Saving 1000 GIANT TREES OF THE WESTERN GHATS- Survey of 4 villages-OZARE KH,HERPUDE, MURADPUR, HATIV

GBH

GIANT TREE SURVEY

MAPPING

FLORA AND FAUNA

CANOPY

CARBON SEQUESTATION

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SPECIES IDENTIFICATION

OWNER

PERSPECTIVE

REASON

SOCIAL SURVEY

DATA COLLECTION

RANDOM SAMPLING

INTERVIEWS

AWARENESS

THREATS

AERF TEAM

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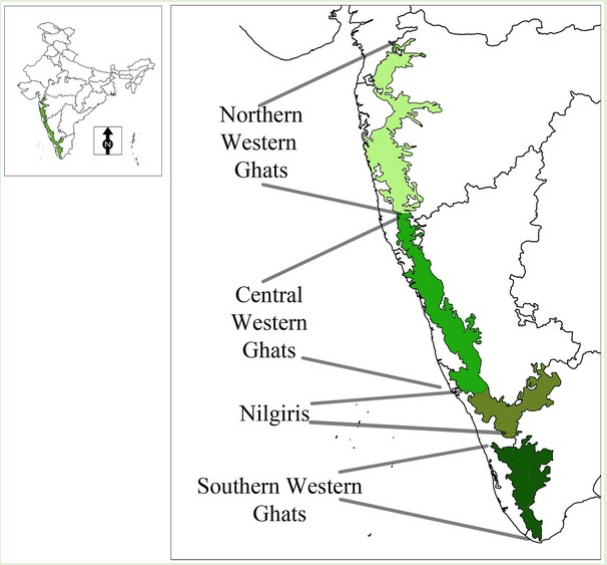
INTRODUCTION

AERF has been aiming and practicing conservation of bio-diversity from the grassroots level to understand the sociological, economic and ecological issues and implementing projects to step forwards towards sustainability.

AERF has an experience of 24 years in Northern Western Ghats also called Sahyadri.

Saving 1000 Giant trees in the Western Ghats is an AERF's initiative to combat the felling of the tree by bringing a common understanding with the owner of the tree. Various methods have been used to arrest the legal felling of trees based on the situations like providing conservation agreement, insurance, NTFP value chain and capacity building & direct stakeholder engagement to sustain the project.



SOURCE-
https://www.google.com/url?sa=i&source=images&cd=&cad

Why giant trees?

Giant trees have a great economical-ecological value.

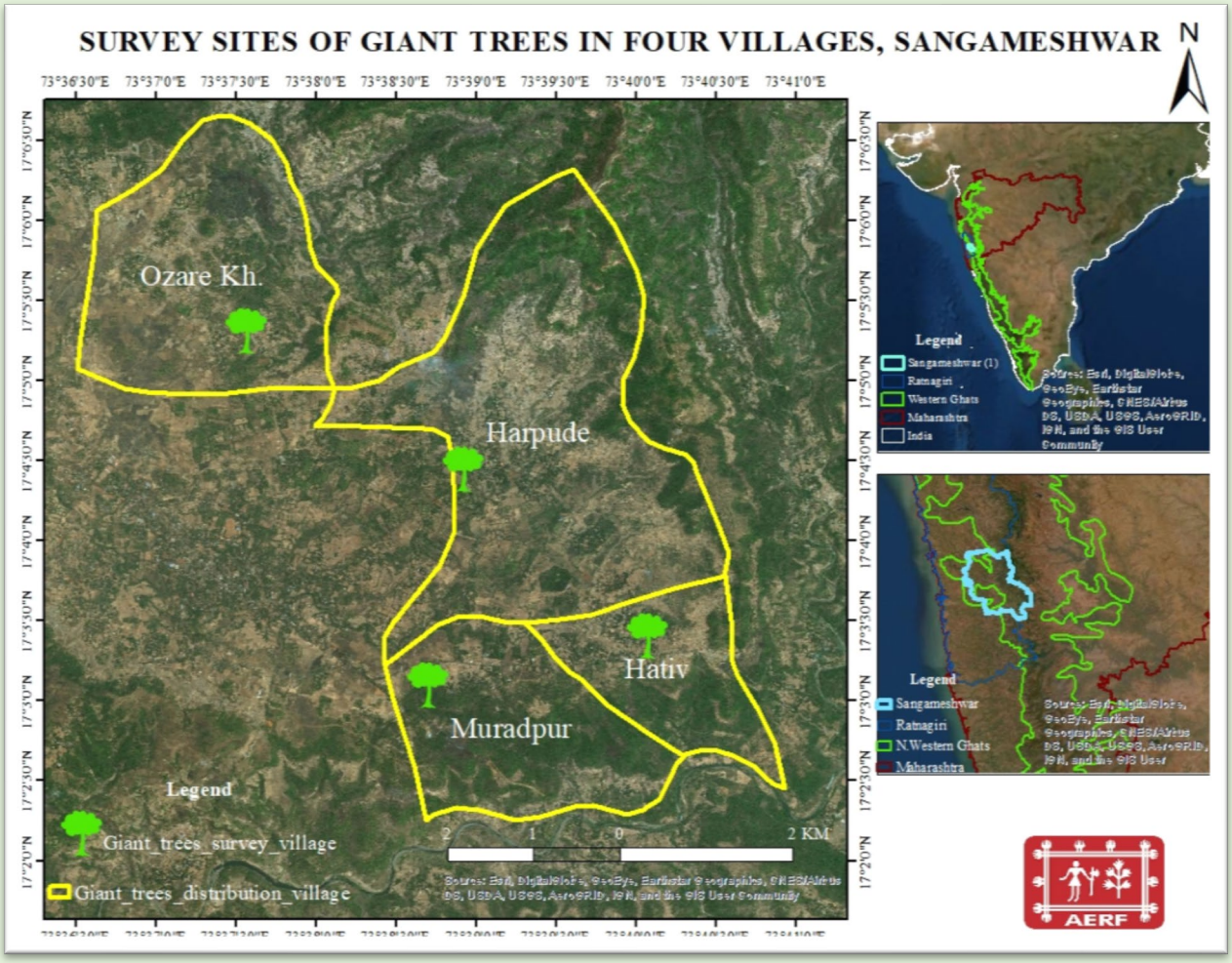
A great weapon to fight climate change. As they absorb and store a larger amount of carbon from the atmosphere.

Giant trees help sustain the ecology as they allow roosting, nesting and provide food of the key species of that area which also ensures restoring of the bio-diversity of that area.

Giants not only support fauna but also a lot of flora by providing shed those who don't grow on direct sunlight.

The root system of these covers a large area and hence not only reduces erosion but also acts as a buffer in case of floods.

Giant trees also have sociological importance. The reason for importance differs from society to family, which they reasons not to cut down the trees.



The above map prepared by Kajol Barman, shows the giant trees survey taken place in Ratnagiri district in four villages- Hativ, Muradpur, Harpude, Ozare Kh and Devrukh by random sampling of giant trees.

The 1000 giant tree survey is divided into giant tree surveys and social surveys. In giant tree survey the data extracted are:-

Mapping of giant trees- Retrieving exact tree location and collecting tree information.

Girth at Breast Height(GBH)-Measure of the circumference of a tree at breast height i.e approx. 1.5 meters from the ground.

Height- The total length of the tree from the base to apex.

Canopy length- The maximum diagonal distance the tree branches have spread.

Bio-diversity-The flora or fauna that is in any direct or indirect link with the tree.

Social-survey is one to one interviews to understand the importance of the tree from the society's perspective and possible threats for the tree.

Objectives-The data extracted has been used to

--to find out the total number of giant trees present.

--to calculate the carbon sequestration from each tree.

--to understand the biodiversity it supports.

--to understand the social perspective towards these giants.

--to understand the threat level to the tree and take possible steps to safeguard them.

--to identify the patches of the giant tree and where plantation drive is required and advantage to the key species like hornbills.

METHEDOLOGY

Ratnagiri district covers 8,208km^2 from which four villages of Sangameshwar taluka has been selected and they are as follows:-

Hativ

Ozare Kh

Muradpur

Harpude

These villages are further separated by hamlets. Different hamlets have been visited and the number of Giant trees has been mapped and the data has been extracted along which a social survey has been conducted.

MAPPING OF THE GIANT TREES

GARMIN Oregon 450t -this GPS device allows us to map each tree by saving the point on the latitude and longitude which can be extracted on a map with a unique number for each and also give the route to revisit. This device gives the accuracy of 2m.

Open Data Kitt App-This app allows us to map and save the latitude, longitude, altitude, and picture that can be directly extracted in excel. The device gives an accuracy of 2-4m.

DATA

Different parameters are recorded to further analyse and to understand the ecology of the surrounding of the tree. Parameters which has been collected of the giant trees are as follows:-

Species identification of the giant tree.

Girth at Breast Height(GBH)- The circumference of the tree at breast height.

Height- total height of the tree

Canopy cover- the total distance that the canopy covers.

Bio-diversity- includes both flora and fauna which is under the canopy.

The picture of the giant tree and the biodiversity present has been taken.

Carbon stock and carbon-sequestration- the amount of carbon stored from the atmosphere

The above mention parameters have been measured by:-

Species identification

The species can be identified by observing.

Girth at Breast Height(GBH)

The GBH has been measured with a 30 meters measuring tape in centimetres.

Height

- The height of the tree can be measured by measuring 5ft distance from the ground with measuring tape and multiplying it by the visual understanding of the height of the tree to get an approximate result.

Canopy

The canopy of the tree can be measured by measuring the distance of the canopy on the ground with the measuring tape. (Only applied if the canopy cover can be reached.)

The canopy cover can also be estimated by measuring 1 foot in the ground and multiply by a visual understanding of the distance covered to get an approximate result.

Bio-diversity

The bio-diversity of the area are identified and noted.

In case not able to identify at the field things other possible can be done that is the description of the species should be noted, take a photograph if possible, ask the local people.

Talk with the local people about their observations on the fauna.

CARBON STOCK AND CARBON SEQUESTATION

The method used to estimate above-ground biomass density and below-ground biomass based on the use of estimated Volume over bark per ha, Volume-weight average density and Biomass Expansion Factor. Summing the above and below ground biomass the total biomass density is calculated. Carbon-stock is 50% of the total biomass density. The calculation has been referred from the -Tree Biomass Carbon Stock Estimation In Anaderi Private Protected Forest, Sangameshwar Block, Ratnagiri, Maharastra Under Conservation Agreement With AERF.

The carbon sequestration has been estimated by multiplying with a constant(approved by the organisation).

- **Above-ground biomass density**

The upper part of the tree biomass known as above-ground biomass estimation procedure is relatively conventional and simple than the part of the tree biomass that is below ground.

AGD(t/ha) = (VOB) x (WD) x (BEF)…… Eq.1

Where, VOB = Volume over bark, WD = volume-weighted average wood density (1 of oven-dry biomass per m3 green volume), BEF = biomass expansion factor (ratio of aboveground oven-dry biomass of trees to oven-dry biomass of inventoried volume)

- **Volume over bark (VOB)**

Volume over bark is the volume of stem of all living tree.

VOB = 1/3πr2h x1.2…… (Eq.2)

Where r is the radius of the tree diameter in meter "h" is the height of the tree in meter. Multiply with 1.2 to approximate account of branch and twigs.

Wood Density

Wood density, or the dry weight per unit volume of wood. Wood density varies with tree species, growth conditions and part of the tree measured, The main stem generally has a higher wood density than the branches, while fast growth is generally related to relatively low wood density. The density of different species has been taken from the site.(http://db.worldagroforestry.org/wd)

- **Volume-Weighted Average Wood Density(WD)**

The wood density can be explained as oven dry mass per unit of green volume.

The Calculated as follows:

WD = {(V1/Vt) x WD1 + (V2/Vt) x WD2 +..... (Vn/Vt)} x Wdn ……(Eq.3)

where: V1, V2,.... Vn = volume of species 1, 2,.. to the nth species Vt = total volume WD1 WD2,.....Wdn = wood density of species 1, 2,..... to the nth species

- **Biomass Expansion Factor (BEF)**

The biomass expansion factor is defined as the ratio of total aboveground oven-dry biomass density of trees with a minimum GBH of 10 cm or more to the oven-dry biomass density of the inventoried volume.

BEF = Exp{3.213 - 0.506*Ln(BV)} for BV < 190 t/ha……..(Eq.4)

1.74 for BV>=190t/ha where: BV = biomass of inventoried volume in t/ha, calculated as the Product of VOB/ha (m3/ha) and wood density (t/m3).

Below Ground Biomass

Below the ground biomass estimation procedure is impossible without destroying the forest. So it is more efficient to apply a regression model to estimate below-ground biomass as a function of the above ground biomass.

BGB = exp(-1.0587 + 0.8836 x Ln AGB)……(Eq.5)

Where, exp = exponential Ln = Logarithm BGB = below-ground biomass density in (t/ha) and AGB=above-ground biomass density (t/ha).

- **Total Biomass Density**

The total biomass density of the forest area can be estimated by adding above ground biomass to the below-ground biomass.

Total Biomass Density = AGB + BGB…….. (Eq. 6)

Where, AGB = above-ground biomass density (t/ha) and BGB = below-ground biomass density in (t/ha)

- **Carbon-stock**

In forest vegetation, Dry mass of biomass contains 50% of its weight carbon. So multiplying total biomass density with 50% can give the C-stock estimation in the forest vegetation (Brown et al. 1989) this can be expressed in the formula as follows

C-stock = Total biomass Density x 50% …….. (Eq. 7)

- **Carbon-sequestration**

The carbon sequestration has been estimated by multiplying with a constant(approved by the organisation).

C-sequestration= C-stock×3.63.

SOCIAL SURVEY

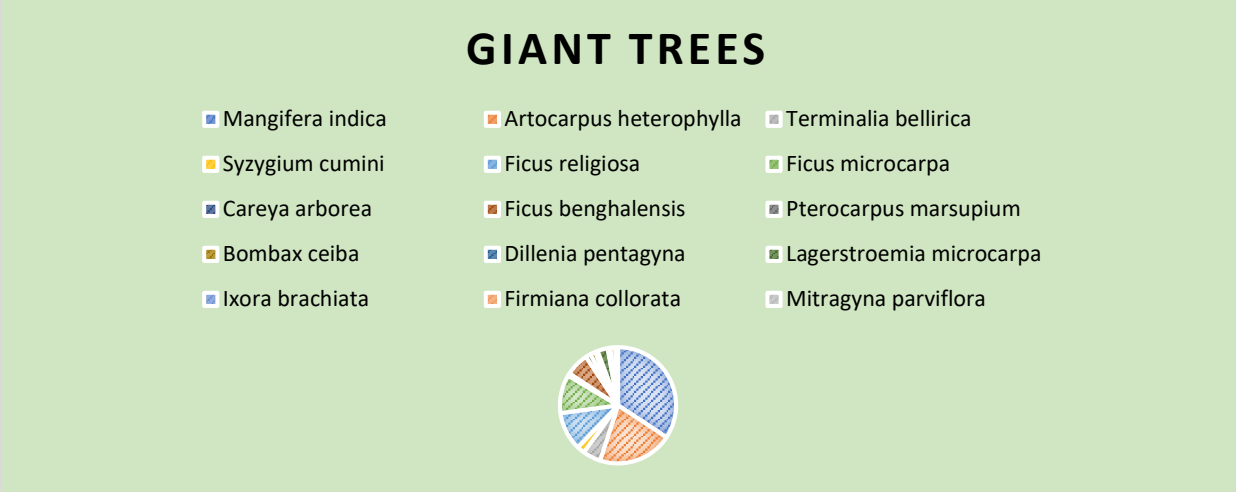
The social survey has been conducted with the owners of the trees and other villagers by random sampling. It's a personal survey in which they were given a brief introduction to the project and questions were asked. The questionnaire consists of their owner name, general observations, potential threats, any benefits from the tree. The main aim of the survey is to know their perspective towards the tree and their reasons to protect or cut them down. The inputs from the survey were handwritten and pictures were taken.

DATA AND ANALYSIS

GIANT TREE SURVEY

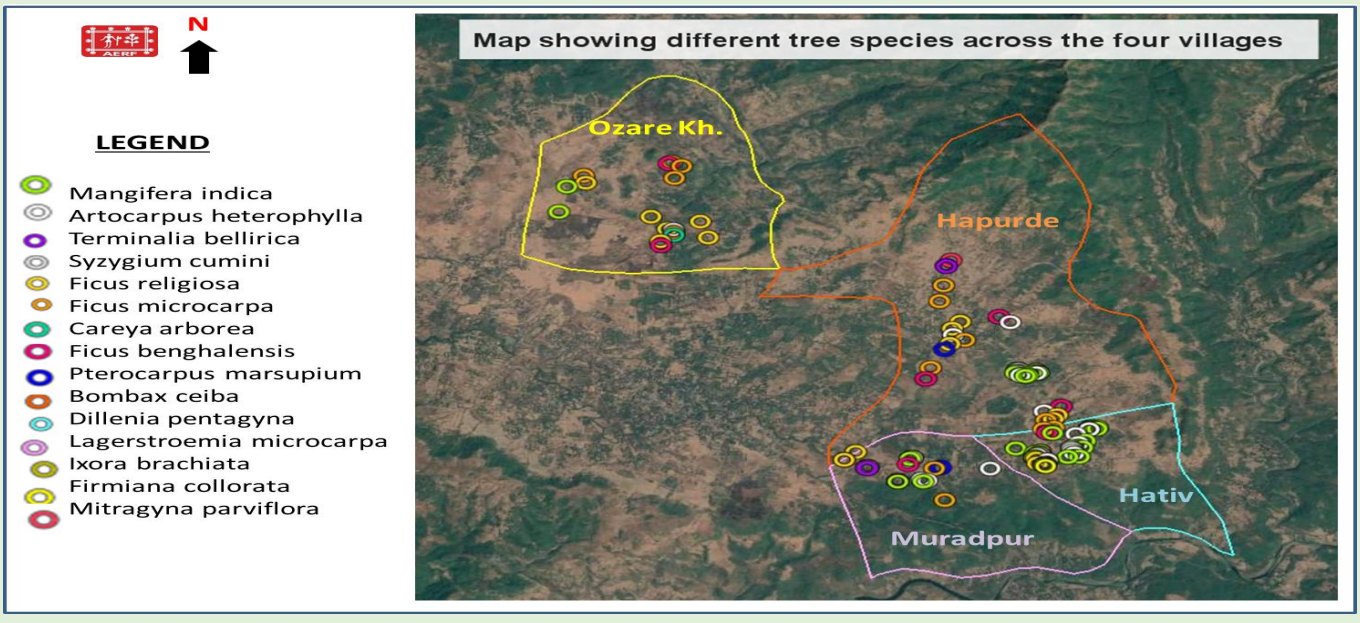
MAPPING OF GIANT TREES

In this survey 138 giant trees have been mapped and their data is collected. The Giants tree plays a great ecology role in maintaining the key species of the area which helps to retain the ecological richness of the place.



During the survey, we have come around many different species of flora and fauna. Some of the species identified are also native and key species which is our target group to conserve.

15 different species of Giant trees have been identified. *Mangifera indica, Artocarpus heterophylla, Ficus religiosa* are the most populated among other species. *Mangifera indica* is the most populated. From the social survey, it has been found that *Mangifera indica* and *Artocarpus heterophylla* are consumed mostly in family and some families don't cut to show their respect towards their ancestors. Pimple is believed to be sacred and is worshiped. *Ficus religiosa*, *Mangifera indica*, Terminalia bellirica trees had holes that act as a nest for keys species Hornbills. The above map was prepared by Prabhashini Mohapatra showing the distribution of the different species of giant trees in the four villages. From the above image the distribution of different species can be understood.



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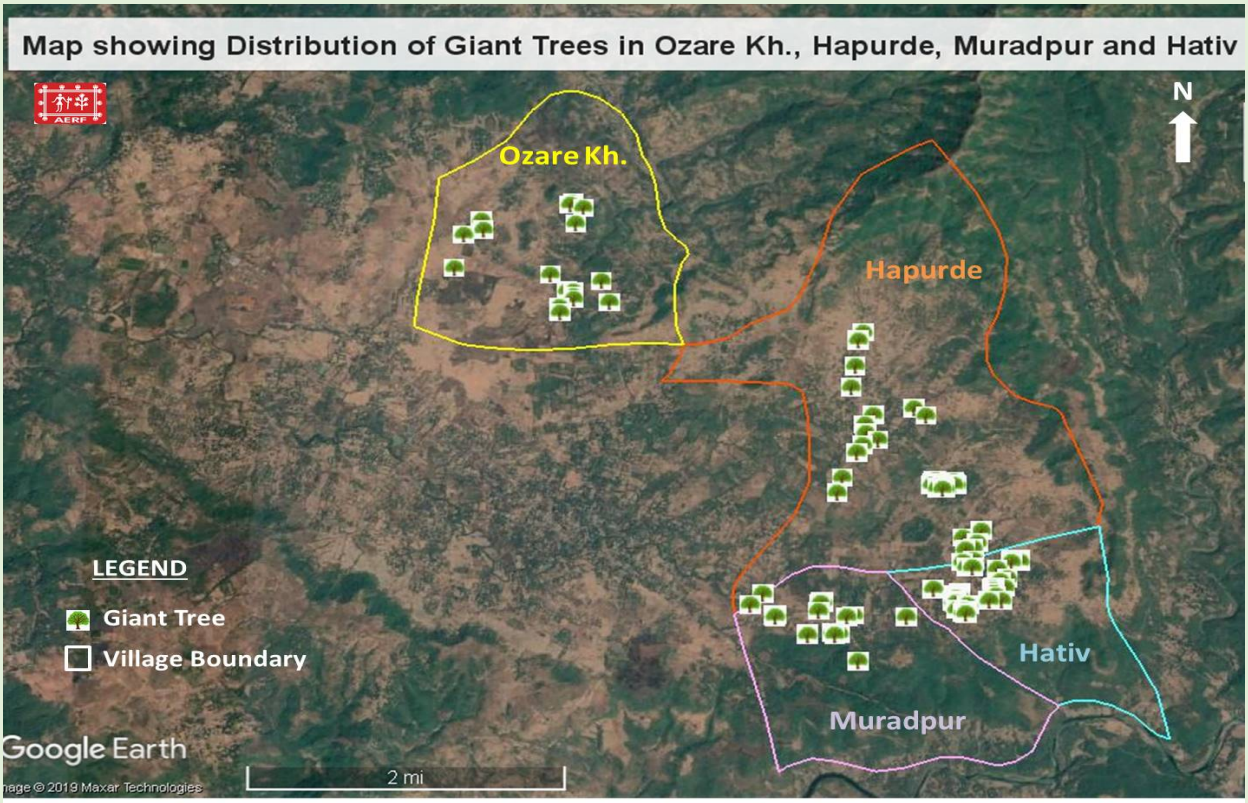
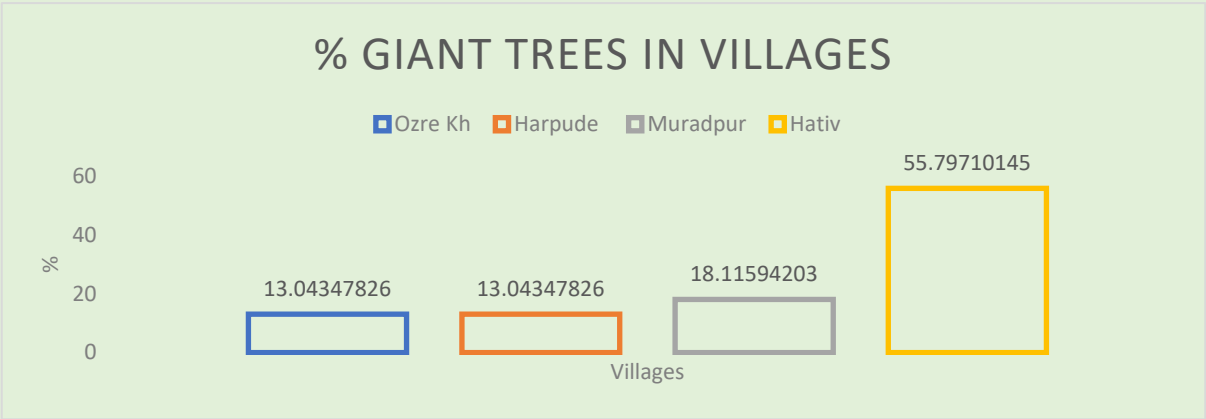


The above map was prepared by Prabhashini Mohapatra showing the distribution of the number of giant trees in the four villages. Below showing the graph of the percentage of the giant tree found in each villages. The map also gives an idea of the different patches of giant trees and the place where plantation is required



Hativ has the largest number of giant trees, 77 trees were identified whereas Ozare Kh. and Harpude have 18 giant trees each. Muradpur has 25 giant trees. The larger number of the giant trees has been found in those which are under gram panchayat and accessible to all villagers.

BIO-DIVERSITY- FLORA

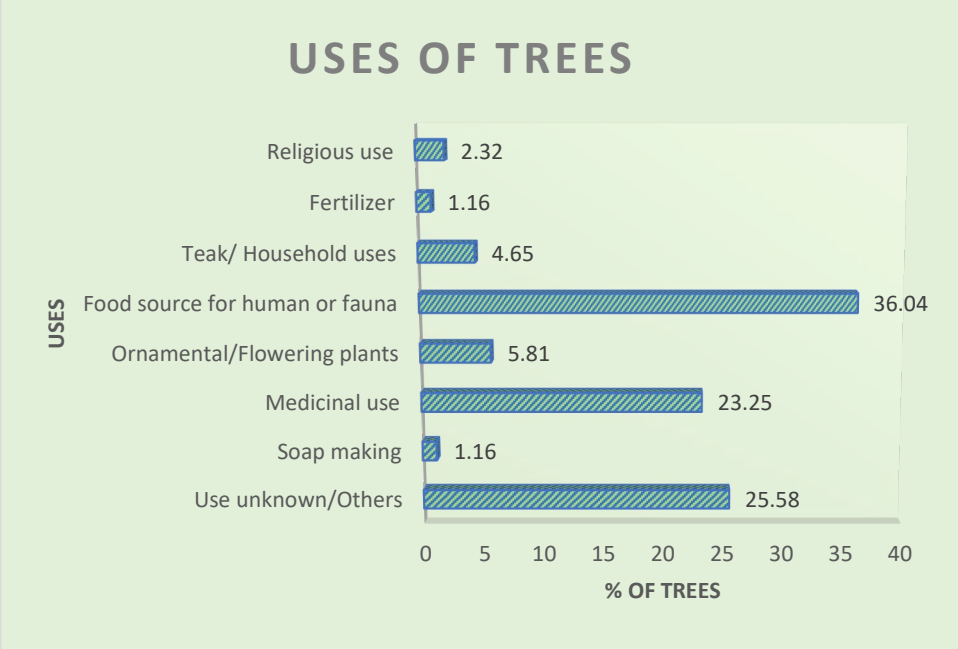
Sl No.	Scientific name	Sl No.	Scientific name
1	Colocasia esculenta	46	Acacia catechu
2	Bauhinia racemosa	47	Ficus aspirrima
3	Hibiscus sp.	48	Ixora brachiata
4	Flacourtia montana	49	Garcinia indica
5	Adhatoda vasica	50	Firmiana collorata
6	Terminalia elliptica	51	Caryea arborea
7	Dioscorea pentaphylla	52	Celosia argentea
8	Meyna laxiflora	53	Caryota urens
9	Mangifera indica	54	Atalantia reacemosa
10	Acacia auriculiformis	55	Lannea coromadelica
11	Getonia floribunda	56	Helictris isora
12	Cassia fistula	57	Fungi
13	Terminalia bellirica	58	Lagerstroemia microcarpa
14	Mimusops elengi	59	Euphorbia ligularia
15	Jasmine sp.	60	Vitex neugondo
16	Clerodendrum serratum	61	Orchidaceae
17	Pterocarpus marsupium	62	Erythrina stricta
18	Plumeria sp.	63	Nyctanthes arbor-tristis
19	Macaranga peltata	64	Psidium guajava
20	Manikara zapota	65	Ficus amplissima
21	Solanum anguivi	66	Ampelocissus latifolia
22	Dendrocalamus sp.	67	Thespesia lampas
23	Grewia tiiifolia	68	Dioscorea bulbifera
24	Leea indica	69	Sapindus laurifolius
25	Cyclea peltata	70	Tectona grandis
26	Artocarpus heterophyllus	71	Rauvolfia serpentina
27	Polypodiopsida sp.	72	Bombax ceiba
28	Sterculia guttata	73	Acacia torta
29	Glyricidia sp.	74	Gmelina arborea
30	Smilax ovalifolia	75	Smithia sp.
31	Poaceae	76	Costus speciosus
32	Tinospora cordifolia	77	Amorphophallus commutatus
33	Sepium insigne	78	Mammea surgia
34	Syzygium cumini	79	Impatiens balsamina
35	Heydnocarpus pentandra	80	Oroxylum indicum
36	Strychnos nux-vomica	81	Allophylus cobbe
37	Wrightia inctoria	82	Zanthoxylum rhetsa
38	Piper hookeri	83	Ziziphus rugosa
39	Bauhinia sp.	84	Ficus racemosa
40	Ziziphus oenoplia	85	Moullava spicata
41	Pongamia pinnata	86	Embelia tsjeriam-cottam
42	Dillenia pentagyna	87	Curcuma psuedomontana
43	Mimordica dioica	88	Madhica indica
44	Carissa congesta	89	Zingiber cernuum
45	Bridelia retusa	90	Lannea coromandelica

KEY
Use unknown/Others
Soap making
Medicinal use
Ornamental/Flowering plants
Food source for human or fauna
Teak/ Household uses
Fertilizer
Religious use

A total of 90 different species of plants have identified in which many of them have medicinal properties, fodder and some can be consumed. The different purposes of the plant have been color-coded. A single plant can have more than one uses, here in the above list the most widely used purpose has been mentioned.

Plants like *Tectona grandis* and *Dendrocalamus sp.* are widely used for furniture, boundary, and other household works. Plants like *Adhatoda vasica, Glyricidia sp.* have been wide use for a boundary as they are not consumed by ruminants. Different types of fungi are seen in the form of mushrooms. Medicinal plants like *Adhatoda vasica* used mostly for cough, *Wrightia inctoria* used for digestive problems are used. *Sapindus laurifolius* is used in soap making. *Glyricidia sp.* is used as fertilizer. *Caryota urens* bears fruits that are consumed by *Anthracoceros coronatus* and *Buceros bicornis.* The presence of young *Caryota urens* where there is no main branch is an indicator of the presence of *Anthracoceros coronatus and Buceros bicornis*. Orchidaceae and *Polypodiopsida* are commonly seen on the giant tree as they provide favorable conditions. *Ficus amplissimam* is an epiphyte, found mostly on *Ficus religiosa, Terminalia bellirica,* and *Mangifera indica.*

Leea indica, Costus speciosus, Colocasia esculenta, Clerodendrum serratum, Smithia sp. , Smilax ovalifolia are some of the common species found in most of the tree canopy.



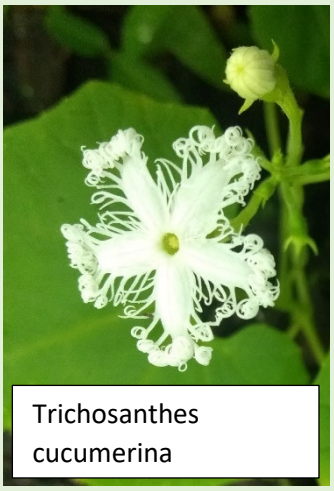
In the survey from the identified species, the majority of them can be consumed by humans or other fauna which causes a domino effect on the pollination; hence those trees are more widespread. About 23.3% of the trees identified possess medicinal properties hence can be used by both human and other fauna, which also possess them a threat of exploitation. Ornamental plants and plants used for religious purposes are found under the canopy of *Ficus religiosa*.

25.5 % of the species found whose usage is not commonly known. More research needs to be taken to understand if there any other possible usage.

The picture below has been captured by Pranav Panvalkar, Sachin Parsharam and Prantika Karmakar.

IMAGES OF THE FLORA FOUND DURING THE SURVEY

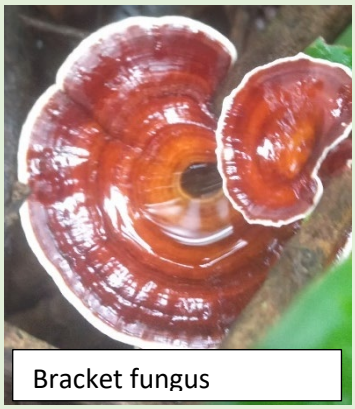
Impatiens pulcherrima



Trichosanthes cucumerina

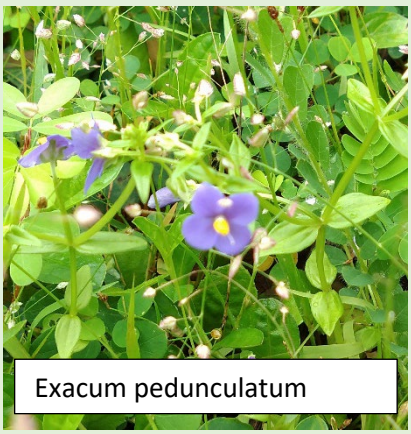
Commelina bengalinchis

Utricularia purpurascens



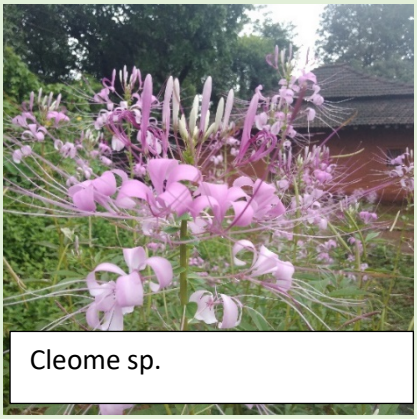
Bracket fungus

Dioscorea pentaphyla



Exacum pedunculatum

Amorphophalus commutatus

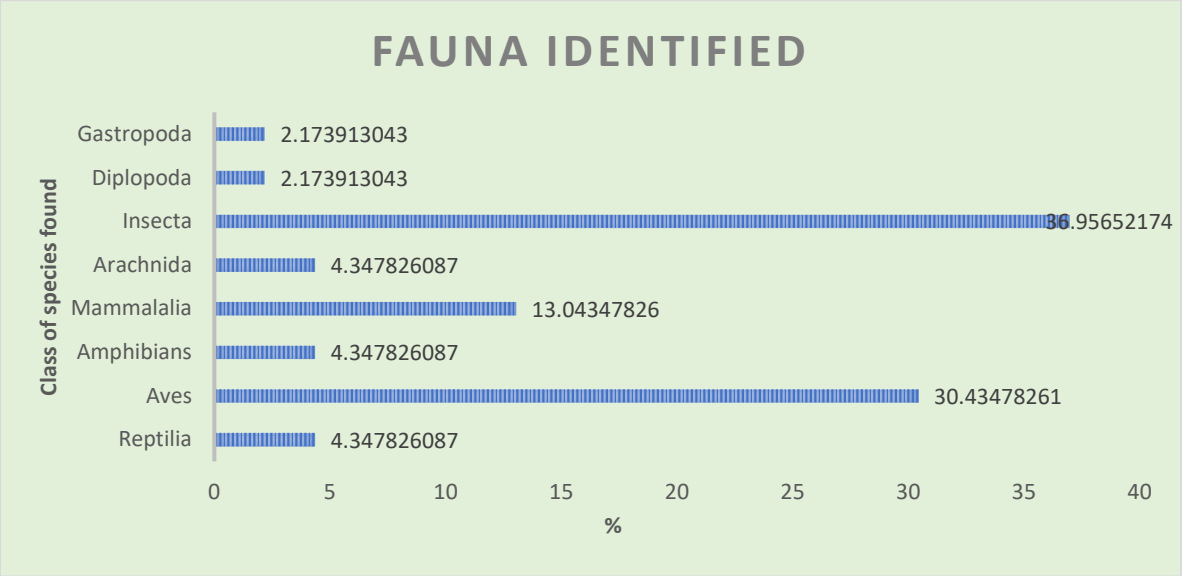


Cleome sp.

Smithia sp.

BIO-DIVERSITY- FAUNA

Giant trees along with flora attract and supports fauna. The giant tree provides a place for roosting, feeding and nesting purpose. The total number of fauna identified is 46.



The most identified species falls under the class insecta and aves and the least identified class is gastropoda and diplopoda.

The giant tree provides a habitable condition for some flora which further attracts other fauna like *Smithia sp., Impatiens balsamina* attract butterflies mostly *Eurema hecabe* and *Apis dorsata* . Fauna like *Apis dorsata* built their hive on these giant trees. Pycnonotus cafer, Corvus macrorhynchos are some of the common species in giant trees. Around six *Anthracoceros coronatus* were spotted and a *Buceros bicornis* has been spotted in giant *Ficus religiosa*. *Araneae sp*., Ant nest, swamps of *Diplopoda Sp* are the commonly identified fauna on barks of the tree. The most common *Araneae* is *Nephila pilipes.*

The picture below has been captured by Pranav Panvalkar, Sachin Parsharam and Prantika Karmakar.

IMAGES OF THE FAUNA FOUND DURING THE SURVEY

Tirumala limniace

Micronia aculeata

Araneae

Neptis hylas

Problepsis vulgaris

Araneae Sp

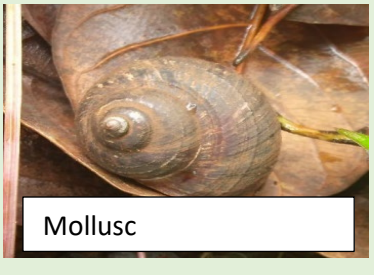
Cheiracanthilium danieli

Apis dorsata -HIVE

Garden lizard

Euphlyctis cyanophlyctis

Indian Bull Frog

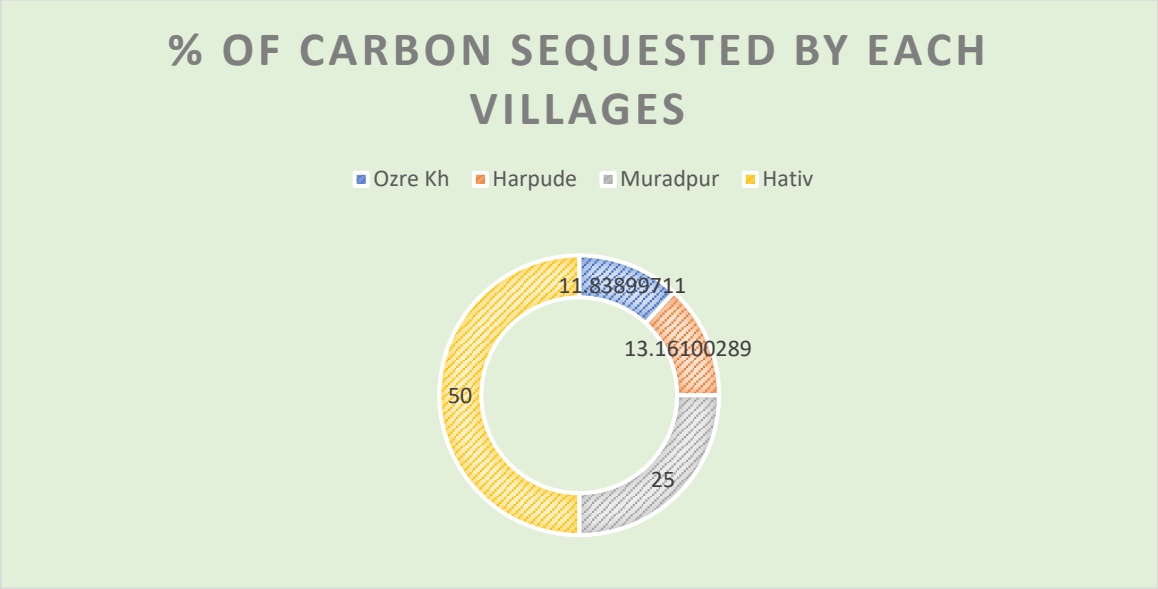


Mollusc

Moth caterpillar

CARBON -STOCK AND CARBON SEQUESTATION

Giant trees also plays an important role in carbon sequestration as it store carbon in it from the atmosphere maintaining the amount of greenhouse hence combating the warming of the earth.



The data calculated from the survey shows that carbon-sequestration of Hativ goes up to 50% of the total data collected. Muradpur have giant trees that sequesterss up to 25%.

Harpude and Ozare Kh having the least number of tree also sequesters only 11-13%.

The giant tree sequesters more amount of carbon than small trees, more giant tree need to be conserved as they can store carbon for a longer time and they can contribute in more sequestration.

SOCIAL SURVEY

In social survey the need to increase the awareness, the need to save tree and their perspective on giant tree has been addressed. A part of survey also concentrate on the possible threats to the giant trees.

The above picture was taken in Hativ village during a social survey. In this survey, we have communicated with many owners and their neighbours' who after learning the reason for the survey have opened up and told their end of the story for saving the tree.

The above graphs shows the common reasons the trees are useful to villagers and reasons they don't cut the trees.

Without any firm reason no-one has cut down the giants. Some of their reason to not cut down the tree along with the percentage are as followed:-

The giants are mostly found in the areas under gram panchayat which is common for everybody to use, the places of cemetery and cremation are left untouched as it does not belong to any one person and it's a place of respect towards their ancestors. In some families the giants have not been cut as they were told by their ancestors and to show respect to their words the giants have not been logged.

Mostly the *Ficus religiosa* and *Ficus benghalensis* trees are believed to be sacred and they are been worship. Many god have been placed near tree and these are surrounded by Cement boundary.

One thing that has been clear the need for them cut down tree are mainly of two reasons that is to clear up space to build their house or to sell it for monetary benefits.

Another reason to cut the trees are the foreseen cause of damage caused by them. Hence though not causing harm in present, many trees are chopped down because there is a chance for it to damage human properties. Sometimes the threat also lies for the tree that are beside road, broadening of road are one of main reason the trees are chopped down all over the world.

The level of threat of the giant tree are taken into account based on the interviews and self-observation (Since the level of threat based on self-observation which may not include interviews or the owner's input, hence the threats can be wrong).

Sl no.	Village	Scientific Name	Notes
1		Syzygium cumini	Sankar devasthan,surrounded by cement boundary,beside road
2		Ficus religiosa	15ft Settlement nearby, Electricity line nearby
3		Ficus religiosa	broken branch(B)
4		Ficus microcarpa	Cement boundary boundary,house in 20ft, Temple nearby
5		Careya arborea	Cement boundary boundary,house in 20ft, Temple nearby
6		Ficus religiosa	electricity line,Cement boundary boundary,Paddy,Road in 40ft,House in 40ft
7		Syzygium cumini	Beside road,
8		Ficus religiosa	Temple(routi) nearby, beside road
9		Ficus benghalensis	Branches on roof of house
10		Ficus religiosa	12ft from road, temple in 30ft, routi(small mandir) under canopy
11		Mangifera indica	10ft from road,Dev aamba, kaju cultivation beside,
12		Mangifera indica	routi(small mandir) under canopy
13		Ficus microcarpa	Settlement nearby,
14		Ficus benghalensis	Tirfal,Aamba(M), Paddy
15		Ficus microcarpa	Paddy,Aaba(B), Surangi(B)
16		Ficus microcarpa	Settement, beside road, Surangi, Wall nearby
17		Ficus microcarpa	
18	Ozre	Ficus benghalensis	Kaju cultivation, Saag(B)
19		Syzygium cumini	Beside Road ,

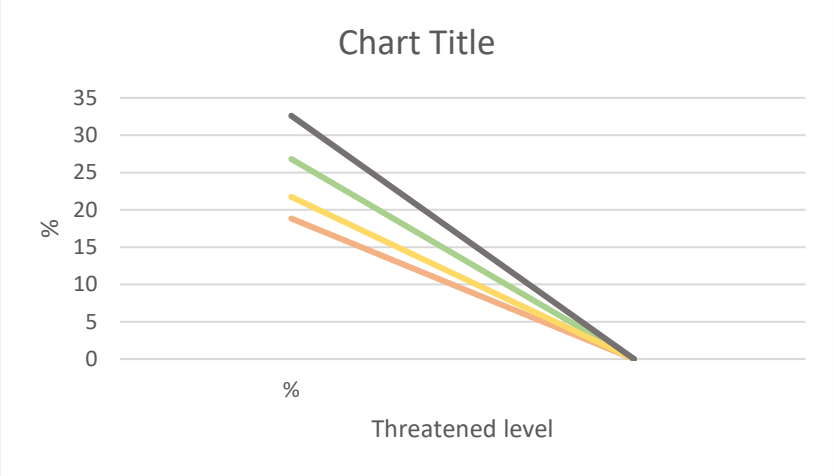
20	Harpude road	Mangifera indica	Boundary nearby,
21		Ficus microcarpa	Katesawar,beside road,Stream nearby
22		Ficus benghalensis	40ft beside road,
23		Pterocarpus marsupium	Beside road , Bamboo
24		Ficus religiosa	beside road,
25		Ficus microcarpa	beside road, settlement,Aamba,
26		Artocarpus heterophylla	Amba, Wall nearby, Saaya,Karanj,Sappligi river
27		Ficus religiosa	beside road,Giripuspo,Ain
28		Artocarpus heterophylla	beside Kedarshwer temple,
29		Ficus benghalensis	Aamba nearby,Taman,Wall
30		Ficus microcarpa	
31		Ficus microcarpa	
32		Mitragyna parviflora	
33		Terminalia bellirica	
34		Terminalia bellirica	
35		Ficus religiosa	
61		Bombax ceiba	Sttlement,Fanus,aamba,beside road
36	Muradpur	Dillenia pentagyna	One branch damaged,Gram panchayat
37		Lagerstroemia microcarpa	Gram panchayat
38		Terminalia bellirica	Gram panchayat
39		Lagerstroemia microcarpa	10/2 cement bench tube bulbs, Gram panchayat
40		Lagerstroemia microcarpa	Gram panchayat
41		Artocarpus heterophylla	
42		Artocarpus heterophylla	Adulsa boundary touching the tree. Cave like hole
43		Lagerstroemia microcarpa	cave like structure in which tubelight are kept, barn nearby
44		Mangifera indica	
45		Artocarpus heterophylla	MAin electricity 5ft from tree
46		Mangifera indica	Boundary of Adulsa, pangeraa, glicidi at 7ft
47		Pterocarpus marsupium	
48		Artocarpus heterophylla	
49		Ficus religiosa	by the roadside
50		Ficus religiosa	
51		Ficus religiosa	
52		Artocarpus heterophylla	
53		Terminalia bellirica	beisde road, Wall,Settlement,Bamboo
54		Mangifera indica	beisde road, Wall,Settlement,Bamboo

55		Mangifera indica	Beside road,Saayaa,Aamba,Saag,Tirfal
56		Mangifera indica	Barn,Bamboo,Surangi,Surman,Kumbha,
57		Ficus microcarpa	Bamboo, Fanus,Aamba,Baheda(S),Saag,
58		Mangifera indica	Someshwer temple, Surmar,Nanya
59		Ficus microcarpa	Fanus,Damaged house,veil,Ratanba
60		Ficus benghalensis	Paddy,beside road, Cement boundary
62	Hattiwa	Ficus religiosa	boundary by cement boundary, palki stops while travelling from Wareshwar to devruk,Telephone wire passing, some of the branched on road but no posiible threat.
63		Mangifera indica	
64		Mangifera indica	Electricity wire of the house nearby
65		Mangifera indica	15ft deep burrow to keep cow dung
66		Mangifera indica	Well in 15ft, Houeses nearby
67		Ficus religiosa	Beside road, have a boundary(Cement boundary)
68		Mangifera indica	In 20ft there's a house
69		Mangifera indica	
70		Mangifera indica	
71		Mangifera indica	one branch is broken and stuck on tree
72		Artocarpus heterophylla	Near boundar, House electric line passing by
73		Artocarpus heterophylla	
74			
75			
76		Terminalia bellirica	Gram panchayat
77		Firmiana collorata	Gram panchayat
78		Ixora brachiata	Gram panchayat
79		Mangifera indica	Gram panchayat
80		Mangifera indica	Gram panchayat
81		Mangifera indica	Gram panchayat,
82		Terminalia bellirica	Gram panchayat
83		Firmiana collorata	
84		Mangifera indica	Boundary,Barn in 20ft,Bathroom present in the canoopy
85		Artocarpus heterophylla	
86		Mangifera indica	Boundary(Cement boundary), Barn in 7ft, Adulsa and Bamboo Boundary nearby
87		Artocarpus heterophylla	Owners-8, Bathroom tank nearby, bathroom nearby, Main electricity line and House Electricity line mearby on which branches are present.
88		Mangifera indica	
89		Mangifera indica	Main electric line and House electric line nearby, Paddy nearby
90		Artocarpus heterophylla	Tree infront of the house in 15ft
91		Artocarpus heterophylla	Paddy nearby, Bathroom nearby

92		Artocarpus heterophylla	Paddy nearby, Bathroom nerby, Hole in the tree
93		Artocarpus heterophylla	Main electric line and House electric line nearby,Bathroom nearby
94		Artocarpus heterophylla	
95		Bombax ceiba	House nearby, Plantation of haldi, Ram temple nearby
96		Mangifera indica	House nearby
97		Mangifera indica	
98		Artocarpus heterophylla	Boundary nearby, beside Kachi road
99		Ficus benghalensis	Houses neaby, some branches over the tree
100		Ficus microcarpa	Paddy field nearby
101		Mangifera indica	paddy
102		Mangifera indica	
103		Artocarpus heterophylla	paddy, barn
104		Mangifera indica	paddy
105		Mangifera indica	house beside
106		Artocarpus heterophylla	ram mandir
107		Mangifera indica	Death stone
108		Mangifera indica	ram mandir
109		Mangifera indica	house nearby
110		Mangifera indica	house nearby
111		Mangifera indica	
112		Artocarpus heterophylla	paddy
113		Mangifera indica	Chamber within canopy, House nearby
114		Artocarpus heterophylla	Paddy nearby, Baheda _ fruiting near by
115		Artocarpus heterophylla	Paddy nearby
116		Mangifera indica	Paddy nearby
117		Artocarpus heterophylla	Paddy nearby
118		Mangifera indica	
119		Mangifera indica	Paddy nearby
120		Artocarpus heterophylla	Paddy nearby
121		Ficus religiosa	
122		Ficus microcarpa	Pariya nearby, boundary nearby
123		Mangifera indica	
124		Mangifera indica	House,Well,Paddy nearby, Canopy on the house
125		Ficus benghalensis	Paddy nearby, haldi cultivation on the side
126		Ficus microcarpa	
127		Mangifera indica	
128		Ficus microcarpa	Mango Garden

129		Mangifera indica	House nearby
130		Mangifera indica	pady
131		Artocarpus heterophylla	
132		Mangifera indica	Road side
133		Artocarpus heterophylla	Road side
134		Mangifera indica	Road side
135		Mangifera indica	
136		Ficus benghalensis	house nearby
137		Mangifera indica	house nearby
138		Ficus religiosa	Paddy, religious place, house nearby

KEY	
STATUS	Threatened level
	High
	No threat
	Minimum chance
	Not sure



The above chat is colour coded to understand the threatened status of giant trees in villages.

About 19% giant trees are found to be threatened whereas 26% have no threats. In 22% of tree no recent threat has been notice.

Mostly the reason for threatened species is they are on the side of road or the tree can damage human belonging. The trees out of threat mostly because they surrounded by cement boundary have least threat as they won't be because of religious reasons or the trees falls under gram panchayat or they belong to more than one owner.

32% of status is unknown as there's no threat was observed and no one was present for social survey.

CONCLUSION

In the 21st century with increasing challenges, the exploitation of resources by humans has been continuously increasing, and to date the only implementation without any negative side effects is plantation. As plants take time to grow and work to its full potential the best possible and effective way is to protect the trees along with planting. 1000 Giant trees project protects the trees with more than 150 cm girth as not only they absorbs carbon-dioxide more than other species, but also provide environmental conditions for other flora and fauna.

The giant tree supports a diverse amount of flora and fauna is a different manner. The study of interdependency in flora and fauna is to be explored more to successfully implement in areas to regenerate. To have a bird's eye view to understand the patches of the giant tree and the barren patch where the plantation is required to revive the key species and other bio-diversity. Malabar pied hornbill and great hornbill which is a key species mostly rests and only nests on the giant tree. The distance between the patches of giant tree has an direct impact on them through their route, frequency. If the distance between the two patches is more the frequency of the birds on that route will less as they get tired due to lack of space to rest. For the availability of place to rest and fruits to feed on, an even distribution of giant trees is required

The community plays an important role as these lands are under private ownership and they have the full right to chop it down. The society's perspective holds great importance which will guide us to design projects in which benefits them to not cut down the tree. Awareness of the problem is a key step for the society to encourage to take part and understand the bio-diversity to sustainably for a sustainable future.

The giant trees support a lot of flora, in some cases when the seeds fall in gaps of the main tree, they started growing hence giant trees support a lot of fauna on itself, most common are *Polypodiopsida*, Orchidacea, Ficus microcarpa, etc. Some shade-loving tree grows in the canopy of giant trees. The pollinators which use the giant tree for roosting feeding or nesting purpose they leave seeds of different fruits they feed on, hence the density of tree is mostly under the canopy.

Taking steps to reduce the logging of the tree by understanding the needs of the society and the bio-diversity are been taken. The process has to gain momentum by co-operation from all the stakeholders and working together towards a sustainable society.

ANNEXURE

-GIANT TREE IDENTIFIED IN VILLAGES

Sl no.	Village Name	Scientic name	GBH(in m)	Tree height (in m)	Canopy (in m)
1	Ozre	Syzygium cumini	4.62	21.336	17
2		Ficus religiosa	4	16.764	11
3		Ficus religiosa	7.49	27.432	18
4		Ficus microcarpa	6	19.812	15
5		Careya arborea	5.3	15.24	12
6		Ficus religiosa	5.32	24.384	11
7		Syzygium cumini	3.2	12.192	8
8		Ficus religiosa	3.8	21.336	18
9		Ficus benghalensis	6	15.24	13
10		Ficus religiosa	9	21.336	30
11		Mangifera indica	1.95	10.668	20
12		Mangifera indica	6.3	21.336	20
13		Ficus microcarpa	7.5	24.384	18
14		Ficus benghalensis	4.5	10.668	14
15		Ficus microcarpa	6.1	18.288	12
16		Ficus microcarpa	4.6	21.336	9
17		Ficus microcarpa	0	18.288	16
18		Ficus benghalensis	3.75	21.336	8
19	Harpude road	Syzygium cumini	2.37	10.668	10
20		Mangifera indica	3.06	13.716	12
21		Ficus microcarpa	4	10.668	10
22		Ficus benghalensis	6	13.716	20
23		Pterocarpus marsupium	1	19.812	8
24		Ficus religiosa	10	24.384	30
25		Ficus microcarpa	9.24	24.384	7
26		Artocarpus heterophylla	5.4	24.384	13
27		Ficus religiosa	4	16.764	15
28		Artocarpus heterophylla	4.6	19.812	7
29		Ficus benghalensis	3.2	13.716	12
30		Ficus microcarpa	6	18.288	15
31		Ficus microcarpa	5	13.716	13
32		Mitragyna parviflora	4	15.24	9
33		Terminalia bellirica	6.16	18.288	22
34		Terminalia bellirica	3.79	9.144	14
35		Ficus religiosa	2.55	21.336	9
		Ficus benghalensis	3.7	16.764	11
36	Muradpur	Bombax ceiba	3.56	16.764	11
37		Dillenia pentagyna	1.62	15.24	10
38		Lagerstroemia microcarpa	4.4	18.288	17
39		Terminalia bellirica	6.16	21.336	20

Sl no.		Scientic name	GBH(in m)	Tree height (in m)	Canopy (in m)
40		Lagerstroemia microcarpa	3.58	16.764	10
41		Lagerstroemia microcarpa	2.6	18.288	12
42		Artocarpus heterophylla	5.12	21.336	9
43		Artocarpus heterophylla	2.96	16.764	11
44		Lagerstroemia microcarpa	4.7	15.24	14
45		Mangifera indica	1.84	19.812	14
46		Artocarpus heterophylla	2.42	19.812	11
47		Mangifera indica	2.7	22.86	11
48		Pterocarpus marsupium	2.4	25.908	15
49		Artocarpus heterophylla	5.5	25.908	20
50		Ficus religiosa	4.57	16.764	18
51		Ficus religiosa	2.96	22.86	15
52		Ficus religiosa	8	24.384	18
53		Artocarpus heterophylla	3.72	15.24	7
54		Terminalia bellirica	2.41	21.336	9
55		Mangifera indica	1.95	21.336	8
56		Mangifera indica	2.59	16.764	9
57		Mangifera indica	1.98	21.336	6
58		Ficus microcarpa	2.64	13.716	6
59		Mangifera indica	2.4	15.24	6
60		Ficus microcarpa	6	15.24	22
62		Ficus religiosa	5.43	15.24	15
63		Mangifera indica	2.41	13.716	9
64		Mangifera indica	3.29	16.764	15
65		Mangifera indica	3.59	19.812	12
66		Mangifera indica	2.15	13.716	7.5
67		Ficus religiosa	6.87	27.432	14
68		Mangifera indica	2.44	19.812	8
69		Mangifera indica	2.67	18.288	7
70		Mangifera indica	2.74	18.288	10
71		Mangifera indica	3.25	25.908	13
72		Artocarpus heterophylla	2.69	24.384	11
73	Hattiwa	Artocarpus heterophylla	1.9	19.812	14
74			1.78	19.812	14
75			1.25	19.812	13
76		Terminalia bellirica	4.42	25.908	23
77		Firmiana collorata	3.08	27.432	12
78		Ixora brachiata	2.42	12.192	9
79		Mangifera indica	2.26	21.336	11
80		Mangifera indica	1.67	21.336	10
81		Mangifera indica	2.36	25.908	12
82		Terminalia bellirica	2	19.812	15
83		Firmiana collorata	2.47	24.384	10
84		Mangifera indica	3.18	27.432	16

Sl no.		Scientic name	GBH(in m)	Tree height (in m)	Canopy (in m)
85		Artocarpus heterophylla	2.12	18.288	9
86		Mangifera indica	2.4	24.384	18
87		Artocarpus heterophylla	2.43	19.812	6
88		Mangifera indica	2.8	24.384	18
89		Mangifera indica	2.8	21.336	15
90		Artocarpus heterophylla	2.14	24.384	7
91		Artocarpus heterophylla	3	16.764	16
92		Artocarpus heterophylla	3.3	18.288	10
93		Artocarpus heterophylla	2.8	18.288	8
94		Artocarpus heterophylla	3.3	21.336	11
95		Bombax ceiba	1.78	25.908	16
96		Mangifera indica	1.95	21.336	10
97		Mangifera indica	2.77	19.812	12
98		Artocarpus heterophylla	2.38	23.1648	18
99		Ficus benghalensis	3.3	19.812	20
100		Ficus microcarpa	6.53	21.336	18
101		Mangifera indica	3.37	24.9936	18
102		Mangifera indica	2.45	24.384	10
103		Artocarpus heterophylla	2.67	13.716	15
104		Mangifera indica	3.54	27.432	25
105		Mangifera indica	2.54	18.8976	18
106		Artocarpus heterophylla	2.62	18.8976	12
107		Mangifera indica	2.57	16.4592	19
108		Mangifera indica	2.42	22.5552	12
109		Mangifera indica	2.74	16.4592	18
110		Mangifera indica	2.06	25.908	22
111		Mangifera indica	2.72	17.0688	18
112		Artocarpus heterophylla	4.35	12.192	12
113		Mangifera indica	2.9	24.384	18
114		Artocarpus heterophylla	4.2	13.716	9
115		Artocarpus heterophylla	2.87	18.288	18
116		Mangifera indica	2.4	22.86	16
117		Artocarpus heterophylla	2.65	15.24	16
118		Mangifera indica	3.1	19.812	14
119		Mangifera indica	2.42	18.288	10
120		Artocarpus heterophylla	2.37	21.336	15
121		Ficus religiosa	5.57	15.24	14
122		Ficus microcarpa	3.1	19.812	18
123		Mangifera indica	3.19	19.812	14
124		Mangifera indica	3.05	24.384	10
125		Ficus benghalensis	4.85	21.336	14
126		Ficus microcarpa	2.3	19.812	10
127		Mangifera indica	2.42	25.6032	21
128		Ficus microcarpa	4.22	27.432	32

Sl no.		Scientic name	GBH(in m)	Tree height (in m)	Canopy (in m)
129		Mangifera indica	2.14	9.7536	22
130		Mangifera indica	2.72	19.5072	22
131		Artocarpus heterophylla	2.1	18.288	18
132		Mangifera indica	2.46	25.908	26
133		Artocarpus heterophylla	2.25	12.192	22
134		Mangifera indica	2.25	22.86	22
135		Mangifera indica	2.35	23.7744	25
136		Ficus benghalensis	2.34	16.4592	22
137		Mangifera indica	2.54	19.2024	15
138		Ficus religiosa	3.76	17.3736	18

- LIST OF TOTAL FLORA IDENTIFIED

Sl No.	*Scientific name*
1	*Colocasia esculenta*
2	*Bauhinia racemosa*
3	*Hibiscus sp.*
4	*Flacourtia montana*
5	*Adhatoda vasica*
6	*Terminalia elliptica*
7	*Dioscorea pentaphylla*
8	*Meyna laxiflora*
9	*Mangifera indica*
10	*Acacia auriculiformis*
11	*Getonia floribunda*
12	*Cassia fistula*
13	*Terminalia bellirica*
14	*Mimusops elengi*
15	*Jasmine sp.*
16	*Clerodendrum serratum*
17	*Pterocarpus marupium*
18	*Plumeria*
19	*Macaranga peltata*
20	*Manikara zapota*
21	*Solanum anguivi*
22	*Dendrocalamus sp.*
23	*Grewia tiiifolia*
24	*Leea indica*
25	*Cyclea peltata*
26	*Artocarpus heterophyllus*
27	*Polypodiopsida*
28	*Sterculia guttata*
29	*Glyricidia sp.*
30	*Smilax ovalifolia*
31	*Poaceae*
32	*Tinospora cordifolia*
33	*Sepium insigne*
34	*Sygygium cumini*
35	*Hednocarpus pentandra*
36	*Strychnos nux-vomica*
37	*Wrightia inctoria*
38	*Piper hookeri*
39	*Bauhinia sp.*
40	*Ziziphus oenoplia*
41	*Pongamia pinnaya*
42	*Dillenia pentagyna*
43	*Mimordica dioica*

44	*Carissa congesta*
45	*Bridelia retusa*
46	*Acacia catechu*
47	*Ficus aspirrima*
48	*Ixora brachiata*
49	*Garcinia indica*
50	*Firmiana collorata*
51	*Caryea arborea*
52	*Celosia argentea*
53	*Caryota urens*
54	*Atalantia reacemosa*
55	*Lannea coromadelica*
56	*Helictris isora*
57	*Fungi*
58	*Lagerstroemia microcarpa*
59	*Euphorbia ligularia*
60	*Vitex neugondo*
61	*Orchidaceae*
62	*Erythrina stricta*
63	*Nyctanthes arbor-tristis*
64	*Psidium guajava*
65	*Ficus amplissima*
66	*Ampelocissus latifolia*
67	*Tespesia lampas*
68	*Dioscorea bulbifera*
69	*Sapindus laurifolius*
70	*Tectona grandis*
71	*Rauvolfia serpentina*
72	*Bombax ceiba*
73	*Acacia torta*
74	*Gmelina arborea*
75	*Smithia sp.*
76	*Costus speciosus*
77	*Amorphophallus commutatus*
78	*Mammea surgia*
79	*Impatiens balsamina*
80	*Oroxylum indicum*
81	*Allophylus cobbe*
82	*Zanthoxylum rhetsa*
83	*Ziziphus rugosa*
84	*Ficus racemosa*
85	*Moullava spicata*
86	*Embelia tsjeriam-cottam*
87	*Curcuma psuedomontana*
88	*Madhica indica*
89	*Zingiber cernuum*

90	*Lannea coromandelica*
91	*Commelina bengalinchis*
92	*Trichosanthes cucumerina*
93	*Cleome sp.*
94	*Withania somnifera*
95	*Mimosa pudica*
96	*Lagerstroemia speciosa*
97	*Exacum pedunculatum*
98	*Vernonia cinerea*
99	*Neanotis sp.*
100	*Utricularia purpurascens*
101	*Habenaria plantaginea*

- LIST OF TOTAL FAUNA IDENTIFIED

Sl No.	*Scientific name*	Phylum	Class
1	*Varanus*	Chordata	Reptilia
2	*Calotes versicolor*	Chordata	Reptilia
3	*Psittacula krameri*	Chordata	Aves
4	*Halcyon smyrnensis*	Chordata	Aves
5	*Oriolus xanthornus*	Chordata	Aves
6	*Treron phoenicoptera*	Chordata	Aves
7	*Pycnonotus cafer*	Chordata	Aves
8	*Anthracoceros coronatus*	Chordata	Aves
9	*Buceros bicornis*	Chordata	Aves
10	*Corvus macrorhynchos*	Chordata	Aves
11	*Turdoides striata*	Chordata	Aves
12	*Chalcophaps indica*	Chordata	Aves
13	*Cinnyris asiaticus*	Chordata	Aves
14	*Spilornis cheela*	Chordata	Aves
15	*Pavo cristatus*	Chordata	Aves
16	*Passer domesticus*	Chordata	Aves
17	*Euphlyctis cyanophlyctis*	Chordata	Amphibians
18	*Sphaerotheca breviceps*	Chordata	Amphibians
19	*Hoplobatrachus tigerinus*	Chordata	Amphibians
20	*Bos gaurus-Pugmark*	Chordata	Mammalalia
21	*Pteropus*	Chordata	Mammalalia
22	*Chiroptera*	Chordata	Mammalalia
23	*Herpestes smithii*	Chordata	Mammalalia
24	*Macaca radiata*	Chordata	Mammalalia
25	*Funambulus palmarum*	Chordata	Mammalalia
26	*Nephila pilipes*	Arthropoda	Arachnida
27	*Araneae*	arthropods	Arachnida
28	*Apis dorsata -HIVE*	Arthropoda	Insecta
29	*Eurema hecabe*	Arthropoda	Insecta
30	*Tirumala limniace*	Arthropoda	Insecta
31	*Micronia aculeata*	Arthropoda	Insecta
32	*Problepsis vulgaris*	Arthropoda	Insecta
33	*Lymantriinae*	Arthropoda	Insecta
34	*Junonia iphita*	Arthropoda	Insecta
35	*Ypthima huebneri*	Arthropoda	Insecta
36	*Hypolimnas misippus*	Arthropoda	Insecta
37	*Ypthima asterope*	Arthropoda	Insecta
38	*Ypthima baldus*	Arthropoda	Insecta
39	*Neptis hylas*	Arthropoda	Insecta
40	*Ant nest*	Arthropoda	Insecta
41	*Acridomorpha*	Arthropoda	Insecta
42	*Anisoptera*	Arthropoda	Insecta

43	*Musca domestica*	Arthropoda	Insecta
44	*Bombus*	Arthropoda	Insecta
45	*Diplopoda Sp*	Arthropoda	Diplopoda
46	*Gastropoda Sp*	Mollusca	Gastropoda

- CARBON STOCK AND CARBON SEQUESTATION OF THE GIANT TREES

Sl no.	Village	Sciencetific name	Carbon-Stock	Carbon Sequestration
1	Ozre Kh	Sygygium cumini	2.160593521	7.84295448
2		Ficus religiosa	0.801679466	2.91009646
3		Ficus religiosa	10.17833878	36.94736977
4		Ficus microcarpa	3.318773151	12.04714654
5		Carea arborea	2.067396967	7.50465099
6		Ficus religiosa	3.163477545	11.48342349
7		Sygygium cumini	0.330826513	1.200900242
8		Ficus religiosa	0.980129255	3.557869195
9		Ficus benghalensis	2.386225538	8.661998701
10		Ficus religiosa	12.05585341	43.76274788
11		Mangifera indica	0.056722378	0.205902232
12		Mangifera indica	4.618017592	16.76340386
13		Ficus microcarpa	8.604848267	31.23559921
14		Ficus benghalensis	0.585846207	2.126621731
15		Ficus microcarpa	3.09945647	11.25102699
16		Ficus microcarpa	1.706870403	6.195939564
17		Ficus benghalensis	0.943179855	3.423742875
18	Harpude	Sygygium cumini	0.130401978	0.47335918
19		Mangifera indica	0.340295364	1.235272172
20		Ficus microcarpa	0.474140086	1.721128514
21		Ficus benghalensis	2.331782999	8.464372287
22		Pterocarpus marsupium	0.025984743	0.094324618
23		Ficus religiosa	22.71722479	82.46352599
24		Ficus microcarpa	18.0311627	65.45312059
25		Artocarpus heterphyllus	4.36961601	15.86170612
26		Ficus religiosa	0.912766294	3.313341648
27		Artocarpus heterphyllus	2.025944332	7.354177926
28		Ficus benghalensis	0.376464136	1.366564813
29		Ficus microcarpa	3.364704391	12.21387694
30		Ficus microcarpa	1.303613164	4.732115785
31		Mitragyna parviflora	0.892386918	3.239364514
32		Terminalia bellirica	4.604545222	16.71449916
33		Terminalia bellirica	0.410739133	1.490983054
34		Ficus religiosa	0.351274421	1.275126148
35		Ficus benghalensis	0.766616517	2.782817958
36	Muradpur	Bombax ceiba	0.700769958	2.543794946
37		Dillenia pentagyna	0.088623437	0.321703075
38		Lagerstroemia microcarpa	1.990330858	7.224901015
39		Terminalia bellirica	7.129755261	25.8810116
40		Lagerstroemia microcarpa	0.963700595	3.498233159

Sl no.		Sciencetific name	Carbon-Stock	Carbon Sequestration
41		Lagerstroemia microcarpa	0.432642404	1.570491928
42		Artocarpus heterphyllus	3.810035255	13.83042797
43		Artocarpus heterphyllus	0.546617921	1.984223054
44		Lagerstroemia microcarpa	1.849746709	6.714580554
45		Mangifera indica	0.1643601	0.596627162
46		Artocarpus heterphyllus	0.388542677	1.410409919
47		Mangifera indica	0.612859548	2.224680158
48		Pterocarpus marsupium	0.589692376	2.140583326
49		Artocarpus heterphyllus	6.227782017	22.60684872
50		Ficus religiosa	1.660741182	6.02849049
51		Ficus religiosa	0.738453447	2.680586012
52		Ficus religiosa	14.64721632	53.16939523
53		Artocarpus heterphyllus	0.923425726	3.352035386
54		Terminalia bellirica	0.466347861	1.692842736
55		Mangifera indica	0.216317573	0.78523279
56		Mangifera indica	0.34678417	1.258826537
57		Mangifera indica	0.22607321	0.820645751
58		Ficus microcarpa	0.238973173	0.867472619
59		Mangifera indica	0.24240369	0.879925394
60		Ficus microcarpa	3.191022885	11.58341307
61		Ficus religiosa	1.23570497	4.48560904
62		Mangifera indica	0.109569157	0.397736041
63		Mangifera indica	0.359733092	1.305831124
64		Mangifera indica	0.589847409	2.141146094
65		Mangifera indica	0.078853082	0.286236689
66		Ficus religiosa	5.759140634	20.9056805
67		Mangifera indica	0.19302343	0.70067505
68		Mangifera indica	0.223054648	0.809688371
69		Mangifera indica	0.240374643	0.872559953
70		Mangifera indica	0.652119103	2.367192343
71		Artocarpus heterphyllus	0.369928535	1.342840583
72	Hativ	Artocarpus heterphyllus	0.100418561	0.364519378
73		Artocarpus heterphyllus	0.083208902	0.302048313
74		Artocarpus heterphyllus	0.030106855	0.109287883
75		Terminalia bellirica	1.860824636	6.75479343
76		Firmiana collorata	0.487641763	1.770139599
77		Ixora brachiata	0.116932274	0.424464154
78		Mangifera indica	0.172177048	0.625002684
79		Mangifera indica	0.071967639	0.261242528
80		Mangifera indica	0.258279342	0.937554011
81		Terminalia bellirica	0.126996649	0.460997835
82		Firmiana collorata	0.217203892	0.788450129
83		Mangifera indica	0.665109	2.41434567

Sl no.		Sciencetific name	Carbon-Stock	Carbon Sequestration
84		Artocarpus heterphyllus	0.122713355	0.445449479
85		Mangifera indica	0.248391593	0.901661481
86		Artocarpus heterphyllus	0.204237453	0.741381956
87		Mangifera indica	0.387929717	1.408184871
88		Mangifera indica	0.319788975	1.16083398
89		Artocarpus heterphyllus	0.190964124	0.693199771
90		Artocarpus heterphyllus	0.294974472	1.070757332
91		Artocarpus heterphyllus	0.440772954	1.600005824
92		Artocarpus heterphyllus	0.274018666	0.994687759
93		Artocarpus heterphyllus	0.550998808	2.000125672
94		Bombax ceiba	0.092115034	0.334377572
95		Mangifera indica	0.112488204	0.408332179
96		Mangifera indica	0.278483706	1.010895852
97		Artocarpus heterphyllus	0.241067205	0.875073954
98		Ficus benghalensis	0.40271141	1.461842419
99		Ficus microcarpa	3.250844171	11.80056434
100		Mangifera indica	0.687624945	2.496078551
101		Mangifera indica	0.263645656	0.95703373
102		Artocarpus heterphyllus	0.157645881	0.572254549
103		Mangifera indica	0.907701177	3.294955274
104		Mangifera indica	0.202468138	0.73495934
105		Artocarpus heterphyllus	0.237111198	0.860713648
106		Mangifera indica	0.171574386	0.622815021
107		Mangifera indica	0.227315829	0.825156458
108		Mangifera indica	0.206435878	0.749362236
109		Mangifera indica	0.174387895	0.633028058
110		Mangifera indica	0.213013513	0.773239054
111		Artocarpus heterphyllus	0.545354496	1.979636821
112		Mangifera indica	0.429400989	1.558725589
113		Artocarpus heterphyllus	0.584282915	2.12094698
114		Artocarpus heterphyllus	0.294297509	1.068299956
115		Mangifera indica	0.226275654	0.821380624
116		Artocarpus heterphyllus	0.179599138	0.651944871
117		Mangifera indica	0.385649644	1.399908207
118		Mangifera indica	0.167919656	0.60954835
119		Artocarpus heterphyllus	0.211473554	0.767649003
120		Ficus religiosa	1.330496036	4.82970061
121		Ficus microcarpa	0.356029192	1.292385967
122		Mangifera indica	0.418953071	1.520799647
123		Mangifera indica	0.496909296	1.803780745
124		Ficus benghalensis	1.527811078	5.545954215
125		Ficus microcarpa	0.150278035	0.545509269
126		Mangifera indica	0.273011002	0.991029936
127		Ficus microcarpa	1.395123271	5.064297472

Sl no.		Sciencetific name	Carbon-Stock	Carbon Sequestration
128		Mangifera indica	0.047635973	0.172918583
129		Mangifera indica	0.258343685	0.937787578
130		Artocarpus heterphyllus	0.119404191	0.433437212
131		Mangifera indica	0.291202749	1.057065979
132		Artocarpus heterphyllus	0.081210998	0.294795921
133		Mangifera indica	0.18779027	0.68167868
134		Mangifera indica	0.225334145	0.817962947
135		Ficus benghalensis	0.12724465	0.461898079
136		Mangifera indica	0.207201483	0.752141384
137		Ficus religiosa	0.514736971	1.868495203

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