

Studies on Carbon Sequestration and Assessment of Tree Diversity in Karnatak University Campus, Dharwad, Karnataka

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ABSTRACT

Dharwad is one of the largest districts situated in the western sector of the northern half of Karnataka State. Karnatak University is a public state university in the Dharwad district of Karnataka state, India, and is spread across 888 acres. The survey was conducted in Karnatak University Campus in 2021 – 2022 for documenting tree diversity and assessing the carbon sequestration capacity. A total of 223 tree species belonging to 56 families and 158 genera were recorded in 80 quadrats. Among which Fabaceae has the highest number of species (41), followed by Malvaceae (16), Bignoniaceae (14), Moraceae (11), Apocynaceae, Meliaceae, and Rubiaceae (8) respectively. Total basal area of all the tree species in the campus is 70.704 m². About 50,353 individuals were measured for calculating above-ground biomass, below-ground biomass, total biomass, and carbon storage capacity. The Importance Value Index was calculated using relative frequency, relative dominance, and relative density of all the tree species. Total carbon sequestered by all the tree species in the campus is about 3400.53 tons, of which *Eucalyptus globulus* sequestered highest 32.1 tons of carbon, followed by *Tamarindus indica* sequestered 3.31 tons of carbon, followed by *Mangifera indica* sequestered 2.77 tons of carbon, followed by *Delonix regia* sequestered 2.22 tons of carbon, which is followed by *Azadirachta indica* sequestered 1.77 tons of carbon being the top five tree species with highest carbon storage capacities. These trees are sequestering a good amount of carbon, hence keeping the campus less polluted and more cleaner air quality.

Keywords: Tree diversity; Karnatak University; Biomass; Carbon Sequestration; Dharwad.

1. INTRODUCTION

Situated on a relatively stable geological terrain and spread across seven hills, Dharwad is a gateway between the plains in the eastern and Western Ghats. Dharwad is one of the largest districts situated in the western sector of the northern half of Karnataka State. The district encompasses an area of 13,738 sq km. lying between the latitudinal parallels of 14°17' North and 15°50' North and the longitudinal meridians of 74° 43' East and 76° East [12]. Karnatak University is a public state university in the Dharwad district of Karnataka state, India, and is spread across 888 acres. The Karnatak University Botanic Garden was established in 1963. It is the only Botanic Garden in the northern part of Karnataka state. It spreads over an area of over 40 acres and is located at an elevation of 830 meters [18]. Floristic diversity refers to the variety of plants and their variation. It is a well-organized complex association having a typical composition (floristic aspect) and structure (morphological aspect), which results from the interaction through time. It can be measured in different levels, from just a number of species in a given area to a complex association with the prevailing ecosystem [17]. The tree biomass is generally determined based on forest inventory data and allometric equations [7].

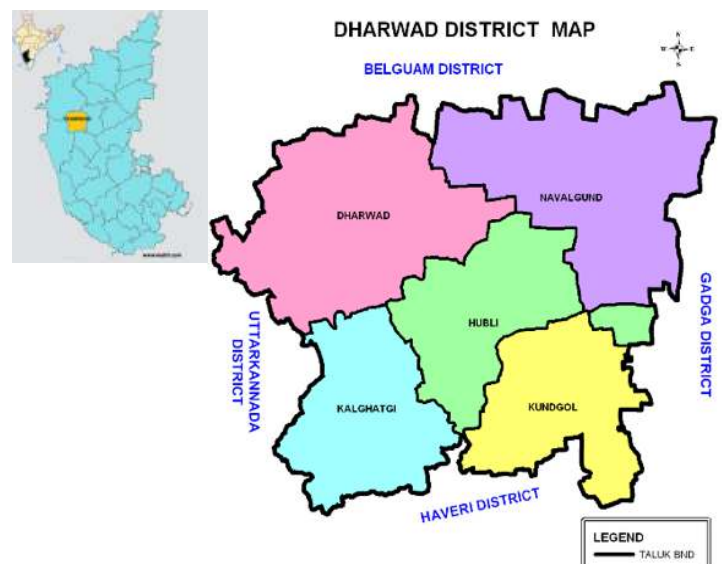


Figure 1: Map of Dharwad district

2. MATERIALS AND METHODS

2.1 Study area: Karnatak University is a public state university in Dharwad district of Karnataka state, India, and is spread across 888 acres. The Bombay legislature of the erstwhile Bombay Presidency established Karnatak University through the Karnatak University Act 1949. It became a statutory University on 1st March 1950. The jurisdiction of the University covers Dharwad, Gadga, Haveri and Uttarkannada districts.

There are 51 PG Departments, 154 teachers, and 4500 students (PG, M.Phil., Ph.D.). Efforts have been put to maintain the beautiful greenery in the campus. Good gardens, Parks and a children's park are maintained by university garden department and add to the aesthetic beauty of the campus environment. The Karnatak University Botanic Garden was established in 1963. It is the only Botanic Garden in the northern part of Karnataka state. It spreads in an area of over 40 acres and is located at an elevation of 830 meters. The flowering plants represent 170 families and more than 1300 species. have been maintained. This garden also has a small nursery where medicinal plants, rare and ornamental plants are maintained. It is a member of BGCI and IBGN. The Garden is well planned with different sections like 1. Oil-yielding plant, 2. Economic plants, 3. Garcinia section, 4. Coconut Garden, 5. Citrus Garden, 6. Systematic section and 7. Gymnosperms and local flora section. The Garden has both indigenous and exotic sps. from different places [18].

The Garden is a centre of study for students of M.Sc. Botany and various other departments like Zoology and Chemistry. This garden is a centre of attraction for the public, nature lovers and students of different Colleges, including Ayurvedic and Homeopathy Colleges and other Universities for the study [18].

The average rainfall is 691.1 mm occurring between June to September. April is generally the hottest month with the mean daily maximum temperature at 37.3 °C and the mean daily minimum at 22.5 °C.

Google Maps Karnatak University, Dharwad

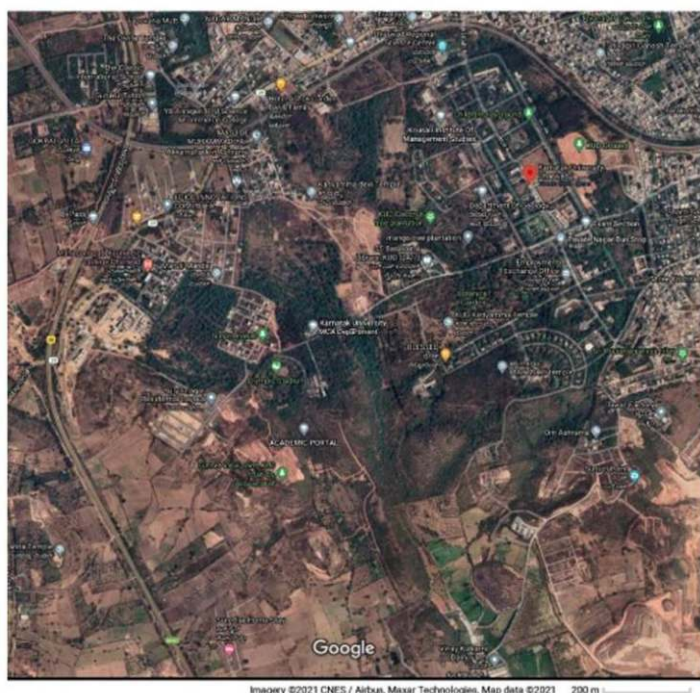


Figure 2: Map of Karnatak University, Dharwad Campus

2.2 Sampling technique: Tree population was calculated using the Quadrat method. The following parameters were tabulated for the enumeration of total biomass and carbon sequestered. The phytosociological data such as frequency, [3] relative frequency, relative density, relative dominance [13], and Importance Value Index (IVI) [2] were calculated.

2.3 Frequency: Frequency denotes the homogeneity of distribution of various species ecosystem.

$$\text{Frequency} = \frac{\text{Number of quadrats in which species appeared}}{\text{Total number of quadrats studied}} \times 100 \text{ (a)}$$

2.4 Basal area and Relative basal area: They are studied by measuring the girth at breast height of all the individuals which in turn helps in studying dominance and biomass.

$$\text{Basal area} = \frac{(\text{GBH})^2}{4\pi} \text{ (b)}$$

$$\text{Relative basal area} = \frac{\text{Total basal area of individuals}}{\text{Total basal area of all the species}} \times 100 \text{ (c)}$$

$$\text{Dominance} = \frac{\text{Basal area of the species}}{\text{Total area sampled}} \text{ (d)}$$

$$\text{Relative dominance} = \frac{\text{Total basal area of the species}}{\text{Total basal area of all the species}} \times 100 \text{ (e)}$$

$$\text{Relative frequency} = \frac{\text{Frequency of a species}}{\text{Sum of frequency of all the species}} \times 100 \text{ (f)}$$

$$\text{Relative density} = \frac{\text{Number of individuals of the species}}{\text{Total number of individuals of all the species}} \times 100 \text{ (g)}$$

2.5 Importance Value Index (IVI): This index is used to assess the overall importance of a species in the given area. It is obtained by the sum of relative density, relative dominance and relative frequency for each species taken.

$$\text{IVI} = \text{Relative Density (RD)} + \text{Relative Frequency (RF)} + \text{Relative Dominance (h)}$$

2.6 Raunkiaer Frequency Classes: Raunkiaer (1934) summarized frequency data from different studies in diverse areas of Europe [15]. He found that if the total number of frequency distributions was divided into five percentage frequency classes, the distribution frequency was as follows:

Class A = 0 – 20%

Class B = 21 – 40%

Class C = 41 – 60%

Class D = 61 – 80%

Class E = 81 – 100%

2.7 Diameter at Breast Height (DBH): The diameter of the tree trunk can be calculated by measuring the Girth at Breast Height (GBH), approximately 1.3 m from the ground level using a measuring tape. Dividing the GBH by pi (3.14) gives the Diameter at Breast Height of the tree. Only tree poles with a diameter more than 10 cm were considered. The values were tabulated.

2.8 Tree biovolume: The volume of the tree stem can be calculated using the following formula:

$$T_{BV} = 0.4 \times (D)^2 \times H \text{ (i)}$$

where, T_{BV} is the tree biovolume.

D is the tree diameter which is equal to GBH/π.

H is the height of the tree.

0.4 is the absolute form coefficient.

2.9 Above-Ground Biomass (AGB): It includes all the living biomass above the soil. Biomass studies were done by non-destructive method using allometric equations. It was calculated by multiplying tree biovolume and wood density. The wood density of the trees were obtained from *World Agroforestry Database*.

The standard average value of 0.6 g/cm^3 is taken for the tree species whose wood density values are not available. It is calculated using the following formula:

$$\text{AGB (g)} = \text{Tree Biovolume (cm}^3\text{)} \times \text{wood density (g/cm}^3\text{)} \text{ (j)}$$

2.10 Below Ground Biomass (BGB): It includes all the living biomass below the soil excluding roots having diameter less than 2mm. The below ground biomass was calculated by using the following formula:

$$\text{BGB (g)} = 0.26 \times \text{AGB (ton)} \text{ (k)}$$

where, 0.26 is the root shoot ratio.

2.11 Total Biomass (TB): It includes the complete biomass of the standing tree species. It is the sum of the above and below ground biomass.

$$\text{TB (ton)} = \text{AGB (ton)} + \text{BGB (ton)} \text{ (l)}$$

2.12 Carbon storage: 50% of the total biomass of a species is its carbon sequestration value. It can be calculated as follows:

$$\text{Carbon storage} = \frac{\text{Biomass (m)}}{2}$$

3. RESULTS AND DISCUSSION

The survey was conducted in Karnatak University Campus in 2021 – 2022 for documenting tree diversity and assessing the carbon sequestration capacity. A total of 223 tree species belonging to 56 families and 158 genera were recorded in 80 quadrats. Among which Fabaceae has the highest number of species (41), followed by Malvaceae (16), Bignoniaceae (14), Moraceae (11), Apocynaceae, Meliaceae, and Rubiaceae (8) respectively. Total basal area of all the tree species in the campus is 70.704 m^2 (Figure 3). Among the listed species majority of the species belong to Raunkiaer's Frequency class 'A', followed by 'B', 'D', 'C' and only two species showing the highest frequency class 'E' (Figure 4). About 50,353 individuals were measured for calculating above-ground biomass, below ground biomass, total biomass, and carbon storage capacity. Importance Value Index was calculated using relative frequency, relative dominance, and relative density of all the tree species (Figure 5). Total biomass of the campus is 12.92 tons with *Eucalyptus globulus* having the highest biomass of 7.59 g/m^2 , followed by *Sapindus mukorossi* with 7.20 g/m^2 , and *Swietenia mahagoni* with 6.33 g/m^2 . Total above-ground biomass of the campus is 210.76 g/m^2 with *Eucalyptus globulus* having the highest above-ground biomass of 6.02 g/m^2 , followed by *Sapindus mukorossi* with 5.71 g/m^2 , and *Swietenia mahagoni* with 5.02 g/m^2 . Total carbon sequestered by all the tree species in the campus is about 3400.53 tons, of which *Eucalyptus globulus* sequestered highest 32.1 tons of carbon, followed by *Tamarindus indica* sequestered 3.31 tons of carbon, followed by *Mangifera indica* sequestered 2.77 tons of carbon, followed by *Delonix regia* sequestered 2.22 tons of carbon, which is followed by *Azadirachta indica* sequestered 1.77 tons of carbon being the top five tree species with highest carbon storage capacities (Figure 6).

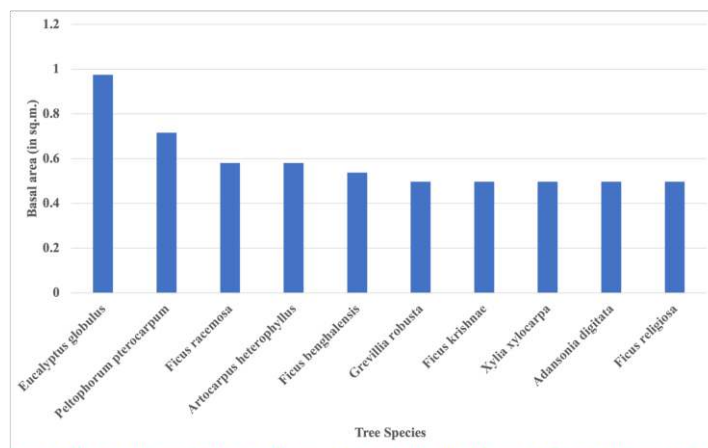


Figure 3: Top ten tree species with highest basal area

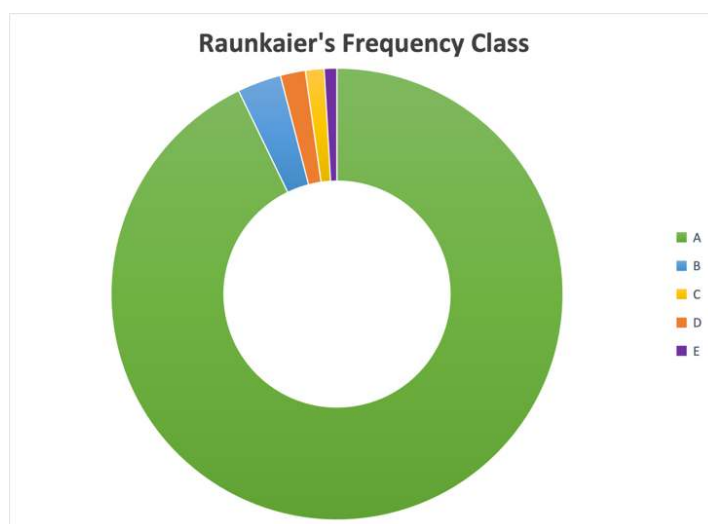


Figure 4: Distribution of species in Raunkiaer's Frequency Class

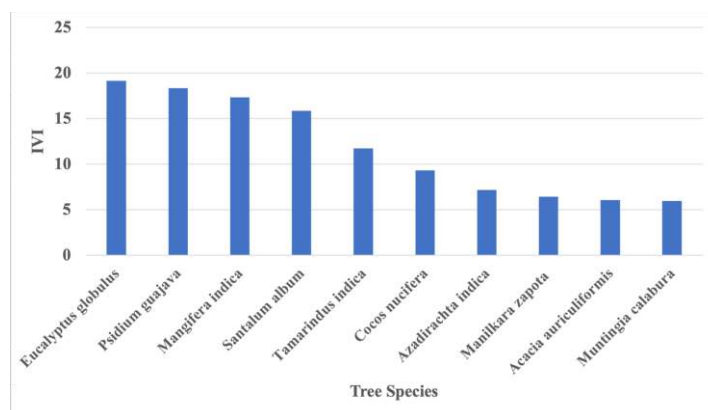


Figure 5: Top ten tree species with highest IVI

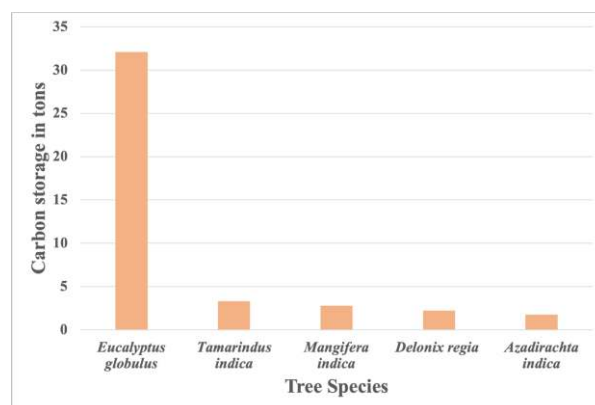


Figure 6: Top five carbon sequestering species of the KUD Campus

Table 1: List of Tree Species and their Vernacular names, number of individuals and number of quadrats in which they are present in KUD Campus, Dharwad

Tree Species	Vernacular Name (Kannada)	Total No. of Individuals	No. of quadrats in which they are present
ANACARDIACEAE			
<i>Anacardium occidentale</i> L.	Godambi mara, Geru mara	55	8
<i>Mangifera indica</i> L.	Mavina mara	280	54
<i>Semecarpus anacardium</i> L.f.	Geru mara	13	5
<i>Spondias pinnata</i> (L.f.) Kurz [Syn: <i>Spondias mangifera</i> Willd.]	Amte kai	2	1
ANNONACEAE			
<i>Annona cherimola</i> Mill.		1	1
<i>Annona muricata</i> L.	Rama phala	2	2
<i>Annona squamosa</i> L.	Seetha phala	3	2
<i>Monoonlongifolium</i> (Sonn.) B.Xue&R.M.K.Saunders	False ashoka	30	18
APOCYNACEAE			
<i>Alstonia macrophylla</i> Wall. ex G.Don	Manoranjini	1	1
<i>Alstonia scholaris</i> (L.) R.Br.	Haale mara	1	1
<i>Holarrhena pubescens</i> Wall. ex G.Don	Kodagasana	2	1
<i>Plumeria alba</i> L.	Devakanagilu	1	1
<i>Plumeria rubra</i> L.		1	1
<i>Cascabelathevetia</i> (L.) Lippold	Gante hoovu	6	4
<i>Wrightia arborea</i> (Dennst.) Mabb.		1	1
<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Aligili, Kodamurya, Aale, Beppale	1	1
ARALIACEAE			
<i>Heptapleurum capitatum</i> (Wight & Arn.) Seem.		1	1
<i>Heptapleurum venulosum</i> (Wight & Arn.) Seem.		1	1
ARAUCARIACEAE			
<i>Araucaria columnaris</i> (G.Forst.) Hook.	Christmas tree	4	4
<i>Agathis robusta</i> (C.Moore ex F.Muell.) F.M.Bailey		1	1
ARECACEAE			
<i>Cocos nucifera</i> L.	Tengina mara	88	58
BIGNONIACEAE			
<i>Crescentia cujete</i> L.		2	2
<i>Markhamia lutea</i> (Benth.) K.Schum.		5	4
<i>Fernandoa adenophylla</i> (Wall. ex G.Don) Steenis		1	1
<i>Jacaranda mimosifolia</i> D.Don	Swarna sundari	32	26
<i>Kigelia africana</i> (Lam.) Benth.		2	1
<i>Millingtonia hortensis</i> L.f.	Akasha mallige	8	1
<i>Oroxylum indicum</i> (L.) Kurz	Tigade, Aalangi, Patagani	1	1
<i>Pajanelia longifolia</i> (Willd.) K.Schum.	Daundi, Mokkuda	1	1
<i>Parmentiera cereifera</i> Seem.		1	1
<i>Spathodea campanulata</i> P.Beauv.	Neerukai, Ucchekai	10	5
<i>Tabebuia aurea</i> (Silva Manso) Benth. & Hook.f. ex S.Moore	Akasha mallige	2	2
<i>Tabebuia rosea</i> (Bertol.) Bertero ex A.DC.		6	1
<i>Tecoma castanifolia</i> (D.Don) Melch.		1	1
<i>Tecomella undulata</i> (Sm.) Seem.		2	2
BIXACEAE			
<i>Bixa orellana</i> L.	Rangumaale, Sindhuri	1	1
<i>Cochlospermum religiosum</i> (L.) Alston	Arishinaburuga	2	2
BORAGINACEAE			
<i>Cordia dichotoma</i> G.Forst		1	1
<i>Cordia macleadii</i> (Griff.) Hook.f. & Thomson	Bili challe, Doddachalle	1	1
<i>Cordia myxa</i> L.	Challehannu	1	1
<i>Ehretia laevis</i> (Rottler ex G. Don) Roxb.		2	2
BURSERACEAE			
<i>Bursera linanoe</i> (La Llave) Rzed., Calderón & Medina		1	1
CALOPHYLLACEAE			
<i>Calophyllum inophyllum</i> L.		1	1
<i>Mammeasuriga</i> (Buch.-Ham. ex Roxb.) Kosterm.	Punarpuli, Upaagi mara	1	1
<i>Mesua ferrea</i> L.		1	1
CANNABACEAE			
<i>Trema orientale</i> (L.) Blume	Gorku, Kiruhale	1	1
CAPPARACEAE			
<i>Capparis grandis</i> L.f.		1	1
CASUARINACEAE			
<i>Casuarina equisetifolia</i> L.	Gaali mara, Sarvae mara	8	3
CELASTRACEAE			
<i>Elaeodendron glaucum</i> (Rottb.) Pers.		1	1
CLUSIACEAE			
<i>Garcinia indica</i> (Thouars) Choisy	Punarpuli, Mugal	2	2
<i>Garcinia livingstonei</i> T.Anderson		1	1
<i>Garcinia gummi-gutta</i> (L.) Roxb.	Punerpuli, Murginahulimari	1	1
COMBRETACEAE			
<i>Terminalia anogeissiana</i> Gere & Boatwr.	Dindiga	15	12
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Taare mara	11	8
<i>Terminalia catappa</i> L.		18	10

<i>Terminalia chebula</i> Retz.		4	4
<i>Terminalia elliptica</i> Willd.	Alale mara	6	5
<i>Terminalia neotaliala</i> Capuron		1	1
<i>Terminalia paniculata</i> B.Heyne ex Roth	Hulive mara	3	2
CUPRESSACEAE			
<i>Cupressus arizonica</i> Greene		1	1
DILLENACEAE			
<i>Dillenia pentagyna</i> Roxb.		2	2
EBENACEAE			
<i>Diospyros kaki</i> L.f.		1	1
<i>Diospyros malabarica</i> (Desr.) Kostel. [Syn: <i>Diospyros embryopteris</i> Pers.]	Tupura, Tinduka, Holetumri	1	1
<i>Diospyros melanoxylon</i> Roxb.	Beedi ele mara	21	14
<i>Diospyros buxifolia</i> (Blume) Hiern	Kunchigana mara	1	1
<i>Diospyros montana</i> Roxb.	Balagunike	1	1
EUPHORBIACEAE			
<i>Euphorbia antiquorum</i> L.	Chandragalli, Mundugalli	2	2
<i>Euphorbia tirucalli</i> L.	Bonta kalli	1	1
<i>Falconeria insignis</i> Royle	Kurudu mara	1	1
<i>Mallotus philippensis</i> (Lam.) Müll.Arg.	Kumkumada mara	2	2
<i>Mallotus tetracoccus</i> (Roxb.) Kurz		4	3
<i>Manihot esculenta</i> Crantz	Baragaladagedde	1	1
FABACEAE			
<i>Acacia auriculiformis</i> A.Cunn. ex Benth.	Gobbaradagida	150	35
<i>Senegalia chundra</i> (Roxb. ex Rottler) Maslin	Kempujaali	1	1
<i>Senegalia catechu</i> (L.f.) P.J.H.Hurter&Mabb.	Kaggali	1	1
<i>Vachellia farnesiana</i> var. <i>farnesiana</i>		1	1
<i>Senegalia polyacantha</i> (Willd.) Seigler&Ebinger	Kaachu	1	1
<i>Adenanthera pavonina</i> L.	BasavanaPaada	3	2
<i>Albizia amara</i> (Roxb.) Boivin	Chigare	6	5
<i>Albizia lebeck</i> (L.) Benth.	Baage	3	3
<i>Albizia odoratissima</i> (L.f.) Benth.	Kadu bage, Bilvara	2	2
<i>Albizia procera</i> (Roxb.) Benth.	Belari	8	5
<i>Bauhinia monandra</i> Kurz		1	1
<i>Bauhinia purpurea</i> L.	Kanchivala	4	3
<i>Bauhinia racemosa</i> Lam.	Aralukadumandara	1	1
<i>Butea monosperma</i> (Lam.) Kuntze	Muthugada mara	10	6
<i>Libidibia coriaria</i> (Jacq.) Schldt.		18	12
<i>Cassia fistula</i> L.	Kakke, Aragu	4	2
<i>Cassia grandis</i> L.f.		1	1
<i>Cassia javanica</i> L.		1	1
<i>Senna surattensis</i> (Burm.f.) H.S.Irwin& Barneby	Adavitangadi, Honnarpe	1	1
<i>Colvillea racemosa</i> Bojer ex Hook.		1	1
<i>Dalbergia lanceolaria</i> L.f.	Bili beete, Manjula beete	2	2
<i>Dalbergia latifolia</i> Roxb.	Beete mara	2	1
<i>Dalbergia lanceolaria</i> subsp. <i>paniculata</i> (Roxb.) Thoth.		1	1
<i>Dalbergia sissoo</i> Roxb. ex DC.	Shimshupa, Biridi, Seesam mara	1	1
<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Kattikayi mara, Kempaturai	88	29
<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Shami mara	2	1
<i>Erythrina suberosa</i> Roxb.	Keechige, Mandara	2	1
<i>Gliricidia sepium</i> (Jacq.) Kunth	Gobbaradagida	26	19
<i>Hardwickia binata</i> Roxb.	Kamra	1	1
<i>Leucaena leucocephala</i> (Lam.) de Wit	Subabul	1	1
<i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne		36	21
<i>Pithecellobium dulce</i> (Roxb.) Benth.	Seemehunase	10	7
<i>Pongamia pinnata</i> (L.) Pierre	Honge mara	16	12
<i>Prosopis cineraria</i> (L.) Druce		6	2
<i>Pterocarpus marsupium</i> Roxb.	Honne, Ollehonne	8	7
<i>Samanea saman</i> (Jacq.) Merr.	Male mara	19	10
<i>Saraca indica</i> L.		2	1
<i>Senna siamea</i> (Lam.) H.S.Irwin& Barneby		12	5
<i>Sesbania grandiflora</i> (L.) Poir.		1	1
<i>Tamarindus indica</i> L.	Hunase mara	120	63
<i>Xyliaxylocarpa</i> (Roxb.) W.Theob.	Honnavarike, Jambe	1	1
LAMIACEAE			
<i>Gmelina arborea</i> Roxb. ex Sm.	Shivani mara	22	15
<i>Gmelina asiatica</i> L.	Shivane, Guludu	1	1
<i>Premna tomentosa</i> Willd.	Naaruvalu, Naarale	2	2
<i>Tectona grandis</i> L.f.	Tegada mara	34	12
<i>Vitex altissima</i> L.f.	Naviladi	1	1
<i>Vitex leucoxydon</i> L.f.	Holelakki	1	1
<i>Vitex pinnata</i> L.		1	1
LAURACEAE			
<i>Cinnamomum camphora</i> (L.) J.Presl	Dhavala, Karpoorada mara	1	1
<i>Cinnamomum verum</i> J.Presl	Lavangachakke, Dalchini, Sambar patre	1	1

<i>Persea americana</i> Mill.		1	1
LECYTHIDACEAE			
<i>Barringtonia acutangula</i> (L.) Gaertn.	Mavinkubia, Niruganigily, Dhatripala	1	1
<i>Careya arborea</i> Roxb.	Doddala	1	1
<i>Couroupita guianensis</i> Aubl.	Nagalingapushpa	1	1
LOGANIACEAE			
<i>Strychnos nux-vomica</i> L.	Kaasarka, Mushti mara	1	1
<i>Strychnos potatorum</i> L.f.	Chilla	1	1
LYTHRACEAE			
<i>Duabanga grandiflora</i> (Roxb. ex DC.) Walp. [Syn: <i>Duabanga sonneratioides</i> Buch.-Ham.]		1	1
<i>Lagerstroemia indica</i> L.		1	1
<i>Lagerstroemia parviflora</i> Roxb.	Channangi mara	2	1
<i>Lagerstroemia speciosa</i> (L.) Pers.	Hole dasavala	1	1
<i>Lagerstroemia tomentosa</i> C.Presl		2	1
MAGNOLIACEAE			
<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Sampige mara	5	2
<i>Magnolia grandiflora</i> L.		1	1
<i>Magnolia nilagirica</i> (Zenker) Figlar		1	1
MALVACEAE			
<i>Adansonia digitata</i> L.	Aanehunase	1	1
<i>Berrya cordifolia</i> (Willd.) L.Laurent		1	1
<i>Bombax ceiba</i> L.	Kempuburuga	3	2
<i>Ceiba insignis</i> (Kunth) P.E.Gibbs&Semir	Bili buruga	1	1
<i>Firmianacolorata</i> (Roxb.) R.Br.	Kempu dale	1	1
<i>Helicteres isora</i> L.	Bhootakarulu	1	1
<i>Heritiera littoralis</i> Aiton		1	1
<i>Hibiscus tiliaceus</i> L.	Bilipatta	1	1
<i>Grewia tilifolia</i> Vahl	Tadasalu, Kendalasu	5	2
<i>Guazumaulmifolia</i> Lam. [Syn: <i>Guazuma tomentosa</i> Kunth]	Bhadrakshi	1	1
<i>Kydiacalycina</i> Roxb.	Kolibende	1	1
<i>Pterospermum acerifolium</i> (L.) Willd.	Raajataru, Kanaka champaca	1	1
<i>Pterospermum suberifolium</i> (L.) Raeusch.		1	1
<i>Sterculia foetida</i> L.	Paatala mara	1	1
<i>Sterculia urens</i> Roxb.	Kempu dale, Kardoli	2	1
<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Adavibende mara, Hooverasi mara	1	1
MELASTOMACEAE			
<i>Memecylon</i> spp.		1	1
MELIACEAE			
<i>Aphanamixis polystachya</i> (Wall.) R.Parker	Mullumuttuga	1	1
<i>Azadirachta indica</i> A.Juss.	Bevina mara	61	35
<i>Chukrasiatubularis</i> A.Juss.	Kalgarike, Madagaribevu	1	1
<i>Melia dubia</i> Cav.	Hebbevu mara	2	1
<i>Rothea</i> sp.		1	1
<i>Soymida febrifuga</i> (Roxb.) A.Juss.	Swamy mara	2	1
<i>Swietenia macrophylla</i> King	Mahogany	1	1
<i>Swietenia mahagoni</i> (L.) Jacq.	Mahogany	4	2
MORACEAE			
<i>Artocarpus heterophyllus</i> Lam.	Halasina mara	1	1
<i>Artocarpus hirsutus</i> Lam.	Hebbalasu, Kaaduhalsu	1	1
<i>Artocarpus altilis</i> (Parkinson) Fosberg	Jeegujje, Seemehalsu	1	1
<i>Ficus benghalensis</i> L.	Aalada mara	1	1
<i>Ficus krishnae</i> C.DC.	Krishna aala	2	1
<i>Ficus benjamina</i> L.	Jaavatti	3	2
<i>Ficus drupacea</i> Thunb.	Goni mara	1	1
<i>Ficus racemosa</i> L.	Atthimara	4	3
<i>Ficus religiosa</i> L.	Arali mara, Ashwatha mara	5	3
<i>Ficus virens</i> Aiton	Kari-Basari	1	1
<i>Streblus asper</i> Lour.	Mitte mara, Penalige mara	4	2
MORINGACEAE			
<i>Moringa oleifera</i> Lam.	Nugge mara	10	7
MUNTINGIACEAE			
<i>Muntingia calabura</i> L.	Gasagase mara	52	38
MYRTACEAE			
<i>Eucalyptus globulus</i> Labill.	Neelagiri mara	48000	80
<i>Melaleuca citrina</i> (Curtis) Dum.Cours.		1	1
<i>Melaleuca leucadendron</i> L.		1	1
<i>Psidium guajava</i> L.	Perale, Seebe	116	72
<i>Syzygium cumini</i> (L.) Skeels	Nerale mara	16	9
<i>Syzygium samarangense</i> (Blume) Merr. & L.M.Perry		1	1
OCHNACEAE			
<i>Ochna serrulata</i> (Hochst.) Walp.		1	1
OLACACEAE			
<i>Ximenia americana</i> L.	Kaadanakaare	1	1

OLEACEAE			
<i>Nyctanthes arbor-tristis</i> L.	Paarijatha	1	1
OXALIDACEAE			
<i>Averrhoa bilimbi</i> L.	Bilimbi	1	1
PHYLLANTHACEAE			
<i>Bischofia javanica</i> Blume	Gobbara mara, Neeli mara	1	1
<i>Phyllanthus acidus</i> (L.) Skeels		1	1
<i>Phyllanthus emblica</i> L.	Nelli kai, Amla	5	3
PINACEAE			
<i>Pinus roxburghii</i> Sarg.		1	1
<i>Pinus</i> spp.		1	1
PROTEACEAE			
<i>Grevillea robusta</i> A.Cunn. ex R.Br.	Silver oak mara	22	17
PUTRANJIVACEAE			
<i>Putranjiva roxburghii</i> Wall.	Putranjiva	1	1
RHAMNACEAE			
<i>Ziziphus mauritiana</i> Lam.	Baare, Elanche	6	2
RHIZOPHORACEAE			
<i>Caralliabrachiata</i> (Lour.) Merr.	Andimurugalu	1	1
RUBIACEAE			
<i>Gardenia gummifera</i> L.f.	Kadu bikke	1	1
<i>Gardenia jasminoides</i> J.Ellis	Suvasanemalle	1	1
<i>Gardenia latifolia</i> Aiton	Kalakambi, Adavibikke	3	2
<i>Ixora parviflora</i> Lam.		2	2
<i>Mitragynaparvifolia</i> (Roxb.) Korth.	Kadavala, Kadaani	2	1
<i>Morinda citrifolia</i> L.	Maddi, Poppali, Noni	2	1
<i>Neolamarckiacadamba</i> (Roxb.) Bosser [Syn: <i>Anthocephaluscadamba</i> (Roxb.) Miq.]	Kadamba, Kadava	1	1
<i>Wendlandia thyrsoides</i> (Roth) Steud.	Taligi, Neerupaale	1	1
RUTACEAE			
<i>Chloroxylon swietenia</i> DC.	Bittula	2	1
<i>Aegle marmelos</i> (L.) Corrêa	Bilvapatre mara	1	1
<i>Limonia acidissima</i> L.	Baela, Belavala	1	1
<i>Naringi crenulata</i> (Roxb.) Nicolson	Kaavata, Arunamullu, Kadu baela	2	1
<i>Bergerakoenigii</i> L. [Syn: <i>Murrayakoenigii</i> (L.) Spreng.]	Karibevina mara	2	2
Salicaceae			
<i>Casearia tomentosa</i> Roxb.		1	1
<i>Flacourtia indica</i> (Burm.f.) Merr.		1	1
SALVADORACEAE			
<i>Salvadora persica</i> L.	Goni mara	1	1
SANTALACEAE			
<i>Santalum album</i> L.	Gandhada mara	231	57
SAPINDACEAE			
<i>Filiciumdecipiens</i> (Wight & Arn.) Thwaites	Kadu Hooverasi, Neeroli	1	1
<i>Sapindus mukorossi</i> Gaertn.	Antuvala	2	2
SAPOTACEAE			
<i>Madhuca insignis</i> (Radlk.) H.J.Lam		1	1
<i>Manilkara hexandra</i> (Roxb.) Dubard	Bakula	1	1
<i>Mimusops elengi</i> L.	Ranje	1	1
<i>Manilkara zapota</i> (L.) P.Royen	Sapota, Chikku	87	24
SIMAROUBACEAE			
<i>Ailanthus excelsa</i> Roxb.	Doddabevu	1	1
<i>Ailanthus triphysa</i> (Dennst.) Alston [Syn: <i>Ailanthus malabarica</i> DC.]	Baagadhoopa, Maddi dhoopa, Halumaddi	1	1
<i>Simarouba glauca</i> DC.	Lakshmitaru	2	1
ULMACEAE			
<i>Holoptelea integrifolia</i> (Roxb.) Planch.	TapasiNavule	19	12
VERBENACEAE			
<i>Citharexylum spinosum</i> L.	Bakale, Bili paarijatha	1	1
ZYGOPHYLLACEAE			
<i>Balanites roxburghii</i> Planch.	Ingala kai, Ingala mara	1	1
<i>Guaiacum officinale</i> L.		3	2

Table 2: Values of Frequency, Basal Area, Raunkiaer Frequency Class, Relative Frequency, Relative Dominance, Relative Density, and Importance Value Index of Tree Species of KUD Campus, Dharwad

Tree Species	Frequency	Basal Area (in m ²)	Raunkiaer Frequency Class	Relative Frequency	Relative Dominance	Relative Density	IVI
<i>Anacardium occidentale</i> L.	10	0.02	A	0.74	0.06	2.34	3.13
<i>Mangifera indica</i> L.	67.5	0.14	D	5.05	0.40	11.90	17.35
<i>Semecarpus anacardium</i> L.f.	6.25	0.02	A	0.46	0.06	0.55	1.07
<i>Spondias pinnata</i> (L.f.) Kurz [Syn: <i>Spondiasmangifera</i> Willd.]	1.25	0.07	A	0.09	0.20	0.09	0.37
<i>Annona cherimola</i> Mill.	1.25	0.01	A	0.09	0.03	0.04	0.16
<i>Annona muricata</i> L.	2.5	0.01	A	0.18	0.03	0.08	0.30
<i>Annona squamosa</i> L.	2.5	0.01	A	0.18	0.03	0.13	0.33
<i>Monoonlongifolium</i> (Sonn.) B.Xue&R.M.K.Saunders	22.5	0.06	B	1.68	0.18	1.27	3.13
<i>Alstonia macrophylla</i> Wall. ex G.Don	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Alstonia scholaris</i> (L.) R.Br.	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Holarrhena pubescens</i> Wall. ex G.Don	1.25	0.01	A	0.09	0.03	0.09	0.20
<i>Plumeria alba</i> L.	1.25	0.30	A	0.09	0.81	0.04	0.93
<i>Plumeria rubra</i> L.	1.25	0.03	A	0.09	0.09	0.04	0.22
<i>Cascabelathevetia</i> (L.) Lippold	5	0.03	A	0.37	0.08	0.25	0.70
<i>Wrightia arborea</i> (Dennst.) Mabb.	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Wrightia tinctoria</i> (Roxb.) R.Br.	1.25	0.30	A	0.09	0.09	0.04	0.22
<i>Heptapleurum capitatum</i> (Wight & Arn.) Seem.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Heptapleurum venulosum</i> (Wight & Arn.) Seem.	1.25	0.03	A	0.09	0.08	0.04	0.21
<i>Araucaria columnaris</i> (G.Forst.) Hook.	5	0.05	A	0.37	0.15	0.17	0.68
<i>Agathis robusta</i> (C.Moore ex F.Muell.) F.M.Bailey	1.25	0.01	A	0.09	0.03	0.04	0.16
<i>Cocos nucifera</i> L.	72.5	0.06	D	5.42	0.18	3.74	9.33
<i>Balanites roxburghii</i> Planch.	1.25	0.02	A	0.09	0.04	0.04	0.17
<i>Crescentia cujete</i> L.	2.5	0.01	A	0.18	0.03	0.09	0.30
<i>Markhamia lutea</i> (Benth.) K.Schum.	5	0.03	A	0.37	0.09	0.21	0.67
<i>Fernandoa adenophylla</i> (Wall. ex G.Don) Steenis	1.25	0.03	A	0.09	0.07	0.04	0.20
<i>Jacaranda mimosifolia</i> D.Don	32.5	0.13	B	2.43	0.38	1.36	4.16
<i>Kigelia africana</i> (Lam.) Benth.	1.25	0.07	A	0.09	0.20	0.09	0.37
<i>Millingtonia hortensis</i> L.f.	1.25	0.01	A	0.09	0.28	0.34	0.70
<i>Oroxylum indicum</i> (L.) Kurz	1.25	0.06	A	0.09	0.18	0.04	0.30
<i>Pajanelia longifolia</i> (Willd.) K.Schum.	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Parmentiera cereifera</i> Seem.	1.25	0.03	A	0.09	0.07	0.04	0.20
<i>Spathodea campanulata</i> P.Beauv.	6.25	0.20	A	0.46	0.59	0.42	1.47
<i>Tabebuia aurea</i> (Silva Manso) Benth. & Hook.f. ex S.Moore	2.5	0.12	A	0.18	0.33	0.09	0.60
<i>Tabebuia rosea</i> (Bertol.) Bertero ex A.DC.	1.25	0.01	A	0.09	0.28	0.25	0.62
<i>Tecoma castanifolia</i> (D.Don) Melch.	1.25	0.03	A	0.09	0.09	0.04	0.22
<i>Tecomella undulata</i> (Sm.) Seem.	2.5	0.03	A	0.18	0.09	0.09	0.35
<i>Bixa orellana</i> L.	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Cochlospermum religiosum</i> (L.) Alston	2.5	0.12	A	0.18	0.33	0.09	0.59
<i>Cordia dichotoma</i> G.Forst.	1.25	0.07	A	0.09	0.28	0.04	0.41
<i>Cordia macleodii</i> (Griff.) Hook.f. & Thomson	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Cordia myxa</i> L.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Ehretia laevis</i> (Rottler ex G. Don) Roxb.	2.5	0.02	A	0.18	0.06	0.09	0.32
<i>Bursera linanoe</i> (La Llave) Rzed., Calderón & Medina	1.25	0.05	A	0.09	0.13	0.04	0.26
<i>Calophyllum inophyllum</i> L.	1.25	0.03	A	0.09	0.07	0.04	0.20
<i>Mammeasuriga</i> (Buch.-Ham. ex Roxb.) Kosterm.	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Mesua ferrea</i> L.	1.25	0.06	A	0.09	0.17	0.04	0.30
<i>Trema orientale</i> (L.) Blume	1.25	0.03	A	0.09	0.08	0.04	0.21
<i>Capparis grandis</i> L.f.	1.25	0.03	A	0.09	0.09	0.04	0.22
<i>Casuarina equisetifolia</i> L.	3.75	0.05	A	0.28	0.15	0.34	0.76
<i>Elaeodendron glaucum</i> (Rottb.) Pers.	1.25	0.03	A	0.09	0.07	0.04	0.19
<i>Garcinia indica</i> (Thouars) Choisy	2.5	0.02	A	0.18	0.06	0.09	0.32
<i>Garcinia livingstonei</i> T.Anderson	1.25	0.01	A	0.09	0.03	0.04	0.16
<i>Garcinia gummi-gutta</i> (L.) Roxb.	1.25	0.01	A	0.09	0.03	0.04	0.16
<i>Terminalia anogeissiana</i> Gere & Boatwr.	15	0.05	A	1.12	0.13	0.64	1.88
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	10	0.06	A	0.74	0.18	0.47	1.38
<i>Terminalia catappa</i> L.	12.5	0.06	A	0.93	0.17	0.76	1.86
<i>Terminalia chebula</i> Retz.	5	0.07	A	0.37	0.20	0.17	0.74
<i>Terminalia elliptica</i> Willd.	6.25	0.18	A	0.46	0.52	0.25	1.23
<i>Terminalia neotaliala</i> Capuron	1.25	0.16	A	0.09	0.05	0.04	0.18
<i>Terminalia paniculata</i> B.Heyne ex Roth	2.5	0.21	A	0.18	0.59	0.13	0.89
<i>Cupressus arizonica</i> Greene	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Dillenia pentagyna</i> Roxb.	2.5	0.42	A	0.18	1.21	0.09	1.47

<i>Diospyros kaki</i> L.f.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Diospyros malabarica</i> (Desr.) Kostel. [Syn: <i>Diospyros embryopteris</i> Pers.]	1.25	0.16	A	0.09	0.05	0.04	0.18
<i>Diospyros melanoxylon</i> Roxb.	17.5	0.01	A	1.3	0.28	0.90	2.47
<i>Diospyros buxifolia</i> (Blume) Hiern	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Diospyros montana</i> Roxb.	1.25	0.03	A	0.09	0.09	0.04	0.22
<i>Euphorbia antiquorum</i> L.	2.5	0.01	A	0.18	0.09	0.09	0.29
<i>Euphorbia tirucalli</i> L.	1.25	0.03	A	0.09	0.09	0.04	0.22
<i>Falconeria insignis</i> Royle	1.25	0.01	A	0.09	0.28	0.04	0.41
<i>Mallotus philippensis</i> (Lam.) Müll.Arg.	2.5	0.13	A	0.18	0.38	0.09	0.64
<i>Mallotus tetracoccus</i> (Roxb.) Kurz	3.75	0.16	A	0.28	0.05	0.17	0.50
<i>Manihot esculenta</i> Crantz	1.25	0.03	A	0.09	0.08	0.04	0.21
<i>Acacia auriculiformis</i> A.Cunn. ex Benth.	43.75	0.35	C	3.27	1.00	1.79	6.06
<i>Senegalia chundra</i> (Roxb. ex Rottler) Maslin	1.25	0.21	A	0.09	0.59	0.04	0.71
<i>Senegalia catechu</i> (L.f.) P.J.H.Hurter &Mabb.	1.25	0.18	A	0.09	0.52	0.04	0.65
<i>Vachellia farnesiana</i> var. <i>farnesiana</i>	1.25	0.01	A	0.09	0.28	0.04	0.41
<i>Senegalia polyacantha</i> (Willd.) Seigler&Ebinger	1.25	0.16	A	0.09	0.05	0.04	0.18
<i>Adenantha pavonina</i> L.	2.5	0.07	A	0.18	0.20	0.13	0.51
<i>Albizia amara</i> (Roxb.) Boivin	6.25	0.12	A	0.46	0.33	0.25	1.04
<i>Albizia lebeck</i> (L.) Benth.	3.75	0.18	A	0.28	0.52	0.13	0.92
<i>Albizia odoratissima</i> (L.f.) Benth.	2.5	0.31	A	0.18	0.89	0.09	1.15
<i>Albizia procera</i> (Roxb.) Benth.	6.25	0.26	A	0.46	0.74	0.34	1.54
<i>Bauhinia monandra</i> Kurz	1.25	0.18	A	0.09	0.52	0.04	0.65
<i>Bauhinia purpurea</i> L.	3.75	0.12	A	0.28	0.33	0.17	0.78
<i>Bauhinia racemosa</i> Lam.	1.25	0.18	A	0.09	0.52	0.04	0.65
<i>Butea monosperma</i> (Lam.) Kuntze	7.5	0.05	A	0.56	0.15	0.42	1.13
<i>Libidibia coriaria</i> (Jacq.) Schltld.	15	0.35	A	1.12	1.00	0.76	2.89
<i>Cassia fistula</i> L.	2.5	0.07	A	0.18	0.20	0.17	0.55
<i>Cassia grandis</i> L.f.	1.25	0.13	A	0.09	0.38	0.04	0.50
<i>Cassia javanica</i> L.	1.25	0.13	A	0.09	0.38	0.04	0.50
<i>Senna surattensis</i> (Burm.f.) H.S.Irwin & Barneby	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Colvillea racemosa</i> Bojer ex Hook.	1.25	0.05	A	0.09	0.13	0.04	0.26
<i>Dalbergia lanceolaria</i> L.f.	2.5	0.26	A	0.18	0.74	0.08	1.00
<i>Dalbergia latifolia</i> Roxb.	1.25	0.05	A	0.09	0.15	0.08	0.32
<i>Dalbergia lanceolaria</i> subsp. <i>paniculata</i> (Roxb.) Thoth.	1.25	0.23	A	0.09	0.66	0.04	0.80
<i>Dalbergia sissoo</i> Roxb. ex DC.	1.25	0.29	A	0.09	0.83	0.04	0.95
<i>Delonix regia</i> (Bojer ex Hook.) Raf.	36.25	0.18	B	2.71	0.52	2.04	5.26
<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	1.25	0.21	A	0.09	0.59	0.08	0.76
<i>Erythrina suberosa</i> Roxb.	1.25	0.01	A	0.09	0.03	0.08	0.20
<i>Gliricidia sepium</i> (Jacq.) Kunth	23.75	0.26	B	1.77	0.74	1.10	3.61
<i>Hardwickia binata</i> Roxb.	1.25	0.04	A	0.09	0.11	0.04	0.24
<i>Leucaena leucocephala</i> (Lam.) de Wit	1.25	0.12	A	0.09	0.33	0.04	0.46
<i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne	26.25	0.72	B	1.96	2.05	1.53	5.54
<i>Pithecellobium dulce</i> (Roxb.) Benth.	8.75	0.04	A	0.65	0.11	0.42	1.19
<i>Pongamia pinnata</i> (L.) Pierre	15	0.05	A	1.12	0.14	0.68	1.94
<i>Prosopis cineraria</i> (L.) Druce	2.5	0.03	A	0.18	0.08	0.25	0.51
<i>Pterocarpus marsupium</i> Roxb.	8.75	0.18	A	0.65	0.52	0.34	1.50
<i>Samanea saman</i> (Jacq.) Merr.	12.5	0.32	A	0.93	0.91	0.80	2.65
<i>Saraca indica</i> L.	1.25	0.01	A	0.09	0.28	0.08	0.45
<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	6.25	0.18	A	0.46	0.51	0.50	1.49
<i>Sesbania grandiflora</i> (L.) Poir.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Tamarindus indica</i> L.	78.75	0.26	D	5.89	0.74	5.10	11.72
<i>Xylocarpus xylocarpa</i> (Roxb.) W.Theob.	1.25	0.41	A	0.09	1.43	0.04	1.56
<i>Gmelina arborea</i> Roxb. ex Sm.	18.75	0.39	A	1.403	1.10	0.93	3.44
<i>Gmelina asiatica</i> L.	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Premna tomentosa</i> Willd.	2.5	0.16	A	0.18	0.05	0.09	0.30
<i>Tectona grandis</i> L.f.	15	0.32	A	1.12	0.91	1.44	3.48
<i>Vitex altissima</i> L.f.	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Vitex leucoxyloides</i> L.f.	1.25	0.12	A	0.09	0.33	0.04	0.46
<i>Vitex pinnata</i> L.	1.25	0.18	A	0.09	0.51	0.04	0.65
<i>Cinnamomum camphora</i> (L.) J.Presl	1.25	0.32	A	0.09	0.91	0.04	1.04
<i>Cinnamomum verum</i> J.Presl	1.25	0.23	A	0.09	0.66	0.04	0.79
<i>Persea americana</i> Mill.	1.25	0.02	A	0.09	0.05	0.04	0.18
<i>Barringtonia acutangula</i> (L.) Gaertn.	1.25	0.07	A	0.09	0.19	0.04	0.32
<i>Careya arborea</i> Roxb.	1.25	0.05	A	0.09	0.13	0.04	0.26
<i>Couroupita guianensis</i> Aubl.	1.25	0.43	A	0.09	1.20	0.04	1.34
<i>Strychnos nux-vomica</i> L.	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Strychnos potatorum</i> L.f.	1.25	0.22	A	0.09	0.62	0.04	0.75

<i>Duabanga grandiflora</i> (Roxb. ex DC.) Walp. [Syn: <i>Duabanga sonneratioides</i> Buch.-Ham.]	1.25	0.05	A	0.09	0.13	0.04	0.26
<i>Lagerstroemia indica</i> L.	1.25	0.01	A	0.09	0.03	0.04	0.16
<i>Lagerstroemia parviflora</i> Roxb.	1.25	0.06	A	0.09	0.17	0.09	0.34
<i>Lagerstroemia speciosa</i> (L.) Pers.	1.25	0.03	A	0.09	0.08	0.04	0.21
<i>Lagerstroemia tomentosa</i> C.Presl	1.25	0.04	A	0.09	0.11	0.09	0.29
<i>Magnolia champaca</i> (L.) Baill. ex Pierre	2.5	0.32	A	0.18	0.91	0.21	1.30
<i>Magnolia grandiflora</i> L.	1.25	0.16	A	0.09	0.05	0.04	0.18
<i>Magnolia nilagirica</i> (Zenker) Figlar	1.25	0.18	A	0.09	0.51	0.04	0.65
<i>Adansonia digitata</i> L.	1.25	0.41	A	0.09	1.43	0.04	1.56
<i>Berrya cordifolia</i> (Willd.) L.Laurent	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Bombax ceiba</i> L.	2.5	0.32	A	0.18	0.91	0.13	1.22
<i>Ceiba insignis</i> (Kunth) P.E.Gibbs & Semir	1.25	0.23	A	0.09	0.66	0.04	0.79
<i>Firmianacolorata</i> (Roxb.) R.Br.	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Helicteres isora</i> L.	1.25	0.01	A	0.09	0.03	0.04	0.16
<i>Heritiera littoralis</i> Aiton	1.25	0.02	A	0.09	0.06	0.04	0.19
<i>Hibiscus tiliaceus</i> L.	1.25	0.04	A	0.09	0.11	0.04	0.24
<i>Grewia tiliifolia</i> Vahl	2.5	0.01	A	0.18	0.28	0.21	0.67
<i>Guazuma ulmifolia</i> Lam. [Syn: <i>Guazuma tomentosa</i> Kunth]	1.25	0.23	A	0.09	0.66	0.04	0.79
<i>Kydiacalycina</i> Roxb.	1.25	0.03	A	0.09	0.08	0.04	0.21
<i>Pterospermum acerifolium</i> (L.) Willd.	1.25	0.05	A	0.09	0.15	0.04	0.28
<i>Pterospermum suberifolium</i> (L.) Raeusch.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Sterculia foetida</i> L.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Sterculia urens</i> Roxb.	1.25	0.12	A	0.09	0.33	0.09	0.50
<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Memecylon</i> spp.	1.25	0.16	A	0.09	0.04	0.04	0.18
<i>Aphanamixis polystachya</i> (Wall.) R.Parker	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Azadirachta indica</i> A.Juss.	43.75	0.46	C	3.27	1.31	2.59	7.18
<i>Chukrasia tabularis</i> A.Juss.	1.25	0.05	A	0.09	0.14	0.04	0.28
<i>Melia dubia</i> Cav.	1.25	0.39	A	0.09	1.10	0.09	1.28
<i>Rothea</i> sp.	1.25	0.16	A	0.09	0.05	0.04	0.18
<i>Soymida febrifuga</i> (Roxb.) A.Juss.	1.25	0.01	A	0.09	0.28	0.09	0.45
<i>Swietenia macrophylla</i> King	1.25	0.39	A	0.09	1.10	0.04	1.24
<i>Swietenia mahagoni</i> (L.) Jacq.	2.5	0.43	A	0.18	1.20	0.17	1.56
<i>Artocarpus heterophyllus</i> Lam.	1.25	0.58	A	0.09	1.67	0.04	1.80
<i>Artocarpus hirsutus</i> Lam.	1.25	0.29	A	0.09	0.82	0.04	0.95
<i>Artocarpus altilis</i> (Parkinson) Fosberg	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Ficus benghalensis</i> L.	1.25	0.54	A	0.09	1.55	0.04	1.67
<i>Ficus krishnae</i> C.DC.	1.25	0.50	A	0.09	1.42	0.09	1.60
<i>Ficus benjamina</i> L.	2.5	0.35	A	0.18	1.00	0.13	1.31
<i>Ficus drupacea</i> Thunb.	1.25	0.32	A	0.09	0.91	0.04	1.04
<i>Ficus racemosa</i> L.	3.75	0.58	A	0.28	1.67	0.17	2.11
<i>Ficus religiosa</i> L.	3.75	0.50	A	0.28	1.42	0.21	1.92
<i>Ficus virens</i> Aiton	1.25	0.32	A	0.09	0.91	0.04	1.04
<i>Streblus asper</i> Lour.	2.5	0.21	A	0.18	0.59	0.17	0.93
<i>Moringa oleifera</i> Lam.	8.75	0.18	A	0.65	0.51	0.42	1.59
<i>Muntingia calabura</i> L.	47.5	0.07	C	3.55	0.20	2.20	5.96
<i>Eucalyptus globulus</i> Labill.	88.75	0.50	E	6.64	1.43	10.28	18.35
<i>Melaleuca citrina</i> (Curtis) Dum.Cours.	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Melaleuca leucadendron</i> L.	1.25	0.13	A	0.09	0.38	0.04	0.50
<i>Psidium guajava</i> L.	90	0.01	E	6.73	0.28	12.15	19.16
<i>Syzygium cumini</i> (L.) Skeels	11.25	0.46	A	0.84	1.31	0.68	2.83
<i>Syzygium samarangense</i> (Blume) Merr. & L.M.Perry	1.25	0.32	A	0.09	0.91	0.04	1.04
<i>Ochna serrulata</i> (Hochst.) Walp.	1.25	0.16	A	0.09	0.05	0.04	0.18
<i>Ximena americana</i> L.	1.25	0.01	A	0.09	0.28	0.04	0.40
<i>Nyctanthes arbor-tristis</i> L.	1.25	0.18	A	0.09	0.51	0.04	0.65
<i>Averrhoa bilimbi</i> L.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Bischofia javanica</i> Blume	1.25	0.05	A	0.09	0.14	0.04	0.28
<i>Phyllanthus acidus</i> (L.) Skeels	1.25	0.07	A	0.09	0.18	0.04	0.32
<i>Phyllanthus emblica</i> L.	3.75	0.01	A	0.28	0.28	0.21	0.77
<i>Pinus roxburghii</i> Sarg.	1.25	0.35	A	0.09	1.00	0.04	1.14
<i>Pinus</i> spp.	1.25	0.32	A	0.09	0.91	0.04	1.04
<i>Grevillea robusta</i> A.Cunn. ex R.Br.	21.25	0.46	B	1.59	1.31	0.93	3.84
<i>Putranjiva roxburghii</i> Wall.	1.25	0.50	A	0.09	1.43	0.04	1.56
<i>Ziziphus mauritiana</i> Lam.	2.5	0.26	A	0.18	0.74	0.25	1.17
<i>Caralliabrachiata</i> (Lour.) Merr.	1.25	0.01	A	0.09	0.28	0.04	0.40
<i>Gardenia gummifera</i> L.f.	1.25	0.18	A	0.09	0.51	0.04	0.65
<i>Gardenia jasminoides</i> J.Ellis	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Gardenia latifolia</i> Aiton	2.5	0.05	A	0.18	0.14	0.13	0.45
<i>Ixora parviflora</i> Lam.	2.5	0.05	A	0.18	0.14	0.09	0.40
<i>Mitragyna parvifolia</i> (Roxb.) Korth.	1.25	0.23	A	0.09	0.66	0.09	0.83

<i>Morinda citrifolia</i> L.	1.25	0.18	A	0.09	0.51	0.09	0.69
<i>Neolamarckiacadamba</i> (Roxb.) Bosser [Syn: <i>Anthocephaluscadamba</i> (Roxb.) Miq.]	1.25	0.22	A	0.09	0.58	0.04	0.71
<i>Wendlandia thyrsoides</i> (Roth) Steud.	1.25	0.03	A	0.09	0.08	0.04	0.21
<i>Chloroxylon swietenia</i> DC.	1.25	0.07	A	0.09	0.20	0.09	0.37
<i>Aegle marmelos</i> (L.) Corrêa	1.25	0.26	A	0.09	0.74	0.04	0.87
<i>Limonia acidissima</i> L.	1.25	0.23	A	0.09	0.66	0.04	0.79
<i>Naringi crenulata</i> (Roxb.) Nicolson	1.25	0.13	A	0.09	0.37	0.09	0.55
<i>Bergerakoenigii</i> L. [Syn: <i>Murrayakoenigii</i> (L.) Spreng.]	2.5	0.12	A	0.18	0.33	0.09	0.59
<i>Casearia tomentosa</i> Roxb.	1.25	0.04	A	0.09	0.11	0.04	0.24
<i>Flacourtia indica</i> (Burm.f.) Merr.	1.25	0.03	A	0.09	0.08	0.04	0.21
<i>Salvadora persica</i> L.	1.25	0.05	A	0.09	0.14	0.04	0.28
<i>Santalum album</i> L.	71.25	0.26	D	5.33	0.74	9.82	15.88
<i>Filiciumdecipiens</i> (Wight & Arn.) Thwaites	1.25	0.18	A	0.09	0.51	0.04	0.65
<i>Sapindus mukorossi</i> Gaertn.	2.5	0.23	A	0.18	0.66	0.09	0.92
<i>Madhuca insignis</i> (Radlk.) H.J.Lam	1.25	0.63	A	0.09	1.79	0.04	1.92
<i>Manilkara hexandra</i> (Roxb.) Dubard	1.25	0.01	A	0.09	0.28	0.04	0.40
<i>Mimusops elengi</i> L.	1.25	0.22	A	0.09	0.53	0.04	0.66
<i>Manilkara zapota</i> (L.) P.Royen	30	0.18	B	2.24	0.51	3.70	6.45
<i>Ailanthus excelsa</i> Roxb.	1.25	0.43	A	0.09	1.20	0.04	1.34
<i>Ailanthus triphysa</i> (Dennst.) Alston [Syn: <i>Ailanthus malabarica</i> DC.]	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Simarouba glauca</i> DC.	1.25	0.12	A	0.09	0.33	0.09	0.50
<i>Holoptelea integrifolia</i> (Roxb.) Planch.	15	0.50	A	1.12	1.43	0.81	3.35
<i>Citharexylum spinosum</i> L.	1.25	0.07	A	0.09	0.20	0.04	0.33
<i>Guaiacum officinale</i> L.	2.5	0.13	A	0.18	0.37	0.13	0.68

Table 3: Values of Wood density, Tree Biovolume, Above Ground Biomass, Below Ground Biomass, Total Biomass and Carbon Storage per Species of Trees of KUD Campus, Dharwad

Tree Species	Wood density (g/cm ³)	T _{BV}	AGB	BGB	TB	Carbon Storage/Species
<i>Anacardium occidentale</i> L.	0.6	0.094	0.0564	0.014664	0.071064	1.95426
<i>Mangifera indica</i> L.	0.6	2.626	1.5756	0.409656	1.985256	277.93584
<i>Semecarpus anacardium</i> L.f.	0.6	0.07	0.042	0.01092	0.05292	0.34398
<i>Spondias pinnata</i> (L.f.) Kurz [Syn: <i>Spondias mangifera</i> Willd.]	0.46	0.327	0.15042	0.0391092	0.1895292	0.1895292
<i>Annona cherimola</i> Mill.	0.6	0.047	0.0282	0.007332	0.035532	0.017766
<i>Annona muricata</i> L.	0.6	0.045	0.027	0.00702	0.03402	0.03402
<i>Annona squamosa</i> L.	0.6	0.042	0.0252	0.006552	0.031752	0.047628
<i>Monoon longifolium</i> (Sonn.) B.Xue & R.M.K.Saunders	0.6	0.271	0.1626	0.042276	0.204876	3.07314
<i>Alstonia macrophylla</i> Wall. ex G.Don	0.6	0.303	0.1818	0.047268	0.229068	0.114534
<i>Alstonia scholaris</i> (L.) R.Br.	0.6	0.178	0.1068	0.027768	0.134568	0.067284
<i>Holarrhena pubescens</i> Wall. ex G.Don	0.6	0.038	0.0228	0.005928	0.028728	0.028728
<i>Plumeria alba</i> L.	0.6	1.31	0.786	0.20436	0.99036	0.49518
<i>Plumeria rubra</i> L.	0.6	0.145	0.087	0.02262	0.10962	0.05481
<i>Cascabela thevetia</i> (L.) Lippold	0.6	0.065	0.039	0.01014	0.04914	0.14742
<i>Wrightia arborea</i> (Dennst.) Mabb.	0.6	0.141	0.0846	0.021996	0.106596	0.053298
<i>Wrightia tinctoria</i> (Roxb.) R.Br.	0.6	0.124	0.0744	0.019344	0.093744	0.046872
<i>Heptapleurum capitatum</i> (Wight & Arn.) Seem.	0.6	0.355	0.213	0.05538	0.26838	0.13419
<i>Heptapleurum venulosum</i> (Wight & Arn.) Seem.	0.6	0.077	0.0462	0.012012	0.058212	0.029106
<i>Araucaria columnaris</i> (G.Forst.) Hook.	0.46	0.221	0.10166	0.0264316	0.1280916	0.2561832
<i>Agathis robusta</i> (C.Moore ex F.Muell.) F.M.Bailey	0.6	0.039	0.0234	0.006084	0.029484	0.014742
<i>Cocos nucifera</i> L.	0.6	0.464	0.2784	0.072384	0.350784	15.434496
<i>Balanites roxburghii</i> Planch.	0.6	0.024	0.0144	0.003744	0.018144	0.009072
<i>Crescentia cujete</i> L.	0.6	0.041	0.0246	0.006396	0.030996	0.030996
<i>Markhamia lutea</i> (Benth.) K.Schum.	0.6	0.122	0.0732	0.019032	0.092232	0.23058
<i>Fernandoa adenophylla</i> (Wall. ex G.Don) Steenis	0.6	0.049	0.0294	0.007644	0.037044	0.018522
<i>Jacaranda mimosifolia</i> D.Don	0.64	0.548	0.35072	0.0911872	0.4419072	7.0705152
<i>Kigelia africana</i> (Lam.) Benth.	0.6	0.279	0.1674	0.043524	0.210924	0.210924
<i>Millingtonia hortensis</i> L.f.	0.6	0.367	0.2202	0.057252	0.277452	1.109808
<i>Oroxylum indicum</i> (L.) Kurz	0.6	0.301	0.1806	0.046956	0.227556	0.113778
<i>Pajanelia longifolia</i> (Willd.) K.Schum.	0.6	0.211	0.1266	0.032916	0.159516	0.079758
<i>Parmentiera cereifera</i> Seem.	0.6	0.073	0.0438	0.011388	0.055188	0.027594
<i>Spathodea campanulata</i> P.Beauv.	0.58	1.818	1.05444	0.2741544	1.3285944	6.642972
<i>Tabebuia aurea</i> (Silva Manso) Benth. & Hook.f. ex S.Moore	0.6	0.828	0.4968	0.129168	0.625968	0.625968

<i>Tabebuia rosea</i> (Bertol.) Bertero ex A.DC.	0.6	0.588	0.3528	0.091728	0.444528	1.333584
<i>Tecoma castanifolia</i> (D.Don) Melch.	0.6	0.136	0.0816	0.021216	0.102816	0.051408
<i>Tecomella undulata</i> (Sm.) Seem.	0.6	0.137	0.0822	0.021372	0.103572	0.103572
<i>Bixa orellana</i> L.	0.6	0.283	0.1698	0.044148	0.213948	0.106974
<i>Cochlospermum religiosum</i> (L.) Alston	0.6	1.459	0.8754	0.227604	1.103004	1.103004
<i>Cordia dichotoma</i> G. Forst	0.6	0.404	0.2424	0.063024	0.305424	0.152712
<i>Cordia macleadii</i> (Griff.) Hook.f. & Thomson	0.6	0.175	0.105	0.0273	0.1323	0.06615
<i>Cordia myxa</i> L.	0.6	0.355	0.213	0.05538	0.26838	0.13419
<i>Ehretia laevis</i> (Rottler ex G. Don) Roxb.	0.6	0.233	0.1398	0.036348	0.176148	0.176148
<i>Bursera linanoe</i> (La Llave) Rzed., Calderón & Medina	0.6	0.148	0.0888	0.023088	0.111888	0.055944
<i>Calophyllum inophyllum</i> L.	0.6	0.071	0.0426	0.011076	0.053676	0.026838
<i>Mammea suriga</i> (Buch.-Ham. ex Roxb.) Kosterm.	0.6	0.245	0.147	0.03822	0.18522	0.09261
<i>Mesua ferrea</i> L.	0.6	0.201	0.1206	0.031356	0.151956	0.075978
<i>Mammea suriga</i> (Buch.-Ham. ex Roxb.) Kosterm.	0.5	0.083	0.0415	0.01079	0.05229	0.026145
<i>Trema orientale</i> (L.) Blume	0.6	0.116	0.0696	0.018096	0.087696	0.043848
<i>Capparis grandis</i> L.f.	0.6	0.245	0.147	0.03822	0.18522	0.074088
<i>Casuarina equisetifolia</i> L.	0.6	0.083	0.0498	0.012948	0.062748	0.031374
<i>Elaeodendron glaucum</i> (Rottb.) Pers.	0.6	0.109	0.0654	0.017004	0.082404	0.082404
<i>Garcinia indica</i> (Thouars) Choisy	0.6	0.06	0.036	0.00936	0.04536	0.02268
<i>Garcinia livingstonei</i> T.Anderson	0.6	0.065	0.039	0.01014	0.04914	0.02457
<i>Garcinia gummi-gutta</i> (L.) Roxb.	0.6	0.176	0.1056	0.027456	0.133056	0.99792
<i>Terminalia anogeissiana</i> Gere & Boatwr.	0.6	0.412	0.2472	0.064272	0.311472	1.713096
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	0.6	0.306	0.1836	0.047736	0.231336	2.082024
<i>Terminalia catappa</i> L.	0.6	0.489	0.2934	0.076284	0.369684	0.739368
<i>Terminalia chebula</i> Retz.	0.6	1.233	0.7398	0.192348	0.932148	2.796444
<i>Terminalia elliptica</i> Willd.	0.6	1.188	0.7128	0.185328	0.898128	0.449064
<i>Terminalia neotaliala</i> Capuron	0.6	1.564	0.9384	0.243984	1.182384	1.773576
<i>Terminalia paniculata</i> B.Heyne ex Roth	0.46	0.367	0.16882	0.0438932	0.2127132	0.1063566
<i>Cupressus arizonica</i> Greene	0.6	6.215	3.729	0.96954	4.69854	4.69854
<i>Dillenia pentagyna</i> Roxb.	0.6	0.428	0.2568	0.066768	0.323568	0.161784
<i>Diospyros kaki</i> L.f.	0.6	0.95	0.57	0.1482	0.7182	0.3591
<i>Diospyros malabarica</i> (Desr.) Kostel. [Syn: <i>Diospyros embryopteris</i> Pers.]	0.65	0.882	0.5733	0.149058	0.722358	7.584759
<i>Diospyros melanoxylon</i> Roxb.	0.6	0.279	0.1674	0.043524	0.210924	0.105462
<i>Diospyros buxifolia</i> (Blume) Hiern	0.6	0.143	0.0858	0.022308	0.108108	0.054054
<i>Diospyros montana</i> Roxb.	0.6	0.05	0.03	0.0078	0.0378	0.0378
<i>Euphorbia antiquorum</i> L.	0.6	0.165	0.099	0.02574	0.12474	0.06237
<i>Euphorbia tirucalli</i> L.	0.6	0.529	0.3174	0.082524	0.399924	0.199962
<i>Falconeria insignis</i> Royle	0.6	0.877	0.5262	0.136812	0.663012	0.663012
<i>Mallotus philippensis</i> (Lam.) Müll.Arg.	0.6	0.95	0.57	0.1482	0.7182	1.4364
<i>Mallotus tetracoccus</i> (Roxb.) Kurz	0.6	0.129	0.0774	0.020124	0.097524	0.048762
<i>Manihot esculenta</i> Crantz	0.6	4.64	2.784	0.72384	3.50784	1.75392
<i>Acacia auriculiformis</i> A.Cunn. ex Benth.	0.6	2.072	1.2432	0.323232	1.566432	117.4824
<i>Senegalia chundra</i> (Roxb. ex Rottler) Maslin	0.6	1.656	0.9936	0.258336	1.251936	0.625968
<i>Senegalia catechu</i> (L.f.) P.J.H.Hurter & Mabb.	0.6	0.739	0.4434	0.115284	0.558684	0.279342
<i>Vachellia farnesiana</i> var. <i>farnesiana</i>	0.9	1.013	0.9117	0.237042	1.148742	0.574371
<i>Senegalia polyacantha</i> (Willd.) Seigler & Ebinger	0.6	0.647	0.3882	0.100932	0.489132	0.733698
<i>Adenantha pavonina</i> L.	0.81	1.517	1.22877	0.3194802	1.5482502	4.6447506
<i>Albizia amara</i> (Roxb.) Boivin	0.6	1.346	0.8076	0.209976	1.017576	1.526364
<i>Albizia lebeck</i> (L.) Benth.	0.6	2.993	1.7958	0.466908	2.262708	2.262708
<i>Albizia odoratissima</i> (L.f.) Benth.	0.6	2.18	1.308	0.34008	1.64808	6.59232
<i>Albizia procera</i> (Roxb.) Benth.	0.6	1.137	0.6822	0.177372	0.859572	0.429786
<i>Bauhinia monandra</i> Kurz	0.6	0.496	0.2976	0.077376	0.374976	0.749952
<i>Bauhinia purpurea</i> L.	0.6	0.855	0.513	0.13338	0.64638	0.32319
<i>Bauhinia racemosa</i> Lam.	0.6	0.366	0.2196	0.057096	0.276696	1.38348
<i>Butea monosperma</i> (Lam.) Kuntze	0.6	2.641	1.5846	0.411996	1.996596	17.969364
<i>Libidibia coriaria</i> (Jacq.) Schldtl.	0.6	0.505	0.303	0.07878	0.38178	0.76356
<i>Cassia fistula</i> L.	0.6	0.918	0.5508	0.143208	0.694008	0.347004
<i>Cassia grandis</i> L.f.	0.6	1.686	1.0116	0.263016	1.274616	0.637308
<i>Cassia javanica</i> L.	0.6	0.606	0.3636	0.094536	0.458136	0.229068
<i>Senna surattensis</i> (Burm.f.) H.S.Irwin & Barneby	0.6	0.237	0.1422	0.036972	0.179172	0.089586
<i>Colvillea racemosa</i> Bojer ex Hook.	0.6	2.915	1.749	0.45474	2.20374	2.20374
<i>Dalbergia lanceolaria</i> L.f.	0.88	0.645	0.5676	0.147576	0.715176	0.715176
<i>Dalbergia latifolia</i> Roxb.	0.6	2.119	1.2714	0.330564	1.601964	0.800982
<i>Dalbergia lanceolaria</i> subsp. <i>paniculata</i> (Roxb.) Thoth.	0.8	3.001	2.4008	0.624208	3.025008	1.512504
<i>Dalbergia sissoo</i> Roxb. ex DC.	0.6	1.82	1.092	0.28392	1.37592	33.02208
<i>Delonix regia</i> (Bojer ex Hook.) Raf.	1.14	3.519	4.01166	1.0430316	5.0546916	222.4064304
<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	0.6	0.202	0.1212	0.031512	0.152712	0.152712
<i>Erythrina suberosa</i> Roxb.	0.6	2.001	1.2006	0.312156	1.512756	19.665828
<i>Gliricidia sepium</i> (Jacq.) Kunth	0.75	0.354	0.2655	0.06903	0.33453	0.167265
<i>Hardwickia binata</i> Roxb.	0.6	1.021	0.6126	0.159276	0.771876	0.385938
<i>Leucaena leucocephala</i> (Lam.) de Wit	0.6	5.47	3.282	0.85332	4.13532	74.43576
<i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne	0.6	0.238	0.1428	0.037128	0.179928	0.89964
<i>Pithecellobium dulce</i> (Roxb.) Benth.	0.6	0.219	0.1314	0.034164	0.165564	1.324512
<i>Pongamia pinnata</i> (L.) Pierre	0.6	0.084	0.0504	0.013104	0.063504	0.190512
<i>Prosopis cineraria</i> (L.) Druce	0.6	1.328	0.7968	0.207168	1.003968	4.015872

<i>Pterocarpus marsupium</i> Roxb.	0.6	2.928	1.7568	0.456768	2.213568	21.028896
<i>Samanea saman</i> (Jacq.) Merr.	0.6	0.323	0.1938	0.050388	0.244188	0.244188
<i>Saraca indica</i> L.	0.6	1.092	0.6552	0.170352	0.825552	4.953312
<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	0.6	0.404	0.2424	0.063024	0.305424	0.152712
<i>Sesbania grandiflora</i> (L.) Poir.	0.6	1.741	1.0446	0.271596	1.316196	0.658098
<i>Tamarindus indica</i> L.	0.6	7.299	4.3794	1.138644	5.518044	331.08264
<i>Xylia xylocarpa</i> (Roxb.) W.Theob.	0.57	4.606	2.62542	0.6826092	3.3080292	36.3883212
<i>Gmelina arborea</i> Roxb. ex Sm.	0.6	2.626	1.5756	0.409656	1.985256	0.992628
<i>Gmelina asiatica</i> L.	0.6	1.148	0.6888	0.179088	0.867888	0.867888
<i>Premna tomentosa</i> Willd.	0.72	4.061	2.92392	0.7602192	3.6841392	62.6303664
<i>Tectona grandis</i> L.f.	0.6	1.51	0.906	0.23556	1.14156	0.57078
<i>Vitex altissima</i> L.f.	0.6	0.513	0.3078	0.080028	0.387828	0.193914
<i>Vitex leucoxylon</i> L.f.	0.6	0.873	0.5238	0.136188	0.659988	0.329994
<i>Vitex pinnata</i> L.	0.6	4.287	2.5722	0.668772	3.240972	1.620486
<i>Cinnamomum camphora</i> (L.) J.Presl	0.6	2.844	1.7064	0.443664	2.150064	1.075032
<i>Cinnamomum verum</i> J.Presl	0.56	0.067	0.03752	0.0097552	0.0472752	0.0236376
<i>Persea americana</i> Mill.	0.6	0.34	0.204	0.05304	0.25704	0.12852
<i>Barringtonia acutangula</i> (L.) Gaertn.	0.6	0.219	0.1314	0.034164	0.165564	0.082782
<i>Careya arborea</i> Roxb.	0.6	6.129	3.6774	0.956124	4.633524	2.316762
<i>Couroupita guianensis</i> Aubl.	0.8	2.823	2.2584	0.587184	2.845584	1.422792
<i>Strychnos nux-vomica</i> L.	0.6	2.205	1.323	0.34398	1.66698	0.83349
<i>Strychnos potatorum</i> L.f.	0.6	0.62	0.372	0.09672	0.46872	0.23436
<i>Duabanga grandiflora</i> (Roxb. ex DC.) Walp. [Syn: <i>Duabanga sonneratioides</i> Buch.-Ham.]	0.6	0.085	0.051	0.01326	0.06426	0.03213
<i>Lagerstroemia indica</i> L.	0.6	0.641	0.3846	0.099996	0.484596	0.484596
<i>Lagerstroemia parviflora</i> Roxb.	0.6	0.138	0.0828	0.021528	0.104328	0.052164
<i>Lagerstroemia speciosa</i> (L.) Pers.	0.6	0.197	0.1182	0.030732	0.148932	0.148932
<i>Lagerstroemia tomentosa</i> C.Presl	0.6	4.853	2.9118	0.757068	3.668868	9.17217
<i>Magnolia champaca</i> (L.) Baill. ex Pierre	0.6	1.362	0.8172	0.212472	1.029672	0.514836
<i>Magnolia grandiflora</i> L.	0.6	1.365	0.819	0.21294	1.03194	0.51597
<i>Magnolia nilagirica</i> (Zenker) Figlar	0.6	4.562	2.7372	0.711672	3.448872	1.724436
<i>Adansonia digitata</i> L.	0.96	1.641	1.57536	0.4095936	1.9849536	0.9924768
<i>Berrya cordifolia</i> (Willd.) L.Laurent	0.6	2.718	1.6308	0.424008	2.054808	3.082212
<i>Bombax ceiba</i> L.	0.6	1.229	0.7374	0.191724	0.929124	0.464562
<i>Ceiba insignis</i> (Kunth) P.E.Gibbs & Semir	0.6	0.178	0.1068	0.027768	0.134568	0.067284
<i>Firmiana colorata</i> (Roxb.) R.Br.	0.6	0.085	0.051	0.01326	0.06426	0.03213
<i>Helicteres isora</i> L.	0.6	0.166	0.0996	0.025896	0.125496	0.062748
<i>Heritiera littoralis</i> Aiton	0.6	0.203	0.1218	0.031668	0.153468	0.076734
<i>Hibiscus tiliaceus</i> L.	0.6	0.377	0.2262	0.058812	0.285012	0.71253
<i>Grewia tiliifolia</i> Vahl	0.6	2.692	1.6152	0.419952	2.035152	1.017576
<i>Guazuma ulmifolia</i> Lam. [Syn: <i>Guazuma tomentosa</i> Kunth]	0.6	0.234	0.1404	0.036504	0.176904	0.088452
<i>Kydia calycina</i> Roxb.	0.6	0.252	0.1512	0.039312	0.190512	0.095256
<i>Pterospermum acerifolium</i> (L.) Willd.	0.6	0.465	0.279	0.07254	0.35154	0.17577
<i>Pterospermum suberifolium</i> (L.) Raeusch.	0.6	1.213	0.7278	0.189228	0.917028	0.458514
<i>Sterculia foetida</i> L.	0.6	1.43	0.858	0.22308	1.08108	1.08108
<i>Sterculia urens</i> Roxb.	0.6	0.586	0.3516	0.091416	0.443016	0.221508
<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	0.6	1.267	0.7602	0.197652	0.957852	0.478926
<i>Memecylon</i> spp.	0.6	3.368	2.0208	0.525408	2.546208	1.273104
<i>Aphanamixis polystachya</i> (Wall.) R.Parker	0.62	0.82	0.5084	0.132184	0.640584	0.320292
<i>Azadirachta indica</i> A.Juss.	0.65	7.121	4.62865	1.203449	5.832099	177.8790195
<i>Chukrasia tabularis</i> A.Juss.	0.6	6.272	3.7632	0.978432	4.741632	4.741632
<i>Melia dubia</i> Cav.	0.6	2.376	1.4256	0.370656	1.796256	0.898128
<i>Rothea</i> sp.	0.6	0.558	0.3348	0.087048	0.421848	0.421848
<i>Soymida febrifuga</i> (Roxb.) A.Juss.	0.6	3.626	2.1756	0.565656	2.741256	1.370628
<i>Swietenia macrophylla</i> King	0.56	5.636	3.15616	0.8206016	3.9767616	7.9535232
<i>Swietenia mahagoni</i> (L.) Jacq.	0.6	8.382	5.0292	1.307592	6.336792	3.168396
<i>Artocarpus heterophyllum</i> Lam.	0.6	1.8	1.08	0.2808	1.3608	0.6804
<i>Artocarpus hirsutus</i> Lam.	0.6	1.549	0.9294	0.241644	1.171044	0.585522
<i>Artocarpus altilis</i> (Parkinson) Fosberg	0.6	4.771	2.8626	0.744276	3.606876	1.803438
<i>Ficus benghalensis</i> L.	0.6	4.891	2.9346	0.762996	3.697596	3.697596
<i>Ficus krishnae</i> C.DC.	0.6	3.302	1.9812	0.515112	2.496312	3.744468
<i>Ficus benamina</i> L.	0.6	2.572	1.5432	0.401232	1.944432	0.972216
<i>Ficus drupacea</i> Thunb.	0.6	6.611	3.9666	1.031316	4.997916	9.995832
<i>Ficus racemosa</i> L.	0.6	6.538	3.9228	1.019928	4.942728	12.35682
<i>Ficus religiosa</i> L.	0.6	2.993	1.7958	0.466908	2.262708	1.131354
<i>Ficus virens</i> Aiton	0.6	1.627	0.9762	0.253812	1.230012	2.460024
<i>Streblus asper</i> Lour.	0.6	1.647	0.9882	0.256932	1.245132	6.22566
<i>Moringa oleifera</i> Lam.	0.6	0.388	0.2328	0.060528	0.293328	7.626528
<i>Muntingia calabura</i> L.	0.6	1.759	1.0554	0.274404	1.329804	31915.296
<i>Eucalyptus globulus</i> Labill.	0.67	8.997	6.02799	1.5672774	7.5952674	3.7976337
<i>Melaleuca citrina</i> (Curtis) Dum.Cours.	0.6	0.541	0.3246	0.084396	0.408996	0.204498
<i>Melaleuca leucadendron</i> L.	0.6	0.303	0.1818	0.047268	0.229068	1.832544
<i>Psidium guajava</i> L.	0.6	4.856	2.9136	0.757536	3.671136	212.925888
<i>Syzygium cumini</i> (L.) Skeels	0.6	2.782	1.6692	0.433992	2.103192	16.825536
<i>Syzygium samarangense</i> (Blume) Merr. & L.M.Perry	0.6	0.99	0.594	0.15444	0.74844	0.37422

<i>Ochna serrulata</i> (Hochst.) Walp.	0.6	0.715	0.429	0.11154	0.54054	0.27027
<i>Ximenia americana</i> L.	0.6	1.365	0.819	0.21294	1.03194	0.51597
<i>Nyctanthes arbor-tristis</i> L.	0.6	0.42	0.252	0.06552	0.31752	0.15876
<i>Averrhoa bilimbi</i> L.	0.6	0.178	0.1068	0.027768	0.134568	0.067284
<i>Bischofia javanica</i> Blume	0.6	0.268	0.1608	0.041808	0.202608	0.101304
<i>Phyllanthus acidus</i> (L.) Skeels	0.6	0.411	0.2466	0.064116	0.310716	0.77679
<i>Phyllanthus emblica</i> L.	0.51	5.372	2.73972	0.7123272	3.4520472	1.7260236
<i>Pinus roxburghii</i> Sarg.	0.6	4.627	2.7762	0.721812	3.498012	1.749006
<i>Pinus</i> spp.	0.51	6	3.06	0.7956	3.8556	42.4116
<i>Grevillea robusta</i> A.Cunn. ex R.Br.	0.6	7.502	4.5012	1.170312	5.671512	2.835756
<i>Putranjiva roxburghii</i> Wall.	0.6	2.272	1.3632	0.354432	1.717632	5.152896
<i>Ziziphus mauritiana</i> Lam.	0.6	0.715	0.429	0.11154	0.54054	0.27027
<i>Carallia brachiata</i> (Lour.) Merr.	0.6	1.62	0.972	0.25272	1.22472	0.61236
<i>Gardenia gummifera</i> L.f.	0.6	0.489	0.2934	0.076284	0.369684	0.184842
<i>Gardenia jasminoides</i> J.Ellis	0.6	0.219	0.1314	0.034164	0.165564	0.248346
<i>Gardenia latifolia</i> Aiton	0.6	0.172	0.1032	0.026832	0.130032	0.130032
<i>Ixora parviflora</i> Lam.	0.6	2.013	1.2078	0.314028	1.521828	1.521828
<i>Mitragyna parvifolia</i> (Roxb.) Korth.	0.6	1.383	0.8298	0.215748	1.045548	1.045548
<i>Morinda citrifolia</i> L.	0.6	1.513	0.9078	0.236028	1.143828	0.571914
<i>Neolamarckia cadamba</i> (Roxb.) Bosser [Syn: <i>Anthocephalus cadamba</i> (Roxb.) Miq.]	0.6	0.119	0.0714	0.018564	0.089964	0.044982
<i>Wendlandia thyrsoides</i> (Roth) Steud.	0.9	0.586	0.5274	0.137124	0.664524	0.664524
<i>Chloroxylon swietenia</i> DC.	0.6	2.429	1.4574	0.378924	1.836324	0.918162
<i>Aegle marmelos</i> (L.) Corrêa	0.6	1.966	1.1796	0.306696	1.486296	0.743148
<i>Limonia acidissima</i> L.	0.6	0.973	0.5838	0.151788	0.735588	0.735588
<i>Naringi crenulata</i> (Roxb.) Nicolson	0.6	0.63	0.378	0.09828	0.47628	0.47628
<i>Bergera koenigii</i> L. [Syn: <i>Murraya koenigii</i> (L.) Spreng.]	0.6	0.128	0.0768	0.019968	0.096768	0.048384
<i>Casearia tomentosa</i> Roxb.	0.6	0.08	0.048	0.01248	0.06048	0.03024
<i>Flacourtia indica</i> (Burm.f.) Merr.	0.64	0.214	0.13696	0.0356096	0.1725696	0.0862848
<i>Salvadora persica</i> L.	0.62	0.509	0.31558	0.0820508	0.3976308	45.9228
<i>Santalum album</i> L.	0.6	2.229	1.3374	0.347724	1.685124	0.842562
<i>Filicium decipiens</i> (Wight & Arn.) Thwaites	0.6	3.418	2.0508	0.533208	2.584008	2.584008
<i>Sapindus mukorossi</i> Gaertn.	0.6	9.526	5.7156	1.486056	7.201656	3.600828
<i>Madhuca insignis</i> (Radlk.) H.J.Lam	0.6	0.725	0.435	0.1131	0.5481	0.27405
<i>Manilkara hexandra</i> (Roxb.) Dubard	0.78	1.948	1.51944	0.3950544	1.9144944	0.9572472
<i>Mimusops elengi</i> L.	0.6	2.32	1.392	0.36192	1.75392	16.66224
<i>Manilkara zapota</i> (L.) P.Royen	0.6	6.022	3.6132	0.939432	4.552632	2.276316
<i>Ailanthus excelsa</i> Roxb.	0.6	0.612	0.3672	0.095472	0.462672	0.231336
<i>Ailanthus triphysa</i> (Dennst.) Alston [Syn: <i>Ailanthus malabarica</i> DC.]	0.6	0.846	0.5076	0.131976	0.639576	0.639576
<i>Simarouba glauca</i> DC.	0.6	7.603	4.5618	1.186068	5.747868	2.873934
<i>Holoptelea integrifolia</i> (Roxb.) Planch.	0.6	0.617	0.3702	0.096252	0.466452	43.613262
<i>Citharexylum spinosum</i> L.	0.6	1.069	0.6414	0.166764	0.808164	1.212246
<i>Guaiaicum officinale</i> L.	0.6	0.617	0.3702	0.0962	0.466	

4. CONCLUSION

The Karnatak University campus harbors a wide variety of tree species and a considerable number of individuals making the campus green and clean. The trees are largely grown and are home to other living beings such as birds, insects, and other small animals. The carbon storage capacity of the region increases with an increase in standing biomass. The tree species in Karnatak University campus are for the purpose of ornamentation, shade giving, and timber is auctioned officially every now and then, depending on the availability. These trees are sequestering good amount of carbon, hence keeping the campus less polluted and more cleaner air quality. Thus trees such as *Eucalyptus globulus*, *Delonix regia*, *Mangifera indica*, *Tamarindus indica*, *Azadirachta indica*, *Acacia auriculiformis*, *Senna siamea*, and *Swietenia mahagoni*, with high carbon sequestering capacities as well as commercial usage, need to be grown in more number.

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