

**Minutes of the 18th Goa State Expert Appraisal Committee
(Goa-SEAC) meeting held on 11th March 2014 at 10.00 a.m. in the
Conference Room of the EIA Secretariat, O/o Goa State Pollution Control
Board (GSPCB), Patto.**

The eighteenth meeting of the Goa-SEAC was held on 11th March 2014 in the Conference room of the GSPCB at 10.00 a.m. under the Chairmanship of Prof. Antonio Jaime Afonso. The list of members who attended the meeting is at “Annexure – 1”.

At the beginning Chairman welcomed the Members and requested Secretary, SEAC to proceed as per the Agenda items (refer Annexure – 2).

1. **Finalization of Terms of References (ToRs’)** to undertake Environment Impact Assessment (EIA) study for proposed setting-up of Common Municipal Solid Waste Management Facility (CMSWMF) at Saligao (North Goa) and Cacora (South Goa) as proposed by then **Department of Science, Technology and Environment (DST&E), Goa** (now Department of Science & Technology) – Based on the project presentation made by the Project Proponent (PP) during 17th Goa-SEAC held on 24th February 2014 followed by the site-inspection conducted on 4th March 2014 (refer Annexure – 3), The matter was discussed and deliberated in detail based on inputs / comments received from Members concerned as well as in terms of model Terms of Reference compiled by M/s IL&FS for various “Developmental activity–specific terms of reference for EIA studies” (*Chapter – 4: Common Municipal Solid Waste Management Facility – pgs. 4-1 to 4-6*). Members agreed to formulate common ToRs’ for both the proposed sites considering the fact that these sites are being used as waste-dump sites since past. However, site-specific importance was felt to address issues pertaining to infrastructure availability for waste transportation from source to respective sites for health, safety and odour-control management, possibility of leachates infiltration through landfill(s) vis-a-vis mandating regular monitoring of natural water source(s) with specific reference to open-dug wells, springs located around / within buffer zone at Saligao and impact on agricultural fields located along three boundary-walls as well as proximity of Government Polytechnic Institution, Cacora at Cacora site.

After detailed deliberation, the Committee decided to issue the ToRs’ as per Annexure – 4.

2. In response to submission of part-compliance by (a) **M/s Satpurush Metal Industries** for a proposal for extraction of basalt-stone in survey no. 66/0 of Allorna village in Pernem taluka and (b) **M/s Christopher Furtado** for a proposal for extraction of basalt-stone in survey no. 13/2 of Cordem village, Quepem taluka to site-specific observations respectively made during the 17th SEAC meeting held on 24th February 2014, Members agreed to record the same and forward to Goa-SEIAA for further needful.
3. In response to a communication received from the **Goa Coastal Zone Management Authority (GCZMA)** in a matter pertaining to M/s Palacio Property Developers and a construction activity at Goa Velha, the Members unanimously agreed to the fact that the alleged violations, referred to in the letter, pertain to relevant provisions under the CRZ Notification, 2011 and Land Conversion Regulations and are outside the purview / mandate of the EIA Notification, 2006. As such, Committee decided to communicate suitably to the GCZMA.
4. This was followed by scrutiny and appraisal of proposals (*under the purview of the CRZ Notification, 2011*) to ascertain the applicability of EIA Notification, 2006.
 - a. **M/s. Hermitage Builders Pvt. Ltd.,** - proposed construction of a Hotel (30 rooms) in Survey. No. 16/4 of Village Sernabatim, Salcete taluka. – Total plot area (CRZ-III) of the proposed site is 12,271 sq.mts. wherein, 9,924.10 sq.mts. of the area falls within 200 mts. from HTL and remaining (i.e. 2,346.90 sq.mts.) falls between 200 – 500 mts. from the HTL. Total built-up area (BUA) – 916.14 sq.mts. Green area development – 855 sq.mts.

Committee, based on the total BUA involved in the proposed project activity, decided that the said proposal does not attract provisions of the EIA Notification, 2006.

- b. **M/s Shiva Goa Places Pvt. Ltd.,** - proposed Hotel-cum-Resort in Survey. No. 174/2 and 165/2 of Varca village, Salcete taluka - Total plot area (CRZ-III) of the proposed site is 46,375 sq.mts. Total built-up area (BUA) – 21,885 sq.mts.

Committee, based on the total BUA involved in the proposed project activity, decided that the said proposal mandates requirement of prior EC as per the EIA Notification, 2006.

Accordingly, Committee decided to communicate the said decision to the GCZMA for further needful.

5. Subsequently, Members desired to know the follow-up and status of the decision taken during the 13th Goa-SEAC meeting held on 13th January 2014 w.r.t. enhancement in sitting/site-inspection fees, issue of photo-identity cards and purchase of utility vehicle for Goa-SEAC / SEIAA. Secretary apprised the Members that the proposal is under process and consideration of Principal Secretary (Environment), Govt. of Goa. Later, Members desired to provide 'communication allowance' of Rs. 500/- per month to SEAC / SEIAA members as well as extending facility for reimbursing Travelling Allowance (T. A.), as per actuals, after submission of relevant receipt(s) by Members concerned. Accordingly, it was decided to communicate Goa-SEIAA officially for suitable consideration / approval and decision.

The meeting ended with vote of thanks to the Chair.

Dr. Manoj R. Borkar _____ *Sd./-* _____

Mrs. Anita. A. B. Barreto _____ *Sd./-* _____

Mrs. Ashwinin Pai Panandikar _____ *Sd./-* _____

Mr. Suhas Gaonkar _____ *Sd./-* _____

Dr. P. K. John _____ *Sd./-* _____

Dr. Purnanand P. Savoikar _____ *Sd./-* _____

Sd./-

Sd./-

Place: Patto, Panaji
Date: 20th March 2014

ANNEXURE – 1

List of members who attended the eighteenth Goa-SEAC meeting

1. Prof. Antonio Jaime C. Afonso, St.Istevam	Chairman
2. Dr. Manoj R. Borkar, Nuvvem	- <i>Member</i>
3. Mrs. Anita B. Barreto, Panaji.	- <i>Member</i>
4. Mrs. Ashwinin Pai Panandikar, Bambolim	- <i>Member</i>
5. Mr. Suhas Gaonkar, cuncolim	- <i>Member</i>
6. Dr. P. K. John, Alto-St.Cruz	- <i>Member</i>
7. Dr. Purnanand Savoikar , Bicholim	- <i>Member</i>
8. Dr. Mohan R. Girap, Panaji	- <i>Secretary</i>

ANNEXURE – 3

Site-inspection report of the visit of Goa-SEAC to Common Municipal Solid Waste Management Facility (CMSWMF) proposed to be installed at Saligao in Bardez taluka (North Goa) and Cacora in Quepem taluka (South Goa)

Goa State Expert Appraisal Committee (Goa-SEAC) conducted site-inspection of two sites proposed for setting up of a Common Municipal Solid Waste management Facilities (CMSWMFs') – one at Saligao in North Goa and another at Cacora in South Goa on 4th March 2014. The purpose of the visit was to ascertain on-site status of proposed area. Cacora site in Quepem taluka of South Goa was inspected in the morning session while Saligao site in Bardez taluka in North Goa was inspected in after-lunch session.

Cacora site was inspected by Prof. Antonio Jaime Afonso, Chairman, Goa-SEAC, Prof. Jagannath Hirkude and Dr. Mohan R. Girap, Secy., Goa-SEAC in the presence of two officials from Solid Waste Management Cell (SWMC) - Mrs. Apporva Gadre (Technical Manager) and Mr. Keshav Naik (Scientific Officer). Saligao site was inspected by Prof. Antonio Jaime Afonso, Chairman, Goa-SEAC, Mrs. Anita Barreto, Dr. Purnanand Savoikar, Mrs. Ashwini Pai-Panandekar, Dr. Suhas Gaonkar, Dr. Mohan R. Girap, Secy., Goa-SEAC in the presence of two officials from Solid Waste Management Cell (SWMC) - Mrs. Apporva Gadre (Technical Manager) and Mr. Keshav Naik (Scientific Officer) and Mr. Patrick from the Directorate of Settlement and Land Records (DSLRL).

Site-specific observations at Cacora CMSWMF site –

Goa-SEAC perused the site-cum-layout plan of the proposed area which is earmarked for setting up a solid waste management facility to handle (*i.e. collect, treat and dispose-off*) waste generated from South Goa district (*refer Figs 1 and 2*).



Figure – 1 : Approach road to the proposed CMSWMF site at Cacora



Figure – 2 : Land use / Land cover surrounding the proposed site at Cacora



Figure – 3 : Presence of perennial water source – stream / nala passing through the proposed property



Figure – 4 : Part of fallow-land (??) within the proposed plot area at Cacora

The proposed site (*survey nos. 164/8(P), 165/1(P), 167, 168/1, 168/2 and 169*) covering total plot area of 82,750 sq.mts. is located opposite to Government Polytechnic Institution, Cacora. Geomorphologically, the area is a shallow low-lying broad valley portion (*refer Fig. 4*) forming a saucer-shaped feature. It was given to understand that the present site is being used as a waste dump site since past and the same was prioritized to set-up CMSWMF considering its non-proximity to any settlement, natural water source (i.e. lake, pond, irrigational canal) and/or forest.

It was noticed that a boundary wall is being constructed by the Cacora Municipal Council (CMC) along certain stretches of the plot area. Further, survey boundary stones, demarcated along other certain stretches, were noticed which, as appraised, are earmarked by the Directorate of Settlement and Land Records (DSLRL) during the recent survey subsequent to acquisition of additional land. A perennial stream traverse through the plot area (*refer Fig. 3*) and ultimately forms a north-eastern plot boundary pertaining to survey no. 169.

In order to have the clarity of the proposed plot boundary, acquired for the said purpose, Goa-SEAC sought clarification w.r.t. the construction of boundary wall vis-a-vis demarcation of survey boundary stones so as to clearly earmark total acquired plot area to set up CMSWMF. Accordingly, SWMC was requested to submit relevant details in the map format on priority.

Considering the presence of stream within the plot boundary, SWMC was directed not to reclaim the stream flow and provide suitable channel / drain for undisturbed water flow, especially during monsoon season(s) and avoid possibility of flooding / inundation of low-lying area(s).

Site-specific observations at Saligao CMSWMF site –

The proposed site partly falls in Calangute village (*survey nos. 47/1(P) – 1,13,500 sq.mts.*) and partly falls in Saligao village (*survey nos. 112/1(P), 114/1(P), 116/1(P) and 117/1(P) – 8,080 sq.mts.*) covering total plot area of 1,21,580 sq.mts. is located behind the Department of Science, Technology and Environment (DST&E) office at Saligao. Geomorphologically, the area is a lateritic plateau-top area (*refer Fig. 5*) flanked by hill-slopes. It was given to understand that the present site is being used as a waste dump site

since past and the same was prioritized to set-up CMSWMF considering its non-proximity to any settlement, natural water source (i.e. lake, pond, irrigational canal) and/or forest.



Figure – 5 : Proposed plot to set-up CMSWMF at Saligao

It was also noted that waste, being brought to the site for dumping through trucks, is being partly segregated into biodegradable and non-biodegradable fractions. Biodegradable material is processed through aerobic decomposition provided through wind-rows and converted into compost. However, non-biodegradable fractions is being burnt (*refer Fig. 6*).



Figure – 6 : Part segregation of biodegradable fraction and its processing through aerobic decomposition and burning of non-biodegradable fraction.

Further, it was informed that Salmona spring is located about 350 – 400 mts. from the outermost plot boundary along eastern side the lower reaches of the hill-slopes. Accordingly, SWMC was directed to address the issue in the Environment Management

Plan (EMP) so as to prevent any likelihood possibility of its contamination due to surficial run-off during monsoon and/or groundwater contamination due to leachate infiltration. The technical details pertaining to proposed landfill design was also sought so as to ascertain the practical feasibility of its site-specific application.

The said inspection was primarily aimed at prioritizing the Terms of References (ToRs') to enable the Project Proponent (PP) – Department of Science, Technology (DST) to with initiate Environment Impact Assessment (EIA) study as mandated in the EIA Notification, 2006 for both the sites independently.

ANNEXURE - 4

Terms of Reference (ToRs') for Environmental Impact Assessment of Common Municipal Solid Waste Management Facility at Calangute / Saligao and Cacora, Goa.

1.0. Background

Profile of the project proponent, name and contact address, implementing organization, organizational structure, project consultants, rational behind the project, effective area of operation (i.e. areas proposed to be covered for waste treatment), current status of the project as well as time frame for completion and operationalization of the proposed Common Municipal Solid Waste Management Facility (CMSWMF) should be

mentioned clearly. Discuss Land parameters plot / survey numbers, village, district, State and area of the land and ownership. (*supporting documents may be annexed*). Policy, legal and administrative framework within which the project is set, major stakeholder(s) / Department(s) of the State and Central Government with their specific roles, applicable laws, clearance requirements at various levels of project execution and their current status may be listed. Any litigation(s) pending against the proposed project and / or any directions or orders passed by any court of law / any statutory authority against the project is to be detailed out. In addition, the Project Proponent (PP) should inform its area of jurisdiction vis-a-vis appellate authority to resolve legal disputes, if any.

2.0. Project Description

This section should describe the geographical location of the proposed facility and its surroundings, capacity, need, goal and objectives for proposed CMSWMF, significance of the project both at local and State/regional level may be mentioned clearly. Background information for implementation of the project and base studies taken up, if any, and overall scenario of the proposed facility in the context of Goa's solid waste management issues and challenges, procedures adopted for selection of technology, criteria for site-selection should be discussed.

Following information should be included:

- State-specific primary waste characteristics (coastal, rural / urban agglomerate) – physical and chemical (preferably, at least for one year with seasonal variation)
- Population / area covered under CMSWMF
- Expected quality / quantity of solid waste (MSW) generated (based on the resident plus floating population)
- Quantity of MSW actually collected (average figure) – details of seasonal variation for actual collection (from secondary sources)
- Methodology for collection of MSW – doorstep collection, segregation at source, community bins, collection from commercial , hotels and office premises, etc.
- Transportation of MSW – type of vehicles (fast or slow moving), frequency of transportation and distance of transportation.
- Analysis of Alternatives (Technology & Sites), if considered, for the proposed projects.
- Mass and Energy Balance flow diagram for the process technology proposed.

Details of the Proposed CMSWMF

The information will be sourced from engineering and design studies conducted for the project. This section should contain the following details:

- Location of the site, rationale for selecting the site for the proposed MSW management facility
- Land requirement for the facility, including its optimization, break up for various purposes and its availability. If any incompatible land use attributes fall within a 5km radius of the project boundary, proponent shall describe the sensitivity areas like public water supply areas from rivers/surface water bodies and groundwater, scenic areas/tourism areas/hill resorts, religious places.
- Details of the following may be furnished –
 - each unit in the facility, with a brief describing of its operations.
 - waste collection system – compliance with the statutory requirements and description of proposed operations.
 - proposed protocol for waste acceptance (system for sampling, parameters, analysis methods, time lags, number of people, qualifications, manifest system, etc.)
 - Ultimate disposal of the waste – details of the methodology of disposal including life span and design of the existing/proposed site.
 - existing solid waste dumping on the proposed site.
 - chosen waste treatment process/technology and whether it is in compliance with the applicable law “Municipal Solid Wastes (Management and Handling) Rules, 2000”.
 - infrastructure facilities including undisturbed drainage / storm-water flow.
 - Details of safety measures for occupational health
- Mass and Energy Balance flow diagram (step-by-step) for the process technology proposed.
- Energy conversion technology (from biogas to electricity) should be clearly detailed out with specifications of the biogas engines and alternators used for this conversion process.
- List of plant(s) and equipment(s) to be set up and vehicles to be used.
- Source of water and electrical power / details about captive utility of in-plant power generation.
- The quality of compost to be produced and arrangements for marketing of compost.

- Details of the laboratory facilities available for testing, analysis, etc.,
- Specific details on leachate collection system, generation rates, treatment and disposal.
- Details of the landfill operation – filling, layers, equipment, compaction levels, cross-checking mechanism, stability considerations, landfill gas monitoring troubleshooting mechanism, etc.
- Details pertaining to monitoring of test wells within and around the landfill site as per standard procedure, its locations, frequency of monitoring, parameters as prescribed by the CPCB norms, etc.
- Fire detection, suppression and safety & health protection measures during project design and operations.
- Value-added utilization of Refuse Derived Fuel (RDF) to produce electricity and/or traditional sources of fuel in coal power plants or local industries. Its production and quality (Calorific value and C/H ratio) as well as list of promising buyers.
- Proposed financial model, creation of fund for future liabilities till 30 years after closure and its monitoring mechanism.

3.0. Description of the Environment in the delineated study area

As a primary requirement of EIA process, the proponent should collect baseline data in the project area as well as in the area within 5km of the proposed project boundary (buffer zone). Map of the study area clearly delineating the location of various monitoring stations (air/ water / soil and noise) superimposed with location of habitats are to be shown. Primary data (baseline data), wherever feasible, should be collected for one season except rainy season. Secondary data should be collected for area within 10km aerial distance from the project site-boundary, as specifically mentioned at column 9(iii) of Form-I of EIA Notification 2006.

The following components of the environment shall be studied:

3.1. Land Environment

- a) Land use / land cover: Data on the land use (conformity with existing development regulation), land ownership, habitation, forest cover around the proposed CMSWMF ascertained from local authorities, revenue records, etc.

- b) Topography: Baseline data needs to be given on existing situation of the land at the proposed project area, including description of plateau features, terrain analysis, slope and elevation, microclimatic factors.
- c) Geology: Baseline data should be provided on rock types, regional tectonic setting and history of any seismicity and associated hazards. Information on distance of quarries/excavation, if any, from habitat, restrictions for cutting / filling, environmental controls, etc., should be provided.
- d) Soil: Data including type, stratification (soil profile), characteristics, soil properties, porosity and permeability, inherent fertility etc. are important from engineering considerations for design of structures like landfills, green belt development, etc should be submitted. The current level of soil and water contamination, if any, due to existing dumps need to be ascertained.
- e) Meteorological data covering the following should be incorporated in the EIA report - Data from the nearest meteorological station in respect of history of heavy rainfall and cyclones for the area shall be mentioned. The data pertaining to the following parameters shall be included:
 - Wind speed and direction (wind-rose diagram)
 - Rainfall
 - Relative humidity
 - Temperature
 - History of heavy rainfall and cyclones

3.2. Water Environment

- a) Groundwater: Baseline data on groundwater sources (springs, open-dug wells, bore wells), including data on depth (groundwater table), physico-chemical parameters is to be collected at least for one season.
- b) Surface water: Baseline data on location of surface lentic and lotic water sources details such as their present quality and utility, if any. Details of water bodies present within the project area and 5kms. surrounding the site-boundary should be provided.
- c) Prepare an existing drainage map of the site with 1.5-km surrounding with natural surface drainage flow points.
- d) Estimate water intake requirements and identify the source of water to be used. Ground water budgeting, if being used, has to be provided. Rainwater harvesting (if proposed) has to be detailed out.
- e) Quantity of wastewater generated during construction and working phase and its treatment and disposal is to be provided.

3.3. Biological Environment

- a) Terrestrial ecology: Inventory of Flora and Fauna based on primary data in the study area as well as that within 10km of its boundary, shall be included in the list of flora and fauna along with classification as per the schedule given in the Wildlife Protection Act, 1972 (for fauna) and in the Red Book Data (flora). Also, a statement clearly specifying whether the study area forms a part of an ecologically sensitive area should be provided. In the event of occurrence of any scheduled-I species, as per IIWPA, 1972, a conservation plan be prepared in consultation with and authenticated by the Chief Wildlife Warden (CWW), Govt. of Goa.
- b) A particular emphasis be laid down on avifaunal diversity highlighting the raptors and scavenging birds at the existing site.
- c) In the water bodies within 5 kms. of crow-fly distance surrounding the site-boundary, excluding the marine realm; an inventory of fresh-water biodiversity to be compiled with emphasis on ichthyofauna and waders, if any.
- d) Inventory of Agro-biodiversity within 5kms buffer zone highlighting local cultivars, if any.

3.4. Air Environment: Baseline data of ambient air parameters, such as RSPM, nitrogen dioxide, sulphur dioxide, carbon monoxide, heavy metals and other harmful air pollutants such as Methane and Dioxins, depending upon the type of waste, should be monitored.

This data should be collected in an area extending at least 5km from the project boundary by monitoring at two locations in upwind direction and three locations in downwind direction wherein specific importance should be given to areas (religious and habitations) in close proximity to the project, say up to 1km. Data for one season, other than monsoon, should be monitored as per the CPCB Norms. Secondary Data (if any) from the adjacent Industrial Estate(s) should be included in the report.

3.5. Noise: Baseline data on noise pollution at the project area and the neighbourhood up to 1km or nearest residential areas is to be monitored as per the CPCB norms.

3.6. Socio-Economic and Occupational Health Environments: Baseline data at the project area shall include the demography, existing infrastructure facilities in the proposed area and area of impact due to the proposed activity. Awareness of the population about the proposed activity shall also be included.

4.0. Anticipated Environmental Impacts and Mitigation Measures

This section should describe the likely impact of the project on each of the environmental parameters and the methods adopted / proposed to be adopted for assessing

the impact such as model studies, empirical methods, reference to existing similar situations, reference to previous studies, details of mitigation methods to reduce adverse effects of the project, best environmental practices and conservation of natural resources. The identification of specific impacts followed with mitigation measures should be done for different stages, i.e., location of the CMSWMF, construction of landfills and other ancillary facilities, operations. It should include the following:

- Assessment report of the impact of transportation of waste on the transport system.
- Details of the impact on drainage in the area and the surroundings.
- Impact on ambient air quality due to the MSW facility.
- Proposed measures for occupational safety and health of workers.
- Scheme for storm water management within and around the proposed facility.
- Details on impacts of landfill gases and its preventive measures, as per CPCB norms.
- Action plan for green belt development, including the details of species, width of plantation and planning schedule as per CPCB norms.

4.1. Land Environment

Anticipated Impacts:

- Impact of project construction/operation on the land requirement/land-use pattern should be assessed including impact on the natural drainage system. Prediction of impacts should include impacts on the existing infrastructures like road network, settlements, groundwater/surface water, loss of soil productivity / fertility.

Mitigation Measures:

- Measures should be adopted to reduce adverse effects such as soil improvement techniques.

4.1.1 Topography, Geology and Soil

Anticipated Impacts:

- Impact of project construction/operation on the topography due to quarrying / excavation for landfill preparation, damage to existing vegetation/green belt and plantation, changes in land-use patterns.
- Impact of the project construction on the geology and vice-versa on the soil parameters, probability of settlement, subsidence, slides, surface drainage, leachates, etc. are to be estimated.

Mitigation Measures:

- Mitigation measures to reduce adverse effects include improving green belt, obtaining construction materials from other sources, usage of alternative construction materials and storm water management.

4.2. Water Environment

4.2.1. Groundwater

Anticipated Impacts:

- Discharge of effluent and its impact should be studied. Impact of project construction/operation on the groundwater on account of leachates, run off from material and storages, percolation, etc. should also be assessed.

Mitigation measures:

- Mitigation measures to reduce adverse effects include constructing storage areas with impervious paving / Bentonite clay liners having self-healing properties and can replace clay layers can also be explored as alternatives, impervious roads, lined drains, routing surface drainage to settlement tanks/pits etc. Treatment of effluent, recycling/reuse and disposal should be planned. Groundwater study on leachates should be carried out periodically and should be correlated with baseline data.

4.2.2. Surface Water

Anticipated Impacts:

- Impact of project construction and operations on surface water sources, contamination due to storm-water flow, especially during monsoon, project operations, impact on surface water flow and quality due to anticipated obstructions, etc. should be assessed.

Mitigation measures:

- Measures should be taken to protect surface water resources and prevent reduction in their quality due to construction and operational activities, and choice of alternative resources should be considered.

4.3. Biological Environment

Anticipated Impacts:

- Impacts of the project construction/operation on the terrestrial ecology on account of project construction should be assessed.

Mitigation measures:

- Mitigation measures to reduce adverse effects should be provided.

4.4. Air Environment

Anticipated Impacts:

- Impact of project construction/operation on the ambient air quality on account of emissions during construction and operations, as well as emission of gases from equipment deployed for construction and waste handling / emissions, if any, from landfill should be assessed.
- Prediction of emissions during waste handling/emissions from the landfill areas/emissions due to increased traffic, emission inventory for critical pollutants with and without mitigation measures should be done.

Mitigation measures:

- Specific mitigation measures during construction stage and operational stage should be included.

4.5. Noise Pollution

Anticipated impacts:

- Impact of project construction/operation, including noise and vibration on account of construction equipment, waste handling equipment and road traffic should be assessed.

Mitigation measures:

- Mitigation measures to reduce adverse effects should be provided. Greenbelt development of appropriate density may be considered.

4.6. Socio-Economic and Occupational Health Environment

Anticipated Impacts:

- The impact of the proposed activity on the communities should be predicted.
- Impact of the project on socio-cultural and tourism aspects should be assessed.

Mitigation measures:

- Mitigation measures to reduce adverse effects should be planned.

4.7. Transport

- Impact of transportation of wastes on existing transport system to be examined and necessary interventions may be recommended.
- Provide a site plan showing the details of connectivity existing and proposed road transport.
- Provide a site plan showing buildings, roads, and open spaces for CMSWMF.

4.8. Environmental Monitoring Program

- Frequency, location, parameters of monitoring air, water, noise and soil during operation of SWMF.
- Compilation and analysis of data and reporting system in a discrete EMP document.

4.9. Institutional arrangement to implement mitigation measures shall be identified and steps to strengthen or expand existing arrangements, if required, shall be proposed.

Issues identified by the public and other stakeholders during public hearings along with the issues raised by the public and the responses of the project proponent should also be appropriately responded to.

4.10. Project Benefits

This section should detail out the positive impacts of the CMSWMF at local / State level including improvements in physical infrastructure, if any.

5.0 Stakeholder Consultations shall be conducted including community consultations at the state, district, village and roadside community levels. The objective of the consultation sessions shall be to improve project components with regard to proper environmental management.

1.0 Environmental Management Plans (EMPs)

Based on the impacts predicted, EMPs shall be prepared to fulfil all requirements of GoI, MoEF and GoG. The scope of EMPs shall include:

- Recommendation of feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels.
- Description of implementation arrangement needed for the project.
- Specification of environmental supervision, monitoring and auditing requirements, including the technical aspects of monitoring the effectiveness of mitigation measures (including measurement methodologies, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules).
- Summary matrix of environmental monitoring, during construction and operation stages, along with the requirement of monitoring facilities, frequency, location, parameters of monitoring, compilation and analysis of data, comparison with base line data, compliance to accepted norms and reporting system, and plantation monitoring program.
- Post-closure plan for landfill site, if any.

- Listing of all the mandatory government clearance conditions, and the status of procuring clearances.

7.0. Executive Summary (Summary EIA)

This should be a summary of the EIA report condensed to 10 A-4 size pages. It should necessarily cover in brief the following chapters of the EIA report: Introduction, Project Description, and Description of the Environment, Anticipated Environmental Impacts & Mitigation Measures, Additional Studies, Environmental Monitoring Programme / Project benefits, and Environmental Management Plan (EMP).

Such an Executive Summary may be required during public hearing process, as applicable, for distribution to public on demand. If required, it has to be translated into a local language(s).

8.0 Disclosure of Consultant Engaged

This shall include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

The following general points should be noted:

- All documents should be properly indexed, page numbered.
- Period/date of data collection should be clearly indicated.
- After the preparation of the draft (*as per the generic structure prescribed in Appendix – III of the EIA Notification, 2006*) covering the above mentioned TORs', the project proponent shall get the Public Hearing conducted, if applicable, and take further necessary action for obtaining prior environmental clearance (EC) in accordance with the procedure prescribed under the EIA Notification, 2006.
- The copy of the letter received from Goa-SEAC on the TORs' prescribed for the project should be attached as an annexure to the final EIA-EMP report. The compliance statement of TORs' prescribed should also be incorporated.
