Development activities must be compatible for possibilities and limitation of natural environment and resources. Predevelopmental analysis must take into account physical site factors as well as those factors as economics, politics and sociology. Landscape has relationship with surface and subsurface conditions upon which design concept and form can be evolved. Landscape developmental activities follow some definite cycle. Conventional method of data collection are uneconomical as compared to Remote Sensing techniques. Scale of data source has direct bearing on the value of parameter. For a basin the scale of data source are not uniform, moreover available Remote Sensed Data are on various scales. In this study landscape parameters has been evaluated using Remotely Sensed Data and scale effect has been studied.

INTRODUCTION

Development of landscape can be treated in terms of a cycle. Drainage basin may be considered as a basic unit of landscape. Geomorphological cycle has its beginning soon after endogenetic geodynamic process has completed, creating an uplifted area such as mountain range, weathering, erosion and detrition begins to act on the uplifted area and gradually proceeds to reduce it to a base level. This completed the cycle. In development of drainage basin, meteorological, physiographical, pedological, geomorphological and botanical factors play a major role. The cycle may be normal, arid or glacial. In order to proceed with a rational explanation of the development of drainage basin it is necessary to describe its features in numerical terms. When dealing with development of large scale landscape development it is not possible to study individual constituent, as various phenomena are so complex and complicated that detailed follow up of the individual microscopic events may not be required for planning purposes. This leads to the theory of drainage basin and to the theory of large scale landscape development. Under such circumstance progress can be made only by considering average properties of the system using probabilistic concept. A number of parameters can be defined as a characteristics of drainage basin. The commonly used parameters are drainage density and drainage frequency. Drainage density is channel length per unit area, defined as

\[ D = \frac{k}{\sum_{i=1}^{n} \frac{LU}{AU}} \]
Low drainage density is favoured in regions of highly resistant or highly permeable, sub soil materials under dense vegetative cover and when relief is low. High drainage density is favoured in regions of weak or impermeable subsurface materials sparse vegetation and mountainous relief. This yields an important measure of the drainage pattern. Drainage texture refers to the number and relative spacing of drainage courses per unit area in the drainage basin. Drainage frequency is number of stream segment per unit area, defined as

\[ F = \frac{K}{\sum NU/AK} \]

Drainage density and Drainage frequency are related as \( F = 0.694 \ D^2 \). The change of drainage texture may point to lithological differences, porosity, permeability and resistance to erosion. The stage of erosional development also influences the drainage texture, which tends to become finer towards old age, if a whole drainage basin is considered.

It is well established fact that drainage density and drainage frequency are very useful parameters for study of various aspect of drainage basin such as hydrological, pedological forestry etc. These parameters can be evaluated from available map of the area. For the same basin available map are not of uniform scale. As such value of parameter differ from map to map depending upon scale of map. For the same basin available map are not of uniform scale and hence evaluated value of landscape parameters differ region to region depending on scale of map used alongwith other factors. For study of the effect of variables dimensional analysis can be carried out under the assumption that run off intensity \( Q \), Erosion factor \( k \), relief \( H \), Density, Viscosity \( P \), N of the fluid, acceleration due to gravity are important parameters affecting drainage density. On carrying out dimensional analysis drainage density can be represented as

\[ D = \frac{1}{H} f(QK, HQP/N, Q^{**} 2/HG). \]

The above equation can also be written as \( D = \frac{1}{H} f(HQ \& RE, FR) \) where HQ, RE & FR are Horton's number, Reynolds number and Froude numbers respectively.

**MEASUREMENT OF PARAMETERS**

Drainage lines are generally wiggly. Wiggles introduces complications. It is clear that more wiggles tend to disappear, the smaller the scale of map. Thus, the length of a line does not have a meaning perse. As it depends very much on the scale of map used. The large the map the greater the length of feature.

Analytically length between points can be evaluated by evaluating integral of point set. The analytical method is generally not suited for practical purpose however the integral can be conveniently and accurately evaluated by finite sum, which permits probabilistic interpretation. The line step by step procedure is outlined below.