



Environmental Impact Assessment For Navi Mumbai Airport

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ABSTRACT

The paper examines the environmental impacts of new airport construction at nevi Mumbai. There is different type's environment impact assessment that can be environmental, that can be social or that can be economical in nature. The main environmental impacts of airports growth are noise and air quality. There are different types of devices like sound level meter were used to recode both noise and air quality. This paper covers the main two environmental impacts of an airport i.e. 1) noise & 2) air quality. The findings suggested that the construction and land use for the new proposed airport has a significant relation with the noise & particulate matter (PM) levels too. The PM level at the surrounding living area should not be above than the recommended levels.

The findings of the study are hoped to assist in providing better benefits of the proposed Navi Mumbai airport within affordable cost. The construction of Navi Mumbai airport system helped to increase the accessibility & mobility of users. This paper also reports the study of passenger behaviour while moving in the interchange facility so the paper finally describes all different types of environmental impact that can be harmful to people by the new construction of any airport.

Keywords: Environmental Engineering, Airport Construction, Environmental Impact.

1. INTRODUCTION

Human Environment plays a vital role in overall development of the country. Recognizing the importance of environmental protection and sustainable development, the Ministry of Environment and Forest, Government of India had formulated policies and procedures governing the industrial and other developmental activities to prevent indiscriminate exploitation of natural resources and to promote the integration of environmental concern in developmental projects.

Environmental Impact Assessment is a planning tool now generally accepted as an integral component of sound decision-making. The purpose of EIA is to give the environment its due place in the decision-making process by clearly evaluating the environmental consequences of the proposed activity before action is taken. Early identification and characterization of critical environmental impact allow the public and the government to form a view about the environmental acceptability of a proposed developmental project and what conditions should apply to mitigate or reduce those risks and impact. EIA helps us for trying to identify the various environmental, social & economic impacts before making a decision whether we should construct an airport at a specific location or not.

2. STUDY OF DIFFERENT TYPES OF ENVIRONMENTAL IMPACTS ON AIRPORT CONSTRUCTION

We have studied some important environmental impacts which are on new airport construction along with different parameters are given below:

Objective of EIA

1. To describe the proposal project and associated works together with the requirements for carrying out the proposal developments.
2. To identify and describe an element of community and environment likely to be affected by the proposed developments and likely.
3. To cause adverse impacts to the proposed projects, including the natural and man-made environment.
4. To identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses.
5. To investigation the extent of side effects of proposed mitigation measures that may lead to other forms of impacts.

6. To identify constraints associated with the mitigation measures recommended in EIA study.

We need a basic knowledge about the past researches and advancements in that field, before starting the work in it. A Literature Review is a text written on the study of the past work and our understandings of them. In other words, It is a form of work acquired to get the knowledge about the past works and inventions in that field and to get a clear idea about the methods and ways for going ahead with our work. So there we have studied different literature papers as given below:

I. Philip J Wolfe

Paper published by Philip J Wolfe and his associates from the laboratory for aviation and environment MIT USA they stated that the environment impact for aviation particularly noise air quality climate change have become increasingly important Aviation Impact the climate through emissions of CO₂, NO_x as well as through induced changes in cloud cover. Aircraft noise is the most readily perceived environmental impact of Aviation and first to be regulated in 1971 although they had been for the regulations still the aircraft noise is a greater concern for communities living near airports the paper calculate expected damage per person as a function of distance from airport for period of a year .they have studied the Three spheres noise air quality and climate for aviation operation it was limited to USA airport.

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Is the paper published information related to EIA and its purpose? What is the legal sanctity of EIA? What is the process of EIA which project need EIA? It had provided the information that EIA compulsory instrument that shall be the Undertaken for propose activities that are likely to have a significant adverse impact on the environment and are subject to a decision of competent national authority to which India is sinuating. It comes under the ministry of environment forest and climate change it is compulsory for mines, power plant or process for extraction of Natural resources, Industries Airport etc.

II. Asinine Voskaki

It was the author stated the negative impact of the airport on the environment and their general solutions it showed that contribution of the airport to environment disturbances at local and global scale is significant It worldwide International aviation is considered one of the most growing sources of greenhouse gas emission. Water use is generally considered as constraining growth factor for many airports and the applied practices to reduce water use are to install the various leak detection system, install water reduction device, an implementation of water recycling operation to reduce the demand of potable water. Airports are a major source of noise and waste. certain measures are implemented to reduce noise is noise monitoring System , Operating restriction and limit traffic management and anti-noise barriers , home insulation etc. degrading of local air quality is another issue created by airport the common applied measure to control air pollution include air quality monitoring, Air Traffic management, wastewater, and effluent needs proper management to avoid pollution. Airport water runoff is considered the major source of pollution as they have a high level of chemical and toxic substance the common applied Methods are waste water and sewage plant groundwater quality monitoring and oil, hydrocarbon and grease separator system. Use of biological degradable de-icing and anti-icing agent.

Kuala Lumpur International Airport Malaysia

This was the papers related to the expansion of Kuala lumped International airport, Malaysia has been read out carefully. The paper study the environment impact of airport expansion. The important environmental concern in airport growth are noise and air quality, several devices were used to find out the noise level. The environmental contamination generates a risk of bad ill effects on human health. Quality of environment and damaging the property. Airport services, operations and construction of new airports creates no of activities that contribute to bad impact on the environment. Aviation affects the environment by several methods such as air pollution, noise pollution, and land pollution. Airport noise can clearly affect the people in surrounding area such as sleep disturbance, hearing complications, stress etc. Aviation services produce hazardous matter such as air pollutants and carbon monoxide. The paper identities environmental impact of airport expansion and construction. It Includes study of several locations within the airport area and airport surrounding the area. The Study by the bell (2007) confirms noise level had given impact on human health as an example. The cardiovascular disease raised by 18 %. It had been assessed that 120 million persons globally had hearing problems due to noise from construction and industrial activities. Based on the table below the acceptable noise level without any complaint and ill effect i.e. 60-70 DBA.for this study, the noise level survey was made by using sound level meter RZ-5503[SLM]. To check the quality of air. Air sampling method was used at different locations.

III. Western Sydney Airport Case Study

On the 15th April 2014, the Australian government announces that Commonwealth land at Badgerys Creek would be the site for western Sydney airport. The site for proposed airport covers an area of approximately 1780 hectares. It had provided the information on the environmental matters. It had provided an overview of likely scale of potential impact associated with the development and consideration of future development. The airport site is a part of an elevated ridge system dividing Nepean River and South creek catchment on the Cumberland plain. The airport site features patches of grassy Woodland and forest. The main land uses were for agricultural and low density rural residential development. A total of 172 Terrestrial fauna and flora was identified at the airport site. Construction of airport had resulted in both direct and indirect impact on Terrestrial and aquatic flora and fauna. The removal of vegetation at airport site result in loss of various species of flora and fauna it has affected on biodiversity.

EIA methodology means an approach developed to identify, predict and value changes of environmental issues considered (physical, chemical, biological, socioeconomic, cultural, landscape values and processes). Uses methods and techniques to quantify or to qualify those changes. All aspects and variables can be measured, problem is to value them. Methods for EIA are as Follows:

- A. Impact Identification
- B. Impact Prediction
- C. Impact Valuation

A. Impact Identification

Methodology means the structural approaches for doing one or more activities of EIA. There is some specific characteristic which an EIA methodology should depict. The different types of methods for impact identifications are as follows:

Types of Impact Identification

- Ad Hoc Method
- Checklist Method
- Matrix/Matrices Method
- Network Method
- Overlay Method

B. Impact Prediction

The accumulated knowledge of the findings of the environmental investigations forms the basis for the prediction of impacts. Once a potential impact has been determined during scoping process, it is necessary to identify which project activity will cause impact, and its magnitude and extent.

Methods of Impact Prediction

- Best estimate professional judgment
- Quantitative mathematical models
- Experiments and physical models
- Case studies as analogues or references

C. Impact Evaluation

Its purpose is to assign relative significance to predict impacts associated with the projects and to determine the order in which impacts are to be avoided, mitigated or compensated.

3. CONCLUSION

New construction of Navi Mumbai airport is necessary for the development of the economy of the Navi Mumbai region in general. It is the consultant opinion that the environmental impacts identified may be mitigated. The proposed new construction of Navi Mumbai airport plan if implemented will suggest the integrity of the environment.

4. SCOPE OF WORK

- a. Describe the project and associated works together with the requirements for carrying out the project.
- b. Identify and describe the elements of the community and environment likely to be affected by the project and likely to cause adverse impacts to the project, including both the natural and man-made environment.
- c. Describe the part of environmental factors played in the selection of the preferred options.
- d. Identify, assesses and specify methods, measures, and standards, to be included in the detailed design, construction and operation of the project which is necessary to mitigate these environmental impacts and reducing them to acceptable levels.
- e. Design and specify the environmental monitoring and audit requirements to ensure the effective implementation of the recommended environmental protection and pollution control measures.

5. REFERENCES

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