

Natural Resources Documentation for Conservation through People Biodiversity Register (PBR) In Variguntham Village, Medak District, Telangana, India

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Abstract

Biological Diversity act 2002 proposed that every local body in India shall constitute a Biodiversity Management Committee (BMC) with the purpose of promoting conservation, sustainable use of biological resources and fair, equitable sharing benefits of commercial utilization. The Telangana State Biodiversity Board (TSBB), has established Biodiversity Management Committees (BMC) in all villages for conservation of biodiversity and People Biodiversity Registers (PBR) were used to document the natural resources. In PBR, locals and technical support organizations document native biodiversity and bio-resources. The village resources, including its socioeconomic, historical, and cultural aspects as well as its natural habitats, are documented by the Biodiversity Management Committee. These habitats include lakes, springs, rare ecological habitat versatility, agro-physiological ecological systems, and ancient distinctive hydrogeological structures made possible by regional methods for managing surface water. The research study was taken up in the Variguntham village of Medak district in Telangana state in the year 2018-2019. The objective of the research was to document the resources of the village by adopting three PBR formats. Through PBR four categories of plant biodiversity have been documented, including 31 type of crops species, 13 type of weeds, 4 types of fruit plants and 13 types of a crop pest and animal biodiversity including one type.

Keywords: Biodiversity management committees (BMC), PBR, Village, Conservation.

1.0 Introduction

The need for precise predictions of how global warming will affect biodiversity is expanding, yet the forecasting techniques that are now available have their limitations. (Pearson, R.G. and Dawson, T.P., 2003.) Since it is now commonly acknowledged that global warming is occurring, there is a rising need for precise predictions of its impacts as well as significant worry over how it may affect biological variety. Only information developed on a solid foundation can result in effective action. Because both the prevalence and exploitation of biodiversity vary significantly from region to region such document is really quite local and temporal constrained. This neighborhood information was known as PBR within Biodiversity Regulation act. It is the most innovative although previously mentioned factors of an entire "Biodiversity Information System (BIS)" that is being developed on the a global scale. Considering both spiritual and cultural demands, this local community employs traditional wisdom and conserve overall biodiversity of a lands. This local community employs local traditions that conserve that diversity of an environment for both cultural

and spiritual purposes. However, neither identification has indeed been made with the help of individuals, incorporating indigenous traditions Recording and reporting biological data is required by both the Bio Diversity Act of 2002 in India as well as the requirements of both the Convention on Biodiversity (CBD) for appropriate compensation amongst personnel in the organisation. (Fraser, D.J.,etal., 2006). This elaborated PBR has been incorporated into to the documenting on local biodiversity, relationships, and perception of diversity in the framework of therapeutic as well as other purposes, as well as their ecological knowledge and views of existing and intended biodiversity management systems. (Das, A.,etal., 2021). In term of spiritual and cultural requirements, each community uses local customs to maintain its planet's variety. (Cocks, M., 2006). Unfortunately, neither assessment has been completed with the assistance of people, particularly indigenous customs. Diverse information was recorded. A set of PBR has been originally established in 1996 with the support of the a community for environmental Organizations including academic institutions at the regional community college level. (Gadgil, M., etal., 2003). As a result of the current situation as well as the increasing availability and abilities of advanced information and communication technology techniques, the software has indeed been enhanced to the point where the majority of the info produced can indeed be gathered and structured to use a reasonable system for managing data.

2.0 Study area:

Variguntham is a hamlet in Medak's Kulcharam mandal. Medak district is one of 31 districts of Telangana, and it was established on October 11, 2016. Medak district headquarters are located in Sangareddy and cover an area of 2765 square kilometres, with a population of 7,67,428 according to 2011 Census statistics. Variguntham is situated at 17.93650N, 78.17070E, 210 metres above sea level. The communities cover a total land area of 1218 hectares. There are 22 hectares of non-agricultural land and 343.5 hectares of irrigated land.



Figure 1: Map of Medak district



Figure 2: Location of Variguntham village

3.0 Methodology:

The basic methodology was to approach the local people directly using individual, and group discussions, and the data was collected as per the PBR Proforma. (Ferlie, E.,etal., 2010). National Biodiversity Authority (NBA), New Delhi formats have been undertaken to understand the indigenous knowledge regarding flora, fauna, livelihood options, perceptions, and motivations. (Verma, S.K., 2004). The NBA consists of four formats and the data was documented by the below methods.

1. Interviews: Information related to the history of the village, local institutions and decision-making, people landscape aspects, and biodiversity were collected from village chiefs and knowledgeable individuals through personal interviews. Local communities were shown local field guides on various taxa (e.g. birds, mammals, butterflies, and reptiles) and asked to list the species found in their village, their local names and uses, and their current status.

2. Group discussions: It was conducted with village elders and knowledgeable individuals. Discussions were mainly held to validate the information gathered at various levels.

3. Field visits: Field visits were carried out with members of the village, BMC council and local knowledgeable individuals to document the bio-resources of the village. For the fauna survey opportunistic documentation was carried out and species observed were recorded.

4. Village BMC council meetings:The village BMC council meeting was conducted at the village council involving all the stakeholders. The village council members and the village development board members were present at the meeting along with women group members. Village health workers and other officials were also present during the meeting. This meeting helped to understand various issues about the conservation of the conserved area and to identify possible solutions to tackle the problems.

Extensive interviews were conducted by using an interview schedule which consists of both open and closed-ended questionnaires. Group discussions and resource mapping were the other tools used to collect primary data. The secondary data was collected from the reports of the forest department, census data, and reports published by various agencies. The information was collected by visiting the village in person.

1. Primary data collection
2. Secondary data collection

3. Process in PBR Preparation.

3.1 Primary data collection

Primary data is data that is collected by a researcher/data collector from first-hand sources,using methods like surveys or interviews.The primary data for PBR was collected in the prescribed format.

Researcher took help of the local people, local leaders, representative of public, Panchayat members, BMC members and related government field level institutes, field officials of the Line department and Krishi Vigyanan Kendra (Paroda, R.S.,etal., 2020). The researcher have carried out the

checklist of commonly known flora and fauna of the villages the data was collected for one year consisting of two seasons.

3.2 Secondary data collection

Secondary data is the data that has been already collected, published, and readily available from other sources. The secondary data was collected as per the requirement of specified formats by researcher. The data was collected during the 2018-2019 from the sources as per the required format. The researcher consulted the office of line departments (Agriculture, forest, horticulture, animal husbandry), Tahsildar office, Grampanchayat and Revenue office. The scientific data/technical data was collected with help of various departments, University journals/Research articles/TSBB data banks.

3.3 Process in PBR Preparation

Step 1: Interaction with already formed BMC by the TSBB in Variguntham village.

Step 2: Sensitization of the public about the study, survey and possible management of the natural resource.

Step 3: Interaction with knowledgeable members in the identification and collection of data on biological resources and traditional knowledge.

Step 4: Collection of data. Data collection includes a review of literature on the natural resources of the districts, Participatory Rural Appraisal (PRA) at the village level, house hold interviews, individual interviews with village leaders and knowledgeable individuals, household heads, key actors of the panchayat raj institutions and NGOs and direct field observations. (Narayanasamy, N., 2009.)

Step 5: Analysis and validation of data in consultation with the technical support group and BMC.

Step 6: Preparation of PBR according to NBA formats.

Step 7: Data analysis and report.

4.0. Results and discussion

PBR preparation involves collecting material gathered through field investigations into the PBR document. This same process of field investigation includes the following components, identifying different biodiversity users group, identifying knowledgeable individuals in different aspects of the distribution of biodiversity, interviewing individuals and groups with members representing different user groups, mapping the study site landscape, visiting representative elements of this terrain, and also to document the species that are present in the village as per the people knowledge, according to the NBA Format.

4.1. Population composition

According to the 2011 census, the total population of Variguntham Panchayat was 2743, out of which 1334 are males and 1409 are females. This panchayat consists of 582 households.

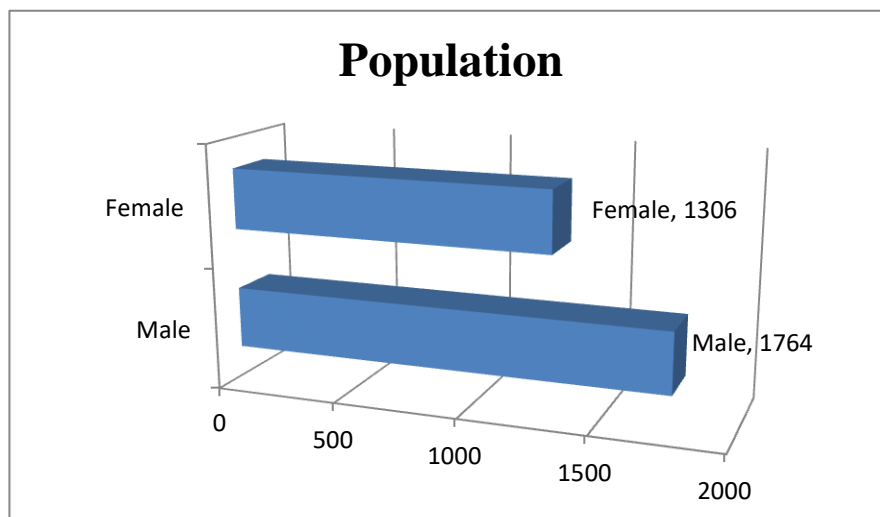


Figure.3.A bar graph showing male and female population of Varigunthamvillage (2011 Census).

4.2. Socio-Economic profile

The village population can be divided into three categories based on their reliance on the local biodiversity: those who depend on agriculture, second who depend on wood fuel collectors and cattle grazers, both of which are directly reliant on the biodiversity in the area, and some private and government employees, as well as some drivers, maintenance workers, and other occupations, who depend on the biodiversity in the area indirectly. The village's annual average income varies from 3000 and 8,000.

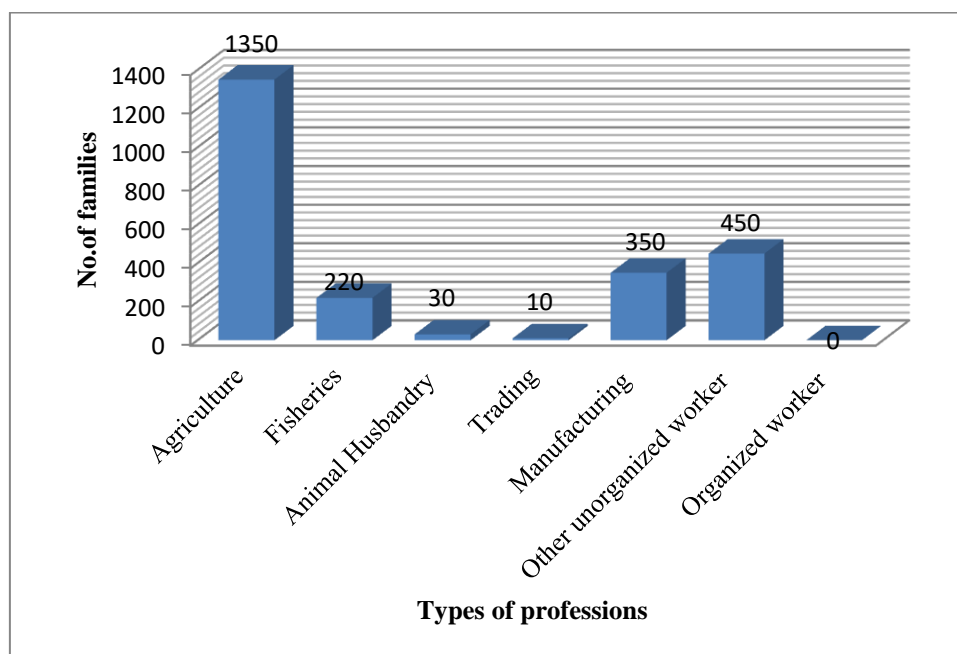


Figure 4: Number of families engaged in various profession.

4.3. Education and literacy:

Within the limits of the this panchayat, there really are three main classes: one elementary, one middle, and one high school. The majority of individuals such as the tribes people, want to send

their children to school since they believe it will assist him escape the impoverished economic situation. Males represent 55.02 percent of a village's literate rate, whereas females represent 35.34 percent.

4.4. Socio-cultural Aspects:

The village's festivities and religious practices demonstrate its rich cultural heritage, The festivals Bathamma and Bonalu are celebrated in this community which involve praying to the nature.

4.5. Soil and Water

Variguntham is located on a plateau. It contains a range of soil types, include sandy loams, loamy sands, and sandy clay loams. Mangoes, cotton, maize, groundnuts, paddy, and other fruit and vegetable crops can be grown on these types of soil. The total nnuual rainfall is 923.8 mm.

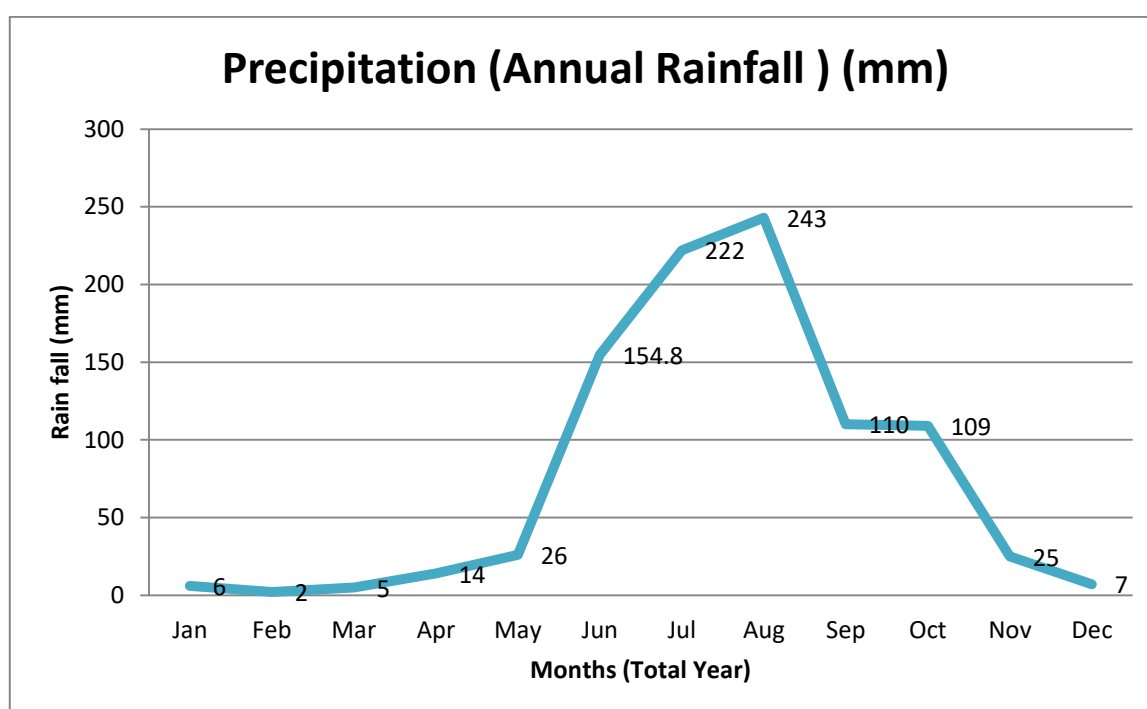


Figure 5: Total annual rain fall (mm).

The main source for drinking water in the towns and villages is aquifer (Carrard, N.,etal., 2019). People living in the majority of village areas think that local access to drinking water is good to excellent (quantity of bore wells: 05, refilling stations: 06, amount of pumping stations: 03, overall volumes of water storage tank: 06, major water tanks: 04, minor storage tanks: 02).

4.6. Agro-biodiversity

Agriculture is the backbone of Variguntham's economy. Rainwater collection resources are used by farms for irrigation (Velasco-Muñoz,etal., 2019). A most significant food crop is rice. Additional notable crops are corn, oilseeds, and textiles. A crops from each of the five families: Poaceae, Malvaceae, Fabaceae, Cucurbitaceae, and Solanaceae is presented in Table 2 information regarding agro - ecosystems. Agricultural forms (31 kinds), herbicides (13 kinds), fruit crops (04 kinds), and agricultural insects are indeed the 4 types in agro - ecosystems (13 kinds).

The biodiversity data was collected according to the NBA Format and the data on Agrobiodiversity is given in table 1.

Table 1: Data collection on Agro Biodiversity of Variguntham village

<u>Crop</u>		<u>Weeds</u>	
<u>Scientific Name</u>	<u>Local Name</u>	<u>Scientific Name</u>	<u>Local Name</u>
<i>Oryza sativa</i>	Vari	<i>Eragrostis tenella</i>	Piichi gaddi
<i>Cajanus cajan</i>	Kandulu	<i>Chloris barbata</i>	Uppu gaddi
<i>Syzygium cumini</i>	Alla neredi	<u>Datura metel</u>	<u>Ummeta</u>
		<u>Parthenium hysterophorus</u>	<u>Vayari bhama</u>
<i>Spinacia oeracea</i>	Pala Kura	<i>Achyranthes aspera</i>	Uthareni
<i>Gossypium Sps</i>	Patti	<i>Tridax procumbens</i>	Gaddi chamanti
<i>Vigna radiata</i>	Pesara	<i>Cyperus rotundus</i>	Tunga musta
<i>Manzifera indica</i>	Mamidi	<i>Cynodon dactylon</i>	Garika
<i>Phoenix sylvestris</i>	Eetha	<i>Tephrosia purpurea</i>	Vempalli
<i>Phyllanthus emblica</i>	Usiri	<u>Solena heterophylla</u>	<u>Adavi donda</u>
<i>Zea maize</i>	Makka	<i>Cleome Gynandra</i>	Vaminta
<i>Criticum velgera</i>	Jonna	<i>Phyllanthus amarus</i>	Nela usari
<i>Sorghum bicolor</i>	Jonna	<i>Citrullus colocynthis</i>	Verri puchakaya
<i>Zizyphus Jujoba</i>	Regu pandlu	Total	13
<i>Carica papaya</i>	Boppai	<u>Fruit Plants</u>	
<i>Cocos nucifera</i>	Kobbari kaya	Scientific name	Local name
<i>Tamarindus indica</i>	Chinta	<i>Mangifera indica</i>	Mamidi
<i>Borassus flabellifer</i>	Tati	<i>Psidium guajava</i>	Jama
<i>Lycopersicum esculentus</i>	Tameta	<i>Carica papaya</i>	Boppai
<i>Solanum melongena</i>	Vankaya	<i>Punica granatum</i>	Daanima
<i>Luffa acutangula</i>	Birakaya	Total	04
<i>Allium cepa</i>	Vullipaya	<u>Pest of Crops</u>	
<i>Abelmoschus esculentus</i>	Benda	Scientific name	Local name
<i>Moringa oleifera</i>	Munaga	<i>Nilaparvata lugens</i>	Aggi tegulu
<i>Hibiscus cannabinus</i>	Gongura	<i>Scriphophaga incertulus</i>	Kandom purugu
<i>Rumex vesicarius</i>	Chukka	<i>Nilparvata lugens</i>	Dooma
kura			

<i>Coriandrum sativum</i>		<i>Waphalocrosis medimalis</i>	<i>Aakuchuta purugu</i>
<i>Kottimera</i>			
<i>Coccinia grandis</i>	<i>Dondakaya</i>	<i>Psara bipuntalis</i>	<i>Akkuannupurugu</i>
<i>Mentha spicata</i>	<i>Pudina</i>	<i>Luecinodes</i>	<i>Kandam purugu</i>
<i>Murraya koenigii</i>		<i>Bemisia tabaci</i>	<i>Tella domma</i>
<i>Karvaypaku</i>			
<i>Lagenaria siceraria</i>	<i>Sorakaya</i>	<i>Spodoptera litura</i>	<i>Ladday purugu</i>
		<i>Xanthomonas axonopodis</i>	<i>Akku purugu</i>
Total	31	<i>Earis spp</i>	<i>Machala purugu</i>
		<i>Amrasea abiguttula</i>	<i>Pacha doma</i>
		<i>Bipolaris turcicum</i>	<i>Akku purugu</i>
		<i>Meloidogyna incognita</i>	<i>Veeru purugu</i>
		Total	13

Table 2: Data Collection on wild plants medicinal species biodiversity of Variguntham Village.

<u>Medicinal plants</u>		<u>Fumigatory Plants</u>	
<u>Scientific Names</u>	<u>Local names</u>	<u>Scientific Names</u>	<u>Local names</u>
<i>Azadirachta indica</i>	<i>Veepa</i>	<i>Azadirachta indica</i>	<i>Veepa</i>
<i>Chrysanthemum sp</i>	<i>Chamanthi</i>	<i>Achyranthes aspara</i>	<i>Uttareni</i>
<i>Tagetes erectus</i>	<i>Banthe</i>	<i>Tamarindus indica</i>	<i>Chinta</i>
<i>Rosa</i>	<i>Gulabi</i>	<i>Ricinus communis</i>	<i>Aamudam</i>
<i>Jasminum</i>	<i>Mallae</i>	Total	04
<i>Ocimum sanctum</i>	<i>Tulasi</i>		
<i>Crossandra infundibuliformis</i>	<i>Kanakambaram</i>	<u>Timber Plants</u>	
<i>Portulaca grandiflorum</i>	<i>Table Rosa</i>	<u>Scientific Names</u>	<u>Local names</u>
<i>Polianthes tuberosa</i>	<i>Sampenga</i>	<i>Tectona grandis</i>	<i>Teak</i>
<i>Cocos nucifera</i>	<i>Cobbara chettu</i>	<i>Tamarindus indica</i>	<i>Chinta</i>
<i>Nerium oleander</i>	<i>Gannaru</i>	<i>Mangifera indica</i>	<i>Mamidi</i>
<i>Hibiscus rosa-sinensis</i>	<i>Mandaram</i>	<i>Azadirachta indica</i>	<i>Veepa</i>
<i>Phyllanthus emblica</i>	<i>Vusari</i>	<i>Ficus benghalensis</i>	<i>Marri</i>
<i>Phoenix dactylifera</i>	<i>Yeeta</i>	<i>Ficus religiosa</i>	<i>Raavi</i>
<i>Borassus flabellifer</i>	<i>Thati</i>	<i>Ecalyptus globulus</i>	<i>Jamaoil</i>
<i>Moringa oleifera</i>	<i>Munaga</i>	<i>chettu</i>	
		<i>Delonix regia</i>	
		<i>Gulmohar</i>	

<i>Butea monosperma</i>	<i>Modhuga</i>	<i>Acacia nilotica</i>	<i>Tumma</i>
<i>Ficus benghalensis</i>	<i>Marri</i>	<i>Hardwickia binata</i>	<i>Vepi</i>
<i>Ficus glomerata</i>	<i>Medi</i>	<i>Leucaena luecocephala</i>	<i>Subabul</i>
<i>Ficus religiosa</i>	<i>Raavi</i>	<i>Butea monosperma</i>	<i>Moduga</i>
<i>Prosopis cineraria</i>	<i>Jammi</i>	Total	12
<i>Pithacalobium dulce</i>	<i>Cheema chinta</i>	<u>Ornamental Plants</u>	<u>Local</u>
<i>Tamarindus indica</i>	<i>Chinta</i>	<u>names</u>	
<i>Tectona grandis</i>	<i>Teak</i>	<i>Chrysanthemum sp</i>	
<i>Syzygium cuminii</i>	<i>Neeradu</i>	<i>Chamanthi</i>	
<i>Senna auriculata</i>	<i>Tangedu</i>	<i>Tagetus erectus</i>	
<i>Phyllanthus niruri</i>	<i>Nella usiri</i>	<i>Banthe</i>	
<i>Tribulus terrestris</i>	<i>Pallarukaya</i>	<i>Rosa</i>	
<i>Cissus quadrangularis</i>	<i>Nallaru</i>	<i>Gulabi</i>	
<i>Ocimum tenuiflorum</i>	<i>Tulasi</i>	<i>Jasminum</i>	
<i>Abrus precatorius</i>	<i>Guruvinda</i>	<i>Mallae</i>	
<i>Acheranthes aspera</i>	<i>Uttareni</i>	<i>Ocimum sanctum</i>	
<i>Aeverta lalata</i>	<i>Pindi kura</i>	<i>Tulasi</i>	
<i>Agava americana</i>	<i>Kalabanda</i>	<i>C.infundibuliformis</i>	
<i>Aloe vera</i>	<i>Manchi Kalabanda</i>	<i>Kanakambaram</i>	
<i>Cleome viscosa</i>	<i>Kukka vamintaku</i>	<i>Portulaca grandiflorum</i>	<i>Table</i>
<i>Datura metel</i>	<i>Umetha</i>	<i>Rosa</i>	
<i>Eclitta prostrata</i>	<i>Gunta garage aku</i>	<i>Polianthesus tuberosa</i>	
<i>Tinospora cordifolia</i>	<i>Tippateega</i>	<i>Sampenga</i>	
<i>Diplocyclos palmatus</i>	<i>Lingadonda</i>	<i>Cocos nucifera</i>	<i>Cobbara</i>
<i>Calotropis gigantea</i>	<i>Jilladu</i>	<i>chettu</i>	
<i>Abutilon indicum</i>	<i>Thuthurabenda</i>	<i>Nerium oleander</i>	
<i>Dodonaea viscosa</i>	<i>Bandera aku</i>	<i>Gannaru</i>	
<i>Allamanda cathartica</i>	<i>Allamanda</i>	Hibiscus rosa-sinensis	Mandaram
<i>Datura metel</i>	<i>Ummatha</i>	Total number	11
<i>Hibiscus rosasinensis</i>	<i>Mandaram</i>		
<i>Ipomoea obscura</i>	<i>Golamadditiga</i>		
<i>Cissus vitiginea</i>	<i>Kuddudinnae</i>		
<i>Pergula riadaemia</i>	<i>Gutaguta,</i>		
<i>Hyptis suaveolens</i>	<i>Peddinguvakoora</i>		



Figure 6: *Cissus Vitiginea*



Figure 7: *Hyptis suaveolens*



Figure 8: *Ipomoea obscura*



Figure 9: *Pergularia dae*

Majority of the plants belong to

Timber Plants - Meliaceae, Moraceae, Anacardiaceae, Lamiaceae

Medicinal plants - Moraceae, Fabaceae, Arecaceae, Amaranthaceae, Sapindaceae

Ornament plants - Asteraceae, Asparagaceae, Malvaceae

Fumigatory plants - Meliaceae, Euphorbiaceae, Fabaceae family.

Some of the plants with high medicinal value that are found in Variguntham village are:

***Ipomoea obscura* (CONVOLVULACEAE)** - For an urgent stomach ache, half a teaspoon of leaf extract was given three times in two hours (Singh, K.N., 2013).

***Cissus vitiginea* (VITACEAE)** - Stem bark paste is used topically to wounds for wounds (Ramakrishna, N. and Sureshbabu, P., 2017).

***Pergularia daemia* (ASCLEPIADACEAE)** - For stomach ache, take 3–4 tablespoons of aerial parts extract twice daily (Mirunalini, S., et al., 2013).

Hyptis suaveolens (LAMIACEAE) - Invasive weed which spreads in affected regions and open forests. Extract of leaves (12–15 ml) was consumed three times daily treating snake bites, while leaf decoction was topically as an ointment.

Table 3: Data collection on wild relative plant biodiversity of Variguntham village

Trees		Shrubs	
<i>Tamarindus indica</i>	Chinta	<i>Heliotropium indicum</i>	Danti
<i>Ficus venghanensis</i>	Marri	<i>Senna auriculata</i>	Tangedu
<i>Syzygium cumini</i>	Neeradu	Grass	
<i>Pithecolobium dulce</i>	Cheema chinta	<i>Cynodon dactylon</i>	Garika gaddi
<i>Phyllanthus emblica</i>	Vusari	<i>Desmostachya bipinnata</i>	Dabha gaddi
<i>Tectona grandis</i>	Teak	<i>Cymbopogon citratus</i>	Nimma gaddi
<i>Ficus religiosa</i>	Raavi	<i>Cynodon dactylon</i>	Garika
<i>Prosopis cineraria</i>	Jammi	Tubers	
<i>Senna auriculata</i>	Tangedu	<i>Urginea indica</i>	Addaviulli
Herbs		<i>Ipomoea batatas</i>	Moram gadda
<i>Acalypha indica</i>	Kuppichettu	<i>Maerua oblongifolia</i>	Bhuchakra gadda
<i>Leucas zeylanica</i>	Thummi	<i>Niru pippali</i>	Gloriosa superba
<i>Celosia spicata</i>	Gumugu	Climbers	
<i>Agave americana</i>	Kalabanda	<i>Coccinia grandis</i>	Donda
		<i>Tinospora cordifolia</i>	Tippa tiga

Table 4: Data collection on domesticated animal biodiversity of Variguntham village

S No	Mammals		Birds		Reptiles	
	Local name	Scientific name	Local name	scientific name	Local name	scientific name
1	Pilli	<i>Felis sylvestris</i>	Kodi	Gallus	Frog	Rana
2	catus		Domesticus		hexadactyla	
3	Mekalu	<i>Capra</i>			HouseLizard	Hemidactylus
4	Yeddulu/				flaviviridis	
5	Aavulu	<i>Bos taurus</i>				
6	Barrelu	<i>Bos bubalis</i>				
	Gorrelu	<i>Ovis aries</i>				
	Kukalu	<i>Canus lepus</i>				
	familiari					
Total	6		1		2	

4.7. Domestic animal biodiversity

Cattle, dogs, and chickens are the animal groups that have been domesticated by a significant section of the people in the Variguntham village clusters for many generations. Goat, sheep, and

poultry are usually bought for your meat. Following table shows those groups within which the majority of farm animals belong: Bovidae, Canidae, and Phasianidae.

There really are three distinct types of cultivated biodiversity. There really are six different types of mammal, single type of bird, and two types species reptile.

Table 5: Various types of biodiversity species in Variguntham village

Agro Biodiversity		Wild biodiversity	
Type		Type	Number
		Shrubs	09
Crop	31	Herbs	04
Weed	13	Tubers	04
Fruit Plant	04	Grasses	04
Pest of Crops	13	Climbers	02
		Fumigate plant	04
		Timber plants	12
		Medicinal plants	36
		Ornamental plants	04
		Trees	09
Domesticated biodiversity			
Type			
Number			
Mammals	06		
Birds	01		
Reptiles	01		

A type of wild biodiversity has been named. Shrubs species include 9, Herbs 4, Tubers 4, Grasses 4, Climbers 2, Fumigate Plants 4, Timber Plants 12, Medicinal Plants 50, Ornamental Plants 4, and Trees Among these, there are 40 Shrub species.

4.8. Wild animal biodiversity

In additional the monkeys and wild pigs, surrounding forests are habitat to various snake species, reptiles, birds, fox, and other animals that damage agriculture..

5.0. Conclusion

PBR provides us with in-depth knowledge and information on regional bio - resources, as well as conventional knowledge about such materials' uses in medical as well as other fields. So order to encourage livelihood dependent upon diversity and contribute towards conservation of biodiversity, PBR documentation is required. And that kind information might very well also serve as a benchmark for integrating local issues in to making plans, trying to identify indigenous knowledge owners and describing their expert knowledge, trying to regulate direct exposure to bio - resources, and trying to educate the a next generation concerning conventional conservation practices as well as there own effectiveness the actual life.

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