. water supply, sewerage, solid waste in Capital City Aizawl. These Sub-projects have been classified by ADB as environmental assessment category B (some negative impacts but less significant than category A) and the impacts of subprojects were assessed through Initial Environmental Examination (IEE) reports prepared according to ADB Environment Policy (2002, 2009) and Environmental Assessment Guidelines (2003).

### C. Project Profile

#### Scope of work in tranche-1

1. Construction of 7 numbers of RCC Tanks (Namely Mission Vengthlang Tank, Bawgkawn Tank, 7 day Tlang Tank, Armed Veng Tank, Luangmual Complex Tank, Zemabawk TB Tlang Tank, and Tlangnuam Tank)
  2. Installation of two chlorinators with chlorinator rooms at inlet of storage reservoir at Tuikhuahtlang and booster pump house Chandmari.
  3. Installation of 130000 numbers of consumer water meters.
3. Construction of 7 (replacement) ground level of RCC Zonal Tank, 3 Staff/Chowkidar Quarters, 1 site office and 2 chlorinators has been awarded to M/s S.S Construction vide contract No. OHT/WS/AIZ/TI/NCB-3 dated 19.04.2010. **Table 1** shows the project components, starting date of implementation, schedule date of completion etc. along with physical progress for Tranche 1.
4. On date, project works started in Aizawl city under Tranche 1 for water supply. Significant physical progress will be expected during next quarter. **Table 1** shows summary of the scope of works along with present work status. Also expected changes from the approved objectives, remedial measures for fulfillment of objective and key risks/ assumption for attainment of objectives are mentioned in the table.

**Table 1:** Sub-project status - Tranche 1 (Upto 30.09.2011)

<b>Name of Work</b>	<b>Construction of 7 (Replacement) Ground level of R.C.C Zonal Tank, 3 Staff / Chowkidar Quarters, 1 Site Office and 2 Chlorinators</b>	<b>Vide Contract No. OHT/WS/AIZ/TI/NCB-3 dated 19.04.2010</b>
Name of Contractor	S.S. Construction, Chaltlang, Aizawl	
Time	18 months	
Commencement Date	25.04.2010	
Scheduled Date of Completion	20.10.2011	

**Table-1 (Contd...)** Construction of 7 (Replacement) Ground level R.C.C Zonal Tanks, 3 Chowkidar Quarters, 1 Site Office and 2 Chlorinator rooms at Aizawl, Mizoram.

Sl.No.	Name of Work	% of Progress during this quarter	Cumulative (complete work) %	Description	Expected changes from approved scope	Fulfillment of objectives- Type of remedial measures needed	Key assumptions and risks that affect attainment of the objectives
(1)	<b>Construction of R.C.C Tank</b>						
a	Mission Vengthlang	0.00 %	99.00%	Water Reservoir completed, electrification completed only wash out valve to be replaced.	No Further change	Effective monitoring and application of EMP	No risk
b	7 Day Tlang	9.68 %	90.38%	RCC retaining wall work completed, Base work of Reservoir, wall and wall beam completed, Inside plaster completed. Manhole & Drainage work is in progress.	No Further change	Effective monitoring and application of EMP	No risk
c	Zemabawk	9.95%	95.0%	Wall, Dome and plastering completed, Ventilation and Railing completed, RCC retaining wall completed. Painting completed, Fencing & drainage 50% completed, Security gate work is in progress.	No Further change	Effective monitoring and application of EMP	No risk
d	Bawngkawn	37.20%	78.35%	Road work completed, Chowkidar Quarter dismantled, P.S. Tank removed, RCC Retaining wall work is in progress.	No Further change	Effective monitoring and application of EMP	No risk
e	Armed Veng	48.10%	60.85%	RCC retaining wall, shuttering for RTW work 40% completed	No Further change	Effective monitoring and application of EMP	No risk
f	Tlangnuam	14.30%	71.8%	Centering, shuttering- 80% completed, Reinforced	No Further	Effective monitoring	No risk

Sl.No.	Name of Work	% of Progress during this quarter	Cumulative (complete work) %	Description	Expected changes from approved scope	Fulfillment of objectives- Type of remedial measures needed	Key assumptions and risks that affect attainment of the objectives
				Cement Concrete - Ring Beam Completed, plastering 80% completed 99% road work completed	change	and application of EMP	
g	Luangmual	2.5%	99.5%	Only Electrification is remaining, rest all completed.	No Further change	Effective monitoring and application of EMP	No risk
(2) a	Construction of Staff Quarters 7 Day Tlang	88.25%	95.25%	Core works completed, Chokhats were fixed, Septic Tank completed, Electrification done, Painting and white washing completed, storm water drain work remains.	No Further change	Effective monitoring and application of EMP	No risk
b	Tlangnuam	67.75%	68.25%	Earthwork, PCC, RCC, water proofing work completed. Brick work 70% & wood work 50% completed	No Further change	Effective monitoring and application of EMP	No Risk
c	Bawngkawn	26.0%	29.00%	Earthwork, PCC, Waterproofing works completed. Steel & RCC work completed 50%	No Further change	Effective monitoring and application of EMP	No risk
(3) a	Construction of Site Office Armed Veng	-	-	Work not started.	----	-----	-----
b	Extra works of Temporary Site Office at 7 Day Tlang	-	100%	Estimated approved Vide No. 11034/PD/SIPMIU dt. 25.06.2010. Work executed by S.S. Construction	No Further change	Effective monitoring and application of EMP	No risk
(4) a	Chlorinator Room Main Reservoir (Tuikhuahtlan)	-	100%	Completed	-	Effective monitoring and application of EMP	No risk
b	Chanmari Booster Pump	-	100%	Completed	-	Effective monitoring and application of EMP	No risk

### 2.1.1 Work Under Execution by M/s De Nora India Limited, GOA

1	Name of Work	Supply of Electro Chlorinator, Installation, Testing, commissioning and Initial Maintenance	CHL/WS/AIZ/T1/ NCB-1 Dt. 24.03.2010
2	Name of Contractor	M/s De Nora India Limited, Kundaim Goa	
3	Time	1. Supply – 4 months 2. Installation, testing, commissioning – 1 month 3. Initial maintenance – 12 months	
4	Commence ment Date	24.07.2010	
5	Scheduled Date of Completion	a) Supply, installation, testing & commissioning- 24.08.2010 b) Initial Maintenance	
6	Progress	a) Supply, Installation of both at Tuikhuahtlang and Chanmari completed. Testing completed. b) Initial maintenance started.	

5. Monitoring and reporting on Environmental and Social safeguard is continuing since starting of work at a regular interval monthly and quarterly. At present no adverse impact of project activities have been observed/identified on social and environmental components.



### III. ENVIRONMENTAL PROCEDURE REVIEW

#### A. Environmental Legal Requirements

6. Rules, Policies and Regulations currently in force in India and deal with environmental issues that could apply to infrastructure development. However, because of the relatively minor negative impacts of most of the subproject likely to be developed under NERCCDIP, it is expected that most subproject should not fall within the scope of these legal instruments. Subprojects and activities that will need to comply with certain laws are:

- Any components that require the acquisition of forest land;
- Any construction activities located in areas covered by any special Notification;
- Common waste management facilities, including composting, landfills, transfer stations, Composting and landfill facilities;
- Common waste management facilities within 10 km of the boundary of protected areas (such as National Parks, Sanctuaries, Notified areas and Biosphere Reserves);
- Mobile diesel generators

#### B. Compliance with Environmental Regulations

7. **Table 2** below shows present clearance status for different sub-projects under **Tranche -1**. As per the present status consent to establish or consent to operate is not required for any sub-project in tranche-1

**Table 2: Present Status of Environment & Forest and Other Clearances (upto 30<sup>th</sup> September 2011) – Tranche-1**

Town	Work (Package No.)	Applicable Legislation/ Type of clearance	Clearance given by and date	Subject / Issue	Remarks/ Action needed
Aizawl (Tr-1)	Construction of 7 (Replacement) Ground level of RCC Zonal Tank, 3 staff/Chowkidar Quarters, 1 Site Office and 2 Chlorinators. (Contract No. OHT/WS/AIZ/NCB-3)	<b>Water (Prevention and Control of Pollution) Act, 1974</b>  Consent to establish for WTP from Pollution Control Board and Consent to operate is required but in this case of Subproject of Tranche-1. WTP is already in operation. So at present Consent to establish and consent to operate is not applicable.	Not required	NA	Not required

### C. Compliance of Environmental Loan Covenants

8. The status of compliance of ADB's major Environmental Loan Covenants shown below:

Project Specific Covenants	Status / Issues
<b>Environmental</b>	
1. The EA shall ensure that: (LA Sched 5 Para 13) (a) the project is carried out and all subproject facilities designed, constructed, operated, maintained, and monitored in compliances with the environmental law and regulations of the Borrower, the state, ADB's Environmental Policy (2002, 2009), and the EARF;	Under compliance in accordance with ADB Environmental Policy and Environmental Assessment Guidelines
(b) Subproject encroaching any National Park or its buffer zone shall not be included in the Project; however, Subproject in or close to the wildlife sanctuary or any other environmentally sensitive area may be allowed subject to the EA obtaining all statutory clearances;	No such encroachment recorded till date. If it happens in future, statutory clearance will be taken up as per applicable Govt. procedure
(c) An IEE as required, including an EMP with budget identifying the cost of its implementation as incorporated in the related bid document if any, when adequate public consultation for each sub-project, in accordance with the EARF shall be submitted to ADB for review and approval before award of related contract. In case of any EIA or SIEE for sub-project classified as A or B sensitive, this shall be subject to the 120 day public disclosure requirement under ADB's Environmental Policy (2002, 2009)	IEE report has been prepared by PPTA consultant for sub-project where EMP, budget for application of EMP and issues of public consultation are incorporated. In tranche-1 no sub-project required environmental clearance.
(d) All mitigation measures identified in the IEE, SIEE, EIA or SEIA and the related EMP, as applicable, for each sub-project, shall be incorporated in sub-project design, and carried out during construction, and O & M, and disclosed to the stakeholders;	Under compliance: IEE screening of potential environmental impact and mitigation measures applied according to project location, specific sector development and associated design requirements.  EMP's prepared and regularly monitored for compliance of stated mitigation measures.  During construction process within the town consultation with local communities on environmental issues are considered and regularly it is being implemented.
(e) If there are any changes in specific locations or alignments of any sub-project facilities after completion of the process of IEE (or EIA) or due to detailed design or implementation that has an impact on the environmental assessment carried out thus far, then additional environmental assessment shall be carried out in accordance with ADB's Environmental Policy (2002, 2009) and the EARF, and prior approval of ADB obtained before further physical implementation of the sub-project;	In case of any major change of locations, EMP will be revised for Tranche-1 sub-projects. Till date no change is expected in tranche-1 sub-project.  For minor change in location/capacity of project facilities EMP will be revised for monitoring purpose.

Project Specific Covenants	Status / Issues
(f) All environmental clearances required by applicable laws, and regulations at Borrower, State, or local levels shall be obtained in a timely manner, prior to commencement of civil works for the relevant subproject	In tranche -1 sub-project no Environmental Clearance is required.
(g) Semi-annual progress reports on the implementation of the EMPs, measures under the IEE/EIA, and the environmental monitoring shall be carried out as a part of the project. Implementation for review and disclosure in accordance with ADB's Public Communications Policy (2005)	Quarterly progress report on application of EMP is being prepared regularly Field monitoring continued as per monitoring plan During construction process within the town consultation with local communities on environmental issues has already been initiated and continued in all locations of project site.

#### D. Environmental Organization and Management

9. Environmental issues of the project coordinated by an Environmental Specialist within the SIPMIU/DSMC, who ensures that all subprojects, comply with environmental safeguards. An Environmental Monitoring Specialist (EMS) who is part of the DSMC team implement the Environmental Monitoring Plan from each IEE to ensure that mitigation measures are provided and protect the environment as intended. **Figure 1** shows institutional responsibility for implementation of environmental safeguard monitoring at different level.

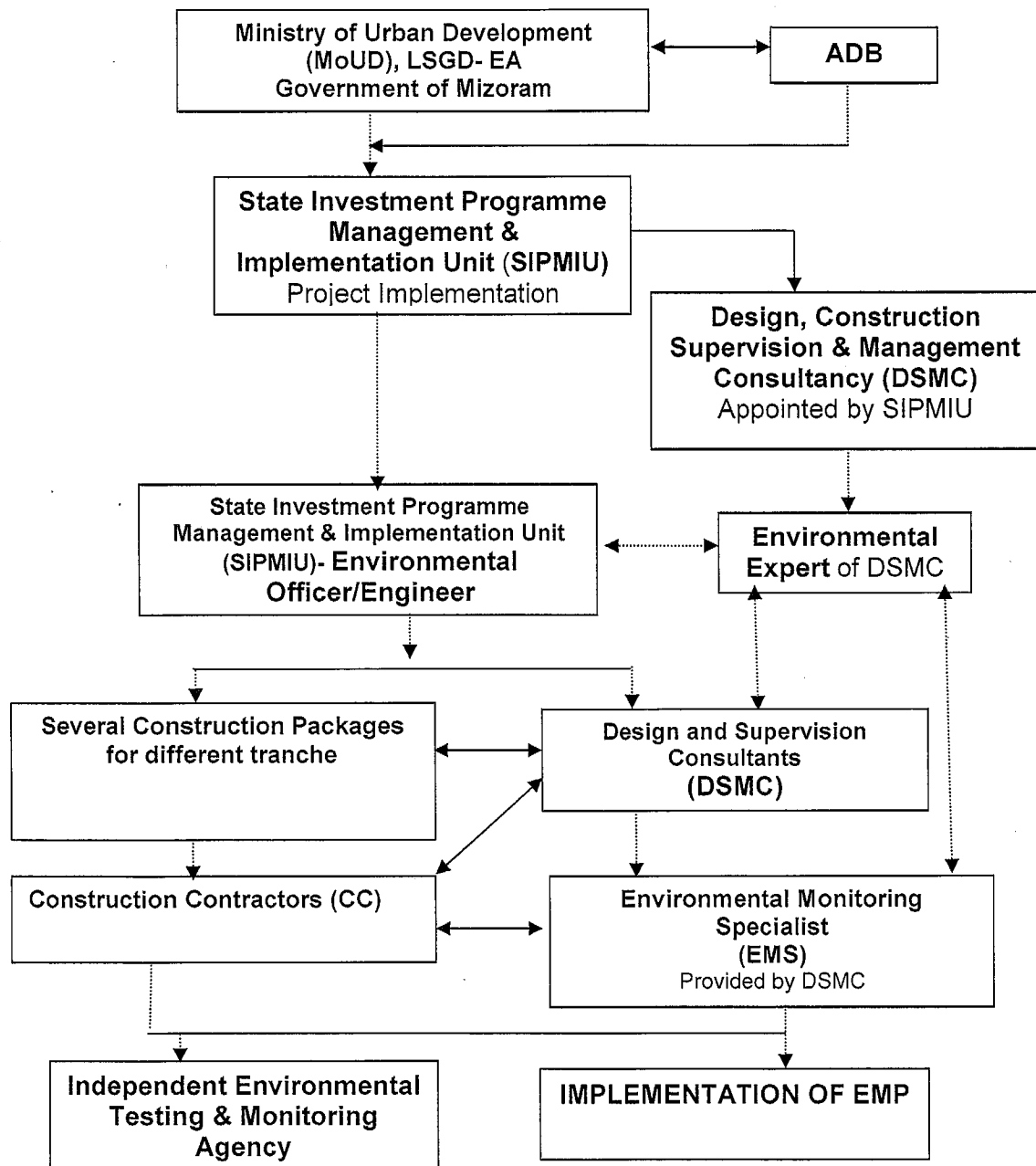
10. EMP shows that most of the mitigation activities are the responsibility of the Construction Contractors (CC) employed to build the infrastructure during the construction stage or the O&M Contractors employed to conduct maintenance or repair work when the system is operating. There are also some actions that need to be taken by SIPMIU in their role as project proponent, and some actions related to the design that would be implemented by the DSMC.

11. A program of monitoring would be conducted to ensure that all parties take the specified action to provide the required mitigation, to assess whether the action has adequately protected the environment, and to determine whether any additional measures may be necessary. This would be conducted by a qualified Environmental Monitoring Specialist (EMS) from the DSMC. The EMS responsible for all monitoring activities and reporting the results and conclusions to the SIPMIU, and recommend remedial action if measures are not being provided or are not protecting the environment effectively. The EMS may be assisted by environmental specialist in particular technical fields, and junior or medium-level engineers who can make many of the routine observations on site. Post-construction monitoring will be conducted by the relevant Government Agency (GA) to whom responsibility for the infrastructure will pass once it begins to operate<sup>1</sup>.

12. EMP shows that most of the mitigation measures are fairly standard methods of minimizing disturbance from building in urban areas (maintaining access, planning work to avoid sensitive times, finding uses for waste material, etc), and experienced contractors should be familiar with most of the requirements. Monitoring of such measures normally involves making observations in the course of site visits, although some require more formal checking of records and other aspects.

<sup>1</sup> In the operational period some infrastructure will be the responsibility of the Municipal Boards/Councils, whilst others will be the responsibility of the appropriate branch of the State government (such as PWD, PHED, etc)

**Figure 1: Institutional Responsibility- Environmental Organisation SIPMIU**



#### IV. IMPLEMENTATION STATUS OF MITIGATION MEASURES

13. At present there are **1 sub-project having 3 components in Tranche-1**. Field activities are ongoing for sub-project of tranche-1 as per EMP. The detail mitigation measures against impacts on air, water, soil environment and safety aspects are shown in **Annexure 1**. Overall compliance status of EMP application and actions needed are discussed below and shown in **Table 3**.

14. For implementation of EMP, arrangement of human safety, provision of PPE for workers engaged in construction is being implemented. Training is being provided to the contractor by DSMC's specialist and SIPMIU representative on environmental safeguard requirement. Moreover instruction is given to contractors to follow the specified clause of BID document to mitigate environmental and social impacts.

15. **Annexure 2** shows the instruction sheet for the contractor on application of EMP.

16. "Pollution under Control certificate" (PUC) for the vehicles engaged in construction work has not been obtained however the number and frequency of vehicle engaged in construction work is very low.

**Table 3:** Compliance Status with Environmental Management and Monitoring Plans as stipulated in the Environmental Documentation – **Tranche 1**

Sites	Name of Sub Project	EMP being Implemented (Yes / No)	Overall Status of EMP Implementation (Excellent/Satisfactory/Partially Satisfactory/B)	Actions Proposed or continued/Additional Corrective Measures Required
Aizawl City	Construction of 7 (Replacement) Ground level of RCC Zonal Tank, 3 staff/Chowkidar Quarters, 1 Site Office and 2 Chlorinators. (Contract No. OHT/WS/AIZ/NC B-3)	Yes	Satisfactory	<ul style="list-style-type: none"> <li>Complete utilisation of PPE like helmets, safety shoes etc.</li> <li>Continue barricading, use of safety tape.</li> <li>Continue Implementation of EMP through awareness and monitoring</li> <li>Complete Implementation of EMP through awareness and monitoring</li> <li>Continual awareness programs are required in order to implement better EMP</li> <li>Continue regular monitoring of the EMP in order to analyze its implementation</li> </ul>

#### V. ENVIRONMENTAL MONITORING AND EVALUATION

17. For effective monitoring, selected environmental parameters have been identified as indicators which may be qualitatively and quantitatively measured and compared over

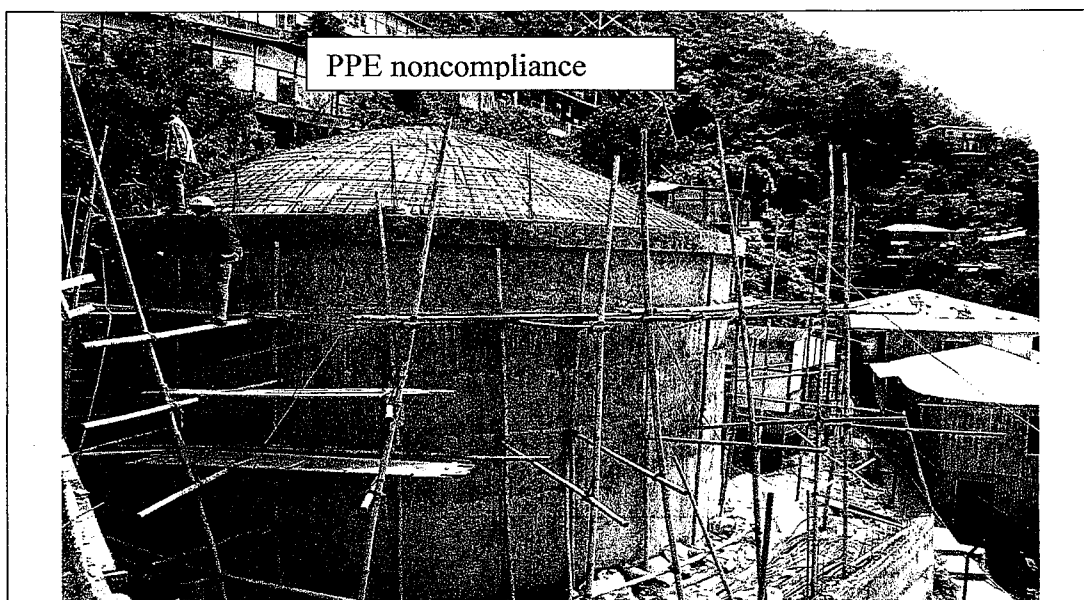
a period of time in order to assess/ensure the compliance of EMP. The environmental performance indicators are physical, biological and social characteristics identified as most important in affecting the environment at critical locations all along the sub-project corridors. The parameters identified as performance indicators are:

- Air, noise and water related pollution source
- Compliance to EMP
- Compliance to local/state/national environmental regulations

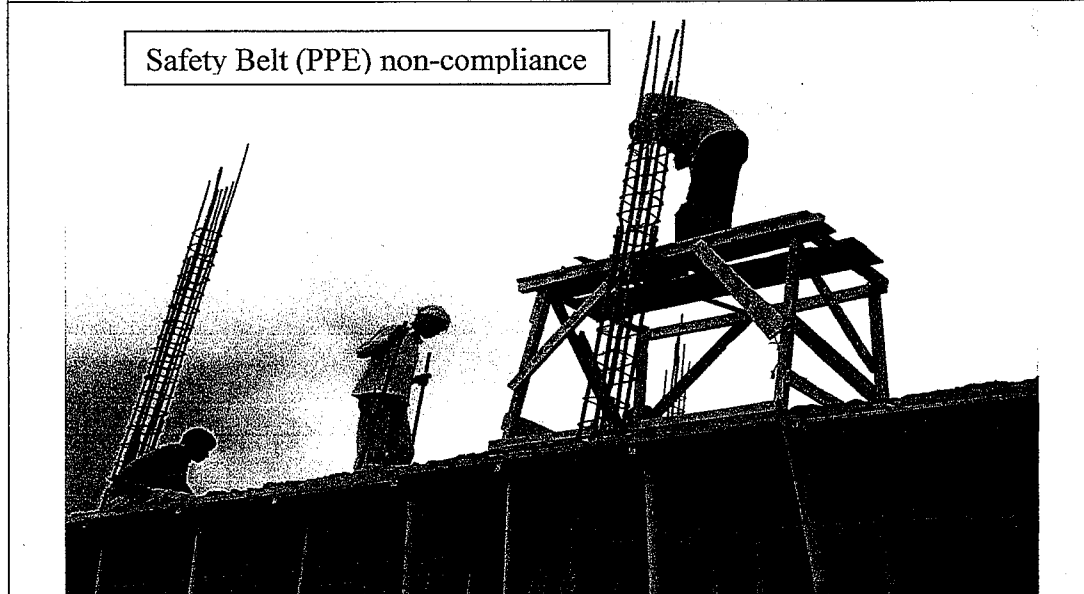
7 people?

## VI. MAJOR PROJECT ISSUES AND PROBLEMS

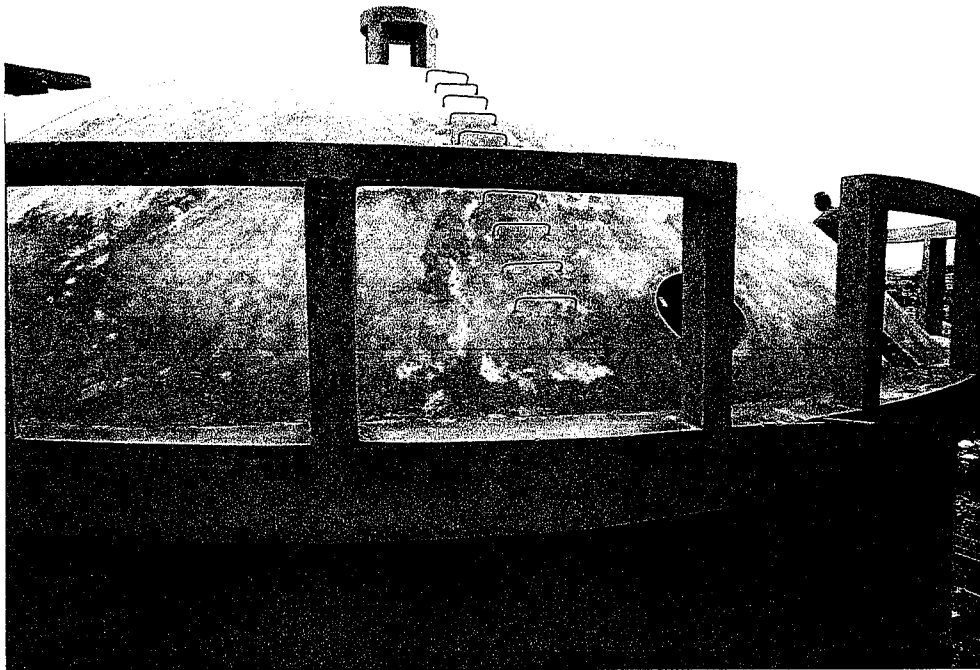
18. Field activity of the sub-project under Tranche-1 is under progress. Till date there is no major issue and problem arising at the project locations. But it is observed that workers engaged in construction work sometimes do not bear proper PPE.



**Construction of R.C.C Tank- Bawngkawn**



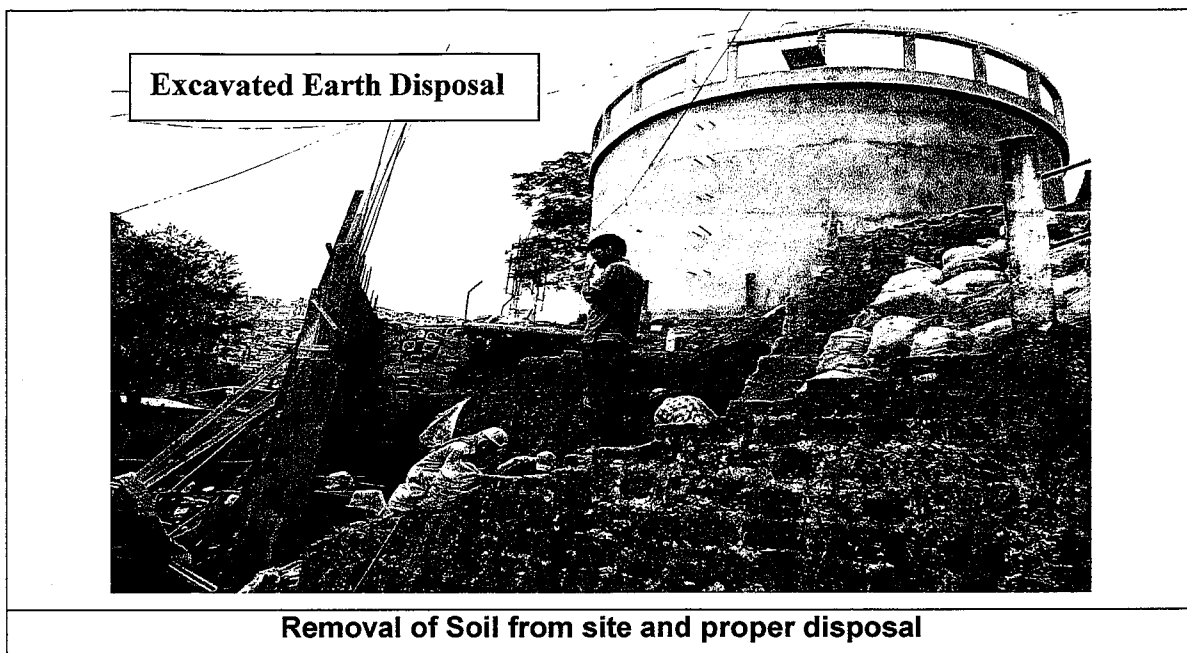
**Construction of staff quarters- Bawngkawn**



**Construction of R.C.C Tank - Armed Veng**



**Housekeeping at construction of R.C.C Tank site - Armed Veng**



## VII. CONSULTATIONS AND RECOMMENDATIONS

19. For protection of local environment, health and safety of workers engaged during construction, application of mitigation measures started as per specified EMP. Public consultation during construction/implementation phase is being carried out, the general recommendations as per present observations are given in **Table 4**.

20. As per ADB's new safeguard policy the project authority established a mechanism to receive and facilitate resolution of affected persons' concerns, complaints and grievances about the project's environmental performance. The grievances mechanism should be scaled to the risks and adverse impacts of the project. It will address affected peoples' concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all the affected people at no cost and without retribution. The affected people will be informed by appropriate mechanism.

**Table 4: Directions and Suggestions**

S. No.	Issues	Directions & Suggestions
1	Execution of works non-compliant to EMP	Effective implementation of Environmental Management Plan is ensured by Contractors and the present status is satisfactory. Except some issues like a) workers do not always use proper PPE, b) no PUC certificate has been provided by contractor during



S. No.	Issues	Directions & Suggestions
2	Health and safety	<ul style="list-style-type: none"> <li>It is also observed that some of the construction areas are not demarcated. These constructions area should be access controlled.</li> <li>Access to site inspection specially at height is not good, proper ladder, staircase should be provided.</li> <li>It has been observed during site visit that workers engaged in construction works are not always bearing proper PPE. The contractor had been directed to insist workers to bear proper PPE to avoid any accident.</li> </ul>
3	Debris disposal	The contractor had been advised to dispose off the excess earth in proper way.

21. The action plan considered for satisfactory environmental compliance as per the present sub-project activities are given in **Table 5**.

**Table 5: Action plan consider for Satisfactory Environmental Compliance**

Action	To be taken by	Time frame
Instruction to contractors and monitoring for <ul style="list-style-type: none"> <li>Proper disposal of debris and quick disposal of excavated/dismantling surplus earth/iron material</li> <li>Complete use of PPE</li> <li>Proper construction of temporary ladders / staircases</li> <li>Camp site management</li> <li>Collection of PUC certificate</li> <li>Use of safety tape/ barricade/ caution board</li> <li>Proper demarcation of site</li> </ul>	SIPMIU, DSMC, and Contractors	Continuous during construction
Public consultation during construction	SIPMIU DSMC,s Capacity building team	Before start of construction work and during construction at regular interval.
Follow up action for departmental clearances/ consent	SIPMIU	Not required in present work

## ANNEXURE - 1

### Application of EMP (upto September 2011)

#### Aizawl Water Supply- Aizawl

**Project:** Construction of 7 (Replacement) Ground level of RCC Zonal Tank, 3 staff/Chowkidar Quarters, 1 Site Office and 2 Chlorinators. (Contract No. OHT/WS/AIZ/NCB-3)  
**Contract No:** OHT/WS/AIZ/NCB-3  
**Tranche- 1**

Sr. No.	Environmental components related to project activities	Compliance		Explanation (in case of done or not done justification necessary)
PRECONSTRUCTION STAGE				
		YES	NO	
1	Site preparation work completed by SIPMIU including necessary clearance	NR	-	It is an up-gradation of existing system clearance is not required from the State Pollution Control board as the project does not fall under the EIA notification, 2006.
CONSTRUCTION STAGE				
2	Establishment of temporary camps with sanitary and solid waste management arrangement	-	NA	Preference has been given to local labor and Predominantly local labors are engaged in construction work so there is no need to construct big worker camp. Small site camp has been established mainly to keep construction equipments. Solid waste generated at construction site is being dumped at designated site.
3	Removal of overburden and excavated/dismantling material from working site and use / preservation of the same – as per mitigation measures	YES		The excavated soil (which is in very small quantity) and the overburden/dismantling material has been stock-piled on the nearby designated grounds which will then be used to refill the low lying areas in the proximity of the site.
4	Water sprinkling at construction site for arresting dust		NO	Sprinkling of water is not required in rainy seasons.
5	Materials carrying vehicle are covered	YES		Material carrying vehicles are occasionally covered with Tarpaulin sheets.
6	All vehicles and equipments mobilized to construction site and producing emission, have Pollution Control Board Certification	No		Large number of vehicles are not engaged few vehicles which are used in the mobilization activities to and fro from the construction site are not PUC certified. Strict instructions have been given to the contractor to use only PUC certified vehicles. Instructions are given to the contractor for submission of PUC certificate as soon as possible.
7	At sensitive locations enclosures provided around generator set and concrete mixture or other noise producing machinery	YES		The noise producing machinery is provided with enclosures to reduce the intensity of noise affecting the environment and local people residing in nearby areas..
8	Regular maintenance of noise producing equipment done	YES		Regular maintenance of the equipments is being done. Oiling of the equipments is being done as per the requirement.
9	Arrangement of drainage of waste		NA	Generation of waste water at construction

Sr. No.	Environmental components related to project activities	Compliance		Explanation (in case of done or not done justification necessary)
	water and arresting solid waste from waste water generated at construction site			site is very less however, Instruction has been given to the contractor and contractor is ready to make the arrangement if necessary.
10	Felling of trees done (if necessary) with mitigation measures i.e. planting of three trees for each tree fell.	-	NA	No trees have been removed from construction site as construction is being done on same existing facility and the same is not required.
11	Chances of water bodies pollution from construction		NA	No such condition exist at site
12	Drainage crossing National Highways and railways - done without any disturbance through construction of culvert etc.		NA	Such item is not applicable as all the construction work is within the urban periphery of Aizawl City.
13	Disposal of construction debris if any as per mitigation measures done	YES		The overburdens and excavated earths are being utilized for backfilling and leveling of undulated grounds nearby the construction site.
14	Local flooding from watering of excavation, flushing pipes etc.		NA	Local flooding from watering of excavation, flushing pipes etc. will not take place. Water logging is also not expected due to its natural topography during heavy rains.
15	Ensure use of Personal Protective Equipment like helmet, gumboot, gloves, safety tape, nose musk and earplugs at work place	YES		Workers do not always bear proper PPE. Instruction has been given to contractor to insist this.
16	Provide Health and Safety training to all personnel and implement H & S plan	YES		The Health and safety training has been imparted to the Contractor who in turn has provided the same to the local labors also. It is instructed to the contractor to ensure the implementation of the H&S plan strictly.
17	Plan truck routes to avoid Town, narrow or congested roads, important or fragile buildings, religious and tourist sites	YES		The transportation activities are carried out during lean hours. The routes are selected in such a way that their movement does not hamper the daily traffic.
18	Plan transport of waste to avoid peak traffic and tourist season	YES		Transportation of waste material is being done during lean hours.
19	Suitable short term traffic diversion and implementation of traffic management plan at construction site		NA	The work is being carried out at existing Water Tank after dismantling the old one in such a way that the daily traffic routes are not affected.
20	Consideration of public safety - as per prescribed mitigation measures	YES		Necessary safety measures are not always observed at construction site. Barricading & safety tapes are generally not in practice. However at few constructions site information boards are placed at appropriate location indicating "Work at progress". Strict instructions have been given to the contractor to maintain public safety.
21	Employ at least 50% of workforce from communities near sites	YES		Most of the labors engaged in construction work/ other related work has been hired from the nearby areas.
22	Continuous monitoring on implementation of mitigation measures.	YES		Regular monitoring on implementation of mitigation measures is being done.

NA- Not applicable, NR- Not required

## ANNEXURE-2: Instructions for Contractor- Environmental Safeguard

- more specific, what is proper?*
- Proper disposal of other construction waste
  - Proper storage of construction materials
  - Regular maintenance of noise producing machinery
  - Proper drainage of waste water/ rain water from working sites so that no nuisance has been created from construction sites
  - Scheduling of work without any social impact – movement of pedestrian or other disturbances etc.
  - Covering of materials carrying vehicles
  - Personnel safety of workforce – use of ear plugs, nose mask, safety belt, helmet, gloves, gumboots, safety shoes etc at working sites
  - Instruction to material supplier/ contractor to arrange pollution under control certificate for material carrying vehicles
  - Removal / disposal of overburden earth/ stone materials at earliest without any accumulation at working sites
  - Providing enclosure for noise producing equipment like generator, concrete mixture etc
  - Implementation of traffic diversion measures including use of safety tape/ barricade/ caution board at working sites
  - Requirement of blasting permission with specification of blasting time if required
  - Awareness program on HIV/AIDS