

## IMPORTANCE OF TAXONOMIC AND GEOGRAPHIC DATA-BASE FOR CONSERVATION OF BIODIVERSITY

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### Introduction

Diversity is the beauty of nature. But human interest is to make it ugly day by day exploitation its worthy resource. Industrialization and associated development is the main cause for such depletion of natural resources. But fortunately in 1992, alarm was made at Rio-de-Janeiro Earth Summit, to conserve the biological diversity and restore ecological balance.

Though in western countries much more work has been done in this regard; but, in India in general and North-Eastern states in particular this concept emerged very late.

The concept of biodiversity is a little complex to the common people if explained theoretically. Equally it may be easy for him if explained practically in the field. Since, he is the producer and end user of products from broomstick to herbal medicines. It is also very transparent that biodiversity conservation is not possible without active participation of such common people. Presently with initiatives of NGOs/VAs the meaning of biodiversity and causes of its loss are well known to almost everybody but the strategy to conservation is still a great challenge.

Documentation of biodiversity is a widespread practice in terms of gene, species and ecosystem. For the conservation, accumulation of information regarding diversity on different respective aspects in a particular area is essential. The taxonomic, i.e., systematic documentation of specimens and geographic study with relation to the existing biological specimens in the respective area would be the primary and principal step for assessment and conservation of biodiversity.

In the biosphere each living organism has its significant role in the ecosystem, which generates a network to living together. Since, human being is also an active participant of that network, any violence by him may cause serious and devastating feedback to himself.

Nature generates typical species composition under typical geographic condition. But the distribution may not be same due to some hindrance. So, the knowledge of taxonomy is more important to focus the composition of biological diversity. The relationship between elements and their respective geographic variability will reflect the condition of existence in the respective habitat.

Finally, the observation of Taxonomy and Geography will give the list of specimens and their required environmental conditions, importance to humans of each specimen and its role in the ecosystem. By conducting this type of observation in more than one area we shall be

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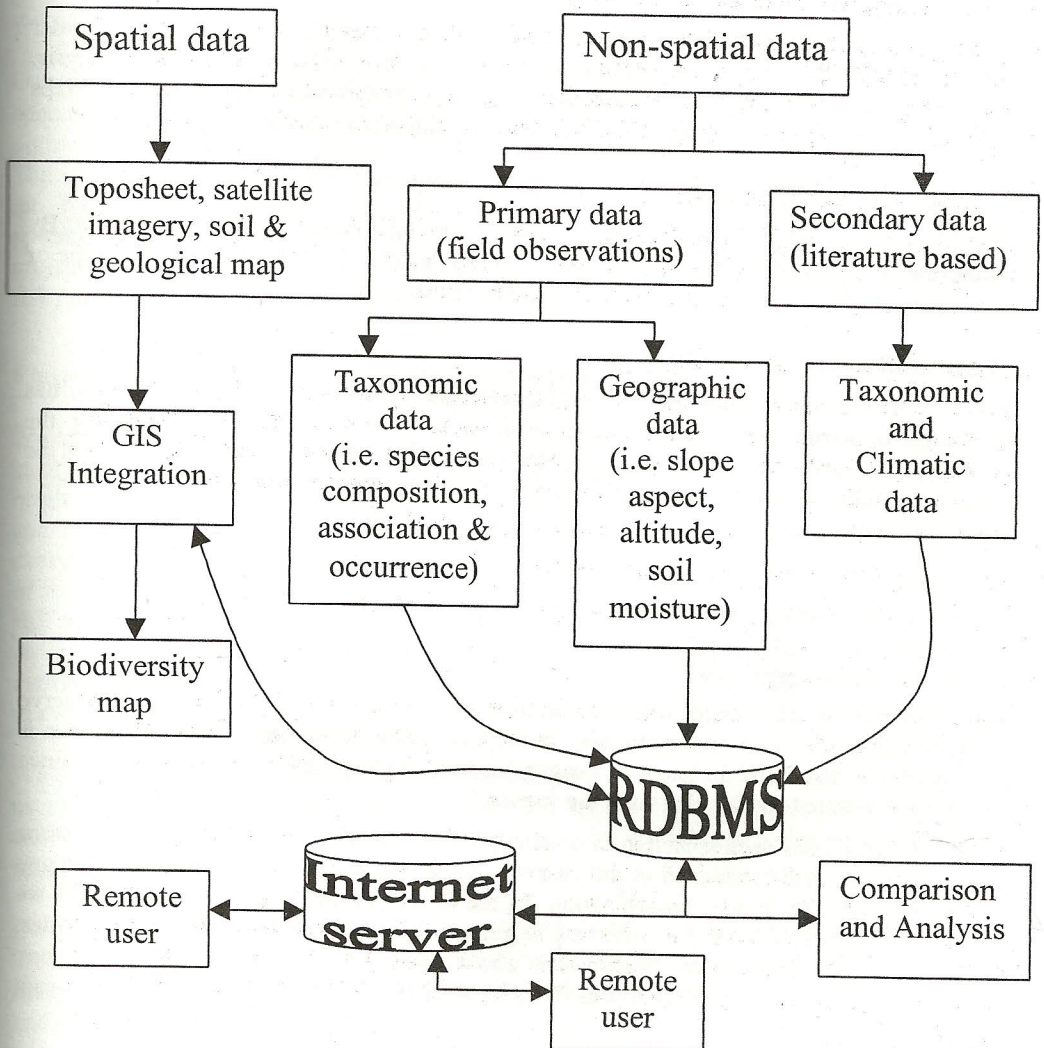
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able to get a clear picture of diversity through comparison. Accordingly, it would be helpful to take the necessary steps through *in-situ* or *ex-situ* method of conservation of biodiversity.

### Methodology

In order to keep vast amount of data base in a systematic way, a computer shall be used with Rational Data Base Management System (RDBMS) and Geographical Information System (GIS) software (Fig - 1). In such an environment, data can be updated in any moment and it is necessary for the study of dynamic phenomena like biodiversity. The following are steps to be followed to prepare the biodiversity map and for Comparison & Analysis of studied area with other geographically similar area:

Fig. - 1



## 1. Data Generation

The data is basically of two types, i.e (a) Spatial data and (b) Non-spatial data.

- (a) Spatial data includes the soil and Geological maps, toposheets and satellite imagery.
- (b) Non-spatial data includes i) Primary data (field observed) ii) Secondary data (literature based).
  - i) The primary data to be observed in the field such as species composition, association and occurrence. At the same time slope aspect, altitude and soil moisture are also to be observed.
  - ii) The secondary data which is literature based are collected such as climatic data from meteorological stations or any other source and taxonomic data from historic records and/or experienced people if any.

## 2. Data entry, Manipulation and storing

Various types of non-spatial data from field and existing literature to be entered in tabular format to the RDBMS. Data manipulation is necessary to avoid absurd result after analysis. While putting data set, care is to be taken in every step to avoid the extreme values. Maps (spatial data) to be digitized using a CAD (Computer Aided Diagram/Design) software.

## 3. Maps and Query from GIS

Once the data is ready in digital media, we can go for integration in GIS environment. By linking this Spatial and Non-spatial data in a common platform we can generate any type of map we desire. Biodiversity map may be an output of this step.

## 4. RDBMS linking to Website

Now we have entered into the age of Information Technology. Internet facility has committed to shrink the global dimension. If such a great facility is utilised for the information of biodiversity, conservation and upgradation of our surroundings would be more easier. Utilization of Internet facility has at least three apparent benefits:

- (a) Study of endangered species based on authentic database.
- (b) Comparison between two geographically similar areas.
- (c) Acquiring information from Internet and inaccessible terrain.

## Conclusion and Suggestions

An urgent need is felt to make documentation of species of whole N. E. Region to conserve the rich biodiversity in a systematic way through computer technology. Since this region is very unique in the world in terms of geographic location and variations, we may introduce numbers of selected species that suits this region.

Crores of rupees has been spending to do similar type of work in some areas whereas some remort areas are still untouched in this respect. Therefore, such type of communication gap to be removed with proper co-ordination. In the age of Information Technology (IT) we should link global network (i.e. Internet) to get latest knowledge about relevant activities. Probably it will make more transparent about what activities are going on in any organisation particularly the NGOs/Vas. Which can be considered as the mirror of grass root level people.