

**3 MDG Infrastructure Investment-Construction of RHCs and Sub-RHCs**

**Construction of Rural Health Centres (RHCs) and Sub Rural Health Centres (S-RHCs), Myanmar**

United Nations Office for Project Services (“UNOPS”)

-and-

Name of Contractor

# Site Environmental Management Plan

Contract No.: Insert Contract Number

Schedule No.: Insert Schedule Number

# Site Environmental Management Plan

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## SITE ENVIRONMENTAL MANAGEMENT PLAN

|   |  |
|---|--|
| <b>Project Title</b>                                  |  |
| <b>Project Location</b>                               |  |
| <b>Project Duration</b>                               |  |
| <b>UNOPS Project Manager</b>                          |  |
| <b>Officer responsible for Environmental planning</b> |  |
| <b>Contractor</b>                                     |  |
| <b>Brief outline of the project scope</b>             |  |

### Version Control

| Version | Date | Author |
|---------|------|--------|
| V 0.00  |      |        |
| V 0.01  |      |        |
| V 0.02  |      |        |

## 1. Introduction/Purpose

UNOPS recognise their responsibility to the environment, the communities in which they work. UNOPS is committed to minimise impacts of their activities on the environment and society and to continual improvement in the environmental performance.

This Site Environmental Management Plan (SEMP) describes how UNOPS intends to manage environmental issues identified for **Construction of Rural Health Centres (RHCs) and Sub Rural Health Centres (S-RHCs), Myanmar**.

The SEMP specifies aspects of site activities that may have adverse impacts on environment and identifies the controls that should be put in place to mitigate those impacts.

These controls will be applied during all stages of the project and will fulfil the requirements of the UNOPS Environmental Policy and Environmental Management System.

SEMP is live document that will be reviewed on the regular basis and updated if necessary. As a minimum the SEMP will be reviewed every **month**, or when project conditions significantly change i.e. change in the scope or environment.

## 2. Environmental Aspects & Impacts

The Site Environmental Management Plan includes aspects that have been identified by the Project Environmental Management Plan (PEMP) as the aspects that may have a significant impact on the environment and have to be managed on site by implementing the relevant mitigation/control measures.

Copy of the **Project Environmental Management Plan** is attached to this SEMP.

On the basis of the Project Environmental Management Plan the project specific Register of Environmental Impacts (REI) is created before work commences.

The input of designers (if applicable) will also be considered in developing of the register.

The REI will detail the site specific aspect and impacts that need to be managed on site together with the specific mitigation measures that will be implemented.

As assistance to the project managers to create the site specific REI, a Generic Register of Environmental Impacts has been created. It records the 'standard' risks for the typical construction project with suggested controls.

The REI will be regularly reviewed and updated to reflect changing conditions on site.

### 3. Laws and regulations

The relevant law and regulations (including requirements of the stakeholders) have been identified during the Environmental Impact Assessment (EIA) or Environmental Review (ER).

In case of the unavailability of the local legislation the UNOPS standards will be applied.

### 4. Objectives and Targets

The environmental objectives set for this project are aligned with the UNOPS environmental objectives and the donor/beneficiary/other stakeholders objectives. These are following:

- Zero water pollution incidents,
- Minimise number of the minor incidents, i.e. small spillages, near-misses,
- Undertake 2 training sessions with the local contractors.

The objectives will be reviewed by the Project Manager on the regular basis and reported to the Program Manager and UNOPS Environmental Coordinator.

### 5. Roles and Responsibilities

UNOPS recognises that all employees have a responsibility to work with concerns to the environment they operate.

All employees are responsible for:

- Stopping work if they identify anything that could cause harm to person or environment,
- Reporting pollution incidents,
- Assisting in incident investigations,
- Identifying, reporting and eliminating (if within their authority and ability) hazards to the environment,
- Complying with the UNOPS Policies, relevant legislations, Project Environmental Management Plan.

These responsibilities will be communicated to the staff during the site induction.

The Project Manager has an ultimate responsibility and accountability for the environmental performance of the project.

The Project Manager will appoint a senior representative – HSE Site Coordinator who will be responsible for implementation and review of this Site Environmental Management Plan.

The Quality, Environmental and Health and Safety (QHSE) Task Force will be created for the project. As a minimum it will consist of the relevant representative of the site management,

representative of employees and representative of Contractor. The role of the QHSE Task Force will be to review the environmental practices on site and make any recommendations to improve the environmental performance on site.

The QHSE Task Force will conduct the regular meetings **at least once a month**. The meetings will be documented and records kept. Notes will be circulated to Project Manager and the UNOPS QHSE Site Coordinator.

Summary of the findings, actions etc. should be communicated to all operatives on site.

## 6. Training

A specific environmental training will be given in accordance with the UNOPS training matrix.

All project operatives will receive a site induction that covers environmental issues and their roles and responsibilities with respect to the environmental management.

Training on specific environmental topics will be given by suitably qualified personnel.

### Tool Box Talks

Site supervisors and engineers will give tool box talks to operatives on key issues such as spill response and waste management, on a basis of one per month and as near miss trends are identified. Following topics should be tackled:

- Housekeeping
- Waste Management (hazardous waste, waste segregation)
- Ecological Awareness
- Water Pollution
- Dust and Air Quality
- Spill Control
- Noise
- Use of Petrol
- Washing Down Plant and Machinery
- Reporting of Incidents

The core set of the toolbox talks is available in the UNOPS environmental system.

Operatives attending the tool box talks will be required to sign an attendance register. The register together with topics raised during the meeting the should be kept on site as the record of toolbox talk.

## 7. Communication

### External communication

Following protocols should apply for the external communication of the environmental performance of the project:

- Donor/beneficiary/stakeholders – as agreed at the project commencement, as a minimum reporting on the environmental performance will be included in the regular project status report,
- Local authorities – communication protocol should be established by the project team, depending on the local conditions and requirements and is outlined below

| Designated Parties         | Name | Address | Contact Name | Telephone | Fax | Mobile | E-mail |
|----------------------------|------|---------|--------------|-----------|-----|--------|--------|
| Regional Health Department |      |         |              |           |     |        |        |
| UN OPS                     |      |         |              |           |     |        |        |
| Contractor                 |      |         |              |           |     |        |        |

- Public Consultation / Good neighbour consultation – if required should be undertaken by the project team in accordance with the local standards.
- Other parties – in accordance with the UNOPS Information Disclosure Policy.

**Internal communication**

The environmental standards, requirements, issues and performance will be communicated to all operatives on site using following methods:

- Site Inductions, topic-specific training, tool box talks,
- Including environmental issues as an agenda item on project progress meetings
- Posting information on notice boards (emergency plan, policies, emergency contacts, responsibilities)
- Method statement and risk assessment briefings
- Material safety data sheets briefings
- Task Force meetings
- Incidents alerts

The information will be provided in English and the local languages. Where possible the graphic representation of the information (photos, schematics, sketches) will be used.

**8. Environmental incident and emergency controls**

A project summary and emergency information details including the site location, neighbours, emergency contact details, location of the spill kits, high priority flora/fauna, culturally sensitive sites are provided within the Site Emergency and Evacuation Plan (Form H&S 02) and also attached to Environmental Plan if necessary.

Adequate and appropriately placed spill kits will be provided for rapid incident response when and where prevention fails. The Project Manager will ensure that controls are in place for any potential emergencies on site.

Reporting procedure shall follow the following:

- The incidents shall be reported to the UNOPS project manager and UNOPS HSE Coordinator as soon as practicably possible and at least within 24 hours of the incident occurring.
- The summary of the near-misses/incidents shall be communicated to the Donor/beneficiary on the monthly basis.
- Major environmental incidents (damage to the site and surroundings causing major degradation and having the high cost of the remediation) should be reported to the Donor/beneficiary and relevant agency immediately.

Environmental incidents, spills or complaints should be thoroughly investigated and action taken to prevent recurrence. Incidents that are judged as having the potential for injury, damage or loss but were not realised (a near miss) should also be investigated to prevent possible recurrence.

Any investigation should be carried out as soon as possible after the incident to allow the maximum amount of information to be obtained. One of the main reasons for an investigation is to support the improvement of the environmental operations on the project by identifying incidents which may have resulted from an absence or inadequacy in environmental controls or the presence of new uncontrolled risks.

The detail and depth of the investigation will largely depend on the severity and complexity of the incident and the level of risk it presents. More time should be spent on significant events involving environmental harm or loss. The UNOPS project manager responsible for the project will either carry out the investigation or delegate the task to a senior member of the UNOPS site team.

The results of the investigation will be disseminated to relevant staff and the Donor/beneficiary.

Should evacuation of the site be necessary the UNOPS project manager will authorise this and evacuation will be undertaken as per procedure described in the Site Emergency and Evacuation Plan.

Should an environmental incident occur on site which will affect any of the site neighbours, the UNOPS project manager will make immediate contact with those likely to be affected and coordinate appropriate action.

## 9. Auditing and Monitoring

Environmental performance at site level will be regularly monitored during weekly inspections carried out by designated site personnel.

All activities on site will be assessed to review whether they do not create additional environmental risks, and if so the appropriate mitigation measures will be put in place.

The site will be also subject to the audits conducted by the UNOPS HSE Coordinator.

Additionally sites may be subject to the external audits conducted by Donor/beneficiary/other stakeholder.

Results of the monitoring, inspection and audits will be passed on to the UNOPS HSE Coordinator for performance review.

It is strongly suggested that senior management (i.e. program manager) visiting site also conducts the review of the environmental performance on site.

Summary of the performance information will be passed onto the regional environmental coordinator on a monthly basis. The information will cover the following:

- Summary of environmental near-misses and non-conformances: category, description (include photos if possible), description of remedial action, date (when non-conformance occurred, when was closed),
- Man-worked hours during the month,
- Number of the pollution incidents: description (include photos if possible), description of remedial and preventative actions, dates (when non-conformance occurred, when was closed),
- Number of toolbox talks – including topics
- Number of complaints – details, date of complain, details of the actions undertaken
- Information on any KPIs specific to the project

## 10. Records

Environmental records will include:

- Site diary
- Site inspection reports
- Site visit records (by others)
- Induction and toolbox talks records (including attendance registers)
- Monthly project reviews
- Internal and external audit reports
- Waste management records
- Minutes of meetings (progress, task force)
- Correspondence
- Incident and investigation reports

The records will be stored on site with the project documentation.

## 11. Site Waste Management Plans

Infrastructure waste is a significant factor in considering the sustainability practices of the construction industry and its operation and activities. A site specific waste management plan shall be developed to enable better control over material and waste produced throughout the project duration.

The site waste management plan shall outline methods to minimise site waste, manage the waste that is produced in a responsible way, manage material supply and storage, monitor waste quantities.

The plan should be prepared in accordance with the requirements of the local legislation and authorities. Hazardous waste and methods of dealing with them should be clearly indicated in the waste management plan.

The plan shall be monitored and updated on the regular basis.

**ENVIRONMENTAL MITIGATION AND MONITORING GUIDELINES  
CONSTRUCTION OF RHCs/SUB-RHCs –MYANMAR**

**Contractor: .....**

The Contractor shall comply with the following Environmental Management and Monitoring Plan (EMMP) specific for this project. This EMMP spells out all steps to be taken by the Contractor to protect the environment in accordance with provisions of regulations and guidelines of the Republic of the Union of Myanmar. The Contractor should get familiar with this EMMP and implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in the EMMP.

| Project Phase and Activity   | Potential Environment Impact   | Mitigation Measure  | Monitoring Indicators   | Monitoring Method  | When to monitor                                       | Who is responsible for monitoring                      |
|--|--|---|---|--|---|--|
| <b>Construction and Handover</b>                                     |  |   |   |  |   |  |
| Construction and operation of temporary small scale contractor camps | Environmental degradation by improper disposal of solid wastes generated by the camp | Provide waste collection bins which should be regularly emptied in a designated dump site<br><br>Disposal of wastes in approved disposal pits and recyclable materials to be recycled and organic wastes to be composted. | Presence of clearing labelled waste collection bins<br><br>No accumulation of waste materials on site<br><br>Compost pits | Inspection of disposal systems in the camp   | Routine   | Contractor and UNOPS for monitoring                    |
|  | Loss of aesthetic value due to unnecessary littering of wastes on the camp           | Sorting wastes by category before disposal e.g biodegradable wastes such as remains of food and non-biodegradable wastes such as plastic water bottles are collected in separate collection bins                          | Camp free from waste littering  | Use of clearly defined waste collection bins one for degradable waste and the on other for non-biodegradable waste | Weekly  | UNOPS to monitor and contractor to implement           |
|  | Contamination of surface and ground water resources by improper disposal of human    | Ensuring brown and grey water are not discharged into the environment by the construction of appropriate sanitary facilities  | Systems for brown an gray water in place  | Inspection and test water quality<br><br>Measure distance  | Prior to installation (site plans for camp) and after | Contractor for implementation and UNOPS for monitoring |

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|  | wastes  | Sanitation facilities to be sited 30 metres downstream and away from surface and ground water sources   | Water quality of surface, ground water within 30m of the camp (E-coli).  |  | construction<br><br>Quarterly (both monitoring and reporting)  |  |
|  | Surface water and soil contamination by fuels, oils and lubricants<br><br>Contamination of soils by accidental spills and leakage from construction machineries | Fueling bays, workshops/garages including storage facilities floors to be made of an impervious materials And wastes from such facilities to be fitted with oil interceptors. Design measures for handling spills<br><br>Regular inspection and maintenance of construction machineries to prevent spills and leakage<br><br>Use of plastic carpet material or groundsheet during maintenance of construction equipment | An impervious layer in all operational areas in place and<br><br>Mechanisms for handling spills in place<br><br>No spills and leakages from construction equipment | Inspection storage facilities<br><br>Test water for chemical and physical compositions<br><br>Regular Inspection | Frequently for storage facilities<br><br>Quarterly for water<br><br>Before and after construction activities | Contractor for mitigation implementation and UNOPS for monitoring<br><br>UNOPs to monitor and contractors to implement |
|  | Resource use conflicts especially for water resources   | Ensure the camp does not compete for resources with the local community by providing alternatives.<br><br>Camp workers to be provided with water that is treated.<br><br>Prohibit contractor from hunting for game meat and logging   | Incidence of Conflicts reported;<br><br>Distance from camp site to human settlement<br>Incidence of illegal logging reported                                       | Community meetings<br><br>Complaints registered  | Frequent   | Contractor for mitigation implementation & UNOPS for monitoring  |
| Demolition, Construction and renovation activities | Air and noise pollution disrupt nearby also lead to , eye / ear infection & respiratory related complications   | Activities with intensive noise and air pollution to be undertaken during least disruptive times and holidays.  | Reported injuries and accidents<br><br>Evidence of workers wearing protective  | Review grievance register<br><br>Reports from the community leaders  | Weekly and monthly during planning and design<br><br>Daily during  | UNOPS to supervise Contractor to implement   |

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|  | <p>to workers</p> <p>Accidents and body injuries from falls, dropped objects ,and tools and equipment;</p> <p>Sharp objects such as nails, broken pieces of metals and unwanted iron sheets may be harmful to health</p> <p>Debris from demolition of the buildings would lead to aesthetic damage and environmental degradation</p> | <p>Provide workers with protective gears e.g masks, helmets, gloves, and gumboots</p> <p>Consultations with local affected persons, staff and students to familiarize them with the work to be done.</p> <p>Provide construction workers with First Aids Kits, proper protective equipment.</p> <p>Collection of all debris from demolition activities for disposal to a designated waste disposal site with knowledge of local authorities</p> <p>Giving out unwanted materials from demolished structures such as iron sheets and timbers to local communities for reuse</p> | <p>equipments</p> <p>Number of sensitization meetings to workers</p> <p>Use of construction Protective gears</p> <p>Taking records of injuries caused</p> <p>Construction site free from debris</p> | <p>Site inspection meetings</p> <p>Evidence of workers using protective gears</p> | <p>construction</p> <p>Throughout construction activities</p> <p>During demolition exercises</p> |   |
|  | <p>Construction of new building blocks and wards would lead to clearing, excavation and removal of vegetation leading to soil erosion and environmental degradation</p>  | <p>Promote labour based methods with light machinery as opposed to heavy ones</p> <p>Limit clearing to the area earmarked for construction of the structures</p> <p>Reuse excavated material e.g soils in back-filling</p>   | <p>Evidence of soil erosion</p> <p>Reuse of excavated material</p> <p>Clearing limited to a specific area</p>   | <p>Visual verification</p>  | <p>Frequent during clearing and construction</p>   | <p>UNOPS to supervise Contractor to implement</p> |

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|                           | Negative health and safety impacts of borrow areas including water-borne diseases and injuries and death   | Restore and re-vegetate borrow areas as soon as possible, and inform communities about the dangers associated with using water from borrow areas  | Borrow pits restored and a vegetative cover is established<br><br>Injuries reported  | Inspect borrow areas<br>Monitor the status of borrow areas   | Frequent  | UNOPS to supervise<br><br>Contractor to implement |
| Water supply & Sanitation | If not properly designed and maintained may contaminate water and provide a breeding habit for disease vectors<br><br>Construction of pit latrines, soak pits with inappropriate distance to water sources may contaminate underground water sources<br><br>Waste material from placenta pits and waste collection pits would leak underground and find their way into water | Site plan to make provision for adequate space for WASH and solid waste disposal systems.<br><br>Implement water quality assurance and capacity building plan to undertake periodically arsenic and faecal coliforms tests<br><br>Pit latrines, located at a distance of 30 or more from underground water sources, like boreholes or hand dug wells<br><br>Waste disposal pits and placenta pits should be located 30 meters away from available underground water sources | Monitor water quality and handling of wastes<br><br>Distance of pit latrines and placenta pits from available water source | Water testing<br>Arsenic and faecal coliforms tests<br><br>Inspection of site layout and positioning | Quarterly water monitoring<br><br>Initial state, during site layout | UNOPS to supervise<br>Contractor to implement     |

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|   | <p>sources leading to contamination and pollution of water</p> <p>Poor construction of underground boreholes and water sources may deplete available underground water</p>  | <p>Thorough testing need to be undertaken to find out the underground water table and yield</p> <p>Gather historical data on the supply and quantity of water seasonally</p>   | <p>Records of underground yield</p>  |   |       |  |
| Power Provisions: Solar and a Generator   | Generators might emit noise and air pollution and contaminate the ground surface  | The floor of the generator house to be made of impervious materials and generators will be frequently maintained minimize fumes and noise  | <p>Levels of noise fume and floor of generator</p> <p>Monitor maintenance records</p>  | Monitor fume and noise from the generator   | Daily | <p>UNOPS to supervise</p> <p>Contractor to implement</p>   |
| <b>Decommissioning</b>  |   |  |  |   |       |  |
| Failure to de-commission contractor camps and to remove construction and hazardous materials during closure of the camp and the project | <p>Accumulation of rubble, loss of aesthetic value of the landscape; pose health and safety risks to community – for instance injuries and death in case of falling in latrines</p> <p>Eroded soils in the vicinity of abandoned rubble may cause gull eyeing and siltation of surface water and damage to aesthetics</p> | <p>Contractors will implement site restoration and clean up plans. including clear all temporary structures; dispose all garbage, night soils and POL (Petroleum)</p> <p>Remove or bury all abandoned construction materials and rubble</p> <p>Fill in and close all latrines and septic systems</p> | <p>Confirm that all construction rubble has been disposed of properly.</p> <p>Conform that excluded materials have been discarded in the construction-debris disposal site.</p> <p>Verify that the</p> | Daily inspection of decommission activities | Daily | Contractor to decommission a UNOPS to supervise and verify |

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|  |  |  | disposal site has been adequately capped with soil material |  |  |  |
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