



ORIGINAL RESEARCH PAPER

Botany

**BIOINFORMATION VIS-A-VIS ECO-
INFORMATION AND PBR OF FLORA -A CASE
STUDY OF MAALE VILLAGE, TAL-MULSHI, DIST-
PUNE**

KEY WORDS: Biodiversity conservation, PBR, Biodiversity act, Maale village, flora

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ABSTRACT

With the advent of improved scientific technological innovations there has been a spirit in industrial and developmental activities. This has caused enormous strain on environmental resources and dynamism resulting in gross ecological imbalance. It has thus become imperative to maintain a balance between awareness of the environmental issues and actual actions plans. This can be achieved by various strategies of Environmental acts to be executed by Govt. of India. So PBR is the most important aspect of "Environmental Impact Assessment (EIA), Environmental Management Plan (EMP) and Environmental Risk Assessment (ERA)." PBR will be an effective management tool which aims at integrating environmental factors into public concern, and decision making so as to achieve sustainable development. As result of mass scale degradation which is threatening the very existence of man and biosphere, we have not only become concern but also scared about undesirable changes in the quality of our environment. Although basically ecology is biological in its marrow, it has now become a social science, a basic components of liberal education for commoner to elite. Rarely has an academic subject become such a major issue in the public consciousness as ecology in late 1960s and early 1970s. Within a few years ecology progressed from a rather quiet and obscure branch of biology to a subject at national and international concern. It is branch of science or rather a discipline of human knowledge dealing with the strategies of survival of man and biosphere in space and I successfully utilized these crisis as an opportunity. Thus need of the hour is this concrete efforts from a taxonomy professor as well as from the local population to this menace, which may take shape of the PBR. This paper thus embody my efforts to prepare a comprehensive list of plants which can be includes in PBR of this village and surrounding area.

INTRODUCTION

PBR (people's biodiversity register) can be defined as "an activity that aims at establishing quantitative values for selected parameters, to study the environment for the people, by the people, before, during and after the proposed activity. PBR should be subjected to EIA exercise. As per "The environmental impact assessment Notification 1994" of Ministry of Environment and Ministry of Environment and Forest, Govt. of India, New Delhi .^{1,2}

According to this notification, "Expansion or modernization of any activity or a new project listed in schedule I of this notification, shall not be undertaken in any part of India, unless it has been accorded environmental clearance by the Central Govt, in accordance with the procedure hereinafter specified in this notification".^{3,4}

For execution of this law an activity to prepare a register of plants and Animal biodiversity in a given area of study is of utmost importance which can be achieved by PBR and the data base can be used for reference, if the law is violated.⁵

There is serious absence of local specific information and several gaps in the knowledge of ecosystems, their structure, function, uses, degradation and conservation. There is hardly any information on sustainable life style, and what individuals can and should do for environmental preservation as a part of personal day-to-day activity.

So there is need for a new approach in education or environmental concern. The objectives of the present creative study was to study social, cultural, educational and environmental values empowering local population to improve the environment through PBR.

Methodology : The guide line given in PBR manual was followed. (Gadgil, M., 1996) Help of experts for field work, information and identification of species. Exploration of selected areas in Maale village and environ.. Checklist - The pockets of vegetation were screened and listed with correct identification to check its personal absence, adverse /beneficial or no effect. Extensive Exploration of the study area for Botanical information. Filled in questionnaire for resources and traditional use of plants. Preparation of report.

Note Positive / negative impact of the development. tal -mulshi ,dist- pune -The district Pune stands at a lofty height 1800 or more. Climate is breezy; rainfall and temperature are moderate determined by the height of the places. The tradition of normal botanical studies at Pune was established by early botanists. Dr. Theodore cook, Woodrow,

Bhide who has been working here for a long tenure, Later Santapau ,Vartak, Razi, Gadgil and others described plants of a number of places in Pune district in their writings. Pune City stands at the confluence of Mula and Mutha rivers. The town of Pune also lies at the apex of Mutha river basin or Maval and it has like other maval climate.^{6,7} The terrain is undulating. The high hilly forts are possibly the fragments of old continuous vegetation in the city but now discontinuous because the trap rocks between them are disintegrated. Soil is gravelly or mixtures at gravel and sane, but nowhere alluvial. Pune has been the headquarter of the BSI of Western India since 1890 - 1893 and was restarted in Pune 1856. The western circle of it is Pune. The flora of Pune is better known than that of other places. But comprehensive check list is not available. So we decided to work out for the flora in the area of the Maale village which is adapted by our college in Samarth Bharat Abhiyan launched by University of Pune.

Geomorphology- It is the transitional zone, (Maval) a narrow north- south strip of Sahyadris ,lying immediately on the eastern side of the Sahyadri ranges and running parallel to them. Parallel to the first transitional zone there is another zone, but much wider, covering Pune. Temperature- It varies from 12° C-14 °C minimum and 38-40 ° C maximum General vegetation- Hooker and Thomson (1855) have attached special importance to the Maval region and they consider it to be a separate entity from floristic point of view. Vegetation in this area does not look much different from that of the Desh side, as it gets dried up and completely parched in summer months.^{8,9} The natural underground water and small reservoirs get dried up and rivers become lean. The vegetation except in the littoral zone is also partially dried.

The pockets where the vegetation has optimum conditions for growth, the plants are well protected. These pockets of evergreen and semi evergreen vegetation in Maval region on Desh side look like shola pockets in higher altitude of Nilgiries.

Observations :Recent years have experienced an explosion of information in various fields since biological information generated all over the world are so high and since conventional file keeping is almost redundant, an altogether new discipline called "Bioinformatics" has been developed Eco-information is proposed to deal with the voluminous data generated in the field of ecology and environmental science. It is expected that eco-information will develop in a big way to analyze and interpret ecological data in a meaningful manner as bioinformatics has done in biology in general.

The convention on biological diversity came in to force on 29 Dec. 1993. The convention was also duly conscious of the loss of biodiversity on one hand and on the other realized the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of Biodiversity.^{10,11}

We practiced the conservation, preservation concept through activity like PBR in its own humble way, for the adapted village Maale. Families enlisted Nymphaeaceae, Annonaceae, Menispermaceae, Ranunculaceae, Papaveraceae, Cap Icacinaceae, paraceae, Cochlospermaceae, Flacourciaceae, Portulacaceae, Bombacaceae, Malvaceae, Sterculiaceae, Tiliaceae, Linaceae, Oxalidaceae, Balsaminaceae, Rutaceae, Meliaceae, Burseraceae, Simaroubaceae, Vitaceae, Leeaceae, Rhamnaceae, Celastraceae, Sapindaceae, Moringaceae, Anacardiaceae, Mimosaceae, Fabaceae, Caesalpiniaceae, Combretaceae, Onagraceae, Lythraceae, Myrtaceae, Lecythidaceae, Cucurbitaceae; Begoniaceae, Trapaceae, Cactaceae, Molluginaceae, Apiaceae, Rubiaceae, Asteraceae, Lobeliaceae, Campanulaceae, Plumbaginaceae, Sapotaceae, Oleaceae, Menyanthaceae, Solanaceae, Convolvulaceae Boraginaceae, Gentianaceae, Asclepiadaceae, Periplocaceae, Apocynaceae, Bignoniaceae, Scrophulariaceae, Thunbergiaceae, Acanthaceae, Martyniaceae, Lamiaceae, Verbenaceae, Loranthaceae, Nyctaginaceae, Polygonaceae, Amaranthaceae, Chenopodiaceae, Euphorbiaceae, Santalaceae, Moraceae, Orchidaceae, Hydrocharitaceae, Commelinaceae, Smilacaceae, Liliaceae, Taccaceae, Discoraceae, Hypoxidaceae, Amaryllidaceae, Zingiberaceae, Aracaceae, Eriocaulaceae, Cyperaceae

In our opinion, anthropocentric attitude, ruthless egocentric behavior and all-out oligarchic temperament of man are the root cause of present day ecological crises. In addition to these, the exponential growth of human population coupled with over consumption of matter and energy by the developed urban areas are adding fuel to the fire. Most of these plants call in -situ conservation within ecological niches, habitat conservation and commercial propagation for providing means of livelihood to local populace which can slow down flow of people towards urban areas. So our country needs a central and accessible reservoir of data, a direct campaign that builds on existing knowledge and does not repeat itself. The scattered bits and pieces of research carried out in different universities and some Government laboratories is neither focused nor organized. So we must keep proper digital records of this information, as it has been mentioned in the policies of Department of Information and technology of Government of India. Plants observed in Maale village and around-Total= 521-The area showed tremendous plant biodiversity. The monsoon ephemeral flora contributes significant count in the study area. Total of 85 families have been listed as follows,

DISCUSSION

The area showed tremendous plant Biodiversity This work will contribute in maintaining the register of native vegetation (PBR) as an important data base of plant resources, which will help to formulate the strategies for taxonomic studies, preparation of data base, in the field of Bio informatics, Conservation of plant species of economic importance.

The present work is essential to enhance scientific understanding of the improved scientific assessment methods, strengthen scientific capacities and ensure that such work is responsive to emerging needs in the field of plant resources, utilization and management studies. Threats to the plant biodiversity and environment in maale village and around. It was 1988 when I was in the same college, in T.Y.B. sc. Botany class. That time we used to visit the same area for botanical excursions. Our interest was to see the biodiversity in Mawal region, as a part of western ghat. Mulshi Dam area, Aambee valley, Shedani back water, Lavharde, Mutha valley, Pirangute, Lavle, Kharawade, Maale were our favorite destination. That time it was really green and rich in biodiversity. Many plants which now has become rare were abundant.^{12,13} The area is known for the sacred groves which harbor many old, rare plants. A very special plant *Gnetum ula* a gymnosperm, *Entada*, *Bauhinia vahilli*, *Butea superba*, *Derris scandecs*, (Lianas) *Gloriossa superba*, *Nothapodytes*, *Ensete superbum*, *Atlancia racemosa*, 5/6 species of *Dioscorias* and many members of Araceae, Zinziberaceae, Cucurbitaceae, Fabaceae, Lamiaceae, Acanthaceae, Apiaceae, Gentianaceae, Poaceae, Asteraceae, Asclepiadaceae, used to show their sporadic appearance as monsoon ephemerals. Ferns, Bryophytes, Mosses were common in wet monsoon season.¹⁴

The interlocking hilly ranges were inaccessible. Few S.T. Buses, Bullock carts. And horses were the only means of travel. The main occupation of the local population were Farming. Live stock raring for milk, Selling the food grains, pulses, poultry birds (local breed), Vegetables, plant medicines, Fodder, Cow dung manure, Cow dung cakes were the basis of the native economy. It was self sufficient and sustainable way of life. We should leave the nature alone... This would be the best concept to reclaim the damage done to this area. If we don't disturb the nature it will take care of itself, because only nature has an amazing capacity to regenerate itself and create harmony. Such activities of college students and their teachers are just a humble contribution to save mother Earth. It provides confidence to researcher, public agencies and communities involve in dealing with negative impacts but also gives feedback on the accuracy of PBR data. This work presents some ideas for society that can be carried out with their components.

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