

*Planning Commission  
Health & Family Division*

v. ~~The final outputs that will be required of the consultant~~

~~The inputs for policy making process suggesting for change in existing policy. Suggestion of ideal model with or without TPA, that has to be properly linked to consultants finding.~~

**Review global and national best practices in the tertiary care and teaching which are partially self financing**

I. Objective:

Review global and national best practices in the tertiary care and teaching which are partially self financing and are responsible for:

- a. Providing good quality care at affordable cost, particularly to the poor
- b. Address Public health needs of population in their catchment area
- c. Professional development of health manpower practicing in their catchment area
- d. Exercise Medical Audit over quality of care within their catchment area
- e. Monitor and evaluate the health status of population in the catchment, linking with public health care clinics and institutions in a hub and spoke model.

Some of the best practices available are:

- CMC's IHC application aids rural health workers to deliver quality healthcare by eliminating redundant data entry in paper registers with the use of personal digital assistants (PDA).
- Aravind Eye Care System which is contributing to improve the quality of eye care services through hospital services, community outreach teaching, training, research and consultancy.

II. Outline of the task

Systematic review of published and unpublished print and electronic materials; Interview with experts, health care givers/takers ; Use of data analysis tools such as STATA and E-View to support the conclusion and findings.

**Hypothesis to be tested:**

Whether the self financing institutions in the tertiary care and teaching have the sufficient role in providing good quality care at affordable cost?

III. Schedule for completion of tasks

4 months

IV. Support or input to be provided by Ministry/Deptt to facilitate the consultancy

~~The researcher can use the previous studies and documents as available at planning commission/GOI/State Govt websites/any other authentic data / information/publication.~~

V. The final outputs that will be required of the consultant

The inputs for policy making process suggesting for change in existing policy. Specific Suggestion regarding what are the best practices in the tertiary care and teaching can be used in the country.

## 2 Study access to essential medicines in public health

### I. Objective:

Study access to essential medicines in public health facilities across all states over last 12 months, and identify gaps and opportunities to access to medicine and suggest a road map to fill the gap.

Study is there any inter-state and inter-district disparities access to essential medicines in public health facilities; and also the role of Essential Drug List(EDL) in access to essential medicines in public health facilities across all states.

Suggest a mechanism to make essential medicines available to one and all based on the principles of universalism, equity, efficiency and quality.

#### Background:

As per HLEG report 71% of all OOP expenditure of households accounted for by drugs alone. The current efforts of the Government (both Central and State governments) is towards providing publicly-funded health insurance coverage to vulnerable populations for hospitalisation care. There is need for addressing OOP spending on out-patient care, especially on purchase of drugs by households.

### II. Outline of the task

Survey methods may be used; Systematic review of published and unpublished print and electronic materials; Interview with different stake holders. Use of data analysis tools to support the conclusion and findings

#### Hypothesis to be tested:

Test whether the access to essential medicines in public health has a sufficient role improvement of public health care?

### III. Schedule for completion of tasks

6-10 months

### IV. Support or input to be provided by Ministry/Deptt to facilitate the consultancy

The researcher can use the previous studies and documents as available at planning commission/GOI/State Govt websites.

### V. The final outputs that will be required of the consultant

The inputs for policy making process suggesting for change in existing policy. Suggestion regarding procurement method, logistic, storage and best practices.

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## STATE PLAN DIVISION (JHARKHAND)

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3 | Draft Terms of Reference on overall impact of Mining in Jharkhand

### TOPIC: EFFECT of Mining Activities on the Economics of Jharkhand.

#### 1. OBJECTIVE:

The purpose of this Terms of Reference (ToR) is to identify the various impacts of the mining industry and mining activities on its various stakeholders. This will help to ascertain the benefits and losses caused by extraction of minerals and proportionate distribution of fruits of mining activities in the state.

The Planning Commission, Jharkhand will conduct and submit an Impact Assessment (IA) report to explain the environmental effects, effects on communities, infrastructure and other related social aspects along with the amount of non-adherence to policies and laws related to mining in the areas of Jharkhand.

The study will:

- Provide information on the need for and likely effects of mining
- Set out acceptable standards and levels of impacts (both beneficial and adverse) on factors like environment, health, livelihood, infrastructure, psycho-social well being.
- Provide information on the compliance of policy legislations related to mining and its other stakeholders.
- Suggest how beneficial impacts can be scaled and adverse impacts managed/overcome.
- Provide a well defined Rehabilitation and Restoration Policy framework
- Status of Corporate Social Responsibility of the Mining company in its area of operation.

#### 2. GENERAL INFORMATION:

**Mining** is the extraction of valuable minerals or other geological materials from the earth, usually from an ore body, vein or (coal) seam. Materials recovered by mining include base metals, precious metals, iron, uranium, coal, diamonds, limestone, oil shale, rock salt and potash. Any material that cannot be grown through agricultural processes, or created artificially in a laboratory or factory, is usually mined. Mining in a wider sense comprises extraction of any non-renewable resource (e.g., petroleum, natural gas, or even water).

Mining of stone and metal has been done since pre-historic times. Modern mining Processes ideally involve:

- a) prospecting for ore bodies, analysis of the profit potential of a proposed mine,
- b) extraction of the desired materials
- c) finally reclamation of the land to prepare it



for other uses once the mine is closed.

Jharkhand has an immense mineral resource base: minerals ranging from (ranking in the country within bracket) from iron ore (1st), coal (3rd), copper ore (1st), mica (1st), bauxite (3rd), Manganese, limestone, china clay, fire clay, graphite (8th), kainite (1st), chromite (2nd), asbestos (1st), thorium (3rd), sillimanite, uranium (Jaduguda mines, Narwa Pahar) (1st) and even gold (Rakha mines) (6th) and silver and several other minerals. Large deposits of coal and iron ore support concentration of industry, in centers like Jamshedpur, Bokaro and Ranchi.

Mining is a very profitable business and it also creates employment opportunities. It benefits everyone including the government and that is why the mining industry is widely supported. However, the nature of mining processes creates a potential negative impact on the environment both during the mining operations and for years after the mine is closed. This impact has led to most of the world's nations adopting regulations to moderate the negative effects of mining operations. Safety has also long been a concern, though modern practices have improved safety in mines significantly.

There are several negative effects of mining for the environment. To make mining possible, several forests are cleared and this leads to deforestation. The vegetation is cleared in order to build the mining facility and laying roads. Several organisms and animals live in these forests. With the deforestation, these organisms and animals lose their natural habitat. So, they start looking for a new habitat in order to survive. However, most organisms and animals do not respond very well to this change and end up dying. The biodiversity is lost in this process. A number of smaller plants and creepers that grow with the support of the trees also die due to deforestation.

In addition, mining causes a lot of pollution as a lot of chemical waste incurred due to the various processes involved. This waste is released into water bodies, rivers and sea. The chemical composition of the soil also changes in the mining area. It becomes a desert-like environment where nothing grows.

### **3. INTRODUCTION TO THE STUDY:**

Mining is the largest cause for land alienation in Jharkhand. Between 1951 to 1991, over 34 per cent of land acquired for development projects was for mining. This displaced about seven per cent of Jharkhand's population, of this nearly half were tribals. Many were never rehabilitated or left to the mercies of the steel and mining companies.

However, the impact of mining which cannot be merely counted in numbers of the families directly displaced but to whole communities residing in the project areas, has been felt and is expected to affect the communities in varied spheres that can be connoted as the external cost to the Government.

An external cost, also known as an externality, arises when the social or economic activities of one group of persons have an impact on another group and when that impact is not fully accounted, or compensated for, by the first group. There are several ways of taking account of the cost to the environment, health etc. i.e. for 'internalizing' external costs like eco-taxes encourage or subsidise cleaner technologies thus avoiding socio-environmental costs; green accounting; life-cycle analysis or technology comparison methods. However the simplest and effective technique is an impact assessment study that will enunciate the ground realities of mining and its effect on the economy of the state. But the most scientific methodology is geo-spatial analysis.

### 3.1. FACTORS AFFECTING VARIOUS STAKEHOLDERS OF MINING:

<b>3.1.1 ENVIRONMENTAL FACTORS :</b>	
Pre-mining land use pattern of (agricultural land/ forest land/ grazing land/ wasteland / water bodies/settlement) of the area is to be detailed out. Details of mineral resources, geological status of the study area and the deposit to be worked out in this section.	
<b>TOPOGRAPHY:</b>	
3.1.1(a)	Impact of changes in the land use due to the start of the projects (habitation, cropping pattern, fertile agriculture land, forest cover, ecologically sensitive features etc. by employing remote sensing techniques and geo-spatial stimulation techniques. (If available). Whether any means undertaken to improve crop productivity through changing cropping pattern accordingly for farmers
3.1.1(b)	Changes in topography such as existing roads, drains/natural water bodies along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, approach roads, major haul roads, etc and the impact of such changes on the topography.
3.1.1(c)	Major polluting sources for land, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance sources of pollution found upto 15 km area of the buffer zone should be given.
<b>FORESTRY, FLORA and FAUNA:</b>	
3.1.1(d)	Type of forest in study area and its conservation status; impact of mining on the conservation status of the flora. Whether new habitation developed around the mining centre exert pressure of varied kinds like fuel wood usage, grazing etc leading to depletion of forests. Study of adverse impact by employing geo-spatial scenario analysis based on Multi-Agent Simulation Technique.



3.1.1(e)	List out endangered and endemic species as per the schedule of the Wildlife Protection Act, 1972 present in the mining area and impact of mining on the breeding and hibernation of these species in the core and buffer zone. Whether wildlife corridor/passes has been provided for movement of wild elephants and other animals
<b>AIR and NOISE:</b>	
3.1.1(f)	Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater),
3.1.1(g)	Impacts of transportation, handling, transfer of mineral and waste, generation of effluents from workshop on air quality,
3.1.1(h)	Impact of blasting, noise and vibrations. Vibration and air over pressure, caused due to blasting, transport and process equipments, wherever applicable
3.1.1(i)	Day-time and night-time noise level monitoring (leq)
<b>WATER:</b>	
3.1.1(j)	Impact of mining on hydrology through hydrology modelling, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the area and adjoining the mining area and the impact on the existing users and impacts of continued mining operations in future as well.
3.1.1(k)	Source of water for use in mine, and impacts vis-à-vis the competing users. Physio-chemical analysis including heavy metals, biological, bacteriological characterization for assessment of water quality. Water quality of water body with respect to upstream and downstream should be covered. Water requirement and waste water generation from various activities of mine, including township.
3.1.1(l)	Details of rainwater harvesting and measures taken for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone. Whether underground stone quarries are being used for arresting rainwater runoff. Study of underground water prospecting to be done based on Cellular Automation Technique.
3.1.1(m)	Status of abandoned open cast coal mines whether being used as water recourse or not.
3.1.1(n)	Status of drinking water needs in areas of sand mining. Does it affect the infiltration well in this region? What is the depth of sand layer in sand mining areas? Is it atleast 6mt deep near big villages and 8mt deep near municipal areas? Is it atleast 3mt deep along the river run?
3.1.1(o)	Status of surface water supply in copper, iron and uranium mining areas? Is it safe for drinking? If ground water is being provided, is it being adequately treated before supply?
3.1.(p)	Changes in Ground Water level over time in the project affected villages since establishment of mines. Daily water used and drained by Open cast/Underground mines and their impact on human and animal health.
3.1.(q)	Whether water auditing has been adopted as a standard practice in the mining agencies or not and their future plan in this respect. Account of work done by Mining agencies to address the drinking water issues with specific mention of year wise expenses and population covered to solve drinking water problems in project affected areas. Changes in public drinking water sources, in terms of spread and quality since the mines was

	established should be conducted through Participatory Rural Appraisal in presence of respective Village Water and Sanitation Committee.
<b>CLIMATE:</b>	
3.1.1(m)	rainfall patterns (including magnitude and seasonal variability of rainfall), air temperatures, humidity, wind (direction and speed) and any other special factors (eg temperature inversions) that may affect air quality within the environs of the proposal. Extremes of climate (droughts, floods, cyclones, etc) should also be discussed with particular reference to water management at the proposal site. The vulnerability of the area to natural or induced hazards, such as floods and bushfires, should also be addressed. The relative frequency, magnitude and risk of these events should be considered.
<b>WASTE GENERATION:</b>	
3.1.1(n)	Impact and management of wastes and issues of rechanneling (wherever applicable) and backfilling and progressive mine closure and reclamation.
3.1.1(o)	Site features of locations of waste storage and disposal using geo-spatial optimization technique.
<b>MINE CLOSURE:</b>	
3.1.1(p)	Impact of Final Mine Closure Plan, post mining land use and restoration of land/habitat/environment. Policy intervention to be decided using geo-spatial simulation, hydrology modelling as DSS for policy intervention.
3.1.1(q)	What has been the compliance to Mineral Conservation and Development Rule 1988, Ministry of Mines, Government of India.

### 3.1.2. HEALTH FACTORS:

This section should describe the existing community values for health and safety that may be affected by mining. Any impacts on the health and safety of the community, workforce, suppliers and other stakeholders should be detailed in terms of health, safety, quality of life from factors such as air emissions, odour, dust noise etc.

#### GENERAL HEALTH STATUS:

3.1.2(a)	Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine-occupational disease wise list of affected persons. Is there human scavenging taking place on mine wastes? Is there children scavenging taking place in the mining waste area? If yes, what provisions are being taken to control this?
3.1.2(b)	Assess the potential health implications of the compounds that will be released to the environment from the proposed operation in relation to exposure limits established to prevent acute or chronic adverse effects on human health
3.1.2(c)	Assess cumulative health effects that are likely to result from the proposed Project in combination with other existing, approved and planned projects or reasonably-foreseeable activities in the region
3.1.2(d)	Describe the potential for contamination of fish relative to fish consumption guidelines



	including the potential for bioaccumulation
3.1.2(e)	Discuss the potential for changes to air, water and soil quality and the bioaccumulation of contaminants in natural food sources in the mining area(s) to increase human exposure to contaminants
3.1.2(f)	What is the model of toilet being constructed in the mining areas? Has any special model of toilet digestion being promoted due to lack of sufficient soil available for leaching purpose?
<b>ANCILLARY SERVICES:</b>	
3.1.2(f)	What are the special provisions for securing health services to the affected people besides regular Governmental Health care services?
3.1.2(g)	Compensation in case of injuries or fatality caused during work.
3.1.2(h)	Any provision for Health insurance/Family insurance/Group Insurance
3.1.2(i)	Rise in any other disease (such as HIV/AIDS, skin eruptions) that the community feels has increased due to the effects of mining.

### 3.1.3. IMPACTS ON LIVELIHOOD:

The economic impact statement in this section should include estimates of the opportunity cost of the project and the value of ecosystem services provided by natural or modified ecosystems to be disturbed or removed during development.

3.1.3(a)	Data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area
3.1.3(b)	Alternate livelihood concerns/employment concerns of the displaced people
3.1.3(c)	Information on the dependence of local people on minor forest products and how it is being affected by mining.
3.1.3(d)	Data on traditional skills, sources of livelihood within the study area and changes in these due to initiation of mining in these areas.
3.1.3(e)	Training to locals for employment in the project and sustainability of small scale income-generation activities promoted by government or CSR.
3.1.3(f)	Compensation for loss of land and crops
3.1.3(g)	Provision for group insurance or family insurance to workers.
3.1.3(h)	Whether the proponent, or contractors are likely to employ workers locally or through other means

### 3.1.4. IMPACTS ON INFRASTRUCTURE:

This section should describe arrangements for the transport of plant, equipment, products, wastes and personnel during both the construction phase and operational phases of the Project. The description should address the use of existing facilities and all requirements for the construction, upgrading or relocation of any transport related infrastructure. This should also cover the impacts of



mining if leading to disasters and what are its mitigation strategies.	
<b>ROAD, BUILDING, OTHER STRUCTURES:</b>	
3.1.4(a)	Any infrastructure (archeological sites, natural sites or constructed sites) being hampered resulting in decline of tourism at the place due to mining operations.
3.1.4(b)	Volume of traffic generated by workforce personnel, visitors and service vehicles
3.1.4(c)	The adequacy of roads existing in the area and if new roads are to be laid the impact of the construction of roads particularly if it is crossing forest lands. Geo-spatial analysis of the same using Agent Based Modelling.
3.1.4(d)	Need for increased road maintenance and upgrading and subsequent costs.
3.1.4(e)	Provide sufficient information to make an independent assessment of how the State-controlled and local government road networks will be affected. Sufficient information should also be provided to enable an independent assessment of how the rail network (including infrastructure) will be affected.
<b>DISASTER: Disasters in Mining field is common. Jharkhand tops the list of top ten mining disasters in the world. Though mining is a central Government affair, the direct impact is on the state of Jharkhand and hence the responsibility of disaster management is critical.</b>	
3.1.4(e)	Hazard, Risk Vulnerability and Capacity Analysis (HRVC) of: <ul style="list-style-type: none"> <li>• Identification of types of hazards each mining ore wise</li> <li>• what are the risks</li> <li>• Who are vulnerable and how</li> <li>• Capacity: What kind of hazards could be caused; Safety measures for handling bulk liquid substances, hazardous wastes, hazardous gas leakages, coal dust explosions, fly rocks, premature blasts and mine induced seismicity.</li> <li>• Personal protection equipment</li> <li>• Disaster management Plan (DMP)</li> <li>• Emergency response procedures</li> </ul>
3.1.4(f)	Impact of mining on occurrence of disaster in the mining areas upto the buffer zone. (both onsite impact and offsite impact-
3.1.4(g)	Describe how local residents will be contacted during an emergency and what type of information will be communicated to them; What are the traditional and modern means of warning used; Is there any area early warning system in place? Whether Mining Disaster Response Force and integration of all response elements has been done.
3.1.4(h)	Whether regional zones for Mining Disaster Management have been created or not, Mining Monitoring, Early Warning Alert, Communication and Response systems, Awareness measures are in place or not.

**3.1.5. PSYCHO-SOCIAL IMPACTS**

The psycho-social impact assessment of the Project should consider the information gathered in the community consultation program and the analysis of the existing socio-economic environment, and describe the Project's impact, both beneficial and adverse, on the local community. The impacts of the Project on local and regional residents, community services and recreational activities are to be analysed and discussed. It is also important to note the nature and extent of the community consultation in the programs developed for the communities. The assessment of impacts should describe the likely response of affected communities and identify possible beneficial and adverse impacts (both immediate and cumulative).

3.1.5(a)	Civic and housing amenities being offered during and post mining activities.
3.1.5(b)	Data relating to historically, culturally and ecologically, traditionally important places in core as well as buffer areas and effect of mining on these
3.1.5(d)	Impact of displacement and rehabilitation/resettlement of affected people on change in culture, heritage & related features.
3.1.5(e)	Level of rise in crime and illicit activities due to displacement viz-a-viz sudden economic development of the area.
3.1.5(f)	Means of Community integration/ recreational, cultural, leisure and sporting facilities or welfare centres established in the mining areas.
3.1.5(g)	Cases of harassment by men coming from outside to settle in villages for working in the mining industry.
3.1.5(h)	What has been done with compensation money by the community in terms of savings and expenditure on alcoholism/ gambling?
3.1.5(i)	Any special measure to ensure the rights and development needs of children besides regular government departments like child welfare, education, tribal welfare, labour welfare etc.
3.1.5(j)	Indebtedness caused to people due to displacement from land if any
3.1.5(k)	Whether children have to bear the brunt of violent behavior as child labourers, as victims in homes of mine workers or displaced parents given into alcoholism or gambling.
3.1.5(l)	Any special provision for children with regard to nutrition, education and welfare besides the regular governmental schemes for children from areas of mine closure or re-settlement.

**3.2. ACCOUNTABILITY TOWARDS POLICIES AND LEGISLATIONS:**

Once the mining industry has been set up during the process of its life cycle, it is required to meet the standards of emissions, effluents and noise levels besides the compliance of other environmental acts/regulations including mining safety regulations. There also



exists Guidelines for Integrating Environmental Concerns with Exploitation of Mineral Resources which identify some of the vital aspects relevant to environmental protection. These guidelines highlight the salient aspects of the various problems and briefly indicate some of the steps that need to be incorporated during the planning and various stages of the mining operations. The need for evolving certain tolerance standards/limits by the appropriate agencies, has also been emphasized. However, accountability towards the community does not only comprise of environmental norms. The rights of individuals and every stakeholder of the mining industry need to be considered while dealing with this section.	
3.2.1	Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. Place of Public Hearing whether it is in the local vicinity or not and whether it is in the local language or not has to be mentioned.
3.2.2	Status of any litigation/ court cases filed/pending on the project.
3.2.3	Status of Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.)
3.2.4	Status of implementation of Environment Policy approved by the Board of Directors. The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
3.2.5	Document the public consultation process implemented for the Project including the involvement of local residents and other key stakeholders within the Study Area
3.2.6	Implementation of National River Conservation Plan (NRCP) and its results
3.2.7	Average life expectancy, Average distance for availability of safe/clean water, Number of manganese affected cases (lethargy, increased muscle tone and mental disturbances) and measures taken for rehabilitation by mining company.
3.2.8	Economic compensation in case of loss of man days due to illness related to occupational hazards.
3.2.9	Measures of malaria control in stagnant water in ditches created through mining
3.2.10	Number of Uranium affected cases (Increases in miscarriages, impotency, infant mortality, Down's syndrome, skeletal deformities and different skin diseases, children with big heads, thalassemia, blood in cough, ulcer, swelling of bone joints, asthma, eye problems, etc.
3.2.11	Compliance of: The Water (Prevention and Control of Pollution) Act, 1974 as amended from time to time (Water Act), The Water (Prevention and Control of Pollution) Cess Act, 1977, as amended (Water Cess Act), The Air (Prevention and Control of Pollution) Act, 1981 as amended (Air Act), The Environment (Protection) Act, 1986 (EPA), The Wildlife (Protection) Act, 1972 as amended, The Forest (Conservation) Act, 1980 as amended, The Public Liability Insurance Act, 1991; The Mines and Minerals (Regulation and Development) Act, 1957, as amended (MMRD Act); Circulars issued by the Director-General Mines Safety (DGMS);

	Mineral Conservation and Development Act.
3.2.12	Implementation of Juvenile Justice (Care and Protection) Act 2000, Amended 2006, which defines children as persons up to the age of 18 and deals with two categories of children — the Child in Need of Care and Protection (CNCP) and the Child in Conflict with Law (CICL). Section 2d defines a child in need of care and protection as one who is exploited or abused or one who is vulnerable to being abused or exploited. It includes children already or vulnerable to displacement and homelessness, trafficking, labour etc that will provide special care and protection to children in mining areas as well.
3.2.13	The Fifth Schedule requires the government to consult and seek the advice of Tribal Advisory Council (TAC) on matters of general welfare and transfer of land. Has this been implemented in the areas of mining.
3.2.14	Under Panchayat Extension to Scheduled Area's Act (PESA) of 1996, Gram Sabha should have been consulted before granting mining leases. What has been the condition of implementation of PESA in the mining area.
3.2.14	Are international laws like Extractive Industries Transparency Initiative (EITI) etc being adhered to?
3.2.15	Examination of relevant Legal Documents of the Mining Department including Lease Agreement and other agreements between State and the Company and the status of their compliance.

#### 4. SUPPLEMENTARY STUDIES:

Specific condition	Study required
Studies identified by the public and other stake holders so far in the mining areas.	Public hearing with the issues raised by the public and the response of the project proponent in tabular form shall be Discussed
R & R action plans	Detailed R&R plan implementation status with data on the existing socio-economic conditions of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternative livelihood concerns/employment and rehabilitation of the displaced people, civil and housing amenities being offered, etc and the schedule of the implementation of the project specific R&R Plan.
Special R&R Program	In case of primitive tribes and rarer tribes, efforts should be made to shift them in totality, in order to maintain the ethnicity of the tribes.



CSR Activities being taken up by Mining Companies	Estimation of funds likely to be available in next five years and their utilization plan towards all the above mentioned sectors.
Technological Standards	Wherever applicable, a detailed study of the present technologies being used in the mining areas for its different functions, what changes have been made from the traditional technologies that were previously being used, what new technological interventions have been proposed in the upcoming 1-2 years; Effects of new technological interventions-positive and negative.

### 5. DESIGN OF THE STUDY:

**Sample size:** The universe would be the sample size viz all the existing, proposed within 1-2 year and closed within 1-2 year mining areas.

Based on the ToR, a proper **Research Methodology** will have to be designed including the following major parts:

- the executive summary;
- the text of the document, which should be structured to cover the matters raised in the ToR and written in a clear and concise manner so as to be readily understood by general readers, and so conclusions can be assessed by an expert third party;
- a document which clearly states the proposed management objectives, performance criteria, control strategies based on the impacts evaluated.
- An EIA (Environmental Impact Assessment) including actual cost of infrastructure development borne by state compared with the returns from royalty, estimation of deficit.
- An EMP (Environment Management Plan)
- appendices containing detailed technical information, source documents are to be included so that study methodologies and scope can be assessed.

As previously noted, the ToR detail the required content of the report. The study should follow format provided in the ToR. However, this format need not be followed where the required information can be more effectively presented in an alternative format, excepting that any significant departure from the format or any departure from the requirements and intent of the ToR must be agreed upon by relevant referral agencies from the Planning Commission. Cross-referencing should be used to avoid unnecessary duplication of text and to demonstrate where each part of the ToR is addressed in the report. To assist, it is recommended that line numbering of the ToR be used to track how the ToR provisions have been addressed in the study.

### **Presentation of Detailed Study with Analysis:**

1. Relevant maps and diagrams (wherever applicable with GIS maps)
2. Provide a realistic assessment of the negative impact of coal mining translating economic, environmental and social (all the above mentioned areas of investigation as mentioned above in the ToR in section 3.1) impacts into costs. Provide provisions through study of present legal and regulatory framework to impose tax or duties on mining activities besides royalty by the Central Government to cover costs of the State Government.
3. Assess the expenditure of administrative machinery of the host state and estimate cost-benefit analysis accordingly.
4. The report is to be written so that any conclusions reached can be assessed by a third party. This means that all sources should be appropriately referenced. References may be presented using the Harvard standard (refer to the Style Guide, Australian Government Publishing Service). The main text of the report must include appendices containing a copy of the final Terms of Reference;
  - a list of persons and agencies consulted during development of the report, and the methods and outcomes of the consultation;
  - any background, specialist, research or scientific studies used or undertaken;
  - listing and explanation of any development approvals required;
  - a list of referral agencies/advisory bodies with an appropriate contact; and
  - the names, professional background and involvement of all personnel involved in the preparation of the report.
5. Where appendices include results of studies conducted in preparing the report, the public availability of the studies should be indicated. Relevant maps, diagrams and other illustrative material should be included in the report as appropriate. The report should be produced on A4 size paper capable of being photocopied with maps and diagrams also at A4 or A3 size. This is to facilitate public access.
6. The report must relate to the entire life of the mining activity including the construction, operation, maintenance and decommissioning stages. Information provided in the report should be clear, logical, objective and concise so that it may be easily understood by non-technical persons.

The report should enable reasonable economic and technical achievability.

### **6. INFORMATION DISSEMINATION:**

#### **6.1. Web Protocol:**



Placement of the report (and related documents such as the initial advice statements, and terms of reference) on the proponent's internet web site is recommended.

Downloadable parts of the document should be in manageable file sizes (eg less than 500kb parcels). The file format should be one or more of commonly used software (eg. Word, Adobe Acrobat, JPEG). The web must not be the only public advertising or place to obtain copies of the report, any addendum reports, initial advice statement, draft and final ToR. An email address may be provided for submissions or comment feedback, and hard copies must be kept of all submission and comments made. The number of hits made on the web site may be recorded to assist in assessing public interest. A link to the appropriate government web site may be made by agreement.

#### ***6.2. CD Protocol***

A CD ROM format may be made available at a reasonable cost at the same time as the printed version. To maximize effectiveness of this format any CD must include:

- a file format that is text searchable by commonly available software;
- all parts of the report including figures, appendices (but not material that the report has agreed is confidential);
- contact details for submissions such as copy of the newspaper advertisement and government contacts.