CHAPTER-1
INTRODUCTION

1.1 PREAMBLE

The growth of sand beneficiation industry significantly contributes towards the economic progress. However, any sand beneficiation industry progress brings along with it a number of environmental impacts of both positive and negative. The negative impacts cause environmental degradation whereas the positive impacts cause benefits especially to the socio-economic environment. It is the responsibility of the management of the industry to document these impacts separately so that these can be identified, quantified and attempts may be made to minimize negative impacts and maximize the positive impacts for better development with least environmental degradation (Biswas and Agarwala, 1992).

Sand beneficiation plant of M/s Saint Gobain Glass India Ltd. is located in Plot No. 98 of Andhra Pradesh Industrial Infrastructure Development Corporation (APIIDC) at Karur Village near Tada in Nellore district of Andhra Pradesh state. The plant site is located nearly 5 km south of Tada and approximately 70 km from Chennai, adjacent to National Highway No.5, connecting Chennai and Kolkata, in an area of 9.0 hectares (22.5 acres). The industry has a production capacity of silica sand of about 1200 TPD suitable for its float glass plant at Sriperumbudur in Tamil Nadu state, by beneficiating from raw sand obtained from sand mines located at Chintavaram, Ballavolu, Momidi, Yeruru, and Vellapalem near Gudur town of Nellore district.

The industry is established during the year 2000. The major activities of the industry are (i) mining the sand near the town of Gudur and (ii) beneficiation of sand, at plant site near Tada, to the
required quality and quantity for use in the manufacture of float glass at Sripemmbudur town in Tamil Nadu state.

By the very nature of these activities both positive and negative impacts are induced on air, noise, water, land, biological and socio-economic components of the environment (Harben, 1999).

Environment Impact Assessment (EIA) is a policy and management tool, which assists to identify, predict and evaluate the environmental consequences of the environment before, during and after impending developmental projects, so that undesirable effects, if any, can be mitigated. Thus, EIA involves in identification, prediction, evaluation and mitigation of environmental concerns regarding implementation of developmental projects, policies, plans etc. EIA must include a detailed risk assessment and provide alternative solutions or options.

Thus the process is structured to analyse, and disclose the associated impacts with respect to established public policies for protecting and enhancing the natural and anthropogenic environment (Mc Hary, 1969).

In the present study, sand beneficiation plant near Tada is taken as the case study to carryout the EIA of the project.

Specifically, an EIA:

- Identifies the sources of impacts from the related activities of the sand beneficiation activities and recognizes the environmental components which are critical to the changes or the impacts.

- Predicts the likely environmental impacts of the sand beneficiation plant and its related activities on the identified environmental components either using quantitative, qualitative, semi-quantitative, or hybrid methods.
• Finds ways to reduce unacceptable impacts and enhance the positive contributions of the industry by recommending mitigative measures.

• Presents to the management and other concerned agencies such as Andhra Pradesh Pollution Control Board (APPCB), the results of impact identification, prediction, and assessment with options of suggested measures of mitigation and monitoring.

1.2 SCOPE OF THE STUDY

The purpose of Comprehensive Environmental Impact Assessment (CEIA) is to identify and evaluate the potential impacts (beneficial and adverse) due to sand mining activities and the existing sand beneficiation plant at Tada on the surrounding environment. The overall impacts of the industry can be quantified through EIA studies for air, noise, water, land, biological and socio-economic components of the environment (Munn, 1979; Disset, 1980; Canter, 1996).

The EIA studies over a period of 3 years from 2002 to 2005, can be divided into three phases. The first phase being identification of significant environmental parameters and assessing the existing pollution levels within the impact zone with respect to air, noise, water, land, biological and socio-economic environments. The second phase involves prediction of impacts due to the activities of the existing industry on identified environmental components. The third phase includes evaluation of overall impacts to take necessary steps, if required, for preventing deterioration of surrounding environmental quality.

An Environmental Management Plan (EMP) adopted by the industry is thoroughly assessed for adequacy of control measures implemented by the industry. The EMP indicates the details of various measures taken by the industry to safeguard environment (UNESCO, 1993; Thompson, 1990; WHO, 1987).
An area comprising 20 km radius around the factory was extensively surveyed on the existing status of environmental quality. Similarly, the activities of industry with respect to pollution contribution sources and their magnitudes were assessed. Information useful for the study was also collected from various agencies and local people.

1.3 RATIONAL AND NEED OF THE INDUSTRY

Silica sand is the basic raw material in the production of various types of glasses used in the house construction for windows, partition walls, decorative works, glass bottles, and in a variety of other uses (Brady and Clouser, 1977).

Silica sand available in the nature is not directly usable in the glass manufacture as it contains certain impurities (Harben, 1999). The impurities need to be removed and made into particular size (100 to 630 μ) in the glass manufacture. As such, the sand is to be beneficiated to attain particular quality. The present sand beneficiation plant at TADA satisfies to the requirement of sand demand for float glass manufacture at Sriperambudur, Tamil Nadu. The future demand for glass is expected to grow by 11% (Association of glass manufacturers, 2005).

Therefore, keeping the demand for glass in view, the glass manufacturing industry is progressing steadily. Therefore the sand beneficiation plant's need is justified for the glass production so that the needs of the society for the demand of the glass can be met indigenously with no share of imports.