

CHAPTER 1

ENVIRONMENTAL MANAGEMENT PLAN – AN OVERVIEW

1.1 INTRODUCTION

The share of power generation from hydel sources has decreased every year in India after independence. This has happened basically due to construction of more no. of thermal power project in comparison to hydel projects. It is imperative that hydropower projects are much better for environment compared to thermal or nuclear projects. Many a times, hydropower projects create positive impacts and lead to environmental enrichment, which may not be reflected in EIA studies.

Environmental Protection and Sustainable Development have been the cornerstones of the policies and procedures governing the industrial and other developmental activities in India. Ministry of Environment & Forests has taken several policy initiatives and enacted environmental and pollution control legislations to prevent indiscriminate exploitation of natural resources and to promote integration of environmental concerns in developmental projects. One such initiative is the Notification on Environmental Impact Assessment (EIA) of developmental projects issued on 27.1.1994 under the provisions of Environment (Protection) Act, 1986 making EIA mandatory for 29 categories of developmental projects. One more item was added to the list in January, 2000.

Environmental management plan (EMP) is suggested on the basis of the identified impact in the Environmental Impact Assessment. EIA is a planning tool that is now generally accepted as an integral component of sound decision-making. The objective of EIA is to foresee and address potential environmental problems/concerns at an early stage of project planning and design. EIA/EMP should assist planners and government authorities in the decision making process by identifying the key impacts/issues and formulating mitigation measures. Ministry had issued sectoral guidelines some time ago. A compendium of the procedures and questionnaires entitled “Application Form

and Questionnaire for Environmental Clearance was published in September, 1999 in association with the Confederation of Indian Industry.

As part of the continued efforts to ensure transparency in the procedures of environmental clearance and to assist the project authorities in improving the quality of EIA documents, this Manual is now being brought out by the Ministry. The Manual has been designed to cover the whole gamut of issues like regulatory requirements, the EIA methodology including baseline studies, identification of key issues and consideration of alternatives, impact analysis and remedial measures in a systematic way. It also delineates the process of reviewing the adequacy of EIA and EMP reports and post-project monitoring.

EMP comprehensively covers all aspects of the natural and human environment so that adverse impact, if any is taken care of and the project does not create any hazard or affect the quality of life for generations. In case of a hydro power project, the natural river system is altered after the reservoir is created. The EMP should cover necessary treatment measures to maintain the life of the reservoir and sustain the services or power production from the project.

Logically, the exercise of preparing EMP is made after completion of an EIA study. Besides certain statutory measures and activities must be incorporated to meet the legal requirements and to satisfy the environmental regulations. Maintaining water quality, health of the population, greenery or vegetation of the area, harmony among the people already living in the project area or likely to be habitated due to the project at different sites are other related objective of EMP. An EMP should always have a long term perspective and make futuristic projections considering the developmental activities likely to take place. Flood and erosion are natural hazards in the NE Region. A hydropower project to a great extent will moderate the flood and reduce the damages. But, exceptional high storms and subsequent release from the reservoir coupled with downstream run off may become a hazard on some rare occasions. The rainfall, which is a natural phenomenon, cannot be controlled but the adverse effect can definitely be minimised. Hazard is natural but it becomes a disaster

if proper care is not taken or managed. Here, EMP plays an important role in minimising disasters of the natural phenomenon of high intensity flood, dam break, earthquake, which are in totality, is obviously beyond mankind's control. Dam break can also cause floods on the down stream and must be studied.

The EMP often provides the financial outlay for all environmental related aspects. Detailing of the budgetary provisions for different activities makes it handy for the project authorities, Union and Concerned State Govt. planners, administrators and General Public to take some actions and incur expenditure towards Environmental Management so as to ultimately reduce the financial burden on the project. Thus it is useful to justify project economic viability. The Dibang hydropower project, which offers a huge scope for hydropower generation, should receive priority for technical and environmental clearance. The present EMP report will answer all likely questions concerned with environmental clearance and sustained operation for its projected life period without inducing any man made interventions that may lead to environmental degradation at any stage due to the project.

1.2 PARAMETERS PERTAINING TO ENVIRONMENTAL MANAGEMENT

The project is basically an water resources project with two major objectives of hydropower generation, Flood moderation besides minor utilities.

Rainfall, run off and sediment obviously play an important role in this project due to high storage capacity, huge inflow to the reservoir and substantial release from down stream of the dam from power tunnel as well as spillways. The required hydro meteorological analysis is covered under the study.

In addition to the existing data, the report has taken care of the future requirement of hydro meteorological data and accordingly measures suggested to meet the requirements like reservoir operation and plan, project operational decisions, modifications during project construction, catchment area treatment and disaster mitigation in the event of high flood down stream.

The soil of the catchments being of light textured and the topography being rugged and hilly, necessary measures for were suggested as a part of environment management to meet the twin objective of reducing sedimentation in the reservoir and maintain fertility of soil to support the flora.

Comprehensive assessment of the catchments through different watershed parameters were carried out and accordingly catchment area treatment plan is prepared.

Under CAT, aspects, like land use –land cover, physiography and relief, area under different slope classes, and drainage pattern with details of tributary wise lengths and catchments are incorporated. Further morphometric parameters are discussed in details covering all characteristics.

Watershed prioritisation has also been made for planning catchment area treatment. The direct drainage area, which is going to affect the reservoir and also get affected by the reservoir due to encroachment and sedimentation was studied and was presented for eight tributaries.

Forest of the area is studied from various available reports and a compatible working plan for forest management and compensatory afforestation is evolved.

Status of fauna and their habitats are also covered for comprehensively treating the issue of flora, fauna in the environmental management plan. Special mention has been made about the fishery resources and a positive impact on fishery development is indicated. Other aspects, which have its importance for the project like seismicity, landslide, which were also concern for environment management, have been duly incorporated.

Water quality, air quality, health related aspects and socio-economic aspects like community development, agriculture, horticulture, fisheries etc. are narrated. Project specification such as disposal of excavated material,

restoration of quarry area, Energy Conservation in the project area, Solid waste management and dam break analysis has formed part of the report.