

## Some Details in the Preparation of District Vegetation Maps in India at 1 : 253,440 Scale According to the Method of Gaussen.

by

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The vegetation mapping by Gaussen's method has been already explained by Gaussen himself (1957) and later by Legris and Viart (1959). The method explained by them is for the preparation of International Vegetation map at 1 : 1000,000 scale. The purpose of this paper is to show how this method of mapping can be applied for the establishment of the district vegetation maps in India at 1 : 253,440 scale. The procedure given below was successfully followed for the preparation of the vegetation maps of South and North Arcot districts (Dabholkar 1960).

**The essential features to be represented on the map :** In the preparation of these types of maps, it is necessary to collect the following information :

1. Ecological conditions of the region.
2. The structure, physiognomy and the floristic composition of the vegetation.
3. The succession of vegetation.
4. Data on Agriculture and Irrigation.

The ecological features which are studied are temperature, rainfall, rainy days, humidity, xerothermic indices, light and the soils and these factors are extensively discussed already (Gaussen 1957). It is intended to explain here the actual method to be followed for the study of the vegetation and its representation on the map.

**The preparation of the Skeleton Map :** There is some information which can be gathered from the survey maps of India at 1" : 1 mile or 1 : 63,360 scale. The information available from such maps is very important. Recently, most of the maps have been modified and can give the latest information about the boundaries of forests, the tanks, the irrigation etc. The above maps are therefore reduced to the required scale as needed and the necessary data are obtained. After preparing such map which can be called as "Skeleton Map", the vegetation, soils, climate and the latest irrigation systems can be represented on it. For the field study therefore, the copy of the

“Skeleton Map” is taken along with the touring officers map of the district under study. Both these maps can be taken useful for locating the different vegetation types on the spot



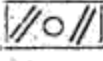

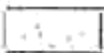
The study of the vegetation and its representation on the map : There are two types of vegetation viz. Natural and the Introduced. Natural vegetation consists of forests which are to be studied actually in the field. Information on Introduced vegetation can be obtained from the Agriculture and Forest departments of the districts concerned.

Natural vegetation : Many methods can be utilized for the study of the vegetation. For the present work, the following method has been used for the study and to classify the plant communities.

First of all, several traverses are made. A general reconnaissance survey is carried out first in order to distinguish as many types as possible. This is followed by traverses in selected areas when the dominants and the stratification are studied. In the third, stage, quadrates are laid out and a floristic estimate is made. The structure and the physiognomy of the forests also are then studied. With this data, the plant communities are delimited. The complete details of this method would appear elsewhere.

The next step is to study the succession of vegetation in the region to know the climax vegetation. Once the present state of vegetation, the successional stages and the climax vegetation are known, then the natural vegetation is represented on the map as follows :

As the existing stages of vegetation are the stages leading to the climax vegetation, they are marked by the stage numbers say from 0 to 10 i. e. from bare soil to the climax vegetation. On the map therefore, these numbers are shown. Physiognomy of vegetation can be shown by any symbol but the following symbols which are utilized in the International vegetation map of South India ( Gaussen *et al* 1960 ) will serve as the best examples.

Grassland ... Fine dots	
Scrub.....Oblique lines	
Woodland scrub.....Oblique lines and circles	
Woodland Savannah.....Circles and fine dots.	
Forest ..... Full colour	

The map thus drawn shows only the condition of the vegetation but does not represent the environmental conditions of the vegetation. The ecological conditions are therefore shown by the colours as explained by Gaussen (*loc. cit.*). The climax community is shown by full colour while the degraded forests are indicated by faint colours.

**Introduced vegetation :** The available information about the agriculture in the regions is in the form of statistics which is district-wise and it can be represented on the map.

The statistics are about the cultivated areas, areas under the forests, fallow lands and uncultivated lands. Similarly, the statistics about the individual crop in the district is also available from the agricultural department. This information is very general and can be useful for the preparation of the general vegetation map (or the International vegetation map at 1:1000,000 scale as called by Gaussen).





For the preparation of the vegetation map of a district at 1:253,440 scale, it is extremely necessary to collect more information on the Introduced vegetation. Up-to-date statistical data on agriculture is available only from the heads of the taluks. Agricultural demonstrators also have information on agriculture in their areas but they are in charge of small divisions in the taluks and one can find that in one taluk there might be two or three demonstrators and therefore, it is difficult to collect the statistics from all these people. So the statistics on agriculture is collected from the taluk heads.

The representation of this data on the map is done as follows :

Area under Forests .....	F
„ „ Cultivation .....	C
„ Non - cultivated .....	U
„ under Permanant pastures .....	Π

The above statistical data viz. CF Π U for the district are shown by means of the same letters and size and style of each letters gives the percentage of each. Suppose, for a taluk, out of the total geographical area the forests form 50 %, cultivated areas 25 %, permanant pastures 20 % and non-cultivated areas 5 %, then this data can be represented as : CF Π. Similarly, the area under each crop such as paddy, millets, groundnut, sugarcane etc. can be shown in the same way.

For the actual indication of the different main crops, taluk agricultural demonstrators and plant protection officers are consulted. Plant protection officers are especially well informed in this regard and can give the accurate demarcation of the different crops. This data are finally put in the form of different symbols having definite statistical values as given below :

Paddy		Each sign represents 1000 hectares
Millets		" " " "
Groundnut		" " " "
Sugarcane		" " " "

These signs are also shown by different ecological colours based on whether the crop is wet or dry. For example, paddy and sugarcane are generally wet crops and can be shown by different shades of blue colour while the dry crops such as groundnuts and millets are shown by red colour. Apart from the cereal crops, there are some trees planted for the fruits, fuel or timber in some places. The plantation of these trees is shown by the horizontal lines using the ecological colour of the tree species.

The coloured vegetation maps of South and North Arcot districts in Madras State prepared in this way cannot be included in this paper. These maps will be published shortly and can be available to the agriculturists.

In conclusion, it can be said that if the vegetation mapping is to be undertaken in India, it should be borne in mind that the maps should be prepared for each district at 1 : 253,440 (1" : 4 miles) scale, as it is rather easy to obtain all the data on the vegetation from each district as shown in this paper.

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