Research Paper

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Environment Impact Assessment and Management (EIA&M) for Paper Industries for Sustainable Development- A Case Study

Environmental Science

KEYWORDS : Impact assessment; decision-making process; sustainable development

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ABSTRACT

Environmental impact assessment (EIA) is an important legislative and scientific tool that may assist and improve the quality assistance for the decision-making process in sustainable development. Here, a comparison of EIAs from three cases of coastal thermal power project,The key reason for this shortcoming is misconceptions about the EIA process, which initially receives intense attention but becomes weakened by the time of implementation. This implies that there is a need to adopt simplified and flexible EIA techniques suitable for the infrastructure and resources of a specific country, taking into account institutional, technical and financial constraints. Improvements are required in public participation, awareness, as well as in environmental control and data system sectors, besides simply enacting legislation to achieve the goals of the EIA system.

1. INTRODUCTION

Success is measured not simply by the profit generated, but by the triple bottom line of economic prosperity, environmental stewardship and corporate social responsibility. Besides simply making good common sense, adhering to the principles of sustainable development fulfills compelling business needs as well, including reducing costs and liabilities, enhancing brand image and reputation, increasing customer loyalty, encouraging innovation and stimulating growth and strengthening with our communities .The principles of sustainable development include fulfillment of human needs for peace, clean air , water, food, shelter, education and useful and satisfying employment. Environmental issues are important, such as ecological integrity through careful stewardship, reduction of wastes, and protection of diverse species and ecological systems[1,2] Sustainable development focuses on local people through public involvement in the definition and development of local solutions to environmental and development problems. Achievement of equity is attained through the fairest possible sharing of limited resources among contemporaries and between our generation and that of our descendents.

2. SCOPE OF EIA STUDIES

Environmental impact assessment study involves three basic components, that is, identification, prediction and evaluation of impacts.[3] The present proposal is for expansion of pulp manufacturing, hence the industry obtained the terms of reference from the Ministry of Environment and Forests, GOI vide letter no. F.No. J-11011/410/2009-IA II (I) dated. October 20th, 2010. The detailed scope of EIA study is as follows;

An intensive reconnaissance and preliminary collection of environmental information to plan field study.

Field studies to collect preliminary information, particularly on the quality of the physical environment. Experienced scientists and engineers will collect the data.

Base line data generation and characterization of air, water, soil, noise and vegetation in the ten kilometer radius area (impact zone) over a period of Three months.

A thorough study of the process including provisions for pollution control, and environmental management that includes prediction of impacts and relevant mathematical modeling.

Preparation of Environmental monitoring program.

Preparation of Environmental Management plan suggesting suitable methods for mitigating and controlling the pollution levels.

Environmental monitoring plan is suggested for monitoring the pollution loads at various facilities in the premises and to ensure compliance with the statutory requirements.

3. ANDHRA PRADESH PAPER MILLS LIMITED

Established as Carnatic Paper Mills Ltd in 1921 the Company was incorporated on 29th June 1964 as "The Andhra Pradesh Paper Mills Ltd." at Rajahmundry. Andhra Pradesh Paper Mills, which is now an International Paper company, is one of the biggest integrated paper and pulp manufacturing centers in India. The company produces indispensible writing, printing and copier papers for foreign and domestic markets. It employs around 2,500 employees and is headquartered in Hyderabad. [4,5] Andhra Pradesh Paper Mills Limited's production facilities are comprised of two mills in Rajahmundry and Kadiam with a total production capacity of 240,000 TPA. The company is becoming a driving force in sustainability in the paper manufacturing arena through focused social and community programs, including pioneering work in raw material generation through social farm forestry. International Paper owns a majority interest in Andhra Pradesh Paper Mills Limited, and the remaining shares are publicly traded on the Bombay and National Stock Exchanges in India (APPAPER).

4. OBJECTIVE

The overall objective of the study has been to incorporate environmental considerations into planning and prepare an Environmental Management Plan for improving of the environmental Quality. The specific objectives of the study are:To map the characteristics and environmental profile of study area.

- Prepare an environmental management plan that includes rehabilitation and mitigation measures.
- To prepare an environmental monitoring schedule w.r.t. the proposed project.
- To recommend guidelines for environmentally compatible land use planning.

5. METHODOLOGY

The Ministry of Environment & Forests (MoEF) , Government of India took up the task of developing sector-specific technical EIA guidance manuals for all the developmental activities listed in the re-engineered EIA Notification. The Infrastructure Leasing and Financial Services Ecosmart

Limited (IL&FS Ecosmart), has been entrusted with the task of developing these manuals for 27 industrial and related sectors. Pulp & paper industry is one of these sectors, for which this manual is prepared.

The ability to design comprehensive EIA studies for specific industries depends on the knowledge of several interrelated topics. Therefore, it requires expert inputs from multiple dimensions i.e., administrative, project management, technical, scientific, social, economic, risk etc., in order to comprehensively analyze the issues of concern and to draw logical interpretations. Thus, Ecosmart has designed a well-composed implementation framework to factor inputs of the experts and stakeholders in the process of finalization of these manuals.

The process of manual preparation involved collection & collation of the secondary available information, technical review by sectoral resource persons and critical review & finalization by a competent Expert Committee composed of core and sectoral peer members.

The MoEF appreciates the efforts of Ecosmart, Expert Core and Peer Committee, resource persons and all those who have directly and indirectly contributed to this Manual.

A) Operational issues

- State level /UT level EIA Authorities (SEIAA/UTEIAA) are formulated for the first time and many are functioning
- Varying roles and responsibilities of involved organizations
- Varying supporting institutional strengths across the States/UTs
- Varying manpower availability, etc

B) GIS in environmental planning

The emergence of GIS during 1970s and the simultaneous development in ecological and environmental planning led to a long term association among GIS and EEP. Given the large amount of environmental data that needs to be compiled for effective suitability analysis, GIS was used as an efficient tool for organising, storing, analysing, displaying and reporting the spatial information. GIS allowed the creation and modification of the analysis that makes the best use of available data. GIS also supported methods to apply guidelines and criteria set by local and India's national management regulations. Five major steps of GIS spatial analysis for environmental and ecological planning include (but not limited to):

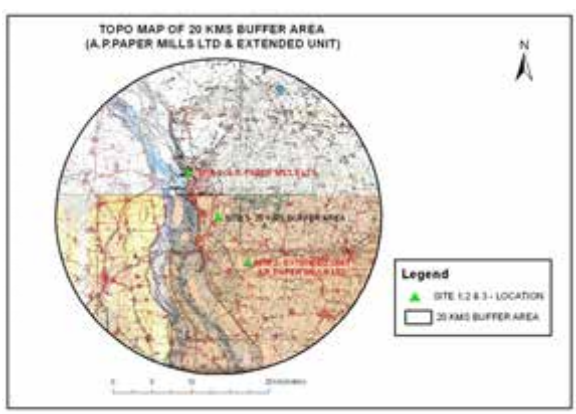
1. Defining criteria for the analysis
2. Defining data needs and base map
3. Acquisition and preparation of the data as thematic maps
4. Creating GIS model/overlays
5. Evaluating results and refinement of the model

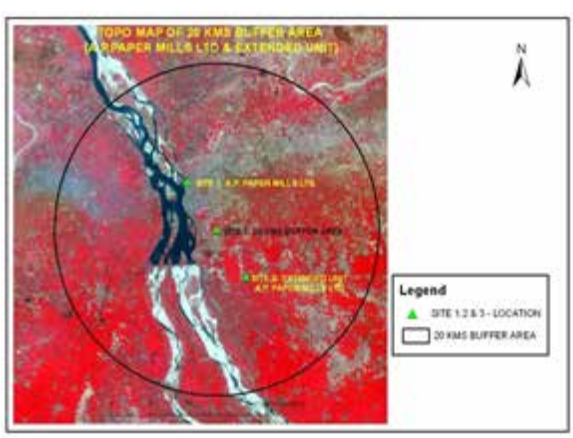
6. RESULTS

Towards environmental integrity, the Paper Mills has to undertake energy conservation measures, which included installation of electrostatic precipitators with high efficiency which had reduced pollution of air and improved generation of specific steam. There has to be proper management of co-generation power and efficient usage of steam. Effluent discharge of the company should also lowered substantially. Thermal energy should reduce, Internal generation of power through generator sets was also increased over the years. Rotary kiln with electrostatic precipitator was commissioned as pollution control equipment in 1997. This helped in controlling air pollution, disposing of solid waste and resources were conserved over the years.

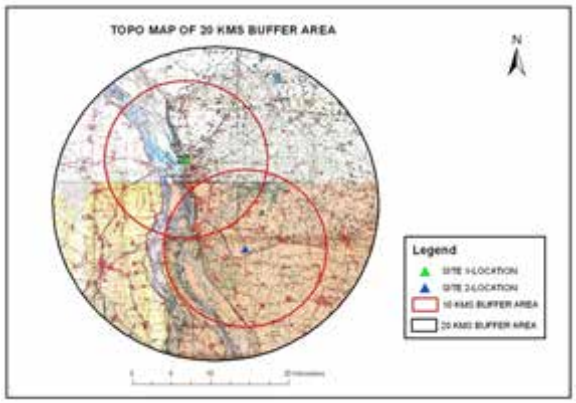
As part of its conservation measures, back-water was re-used, treated effluent water was used for miscellaneous purposes and recycling of water through the cooling tower can be done. Waste heat can recycle thereby reducing the use of coal. Waste sludge from the effluent treatment plant was recycled and used as auxiliary fuel in the boilers. Lime sludge was recycled to recover lime for re-use. Fly ash recovered from the power boilers are supplied to brick manufacturers and for filling quarry pits. In order to control pollution,Solid waste like wood dust can be used as auxiliary fuel in its coal fired boilers. Burnt lime can regenerate for re-use in the cooking liquor preparation. Effluents from company after treatments can pass through land treatment system with soil water air matrix and sent to sand shoals of Godavari.

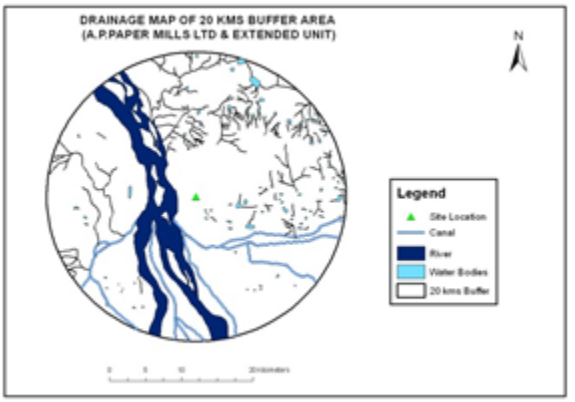
Company should distribute saplings of plants like casuarina and subabul seeds to farmers as part of their farm forestry scheme. Farmers raised plantations on their waste land. This not only brought prosperity to them but also brought in ecological balance. Towards its social commitment, company donated to charitable and other community developments purposes. Company's eco-friendly approach with farm forestry continued over the years. Company's planting techniques with less cost was accepted by farmers. The socio economic commitments of the company towards environmental and upliftment of status of the farmers continued. Company should provide drinking water, organized medical camps, irrigation projects for farmers, caring for children through various initiatives in the education sector, sewing machines for under privileged women, etc were done towards commitment to society.

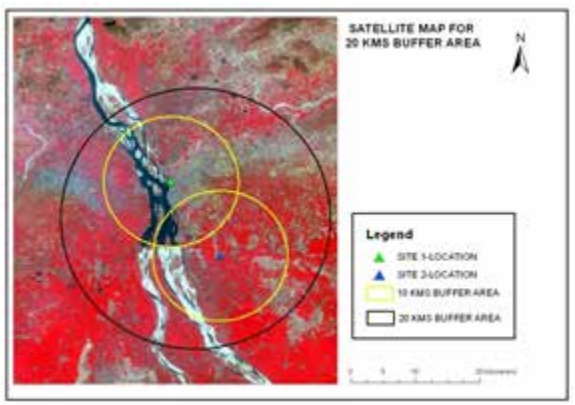


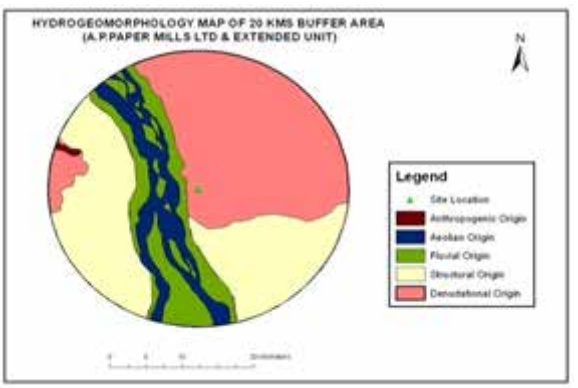


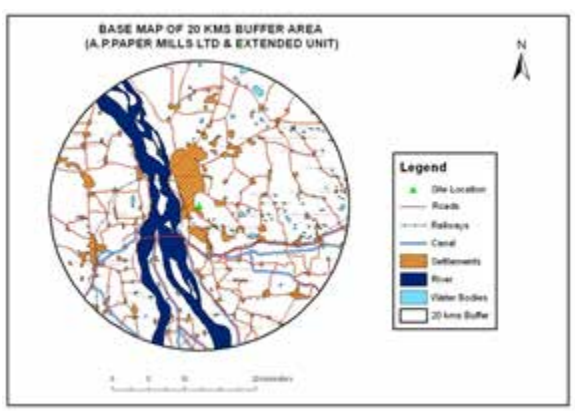
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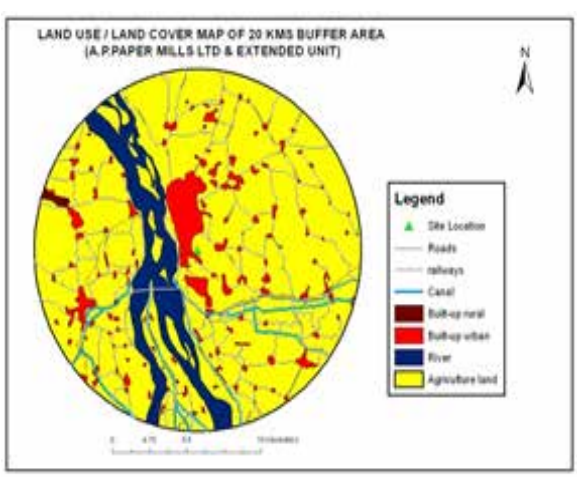












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