Supplementary Appendix R

Environmental Assessment Document

Updated Environmental Assessment and Review Framework
Project Number: 35290-01

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India: Northeastern Region Capital Cities Development Investment Program

ENVIRONMENTAL ASSESSMENT AND REVIEW FRAMEWORK (EARF)

I. INTRODUCTION

1. The North Eastern Region Capital Cities Development Investment Program (NERCCIP) envisages achieving sustainable urban development in the Project Cities of Agartala, Aizawl, Kohima, Gangtok and Shillong through investments in urban infrastructure sectors. The urban infrastructure and services improvement is proposed in the following sectors (i) water supply, (ii) sewerage and sanitation, and (iii) solid waste management. The expected impact of the Investment Program, is increased economic growth potential, reduced poverty, and reduced imbalances between the NER and the rest of the country. The expected outcomes of the Investment Program will be an improved urban environment and better living conditions for the 1.65 million people expected to be living in the Investment Program cities by 2018. To this end, the Investment Program will (i) improve and expand urban infrastructure and services in the cities including in slums and (iii) strengthen urban institutional, management, and the financing capacity of the institutions, including the urban local bodies. Based on considerations of economic justification, absorptive capacity and sustainability of the implementing agencies, sub-projects have been identified in each city in the priority infrastructure sectors.

2. Though the Project aims to improve the environmental condition of urban areas, the proposed improvements of infrastructure facilities may exert certain adverse impacts on the natural environment. While developing urban infrastructure facilities, impacts during the construction stage are expected to be more severe than impacts during the operation phase, though for a short duration. Exceptions being some facilities such as solid waste landfills and sewage treatment plants, which may also exert adverse impacts during the operation phase, if due care is not taken.

3. The mandatory requirements applicable to the NERCCIP may also necessitate the proposed components to go through the environmental assessment process at an appropriate level. Hence, considering these issues and particularly to facilitate the State-level Investment Program Management and Implementation Units (SIPMIU) and the Executing Agencies (EA) with definite environmental criteria to be met for implementation of NERCCIP sub-projects and sub-components, this environmental framework has been prepared.

4. Above all, this exercise ensures that the NERCCIP, in its project cycle, will not deteriorate or interfere with the environmental sensitivity of a project area but rather improve environmental quality through development of infrastructure facilities. Moreover, any component included in NERCCIP shall comply with the environmental requirements of the Government of India (GoI), the respective state governments, and ADB. This document provides an Environmental Assessment and Review Framework (EARF), which is the structure through which the impacts of new and amended subprojects can be assessed by the Executing Agency in the future, in compliance with both national law and ADB policy. The document was prepared by the Executing Agency with ADB assistance, and complies with ADB Safeguard Policy Statement (SPS, 2009) and the GoI EIA Notification (2006).[5] Details of components and sub-components financed under the NERCCIP are given below.

[5] The SPS applies to tranches of multitranche financing facility (MFF) projects for which periodic financing requests are to be approved by ADB Management after 20 January 2010. Tranche 2 and 3 subprojects will therefore require compliance with the SPS while ongoing Tranche I will be implemented under the former ADB safeguard policies for environment, resettlement, and indigenous people. In the event of any discrepancy or contradiction between the

II. OVERVIEW OF THE SUB-PROJECT COMPONENTS

5. The Investment Program will consist of two parts. **Part A** covers urban infrastructure and services improvement including the rehabilitation, improvement and expansion of (i) water supplies, (ii) sewerage and sanitation, and (iii) solid waste management. **Part B** covers provision of project management support, institutional development, capacity building and project administration.

A. Part A: Urban Infrastructure and Services Improvement Components

1. Water Supply

6. Although 50-83% of the population of the Project cities have access to piped water supplies, the quality and quantity of water supplied falls substantially short of the expectations of the residents of all the cities, and the shortages that have emerged particularly in Agartala, Aizawl, Kohima and Shillong create severe hardship. In Aizawl and Kohima, water may be delivered during the dry season for only a few hours a week. In Shillong and Agartala, most consumers receive water a few hours a day but it cannot be used without boiling. In Gangtok, most consumers receive water more than six hours a day. Because there are abundant known water resources in all the cities except Aizawl, it is anticipated that it will be possible to improve water supplies to 12 hours per day or more in all the cities. The proposed components are:

AGARTALA

7. **Distribution System**. Upgrading and rehabilitation of existing networks is proposed in the South and Central Zones, including extension of networks into presently uncovered areas. The improvements proposed include:

a) Provision of 80% service coverage through installation of 99,600 metered service connections;
b) Near-complete replacement of existing connections;
c) Construction of 18 reservoirs with a capacity of 17.5 ML (7.5 ML for Southern Zone and 10 ML for Central Zone);
d) Construction of 67 km of pumping mains to create a primary system with a length of 87 km;
e) Construction of 140 km of secondary and tertiary pipelines to create a secondary and tertiary pipeline network of about 860 km;
f) Construction of chlorinators at major reservoirs to supplement the treatment provided at the main treatment plant; and,
g) Reduction in UFW (advance leak detection instrumentation) from more than 50% at present to about 30% by 2011.

8. **Source and Treatment Works**. The improvements proposed include:

Central Zone – in the absence of the DPR, confirmation remains pending

h) Provision of infiltration galleries at the College Tilla, which shall be connected to the existing intake wells; the infiltration gallery will improve the quality of water at all times and the quantity of water available when the river is almost dry.

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relevant features of this EARF pertaining to ADB's safeguards policies and ADB Safeguards Policy Statement, 2009, the SPS, 2009 shall prevail.

i) Augmentation of existing treatment capacity at College Tilla Water Treatment Plant: installation of pumping machineries at the intake well and construction of aeration cum pre-sedimentation tanks at the existing water treatment plants; and replacement of old and inefficient machinery and equipments.
j) Provision of dedicated power supply in the river intake works, the treatment plants and the booster pumping stations to the reservoirs;
k) Rehabilitation of 7 existing deep tube wells, and construction of 7 new ones;
l) Rejuvenation of 7 iron removal plants (IRPs), and 3 new IRPs.
m) Construction of 2 new groundwater treatment plants, and
South Zone
n) Rehabilitation of 18 existing deep tube wells, and construction of 2 new ones;
o) Rejuvenation of 10 iron removal plants (IRPs), and 5 new IRPs.
p) Construction of 5 new groundwater treatment plants, and
q) Construction of sludge drying and disposal facilities as required at the two treatment plants.

AIZAWL

9. Source and Treatment Works. Enhancement of the existing production capacity from 22.8 to 34.8 MLD has been undertaken with support by MDONER and JNNURM. This will provide sufficient capacity for up to 2015-2020, and therefore it is proposed that additional capacity increases be deferred to such date. However, whilst funds for most pumping and other equipment and machinery have been allocated, there is need to secure adequate power requirements. For this purpose, the following subcomponent is proposed:

a) Provision of a dedicated power supply 132 KV line from grid system to the Tlawng river intake. The length of the separate power line is approximately 17 km in length.

10. **Distribution System:** Upgrading and rehabilitation of existing networks is proposed including extension of networks into presently uncovered areas. The improvements proposed include:

b) Lengthening of service duration to 24 hours per day in some parts and 12 hours per day in all parts of the system;
c) Provision of 100% service coverage and installation of 13,000 out of the 41,000 metered service connections (27,000 installed to date, pending balance due after completion of works);
d) Complete replacement of the “bunched” connection system with a sub mains system;
e) Complete replacement of 7 reservoirs and construction of 9 new reservoirs;
f) Replacement of 22 km and construction of 15 km of primary pipelines;
g) Replacement of 88 km and new construction of 42 km of secondary and tertiary pipelines;
h) Construction of chlorinators at major reservoirs (2) to supplement the treatment provided at the main treatment plant; and
i) Establishment of a NRW reduction program with the aim of reducing UFW from more than 35% at present to about 28% by 2014.

GANGTOK

11. **Source and Treatment Works.** No augmentation is proposed for the existing source and treatment works, which are more than adequate for the next several decades.

12. **Distribution System.** Upgrading and rehabilitation of existing networks is proposed including extension of networks into presently uncovered areas. The improvements proposed include:

a) Provision of 63% service coverage through installation of 19,000 metered service connections, or 38% of the master plan;
b) Near-complete replacement of the "bunched" connection system with a sub mains system;
c) Construction of 3 new reservoirs with a capacity of 1.9 ML to create a reservoir system with a capacity of about 7.3 ML, or 94% of the master plan;
d) Construction of 31 kilometers of primary pipelines to create a primary system with a length of 65 kilometers, or 94% of the master plan;
e) Construction of 38 kilometers of secondary and tertiary pipelines to create a secondary and tertiary pipeline network of about 81 kilometers, or 64% of the master plan;
f) Construction of chlorinators (4) at major reservoirs to supplement the treatment provided at the main treatment plant;
g) Reduction in UFW from 30-50% at present to about 28% by 2014; and,
h) Establishment of a meter installation program.

KOHIMA

13. **Source and Treatment Works. The improvements proposed under the Project include:**

a) Replacement of old and inefficient machinery and equipment in the existing treatment plant, including replacement of clarifiers, filter media, structural assessments of reservoir and introduction of adequate bacteriological treatment through effective chlorination to ensure supply of safe quality water.

14. **Distribution System.** Upgrading and rehabilitation of existing networks is proposed including extension of networks into presently uncovered areas. The improvements proposed include:

b) Near-full integration of the present PHED, private and village systems;
c) Near-complete replacement of the "bunched" connection system with a submains system;
d) Construction of 7 new reservoirs and replacement of 19 existing reservoirs with a capacity of 8.0 MLD;
e) Construction of 17 kilometers of primary pipelines to create a primary system with a length of 31 kilometers;
f) Construction and replacement of 90 kilometers of secondary and tertiary pipelines; and
g) Establishment of a meter installation and UFW reduction program with the aim of reducing UFW from more than 50% at present to about 30% by 2013. This includes provision of bulk meters and leak detection equipment.

SHILLONG

15. **Source and Treatment Works and Distribution System.** ADB is of the opinion that no improvements in the treatment works are required as present capacity would be adequate. Augmentation of source on long-term basis is being implemented by PHED as part of the JNNURM

program. PHED has indicated that Government of India is to provide for water augmentation and distribution in Shillong and support from ADB, if any, would be minimal. Since no specific information has been submitted by PHED, an evaluation cannot be conducted. If the proposed allocation of $14-15 million was to be required, ADB would exclusively focus on the conversion of the existing bunched connections to a conventional distribution system.

2. Sewerage and Sanitation

16. Towards improvement of sanitation in the Project cities, a two-pronged approach comprising (i) construction of central piped sewerage and sewage treatment systems designed according to master plans but scoped in such a way as to constitute a minimal feasible investment and (ii) improvement of individual sanitation systems, particularly septic tanks and soak pits, where and until sewerage systems can be constructed is followed. Taking into account that sanitary sewerage would be a new service in each of the Project cities except Gangtok, an effort was made to identify modestly sized components serving the worst-affected areas of each city as the first stage of development of the sewerage master plans. The project components are:

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17. The proposed project comprises of (i) coverage of part of Zone I (more congested core area) of the four sewerage zones with an underground sewerage system and treatment and disposal facilities, and (ii) provision of low cost sanitation facilities to communities lacking basic access to sanitation facilities.

18. **Collection and Treatment.** The components proposed include:

a) Provision for underground sewerage system for Zone I of the four sewerage zones (catering to about 17% of the projected city population for 2021) with 3,592 numbers of house hold connections comprising densely populated wards and areas vulnerable to landslides;
b) Laying of 23 km of primary mains and 30 km of secondary collectors and mains along the existing road stretches and along hillsides where conveyance through gravity is possible.
c) Construction of a sewerage treatment plant (STP) of 7 MLD capacity on the southeastern side of the city using bio tower with aerated lagoon technology.

19. **Low Cost Sanitation Facilities.** The components proposed include:

d) Provision, under low cost sanitation programme, for construction of 6 community toilet blocks each, for those localities where the households do not have space to construct toilets within their premises.
e) Provision, on a pilot scale, to cover about 1000 households by providing assistance for upgrading pit latrines and pour flush latrines and connecting to proposed sewers (preferential) and/or support to poor households outside the sewered area in Aizawl to construct latrines and install septic tank facilities.

GANGTOK

20. The Project proposes (i) extension of sewerage and sewage treatment facilities to zones 2 (Upper Burtuk, Burtuk, Penlong, Sicheygaon, Upper Chandmari) and 3 (Ward No1, 2, 3 and 10, Upper Chandmari, Chandmari, Upper Tathangchen and Syari), (iii) provision for connections and

(iv) provision for low cost sanitation schemes to communities lacking basic access to sanitation facilities.

21. **Collection and Treatment.** The proposed components include:

a) Construction of sewerage network in Zones 2 and 3, including about 24 km of primary lines, provision of around 8,000 household connections and new sewage treatment plant. The sewerage network shall be laid along the existing road stretches where conveyance through gravity is possible. Along stretches where gravity conveyance is not possible, the sewers are routed along the natural streams and nallahs.

22. **Low Cost Sanitation Facilities.** The proposed components include:

b) Under the low cost sanitation component, proposals are made for construction of 6 community toilets blocks (6 water closets each) for communities who do not have land to construct toilets.

c) Provision of financial assistance to 1,000 households for upgradation of existing pit latrines and pour flush latrines will be given on pilot basis and connection to the proposed sewer networks.

KOHIMA

23. The project proposes a two-pronged approach comprising (i) coverage of substantial parts of the city with an underground sewerage system, and (ii) provision of low cost sanitation facilities in areas not served with sanitary sewerage.

24. **Proposed Sewerage System – Collection and Treatment.** The Project as presently designed provides for 6,700 service connections including areas worst affected by landslips representing about 28% of the city population:

a) Construction of about 57 km of collectors and mains (29km in zone-I and 28km in Zone-2) which shall be laid along the existing roads and along stretches where conveyance through gravity is possible. Along stretches where gravity conveyance is not possible, the sewers are routed along the natural streams and nallahs.

b) Construction of two sewage treatment plants using extended aeration systems (i) in the western side of GKPA which is about 2 km above the Agri forest ward towards the North (7 MLD capacity) and (ii) at the south eastern side of GKPA which is about 1 km away from the A.G. colony towards the east (5 MLD capacity).

25. **Proposed Low Cost Sanitation Facilities.** The Project provides for (i) community toilet blocks with 6 water closets each have been proposed at 6 *'slum'* locations and (ii) financial assistance to 1000 households for upgradation of existing pit latrines and connection to the proposed sewer network.

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26. **Sewerage System.** Collection and Treatment: The proposed components are subject to demonstrating that sufficient water has been made available (project sanctioned) in project areas and include:

a) Provision of 6536 nos. service connections to households; residing within Zone I, comprising the densely populated wards of the SMB;

b) Laying of primary (33 km), secondary (60 km) networks. The sewerage network shall be laid along the existing roads along stretches where conveyance through gravity is possible. Along stretches where gravity conveyance is not possible, the sewers are routed along the natural streams and nullahs; and,
c) Construction of an STP of 20 MLD capacity at western side of Mawlai village using aerated lagoon system followed by up flow settling tank.

27. **Low Cost Sanitation Facilities.** The proposed components include:
d) Under the community-upgrading component of the project, proposals are made for construction of community latrines on a pilot scale for communities presently lacking sanitation facilities. Community toilet blocks with 6 water closets each have been proposed at 6 'slum' locations;
e) In addition, towards improving sanitation in slum areas, a provision has been made on a pilot scale to cover about 1000 households by providing assistance for conversion of pit latrines and pour flush latrines to flush latrines including connection to sewers. Extensive awareness campaigns towards sensitizing the communities on improved sanitation facilities are proposed through involvement of NGOs and dorbars.

3. Solid Waste Management

28. All of the Project cities dispose their wastes by open dumping. It is anticipated that it will be possible to improve existing collection levels to between 55% to 65% by 2011, depending upon the city, through improvements in primary and secondary collection facilities and through an intensive community awareness and consultation program, in consultation with NGOs. The proposed components are:

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29. The proposals include improvement of (i) primary and secondary collection efficiencies, (ii) existing system for transportation of wastes, and (iii) treatment and disposal of wastes in accordance with Solid Waste Handling Rules (SWHR).

30. **Improvement of Collection System**. The components proposed include:
a) Introduction of house-to-house waste collection through source segregation to 15,000 households within the central zone of the city. This shall be done in three phases, with a target of 5,000 households per year for three years during the project implementation;
b) Provision of 25 liter household bins and heavy duty PVC bags to be used for segregation of wastes;
c) Provision of 1000 nos. 30 liter dustbins at public places;
d) Provision of 700 wheelbarrows to be used by sweepers in central areas of the city; and,
e) Provision of 70 nos. of 4.5 cu.m community dustbins to be used in areas where bell ringing or house-to-house service is not provided.

31. **Transportation facilities**. Operational improvements of the existing refuse vehicles through incorporation of more vehicles with proper tipping and hydraulic loading/unloading arrangements. The components proposed include:

f) Provision of 5 medium duty tipper trucks for collecting the wastes from house to house with introduction of bell ringing system in the periphery areas to households along the main road;
g) Provision for augmentation of existing fleet of tipper trucks for carrying waste loads from the transfer station to the landfill sites; and,
h) Provision of 1 bulldozers, 1 tipper trucks, 1 JCBs and 1 loader bobcats for disposal site and composting plant operations.

32. **Treatment and Disposal.** The components proposed include
i) Development of one new disposal sites either at Nagichora (South West) or at Paschim Noabadi (North-East) with proper arrangement of access, waste retention and leachate collection facilities;
j) Detailed design of the new disposal sites and sanitary land filling system;
k) Development of a compost plant of 50 TPD, and,
l) Installation of an electronic weighbridges for improved vehicle management at the new disposal sites.

33. **Garage and transfer station.** The components proposed include
m) One transfer stations of 600cu.m capacity at either (i) Malay Nagar at the south east portion to cater waste from the central and southern portion of GAPA towards ultimate disposal to Nagichora disposal site **or** at (ii) Indranagar at north east portion to cater waste from central and northern portion; and,
n) Development of a new garage cum parking facility at transfer station to accommodate 24 refuse vehicles.

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34. The proposals include improvement of (i) primary and secondary collection efficiencies (ii) existing system for transportation of wastes, and, (iii) treatment and disposal of wastes in accordance with Solid Waste Handling Rules (SWHR). The proposed components are:

35. **Improvement of Collection System.** Improvement of the existing SW collection system from 40% to 55% by 2011, through improvements in primary and secondary collection facilities and through an intensive community awareness and consultation program, in consultation with NGOs and CBOs;
a) Introduction of house-to-house waste collection through source segregation on a pilot basis, initially to about 2000 households;
b) Provision of 60 nos dumper placer bins in central public places;
c) Provision of 2000 nos. of 25-litre household dustbins and 2000, heavy duty PVC bags to be used for segregation of wastes at source (non biodegradable);
d) Provision of 200 nos. wheelbarrows to be used by sweepers in the central areas of the city; and,
e) Provision of 16 nos., autovans with 6 container system;

36. **Transportation facilities.** Operational improvements of the existing refuse vehicles through procurement of vehicles with proper tipping and hydraulic loading/unloading arrangements:
f) Provision of 6 nos. medium duty tipper trucks for waste collection through bell ringing service;
g) Provision of 4 nos. dumper-placer trucks for collecting the wastes from community bins; and,
h) Provision of 8 nos. of tractors with covered trolleys.

37. **Garage and transfer station.** The components proposed include:

i) Development of a transfer station towards enhancing the operational efficiencies of the existing system. Transfer stations shall function as recovery centers for segregation of biodegradable portions from recoverables /recyclables; and,

j) Construction of a new parking/garage/workshop facility to accommodate and maintain 24 refuse vehicles. The garage shall also be used for the maintenance of wheelbarrows and mechanized containers.

38. **Treatment and Disposal.** The components proposed include:

k) Development of a new sanitary landfill site including establishment of a compost plant of 50MTPD capacity;

l) Provision for the following measures towards environmental protection at the existing dumping site at Tuirial (i) adequate leachate collection facilities; and (ii) barrier wall to arrest wastes flowing into streams.

m) Introduction of weighbridge at landfill sites at Mullungthu.

n) Provision of 1 bulldozer, 2 tipper trucks, 2 JCBs and 1 loader bobcat for disposal site and compost plant operations.

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39. The proposals include improvement of (i) primary and secondary collection efficiencies, (ii) existing system for transportation of wastes, and (iii) treatment and disposal of wastes in accordance with SWHR. The proposed improvements include:

40. **Improvement of Collection System:** The project envisages improvement of the existing SW collection system from 40% to 55% by 2012, through improvements in primary and secondary collection facilities and through an intensive community awareness and consultation program, in consultation with communities and NGOs. The specific improvements proposed in the improvement of collection systems include:

a) Introduction of house-to-house waste collection through source segregation on a pilot basis, initially to about 2000 households.

b) Provision of 1000 nos., 30 litre dustbins which shall be placed in central public places;

c) Provision of 2000 nos., 25 litre household dustbins and 2000 Nos. heavy duty PVC bags to be used for segregation of wastes at source (non biodegradable).

d) Provision 200 nos. wheelbarrows to be used by sweepers in the central areas of the city.

e) Provision of 20 nos., 4.5 cu.m community dustbins in areas where bell ringing house-to-house waste collection is not provided.

41. **Transportation Facilities:** Operational improvement of the existing refuse vehicles through procurement of vehicles with proper tipping and hydraulic loading/unloading arrangements.

f) Provision of 3 medium duty tipper trucks for waste collection through bell ringing service.

g) Provision of 4 dumper placers for lifting the waste collected in mechanized containers.

h) Provision of 3 large tipper trucks coupled with augmentation of existing fleet of tipper trucks for carrying waste load from transfer station to landfill sites.

42. **Garage and Transfer Station:** The proposed components include:

i) Development of a transfer station at the junction of NH-31A and Indira Bypass towards increase in vehicle trips and area of coverage. The transfer station shall also function as recovery centre for segregation of biodegradable portions from the recoverables/ recyclables.
j) Construction of new garage/workshop facility at the existing parking space of UD&HD for accommodation and maintenance of 24 refuse vehicles. The garage shall also be used for maintenance of wheelbarrows and mechanized containers.

43. **Treatment and Disposal:** The proposed components include:
k) Development of a sanitary landfill at the proposed disposal site at Martam;
l) Provision of 1 bulldozer, 1 tipper truck, 1 JCB for the disposal site and compost plant operations; and,
m) Improve marketing of the composts that shall be produced at the Martam compost plant (under construction).

KOHIMA

44. The proposals include improvement of (i) primary and secondary collection efficiencies, (ii) existing system for transportation of wastes, and (iii) treatment and disposal of wastes in accordance with SWHR. The proposed improvements include:

45. **Improvement of Collection System:** Improvement of the existing SW collection system, through improvements in primary and secondary collection facilities and through an intensive community awareness and consultation program, in consultation with the village councils and NGOs. The components proposed include:
a) Introduction of house-to-house waste collection through source segregation on a pilot basis, initially to about 2000 households;
b) Provision of 350 nos of 30 litre litter bins in central public places;
c) Provision of 2000 nos. of 25-litre household dustbins and 2000, heavy duty PVC bags to be used for segregation of wastes at source (non biodegradable);
d) Provision of 200 nos. wheelbarrows to be used by sweepers in the central areas of the city; and,
e) Provision of 22 nos., 4.5 cum community dustbins in areas where bell ringing house-to-house collection is not provided;

46. **Transportation facilities.** Operational improvements of the existing refuse vehicles through procurement of vehicles with proper tipping and hydraulic loading/unloading arrangements:
f) Provision of 4 nos. medium duty tipper trucks for waste collection through bell ringing service;
g) Provision of 6 nos. dumper-placer trucks for collecting the wastes from community bins; and,
h) Provision of 3 nos. of tipper trucks from carrying wastes from the transfer station to disposal sites.
i) Repairs to Kohima existing waste collection fleet.

47. **Transfer Station and Disposal Facility.** The proposed components include:
j) Development of a transfer station of 300 cu.m. capacity near the new Secretariat Complex for reduction of transportation time and fuel, which shall also function as recovery center to segregate wastes.

48. **Treatment and Disposal:** The proposed components include:

k) A new sanitary landfill site is to be developed to reduce the load on existing land filling site and reduction of environmental nuisance.
l) Composting of biodegradable parts of waste to recover the cost.
m) Provision of 1 bulldozer, 2 tipper trucks, 2 JCBs and 2 loader bobcats for disposal site and composting plant operations.
n) Construction of a parking/garage/workshop facility, for the refuse vehicles/wheelbarrow/ mechanized containers of about 20-24 vehicles.

SHILLONG

49. The proposals include improvement of (i) primary and secondary collection efficiencies, (ii) existing system for transportation of wastes, and (iii) treatment and disposal of wastes in accordance with SWHR. The proposed improvements include:

50. **Improvement of Collection System:** Improvement of the existing SW collection system from 45% to 60% by 2014, through improvements in primary and secondary collection facilities and through an intensive community awareness and consultation program, in consultation with communities, dorbars and NGOs. The proposed components include:

a) Introduction of house-to-house waste collection through source segregation on a pilot basis, initially to about 2000 households within the SMB area.
b) Provision of 1000, 30 litre dustbins to be placed in public places;
c) Provision of 2000, 25-litre household dustbins and 2000 Nos. heavy duty PVC bags to be used for segregation of wastes at source (non biodegradable);
d) Provision of 250 wheelbarrows to be used by sweepers in the central areas of the city; and,
e) Provision of 35 nos, 4.5 cum community dustbins to be used in areas where bell ringing or house-to-house service is not provided.

51. **Transportation Facilities:** Operational improvements of the existing refuse vehicles through incorporation of more vehicles with proper tipping and hydraulic loading/unloading arrangements.

f) Provision of 5, medium duty tipper trucks for collecting the wastes from house to house with introduction of bell ringing system in the periphery areas to households along the main road;
g) Provision of 7 new dumper placers for secondary collection. The medium tippers and dumper placers shall be used for carrying waste from the waste generating sources to transfer station; and,
h) Provision of 6 large tipper trucks with 8-10 cu.m waste carrying capacity per trip. The larger tipper shall be used for carrying waste from transfer station to sanitary landfill sites.

52. **Garage and Transfer Station:** The proposed components include:

i) Development of a transfer station at the existing disposal site at Mawlai towards increase in vehicle trips and area of coverage. The transfer station shall also function as recovery centre for segregation of biodegradable portions from the recoverables/ recyclables.
j) Construction of new parking/garage/workshop facility at Mawlai (the existing disposal site) for accommodation and maintenance of 24 refuse vehicles. The garage shall also be used for maintenance of wheelbarrows and mechanized containers.

53. **Treatment and Disposal:** The proposed components include:

k) Development of a new sanitary landfill site, with adequate leachate collection facilities and environmental protection measures.
l) Provision of 2 bulldozers, 2 tipper trucks and 1 JCBs for disposal site;
m) Provision of environmental protection measures and short-term sanitary landfill facilities (approx. 6 acres) at the present disposal site at Mawlai, as intermediate protection measures till the new sanitary landfill site starts operation; and,
n) Introduction of weighbridges at landfill sites to track waste supply to compost plant and fuel consumption.

B. Part B: Project Management and Capacity Building Components

4. Investment Program Management, Institutional Development, Capacity Building and Training

54. While NERCCIP will involve provision of urban infrastructure and services in the capital cities, long-term sustainability of the assets created, and effective planning and management of urban basic services in general, requires that key urban management issues be addressed by the Program.

55. Management of the implementation of the NERRCIP would be undertaken by the SIPMIU, responsible for overall project implementation. Provision is made under the project for funding the costs of the SIPMIU, as well as the cost of consultants to provide assistance in project management and related capacity building. Such support is considered essential to the implementation of the project, particularly in light of the lack of experience of the proposed executing and implementing agencies with projects this large, implemented through separate design and construction contracts.

56. Effective and sustained delivery of urban services will require that the existing ULBs be strengthened and new ULBs be created, that water supply, sewerage and solid waste management operations be operated in a much more effective and efficient manner, that own source funding of all urban services be very substantially enhanced and that urban land management be improved. These will require a variety of actions which are expected to range from conduct of community consultations and institutional surveys to preparation and implementation of legislation and regulations, reorganization of departments, modernization of human resource management systems and improvement of financial management systems. Some of the measures, such as creation of a new urban local body or a new water supply and sanitation agency, involve major changes and these will have to be conducted over a longer period of time. Support will be provided under the project for the necessary measures.

57. The proposed project management and capacity development for each city include:

a) safeguards compliance studies;
b) community awareness programs,
c) compost marketing studies;
d) non-revenue reduction programs, power and water audits;
e) support for migration to a double entry accounting basis system in ULB;
f) support for preparation of a GIS based property tax system
g) private sector participation opportunities studies
h) water utility reform program focusing on asset management improvement.

III. GOVERNMENT OF INDIA AND STATE GOVERNMENT ENVIRONMENTAL

ASSESSMENT AND REVIEW PROCEDURES

A. Applicable Legislations

58. The implementation of sub-projects proposed under NERCCIP will be governed by the Environmental Acts, Rules, Policies, and Regulations of the GoI and the respective state governments of the Northeast Region. These regulations impose restrictions on the activities to minimize/mitigate likely impacts on the environment. The following are the environmental regulations applicable to NERCCIP (see Appendices for more information, particularly state programs):

(i) The Water (Prevention and Control of Pollution) Act, 1974, amended 1988;
(ii) The Water (Prevention and Control of Pollution) Rules, 1975;
(iii) The Air (Prevention and Control of Pollution) Act 1981, amended 1987;
(iv) The Air (Prevention and Control of Pollution) Rules, 1982;
(v) The Environment (Protection) Act, 1986, amended 1991 and including the following Rules/Notification issued under this Act;
(vi) The Environment (Protection) Rules, 1986, including amendments;
(vii) The Municipal Solid Wastes (Management and Handling) Rules, 2000;
(viii) The Hazardous Wastes (Management and Handling) Rules, 1989;
(ix) The Bio-Medical Waste (Management and Handling) Rules, 1998;
(x) Noise Pollution (Regulation and Control) Rules, 2000;
(xi) Wild Life (Protection) Amendment Act, 2002;
(xii) Environmental Impact Assessment Notification, 2006;
(xiii) Environmental Standards of Central Pollution Control Board (CPCB);
(xiv) The Indian Wildlife (Protection) Act, 1972, amended 1993;
(xv) The Wildlife (Protection) Rules, 1995;
(xvi) The Indian Forest Act, 1927;
(xvii) Forest (Conservation) Act, 1980, amended 1988;
(xviii) Forest (Conservation) Rules, 1981 amended 1992 and 2003; and
(xix) Guidelines for Diversion of Forest Lands for Non-Forest Purpose under the Forest (Conservation) Act, 1980.

59. Any component included in NERCCIP shall comply with the above Government of India and any state government environmental laws, standards, rules and requirements. Key standards include those related to drinking water quality, air quality, effluent discharge, leachate quality, and protected areas. Compliance is required in all stages of the project including design, construction, and operation and maintenance.

B. Environmental Assessment Requirements

60. The new EIA Notification of 2006 of GoI, which replaces the EIA Notification of 1994, requires environmental clearance for certain defined activities/projects. This Notification classifies the projects/activities that require environmental clearance (EC) into ‘A’ and ‘B’ categories depending on the impact potential and/or scale of project. For both category projects, prior environmental clearance is mandatory before any construction work, or preparation of land except for securing the land, is started on such project or activity. Clearance provisions are as follows:

(i) Category ‘A’ projects require prior environmental clearance from the MoEF,

Government of India[1];

(ii) Category 'B' projects require prior environmental clearance from the State Environment Impact Assessment Authority (SEIAA)[2]; and

(iii) This Notification provides that, any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of protected areas, notified areas and inter-state and international boundaries[3]. Also, in the case where a SEIAA does not exist, Category B project will be reviewed by the MoEF and reclassified as Category A.

61. Consequently, the only NERCCIP subproject listed in the EIA Notification of 2006 Schedule of Projects Requiring Prior Environmental Clearance is solid waste facilities, otherwise referred to as Common Municipal Solid Waste Facilities (CMSWF). Common municipal solid waste management facilities qualify as Category B projects and are thus reviewed by the respective SEIAA. For solid waste facilities, the Government of India further ensures environmental safeguards through its Municipal Solid Waste Management and Handling Rules (SWMHR), 2000 (Annex 4) as published under MoEF.

62. At the state government level, water treatment, sewage, and solid waste subprojects require approval by the State Pollution Control Boards (SPCB). The following approvals from SPCB are required: No Objection Certificates (NOC), Certificates of Establishment (COE) and Certificates for Operation (CFO).

C. Forest Clearances

63. Forest legislation in India dates back to enactment of the Indian Forest Act, 1927. This Act empowers the State Government to declare "any forest land or waste-land, which is the property of Government or over which the Government has proprietary rights or to the whole or any part of the forest-produce of which the Government is entitled", a reserved forest or protected forest. The State Government may assign to any village-community the rights of Government over a reserved forest - those are called village-forests. Act also allows Government control over forest and lands not being the property of Government.

64. Acts like clearing or break up of any land for cultivation or for any other purpose, damage to vegetation/trees and quarrying or removing any forest produce from reserved forest is prohibited. All these are also applicable to village-forests. For protected forests, with the provision of the Act, the State Government makes rules to regulate activities like: cutting of trees and removal of forest produce; clearing or breaking up of land for cultivation or any other purpose; and for protection and management of any portion of protected forest.

65. Forest (Conservation) Act, 1980 (amended in 1988) enacted by Government of India, restricts the dereservation of forests for use of non-forest purposes. According to the Act, State Government requires prior approval of GoI for the use of forest land for non-forest purposes

[1] For Category A projects, based on the preliminary details provided by the project proponent as per Notification, the Expert Appraisal Committee (EAC) of MoEF, determine comprehensive TOR for EIA studies. This TOR will be finalized within 60 days. On the recommendation of the EAC based on EIA studies, MoEF provides the EC.

[2] The B category projects will be further divided by State Level EAC into B1 – that require EIA studies and B2 – no EIA studies. The Sate Level EAC will determine TOR for EIA studies for B1 projects with in 60 days. On the recommendation of the State level EAC based on EIA studies, SEIAA provides the EC.

[3] (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries.

(means the breaking up or clearing of any forest land) or for assigning least to any private person or agency not controlled by government. The Forest (Conservation) Rules, 2003 issued under this Act, provide specific procedures to be followed for conversion of forest land for non-forest purposes.

66. Limited sub-projects notably solid waste composting and landfills may require acquisition of forest land[4]. Linear subprojects like water supply rising mains/trunks mains may traverse forest lands. The forest land conversion will follow the "Guidelines for Diversion of Forest Lands for Non-Forest Purpose" under Forest (Conservation) Act, 1980. Compensatory afforestation is one of the most important conditions stipulated for diversion of forest land. The following proposals for conversion will be forwarded by the State Government to the MoEF, GoI:

(i) Forest land involving up to 5 ha will cleared by the Regional Office of the MoEF.
(ii) Forest land involving more than 5 ha and up to 20 ha sent will be cleared by the Regional Office after referring the case to MoEF.
(iii) Conversion of forest land (i) having density above 0.4 irrespective of the area involved, and, (ii) of more than 20 ha in the plains and 10 ha in the hilly region, irrespective of density, will be cleared by MoEF.
(iv) Compensatory afforestation is compulsory for conversion:
(v) Afforestation will be done over an equivalent area of non-forest land.
(vi) As far as possible, the non-forest land for compensatory afforestation should be identified contiguous to or in the proximity of Reserved Forest or Protected Forest. If non-forest lands are not available in the same district other non-forest land may be identified elsewhere in the state.
(vii) Where non-forest lands are not available, compensatory afforestation may be carried out over degraded forest twice in extent to the area being diverted.

67. Conversion of forest lands that are part of National Parks/Sanctuaries and Tiger Reserve areas (notified under Indian Wildlife (Protection) Act, 1972) is not permitted. In exceptional case, the State Government requires consent of the Indian Board of Wildlife for obtaining approval of the State Legislature for denotification of the area as a sanctuary.

68. Cutting of trees in non-forest land, irrespective of land ownership, also requires permission from the State Forest Department. Afforestation to the extent of two trees per each tree felled is mandatory.

D. Other Environmental Regulations

69. Under the Water (Prevention and Control of Pollution) Act, 1974 and/or the Air (Prevention and Control of Pollution) Act, 1981, the following sub-projects require Consent for Establishment (CFE) and Consent for Operation (CFO) from the respective State Pollution Control Board (SPCB). The CFE/CFO is issued upon project review and site visits. The Board issues the CFE before start of construction and the CFO after completion of construction and satisfying CFE conditions, if any. During the operation period, the effluent and air emissions must conform to the stipulated standards (CPCB Environmental Standards). The CFO is renewed every year based on the operation performance of the facility. The following sub-projects require SPCB consent for establishment and operation.

[4] The term 'Forest land' refers to land owned by the Forest Department; it may or may not include reserved forest, protected forest or any area recorded as forest in the government records.

(i) New or augmentation of water treatment plants (under the Water Act);
(ii) New or augmentation of sewage treatment plants (under the Water Act);
(iii) Solid waste composting and landfills (under the Water Act and the Air Act);
(iv) Diesel generators (under the Air Act); and
(v) Hot Mix Plants, Wet Mix Plants, Stone Crushers etc, if installed for construction (under the Air Act).

70. **Municipal Solid Waste (Management and Handling) Rules, 2000 of GOI (Annex 4).** These Rules issued under the Environment (Protection) Act, 1986 with the objective of regulating the management and handling of the municipal solid wastes applicable to all MSW subprojects. The important provisions are:

(i) Solid waste generated in a municipal area shall be managed, including segregation, collection, transportation, and disposal in accordance with the Rules.
(ii) The State Pollution Control Board will authorize waste processing and landfills.
(iii) Solid waste processing and landfills shall meet design and operation specifications/standards specified under the Rules. These include site and facility design specifications, output compost characteristics, pollution control and monitoring programs, including closure of landfill site and post-care.

71. A summary of the environmental compliance requirements is presented in below in Table 1.

Table 1: Environmental Compliance Requirements of NERCCDIP Sub-projects

S. No	Component	Applicable Legislation	Compliance	Action Required
1	All components that require forest land acquisition	Forest (Conservation) Act, 1980 &and Wildlife Act, 1972	Approval of the Ministry of Environment and Forests, GoI	Identification of non-forest land and afforestation program need to be formulated
2	Water treatment plant (WTP), and sewage treatment plant (STP)	Water (prevention and control of pollution) Act, 1974	No Objection Certificate (NOC), Consent for Establishment (CFE) and Consent for Operation (CFO) from SPCB	Based on project review and site inspection the SPCB provides CFE before construction. The disposal standards to be met during the operation will be stipulated. Subsequent to completion of construction, CFO is issued confirming compliance of CFE conditions, if any.
			Renewal of CFO during operation	Based on the performance of the STP and its compliance with the disposal standards CFO will be renewed every year.
3	All composting and landfill facilities	The Municipal Solid Wastes (Management and Handling) Rules, 2000	Authorization of proposed site by SPCB	Based on land use and surrounding surface and groundwater conditions authorization is issued
		Water (prevention and control of pollution) Act and Air (prevention and control of pollution) Act	NOC, CFE and CFO from SPCB	Same as indicated for STPs.
4	Common waste management facilities including composting, landfills, and transfer	The Environment (Protection) Act, 1986 EIA Notification, 2006 Category B	Requires environmental clearance from the State Environment	Based on preliminary information and site visits, if required, project will be categorized as B1 or B2. B1 projects require EIA study for

S. No	Component	Applicable Legislation	Compliance	Action Required
	stations		Impact Assessment Authority (SEIAA).	approval. If no SEIAA exists, then considered Category A and reviewed by MOEF.
5	Common waste management facilities within 10 km boundary of protected areas such as National Parks, Sanctuaries, notified areas and biosphere reserves	EIA Notification, 2006 Category A	Requires environmental clearance from the MOEF	Conduct EIA study. B1 and A projects require public consultation as part of EIA.

IV. ENVIRONMENTAL ASSESSMENT PROCEDURES TO BE USED FOR SUBPROJECTS

A. Implementation Arrangements

72. The national-level Executing Agency (NEA) for the Investment Program will be MOUD. An Investment Program Coordination Cell (IPCC) will be established in MOUD. IPCC will be responsible for overall management of the Investment Program in the five cities and will include social/environmental safeguard specialists whose tasks include monitoring Program implementation and reviewing and screening the subprojects submitted by States in accordance with subproject selection criteria, including the environmental provisions. A national level Steering Committee (NSC) will be set up by GOI within three months of loan effectiveness to monitor the use of funds under MFF and overall implementation performance of the Investment Program. The IPCC will be assisted by a Project Management Consultant (PMC) to provide support and coordination for environmental assessment and review procedures. A State-level Executing Agency (SEA) in each State will be responsible for executing the part of the loan falling under the respective State Governments.

73. A consolidated State Investment Program Management and Implementation Unit (SIPMIU) will be established in each of the five SEAs and headed by a Program Director (PD). SIPMIU will oversee the Program's environment and resettlement planning. This includes the preparation of all documentation needed for decision-making, contracting, and supervision of work and providing progress-monitoring information to the PD. The SIPMIU shall comprise of a Safeguards and Social Cell staffed with an Environmental Officer (EO). The EO shall be responsible for implementing the environmental safeguard provisions in the project including (i) ensuring environmental criteria for subproject selection in the EARP (also see Table A11.2) are followed, (ii) ensuring mitigation requirements are in contractor bidding documents, and (iii) liasing with various Central and State government agencies on compliance matters. The SIPMIU will appoint and manage Construction Contractors (CC) to build elements of the infrastructure who are required to submit Environmental Implementation Plans (EIPs) for SIPMIU approval.

74. The SIPMIU will be assisted by the DSMC, who will design the infrastructure, manage tendering of contracts, and supervise the construction process. An Environmental Specialist (ES) in the DSMC will be responsible for addressing the environmental issues in the project components during design and implementation. The ES will ensure all mitigation requirements are in contractor bidding documents and EIPs, and will supervise the effective implementation of environmental provisions during construction. In addition, the ES will assist the IPMU on the procurement needs and other project implementation aspects and shall play a central role in

ensuring capacity building on environmental management of the IPMU, Contractor and Line Departments through capacity development support and training.

75. DSMC will submit periodic monitoring and implementation reports to SIPMIU, who will take follow-up actions, if necessary. SIPMIU will submit monitoring reports to the PD who will then submit to ADB. SIPMIU will also prepare annual monitoring reports for IPCC and assist IPCC in preparing an annual monitoring report to ADB. The annual report is to focus on the progress of implementation of the EMP and EARP and issues encountered and measures adopted, follow-up actions required, if any, as well as the status of Program compliance with subproject selection criteria, and relevant loan covenants. IPCC will seek clearance for submission and disclosure of the annual environmental monitoring report to ADB. Annex 8 provides the organizational chart.

Table 2: Institutional Roles and Responsibilities

SIPMIUs	ADB
Subproject Identification stage	
Environmental safeguard specialists in SIPMIU and IPCC screen subprojects based on Subproject selection Criteria	
Detailed Design stage	
SIPMIUs to review design changes and if these warrant classification of the change, initiate the EA process in accordance with the EARP, revise the IEE/EIA/EMP in accordance with detailed design changes as warranted;	ADB to review the changes, the suggested classification, if required; revise IEE/EIA/EMP based on detailed design changes, as warranted.
Pre-construction stage	
• SIPMIU (through its DSMC) to conduct Rapid Environmental Assessment (REA) for each sub-components using checklists • Based on the REA, categorize the project based on ADB's Guidelines • To fulfill ADB requirements. DSMC will assist the SIPMIU in conducting EIAs for Category A and IEEs for Category B sub-projects. If warranted from IEE review, an EIA to be conducted and submitted. An REA may also trigger an EIA. For Category C sub-projects no EIA or IEE is required, the SIPMIU to provide generic mitigation measures, if any, to be implemented. • SIPMIU (through DSMC) will review the EIA/IEE Reports and will submit to MoUD and ADB for review and approval. • SIPMIU (through its DSMC) to fulfill GoI and State environmental requirements including: Environmental Clearance (EC) for common compost and landfill sites (EIA to be conducted for A and B1 category according to the TOR determined by MoEF/State-level EAC); CFE and CFO for STPs, compost plants and land fills, water treatment plants, diesel generators and authorization for compost and landfill sites from respective SPCB; and Forest clearances. • For the subprojects that require EC, the ToR determined by concerned agency shall be included in the IEE/EIA study so as to fulfill the GoI and ADB requirements with single document. • SIPMIU (through DSMC) to conduct public consultation and disclosure during IEE/EIA process and comments shall be reflected in the IEE/EIA report. • PMC to monitor the disclosure and public consultation. • SIPMIU will apply for any CFO renewals if required.	• ADB reserves the right to review the project document and IEE reports, as necessary. ADB (and MoUD) to review the REA checklists and reconfirm the categorization The ADB will review and approve IEE/EIA reports of: (i) all Category A and Category B subprojects; (ii) subprojects with a capital cost of more than $10 million, and (iii) all subprojects with solid waste landfill and sewerage collection/treatment components. Notwithstanding these thresholds, in each tranche ADB will review at least one subproject of the sectors being implemented under respective tranche. In addition, the updated and finalized IEE/EIA reports of all tranche 1 subprojects will be reviewed and cleared by ADB prior to approval and issuance of tender documents during detailed design stage.

SIPMIUs	ADB
• After confirmation of approval of IEE/EIAs, SIPMIU with the assistance of Project Consultants to disclose the EIA/IEE to the public as required by ADB Guidelines. EIA reports are to be made available to the public for Category A projects 120 days before ADB Board consideration. All IEEs/EIAs are available to the public upon request.	
• Project Consultants (DSMC), on behalf of SIPMIU, to incorporate mitigation measures in project design, specified in IEE/EIA study.	
• SIPMIU with the assistance of Project Consultants (DSMC) to identify and incorporate environmental mitigation and monitoring measures into contract documents.	
Construction stage	
• SIPMIU and DSMC to monitor the implementation of mitigation measures by Contractor. • DSMC to prepare monthly progress reports including a section on implementation of the mitigation measures and submit to SIPMIU for review • SIPMIU to review the progress reports to ensure that the all mitigation measures are properly implemented. • SIPMIU to consolidate the monthly reports and submit quarterly reports to MoUD and ADB for review. • DSMC will conduct environmental quality monitoring during construction stage (ambient air and noise, and water quality). • SIPMIU to assist IPCC prepare the annual monitoring report on environment by focusing on the progress in implementation of the EMP and EARP and issues encountered and measures adopted, follow-up actions required, if any. SIPMIU will submit annual monitoring report to IPCC which in turn will include in the report, the status of Program compliance with subproject selection criteria, and with relevant loan covenants. IPCC will seek clearance for submission and disclosure of the annual environmental monitoring report to ADB.	• ADB (and MoUD) to review the reports and provide necessary advice as needed to the SIPMIU. ADB to review the annual monitoring report and to post this on ADB website
Operation Stage	
• ULB/SIPMIU to conduct monitoring, as specified in the environmental monitoring plan. • The SPCB to monitor the compliance of the standards regarding drinking water quality, ground water, ambient air, leachate quality and compost quality including incineration standards, if applicable. • SPCB to fulfill all responsibilities as outlined in the Solid Waste Management Handling Rules, 2000.	

B. Environmental Criteria for Sub-project Selection

76. It may be mentioned that none of the components will have significant negative impacts, which is mainly attributed to the nature of components, which will primarily improve the environmental condition. In the case sensitive features (i.e., water bodies) may exist near or in the vicinity of project sites, careful siting and engineering of project components coupled with clearly defined operation and maintenance procedures are specified to mitigate adverse environmental impacts. In addition, fulfilling the GoI and the state governments' requirements will ensure environmental safeguards for the most potentially impacting facilities namely STP and solid waste disposal sites. The other components are unlikely to have negative impacts; however, the selection criteria indicated in Table 3 should be followed while identifying and finalizing Project components.

Table 3: Environmental Criteria for Sub-project Selection

Component	Criteria
Overall selection criteria (applicable to all components)	• Will avoid resettlement/relocation. If unavoidable the extent of resettlement will be minimized. • Will not result in destruction of or encroachment onto protected areas, including reserved forests or biodiversity conservation hotspots (identified in the State Biodiversity Strategy and Action Plans). • Will not result in destruction/disturbance to historical and cultural places/values. • Will avoid conversion of prime agriculture areas for component establishment. • Will not involve social conflicts. • Will reflect inputs from public consultation and disclosure for site selection.
Water supply	• Adequate buffer around treatment plants and pumping stations to alleviate noise and other possible nuisances. • Will not result in excessive abstraction of water affecting downstream water users and other beneficial water uses for surface and ground water. • Will ensure adequate protection from pollution of intake works or wells. • Will not utilize raw water of very poor quality evidenced by the presence of high levels of pathogens and /or mineral contents • Ensure occupational safety measures for the safe handling of chlorine, including wash area, as well as proper handling as not to result in inadequate/poor treatment and chlorination. • Will ensure proper and adequate treatment and disposal facilitates for increased volumes of wastewater generation. • Will ensure networks and distribution systems are designed considering vulnerability to landslides and earthquakes. • Will not involve the use or handling of asbestos cement (AC) pipes. Existing AC pipes, if any, will be left as it is, but project team cause to ensure that pipes will be marked appropriately. • Will ensure location of water treatment plant will take into account the present and future demands, direction and rate of growth of the service area and potential deterioration of source quality in the future. • Will ensure location of water treatment plant will follow the natural hydraulic gradient so that the service area can be supplied by gravity • Will be located above the one in 100 year design flood level of the maximum flood level experienced if records are insufficient for flood analysis. • Include treatment of all backwash and sludge resulting from water treatment plants and acceptable to discharge standards of the SPCB before disposal.
Sewerage and sanitation	• Will ensure sewage treatment plant (STP) site selection is not in (i) close proximity to inhabited areas; (ii) flood and landslide prone areas; and (iii) effluent disposal points close to water intake or water usage points. • Sub-projects will be implemented only with consent of State Pollution Control Board (SPCB). • Will ensure sewage pumping station locations avoids sensitive receptors (e.g. proximity of high density residential, schools, hospitals, etc.). • Will ensure networks and distribution systems are designed considering vulnerability to landslides and earthquakes. • Will ensure low cost sanitation measures proposed do not increase vulnerability to landslides or result in pollution of groundwater. • Subproject sewage treatment technology and low-cost sanitation schemes are appropriate to the site and local culture, and do not require sophisticated O&M, but will ensure treatment as per the disposal standards. Air/odor dispersion will be considered during detailed design to reflect appropriate technology, design, and required mitigation measures.
Solid waste management	• Site selection will be based on the provisions (Specifications of Landfills) of Municipal Solid Waste (Management and Handling) Rules, 2000 (Government of India). Will ensure compliance with Municipal Solid Waste (Management and Handling) Rules, 2000 (Government of India). • Will ensure no land use conflicts. • Sub-projects will be implemented only with Environmental Clearance from the government, and consent from the State Pollution Control Board (SPCB). • Sub-projects will not be constructed in areas where the groundwater table is less than 2 meters below ground level.

C. Environmental Assessment Procedures for Subprojects

77. Subprojects proposed under NERCCIP must comply with GoI legislation, state government, and ADB policy as summarized above. In practice SIPMIU will liaise with the NERCCIP, SEIAA, MoEF and the ADB Regional Department (RD) to determine the specific requirements for environmental assessment of each subproject. If the environmental criteria shown in the above table are followed in the selection and development of subprojects, then most should have relatively minor environmental impacts. The principal steps in each process are described below.

1. ADB Environment Policy

a. Environmental Classification

78. According to ADB Safeguard Policy Statement (2009) the environmental classification of subprojects is determined by the Environment and Social Safeguards Division (RSES) of ADB, and there are four possible outcomes:

Category A: A subproject is classified as Category A if it could have significant adverse environmental impacts. Such projects require Environmental Impact Assessment (EIA);

Category B: A subproject is classified as Category B if it is likely to have some negative impacts, but these will be less significant than those of Category A. These projects require an Initial Environmental Examination (IEE);

Category C: A subproject is classified as Category C if it is not expected to have any environmental impacts. In this case no EIA or IEE is required, although environmental implications are reviewed.

19. The classification of a project is reviewed on completion of the studies and may be revised if appropriate by ADB's Chief Compliance Officer.

b. Preparation of Initial Environmental Examinations (IEEs):

20. An IEE describes the studies conducted to identify the potential environmental impacts of a proposed development, and is prepared when impacts are unlikely to be highly significant and can be mitigated relatively easily. Under a Multi-tranche Financing Facility (MFF) a separate IEE is required for each Category B subproject, so several IEEs are likely to be needed for each town (covering subprojects in water supply, sewerage, etc). The content and format of the IEE are described in Annex to Appendix 1 of the ADB Safeguard Policy Statement (2009).

c. Preparation of Environmental Impact Assessments (EIAs):

21. An EIA fulfils the same purpose as an IEE, but is generally a more detailed study and more comprehensive document, because of the greater severity of the potential impacts. In the unlikely event of a subproject being classified as Category A, an EIA would be required to

comply with ADB Safeguard Policy Statement (2009), and the content and format are described in Annex to Appendix 1.

d. Environmental Management Plans (EMP):

22. EMPs describe the environmental management measures that will be carried out to mitigate negative impacts or enhance the environment during implementation of a project, plus the environmental monitoring to be conducted to ensure that mitigation is provided and is effective in reducing impacts, or to determine the long-term impacts of a project. The EMP is normally prepared as part of the EIA or IEE, although it may be presented in a separate volume or document. The preparation and content of an EMP are described in the ADB Safeguard Policy Statement (2009), and are more detailed when conducted for an EIA than for an IEE. EMPs for Category A and B subprojects should outline specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements.

e. Public Consultation and Information Disclosure:

23. Public consultation is the process of exchanging information with those persons and organisations with a legitimate interest in a project and/or who are likely to be affected by the project (stakeholders). It is a two-way process that informs and involves the community in developing a project, and informs the proponent about issues and concerns, which can then be addressed in project design. Information disclosure involves stakeholders in monitoring the development and implementation of a project and fosters openness in decision-making by presenting documents and other project materials for public scrutiny.

24. Consultation and disclosure is mandatory under ADB Safeguards Policy Statement (2009), and best practice approaches should be followed. This involves meaningful consultation with stakeholders at an early stage of EA preparation, and throughout project implementation. A variety of approaches can be adopted,. As a minimum, stakeholders should be consulted regarding the scope of the environmental study before work has commenced in earnest, and should then be informed about the likely impacts of the subproject and proposed mitigation once the IEE or EIA report is under preparation. The report should record the views of stakeholders and indicate how these have been taken into account in project development. There are a variety of approaches for such contacts including public meetings, focus group discussions, workshops, public information campaigns, etc, and several methods should be used in order to reach all sectors of society, as well as institutional stakeholders, NGOs etc.

25. Information is disclosed through public consultation and more formally by making documents and other materials available in a form and at a location in which they can be easily accessed by stakeholders. This normally involves making draft reports available at public locations in the town and providing a mechanism for the receipt of comments, and making documents available more widely by lodging them on the ADB and the EA's website. For Category A projects the full EIA must be made available to the public at least 120 days before ADB's Board of Directors considers the loan.

f. Review of Environmental Assessment:

26. ADB will review draft final reports of:

- IEEs of any Tranche 1 subprojects updated during detailed design;
- IEEs or EIAs of subproject types that were not reviewed in Tranche 1;
- EIAs of any subproject classified as Category A; and
- IEEs or EIAs of any subproject with capital cost exceeding $5 million.

Comments will be provided on format, content and compliance with ADB procedure, and these will be addressed by the consultant in preparing the final reports. The final IEE or EIA documents are submitted to ADB officially by the Executing Agency for consideration by the Bank's Board of Directors. As noted above, completed reports are made available worldwide by ADB via the depository library system and the ADB website.

2. GoI Environmental Clearance Procedures

87. The requirements of national environmental laws that apply to NERCCIP subprojects are summarized in Section III above. This indicates that in terms of compliance, subprojects may be of three types: (i) Subprojects that attract the EIA Notification; (ii) Subprojects that require clearance/no objection certificates or consent from competent Government agencies; and (iii) subprojects that require no environmental authorization. The procedures for subprojects (i) and (ii) are as follows:

a. Environmental Classification

88. Under the GoI EIA Notification, 2006 the environmental classification of projects is determined by MoEF, and there are two possible outcomes:

(i) **Category A.** A subproject is classified as Category A if it is likely to have significant negative impacts and is thus one of the types of project listed in this category in the EIA Notification. Such projects require EIA, plus Environmental Clearance (EC) from MoEF;

(ii) **Category B.** A subproject is classified as Category B if it is likely to have fewer negative impacts and is listed in this category in the EIA Notification. These projects require EC from the State Environment Impact Assessment Authority (SEIAA), who classify the project as B1 (requiring EIA) or B2 (no EIA), depending on the level of potential impacts. Projects classified as B2 require no further study. If an SEIAA does not exist all Category B projects are considered Category A requiring clearance from MoEF.

b. Preparation of Environmental Impact Assessments (EIAs)

89. An EIA is mandatory for Category A and B1 projects. Projects in Category A are those with major negative impacts (such as power plants, chemical manufacturing, etc), so it is very unlikely that any subprojects developed under NERCCIP would fall into this group. However, certain subprojects (eg common landfills and sewage treatment plants) are included in Category B, and these may be classified by SEIAA as B1. These would then require EIA, which should follow the content and format shown in Annex 1 of the EIA Notification (see Annex 1);

this includes Social Impact Assessment Studies and Rehabilitation and Resettlement Action Plans.

c. Environmental Monitoring and Environmental Management Plans (EMP):

90. The EIA Notification requires that the EIA includes a comprehensive program for monitoring the effectiveness of mitigation measures. This should specify measurement methodologies, frequency, locations, data analysis, reporting schedules, emergency procedures, detailed budget and procurement schedules. An Environmental Management Plan is also required, identifying mitigation measures and specifying administrative arrangements to ensure that mitigation measures are implemented and their effectiveness is monitored after approval of the EIA. A budget for the EMP should also be provided.

d. Public Consultation and Information Disclosure:

91. Public consultation and disclosure is required for A and B1 projects and consists of (i) a public hearing at or near the proposed site, and (ii) responses in writing from stakeholders. The public hearing is conducted by the appropriate State Pollution Control Board. Disclosure is also handled by SPCB, who lodge the Summary EIA report on their website and invite responses from stakeholders. The Draft EIA report is available on request until the public hearing.

e. Review of Environmental Assessment Reports by Government Agencies:

92. After completion of the public consultation the proponent addresses all material concerns expressed during consultation and disclosure, by appropriate changes in the draft EIA and EMP, which are then submitted for approval. The report is reviewed by an Expert Appraisal Committee (EAC), constituted by MoEF for Category A projects and SEIAA for B1 projects. The EAC provides its recommendation to the appropriate authority, which then decides on the basis of the recommendation whether to issue or deny the Environmental Clearance (EC). An issued EC will normally include certain conditions, with which the proponent must comply.

f. Post Environmental Clearance Monitoring:

93. Under the EIA Notification it is mandatory for the project proponent to submit half-yearly compliance reports in respect of the stipulated EC conditions.

g. Other Mandatory Environmental Requirements

94. Subprojects that include Sewage Treatment Plants (STP), Water Treatment Plants (WTP), landfill and composting facilities, or hot/wet mix plants and stone crushers (if required for construction) may attract the Water (Prevention and Control of Pollution) Act 1974, and/or the Air (Prevention and Control of Pollution) Act 1981. If this is the case, consent will be required from SPCB for Consent for Establishment as well as Consent for Operation (CFO). Landfills and compost plants additionally require site authorization from SPCB under the Municipal Solid Waste (Management and Handling) Rules 2000.

95. After obtaining EC (if required by the EIA Notification), the project proponent submits to SPCB the necessary application forms, plus maps and other documents describing the site and the project and process. CFE/CFO is issued upon review of documents, supplemented by site visits. The Board issues CFE before the start of construction and CFO on completion of

construction, provided CFE conditions, if any, are satisfied. During the operation period the effluent, air emissions, noise levels, etc must conform to applicable environmental standards as required by the appropriate legislation. The CFO is considered for renewal every year based on the operational performance of the facility.

96. The main responsibility of implementing the subprojects in compliance with the above guidelines and policies lies with the Executing Agency (EA) through its SIPMIU. The roles and responsibilities of various institutions involved in NERCCIP are summarized in the Table 2 above. Table 4 below summarizes ADB and GoI procedures during subproject processing.

97. Based on the above criteria, components identified will ensure that the Project does not result in any potential adverse environmental impacts, which will in turn categorize the Project as 'B'. As established in the IEE of the sample sub-projects, most of the impacts are typical construction related impacts, which could be mitigated by appropriate mitigation measures. Most of the components, therefore, could be categorized as either 'B' or 'C' that does not warrant an EIA study. In any case, if an IEE (or an REA) warrants further study, an environmental impact assessment (EIA) should be conducted.

98. However, to take note of those Project components which may probably induce significant environmental impacts due to its location or process, the following procedure is suggested. The sub-project components under this category are: (i) sewage treatment plant; and (ii) solid waste processing and disposal facility. For these components it is recommended to conduct a rapid environmental assessment (REA) to check the Project category. (REA checklists are appended in Annex 5). Environmental impact assessment (EIA) shall be conducted for "A" category while initial environmental examination (IEE) to be conducted for "B" category.

Table 4: ADB and GoI Environmental Procedures during Subproject Processing

Project Stage	ADB Procedures	GoI
Subproject Identification	REA Checklist	Categorization (A or B) according to Schedule and General/Specific Conditions in GoI Environmental Protection Rules, 2006
	Categorization (A/B/C)	Application for Prior Environmental Clearance (EC) after the identification of the prospective site, or before commencing any construction, or land preparation. Category A requires EC from MOEF. Category B requires EC from SEIAA. In the absence of SEIAA or SEAC, Category B treated as Category A.
	Meets subproject selection criteria	Screening (for Category B) subject by SEAC. Categorized as B1 (requires full EIA) or B2 (does not require full EIA).
Detailed Design	IEE/EIA (EMP for Category A and B)	Scoping and TOR for EIA (A or B1) with scrutiny by EAC. TOR (or rejection of EC) finalized by EAC or SEAC within 60 days. Approved TOR posted on MOEF or concerned SEIAA website.

Project Stage	ADB Procedures	GoI
	Public Consultation—For Category A at least twice: once during the early stages of EIA field work and once when the draft EIA report is available, and prior to loan appraisal by ADB. For Category B Projects it is recommended that public consultation be carried out during the early stages of the EA process and throughout the project implementation to address any environmental issues that affect the local communities, NGOs, governments, and other interested parties.	Public Consultation for Category A and B1 projects (as per Appendix IV of EPR, 2006). and consists of two components: (i) public hearing conducted by SPCB or UTPCC within 45 days of a request from the applicant, and (ii) Obtain written responses. Draft EIA publicized widely before hearing. Notice of public hearing within 7 days of date. 30 days for public responses. Incorporate concerns expressed into the draft EIA and EMP.
	EIA circulated to Board 120-days prior to Board consideration for Category A.	
	EIA/IEE disclosed to public. EIA/IEE made available upon request.	.
	SIPMIU with the assistance of consultants to incorporate mitigation measures in project design specified in IEE/EIA study.	
	SIPMIU with the assistance of Project Consultants (DSMC) to identify and incorporate environmental mitigation and monitoring measures into contract documents.	
Appraisal	EMP and other environmental loan covenants are incorporated into the Project Administration Memorandum (PAM).	Appraisal of application completed by EAC or SEAC within 60 days of receipt of final EIA repot.
Approval	ADB approval based on EIA/IEE compliance with ADB guidelines and procedures, and subproject selection guidelines.	EC Decision within 40 days of the receipt of the recommendations of the EAC or SEAC or within 105 days of the receipt of the final EIA. Where EIA is not required, within 105 days of the receipt of the complete application and requisite documents
Contract Award	Obtain necessary environmental clearances and NOCs prior to contract award. Contractors submit Environmental Implementation Plans (EIP) based on EIA/IEE findings.	Necessary EC obtained prior to commencing any construction, or land preparation. NOCs, CFE and CFO from respective SPCB; and Forest clearances.
Implementation	Implementation of EMP. Periodic monitoring reports from SIPMIU. Annual monitoring report from IPCC.	Project must submit half-yearly compliance monitoring reports on 1st June and 1st December. All compliance reports are public documents and displayed on website of concerned regulatory authority

State Level Expert Appraisal Committee (SEAC), Expert Appraisal Committee (EAC), Ministry of Environment and Forest (MOEF), State Environment Impact Assessment Authority (SEIAA). State Pollution Control Board (SPCB), Union Territory Pollution Control Committee (UTPCC), No Objection Certificates (NOCs).

99. The following reference documents are provided as appendices:

Annex 1: Ministry of Environment and Forests - EIA Notification 2006, Excerpts
Annex 2A: The Indian Forest Act, 1927
Annex 2B: Forest (Conservation) Act, 1980
Annex 2C: Forest Conservation Rules, 2003
Annex 3: Central Pollution Control Board (CPCB)- Applicable Environmental Standards
Annex 4: Ministry of Environment & Forests- Municipal Solid Wastes (Management and Handling) Rules, 2000 – Excerpts
Annex 5: Rapid Environmental Assessment (REA) Checklist
Annex 6: Content and Format of Environmental Impact Assessment (EIA)
Annex 7: Content and Format - Initial Environmental Examination (IEE)
Annex 8: Investment Program Organization Chart
Annex 9: Applicable environmental acts/policies/regulations of GoI and the states

VI. CONFIRMATION THAT ENVIRONMENTAL ASSESSMENT AND REVIEW PROCEDURES CONFORMS TO ADB'S ENVIRONMENTAL AND SOCIAL SAFEGUARD POLICIES

100. ADB social safeguards are contained in the ADB Safeguard Policy Statement (2009) of which those of most importance in relation to RUSDIP are the sections on Involuntary Resettlement and Indigenous Peoples. Guidance on the practical implementation of these are in Appendix 2 and 3 of the ADB safeguard policy, and other social assessment is provided in the Handbook on Social Analysis (2007).

102. The PPTA through which NERCCIP was prepared included detailed studies on Involuntary Resettlement, Gender and Indigenous Peoples, and Resettlement Framework which describes how these issues would be addressed in development and implementation of subprojects in the future. Together with the Environmental Assessment and Review Framework (EARF) described in this document, these documents ensure that subprojects and the NERCCIP as a whole comply with ADB policies.

103. The Resettlement Framework includes a section confirming how the procedures comply with the Bank's social safeguard policies. Table 5 below shows how the EARF complies with the environmental safeguard policies and is based on a table provided in the Environmental Assessment (EA) Guidelines (2003), which summarizes the environmental assessment requirements for project loans (because under MMF the first tranche is considered as a project). The Table lists the individual EA requirements and indicates where in the EARF the procedure to be followed is described.

Table 5: Confirmation that the EARF confirms to ADB Environmental Safeguard Policies

Project Category	Basic EIA Requirements	Approach described in EARF Paragraph No:[6]
A: Potential for significant adverse environmental impacts	Preparation of EIA and EIA report	35
	Public consultation (at least twice)	40, 41
	Preparation of EMP and budget	47
	EIA circulated to ADB Board	41
	EIA disclosed to the public	41
	EIA available to public on request	41

[6] Table 4 summarizes the environmental safeguard procedures for ADB and government

B: Some adverse environmental impacts but less significant than Category A	Preparation of IEE and IEE report	37
	Public consultation	40, 41
	IEE circulated to ADB Board	41
	IEE disclosed to the public	41
	Preparation of EMP and budget	39
	IEE available to public on request	41
C: Unlikely to have adverse impacts	No IEE or EIA	35
	Environmental implications summarized in RRP	-

ADB = Asian Development Bank, EARF = Environmental Assessment and Review Framework, EIA = Environmental Initial Assessment, EMP = Environmental Management Plan, IEE = Initial Environmental Examination, RRP = Report and Recommendation to the President

VII. STAFFING REQUIREMENTS AND BUDGET

104. The Project Consultants, appointed and overseen by the SIPMIU, shall prepare the EIA/IEE as per the ADB guidelines. A time frame of 30 days may be sufficient to prepare an IEE report and about 80 days may be required for preparation of an EIA report. The Environmental Engineer of SIPMIU shall prepare the REA checklists. The public consultation and information disclosure shall be conducted through the Community Awareness and Participation Program (CAPP). During implementation, ULB/ implementing agencies will also require the services of Project Consultants to inspect the implementation of mitigation measures identified and to perform all necessary activities identified IEE including monitoring plan.

105. The SIPMIU will implement this EARF. The SIPMIU (through its DSMC) will be responsible for conducting the IEE studies for Category B sub-projects and EIA studies for Category A sub-projects based on ADB's Safeguard Policy Statement (2009). DSMC will also be responsible for: incorporation of mitigation measures in design and construction; and, baseline and construction-stage environmental quality monitoring. SIPMIUs with the assistance of PMC will review and approve IEEs or EIAs, and will monitor the implementation of environmental monitoring plan and environmental management plan where required. The construction contractors will implement mitigation measures in construction. Implementation of mitigation and monitoring measures during the operation and maintenance (O&M) will be the responsibility of the respective IAs. Government regulatory agencies such as SPCBs will also monitor the environmental performance in compliance with government standards and regulations. Therefore there will be no additional costs for long-term environmental monitoring for the project.

106. Costs required for operating the Environmental Assessment and Review Framework should cover the following activities:

(i) Conducting IEE or EIA studies, preparing and submitting reports and public consultation and disclosure;
(ii) Implementation of Environmental Monitoring Plans (EMP).

107. For budgeting purposes it is assumed that all subprojects will be classified as Category B by ADB (requiring IEE) and B1 by SEIAA (requiring EIA). In practice the SIPMIU should aim to produce a single document that serves both purposes to avoid duplication of effort, and this should be achievable given the comprehensive nature of ADB's IEE requirements.

108. Generally an IEE relies on the collection of existing data in order to describe environmental conditions in the project area, and it is not expected that new surveys would be

conducted. The work thus involves the collection and analysis of data on the existing environment and the proposed project, assessment and mitigation of impacts, preparation of a monitoring plan or EMP and budget, public consultation, and preparation of the IEE report and summary.

109. IEEs conducted for the first tranche of sub-projects suggest that implementation of a typical monitoring plan or EMP will require a full time Environmental Safeguards Specialist over the life of the project to oversee environmental management. Long-term monitoring of key environmental parameters including air and water quality is required by the SPCB as per there mandated responsibilities; SPCB data will be monitored by ADB during the project. As SPCB will conduct this routine monitoring, there will be no additional costs for long-term monitoring for environmental management.

Table 6: Staffing and Cost of EARF Implementation

Item	Quantity	Unit Cost	Total Cost	Sub-total
		USD	USD	USD
1. SIPMIU (5 total, one for each state)				
Environmental Safeguards staff	72 man months/staff X 5 states = 360 man months	$400 unit	$144,000	$144,000
2. DSMC (5 total, one for each state)				
Environmental Specialists (ES) (Domestic consultant)	22 man months/ES X 5 states = 110 man months	$3,000 unit	$330,000	
	Travel (11 trips)/ES X 5 states = 55 trips	$600	$33,000	
	Per Diem for 22 man months/ES X 5 states = 110 man months	$1,200	$132,000	
				$495,000
3. PMC at MoUD				
Safeguards Specialists (Domestic consultant)	9 man months X 6 years = 54 man months	$3,000	$162,000	$162,000
4. Other Expenses				
Environmental Assessments	Tranche 1 & Tranche 2 X 5 states	Tranche 1 ($5,000); Tranche 2 ($20,000)	$125,000	$125,000
Public Consultations	Tranches 1,2,& 3 X 5 states	Tranche 1 ($10,000), Tranche 2 ($30,000), Tranche 3 ($40,000)	$385,000	$385,000
TOTAL				$1,311,000

DSMC = Design, Supervision, and Management Consultants, IEE = Initial Environmental Examination, PMC = Program Management Consultants, SIPMIU = State Investment Program Management & Implementation Unit, SPCB = State Pollution Control Board, Environmental Monitoring Plan (EMP)

ANNEX 1

MINISTRY OF ENVIRONMENT AND FORESTS - EIA NOTIFICATION 2006, EXCERPTS

1. The required construction of new projects or activities or the expansion or modernization of existing projects or activities listed in the Schedule to this notification entailing capacity addition with change in process and or technology shall be undertaken in any part of India only after the prior environmental clearance from the Central Government or as the case may be, by the State Level Environment Impact Assessment Authority (SEIAA), duly constituted by the Central Government under sub-section (3) of section 3 of the said Act, in accordance with the procedure specified hereinafter in this notification.

2. **Requirements of prior Environmental Clearance (EC)**:- The following projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall hereinafter referred to be as the Central Government in the Ministry of Environment and Forests for matters falling under Category 'A' in the Schedule and at State level the State Environment Impact Assessment Authority (SEIAA) for matters falling under Category 'B' in the said Schedule, before any construction work, or preparation of land by the project management except for securing the land, is started on the project or activity:

(i) All new projects or activities listed in the Schedule to this notification;
(ii) Expansion and modernization of existing projects or activities listed in the Schedule to this notification with addition of capacity beyond the limits specified for the concerned sector, that is, projects or activities which cross the threshold limits given in the Schedule, after expansion or modernization;
(iii) Any change in product - mix in an existing manufacturing unit included in Schedule beyond the specified range.

3. **State Level Environment Impact Assessment Authority**:- (1) A State Level Environment Impact Assessment Authority hereinafter referred to as the SEIAA shall be constituted by the Central Government under sub-section (3) of section 3 of the Environment (Protection) Act, 1986 comprising of three Members including a Chairman and a Member – Secretary to be nominated by the State Government or the Union territory Administration concerned.

4. **Categorization of Projects and Activities:-**

(i) All projects and activities are broadly categorized in to two categories - Category A and Category B, based on the spatial extent of potential impacts and potential impacts on human health and natural and man made resources.

(ii) All projects or activities included as Category 'A' in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, shall require prior environmental clearance from the Central Government in the Ministry of Environment and Forests (MoEF) on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification;

(iii) All projects or activities included as Category 'B' in the Schedule, including expansion and modernization of existing projects or activities as specified in sub paragraph (ii) of paragraph 2, or change in product mix as specified in sub paragraph (iii) of paragraph 2, but excluding those which fulfill the General

Conditions (GC) stipulated in the Schedule, will require prior environmental clearance from the State/Union territory Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a State or Union territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification. In the absence of a duly constituted SEIAA or SEAC, a Category 'B' project shall be treated as a Category 'A' project;

5. **Screening, Scoping and Appraisal Committees:-**The same Expert Appraisal Committees (EACs) at the Central Government and SEACs (hereinafter referred to as the (EAC) and (SEAC) at the State or the Union territory level shall screen, scope and appraise projects or activities in Category 'A' and Category 'B' respectively.

6. **Application for Prior Environmental Clearance (EC):-**An application seeking prior environmental clearance in all cases shall be made in the prescribed Form 1 Appendixed herewith and Supplementary Form 1A, if applicable, as given in Appendix II, after the identification of prospective site(s) for the project and/or activities to which the application relates, before commencing any construction activity, or preparation of land, at the site by the applicant. The applicant shall furnish, along with the application, a copy of the pre-feasibility project report except that, in case of construction projects or activities (item 8 of the Schedule) in addition to Form 1 and the Supplementary Form 1A, a copy of the conceptual plan shall be provided, instead of the pre-feasibility report.

7. **Stages in the Prior Environmental Clearance (EC) Process for New Projects:-**The environmental clearance process for new projects will comprise of a maximum of four stages, all of which may not apply to particular cases as set forth below in this notification. These four stages in sequential order are:

Stage (1) Screening (Only for Category 'B' projects and activities)
Stage (2) Scoping
Stage (3) Public Consultation
Stage (4) Appraisal

I. Stage (1) - Screening:

8. In case of Category 'B' projects or activities, this stage will entail the scrutiny of an application seeking prior environmental clearance made in Form 1 by the concerned State level Expert Appraisal Committee (SEAC) for determining whether or not the project or activity requires further environmental studies for preparation of an Environmental Impact Assessment (EIA) for its appraisal prior to the grant of environmental clearance depending up on the nature and location specificity of the project . The projects requiring an Environmental Impact Assessment report shall be termed Category 'B1' and remaining projects shall be termed Category 'B2' and will not require an Environment Impact Assessment report. For categorization of projects into B1 or B2 except item 8 (b), the Ministry of Environment and Forests shall issue appropriate guidelines from time to time.

II. Stage (2) - Scoping:

9. (i) "Scoping": refers to the process by which the Expert Appraisal Committee in the case of Category 'A' projects or activities, and State level Expert Appraisal Committee in the case of Category 'B1' projects or activities, including applications for expansion and/or modernization and/or change in product mix of existing projects or activities, determine detailed and comprehensive Terms Of Reference (TOR) addressing all relevant environmental concerns for the preparation of an Environment Impact Assessment (EIA) Report in respect of the project or activity for which prior environmental clearance is sought.

(ii) The Terms of Reference (TOR) shall be conveyed to the applicant by the Expert Appraisal Committee or State Level Expert Appraisal Committee as concerned within sixty days of the receipt of Form 1

III. Stage (3) - Public Consultation:

10. (i) "Public Consultation" refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impacts of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category 'A' and Category B1 projects or activities shall undertake Public Consultation, except the following:-

(a) modernization of irrigation projects (item 1(c) (ii) of the Schedule).

(b) all projects or activities located within industrial estates or parks (item 7(c) of the Schedule) approved by the concerned authorities, and which are not disallowed in such approvals.

(c) expansion of Roads and Highways (item 7 (f) of the Schedule) which do not involve any further acquisition of land.

(d) all Building /Construction projects/Area Development projects and Townships (item 8).

(e) all Category 'B2' projects and activities.

(f) all projects or activities concerning national defence and security or involving other strategic considerations as determined by the Central Government.

11. **Post Environmental Clearance Monitoring:**

(i) It shall be mandatory for the project management to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.

List of Infrastructure/Construction Projects/Activities Requiring Prior Environmental Clearance

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
7		Physical Infrastructure including Environmental Services		
7(a)	Air ports	All projects	-	-
7(b)	All ship breaking yards including ship breaking units	All projects	-	-
7(c)	Industrial estates/ parks/ complexes/ areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes.	If at least one industry in the proposed industrial estate falls under the Category A, entire industrial area shall be treated as Category A, irrespective of the area. Industrial estates with area greater than 500 ha. and housing at least	-Industrial estates housing at least one Category B industry and area <500 ha. Industrial estates of area> 500 ha. and not housing any industry belonging to Category A	Special condition shall apply Note: Industrial Estate of area below 500 ha. and not housing any industry of category A or B does not require clearance.

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
		one Category B industry.	or B.	
7(d)	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	All integrated facilities having incineration &landfill or incineration alone	All facilities having land fill only	General Condition shall apply
7(e)	Ports, Harbours	≥ 5 million TPA of cargo handling capacity (excluding fishing harbours)	< 5 million TPA of cargo handling capacity and/or ports/ harbours ≥10,000 TPA of fish handling capacity	General Condition shall apply
7(f)	Highways	i) New National High ways; and ii) Expansion of National High ways greater than 30 KM, involving additional right of way greater than 20m involving land acquisition and passing through more than one State.	i) New State High ways; and ii) Expansion of National /State Highways greater than 30 km involving additional right of way greater than 20m involving land acquisition.	General Condition shall apply
7(g)	Aerial ropeways		All projects	General Condition shall apply
7(h)	Common Effluent Treatment Plants (CETPs)		All projects	General Condition shall apply
7(i)	Common Municipal Solid Waste Management Facility (CMSWMF)		All projects	General Condition shall apply
8		Building /Construction projects/Area Development projects and Townships		
8(a)	Building and Construction projects		≥20000 sq.mtrs and <1,50,000 sq.mtrs. of built-up area#	#(built up area for covered construction; in the case of facilities open to the sky, it will be the activity area)
8(b)	Townships and Area Development projects.		Covering an area ≥ 50 ha and or built up area ≥1,50,000 sq .mtrs ++	++All projects under Item 8(b) shall be appraised as Category B1

Note:-

General Condition (GC):

Any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries. (v) If a SEIAA does not exist, all Category B projects are considered Category A.

FORM 1

I. Basic Information

Name of the Project:
Location / site alternatives under consideration:
Size of the Project: *
Expected cost of the project:
Contact Information:
Screening Category:

1. Capacity corresponding to sectoral activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.,)

II. Activity

2. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)		
1.2	Clearance of existing land, vegetation and buildings?		
1.3	Creation of new land uses?		
1.4	Pre-construction investigations e.g. bore houses, soil testing?		
1.5	Construction works?		
1.6	Demolition works?		
1.7	Temporary sites used for construction works or housing of construction workers?		
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations		
1.9	Underground works including mining or tunneling?		
1.10	Reclamation works?		
1.11	Dredging?		
1.12	Offshore structures?		
1.13	Production and manufacturing processes?		
1.14	Facilities for storage of goods or materials?		
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?		
1.16	Facilities for long term housing of operational workers?		
1.17	New road, rail or sea traffic during construction or operation?		
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?		

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?		
1.20	New or diverted transmission lines or pipelines?		
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?		
1.22	Stream crossings?		
1.23	Abstraction or transfers of water form ground or surface waters?		
1.24	Changes in water bodies or the land surface affecting drainage or run-off?		
1.25	Transport of personnel or materials for construction, operation or decommissioning?		
1.26	Long-term dismantling or decommissioning or restoration works?		
1.27	Ongoing activity during decommissioning which could have an impact on the environment?		
1.28	Influx of people to an area in either temporarily or permanently?		
1.29	Introduction of alien species?		
1.30	Loss of native species or genetic diversity?		
1.31	Any other actions?		

3. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S. No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)		
2.2	Water (expected source & competing users) unit: KLD		
2.3	Minerals (MT)		
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)		
2.5	Forests and timber (source – MT)		
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)		
2.7	Any other natural resources (use appropriate standard units)		

4. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)		
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)		
3.3	Affect the welfare of people e.g. by changing living conditions?		
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,		
3.5	Any other causes		

5. Production of solid wastes during construction or operation or decommissioning (MT/month)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes		
4.2	Municipal waste (domestic and or commercial wastes)		
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)		
4.4	Other industrial process wastes		
4.5	Surplus product		
4.6	Sewage sludge or other sludge from effluent treatment		
4.7	Construction or demolition wastes		
4.8	Redundant machinery or equipment		
4.9	Contaminated soils or other materials		
4.10	Agricultural wastes		
4.11	Other solid wastes		

6. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources		

5.2	Emissions from production processes		
5.3	Emissions from materials handling including storage or transport		
5.4	Emissions from construction activities including plant and equipment		
5.5	Dust or odours from handling of materials including construction materials, sewage and waste		
5.6	Emissions from incineration of waste		
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)		
5.8	Emissions from any other sources		

7. Generation of Noise and Vibration, and Emissions of Light and Heat:

S. No.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers		
6.2	From industrial or similar processes		
6.3	From construction or demolition		
6.4	From blasting or piling		
6.5	From construction or operational traffic		
6.6	From lighting or cooling systems		
6.7	From any other sources		

8. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials		
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)		
7.3	By deposition of pollutants emitted to air into the land or into water		
7.4	From any other sources		
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?		

9 Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances		
8.2	From any other causes		
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?		

10. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting. lities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries • supply industries • other		
9.2	Lead to after-use of the site, which could haven impact on the environment		
9.3	Set a precedent for later developments		
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects		

Environmental Sensitivity

S. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value		
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests		
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration		
4	Inland, coastal, marine or underground waters		
5	State, National boundaries		
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas		
7	Defence installations		
8	Densely populated or built-up area		
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)		
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)		
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)		
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)		

ANNEX 2A
THE INDIAN FOREST ACT, 1927

Chapter II of Reserved Forests

1. **Power to reserve forests.–**The State Government may constitute any forest-land or waste-land which is the property of Government, or over which the Government has proprietary rights, or to the whole or any part of the forest-produce of which the Government is entitled, a reserved forest in the manner hereinafter provided.

2. **Notification by State Government.**

(1) Whenever it has been decided to constitute any land a reserved forest, the State Government shall issue a notification in the Official Gazette–

(a) declaring that it has been decided to constitute such land a reserved forest;

(b) specifying, as nearly as possible, the situation and limits of such land; and

(c) appointing an officer (hereinafter called "the Forest Settlement-officer") to inquire into and determine the existence, nature and extent of any rights alleged to exist in favour of any person in or over any land comprised within such limits or in or over any forest-produce, and to deal with the same as provided in this Chapter. Explanation.–For the purpose of clause (b), it shall be sufficient to describe the limits of the forest by roads, rivers, ridges or other well-known or readily intelligible boundaries.

(2) The officer appointed under clause (c) of sub-section (1) shall ordinarily be a person not holding any forest-office except that of Forest Settlement-officer.

(3) Nothing in this section shall prevent the State Government from appointing any number of officers not exceeding three, not more than one of whom shall be a person holding any forest-office except as aforesaid, to perform the duties of a Forest Settlement-officer under this Act.

3. **Bar of accrual of forest-rights.–**After the issue of a notification under section 4, no right shall be acquired in or over the land comprised in such notification, except by succession or under a grant or contract in writing made or entered into by or on behalf of the Government or some person in whom such right was vested when the notification was issued; and no fresh clearings for cultivation or for any other purpose shall be made in such land except in accordance with such rules as may be made by the State Government in this behalf.

4. **Proclamation by Forest Settlement-officer.–**When a notification has been issued under section 4, the Forest Settlement-officer shall publish in the local vernacular in every town and village in the neighbourhood of the land comprised therein, a proclamation

(a) specifying, as nearly as possible, the situation and limits of the proposed forest;

(b) explaining the consequences which, as hereinafter provided, will ensue on the reservation of such forest; and

(c) fixing a period of not less than three months from the date of such proclamation, and requiring every person claiming any right mentioned in section 4 or section, 5 within such period either to present to the Forest Settlement-officer a written notice specifying or to appear before him and state, the nature of such right and

the amount and particulars of the compensation (if any) claimed in respect thereof.

5. **Inquiry by Forest Settlement-officer.–**The Forest Settlement-officer shall take down in writing all statements made under section 6, and shall at some convenient place inquire into all claims duly preferred under that section, and the existence of any rights mentioned in section 4 or section 5 and not claimed under section 6 so far as the same may be ascertainable from the records of Government and the evidence of any persons likely to be acquainted with the same.

6. **Powers of Forest Settlement-officers.-**For the purpose of such inquiry, the Forest Settlement-officer may exercise the following powers, that is to say:

(a) power to enter, by himself or any officer authorised by him for the purpose, upon any land, and to survey, demarcate and make a map of the same; and

(b) the powers of a Civil Court in the trial of suits.

7. **Extinction of rights.-**Rights in respect of which no claim has been preferred under section 6, and of the existence of which no knowledge has been acquired by inquiry under section 7, shall be extinguished, unless before the notification under section 20 is published, the person claiming them satisfies the Forest Settlement-officer that he had sufficient cause for not prefer-ring such claim within the period fixed under section 6.

8. **Treatment of claims relating to practice of shifting cultivation.**

(1) In the case of a claim relating to the practice of shifting cultivation, the Forest Settlement-officer shall record a statement setting forth the particulars of the claim and of any local rule or order under which the practice is allowed or regulated, and submit the statement to the State Government, together with his opinion as to whether the practice should be permitted or prohibited wholly or in part.

(2) On receipt of the statement and opinion, the State Government may make an order permitting or prohibiting the practice wholly or in part.

(3) If such practice is permitted wholly or in part, the Forest Settlement-officer may arrange for its exercise

(a) by altering the limits of the land under settlement so as to exclude land of sufficient extent, of a suitable kind, and in a locality reasonably convenient for the purposes of the claimants, or

(b) by causing certain portions of the land under settlement to be separately demarcated, and giving permission to the claimants to practise shifting cultivation therein under such conditions as he may prescribe.

(4) All arrangements made under sub-section (3) shall be subject to the previous sanction of the State Government.

(5) The practice of shifting cultivation shall in all cases be deemed a privilege subject to control, restriction and abolition by the State Government.

9. **Power to acquire land over which right is claimed.**

(1) In the case of a claim to a right in or over any land, other than a right of way or right of pasture, or a right to forest produce or a water-course, the Forest Settlement-officer shall pass an order admitting or rejecting the same in whole or in part.

(2) If such claim is admitted in whole or in part, the Forest Settlement-officer shall either
  (i) exclude such land- from the limits of the proposed forest; or
  (ii) come to an agreement with the owner thereof for the surrender of his rights; or
  (iii) proceed to acquire such land in the manner provided by the Land Acquisition Act, 1894 (1 of 1894).

(3) For the purpose of so acquiring such land
  (a) the Forest Settlement-officer shall be deemed to be a Collector proceeding under the Land Acquisition Act, 1894 (1 of 1894);
  (b) the claimant shall be deemed to be a person interested and appearing before him in pursuance of a notice given under section 9 of that Act;
  (c) the provisions of the preceding sections of that Act shall be deemed to have been complied with; and
  (d) the Collector, with the consent of the claimant, or the Court, with the consent of both parties, may award compensation in land, or partly in land and partly in money.

10. **Order on claims to rights of pasture or to forest-produce.–**In the case of a claim to rights of pasture or to forest-produce, the Forest Settlement-officer shall pass an order admitting or rejecting the same in whole or in part.

11. **Record to be made by Forest Settlement-officer.**–The Forest Settlement officer, when passing any order under section 12, shall record, so far as may be practicable,–
  (a) the name, father's name, caste, residence and occupation of the person claiming the right; and
  (b) the designation, position and area of all fields or groups fields (if any), and the designation and position of all buildings (if any) in respect of which the exercise of such rights is claimed.

12. **Record where he admits claim.–**If the Forest Settlement-officer admits in whole or in part any claim under section 12, he shall also record the extent to which the claim is so admitted, specifying the number and description of the cattle which the claimant is from time to time entitled to graze in the forest, the season during which such pasture is permitted, the quantity of timber and other forest produce which he is from time to time authorised to take or receive, and such other particulars as the case may require. He shall also record whether the timber or other forest-produce obtained by the exercise of the rights claimed may be sold or bartered.

13. **Exercise of rights admitted.**
  (1) After making such record the Forest Settlement officer shall, to the best of his ability, having due regard to the maintenance of the reserved forest in respect of which the claim is made, pass such orders as will ensure the continued exercise of the rights so admitted.
  (2) For this purpose the Forest Settlement-officer may
    (a) set out some other forest-tract of sufficient extent, and in a locality reasonably convenient, for the purposes of such claimants, and record an order conferring upon them a right of pasture or to forest-produce (as the case may be) to the extent so admitted; or

(b) so alter the limits of the proposed forest as to exclude forest-land of sufficient extent, and in a locality reasonably convenient, for the purposes of the claimants; or

(c) record an order, continuing to such claimants a right of pasture or to forest-overpage produce, as the case may be, to the e tent so admitted, at such seasons, within such portions of the proposed forest, and under such rules, as may be made in this behalf by the State Government.

14. **Commutation of rights.–**In case the Forest Settlement-officer finds it impossible having due regard to the maintenance of the reserved forest, to make such settlement under section 15 as shall ensure the continued exercise of the said rights to the extent so admitted, he shall, subject to such rules as the State Government may make in this behalf, commute such rights, by the payment to such persons of a sum of money in lieu thereof, or by the grant of land, or in such other manner as he thinks fit.

15. **Appeal from order passed under section 11, section 12, section 15 or section 16.–**Any person who has made a claim under this Act, or any Forest-officer or other person generally or specially empowered by the State Government in this behalf, may, within three months from the date of the order passed on such claim by the Forest Settlement-officer under section 11, section 12, section 15 or section 16, present an appeal from such order to such officer of the Revenue Department of rank not lower than that of a Collector, as the State Government may, by notification in the Official Gazette, appoint to hear appeals from such orders:

Provided that the State Government may establish a Court (hereinafter called the Forest Court) composed of three persons to be appointed by the State Government, and when the Forest Court has been so established, all such appeals shall be presented to it.

16. **Appeal under section 17.**

(1) Every appeal under section 17 shall be made by petition in writing, and may be delivered to the Forest Settlement-officer, who shall forward it without delay to the authority competent to hear the same.

(2) If the appeal be to an officer appointed under section 17, it shall be heard in the manner prescribed for the time being for the hearing of appeals in matters relating to land-revenue.

(3) If the appeal be to the Forest Court, the Court shall fix a day and a convenient place in the neighbourhood of the proposed forest for hearing the appeal, and shall give notice thereof to the parties, and shall hear such appeal accordingly.

(4) The order passed on the appeal by such officer or Court, or by the majority of the members of such Court, as the case may be, shall, subject only to revision by the State Government, be final.

17. **Pleaders.**–The State Government, or any person who has made a claim under this Act, may appoint any person to appear, plead and act on its or his behalf before the Forest Settlement-officer, or the appellate officer or Court, in the course of any inquiry or appeal under this Act.

18. **Notification declaring forest reserved.**

(1) When the following events have occurred, namely:–

(a) the period fixed under section 6 for preferring claims have elapsed and all claims (if any) made under that section or section 9 have been disposed of by the Forest Settlement-officer;

(b) if any such claims have been made, the period limited by section 17 for appealing from the orders passed on such claims has elapsed, and all appeals (if any) presented within such period have been disposed of by the appellate officer or Court; and

(c) all lands (if any) to be included in the proposed forest, which the Forest Settlement-officer has, under section 11, elected to acquire under the Land Acquisition Act, 1894 (1 of 1894), have become vested in the Government under section 16 of that Act,

the State Government shall publish a notification in the Official Gazette, specifying definitely, according to boundary-marks erected or otherwise, the limits of the forest which is to be reserved, and declaring the same to be reserved from a date fixed by the notification.

(2) From the date so fixed such forest shall be deemed to be a reserved forest.

19. **Publication of translation of such notification in neighbourhood of forest.–**The Forest-officer shall, before the date fixed by such notification, cause a translation thereof into the local vernacular to be published in every town and village in the neighbourhood of the forest.

20. **Power to revise arrangement made under section 15 or section 18–**The State Government may, within five years from the publication of any notification under section 20, revise any arrangement made under section 15 or section 18, and may for this purpose rescind or modify any order made under section 15 or section 18, and direct that any one of the proceedings specified in section 15 be taken in lieu of any other of such proceedings, or that the rights admitted under section 12 be commuted under section 16.

21. **No right acquired over reserved forest, except as here provided.–**No right of any description shall be acquired in or over a reserved forest except by succession or under a grant or contract in writing made by or on behalf of the Government or some person in whom such right was vested when the notification under section 20 was issued.

22. **Rights not to be alienated without sanction.**

(1) Notwithstanding anything contained in section 23, no right continued under clause (c) of sub-section (2) of section 15 shall be alienated by way of grant, sale, lease mortgage or otherwise, without the sanction of the State Government:

Provided that, when any such right is appendant to any land or house, it may be sold or otherwise alienated with such land or house.

(2) No timber or other forest-produce obtained in exercise of any such right shall be sold or bartered except to such extent as may have been admitted in the order recorded under section 14.

23. **Power to stop ways and water-courses in reserved forests.–**The Forest-officer may, with the previous sanction of the State Government or of any officer duly authorised by it in this behalf, stop any public or private way or water-course in a reserved forest, provided that a substitute for the way or water-course so stopped, which the State Government deems to be reasonably convenient, already exists, or has been provided or constructed by the Forest-officer in lieu thereof.

24. **Acts prohibited in such forests.**

(1) Any person who–

(a) makes any fresh clearing prohibited by section 5, or

(b) sets fire to a reserved forest, or, in contravention of any rules made by the State Government in this behalf, kindles any fire, or leaves any fire burning, in such manner as to endanger such a forest;

or who, in a reserved forest–

(c) kindles, keeps or carries any fire except at such seasons as the Forest-officer may notify in this behalf,

(d) trespasses or pastures cattle, or permits cattle to trespass;

(e) causes any damage by negligence in felling any tree or cutting or dragging any timber;

(f) fells, girdles, lops, or bums any tree or strips off the bark or leaves from, or otherwise damages, the same;

(g) quarries stone, bums lime or charcoal, or collects, subjects to any manufacturing process, or removes, any forest-produce;

(h) clears or breaks up any land for cultivation or any other purpose;

(i) in contravention of any rules made in this behalf by the State Government hunts, shoots, fishes, poisons water or sets traps or snares; or

(j) in any area in which the Elephants' Preservation Act, 1879 (6 of 1879), is not in force, kills or catches elephants in contravention of any rules so made,

shall be punishable with imprisonment for a term which may extend to six months, or with fine which may extend to five hundred rupees, or with both, in addition to such compensation for damage done to the forest as the convicting Court may direct to be paid.

(2) Nothing in this section shall be deemed to prohibit

(a) any act done by permission in writing of the Forest-officer, or under any rule made by the state Government; or

(b) the exercise of any right continued under clause (c) of sub-section (2) of section 15, or created by grant or contract in writing made by or on behalf of the Government under section 23.

(3) Whenever fire is caused wilfully or by gross negligence in a reserved forest, the State Government may (notwithstanding that any penalty has been inflicted under this section) direct that in such forest or any portion there of the exercise of all rights of pasture or to forest produce shall be suspended for such period as it thinks fit.

25. **Power to declare forest no longer reserved.**

(1) The State Government may,6[* * *] by notification in the Official Gazette, direct that, from a date fixed by such notification, any forest or any portion thereof reserved under the Act shall cease to be a reserved forest.

(2) From the date so fixed, such forest or portion shall cease to be reserved; but the rights (if any) which have been extinguished therein shall not revive in consequence of such cessation.

Chapter III of Village Forests

26. **Formation of village-forests.**

(1) The State Government may assign to any village-community the rights of Government to or over any land which has been constituted a reserved forest, and may cancel such assignment. All forests so assigned shall be called village-forests.

(2) The State Government may make rules for regulating the management of village forests, prescribing the conditions under which the community to which any such assignment is made may be provided with timber or other forest-produce or pasture, and their duties for the protection and improvement of such forest.

(3) All the provisions of this Act relating to reserved forests shall (so far as they are not inconsistent with the rules so made) apply to village-forests.

Chapter IV of Protected Forests

27. **Protected forests.**

(1) The State Government may, by notification in the Official Gazette, declare the provisions of this Chapter applicable to any forest-land or waste-land which,, is not included in a reserved forest but which is the property of Government, or over which the Government has proprietary rights, or to the whole or any part of the forest produce of which the Government is entitled.

(2) The forest-land and waste-lands comprised in any such notification shall be called a "protected forest".

(3) No such notification shall be made unless the nature and extent of the rights of Government and of private persons in or over the forest-land or waste-land comprised therein have been inquired into and recorded at a survey or settlement, or in such other manner as the State Government thinks sufficient. Every such record shall be presumed to be correct until the contrary is proved:
Provided that, if, in the case of any forest-land or waste land, the State Government thinks that such inquiry and record are necessary, but that they will occupy such length of time as in the meantime to endanger the rights of Government, the State Government may, pending such inquiry and record, declare such land to be a protected forest, but so as not to abridge or affect any existing rights of individuals or communities.

28. **Power to issue notification reserving trees, etc.–**The State Government may, by notification in the Official Gazette,

(a) declare any trees or class of trees in a protected forest to be reserved from a date fixed by, the notification;

(b) declare that any portion of such forest specified in the notification shall be closed for such term, rot exceeding thirty years, as the State Government thinks fit, and that the rights of private persons, if any, over such portion shall be suspended during such terms, provided that the remainder of such forest be sufficient, and in a locality reasonably convenient, for the due exercise of the right suspended in the portion so closed; or

(c) prohibit, from a date fixed as aforesaid, the quarrying of stone, or the burning of lime or charcoal, or the collection or subjection to any manufacturing process, or removal of, any forest-produce in any such forest, and the breaking up or

clearing for cultivation, for building, for herding cattle or for any other purpose, of any land in any such forest.

29. **Publication of translation of such notification in neighbourhood.–**The Collector shall cause a translation into the local vernacular of every notification issued under section 30 to be affixed in a conspicuous place in every town and village in the neighbourhood of the forest comprised in the notification.

30. **Power to make rules for protected forests.–**The State Government may make rules to regulate the following matters, namely:

(a) the cutting, sawing, conversion and removal of trees and timber, and the collection, manufacture and removal of forest-produce, from protected forests;

(b) the granting of licences to the inhabitants of towns and villages in the vicinity of protected forests to take trees, timber or other forest-produce for their own use, and the production and return of such licences by such persons;

(c) the granting of licences to persons felling or removing trees or timber or other forest-produce from such forests for the purposes of trade, and the production

d) the payments, if any, to be made by the persons mentioned in clauses (b) and (c) for permission to cut such trees, or to collect and remove such timber or other forest-produce;

(e) the other payments, if any, to be made by them in respect of such trees, timber and produce, and the places where such payment shall be made;

(f) the examination of forest-produce passing out of such forests;

(g) the clearing and breaking up of land for cultivation or other purposes in such forests;

(h) the protection from fire of timber lying in such forests and of trees reserved under section 30;

(i) the cutting of grass and pasturing of cattle in such forests;

(j) hunting, shooting, fishing, poisoning water and setting traps or snares in such forests and the killing or catching of elephants in such forests in areas in which the Elephants' Preservation Act, 1879 (6 of 1879), is not in force;

(k) the protection and management of any portion of a forest closed under section 30; and

(l) the exercise of rights referred to in section 29.

31. **Penalties for acts in contravention of notification under section 30 or of rules under section 32.**

(1) Any person who commits any of the following offences, namely:–

(a) fells, girdles, lops, taps or bums any tree reserved under section 30, or strips off the bark or leaves from, or otherwise damages, any such tree;

(b) contrary to any prohibition under section 30, quarries any stone, or bums any lime or charcoal or collects, subjects to any manufacturing process, or removes any forest-produce;

(c) contrary to any prohibition under section 30, breaks up or clears for cultivation or any other purpose any land in any protected forest;

(d) sets fire to such forest, or kindles a fire without taking all reasonable precautions to prevent its spreading to any tree reserved under section 30, whether standing fallen or felled, or to say closed portion of such forest;

(e) leaves burning any fire kindled by him in the vicinity of any such tree or closed portion;

(f) fells any tree or drags any timber so as to damage any tree reserved as aforesaid;
(g) permits cattle to damage any such tree;
(h) infringes any rule made under section 32, shall be punishable with imprisonment for a term which may extend to six months, or with fine which may extend to five hundred rupees, or with both.

(2) Whenever fire is caused wilfully or by gross negligence in a protected forest, the State Government may, notwithstanding that any penalty has been inflicted under this section, direct that in such forest or any portion thereof the exercise of any right of pasture or to forest-produce shall be suspended for such period as it thinks fit.

32. **Nothing in this Chapter to prohibit acts done in certain cases.**–Nothing in this Chapter shall be deemed to prohibit any act done with the permission in writing of the Forest-officer, or in accordance with rules made under section 32, or, except as regards any portion of a forest closed under section 30, or as regards any rights the exercise of which has been suspended under section 33, in the exercise of any right recorded under section 29.

Chapter V of the Control Over Forests and Lands Not Being the Property of Government

33. **Protection of forests for special purposes.**

(1) The State Government may, by notification in the Official Gazette, regulate or prohibit in any forest or waste-land
(a) the breaking up or clearing of land for cultivation;
(b) the pasturing of cattle; or
(c) the firing or clearing of the vegetation;

when such regulation or prohibition appears necessary for any of the following purposes:–
(i) for protection against storms, winds, rolling stones, floods and avalanches;
(ii) for the preservation of the soil on the ridges and slopes and in the valleys of hilly tracts, the prevention of land slips or of the formation of ravines, and torrents, or the protection of land against erosion, or the deposit thereon of sand, stones or gravel;
(iii) for the maintenance of a water-supply in springs, rivers and tanks;
(iv) for the protection of roads, bridges, railways and other lines of communication;
(v) for the preservation of the public health.

(2) The State Government may, for any such purpose, construct at its own expense, in or upon any forest or waste-land, such work as it thinks fit.

(3) No notification shall be made under sub-'section (1) nor shall any work be begun under sub-section (2), until after the issue of a notice to the owner of such forest or land calling on him to show cause, within a reasonable period to be specified in such notice, why such notification should not be made or work constructed, as the case may be, and until his objections, if any, and any evidence he may produce in support of the same, have been heard by an officer duly appointed in that behalf and have been considered by the State Government.

34. **Power to assume management of forests.**

(1) In case of neglect of, or wilful disobedience to, any regulation or prohibition under section 35, or if the purposes of any work to be-constructed under that section so require, the State Government may, after notice in writing to the owner of such forest or land and after considering his objections, if any, place the same under the control of a Forest-officer, and may declare that all or any of the provisions of this Act relating to reserved forests shall apply to such forest or land.

(2) The net profits, if any, arising from the management of such forest or land shall be paid to the said owner.

35. **Expropriation of forests in certain cases.**

(1) In any case under this Chapter in which the State Government considers that, in lieu of placing the forest or land under the control of a Forest-Officer, the same should be acquired for public purposes, the State 3overnment may proceed to acquire it in the manner provided by the Land Acquisition Act, 1894 (1 of 1894).

(2) The owner of any forest or land comprised in any notification under section 35 may, t any time not less than three or more than twelve years from the date thereof, require that such forest or land shall be acquired for public purposes, and the State Government shall require such forest or land accordingly.

36. **Protection of forests at request of owners.**

(1) The owner of any land or, if there more than one owner thereof, the owners of shares therein amounting in the aggregate at least two-thirds thereof may, with a view to the formation or conservation of forests thereon, represent in writing to the Collector their desire

(a) that such land be managed on their behalf by the Forest-officer as a reserved or a protected forest on such terms as may be mutually agreed upon; or

(b) that all or any of the provisions of this Act be applied to such land.

(2) In either case,-the State Government may, by notification in the Official Gazette, apply to such land such provisions of this Act as it thinks suitable to the circumstances thereof and as may be desired by the applicants.

ANNEX 2B

FOREST (CONSERVATION) ACT, 1980

1. An Act to provide for the conservation of forests and for matters connected therewith or ancillary or incidental thereto.

2. **Restriction on the dereservation of forests or use of forest land for non-forest purpose.**

Notwithstanding anything contained in any other law for the time being in force in a State, no State Government or other authority shall make, except with the prior approval of the Central Government, any order directing-

(i) that any reserved forest (within the meaning of the expression "reserved forest" in any law for the time being in force in that State) or any portion thereof, shall cease to be reserved;

(ii) that any forest land or any portion thereof may be used for any non-forest purpose;

(iii) that any forest land or any portion thereof may be assigned by way of lease or otherwise to any private person or to any authority, corporation, agency or any other organization not owned, managed or controlled by Government;

(iv) that any forest land or any portion thereof may be cleared of trees which have grown naturally in that land or portion, for the purpose of using it for reforestation.

Explanation - For the purpose of this section, "non-forest purpose" means the breaking up or clearing of any forest land or portion thereof for-

(a) the cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plants;

(b) any purpose other than reafforestation;

but does not include any work relating or ancillary to conservation, development and management of forests and wildlife, namely, the establishment of check-posts, fire lines, wireless communications and construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks, pipelines or other like purposes.

3. **Constitution of Advisory Committee.**

The Central Government may constitute a Committee consisting of such number of persons as may deem fit to advise that Government with regard to-

(i) the grant of approval under Section 2; and

(ii) any other matter connected with the conservation of forests which may be referred to h by the Central Government.

3A. **Penalty for contravention of the provisions of the Act.**

Whoever contravenes or abets the contravention of any of the provisions of Section 2, shall be punishable with simple imprisonment for a period which may extend to fifteen days.

3B. **Offences by the Authorities and Government Departments.**

(1) Where any offence under this Act has been committed -

(a) by any department of Government, the head of the department; or

(b) by any authority, every person who, at the time the offence was committed, was directly in charge of, and was responsible to, the authority for the conduct of the business of the authority as well as the authority;

shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:

Provided that nothing contained in this sub-section shall render the head of the department or any person referred to in clause (b), liable to any punishment if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence punishable under the Act has been committed by a department of Government or any authority referred to in clause (b) of sub-section (1) and it is proved that the offence has been committed with the consent or connivance of; or is attributable to any neglect on the part of any officer, other than the head of the department, or in the case of an authority, any person other than the persons referred to in clause (b) of sub-section (1), such officer or persons shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

ANNEX 2C

FOREST CONSERVATION RULES, 2003

6. **Submission of the proposals seeking approval of the Central Government under section 2 of the Act.-**

(1) Every user agency, who wants to use any forest land for non-forest purposes shall make his proposal in the appropriate Form appended to these rules, i.e. Form 'A' for proposals seeking first time approval under the Act and Form 'B' for proposals seeking renewal of leases where approval of the Central Government under the Act had already been obtained earlier, to the concerned nodal officer authorized in this behalf by the State Government, along with requisite information and documents, complete in all respects, well in advance of taking up any non-forest activity on the forest land.

(2) Every State Government or other authority, after having received the proposal under sub-rule (1) and after being satisfied that the proposal requires prior approval under section 2 of the Act, shall send the proposal to the Central Government in the appropriate forms, within ninety days of the receipt of the proposal from the user agency for proposals seeking first time approval under the Act and within sixty days for proposals seeking renewal of leases where approval of the Central Government under the Act had already been obtained earlier:

Provided that all proposals involving clearing naturally grown trees in forest land or portion thereof for the purpose of using it for reafforestation shall be sent in the form of Working Plan or Management Plan.

(3) The proposal referred to in sub-rule (2) above, involving forest land of more than forty hectare shall be sent by the State Government to the Secretary to the Government of India, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, Lodhi Road, New Delhi-110 003, with a copy of the proposal (with complete enclosures) to the concerned Regional Office.

(4) The proposal referred to in sub-rule (2) above, involving forest land up to forty hectare shall be sent to the Chief Conservator of Forests or Conservator of Forests of the concerned Regional Office of the Ministry of Environment and Forests.

(5) The proposal referred to in sub-rule (2) above, involving clearing of naturally grown trees in forest land or portion thereof for the purpose of using it for reafforestation shall be sent to the Chief Conservator of Forests or Conservator of Forests of the concerned Regional Office of the Ministry of Environment and Forests.

7. **Committee to advise on proposals received by the Central Government.-**

(1) The Central Government shall refer every proposal, complete in all respects, received by it under sub-rule (3) of rule 6 including site inspection report, wherever required, to the Committee for its advice thereon.

(2) The Committee shall have due regard to all or any of the following matters while tendering its advice on the proposals referred to it under sub-rule (1), namely:-

(a) Whether the forests land proposed to be used for non-forest purpose forms part of a nature reserve, national park wildlife sanctuary, biosphere reserve or forms part of the habitat or any endangered or threatened

species of flora and fauna or of an area lying in severely eroded catchment;

(b) Whether the use of any forest land is for agricultural purposes or for the rehabilitation of persons displaced from their residences by reason of any river valley or hydro-electric project ;

(c) Whether the State Government or the other authority has certified that it has considered all other alternatives and that no other alternatives in the circumstances are feasible and that the required area is the minimum needed for the purpose; and

(d) Whether the State Government or the other authority undertakes to provide at its cost for the acquisition of land of an equivalent area and afforestation thereof.

(3) While tendering the advice, the Committee may also suggest any conditions or restrictions on the use of any forest land for any non-forest purpose, which in its opinion, would minimise adverse environmental impact.

8. **Action of the Central Government on the advice of the Committee.**–

The Central Government shall, after considering the advice of the Committee tendered under rule 7 and after such further enquiry as it may consider necessary, grant approval to the proposal with or without conditions or reject the same within sixty days of its receipt.

(See Rule 6)

FORM – 'A'

Form for seeking prior approval under section 2 of the proposals by the State Governments and other authorities

PART-I
(to be filled up by user agency)

1. Project details:
   (i) Short narrative of the proposal and project/scheme for which the forest land is required.
   (ii) Map showing the required forest land, boundary of adjoining forest on a 1:50,000 scale map.
   (iii) Cost of the project:
   (iv) Justification for locating the project in forest area.
   (v) Cost-benefit analysis (to be enclosed).
   (vi) Employment likely to be generated.

2. Purpose-wise break-up of the total land required:

3. Details of displacement of people due to the project, if any:
   (i) Number of families.
   (ii) Number of Scheduled Castes/Scheduled Tribe families
   (iii) Rehabilitation plan. (to be enclosed)

4. Whether clearance under Environment (Protection) Act, 1986 required? (Yes/No).

5. Undertaking to bear the cost of raising and maintenance of compensatory afforestation and/or penal compensatory afforestation as well as cost for protection and regeneration of Safety Zone, etc. as per the scheme prepared by the State Government (undertaking to be enclosed).

6. Details of Certificates/documents enclosed as required under the instructions.

Signature
(Name in Block letters)
Designation
Address (of User Agency)

Date:-_____
Place:-_____

State serial No. of proposal_____
(To be filled up by the Nodal Officer with date of receipt)

PART-II
(To be filled by the concerned Deputy Conservator of Forests)

State serial No. of proposal_____

7. Location of the project/Scheme:
   (i) State/Union Territory
   (ii) District.
   (iii) Forest Division
   (iv) Area of forest land proposed for diversion (in ha.)
   (v) Legal status of forest
   (vi) Density of vegetation.
   (vii) Species-wise (scientific names) and diameter class-wise enumeration of trees (to be enclosed. In case of irrigation / hydel projects enumeration at FRL, FRL-2 meter & FRL-4 meter also to be enclosed.)
   (viii) Brief note on vulnerability of the forest area to erosion.
   (ix) Approximate distance of proposed site for diversion from boundary of forest.
   (x) Whether forms part of National Park, wildlife sanctuary, biosphere reserve, tiger reserve, elephant corridor, etc. (If so, the details of the area and comments of the Chief Wildlife Warden to be Appendixed).
   (xi) Whether any rare/endangered/unique species of flora and fauna found in the area- if so details thereof.
   (xii) Whether any protected archaeological/heritage site/defence establishment or any other important monument is located in the area. If so, the details thereof with NOC from competent authority, if required.

8. Whether the requirement of forest land as proposed by the user agency in col. 2 of Part-I is unavoidable and barest minimum for the project. If no, recommended area item-wise with details of alternatives examined.

9. Whether any work in violation of the Act has been carried out (Yes/No). If yes, details of the same including period of work done, action taken on erring officials. Whether work in violation is still in progress.

10. Details of compensatory afforestation scheme:
    (i) Details of non forest area/degraded forest area identified for compensatory afforestation, its distance from adjoining forest, number of patches, size of each patch.
    (ii) Map showing non-forest/degraded forest area identified for compensatory afforestation and adjoining forest boundaries.
    (iii) Detailed compensatory afforestation scheme including species to be planted, implementing agency, time schedule, cost structure, etc.
    (iv) Total financial outlay for compensatory afforestation scheme.
    (v) Certificates from competent authority regarding suitability of area identified for compensatory afforestation and from management point of view. (To be signed by the concerned Deputy Conservator of Forests).

11. Site inspection report of the DCF (to be enclosed) especially highlighting facts asked in col. 7 (xi, xii), 8 and 9 above.

12. Division/District profile:
    (i) Geographical area of the district.
    (ii) Forest area of the district.
    (iii) Total forest area diverted since 1980 with number of cases.
    (iv) Total compensatory afforestation stipulated in the district/division since 1980 on
    (a) forest land including penal compensatory afforestation,
    (b) non-forest land.
    (v) Progress of compensatory afforestation as on (date) _____ on
    (a) forest land
    (b) non-forest land.

13. Specific recommendations of the DCF for acceptance or otherwise of the proposal with reasons.

Signature
Name
Official Seal

Date:-_____
Place:-_____

PART-III
(To be filled by the concerned Conservator of Forests)

14. Whether site, where the forest land involved is located has been inspected by concerned Conservator of Forests (Yes/No). If yes, the date of inspection & observations made in form of inspection note to be enclosed.
15. Whether the concerned Conservator of Forests agree with the information given in Part-B and the recommendations of Deputy Conservator of Forests.
16. Specific recommendation of concerned Conservator of Forests for acceptance or otherwise of the proposal with detailed reasons.

Signature
Name
Official Seal

Date:-_____
Place:-_____

PART-IV
(To be filled in by the Nodal Officer or Principal Chief Conservator of Forests or Head of Forest department)

17. Detailed opinion and specific recommendation of the State Forest Department for acceptance of otherwise of the proposal with remarks.

(While giving opinion, the adverse comments made by concerned Conservator of Forests or Deputy Conservator of Forests should be categorically reviewed and critically commented upon).

Signature
Name & Designation
(Official Seal)

Date:-_____
Place:-_____

PART- V
(To be filled in by the Secretary in charge of Forest Department or by any other authorised officer of the State Government not below the rank of an Under Secretary)

18. Recommendation of the State Government:
(Adverse comments made by any officer or authority in Part-B or Part-C or Part-D above should be specifically commented upon)

Signature
Name & Designation
(Official Seal)

Date:-_____
Place:-_____

INSTRUCTIONS (for Part-I):-

1. The project authorities may Appendix a copy of the approved project/plan in addition to filling Col. 1 (i) e.g. IBM approved mining plan for major minerals/CMPDI plan with subsidence analysis reports, etc.
2. Map has to be in original duly authenticated jointly by project authorities and concerned DCF – Col. 1 (ii).
3. Complete details of alternative alignments examined especially in case of project like roads, transmission lines, railway lines, canals, etc. to be shown on map with details of area of forest land involved in each alternative to be given - Col. 1 (iii).
4. For proposals relating to mining, certificate from competent authority like District Mining Officer about non-availability of the same mineral in surrounding/nearby non-forest areas.

5. In case the same company/individual has taken forest land for similar project in the State, a brief detail of all such approvals/leases be given as an enclosure along with current status of the projects.
6. The latest clarifications issued by the Ministry under Forest (Conservation) Act, 1980 may be kept in mind. In case such information do not fit in the given columns, the same shall be Appendixed separately.

GENERAL INSTRUCTIONS:-

1. On receipt of proposal, Nodal Officer shall issue a receipt to the user agency indicating therein the name of the proposal, user agency, area in hectare, serial number and date of receipt.
2. If the space provided above is not sufficient to specify any information, please attach separate details/documents.
3. While forwarding the proposal to the Central Government, complete details on all aspects of the case as per Form prescribed above read with the clarifications issued by the Ministry of Environment and Forests, Government of India, New Delhi should be given. Incomplete or deficient proposals shall not be considered and shall be returned to the State Government in original.
4. The State Government shall submit the proposal to the Central Government within stipulated time limits. In case of delay while forwarding, the reasons for the same to be given in the forwarding/covering letter.

FORM – 'B'
(See Rule 6)

Form for seeking prior approval under section 2 of the proposals by the State Governments and other authorities in respect of renewal of leases, which have been earlier granted clearance under Forest (Conservation) Act, 1980

PART-I
(to be filled up by user agency)

1. Letter No. & date vide which clearance under Forest (Conservation) Act, 1980 accorded by the Central Government (copy to be enclosed):
2. Project details:
   (i) Short narrative of the proposal and project/scheme for which the forest land is required.
   (ii) Map showing the required forest land, boundary of adjoining forest on a 1:50,000 scale map.
   (iii) Cost of the project:
3. Purpose-wise break-up of the total land required (already broken & to be broken):
4. Details of Certificates/documents enclosed as required under the instructions.

Signature
(Name in Block letters)
Designation
Address (of User Agency)

Date:-_____
Place:-_____

State serial No. of proposal_____
(To be filled up by the Nodal Officer with date of receipt)

PART-II

(To be filled by the concerned Deputy Conservator of Forests)

State serial No. of proposal_____

5. Location of the project/Scheme:
   (i) State/Union Territory
   (ii) District.
   (iii) Forest Division
   (iv) Area of forest land proposed for diversion (in ha.)
   (v) Legal status of forest
   (vi) Density of vegetation.
   (vii) Species-wise (scientific names) and diameter class-wise enumeration of trees in unbroken area.
   (viii) Whether forms part of National Park, wildlife sanctuary, biosphere reserve, tiger reserve, elephant corridor, etc. (If so, the details of the area and comments of the Chief Wildlife Warden to be annexed).
6. Whether any work in violation of the Act has been carried out (Yes/No). If yes, details of the same including period of work done, action taken on erring officials. Whether work in violation is still in progress.
7. Site inspection report of the DCF (to be enclosed) in respect to status of compliance of conditions stipulated during earlier approval.
8. Division/District profile:
   (i) Geographical area of the district.
   (ii) Forest area of the district.
   (iii) Total forest area diverted since 1980 with number of cases.
   (iv) Total compensatory afforestation stipulated in the district/division since 1980 on
      (a) forest land including penal compensatory afforestation,
      (b) non-forest land.
   (v) Progress of compensatory afforestation as on (date) _____ on
      (a) forest land
      (b) non-forest land.
9. Specific recommendations of the DCF for acceptance or otherwise of the proposal with reasons.

Signature
Name
Official Seal

Date:-_____
Place:-_____

PART-III

(To be filled by the concerned Conservator of Forests)

10. Whether site, where the forest land involved is located has been inspected by concerned Conservator of Forests (Yes/No). If yes, the date of inspection & observations made in form of inspection note to be enclosed.
11. Whether the concerned Conservator of Forests agree with the information given in Part-B and the recommendations of Deputy Conservator of Forests.
12. Specific recommendation of concerned Conservator of Forests for acceptance or otherwise of the proposal with detailed reasons.

Signature
Name
Official Seal

Date:-_____
Place:-_____

PART-IV

(To be filled in by the Nodal Officer or Principal Chief Conservator of Forests or Head of Forest department)

13. Detailed opinion and specific recommendation of the State Forest Department for acceptance of otherwise of the proposal with remarks.

(While giving opinion, the adverse comments made by concerned Conservator of Forests or Deputy Conservator of Forests should be categorically reviewed and critically commented upon).

Signature
Name & Designation
(Official Seal)

Date:-_____
Place:-_____

PART- V

(To be filled in by the Secretary in charge of Forest Department or by any other authorised officer of the State Government not below the rank of an Under Secretary)

14. Recommendation of the State Government:
(Adverse comments made by any officer or authority in Part-B or Part-C or Part-D above should be specifically commented upon)

Signature
Name & Designation
(Official Seal)

Date:-_____
Place:-_____

INSTRUCTIONS (for Part-I):-

1. The project authorities may annex a copy of the approved project/plan in addition to filling Col. 2 (i) e.g. IBM approved mining plan for major minerals/CMPDI plan with subsidence analysis reports, etc.
2. Map has to be in original duly authenticated jointly by project authorities and concerned DCF – Col. 2 (ii).

3. In case the same company/individual has taken forest land for similar project in the State, a brief detail of all such approvals/leases be given as an enclosure along with current status of the projects.
4. Item-wise requirement (Col. 3) should be separately shown for broken up and fresh areas.
5. The latest clarifications issued by the Ministry under Forest (Conservation) Act, 1980 may be kept in mind. In case such information do not fit in the given columns, the same shall be annexed separately.

GENERAL INSTRUCTIONS:-

1. On receipt of proposal, Nodal Officer shall issue a receipt to the user agency indicating therein the name of the proposal, user agency, area in hectare, serial number and date of receipt.
2. If the space provided above is not sufficient to specify any information, please attach separate details/documents.
3. While forwarding the proposal to the Central Government, complete details on all aspects of the case as per Form prescribed above read with the clarifications issued by the Ministry of Environment and Forests, Government of India, New Delhi should be given. Incomplete or deficient proposals shall not be considered and shall be returned to the State Government in original.
4. The State Government shall submit the proposal to the Central Government within stipulated time limits. In case of delay while forwarding, the reasons for the same to be given in the forwarding/covering letter.

ANNEX 3

CENTRAL POLLUTION CONTROL BOARD (CPCB)
APPLICABLE ENVIRONMENTAL STANDARDS

Table 1: General Standards for Discharge of Environmental Pollutants Part - A: Effluents

Parameter	Inland surface water	Public sewers	Land for irrigation	Marine/coastal areas
Suspended solids mg/l, max.	100	600	200	(a) For process waste water (b) For cooling water effluent 10 per cent above total suspended matter of influent.
Particle size of suspended solids	shall pass 850 micron IS Sieve	-	-	(a) Floatable solids, solidsmax. 3 mm (b) Settleable solids, max 856 microns
pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
Temperature	shall not exceed 5oC above the receiving water temperature			shall not exceed 5oCabove the receiving water temperature
Oil and grease, mg/l max,	10	20	10	20
Total residual chlorine, mg/l max	1.0	-	-	1.0
Ammonical nitrogen (as N),mg/l, max.	50	50	-	50
Total kjeldahl nitrogen (as N);mg/l, max. mg/l, max.	100	-	-	100
Free ammonia (as NH3), mg/l,max.	5.0	-	-	5.0
Biochemical oxygen demand (3 days at 27oC), mg/l, max.	30	350	100	100
Chemical oxygen demand, mg/l, max.	250	-	-	250
Arsenic(as As).	0.2	0.2	0.2	0.2
Mercury (As Hg), mg/l, max.	0.01	0.01	-	0.01
Lead (as Pb) mg/l, max	0.1	1.0	-	2.0
Cadmium (as Cd) mg/l, max	2.0	1.0	-	2.0
Hexavalent chro-mium (as Cr + 6),mg/l, max.	0.1	2.0	-	1.0
Total chromium (as Cr) mg/l, max.	2.0	2.0	-	2.0
Copper (as Cu)mg/l, max.	3.0	3.0	-	3.0
Zinc (as Zn) mg/l, max.	5.0	15	-	15
Selenium (as Se)	0.05	0.05	-	0.05
Nickel (as Ni) mg/l, max.	3.0	3.0	-	5.0
Cyanide (as CN) mg/l, max.	0.2	2.0	0.2	0.2
Fluoride (as F) mg/l,	2.0	15	-	15

Parameter	Inland surface water	Public sewers	Land for irrigation	Marine/coastal areas
max.				
Dissolved phos-phates (as P),mg/l, max.	5.0	-	-	-
Sulphide (as S) mg/l, max.	2.0	-	-	5.0
Phenolic compounds (as C6H50H)mg/l, max.	1.0	5.0	-	5.0
Radioactive materials: (a) Alpha emitters micro curie mg/l, max. (b)Beta emittersmicro curie mg/l	10^{-7} 10^{-6}	10^{-7} 10^{-6}	10^{-8} 10^{-7}	10^{-7} 10^{-6}
Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
Manganese	2 mg/l	2 mg/l	-	2 mg/l
Iron (as Fe)	3mg/l	3mg/l	-	3mg/l
Vanadium (as V)	0.2mg/l	0.2mg/l	-	0.2mg/l
Nitrate Nitrogen	10 mg/l	-	-	20 mg/l

- These standards shall be applicable for industries, operations or processes other than those industries, operations or process for which standards have been specified in Schedule of the Environment Protection Rules, 1989.

Standards for Diesel Generator Sets: Stack Height

The minimum height of stack to be provided with each generator set can be worked out using the following formula:

H = h+0.2x ÖKVA
H = Total height of stack in metre
h = Height of the building in metres where the generator set is installed
KVA = Total generator capacity of the set in KVA
Based on the above formula the minimum stack height to be provided with different range of generator sets may be categorised as follows:

For Generator Sets	Total Height of stack in metre
50 KVA	Ht. of the building + 1.5 metre
50-100 KVA	Ht. of the building + 2.0 metre
100-150 KVA	Ht. of the building + 2.5 metre
150-200 KVA	Ht. of the building + 3.0 metre
200-250 KVA	Ht. of the building + 3.5 metre
250-300 KVA	Ht. of the building + 3.5 metre

Similarly for higher KVA ratings a stack height can be worked out using the above formula.

PART-E Noise Standards

Noise limits for domestic appliances and construction equipments at the manufacturing stage in dB(A).

Window air conditioners of 1 -1.5 tonne	68
Air coolers	60
Refrigerators	46
Diesel generator for domestic purposes	85
Compactors (rollers), front loaders, concentrate mixers, cranes (movable), vibrators and saws	75

ANNEX 4

MINISTRY OF ENVIRONMENT & FORESTS-

MUNICIPAL SOLID WASTES (MANAGEMENT AND HANDLING) RULES, 2000 - EXCERPTS

These rules shall apply to every municipal authority responsible for collection, segregation, storage, transportation, processing and disposal of municipal solid wastes

Management of Municipal Solid Wastes

S.No	Compliance Criteria
	COLLECTION OF MUNICIPAL SOLID WASTES
1	1. Littering of municipal solid waste shall be prohibited in cities, towns and in urban areas notified by the State Government, To prohibit littering, and facilitate compliance, the following steps shall be taken by the municipal authority, namely
	(i) Organizing house to house collection of municipal solid wastes through any of the methods, like containerized collection, community bin collection (central bin), house to house collection, collection on regular pre-informed timings and scheduling by using ringing of musical vehicle (without exceeding permissible noise levels).
	(ii) Collection of waste from slums and squatter areas of localities including hotels/restaurants/office complexes and commercial areas
	(iii) Wastes from slaughter houses, fruits and vegetable markets, which are biodegradable in nature, shall be managed to make use of such wastes
	(iv) Bio-medical wastes and industrial wastes shall not be mixed with municipal solid wastes and such wastes shall follow the rules separately specified for the purpose
	(v) Collected waste from residential and other areas shall be transferred to community bin by hand-driven containerised Carts.
	(vi) Horticulture and construction/demolition wastes/debris shall be separately collected and disposed off following proper norms. Similarly wastes generated at dairies shall be regulated in accordance with State laws.
	(vii) Waste (garbage, dry leaves) shall not be burnt
	(viii) Stray animals shall not be allowed to move around waste storage facilities or at any other place in city/town and shall be managed as per State Laws.
	2. Municipal authority shall notify waste collection schedule and the likely method to be adopted for public benefit in a city/town.
	3. It shall be the responsibility of generator of wastes to avoid littering and ensure delivery of wastes in accordance with the collection and segregation system to be notified by the municipal authority as per para 1 (2) of this schedule
	SEGREGATION OF MUNICIPAL SOLID WASTES
2	In order to encourage the citizens, municipal authority shall organise awareness programs for segregation of wastes and shall promote recycling or reuse of segregated materials. The Municipal authority shall undertake phased program to ensure community participation in waste segregation. For this purpose, regular meetings at quarterly intervals shall be arranged by the municipal authorities with representatives of local resident welfare associations and non-governmental organizations.
	STORAGE OF MUNICIPAL SOLID WASTES
3	Municipal authorities shall establish and maintain storage facilities in such a manner as they do not create unhygienic/insanitary conditions around it. Following criteria shall be taken into account while establishing and maintaining storage facilities, namely
	(i) storage facilities shall be created/established by taking into account quantities of waste generation in a given area and the pollution densities. A storage facility shall be so placed that it is accessible to users.
	(ii) Storage facilities to be set up the Municipality authorities or any other agency shall be so designed that

S.No	Compliance Criteria
	waste stored shall not be exposed to open atmosphere and shall be aesthetically acceptable and user-friendly
	(iii) Storage facilities or 'bins' shall have 'easy to operate' design for handling, transfer and transportation of waste. Bins for storage of bio-degradable wastes shall be painted green, those of storage of recyclable wastes shall be painted white and those for storage of other wastes shall be painted black
	(iv) Manual handling of waste shall be prohibited. If unavoidable due to constraints, manual handling shall be carried out under proper precaution with due care for safety of workers.
	TRANSPORTATION OF MUNICIPAL SOLID WASTES
4	Vehicles used for transportation of wastes shall be covered. Waste should not be visible to public, nor exposed to open environment preventing their scattering. The following criteria shall be met namely,
	(i)The storage facilities set up by Municipal authorities shall be daily attended for clearing of wastes. The bins or containers wherever placed shall be cleaned before they start overflowing
	(ii) Transportation vehicles shall be so designed that multiple handling of wastes, prior to final disposal, is avoided
	PROCESSING OF MUNICIPAL SOLID WASTES
5	Municipal authorities shall adopt suitable technology or combination of such technologies to make use of wastes so as to minimize burden on landfill. Following criteria shall be adopted, namely
	(i) The biodegradable wastes, shall be processed by composting, vermicomposting, anaerobic digestion or any other appropriate biological processing for stabilization of waste. It shall be ensured that compost or any other end product shall comply with standards as specified in Schedule IV
	(ii) Mixed waste containing recoverable resources shall follow the route of recycling. Incineration with or without energy recovery including pelletisation can also be used for processing wastes in specific cases. Municipal authority or the operator of a facility wishing to use other state-of-the-art technologies shall approach the Central Pollution Control Board to get the standards laid down before applying for grant of authorization.
	DISPOSAL OF MUNICIPAL SOLID WASTES
6	Land filling shall be restricted to non-biodegradable i.e., insert waste and other waste that are not suitable either for recycling or for biological processing. Land filling shall also be carried out for residues of waste processing facilities as well as pre-processing rejects from waste, processing facilities. Land filling of mixed waste shall be avoided unless same is found unsuitable for waste processing. Under unavoidable circumstances or till installation of alternative facilities land-filling shall be done following proper norms. Land filling shall meet the specifications as given in Schedule III.

Specifications for Landfill Sites

Site Selection

1. In areas falling under the jurisdiction of "Development Authorities"; it shall be the responsibility of such Development Authorities to identity the landfill sites and hand over the sites to the concerned municipal authority for development, operation and maintenance. Elsewhere, this responsibility shall lie with the concerned municipal authority.
2. Selection of landfill sites shall be based on examination of environmental issues. The Department of Urban Development of the State or the Union territory shall co-ordinate with the concerned organisations for obtaining the necessary approvals and clearances.
3. The landfill site shall be planned and designed with proper documentation of a phased construction plan as well as a closure plan.
4. The landfill sites shall be selected to make use of nearby wastes processing facility. Otherwise, wastes processing facility shall be planned as an integral part of the landfill site.
5. The existing landfill sites which continue to be used for more than five years, shall be improved in accordance of the specifications given in this Schedule.

6. Biomedical wastes shall be disposed off as per the bio-medical wastes (management and handling) rules, 1998. Hazardous wastes shall be managed as per the Hazardous Wastes (Management and Handling) Rules 1989 as amended from time to time.
7. The landfill site shall be large enough to last for 20-25 years
8. The landsite shall be away from habitation clusters, forest areas, monuments, National parks, wetlands and places of important cultural, historical or religious interest.
9. A buffer zone of no-development be maintained around landfill site and shall be incorporated in the Town Planning Department's land-use plans.
10. Landfill site shall be away from airport including airbase. Necessary approval of airport or airbase authorities prior to the setting up of the landfill site shall be obtained in cases where the site is to be located within 20 km of an airport or airbase.

Facilities at the Site

1. Landfill site shall be fenced/hedged and provided with proper gate to monitor incoming vehicles/ or other modes of transportation.
2. The landfill site shall be well protected to prevent entry of unauthorized persons and stray animals.
3. Approach and other internal roads for free flow of vehicles and other machinery shall exist at the landfill site.
4. The landfill site have wastes inspection facility to monitor wastes brought in for landfill, office facility for record keeping and shelter for keeping equipment and machinery including pollution monitoring equipment.
5. Provisions like weigh bridge to measure quantity of waste brought at landfill site, fire protection equipments and other facilities as may be required, shall be provided
6. Utilities such as drinking water (preferably bathing facilities to workers) and lighting arrangements for easy landfill operations when carried out in night hours, shall be provided.
7. Safety provisions including health inspections of workers at landfill site shall be periodically made.

Specifications for Land filling

1. Wastes subjected to land filling shall be compacted in thin layers using landfill compactors to achieve high density of the wastes. In high rainfall areas where heavy compactors cannot be used alternative measures shall be adopted.
2. Wastes shall be covered immediately or at the end of each working day with minimum 10 cm of soil inert debris in construction materials till such time waste processing facilities for composting or recycling or energy recovery are set up as per Schedule I.
3. Prior to the commencement of monsoon season, an intermediate cover of 4-65 cm thickness of soil shall be placed on the landfill with proper compaction and grading to prevent infiltration during monsoon. Proper drainage berms shall be constructed to divert run-off away from the active cell of the landfill.
4. After completion of landfill, a final cover shall be designed to minimize infiltration and erosion. The final cover shall meet the following specifications, namely;
    a) The final cover shall have a barrier soil layer comprising of 60 cms of clay/amended soil with permeability coefficient less that 1×10^{-7} cm/sec.
    b) On top of the barrier soil layer, there shall be a drainage layer of 15 cm.
    c) On top of the drainage layer, there shall be a vegetative layer of 45 cm to support natural plant growth and to minimize erosion.

Pollution prevention

1. In order to prevent pollution problems from landfill operations, the following provisions shall be made, namely;

a) Diversion of storm water drains to minimize leachate generation and prevent pollution of surface water and also for avoiding flooding and creation of marshy conditions:

b) Construction of a non-permeable lining system at the base and wall of waste disposal area. For landfill receiving residues of waste processing facilities or mixed waste or waste having contamination of hazardous materials (such as aerosols, bleaches, polishes, batteries, waste oils, paint products and pesticides) minimum liner specifications shall be a composite barrier having 1.5 min high density polyethylene (HDPE) geomembrane or equivalent overlying 90 cm of soil (clay/amended soil) having permeability coefficient not greater than 1×10^{-7} cm/sec. The highest level of water table shall be at least 2 meter below the base of clay/amended soil barrier layer.

c) Provision for management of leachates collection and treatment shall be made. The treated leachates shall meet the standards specified in Schedule IV.

d) Prevention of run-off from landfill area entering any stream, river lake or pond.

Water Quality Monitoring

1. Before establishing any landfill site, baseline data of ground water quality in the area shall be collected and kept in record for future reference. The ground water quality within 50 metres of the periphery of landfill site shall be periodically monitored to ensure that the ground water is not contaminated beyond acceptable limit as decided by the Ground Water Board or the State Board or the Committee. Such monitoring shall be carried out to cover different seasons in a year that is, summer monsoon and post-monsoon period.

2. Usage of groundwater in and around landfill sites for any purposes (including drinking and irrigation) is to be considered after ensuring its quality. The following specifications for drinking water quality shall apply for monitoring purpose, namely;

S.No.	Parameters	IS 10500: 1991 Desirable limit (mg/1 except for pH)
1	Arsenic	0.05
2	Cadmium	0.01
3	Chromium	0.05
4	Copper	0.05
5	Cyanide	0.05
6	Lead	0.05
7	Mercury	0.001
8	Nickel	-
9	Nitrate as NO	45.0
10	PH	6.5-8.5
11	Iron	0.3
12	Total hardness (as CaCO3)	300.0
13	Chlorides	250
14	Dissolved solids	500
15	Phenolic compounds ($C_6 H_5 OH$)	0.001
16	Zinc	5.0
17	Sulphate (as SO_4)	200

Ambient Air Quality Monitoring

1. Installation of landfill gas control system including gas collection system shall be made at landfill site to minimize odour generation, prevent off-site migration of gases and to protect vegetation planted on the rehabilitated landfill surface.

2. The concentration of methane gas generated at landfill site shall not exceed 25 per cent of the lower explosive limit (LEL).

3. The landfill gas from the collection facility at a landfill site shall be utilized for either direct thermal applications or power generation, as per viability. Otherwise, landfill gas shall be burnt (flared) and shall not be allowed to directly escape to the atmosphere or for illegal tapping. Passive venting shall be allowed if its utilization or flaring is not possible.

4. Ambient air quality at the landfill site and at the vicinity shall be monitored to meet the following prescribed standards, namely;

S.No	Parameters	Acceptable Levels
(i)	Sulphur dioxide	120 $\mu g/m^3$ (24 hours)
(ii)	Suspended particulate matter	500 $\mu g/m^3$ (24 hours)
(iii)	Methane	Not to exceed 25 per cent of the lower explosive limit (equivalent to 650 $mg/m^{3)}$
(iv)	Ammonia Daily average (Sample duration 24 hrs)	0.4 mg/m^3 (400 $\mu g/m^3$)
(v)	Carbon Monoxide	1 hour average: 2 mg/m^3 8 hour average: 1 mg/m^3

5. The ambient air quality monitoring shall be carried out by the concerned authority as per the following schedule, namely;

a) Six times in a year for cities having population of more than fifty lakhs,
b) Four times in a year for cities having population between ten and fifty lakhs.
c) Two times in a year for town or cities having population between one and ten lakhs.

Plantation at Landfill site

6. A vegetative cover shall be provided over the completed site in accordance with the following specifications, namely;

a) Selection of locally adopted non-edible perennial plants that are resistant to drought and extreme temperatures shall be allowed to grow
b) The plants grown be such that their roots do not penetrate more than 30 cms. This condition shall apply till the landfill is stabilised.
c) Selected plants shall have ability to thrive on low-nutrient soil with minimum nutrient addition
d) Plantation to be made in sufficient density to minimize soil erosion

Closure of Landfill site and post-care

7. The post closure care of landfill site shall be conducted for at least fifteen years and long term monitoring / care plan shall consist of the following, namely;

a) Maintaining the integrity and effectiveness of final cover, making repairs and preventing run-on and run-off from eroding or otherwise damaging the final cover.

b) Monitoring leachate collection system in accordance with the requirement.

c) Monitoring of ground water in accordance with requirements and maintaining ground water quality.

d) Maintaining and operating the landfill gas collection system to meet the standards.

8. Use of closed landfill sites after fifteen years of post-closure monitoring can be considered for human settlement or otherwise. Only after ensuring that gaseous and leachate analysis complied with the laid down standards.

Special provisions for hilly areas

9. Cities and towns located on hills, shall have location-specific methods evolved for final disposal of solid wastes by the municipal authority with the approval of the concerned State Board of the Committee. The Municipal authority shall set up processing facilities for utilization of biodegradable wastes. The inert and non-biodegradable waste shall be used for building roads or filling up of appropriate areas on hills. Because of constraints in finding adequate land in hilly areas, wastes not suitable for road-laying or filling up shall be disposed of in specially designed landfills.

Standards for Composting, Treated Leachates and Incineration

1. The waste processing or disposal facilities shall include composting, incineration, pelletisation, energy recovery or any other facility based on state-of-the-art technology duly approved by the Central Pollution Control Board.

2. In case of engagement of private agency by the municipal authority, a specific agreement between the municipal authority and the private agency shall be made particularly, for supply of solid waste and other relevant terms and conditions.

3. In order to prevent pollution problems from compost plant and other processing facilities, the following shall be complied with, namely;

(i) The incoming wastes at site shall be maintained prior to further processing. To the extent possible, the waste storage area should be covered. If such storage is done in an open area, it shall be provided with impermeable base with facility for collection of leachate and surface water run-off into lined drains leading to a leachate treatment and disposal facility;

(ii) Necessary precautions shall be taken to minimise nuisance of odour, flies, rodents, bird menace and fire hazard;

(iii) In case of breakdown or maintenance of plant, waste intake shall be stopped and arrangements be worked out for diversion of wastes to the landfill site;

(iv) Pre-process and post-process rejects shall be removed from the processing facility on regular basis and shall not be allowed to pile at the site. Recyclables shall be routed through appropriate vendors. The non-recyclables shall be sent for well designed landfill site(s);

(v) In case of compost plant, the windrow area shall be provided with impermeable base. Such a base shall be made of concrete or compacted clay, 50 cm thick, having permeability coefficient less than 10^{-7} cm/sec. The base shall be provided with 1 to 2 percent slope and circled by lined drains for collection of leachate or surface run-off.

(vi) Ambient air quality monitoring shall be regularly carried out particularly for checking odour nuisance at down-wind direction on the boundary of processing plant.

(vii) In order to ensure safe application of compost, the following specifications for compost quality shall be met, namely;

Parameters	**Concentration not to exceed (mg/kg dry basis, except pH value and C/N ratio) ***
Arsenic	10.00
Cadmium	5.00
Chromium	50.00
Copper	300.00
Lead	100.00
Mercury	0.15
Nickel	50.00
Zinc	1000.00
C/N ratio	20-40
PH	5.5-8.5

* Compost (final product) exceeding the above stated concentration limits shall not be used for food crops. However, it may be utilized for purposes other than growing food crops.

4. The disposal of treated leachates shall follow the following standards, namely;

S. No.	**Parameter**	**Standards (Mode of Disposal)**		
		Inland surface water	**Public sewers**	**Land disposal**
1	Suspended solids, mg/1, Max	100	600	200
2	Dissolved solids (inorganic) mg/1, max	2100	2100	2100
3	PH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
4	Ammonical nitrogen (as N), mg/1, max	50	50	-
5	Total Kjeldahl nitorgen (as N), mg/1, max	100	-	-
6	Biochemical oxygen demand (3 days at 27° C) Max (mg/1)	30	350	100
7	Chemical oxygen demand, mg/1 max	250	-	-
8	Arsenic (as As), mg/1 max	0.2	0.2	0.2
9	Mercury (as Hg) mg/1, max	0.01	0.01	
10	Lead (as Pb), mg/1, max	0.1	1.0	
11	Cadmium (as Cd) mg/1 max	2.0	1.0	

12	Total chromium (as Cr), mg/1, max	2.0	2.0	
13	Copper (as Cu) mg/1, max	3.0	3.0	
14	Zinc A(as Zn) mg/1, max	5.0	15	
15	Nickel (as Ni) mg/1, max	3.0	3.0	
16	Cyanide (as CN) mg/1, max	0.2	2.0	0.2
17	Chloride (as Cl) mg/1, max	1000	1000	600
18	Fluoride (as F), mg/1, max	2.0	1.5	-
19	Phenolic compounds (as C_6H_5OH) mg/1, max	1.0	5.0	-

Note: While discharging treated leachates into inland surface waters, quantity of leachates being discharged and the quantity of leachates being discharged and the quantity of dilution water available in the receiving water body shall be given due consideration.

ANNEX 5:

RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST

WATER SUPPLY

Instructions:

- ❑ This checklist is to be prepared to support the environmental classification of a project.
- ❑ This checklist is to be completed by PMU (or its consultants) of UUSDP
- ❑ This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- ❑ Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening questions	Yes	No	Remarks
A. Project siting Is the project area…			
• Densely populated?			
• Heavy with development activities?			
Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
B. Potential environmental impacts Will the project cause…			
• Pollution of raw water supply from upstream wastewater discharge from communities, industries, agriculture, and soil erosion runoff?			
• Impairment of historical/cultural monuments/areas and loss/damage to these sites?			
• Hazard of land subsidence caused by excessive ground water pumping?			
• Social conflicts arising from displacement of communities?			
• Conflicts in abstraction of raw water for water supply with other beneficial water uses for surface and ground waters?			
• Unsatisfactory raw water supply (e.g. Excessive pathogens or mineral constituents)?			
• Delivery of unsafe water to distribution system?			
• Inadequate protection of intake works or wells, leading to pollution of water supply?			
• Over pumping of ground water, leading to salinization			

Screening questions	Yes	No	Remarks
and ground subsidence?			
• Excessive algal growth in storage reservoir?			
• Increase in production of sewage beyond capabilities of community facilities?			
• Inadequate disposal of sludge from water treatment plants?			
• Inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances and protect facilities?			
• Impairments associated with transmission lines and access roads?			
• Health hazards arising from inadequate design of facilities for receiving, storing, and handling of chlorine and other hazardous chemicals.			
• Health and safety hazards to workers from handling and management of chlorine used for disinfection, other contaminants, and biological and physical hazards during project construction and operation?			
• Dislocation or involuntary resettlement of people?			
• Disproportionate impacts on the poor, women and children, indigenous peoples or other vulnerable groups?			
• Noise and dust from construction activities?			
• Increased road traffic due to interference of construction activities?			
• Continuing soil erosion/silt runoff from construction operations?			
• Delivery of unsafe water due to poor o&m treatment processes (especially mud accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
• Delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals?			
• Accidental leakage of chlorine gas?			
• Excessive abstraction of water affecting downstream water users?			
• Competing uses of water?			
• Increased sewage flow due to increased water supply			
• Increased volume of sullage (wastewater from cooking and washing) and sludge from wastewater treatment plant			
• Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
• Social conflicts if workers from other regions or countries are hired?			
• Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			
• Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and			

Screening questions	Yes	No	Remarks
decommissioning?			

Climate Change and Disaster Risk Questions The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.	Yes	No	Remarks
• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes (see Appendix I)?			
• Could changes in temperature, precipitation, or extreme events patterns over the Project lifespan affect technical or financial sustainability (e.g., changes in rainfall patterns disrupt reliability of water supply; sea level rise creates salinity intrusion into proposed water supply source)?			
• Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g.,high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)?			
• Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., by using water from a vulnerable source that is relied upon by many user groups, or encouraging settlement in earthquake zones)?			
* Hazards are potentially damaging physical events.			

Environment	Natural Hazards and Climate Change	Example Impact on Water Supply
Arid/Semi-arid and desert environments	Low erratic rainfall of up to 500 mm rainfall per annum with periodic droughts and high rainfall variability. Low vegetative cover. Resilient ecosystems & complex pastoral and systems, but medium certainty that 10–20% of drylands degraded; 10-30% projected decrease in water availability in next 40 years; projected increase in drought duration and severity under climate change. Increased mobilization of sand dunes and other soils as vegetation cover declines; likely overall decrease in agricultural productivity, with rain-fed agriculture yield reduced by 30% or more by 2020. Earthquakes and other geophysical hazards may also occur in these environments.	Reduced availability of water due to reduced precipitation, increased temperatures, increased water demand and evaporation
Humid and sub-humid plains, foothills and hill country	More than 500 mm precipitation/yr. Resilient ecosystems & complex human pastoral and cropping systems. 10-30% projected decrease in water availability in next 40 years; projected increase in droughts, heatwaves and floods; increased erosion of loess-mantled landscapes by wind and water; increased gully erosion; landslides likely on steeper slopes. Likely overall decrease in agricultural productivity & compromised food production from variability, with rain-fed agriculture yield reduced by 30% or more by 2020. Increased incidence of forest and agriculture-based insect infestations. Earthquakes and other geophysical hazards may also occur in these environments.	Increased landslides and mudflows disrupt water supply networks, water seepage into storage tanks during floods, increased sedimentation and runoff reduce storage capacity and increase maintenance costs
River valleys/deltas and	River basins, deltas and estuaries in low-lying areas are vulnerable to riverine floods, storm surges associated with	Increased salinity of ground and surface water supplied caused in

Environment	Natural Hazards and Climate Change	Example Impact on Water Supply
estuaries and other low-lying coastal areas	tropical cyclones/typhoons and sea level rise; natural (and human-induced) subsidence resulting from sediment compaction and ground water extraction; liquefaction of soft sediments as result of earthquake ground shaking. Tsunami possible/likely on some coasts. Lowland agri-business and subsistence farming in these regions at significant risk.	part by salt water intrusion, contamination of water supplies, physical damage to infrastructure caused by earthquakes
Small islands	Small islands generally have land areas of less than 10,000km2 in area, though Papua New Guinea and Timor with much larger land areas are commonly included in lists of small island developing states. Low-lying islands are especially vulnerable to storm surge, tsunami and sea-level rise and, frequently, coastal erosion, with coral reefs threatened by ocean warming in some areas. Sea level rise is likely to threaten the limited ground water resources. High islands often experience high rainfall intensities, frequent landslides and tectonic environments in which landslides and earthquakes are not uncommon with (occasional) volcanic eruptions. Small islands may have low adaptive capacity and high adaptation costs relative to GDP.	Same as above
Mountain ecosystems	Accelerated glacial melting, rockfalls/landslides and glacial lake outburst floods, leading to increased debris flows, river bank erosion and floods and more extensive outwash plains and, possibly, more frequent wind erosion in intermontane valleys. Enhanced snow melt and fluctuating stream flows may produce seasonal floods and droughts. Melting of permafrost in some environments. Faunal and floral species migration. Earthquakes, landslides and other geophysical hazards may also occur in these environments.	Erratic water supply caused by glacial melting, loss of infrastructure investment resulting from rockfalls
Volcanic environments	Recently active volcanoes (erupted in last 10,000 years – see WWW.VOLCANO.SI.EDU). Often fertile soils with intensive agriculture and landslides on steep slopes. Subject to earthquakes and volcanic eruptions including pyroclastic flows and mudflows/lahars and/or gas emissions and occasionally widespread ashfall.	Damage and loss of infrastructure, insecurity for local communities and settlements.

RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST

SEWAGE TREATMENT

Instructions:

- ❑ This checklist is to be prepared to support the environmental classification of a project.
- ❑ This checklist is to be completed by PMU (or its consultants) of UUSDP
- ❑ This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- ❑ Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area…			
• Densely populated?			
• Heavy with development activities?			
Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
B. Potential Environmental Impacts Will the Project cause…			
• impairment of historical/cultural monuments/areas and loss/damage to these sites?			
• interference with other utilities and blocking of access to buildings; nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.?			
• dislocation or involuntary resettlement of people?			
• disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
• impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?			
• overflows and flooding of neighboring properties with raw sewage?			
• environmental pollution due to inadequate sludge disposal or industrial waste discharges illegally disposed in sewers?			

• noise and vibration due to blasting and other civil works?			
• Risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?			
• discharge of hazardous materials into sewers, resulting in damage to sewer system and danger to workers?			
• inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances, and protect facilities?			
• road blocking and temporary flooding due to land excavation during the rainy season?			
• noise and dust from construction activities?			
• traffic disturbances due to construction material transport and wastes?			
• temporary silt runoff due to construction?			
• hazards to public health due to overflow flooding, and groundwater pollution due to failure of sewerage system?			
• deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water?			
• contamination of surface and ground waters due to sludge disposal on land?			
• health and safety hazards to workers from toxic gases and hazardous materials which maybe contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?			
• large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?			
• social conflicts between construction workers from other areas and community workers?			
• risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
• community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Climate Change and Disaster Risk Questions The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes (see Appendix I)?			
• Could changes in precipitation, temperature, salinity, or extreme events over the Project lifespan affect its sustainability or cost?			

• Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g. high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)?			
• Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., increasing traffic or housing in areas that will be more prone to flooding, by encouraging settlement in earthquake zones)?			

Environment	Natural Hazards and Climate Change	Example Impact on Water Supply
Arid/Semi-arid and desert environments	Low erratic rainfall of up to 500 mm rainfall per annum with periodic droughts and high rainfall variability. Low vegetative cover. Resilient ecosystems & complex pastoral and systems, but medium certainty that 10–20% of drylands degraded; 10-30% projected decrease in water availability in next 40 years; projected increase in drought duration and severity under climate change. Increased mobilization of sand dunes and other soils as vegetation cover declines; likely overall decrease in agricultural productivity, with rain-fed agriculture yield reduced by 30% or more by 2020. Earthquakes and other geophysical hazards may also occur in these environments.	Reduced availability of water due to reduced precipitation, increased temperatures, increased water demand and evaporation
Humid and sub-humid plains, foothills and hill country	More than 500 mm precipitation/yr. Resilient ecosystems & complex human pastoral and cropping systems. 10-30% projected decrease in water availability in next 40 years; projected increase in droughts, heatwaves and floods; increased erosion of loess-mantled landscapes by wind and water; increased gully erosion; landslides likely on steeper slopes. Likely overall decrease in agricultural productivity & compromised food production from variability, with rain-fed agriculture yield reduced by 30% or more by 2020. Increased incidence of forest and agriculture-based insect infestations. Earthquakes and other geophysical hazards may also occur in these environments.	Increased landslides and mudflows disrupt water supply networks, water seepage into storage tanks during floods, increased sedimentation and runoff reduce storage capacity and increase maintenance costs
River valleys/deltas and estuaries and other low-lying coastal areas	River basins, deltas and estuaries in low-lying areas are vulnerable to riverine floods, storm surges associated with tropical cyclones/typhoons and sea level rise; natural (and human-induced) subsidence resulting from sediment compaction and ground water extraction; liquefaction of soft sediments as result of earthquake ground shaking. Tsunami possible/likely on some coasts. Lowland agri-business and subsistence farming in these regions at significant risk.	Increased salinity of ground and surface water supplied caused in part by salt water intrusion, contamination of water supplies, physical damage to infrastructure caused by earthquakes
Small islands	Small islands generally have land areas of less than 10,000km2 in area, though Papua New Guinea and Timor with much larger land areas are commonly included in lists of small island developing states. Low-lying islands are especially vulnerable to storm surge, tsunami and sea-level rise and, frequently, coastal erosion, with coral reefs threatened by ocean warming in some areas. Sea level rise is likely to threaten the limited ground water resources. High islands often experience high rainfall intensities, frequent landslides and tectonic environments in which	Same as above

Environment	Natural Hazards and Climate Change	Example Impact on Water Supply
	landslides and earthquakes are not uncommon with (occasional) volcanic eruptions. Small islands may have low adaptive capacity and high adaptation costs relative to GDP.	
Mountain ecosystems	Accelerated glacial melting, rockfalls/landslides and glacial lake outburst floods, leading to increased debris flows, river bank erosion and floods and more extensive outwash plains and, possibly, more frequent wind erosion in intermontane valleys. Enhanced snow melt and fluctuating stream flows may produce seasonal floods and droughts. Melting of permafrost in some environments. Faunal and floral species migration. Earthquakes, landslides and other geophysical hazards may also occur in these environments.	Erratic water supply caused by glacial melting, loss of infrastructure investment resulting from rockfalls
Volcanic environments	Recently active volcanoes (erupted in last 10,000 years – see WWW.VOLCANO.SI.EDU). Often fertile soils with intensive agriculture and landslides on steep slopes. Subject to earthquakes and volcanic eruptions including pyroclastic flows and mudflows/lahars and/or gas emissions and occasionally widespread ashfall.	Damage and loss of infrastructure, insecurity for local communities and settlements.

RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST

SOLID WASTE MANAGEMENT

Instructions:

- ❑ This checklist is to be prepared to support the environmental classification of a project.
- ❑ This checklist is to be completed by PMU (or its consultants) of UUSDP
- ❑ This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- ❑ Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening questions	Yes	No	Remarks
A. Project siting Is the project area…			
• Densely populated?			
• Heavy with development activities?			
Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
B. Potential environmental impacts Will the project cause…			
• Impacts associated with transport of wastes to the disposal site or treatment facility			
• Impairment of historical/cultural monuments/areas and loss/damage to these sites?			
• Degradation of aesthetic and property value loss?			
• Nuisance to neighboring areas due to foul odor and influx of insects, rodents, etc.?			
• Dislocation or involuntary resettlement of people?			
• Disproportionate impacts on the poor, women and children, indigenous peoples or other vulnerable groups?			
• Risks and vulnerabilities related occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
• Public health hazards from odor, smoke from fire, and diseases transmitted by flies, insects, birds and rats?			
• Deterioration of water quality as a result of contamination of receiving waters by leacheate from land disposal system?			

Screening questions	Yes	No	Remarks
• Contamination of ground and/or surface water by leach ate from land disposal system?			
• Land use conflicts?			
• Pollution of surface and ground water from leach ate coming form sanitary landfill sites or methane gas produced from decomposition of solid wastes in the absence of air, which could enter the aquifer or escape through soil fissures at places far from the landfill site?			
• Inadequate buffer zone around landfill site to alleviate nuisances?			
• Road blocking and/or increased traffic during construction of facilities?			
• Noise and dust from construction activities?			
• Temporary silt runoff due to construction?			
• Hazards to public health due to inadequate management of landfill site caused by inadequate institutional and financial capabilities for the management of the landfill operation?			
• Emission of potentially toxic volatile organics from land disposal site?			
• Surface and ground water pollution from leach ate and methane gas migration?			
• Loss of deep-rooted vegetation (e.g. Tress) from landfill gas?			
• Explosion of toxic response from accumulated landfill gas in buildings?			
• Contamination of air quality from incineration?			
• Public health hazards from odor, smoke from fire, and diseases transmitted by flies, rodents, insects and birds, etc.?			
• Health and safety hazards to workers from toxic gases and hazardous materials in the site?			
• Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
• Social conflicts if workers from other regions or countries are hired?			
• Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
• Community safety risks due to both accidental and natural hazards, especially where the structural elements or components (e.g., landfill or incinerator) of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Climate Change and Disaster Risk Questions The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes (see Appendix I)?			

• Could changes in precipitation, temperature, salinity, or extreme events over the Project lifespan affect its sustainability or cost?			
• Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g. high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)?			
• Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., increasing traffic or housing in areas that will be more prone to flooding, by encouraging settlement in earthquake zones)?			

Environment	Natural Hazards and Climate Change	Example Impact on Water Supply
Arid/Semi-arid and desert environments	Low erratic rainfall of up to 500 mm rainfall per annum with periodic droughts and high rainfall variability. Low vegetative cover. Resilient ecosystems & complex pastoral and systems, but medium certainty that 10–20% of drylands degraded; 10-30% projected decrease in water availability in next 40 years; projected increase in drought duration and severity under climate change. Increased mobilization of sand dunes and other soils as vegetation cover declines; likely overall decrease in agricultural productivity, with rain-fed agriculture yield reduced by 30% or more by 2020. Earthquakes and other geophysical hazards may also occur in these environments.	Reduced availability of water due to reduced precipitation, increased temperatures, increased water demand and evaporation
Humid and sub-humid plains, foothills and hill country	More than 500 mm precipitation/yr. Resilient ecosystems & complex human pastoral and cropping systems. 10-30% projected decrease in water availability in next 40 years; projected increase in droughts, heatwaves and floods; increased erosion of loess-mantled landscapes by wind and water; increased gully erosion; landslides likely on steeper slopes. Likely overall decrease in agricultural productivity & compromised food production from variability, with rain-fed agriculture yield reduced by 30% or more by 2020. Increased incidence of forest and agriculture-based insect infestations. Earthquakes and other geophysical hazards may also occur in these environments.	Increased landslides and mudflows disrupt water supply networks, water seepage into storage tanks during floods, increased sedimentation and runoff reduce storage capacity and increase maintenance costs
River valleys/deltas and estuaries and other low-lying coastal areas	River basins, deltas and estuaries in low-lying areas are vulnerable to riverine floods, storm surges associated with tropical cyclones/typhoons and sea level rise; natural (and human-induced) subsidence resulting from sediment compaction and ground water extraction; liquefaction of soft sediments as result of earthquake ground shaking. Tsunami possible/likely on some coasts. Lowland agri-business and subsistence farming in these regions at significant risk.	Increased salinity of ground and surface water supplied caused in part by salt water intrusion, contamination of water supplies, physical damage to infrastructure caused by earthquakes
Small islands	Small islands generally have land areas of less than 10,000km2 in area, though Papua New Guinea and Timor with much larger land areas are commonly included in lists of small island developing states. Low-lying islands are especially vulnerable to storm surge, tsunami and sea-level rise and, frequently, coastal erosion, with coral reefs threatened by ocean warming in some areas. Sea level rise	Same as above

Environment	Natural Hazards and Climate Change	Example Impact on Water Supply
	is likely to threaten the limited ground water resources. High islands often experience high rainfall intensities, frequent landslides and tectonic environments in which landslides and earthquakes are not uncommon with (occasional) volcanic eruptions. Small islands may have low adaptive capacity and high adaptation costs relative to GDP.	
Mountain ecosystems	Accelerated glacial melting, rockfalls/landslides and glacial lake outburst floods, leading to increased debris flows, river bank erosion and floods and more extensive outwash plains and, possibly, more frequent wind erosion in intermontane valleys. Enhanced snow melt and fluctuating stream flows may produce seasonal floods and droughts. Melting of permafrost in some environments. Faunal and floral species migration. Earthquakes, landslides and other geophysical hazards may also occur in these environments.	Erratic water supply caused by glacial melting, loss of infrastructure investment resulting from rockfalls
Volcanic environments	Recently active volcanoes (erupted in last 10,000 years – see WWW.VOLCANO.SI.EDU). Often fertile soils with intensive agriculture and landslides on steep slopes. Subject to earthquakes and volcanic eruptions including pyroclastic flows and mudflows/lahars and/or gas emissions and occasionally widespread ashfall.	Damage and loss of infrastructure, insecurity for local communities and settlements.

ANNEX 6

CONTENT AND FORMAT OF ENVIRONMENTAL ASSESSMENT DOCUMENTS

I. Introduction

1. EIA is an important tool for incorporating environmental concerns at the project level. EIA should be carried out as early as the project planning stage as part of feasibility thus it can assure that the project will be environmentally feasible. The general objectives of the EIA study are to provide;

(i) baseline information about the environmental, social, and economic conditions in the project area;

(ii) information on potential impacts of the project and the characteristic of the impacts, magnitude, distribution, who will be the affected group, and their duration;

(iii) information on potential mitigation measures to minimize the impact including mitigation costs;

(iv) to assess the best alternative project at most benefits and least costs in terms of financial, social, and environment. In addition to alternative location of the project, project design or project management may also be considered; and

(v) basic information for formulating environmental management plan.

2. EIA requires an in-depth analysis because of the potential significance of environmental impacts from the project. EIAs demand: (i) comprehensive analysis of the potential impacts; (ii) works to be carried out to formulate practical mitigation measures; (iii) in-depth economic valuation of impact to screen and evaluate the best alternative; and (vi) in-depth analysis to prepare an adequate environmental management plan.

3. EIA reports should be presented in certain way to meet the requirements of ADB and the DMC. However, wherever possible, ADB requests that the Borrower follow ADB-prescribed format for EIA. This is to ensure that environmental assessment results are presented in a clear and concise fashion to contribute most effectively to decision-making. However, if several other financial institutions fund the proposed Project in the form of co-financing modality, it is necessary for ADB to come up with an agreement with those institutions on EIA reporting requirement. In this context, it is necessary to ensure that the content of the EIA reports cover all issues required by ADB.

4. An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report contains the following major elements, and an IEE may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

a. Executive Summary

5. This section describes concisely the critical facts, significant findings, and recommended actions.

b. Policy, Legal, and Administrative Framework

6. This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

c. Description of the Project

7. This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

d. Description of the Environment (Baseline Data)

8. This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

e. Anticipated Environmental Impacts and Mitigation Measures

9. This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2 of ADB Safeguard Policy, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

f. Analysis of Alternatives

10. This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

g. Information Disclosure, Consultation, and Participation

11. This section:

(i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;

(ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
(iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

h. Grievance Redress Mechanism

12. This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

i. Environmental Management Plan

13. This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

(i) Mitigation:
(a) identifies and summarizes anticipated significant adverse environmental impacts and risks;
(b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
(c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.
(ii) Monitoring:
(a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and
(b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.
(iii) Implementation arrangements:
(a) specifies the implementation schedule showing phasing and coordination with overall project implementation;
(b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and

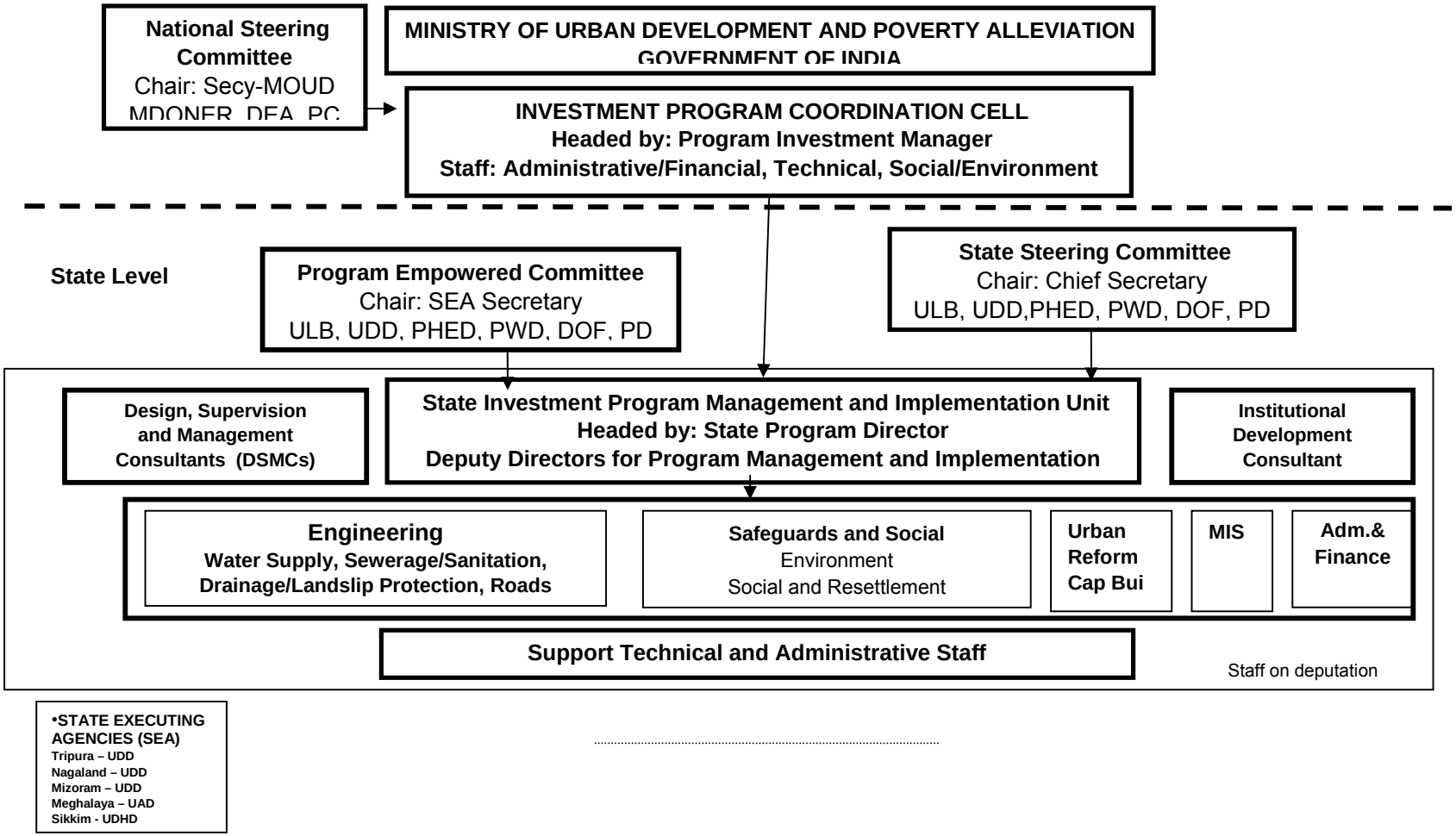
(c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

j. Conclusion and Recommendation

14. This section provides the conclusions drawn from the assessment and provides recommendations.

ANNEX 8: INVESTMENT PROGRAM ORGANISATION CHART



MoDONER = Ministry for Development of North Eastern Region, Secy = Secretary, MoUD&PA = Ministry of Urban Development and Poverty Alleviation, DEA = Department of Economic Affairs, PC = Planning Commission, C&S = Commissioner & Secretary, UDD = Urban Development Department, UAD =Urban Affairs Department, LAD = Local Administration Department, UDHD = Urban Development and Housing Department, FA = Financial Advisor, Comm = Commissioner, PHED = Public Health Engineering Department, PWD = Public Works Department, PD = Program Director, RR = Resettlement and Rehabilitation,

ANNEX 9

APPLICABLE ENVIRONMENTAL ACTS/POLICIES/REGULATIONS OF GOI AND THE STATES

GOVERNMENT OF TRIPURA

The Tripura Municipal Act, 1994

1. In pursuance of the 74th (Constitution Amendment) Act, 1992, the Government enacted the Tripura Municipal Act in 1994. The Act is comprehensive and covers three levels of ULB's, the Nagar Panchayat, the Municipality and the Corporation. Following are the salient features of the act that defines and regulates all civic services, amenities and facilities within the domain of the Agartala Municipal Corporation (AMC).

Water Supply

(i) Water supply to the municipal area: Municipality either itself or through any agency (including a government department) shall supply water for the use of the inhabitant.

(ii) Vesting of Public Work: All public tanks, reservoirs, cistern, well, tubewells, aqueducts, conduits, tunnels, pipes, tapes and other water works that are either made or laid or created form the Municipal funds shall be vested with Municipality.

(iii) Right of underground water: All rights over the sub-soil water resources within the municipal area shall be vested with the municipality.

(iv) Construction of water works: Municipality within the municipal area if necessary in collaboration with or through other local bodies or agencies undertake construction of water works and operate, manage or maintain any water works intended to serve the inhabitants of the municipal area. Where as for the water works outside municipal limits, approval from the state government shall be required.

(v) Laying of pipes or channel: For the purpose of carrying out or maintaining water supply system, municipality may lay or carry pipe or channels across, under or over any street or public place only after giving atleast one month notice to the owner within the municipal area.

(vi) No building or private street, digging of well, tube well, pond and cistern or fountain shall be constructed without any written permission from the Municipality.

Drainage and Sewerage

(i) The act directs the municipality to provide and maintain drainage and sewerage system with safe and sufficient out fall in or outside the municipal area.

(ii) No owner or occupier shall entitled to cause his drain water to empty into the municipal drains until and unless written permission f the municipality.

(iii) No person shall encroach upon drainage and sewerage system in the municipal area. Municipality may give consent for the purpose of securing access to any abutting land or building.

Solid Waste

(i) The act has given municipality, the responsibility for securing efficient scavenging and clearing of all streets, public places and premises within a Municipal Area.

(ii) The act directs the municipality to provide temporary bin / receptacles at proper and convenient location for temporary deposits of rubbish, matter, trade refuse, carcasses of dead animals and polluted matter. The act also directs the municipality to remove waste from all receptacles and bin regularly.

(iii) For the purpose of receiving storing, treating, processing and disposing solid waste or converting such waste into compost, municipality may construct, acquire, operate, maintain, develop and manage any work within or outside the municipal area.

(iv) The act prohibits throwing / dumping of any waste upon or along any public street, public place land belonging to the municipality or on any land on the bank of water course.

Public Safety and Nuisance

(i) The act directs municipality to fence off, take down, secure or repair any structure deemed by the municipality to be in ruinous state and dangerous to the passer-by or to owner or occupiers. This shall be undertaken by serving the notice to the owner or occupiers specifying the time frame.

(ii) Municipality may be by notice to owner can or cut down any tree or any branches of a tree that is likely to fall thereby endangering any person or structure.

(iii) To prevent breeding of mosquitoes or any nuisance within the municipal area, municipality may direct the owner or the person having control to take measures as directed by the municipality.

Guidelines for Tree Felling from Non-forest Areas issued in compliance of Supreme Court order, dated 12th May 2001.

2. The guideline regulates the plantation and felling of trees from non-forest areas. Following are the salient features of the act in reference to the project:

(i) Registration of tree plantation: The guideline directs the registration of tree plantation raised in non-forest areas by an individual, community or institutions or non-governmental organization. Registration shall be done with the Divisional Forest Officers (DFO) in the manner prescribe by the Principal Chief Conservator of Forests. The DFO shall issue the registration certificate to the applicant within 90 days of the receipt of complete application.

(ii) Trees species not requiring felling permission: The tree species such as Aam (Mangifera indica), Jamun (Syzygium cumini), Kothal (Artocarpus integrifolia), all species of bamboo, leteku, paniol and madhuriam will not require any permission for felling if they are felled from non-forest area.

(iii) Felling of Tree: No tree shall be felled without the written permission from the divisional forest officer on the Performa prescribed by the Principal Chief Conservator of Forest (PCCF). The Performa shall contain details of species, number of trees to be felled, girth and copy of the registration certificate.

(iv) Permission for felling trees: The permission or refusal shall be granted by the Divisional Forest Officer (DFO) not later than 30 days from the date of receipt of application. In case of felling trees from registered plantation, permission or refusal shall be given not later than 60 days from the date of receipt of application.

(v) Removal of Felled Trees: No felled trees/timber shall be removed from the felling site without Transit Pass issued by Forest Department unless and until exempted under the relevant act / rule / regulations.

GOVERNMENT OF MIZORAM

The Mizoram Forest Act, 1955

3. The act provides the legal framework for the management of forest in the state of Mizoram, which are not reserved forest. Following are the salient features of the act in reference to the project:

(i) **Reserved Trees:** The act specifies certain species of the trees that shall be treated as reserved trees. Such trees shall not be cut, felled, tapped or injured in any manner without permission in writing by the state government. No permission shall be given to cut the reserve trees whose girth are less than six feet, except reserve tree Hageswar (Herhse) whose girth limit is five feet. Further the act prohibits any contamination or poisoning of water body, quarrying of stones, burning of lime or charcoal or removal of forest produce.

(ii) **Town Forest Reserve:** Under the act, the Government by notification in the Mizoram Gazette constitutes any forest, which is not government reserve forest into 'town forest reserve'. No tree shall be felled, cut or tapped without permission in writing, which will be subjected to such condition imposed by the state government.

(iii) **Village Forest Reserves:** The state government constitutes any forest, which is not reserved forest into village forest for the benefit of any village community or group of village communities. The act classified these village forest reserves into three classes:

(iv) **Village safety reserves:** This reserve shall be constituted in the interest of health and water supply. No one shall utilize this reserve for any purpose; no tree shall be cut except with the permission of the state government. The village council may dispose of any dead trees in the manner it considers most beneficial for the village.

(v) **Village supply reserve**: This reserve is constituted to fulfill the needs and supply of the village. Any person residing in the village may cut the tree and bamboos for his household needs.

(vi) **Protected forest reserves**: For the protection of valuable forest from destruction for the interest of the village communities. No one shall utilize any land wholly or

partly for any purpose and shall not cut any tree except with the permission of the state government.

(vii) **Jhuming in Government Forest:** The right to Jhuming or any shifting cultivation in the unclassed government forest is subjected to any regulation, rules or order made or prescribed by a village council or any body granted powers similar to a village council by the Government of Mizoram. No Jhuming shall be permitted within one hundred feet on either side of all government roads, except with the written permission of the Deputy Commissioner in consultation with chief minister or the State Government.

(viii) **Wet Cultivation:** No wet cultivation shall be opened in the district except under a pass granted by the state government. In granting such pass, the state government shall take into consideration the recommendation of the village council.

(ix) **Forest Villages:** For forming and maintaining plantation and taungyas, the government may establish forest village within the limits of any reserved forest selected by the state government. Jhum in such forest shall be allowed only to the forest villagers provided that at least 12 bigas of Jhum land will be made available annually for each resident household. Building material and fuels will be given to the villagers free of charge but they will be liable to render ten days free labour in the first instance and another ten days if called upon and in next instance at a rate of wages to be fixed by the forest officer. The sub-letting of land by a forest villager is not permissible

The Mizoram Urban and Regional Development Rules, 1955

4. The rule provides regulations for planned growth and development in all notified planning areas, town areas and urban areas or region in relation to economic growth, protection, preservation and development of natural setting, urban environment, archeological monuments and historical places within Mizoram. Following are the salient features of the rule in reference to the project:

(i) Planning Permits: No person shall develop or redevelop or erect or re-erect any parcel of land within development planning area of region without obtaining a planning permit from planning authority. Whereas construction of railways, national highways, aerodromes or airways, telecommunication, regional electricity grid or any other service which is essential to the life of the community are being exempted from the purview of these rules.

(ii) The rule prohibits construction of ash pit, refuse pit, borehole latrines within 15 cm upwards from the earth or closet, or privy from the natural water points or spring from which water is used for human consumption or domestic purpose.

(iii) No dwelling house shall be constructed unless adequate drainage facility is provided as directed by the planning authority.

(iv) A subsoil dispersion system such as soak pit or septic tank shall not be closer than 18 meters from any source of drinking water.

(v) Considerations for septic tank: Septic tank must have minimum width of 75 cm, minimum depth of 1 meter below water level and a minimum liquid capacity of one cubic meter and the length of tank shall be two or four times the width.

(vi) The rule strictly prohibits the release of any effluent into an open channel drain or body of water without adequate anaerobic treatment.

GOVERNMENT OF SIKKIM

Sikkim Forest, Water Courses and Road Reserve (Preservation and Protection) Act, 1988

5. The preamble of the said act focuses on declaration and conservation of forest, khasmal and gorucharan land and protection of riverbank, slip areas within the state. The act is divided into ten chapters. Following chapters are relevant to the project:

(i) Chapter I Preliminary: The chapter defines the relevant 'Amenities' such as cattle, forest, forest land, forest officers, forest offence, forest produce, government, gorucharan forest, khasmal forest, reserve forest, rivers, timber, trees and waste land.

(ii) Chapter II Reserve Forest: The chapter defines the process of declaration and conservation of reserve forest. The salient features of the chapter are:

(iii) The government can declare any land as reserved forest by issuing the notification specifying the location, situation and limits of such land and by appointing the Forest Settlement Officer.

(iv) No right shall be acquired in over the land comprised in notified boundaries of reserve forest except by succession or under a grant or contract in writing made or entered into or by or on behalf of the Government or some person in whom such right was vested when the notification of declaring reserve forest was issued.

(v) Activities are prohibited in reserve forest areas:

(vi) Conversion of reserve forest or part to any uses other than forestry.

(vii) Leasing of forest areas to private parties for raising captive plantation or food crops.

(viii) Felling of trees or cutting or dragging of timber.

(ix) Damage, alteration or removal of any cairn, wall, ditches, embankment, fence, hedge or railing shall.

(x) Chapter III Khasmal and Gorucharan: The chapter defines the Khasmal and Gorucharan land. Following are the guidelines lay down in order to conserve areas:

(xi) Restricts any clearing or conversion or khasmal or gorucharan forest or part of forest to any use other than forestry.

(xii) Permission shall be obtained from forest officer not below the rank of Range Officer for clearing or conversion of such land.

(xiii) Payment (Payment equivalent to bustiwalla rate of the timber volume) shall be made against permission to cut tree or to collect or remove timder or other forest produce.

(xiv) Chapter IV Protection of River Bank, Slip Reserve, Road Reserve: The chapter defines the following amenities:

(xv) River Bank includes, an area of sixty meters on either side of such river or area within high flood level mark, whichever is less.

(xvi) Slip Reserve all land, denuded areas which are in process or required to be conserve / preserve for stabilization.

(xvii) Road Reserve: These are the lands lying within prescribed distance from the centerline of either national highways or state highway or any other road. If these were forest constituted under the act then these reserves shall be under the administrative control of Forest Department. Any encroachment into such road reserves shall be evicted incompliance with Sikkim Public Premises (Eviction of Unauthorised Occupants and Rent Recovery) Act, 1980.

(xviii) Chapter V Control and Management of Private Forest: Without the prior permission of the forest officer, no owner of the any forest and no person claiming under him shall cut or griddle trees or do any act to denude the forest or diminish its utility as a forest.

(xix) Chapter IX Penalties and Procedures: The Deputy Conservator of Forest can disposed off any building or other construction erected without the prior approval from the forest officer.

Sikkim Private and Other Non-Forest Lands Tree Felling Rules, 2001

6. Felling of Trees under the rule: The rule restricts felling of tree or trees on any private or other non-forest land without prior approval from the range officer. The act lays down the following conditions that needs to be looked into prior to felling of any tree:

(i) Only after the approved management plan, tree that are less than 5 ft girth at breast height for the species belonging to classes B to E in the schedule of rates of the government or less than 7 ft girth at breast height for species belonging to the other classes shall be allowed to fell.
(ii) The tree to be removed should not have tree coverage area of more than 33 % of total trees cover.
(iii) The tree should not be standing within 2 ft from the edge of a gully, stream bank or edge of a precipitous slope.
(iv) The tree should not be standing on a landslide, landslip, eroded surface, bank of Jhoras or a stabilized landslide falling within private land or other non-forest land.
(v) The tree should not be on general slopeof more than 70 degree to the horizontal
(vi) The tree should not belong to a category of species reserved by the government under the provisions of Forest Act.
(vii) The tree should not have high ecological value such as rare growth of epiphytes.

7. Compensatory Plantation: Under the rule, for every tree felled on the private land, ten saplings shall be planted in the ensuing monsoon. Whereas on the non-forest land, felling of trees shall be undertaken on the payment equivalent to bustiwalla rate of the timber volume.

Sikkim Non-Biodegradable Garbage (Control) Act 1997 and Rules, 2001

8. To cope with the growing menace of non-biodegradable waste in the state, the department of UD&HD has enforced the act from June 1998. Following are the salient feature in reference to the project:

(i) **Prohibition of disposal of waste:** Under the provisions of act and rule, no one shall throw or cause deposition of non-biodegradable, either directly or indirectly in a place or into any drain, pipe / fittings and ventilation shaft connected to either private or public nuisance.
(ii) **Formation of garbage collection / management zones and Garbage Management Committee:** Local authorities (UD&HD in this case) shall divide the area within its territory jurisdiction into garbage collection/garbage management zones. Within these zones committee consists of public representative of the area and the deputy secretary / bazaar officer of the respective area / sanitary inspector of UD&HD shall be formed that is made responsible for the efficient collection and disposal of the garbage, arranging awareness programs for reduction, reuse and recycling of garbage waste. The committee shall devise steps for the maintenance of ecology and reduction of environmental pollution in the area.
(iii) **Provision of garbage bins:** The act directs the concerned authority to provide separate bins for biodegradable and non-biodegradable refuse, that shall be placed at conveniently location and shall be maintained on a regular basis. The

person will be responsible for placing the garbage in bins or location provided by the concerned local authority for the purpose.

(iv) **Segregation of Biodegradable and Non-biodegradable Waste:** The act envisages the segregation of waste into biodegradable and non-biodegradable. For biodegradable bins, green colour shall be used with the inscription "for biodegradable waste only" and for non-biodegradable waste; brown colour shall be used with the inscription "for non-biodegradable waste only".

(v) **Disposal of garbage waste:** The garbage / waste from the receptacles shall be collected and removed by the local authorities to the dumping ground or suitable disposal sites. The non-biodegradable garbage shall be sent to the recycling center arranged by the government and reject shall be sent to the suitable disposal site.

(vi) **Bio-medical Waste:** For the bio-medical waste generating from hospital, nursing home, clinic, dispensary, veterinary clinic / institution, animal house, pathological laboratory and blood bank shall not cause any adverse effect to the human health and the environment. Such waste shall be not be mixed with biodegradable and non- biodegradable waste and shall be kept as per guidelines prescribe in Schedule II of the rule (Refer Appendix 2). Collection, transportation, storage and disposal of such waste shall be done in accordance with the 'Bio-Medical Waste Management Handling Rules, 1998 and as per the guidelines issued by the Government of India.

Sanitation Rules for Towns of Sikkim, 2000

9. The sanitation rules lay down the guidelines for solid waste and offensive matter disposal – in receptacles and not in Jhoras. It focuses on maintenance and cleanliness to prevent breeding of mosquitoes, etc. The UD&HD has enforced the rule in the year 2000 under section 8 of Sikkim (Repeal & Miscellaneous Provisions) Act, 1985 valid in all towns of Sikkim. Following are the salient features in reference to the project:

(i) **Disposal of rubbish / offensive waste material:** Under the rule no person is allowed to disposed or placed any rubbish or offensive matter in any place other than receptacles provided by UD&HD or any other authorized agencies. Any disposal of waste in Jhoras streams is strictly prohibited.

(ii) **Prevention of mosquitoes breeding:** The owner or occupier of building, house or land shall permit / allowed water to stand or collect water to prevent the breeding of mosquitoes.

(iii) **Private Latrine and house drain connection:** All the house must have must have adequate latrine and house drains. They all are bound to connect latrines or house drains to the main sewerage line (if there) and in an areas where there are no sewerage line connects to nearest suitable jhoras as directed by department engineers.

(iv) **Prohibition of construction of latrine over into Jhoras:** Construction of ay latrines, shed, and disposal system of any kind over any public or private Jhoras is strictly prohibited.

(v) **Strom Water Drain:** The building owners shall provide adequate plinth protection and storm water drainage leading to the nearest public Jhora or drain.

(vi) **Levy of Sanitation Tax:** The sanitation tax shall be levied based on the total covered area of house or building of each floor excluding the courtyard and hood at the following rate:
(vii) Residential Building and Government Office @ Rs. 0.10 Paise per square foot per annum.
(viii) Commercial Building @ Rs. 0.20 Paise per square foot per annum.
(ix) And where building is utilized for both the purpose tax shall be computed accordingly.

The Sikkim Water Supply and Water Tax Act, 1986 and Rule

10. The act determines the framework of supply of water by the PHED to areas notified under the act, which include Gangtok and notified bazaar areas of Sikkim. Following are the salient feature in reference to the project:

(i) **Provision of Water:** It empowers PHED to supply of water for public, commercial, domestic and other uses subject to the availability of water.
(ii) **Levy of Water charges:** As per the act monthly charges are left to the discretion of the government and shall be on the basis of volumes or on the basis on numbed of taps installed or in dimension of service pipes.
(iii) **Power of PHED:** The act prohibits the wastage of water and empowers PHED to cut off water supply on non-payment, wastage, and damage to infrastructure. The acts underlain that the notified water sheds or water sources or notified water main routes shall be under the administrative control of the Building, PHE and Housing Department.

Sikkim Sewerage and Sewage Disposal Act, 1987

11. The act empowers PHED to regulate and manage sewerage and sewage disposal in the state of Sikkim. Following are the salient features in reference to the project:

(i) **Laying of sewer lines:** For the purpose of arranging or maintaining sewerage system, PHED can lay or carry any sewer through, across or under or over any road or streets, provided that such work shall be carried with least annoyance to the public and within a reasonable time. The PHED shall give seven days notice to the owner in writing prior to the commencement of work. The department shall give reasonable compensation if any damage occurs during laying of sewer line. The act directs that no person without the permission of the Department shall construct any private street, building or other structure on any government sewer mains.
(ii) **Sewer Connection:** Every household within a distance of 100 meters from sewer main are required to connect with sewerage system
(iii) **Levy of Sewerage Tax:** The government shall levy on premises situated in an area where sewerage system is provided based on the assessed annual value of the premise. The tax rate shall not be less than one percent and not more than the ten percent of the assessed annual value of the premises. Government by notification can specify different rates of tax for different areas after considering the economic condition of the people residing in that area.

(iv) **Drains:** All the public drains, alongside or under any public streets except those constructed along national highways are vested with PHED and UD&HD.

GOVERNMENT OF NAGALAND

Nagaland Forest Act, 1968

12. The act consolidates the law relating to forest, forest produce and the duty leviable on timber in Nagaland. Following are the salient feature of the act in reference to the project:

(i) **Amenities:** The act defines the relevant 'Amenities' such as cattle, forest offence, forest officers, forest produce, government, rivers, timber, trees, etc.

(ii) **Reserve Forest:** The government can declare any land as reserved forest by issuing the notification specifying the purpose to constitute such land as reserve forest, situation and limits and appointment of Forest Settlement Officer.

(iii) **Right of way, watercourse or forest produce in reserve forest:** Incase of any such claim, forest settlement officer shall pass an order specifying the particulars of such claims and can admit the same wholly or in part as the case may be.

(iv) **Acquisition of rights over reserved forest:** No right shall be acquired in or over reserved forest, except by succession or under grant or contract in writing made by the Government or some person in whom such right was vested when notification of reserve forest was published.

(v) **Power to stop ways and watercourse in reserve forest:** The Forest officer with prior sanction from state government may stop any public or private way or watercourse in a reserve forest, provided that there shall be an alternative, which is equally convenient, already exists or has been provided or constructed by the forest department.

(vi) **Activities prohibited in reserve forest:** (i) Making any fresh clearing for cultivation or for any other purpose (ii) quarrying of stone, burning of lime or charcoal or removal of forest produce and (iii) poisoning of water, hunting, shooting, fishing or setting up of traps.

(vii) **Village Forest:** The state government by the notification in the official gazette shall declare any government land a 'village forest' for the benefits of any village community or group of village communities either in terms of forest produce or with pasture.

The Nagaland Tree Felling Regulation, 2002

13. The rule framed the guidelines for plantation and felling of trees in non-forest areas. Following are the salient features of the act in reference to the project:

(i) **Registration of Tree Plantation:** The rule directs the registration of tree plantation raised in private and community holdings, if they are not covered by any working schemes. Registration shall be done with local divisional forest officer in the manner prescribe by him. Registration to such plantation shall be made on the basis of certificate issued by the respective village council.

(ii) **Felling of trees:** No tree shall be cut down without prior written permission from the Division Forest Officer. The application shall contain type of species, number

and the quantity of the trees to be felled along with a copy of registration certificate.

(iii) **Trees species not requiring felling permission:** All horticultural tree species except for Aam (Mangifera indica) and Wild apple, will not require any permission for felling if they are felled from non-forest area.

(iv) **Restricted Permission:** No felling permission shall be granted to those trees, which are less than 5 year old.

(v) **Felling of isolated trees in non-forest areas:** The Divisional Forest Officer shall give permission to fell maximum five trees per applicant from non-forest areas like homestead/farm houses etc.

(vi) **Removal of Felled Trees:** No fell trees/timber shall be removed from the felling site without Transit Pass issued by forest department.

The Nagaland Jhum land Act, 1970

14. The act safeguards and regulates the right to Jhumland in Nagaland. Following are the salient features relevant to the project:

(i) **Customary right to Jhumland** shall be given to those village or community that has been pursuing 'Jhum Cultivation' as local custom for not less than thirty years.

(ii) Transfer of Jhumland: No Jhumland which is belonging to the community or individual through the customary right can be sold or mortgaged to any community or any individual until and unless authorized by the Deputy Commissioner and on the recommendation of concerned Village Area Council.

(iii) Leases: No Jhumland can be leased out until and unless the deputy commissioner or additional deputy commissioner has approved on the recommendation of the village and area council. A person can lease out the land only to those persons who are member of the same village or community provided that he is unable to cultivate or utilize the land by himself either due to age or infirmity.

(iv) Acquisition of Public Purpose: For public purpose, government may acquire any Jhumland and shall pay reasonable compensation for all the land acquired.

(v) Prevention of erosion and protection of forest: For the conservation of water shed and prevention of excessive cutting of tree and denudation of land, Government may acquire whole or any part of Jhumland on payment of compensation and can declare it as a protected forest.

(vi) Protection of bridle path and roads: For the same, the deputy commissioner or additional deputy commissioner may direct any land lying within 50 m of the road to not to be cultivated and may further prohibit the cutting of trees in such areas.

Nagaland Communitization of Water supply and Sanitation System in Rural Habitation Rules, 2003

15. The rule was framed under section 3, 4 and 11 of the Nagaland Communitization of Public Institution and Service Act, 2002. It focuses on the community participation for the management and supervision of the water supply and sanitary system. Following are the salient features of the rule in reference to the project:

(i) Formation of Village Committee known as WATSAN Committee (WATSAN Committee term refers to Water Supply and Sanitary System Committee): The rule directs the village council in every village to form the WATSAN committee consisting of Chairman, elected or selected by the Village Council, Secretary-Village Development Board and Members representing women group and persons from the village.

(ii) Function of WATSAN Committee: The committee shall perform the following functions:

Custody and maintenance of the assets and equipment that may be created or procured by the WATSAN committee or transferred by the state government.

(i) Co-ordination with the designated official of the PHED for carrying out the major repair and replacement works incase of breakdown arising out of natural calamities or abnormal situation.

(ii) Collection of water charges that may be levied by the state government.

(iii) Implementation of schemes/projects connected with development and improvement and protection of watershed for the sources of water supply.

(iv) Resolve any grievances pertaining to ownership of water source and sites for installing water supply and sanitary system.

16. Incase of sharing of same water supply sources, an Integrated WATSAN Committee shall be formed consisting of chairman of WATSAN committee and representatives of the village councils. This committee shall maintain and supervise the water supply from the source to the common main distribution reservoir.

17. The Annual Audit shall be done by the audit team under the in charge of Executive Engineer of PHED of concerned area. The audit teams shall prepare audit report that shall be made available to the village council and village development board for settlement of the observation and objection made by the audit team.

GOVERNMENT OF MEGHALAYA

The Meghalaya Protection of Catchment Areas Act, 1992

18. The act directs the state government to make provision for the protection of catchment areas (Catchment Area means an area where springs, streams, rivulets and water sources originated and serve as potential sources of perennial flow of water.) with a view to preserve water. Following are the salient features of the act in reference to the project:

(i) **Constitution of Meghalaya Catchment Area Advisory Board:** The act directs the state government to constitute “Meghalaya Catchment Areas Advisory Board”. The Advisory Board advises the state government for identification, delineation, preservation and protection of catchment area.

(ii) **Classification of catchment area:** Under the act, catchment areas are classified into critical catchment area (Critical Catchment Area means the area from where springs, streams, rivulets and water heads potential serve the water supply system of any village or town and the preservation of which is so vital for the life

and health of the community.) and non-critical catchment area (Non-critical Catchment Area refers to all other catchment area that are not identified as critical catchment area)

(iii) **Prohibition of activities in critical catchment areas:** Incase of critical catchment area, the act prohibits within a distance not exceeding 200 metes from the periphery of area - felling of trees, destruction or clearing of grooves or bushes or any other vegetative covers, jhum cultivation, use of any insecticide or pesticides, quarrying of sand or stone, excavation of earth and construction of roads.

(iv) **Prohibition of activities in non-critical catchment areas:** Incase on non-critical areas, the act prohibits above mentioned activities without permission from competent authority (Competent Authority refers to Special Secretary / Secretary of Forest and Environmental Department), within a distance not exceeding 100 metes from the periphery of area.

(v) **Grant or Refusal of Permission:** Competent Authority shall grant or refuse permission considering the nature, period of the activity and by examining extent of damage likely to be caused by the proposed activity.

The Meghalaya Tree (Preservation) Act, 1976

19. The act makes provisions for regulating the felling of trees for purpose of protecting catchment areas and soil from erosion and to preserve the special characteristics of the hilly areas such as landscapes, vegetative cover and climate. Following are the salient features of the act in reference to the project:

(i) **Felling of trees:** No person shall fell any tree without prior written permission from Divisional Forest Officer (DFO). The DFO shall not refuse the permission if the tree is dead, diseased, over matured, wind fallen or has become dangerous to life and property.

(ii) **Duration of granting permission:** The act direct the DFO that duration of granting permission shall not be greater than 2 months from the date of submission of the application.

The Meghalaya Wild Animals and Birds Protection Act, 1971

20. The act provides for the betterment, protection and preservation of certain wild animals and birds in the state specified in the schedule of this Act. The act talks about Hunting, capturing, buying and selling of scheduled animal and birds.

The Meghalaya Forest Authority Act, 1991

21. The act directs the state government to constitute an authority for the unified control of forest in the state. Under this Act, Meghalaya Forest Authority comprising the Chief Minister, Minister in Charge of Forest and Environment and the Chief Executive Members of the Autonomous District Councils of the state shall be formed. This authority shall advice the state government in preparation of forest plan and schemes, co-ordination and implementation of forest laws and other matter connected with the preservation of forest in state.