

# **GIS Based Modeling for Landfill Site Selection Using Analytical Hierarchy Process**

**R.L.Narayanan**

**Human Settlement Analysis Division, IIRS**

**Guide**

**Prof. B.S.Sokhi, Human Settlement Analysis Division, IIRS**

## **ABSTRACT**

Solid waste disposal is one of the most troublesome logistic problems facing our society. Not only has the volume of solid waste increased rapidly in the past few years, but the available sites meeting stringent environmental requirements have been depleted.

A sanitary landfill is traditionally defined as an engineering method of disposing solid waste on land in a manner that protects the environment. This is achieved by spreading the waste in thin layers, compacting it to the smallest practical volume and covering it with soil by the end of each working day. Most of the solid waste generated is being disposed in landfills, this being most economical. In order to keep abreast of nations land filling needs, new landfill sites have to be sited as the older ones are filled.

In the present study an attempt has been made to identify potential landfill sites depending upon the site attribute using process modelling techniques. Selection of landfill sites involves integration of voluminous and varied data set pertaining to several earth related factors. The present study, therefore, has been carried out in the remote sensing and GIS environment. A spatial decision supportive system has been developed to calculate the relative weights for different themes at different levels. These relative weights have been used to integrate the data in spatial domain. GIS has been used as analytical screening tool, in a site selection process, to narrow down the number of candidate sites, subsequently, leading to one or more sites for detailed investigation.

The project would aim at demonstrating the utility of Remote Sensing & GIS Technology in identification and selection of sites for waste disposal in and around Dehradun, using the Analytical Hierarchy Process(AHP).