

**PROCEEDINGS OF THE TREE EXPERT COMMITTEE MEETING HELD  
ON 14.10.2020 AT 2:00 PM AT BENGALURU.**

**PRESENT:**

- |    |   |                  |
|----|---|------------------|
| 1. | <b>Shri I B Srivastava, IFS (Rtd).</b>  | <b>CHAIRMAN</b>  |
|    | <b>Dr. Muthu Kumar</b>                  | <b>MEMBER</b>    |
|    | <b>Arunachalam</b>                      |                  |
| 2. | <b>(Scientist-E, Plant Pathologist)</b> |                  |
|    | <b>IWST.</b>                            |                  |
|    | <b>Dr. Nagarajaiah C</b>                | <b>MEMBER</b>    |
|    | <b>(Professor and Head, Dept. of</b>    |                  |
| 3. | <b>Forestry and Environmental</b>       |                  |
|    | <b>Science)</b>                         |                  |
|    | <b>Dr. R Krishna Murthy</b>             | <b>MEMBER</b>    |
|    | <b>(Professor Dept. of Forestry and</b> |                  |
| 4. | <b>Environmental Science)</b>           |                  |
|    | <b>Shri. V.Govindaraju</b>              | <b>MEMBER -</b>  |
|    | <b>(Assistant Conservator of</b>        | <b>SECRETARY</b> |
| 5. | <b>Forests, (BBMP)</b>                  |                  |

Shri V. Govindaraju, Member Secretary, Tree Expert Committee and Assistant Conservator of Forests, BBMP, Bengaluru welcomed the Chairman, and Members of the Committee present in the meeting.

Pursuant to the orders dt 20.08.2020 of Hon'ble High Court of Karnataka to reconstitute the Tree Expert Committee, the Government of Karnataka has re-constituted the Committee of Experts by incorporating the following members:

- (1) Professor and Head, Department of Forestry and Environmental Science and
- (2) Professor, Department of Forestry and Environmental Science, University of Agricultural Sciences, GKVK, Bengaluru. The same was submitted and placed on record by the Hon'ble High Court of Karnataka.

Bearing in mind the directions issued by the Hon'ble High Court and taking into account all the paper and documents with respect to the pending applications pertaining to BMRCL, the re-constituted Committee examined the pending

applications of BMRCL and carried out field visits for on site assessment and to find alternative ways to save the trees which were identified for felling, in different project sites/locations on the dates mentioned against each location: -

Sl.No	Metro Stations/Depot. Location	Date of Inspection
1	UM Kaval Depot.(Reach 4B)	10.09.2020
2	Bennaganahalli Lake Bund (Reach 1A)	15.09.2020
3	Kadugudi Metro Station (Reach 1B)	17.09.2020
4	Whitefield Metro Station (Reach 1B)	
5	Kadugudi Depot.	
6	Kothunur Depot Entry Line (Reach 6 Elevated)	19.09.2020
7	Reach 5 (Package-3)	
8	Govt. I.T.I Ground (Fabrication Yard)	
9	Dairy Circle Metro Station (RT 01 UG)	
10	Lakkasandra Metro Station (RT 01 UG)	23.09.2020
11	M G Road Metro Station (RT 02 UG)	

During the course of these visits, the concerned Chief Engineers / Deputy Chief Engineers of BMRCL have explained with reference to the alignment of Metro works along with the approved alignment, drawing plans etc., and the same has been examined by the Committee.

The Committee thoroughly assessed each existing tree in all the above locations for the possibility of Retention or Transplantation considering the following factors like change in project alignment / shifting of proposed structures, type of trees, health of the tree, age / maturity status of the tree *etc.* in reference to the 20 points Working Procedure and Methodology submitted to the Hon'ble High Court of Karnataka.

Intensive assessment was carried out by the Committee in order to retain the trees on site by understanding the overall project plan vis-à-vis the alignment of Metro line, stations, Depot *etc.* wherever possible, as Retention is the first priority and efficient way to save trees in any infrastructure development project area. Only when retention on site was not feasible, Committee examined as to whether the tree is sufficiently healthy to be translocated. Then if the above two options are not possible then as a last resort, the Tree Expert Committee has decided to recommend for felling of trees.

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The Committee has also inspected the proposed sites by BMRCL for translocation of trees both of existing trees locations and at receptors sites (planned for translocation) which are near to the existing trees locations at some places. Details of soil test reports are produced as **Annexure**.

Thereafter meetings were held by the Committee for finalizing the field inspections reports pertaining to various Metro Stations, Viaducts and Depots in jurisdiction of Concerned Tree Officers and further the proceedings were drawn based on the field inspection reports indicating which are the trees to be saved by way of retention, which are the trees to be saved by way of translocation and finally trees to be felled.

All sincere efforts were made to save the trees by means of retention on site as first priority and then translocation as a next step. After due deliberation, the Tree Expert Committee has therefore taken decision and directed the concerned Tree Officers to issue / grant permissions for retention of trees on site, translocation of trees to suitable places and then felling of remaining trees as a last resort to BMRCL besides simultaneously informing them to carry out planting of tall healthy saplings in lieu of felling of trees at the ratio of 1:10 at suitable places. The details of trees permitted for retention, translocation and felling has been listed in the field inspection reports of Tree Expert Committee (Reports enclosed).

The Committee stressed that in respect of tree to be translocated, regular inspection of the process of translocation should be conducted and translocation should be done with close supervision of Forest Staff. Further regular post care management of the trees thus translocated must be undertaken by the Forest Staff of BBMP, Bangalore Urban Division and Project Authorities and it should be ensured that the greenery of Bengaluru city is enhanced through proper maintenance of saplings / trees under all circumstances.



  
Member Secretary and  
Assistant Conservator of Forests, BBMP

## List of Tress at Benniganahalli Tank Bund

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Committee Remarks
1	1	Akasha mallige	1.25	7.50	To be Translocated
2	2	Akasha mallige	0.85	7.60	To be Translocated
3	3	Neem Tree	0.82	1.50	To be Translocated
4	04 (A)	Peepal Tree	1.05	7.30	To be Felled
	(B)		0.95	7.60	
	(C)		0.45	7.10	
	(D)		0.65	7.20	
	(E)		1.55	6.90	
	(F)		1.05	6.80	
5	5	Hole dasavala	0.49	2.50	To be Translocated
6	6	Banyan Tree	2	4.00	To be Translocated
7	7	Hole dasavala	0.52	3.10	To be Translocated
8	8	Hole dasavala	0.67	2.10	To be Translocated
9	9	Bagane tree	1.1	5.80	To be Translocated
10	10	Bagane tree	0.66	3.90	To be Felled
11	11 (A)	Caesalpinia Pulcherrima	0.3	3.80	To be Felled
	(B)		0.27	3.20	
12	12	Bagane tree	0.65	3.00	To be Translocated
13	13	Hole dasavala	0.82	4.60	To be Translocated
14	14	Jamun Tree( Nerale)	0.55	4.10	To be Translocated
15	15	Hole dasavala	0.95	6.10	To be Translocated
16	16	Tabebuia avellanedae	0.3	3.50	To be Felled
17	17	Tabebuia avellanedae	0.36	3.50	To be Felled
18	18	Kari jali Tree	0.92	4.30	To be Translocated
19	19	Hole dasavala	0.69	5.00	To be Translocated
20	20	Spathodea Tree	1.8	6.00	To be Felled
21	21	Rain Tree	0.48	7.30	To be Translocated
22	22	Akasha mallige	0.36	4.60	To be Translocated
23	23	Akasha mallige	1.15	7.10	To be Translocated
24	24	Rain Tree	1.6	7.30	To be Felled
25	25	Akasha mallige	0.75	6.90	To be Felled
26	26	Akasha mallige	0.68	6.40	To be Felled
27	27	Jungle Wood Tree	0.55	6.50	To be Felled
28	28	Akasha mallige	0.57	6.20	To be Felled
29	29 (A)	Peltorum Pterocarpum Tree	0.7	7.10	To be Felled
	(B)		0.65	6.90	
	(C)		0.45	6.80	
30	30	Subabul Tree	0.9	7.10	To be Felled
31	31 (A)	Akasha mallige	0.65	6.70	To be Felled
	(B)		0.32	6.60	

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Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Committee Remarks
32	32 (A)	Akasha mallige	0.4	6.30	To be Felled
	(B)		0.58	7.10	
33	33	Subabul Tree	0.92	6.20	To be Felled
34	34	Akasha mallige	0.38	4.30	To be Felled
35	35	Subabul Tree	0.41	3.90	To be Felled
36	36	Subabul Tree	0.82	4.90	To be Felled
37	37	Rain Tree	1.4	5.70	To be Felled
38	38	Subabul Tree	0.5	4.80	To be Felled
39	39	Subabul Tree	0.55	3.90	To be Felled
40	40 (A)	Banyan Tree	0.55	4.10	To be Felled
	(B)		0.72	3.90	
41	41	Subabul Tree	0.6	6.90	To be Felled
42	42 (A)	Subabul Tree	0.9	6.80	To be Felled
	(B)		0.6	5.20	
	(C)		0.55	3.00	
	(D)		0.6	3.00	
43	43	Subabul Tree	0.38	4.80	To be Felled
44	44 (A)	Akasha mallige	0.6	3.20	To be Translocated
	(B)		0.22	2.40	To be Translocated
45	45 (A)	Hole dasavala	0.3	2.80	To be Translocated
	(B)		0.35	2.70	To be Translocated
46	46	Dalichandra	0.68	5.20	To be Translocated
47	47	Honge	0.69	3.50	To be Translocated
48	48	Avalanda	0.66	5.90	To be Translocated
49	49	Hole dasavala	0.5	5.30	To be Translocated
50	50 (A)	Bili Kanagalu	0.34	1.00	To be Felled
	(B)		0.25	1.00	
51	51	Tabebuia avellaneda	0.36	2.50	To be Felled
52	52	Bougainvillea Tree	0.46	2.50	To be Felled
53	53	Bili Kanagalu	0.38	1.50	To be Felled
54	54	Akasha mallige	0.25	3.00	To be Felled
55	55	Subabul	0.71	4.00	To be Felled
56	56	Subabul	0.53	4.00	To be Felled
57	57	Subabul	0.6	4.00	To be Felled
58	58	Akasha mallige	0.22	2.50	To be Translocated
59	59 (A)	Kari jaali Tree	0.25	2.00	To be Felled
	(B)		0.2	2.00	
60	60 (A)	Kari jaali Tree	0.24	2.00	To be Felled
	(B)		0.22	2.00	
61	61	Rose Wood Tree	0.7	8.00	To be Translocated
62	62	Rose Wood Tree	0.74	7.00	To be Translocated
63	63	Rose Wood Tree	0.9	10.00	To be Translocated
64	64	Rose Wood Tree	0.5	4.00	To be Translocated
65	65	Rose Wood Tree	0.75	8.00	To be Translocated
66	66	Rose Wood Tree	0.85	8.00	To be Translocated
67	67	Rose Wood Tree	0.7	8.00	To be Translocated
68	68	Rose Wood Tree	0.75	8.00	To be Translocated

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Committee Remarks
69	69	Rose Wood Tree	0.7	8.00	To be Translocated
70	70	Rose Wood Tree	1.1	8.00	To be Translocated
71	71	Rose Wood Tree	0.65	11.00	To be Translocated
72	72	Rose Wood Tree	0.8	7.00	To be Translocated
73	73	Rose Wood Tree	0.78	7.00	To be Felled
74	74	Rose Wood Tree	0.69	8.00	To be Translocated
75	75	Rose Wood Tree	0.7	7.00	To be Translocated
76	76	Rose Wood Tree	0.58	7.00	To be Translocated
77	77	Rose Wood Tree	0.6	6.00	To be Translocated
78	78	Rose Wood Tree	0.57	4.00	To be Translocated
79	79	Rose Wood Tree	0.47	3.00	To be Felled
80	80	Rose Wood Tree	0.7	7.00	To be Translocated
81	81	Rose Wood Tree	0.57	4.00	To be Translocated
82	82	Rose Wood Tree	0.4	3.50	To be Translocated
83	83	Rose Wood Tree	0.58	6.00	To be Translocated
84	84	Rose Wood Tree	0.59	6.00	To be Translocated
85	85	Rose Wood Tree	0.75	8.00	To be Translocated
86	86	Rose Wood Tree	0.64	8.00	To be Translocated
87	87	Rose Wood Tree	0.44	4.00	To be Felled
88	88	Rose Wood Tree	0.47	4.00	To be Translocated
89	89 (A)	Rose Wood Tree	0.53	6.00	To be Translocated
	(B)	Rose Wood Tree	0.63	6.00	
90	90	Rose Wood Tree	0.65	9.00	To be Translocated
91	91	Rose Wood Tree	0.77	8.00	To be Translocated
92	R1	Hole Dasawala	0.67	4.00	To be Retained
93	R2	Rose Wood	0.9	5.60	To be Retained
94	R3	Rose Wood	0.88	7.50	To be Retained
95	R4	Rose Wood	0.83	8.60	To be Retained
96	R5	Rose Wood	0.69	6.00	To be Retained
97	R6	Rose Wood	0.72	5.00	To be Retained
98	R7	Rose Wood	0.67	4.50	To be Retained
99	R8	Rose Wood	0.6	7.00	To be Retained
100	R9	Rose Wood	0.84	8.00	To be Retained
101	R10	Rose Wood	1.04	9.00	To be Retained
102	R11	Rose Wood	0.67	8.00	To be Retained
103	R12	Rose Wood	0.8	7.50	To be Retained
104	R13	Rose Wood	0.76	6.50	To be Retained
105	R14	Rose Wood	0.63	5.50	To be Retained
106	R15	Rose Wood	0.77	5.00	To be Retained
107	R16	Spathodia	1.45	10.00	To be Retained
108	R17	Rose Wood	0.6	6.50	To be Retained
109	R18	Rose Wood	0.61	5.00	To be Retained
110	R19	Rose Wood	0.71	5.50	To be Retained



Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Committee Remarks
111	R20	Rose Wood	0.61	5.00	To be Retained
112	R21	Rose Wood	0.68	6.00	To be Retained
113	R22	Rose Wood	0.67	8.00	To be Retained
114	R23	Rose Wood	0.77	7.00	To be Retained
115	R24	Rose Wood	0.62	9.00	To be Retained
116	R25	Rose Wood	0.36	6.00	To be Retained
117	R26	Rose Wood	0.88	6.50	To be Retained
118	R27	Rose Wood	0.88	7.00	To be Retained
119	R28	Rose Wood	0.78	5.50	To be Retained

<b>No. of Trees Enumerated</b>	<b>119 Nos</b>
<b>No. of trees recommended for Retention</b>	<b>28 Nos</b>
<b>No. of trees recommended for Translocation</b>	<b>52 Nos</b>
<b>No. of trees recommended for Felling</b>	<b>39 Nos</b>
<b>Total No. of Trees</b>	<b>119 Nos</b>




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## List of Tress at Benniganahalli Tank Bund

### Trees Recommended to Retain at Site

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
1	R1	Hole Dasawala	0.67	4.00	It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers in this plant bloom only once in a year at the peak of summer.	On the day of field visit on 15.09.2020 the TEC observed these 26 rose wood trees , 01 Hole dasawala and 01 spathodia were found abutting the boundary of the project alignment. Considering the ecological services and economical value these trees, specifically rose wood these trees are identified for Retention.( These recommendations are in reference to the 20 point working procedure or methodology submitted by TEC to the Hon'ble High Court of Karnataka) 
2	R2	Rose Wood	0.90	5.60	<i>Dalbergia latifolia</i> (synonym <i>Dalbergia emarginata</i> ) is a premier timber species, also known as the Indian rosewood. Some common names in English include rosewood, Bombay blackwood, roseta rosewood, East Indian rosewood, reddish-brown rosewood, Indian palisandre, and Java palisandre. The tree has grey bark that peels in long fibres, pinnately compound leaves, and bunches of small white flowers. It grows as both an evergreen and a deciduous tree in the deciduous monsoon forests of India making the tree very drought hardy.	
3	R3	Rose Wood	0.88	7.50		
4	R4	Rose Wood	0.83	8.60		
5	R5	Rose Wood	0.69	6.00		
6	R6	Rose Wood	0.72	5.00		
7	R7	Rose Wood	0.67	4.50		
8	R8	Rose Wood	0.60	7.00		
9	R9	Rose Wood	0.84	8.00		
10	R10	Rose Wood	1.04	9.00		
11	R11	Rose Wood	0.67	8.00		
12	R12	Rose Wood	0.80	7.50		
13	R13	Rose Wood	0.76	6.50		
14	R14	Rose Wood	0.63	5.50		
15	R15	Rose Wood	0.77	5.00		

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Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
16	R16	Spathodia	1.45	10.00	<i>Spathodea campanulata</i> , is commonly known as the African tulip tree,fountain tree, pichkari or Nandi flame. The tree grows between 7–25 m (23–82 ft) tall and is native to tropical dry forests of Africa. It has been nominated as among 100 of the "World's Worst" invaders. This tree is planted extensively as an ornamental tree throughout the tropics and is much appreciated for its very showy reddish-orange or crimson (rarely yellow), campanulate flowers.	
17	R17	Rose Wood	0.60	6.50	<i>Dalbergia latifolia</i> is a medium to large deciduous tree with a light crown which reproduces by seeds and suckers. It can grow up to a maximum of 25 m (82 ft) in height and 2 to 3 m (6 ft 7 in to 9 ft 10 in) in diameter, but is usually smaller. Trunks are often crooked when grown in the open.. Shisham is the best known economic timber species of the rosewood genus sold internationally, but it is also used as fuel wood and for shade and shelter	
18	R18	Rose Wood	0.61	5.00		
19	R19	Rose Wood	0.71	5.50		
20	R20	Rose Wood	0.61	5.00		
21	R21	Rose Wood	0.68	6.00		
22	R22	Rose Wood	0.67	8.00		
23	R23	Rose Wood	0.77	7.00		
24	R24	Rose Wood	0.62	9.00		
25	R25	Rose Wood	0.36	6.00		
26	R26	Rose Wood	0.88	6.50		
27	R27	Rose Wood	0.88	7.00		
28	R28	Rose Wood	0.78	5.50		

*[Signatures]*



## List of Tress at Benniganahalli Tank Bund

### Trees recommended for Translocation

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
1	01	Akasha mallige	1.25	7.50	<i>Millingtonia hortensis</i> , the tree jasmine or Indian cork tree, is the sole species in the genus Millingtonia, is a tree native to South Asia & South East Asia. The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. he wood is also used as timber and the bark is used as an inferior substitute for cork	<p>* In this site the identified trees for translocation are of different species with different girth size and found healthy , having availability of suitable rootball size for excavation. There is no alternative other than translocation to save these trees as these trees are falling within project alignment. (These recommendations are in reference to the 20 point working procedure and methodology submitted by TEC to the Hon'ble High Court of Karnataka) .</p> <p>* Regarding translocation of trees, the sites identified are on Benaganahalli-HAL Road and in the premises of K.R.Puram Metro Station. These sites have been inspected by TEC. Soil analysis reports were also produced for persual of TEC, translocation of trees can be done in these areas. The recommendations as suggested by GKVK and TEC during the course of translocation activity have to be followed by BMRCL</p> <div></div>
2	02	Akasha mallige	0.85	7.60		
3	03	Neem Tree	0.82	1.50	Neem is a fast-growing tree that can reach a height of 15–20 metres (49–66 ft), and rarely 35–40 metres (115–131 ft). It is evergreen, but in severe drought it may shed most or nearly all of its leaves. The branches are wide and spreading. The fairly dense crown is roundish and may reach a diameter of 20–25 metres (66–82 ft). The flowers (white and fragrant) are arranged in more-or-less drooping axillary panicles which are up to 25 centimetres (9.8 in) long. The fruit is a smooth (glabrous), olive-like drupe which varies in shape from elongate oval to nearly roundish.	
4	05	Hole dasavala	0.49	2.50	It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers in this plant blooms only once in a year at the peak of summer.	
5	06	Banyan Tree	2.00	4.00	<i>Ficus benghalensis</i> is a large, evergreen to deciduous tree, up to 20 (-25) m tall, with wide leafy crown and branches spreading up to 100 m or more with pillar-like prop roots and accessory trunks. Trunk massive, fluted, bark grey, smooth, young softly white puberulous. F. benghalensis grows from low altitudes to 600 metres principally in monsoon and rain forests.	
6	07	Hole dasavala	0.52	3.10	It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers in this plant blooms only once in a year at the peak of summer.	
7	08	Hole dasavala	0.67	2.10		
8	09	Bagane tree	1.10	5.80	<i>Caryota urens</i> is a species of flowering plant in the palm family, native to Sri Lanka, India, Myanmar and Malaysia, where they grow in fields and rainforest clearings, it is regarded as introduced in Cambodia. The epithet urens is Latin for "stinging" alluding to the chemicals in the fruit	
9	12	Bagane tree	0.65	3.00		
10	13	Hole dasavala	0.82	4.60	It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers in this plant blooms only once in a year at the peak of summer.	

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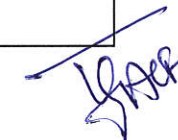


## List of Tress at Benniganahalli Tank Bund

### Trees recommended for Translocation

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
11	14	Jamun Tree( Nerale)	0.55	4.10	<i>Syzygium cumini</i> , commonly known as Malabar plum, Java plum, black plum, or jambolan, is an evergreen tropical tree in the flowering plant family Myrtaceae, and favored for its fruit, timber, and ornamental value. The leaves which have an aroma similar to turpentine. The leaves are used as food for livestock, as they have good nutritional value.	
12	15	Hole dasavala	0.95	6.10	It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers in this plant blooms only once in a year at the peak of summer.	
13	18	Kari jali Tree	0.92	4.30	<i>Acacia nilotica</i> is a tree 5–20 m high with a dense spheric crown, stems and branches usually dark to black coloured, fissured bark, grey-pinkish slash, exuding a reddish low quality gum. The tree has thin, straight, light, grey spines in axillary pairs, usually in 3 to 12 pairs, 5 to 7.5 cm (3 in) long in young trees, mature trees commonly without thorns.	
14	19	Hole dasavala	0.69	5.00	It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers in this plant blooms only once in a year at the peak of summer.	
15	21	Rain Tree	0.48	7.30	Rain tree is a wide-canopied tree with a large symmetrical umbrella-shaped crown. It usually reaches a height of 15–25 m (49–82 ft) and a diameter of 30 m (98 ft). The tree has pinkish flowers. Rain trees usually have a short, stout trunk of about 1–2 m (3–6.5 ft) in diameter at breast height (dbh), but the Trunk can attain 2–3 m (6.5–10 ft) dbh in exceptional cases	
16	22	Akasha mallige	0.36	4.60	<i>Millingtonia hortensis</i> , the tree jasmine or Indian cork tree, is the sole species in the genus Millingtonia. The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. The wood is also used as timber and the bark is used as an inferior substitute for cork	
17	23	Akasha mallige	1.15	7.10		
18	44 (A),(B)	Akasha mallige	0.60	3.20		





## List of Tress at Benniganahalli Tank Bund

### Trees recommended for Translocation

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
19	45 (A),(B)	Hole dasavala	0.30	2.80	<i>Lagerstroemia speciosa</i> (giant crepe-myrtle, Queen's crepe-myrtle, banabá plant for Philippines, or pride of India) is a species of Lagerstroemia native to tropical southern Asia. It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers in this plant blooms only once in a year at the peak of summer.	
20	46	Dalichandra	0.68	5.20	<i>Dolichandra unguis-cati</i> has semipersistent foliage. Stems are woody and can reach 20 metres (66 ft). Thin and small aerial roots are used for climbing. Leaves are dark green, opposite and bifoliate. Leaflets have a length of 3 to 4 cm (1.2 to 1.6 in).	
21	47	Honge	0.69	3.50	<i>Pongamia pinnata</i> , also known as Karanja or Indian beech, has been useful in traditional medicine for centuries. The root, stem, leaf, fruit, seed, oil, bark, and flower are used to treat many ailments, ranging from mild colds to tumors. The tree grows in tropical and sub-tropical regions all over the world. This angiosperm grows to be anywhere between 30 and 75 feet tall but the trunk is typically short. The leaves are evergreen and occur in fives, sevens, or nines. Pongam flowers range from white to pink to purple and seeds range from 10 to 15 cm long	
22	48	Avalanda	0.66	5.90	<i>Handroanthus impetiginosus</i> is the scientific name of Tabebuia avellanedae. It has a large, globus, but often sparse canopy. The tree has a slow growth rate. The flower is large, tubular shaped, its corolla is often pink or magenta, though exceptionally seen white, about 2 inches long.	
23	49	Hole dasavala	0.50	5.30	It is a small to medium-sized tree growing to 20 metres (66 ft) tall, with smooth, flaky bark. The leaves are deciduous, oval to elliptic, 8–15 cm (3.1–5.9 in) long and 3–7 cm (1.2–2.8 in) broad, with an acute apex. The flowers are produced in erect panicles 20–40 cm (7.9–15.7 in) long, each flower with six white to purple petals 2–3.5 cm (0.79–1.38 in) long. The flowers in this plant blooms only once in a year at the peak of summer.	
24	58	Akasha mallige	0.22	2.5	<i>Millingtonia hortensis</i> , the tree jasmine or Indian cork tree, is the sole species in the genus Millingtonia. The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. The wood is also used as timber and the bark is used as an inferior substitute for cork	

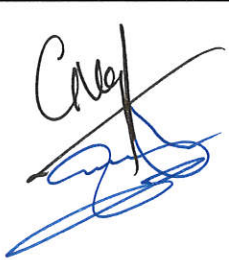


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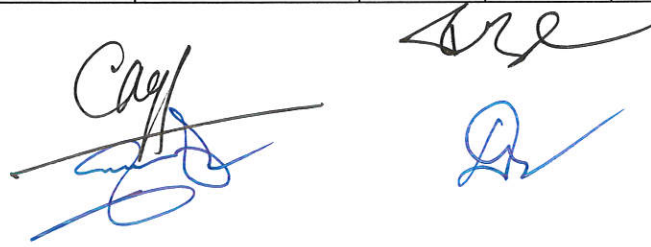
List of Tress at Benniganahalli Tank Bund						
Trees recommended for Translocation						
Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
25	61	Rose Wood Tree	0.70	8.00	<p><i>Dalbergia latifolia</i> (synonym <u><i>Dalbergia emarginata</i></u>) is a premier timber species, also known as the Indian rosewood. Some common names in English include rosewood, Bombay blackwood, roseta rosewood, East Indian rosewood, reddish-brown rosewood, Indian palisandre, and Java palisandre. The tree has grey bark that peels in long fibres, pinnately compound leaves, and bunches of small white flowers. It grows as both an evergreen and a deciduous tree in the deciduous monsoon forests of India making the tree very drought hardy.</p>	
26	62	Rose Wood Tree	0.74	7.00		
27	63	Rose Wood Tree	0.90	10.00		
28	64	Rose Wood Tree	0.50	4.00		
29	65	Rose Wood Tree	0.75	8.00		
30	66	Rose Wood Tree	0.85	8.00		
31	67	Rose Wood Tree	0.70	8.00		
32	68	Rose Wood Tree	0.75	8.00		
33	69	Rose Wood Tree	0.70	8.00		
34	70	Rose Wood Tree	1.10	8.00		
35	71	Rose Wood Tree	0.65	11.00		
36	72	Rose Wood Tree	0.80	7.00		
37	74	Rose Wood Tree	0.69	8.00		
38	75	Rose Wood Tree	0.70	7.00		
39	76	Rose Wood Tree	0.58	7.00		
40	77	Rose Wood Tree	0.60	6.00		
41	78	Rose Wood Tree	0.57	4.00		
42	80	Rose Wood Tree	0.70	7.00		
43	81	Rose Wood Tree	0.57	4.00		
44	82	Rose Wood Tree	0.40	3.50		
45	83	Rose Wood Tree	0.58	6.00		
46	84	Rose Wood Tree	0.59	6.00		
47	85	Rose Wood Tree	0.75	8.00		
48	86	Rose Wood Tree	0.64	8.00		
49	88	Rose Wood Tree	0.47	4.00		
50	89 (A)	Rose Wood Tree	0.53	6.00		
	(B)	Rose Wood Tree	0.63	6.00		
51	90	Rose Wood Tree	0.65	9.00		
52	91	Rose Wood Tree	0.77	8.00		

### List of Tress at Benniganahalli Tank Bund

#### Trees Recommended for felling

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
1	4 (A),(B), (C),(D),(E),(F)	Peepal Tree	1.05	7.3	<i>Ficus religiosa</i> is a large dry season-deciduous or semi-evergreen tree up to 30 metres (98 ft) tall and with a trunk diameter of up to 3 metres (9.8 ft). The leaves are cordate in shape with a distinctive extended drip tip. F. religiosa has a very long lifespan, ranging on average between 900 and 1,500 years. In some of its native habitats, it has been reportedly found living for over 3,000 years. Ficus religiosa suitably grows at altitudes ranging from 10 metres (33 ft) up to 1,520 metres (4,990 ft). Due to the climatic conditions which are prevalent throughout different heat zones, it can grow at latitudes ranging from 30°N to 5°S	<p>Felling of these trees was decided as a last resort , as these trees are falling with in the project alignment and they were exhibiting various symptomatic parameters which made them un-fit for translocation. The various parameters include major wounds on the trunk, debarking, physical damage on the bark, scar due to fire, damage(girding) due to constrictions by asphaltting and concrete/cement pavements and other pest infestation.( These recommendations are in reference to the 20 point working procedure and methodology submitted by TEC to the Hon'ble High Court of Karnataka)</p> 
2	10	Bagane tree	0.66	3.9	<i>Caryota urens</i> is a species of flowering plant in the palm family, native to Sri Lanka, India, Myanmar and Malaysia (perhaps elsewhere in Indo-Malayan region), where they grow in fields and rainforest clearings, it is regarded as introduced in Cambodia. The epithet urens is Latin for "stinging" alluding to the chemicals in the fruit. Common names in English include solitary fishtail palm, kitul palm, toddy palm, wine palm, sago palm and jaggery palm	
3	11 (A) & 11 (B)	<u>Caesalpinia Pulcherrima</u>	0.3	3.8	It is a shrub growing to 3 m tall. In climates with few to no frosts, this plant will grow larger and is semievergreen. In Hawaii this plant is evergreen and grows over 5 m tall. Grown in climates with light to moderate freezing, plant will die back to the ground depending on cold, but will rebound in mid- to late spring.	
4	16	Tabebuia avellanedae	0.3	3.5	The pink lapacho is a rather large deciduous tree, with trunks sometimes reaching 8 dm width and 30 m height. Usually a third of that height is trunk, and two thirds are its longer branches. It has a large, globous, but often sparse canopy. The tree has a slow growth rate. Leaves are opposite and petiolate, 2 to 3 inches long, elliptic and lanceolate, with lightly serrated margins and pinnate venation. The leaves are palmately compound with usually 5 leaflets.	
5	17	Tabebuia avellanedae	0.36	3.5		
6	20	Spathodea Tree	1.8	6	<i>Spathodea campanulata</i> , is commonly known as the African tulip tree, fountain tree, pichkari or Nandi flame. The tree grows between 7–25 m (23–82 ft) tall and is native to tropical dry forests of Africa. It has been nominated as among 100 of the "World's Worst" invaders. This tree is planted extensively as an ornamental tree throughout the tropics and is much appreciated for its very showy reddish-orange or crimson (rarely yellow), campanulate flowers.	
7	24	Rain Tree	1.6	7.3	Rain tree is a wide-canopied tree with a large symmetrical umbrella-shaped crown. It usually reaches a height of 15–25 m (49–82 ft) and a diameter of 30 m (98 ft). The tree has pinkish flowers. Rain trees usually have a short, stout trunk of about 1–2 m (3–6.5 ft) in diameter at breast height (dbh), but the Trunk can attain 2–3 m (6.5–10 ft) dbh in exceptional cases	
8	25	Akash mallige	0.75	6.9	The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. he wood is also used as timber and the bark is used as an inferior substitute for cork	
9	26	Akash mallige	0.68	6.4		





### List of Tress at Benniganahalli Tank Bund

#### Trees Recommended for felling

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
10	27	Jungle Wood Tree	0.55	6.5	<i>Bauhinia racemos a</i> , commonly known as the Bidi leaf tree is a rare medicinal species of flowering shrub with religious significance. It is a small crooked tree with drooping branches that grows 3–5 metres (10–16 ft) tall and flowers between February and May. he leaves are used in the production of beedi, a thin Indian cigarette	
11	28	Akash mallige	0.57	6.2	The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. he wood is also used as timber and the bark is used as an inferior substitute for cork	
12	29 (A), (B),( C)	<u>Peltoforum</u> Pterocarpum Tree	0.7	7.1	It is a deciduous tree growing to 15–25 m (rarely up to 50 m) tall, with a trunk diameter of up to 1 m belonging to Family Leguminosae and sub-family Caesalpiniaceaea. The leaves are bipinnate, 30–60 cm long, with 16–20 pinnae, each pinna with 20–40 oval leaflets 8–25 mm long and 4–10 mm broad. The wood has a wide variety of uses, including cabinet-making[7] and the foliage is used as a fodder crop.	
13	30	Subabul Tree	0.9	7.1	<i>Leucaena leucocephal a</i> is a small fast-growing mimosoid tree native to southern Mexico and northern Central America (Belize and Guatemala) and is now naturalized throughout the tropics. it was promoted as a "miracle tree" for its multiple uses It has also been described as a "conflict tree" because it is used for forage production but spreads like a weed in some places.	
14	31 (A), (B)	Akash mallige	0.65	6.7	The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. he wood is also used as timber and the bark is used as an inferior substitute for cork	
15	32 (A), (B)	Akash mallige	0.4	6.3		
16	33	Subabul Tree	0.92	6.2	<i>Leucaena leucocephala</i> is a small fast-growing mimosoid tree native to southern Mexico and northern Central America (Belize and Guatemala) and is now naturalized throughout the tropics. it was promoted as a "miracle tree" for its multiple uses It has also been described as a "conflict tree" because it is used for forage production but spreads like a weed in some places.	
17	34	Akash mallige	0.38	4.3	The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. he wood is also used as timber and the bark is used as an inferior substitute for cork	

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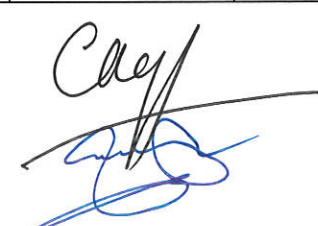
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# List of Tress at Benniganahalli Tank Bund

## Trees Recommended for felling

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
18	35	Subabul Tree	0.41	3.9	<i>Leucaena leucocephala</i> is a small fast-growing mimosoid tree native to southern Mexico and northern Central America (Belize and Guatemala) and is now naturalized throughout the tropics. it was promoted as a "miracle tree" for its multiple uses It has also been described as a "conflict tree" because it is used for forage production but spreads like a weed in some places.	
19	36	Subabul Tree	0.82	4.9		
20	37	Rain Tree	1.4	5.7	Rain tree is a wide-canopied tree with a large symmetrical umbrella-shaped crown. It usually reaches a height of 15–25 m (49–82 ft) and a diameter of 30 m (98 ft). The tree has pinkish flowers. Rain trees usually have a short, stout trunk of about 1–2 m (3–6.5 ft) in diameter at breast height (dbh), but the Trunk can attain 2–3 m (6.5–10 ft) dbh in exceptional cases	
21	38	Subabul Tree	0.5	4.8	<i>Leucaena leucocephala</i> is a small fast-growing mimosoid tree native to southern Mexico and northern Central America (Belize and Guatemala) and is now naturalized throughout the tropics. it was promoted as a "miracle tree" for its multiple uses It has also been described as a "conflict tree" because it is used for forage production but spreads like a weed in some places.	
22	39	Subabul Tree	0.55	3.9		
23	40 (A), (B)	Banyan Tree	0.55	4.1	<i>F. benghalensis</i> is a large, evergreen to deciduous tree, up to 20 (-25) m tall, with wide leafy crown and branches spreading up to 100 m or more with pillar-like prop roots and accessory trunks. Trunk massive, fluted, bark grey, smooth, young softly white puberulous. F. benghalensis grows from low altitudes to 600 metres principally in monsoon and rain forests.	
24	41	Subabul Tree	0.6	6.9	<i>Leucaena leucocephala</i> is a small fast-growing mimosoid tree native to southern Mexico and northern Central America (Belize and Guatemala) and is now naturalized throughout the tropics. it was promoted as a "miracle tree" for its multiple uses It has also been described as a "conflict tree" because it is used for forage production but spreads like a weed in some places.	
25	42 (A), (B), (C), (D)	Subabul Tree	0.9	6.8		
26	43	Subabul Tree	0.38	4.8		
27	50 (A), (B)	Bili Kanagalu	0.34	1	<i>Couroupita guianensis</i> is a tree that reaches heights of up to 35 metres (110 ft).The leaves, which occur in clusters at the ends of branches, are usually 8 to 31 centimeters (3 to 12 inches) long, but can reach lengths of up to 57 centimeters (22 inches).The flowers are born in racemes up to 80 centimeters (31 inches) long. Some trees flower profusely until the entire trunk is covered with racemes. One tree can hold as many as 1000 flowers per day.	
28	51	<del>Tabebuia</del> Avellaneda	0.36	2.5	The pink lapacho is a rather large deciduous tree, with trunks sometimes reaching 8 dm width and 30 m height. Usually a third of that height is trunk, and two thirds are its longer branches. It has a large, globous, but often sparse canopy. The tree has a slow growth rate. Leaves are opposite and petiolate, 2 to 3 inches long, elliptic and lanceolate, with lightly serrated margins and pinnate venation. The leaves are palmately compound with usually 5 leaflets.	
29	52	Bougainvillea Tree	0.46	2.5	Bougainvillea (/ˌbuːɡɪnˈvɪliə/ or /ˌboʊɡɪnˈvɪliə/) is a genus of thorny ornamental vines, bushes, or trees. It is native to Eastern South America, from Brazil, west to Peru, and south to southern Argentina. Different authors accept from four to 18 species in the genus. The inflorescence consists of large colourful sepal-like bracts which surround three simple waxy flowers.	









### List of Tress at Benniganahalli Tank Bund

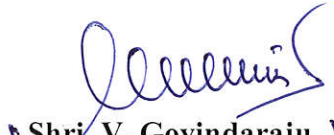
#### Trees Recommended for felling

Sl. No.	Tree No.	Tree Name	Tree Girth in m	Height in m	Species Characteristics	Committee Remarks
30	53	Bili Kanagalu	0.38	1.5	<i>Couroupita guianensis</i> is a tree that reaches heights of up to 35 metres (110 ft). The leaves, which occur in clusters at the ends of branches, are usually 8 to 31 centimeters (3 to 12 inches) long, but can reach lengths of up to 57 centimeters (22 inches).The flowers are born in racemes up to 80 centimeters (31 inches) long. Some trees flower profusely until the entire trunk is covered with racemes. One tree can hold as many as 1000 flowers per day.	
31	54	Akash mallige	0.25	3	The tree grows to height of between 18 and 25 metres and has a spread of 7 to 11 metres. It reaches maturity between 6 and 8 years of age and lives for up to 40 years. It is a versatile tree which can grow in various soil types and climates with a preference for moist climates. The tree is evergreen and has an elongated pyramidal stem. The soft, yellowish-white wood is brittle and can break under strong gusts of wind. he wood is also used as timber and the bark is used as an inferior substitute for cork	
32	55	Subabul	0.71	4	<i>Leucaena leucocephala</i> is a small fast-growing mimosoid tree native to southern Mexico and northern Central America (Belize and Guatemala) and is now naturalized throughout the tropics. it was promoted as a "miracle tree" for its multiple uses It has also been described as a "conflict tree" because it is used for forage production but spreads like a weed in some places.	
33	56	Subabul	0.53	4		
34	57	Subabul	0.6	4		
35	59 (A), (B)	Kari jaali Tree	0.25	2	<i>Acacia nilotica</i> is a tree 5–20 m high with a dense spheric crown, stems and branches usually dark to black coloured, fissured bark, grey-pinkish slash, exuding a reddish low quality gum. The tree has thin, straight, light, grey spines in axillary pairs, usually in 3 to 12 pairs, 5 to 7.5 cm (3 in) long in young trees, mature trees commonly without thorns.	
36	60 (A), (B)	Kari jaali Tree	0.24	2		
37	73	Rose Wood Tree	0.78	7	<i>Dalbergia latifolia</i> (synonym <i>Dalbergia emarginata</i> ) is a premier timber species, also known as the Indian rosewood.Some common names in English include rosewood, Bombay blackwood, roseta rosewood, East Indian rosewood, reddish-brown rosewood, Indian palisandre, and Java palisandre.The tree has grey bark that peels in long fibres, pinnately compound leaves, and bunches of small white flowers. It grows as both an evergreen and a deciduous tree in the deciduous monsoon forests of India making the tree very drought hardy.	
38	79	Rose Wood Tree	0.47	3		
39	87	Rose Wood Tree	0.44	4		

  
Prof. C. Nagarajiah  
(Member, TEC)

  
Dr. Muthu Kumar Arunachalam  
(Member, TEC)

  
Prof. R. Krishna Murthy  
(Member, TEC)

  
Shri. V. Govindaraju  
(Member Secretary and ACF, BBMP)

Shri I.B. Srivastava, IFS (Rtd).  
Chairman, TEC



## BRUHAT BANGALORE MAHANAGARA PALIKE

No: ACF//PR. 16 /2020-21

Encls: 24 pages.

Office of the  
Assistant Conservator of Forests  
Bruhat Bangalore Mahanagara Palike  
N.R.Square Annex Building-3  
Bengaluru, dated: 15.10.2020

To,

The Deputy Conservator of Forests  
Bangalore Urban Division,  
Bengaluru.

Sir,

**Sub: Proceedings of the Tree Expert Committee meeting held  
on 14.10.2020 Reg.**

Please find enclosed herewith the copy of the proceedings along with Field Inspection reports of the Tree Expert Committee meeting held on 14.10.2020, with a request to take necessary action pertaining to your jurisdiction as per the direction by the Tree Expert Committee in the proceedings.

Also, in this regard, action may be taken to upload the documents in the website of BBMP as per the directions of the Hon'ble High Court of Karnataka vide its order dated 04.03.2020.



Yours faithfully

  
Member Secretary and  
Assistant Conservator of Forests  
BBMP  


Copy to:

1. The Chairman, Tree Expert Committee.
2. Respected members of Tree Expert Committee.



**UNIVERSITY OF AGRICULTURAL SCIENCES GKVK, BANGALORE**  
**DEPARTMENT OF SOIL SCIENCE AND AGRICULTURAL CHEMISTRY**

SS&AC/ /2020-21

20-08-2020

To,

SHRI COL ATUL KLSHRESTHA  
ENGINEER- R1A/BMRC  
KRISHNAPALYA ROAD , NEAR ESI LOCAL OFFICE  
OLD NGEF FACTORY MAIN ROAD  
BAIYAPANAHALLI, BANGALORE-38

Sir,

Sub: Analytical result of five soil samples .....reg

Ref: DR/ STA/TT -105/ 2020-21

dt:-18-08-2020

Please find here with the analytical results of five soil samples provided by you (**BMRCCL/Dy.CE/R1A/ph-II/ TREES/2020/3987**) for analysis in the Dept. of Soil Science and Agricultural Chemistry, College of Agriculture, GKVK, Bangalore-65

**Soil samples**

Parameters	14 Present location Benaganahalli lake	15 Proposed location Benaganahalli hal road	16 Proposed location K r puram station
pH (1:2.5)	8.3	7.6	7.90
Electrical conductivity (dS/m)(1: 2.5)	0.68	0.05	0.36
Organic carbon (%)	0.39	0.39	0.20
Nitrogen( kg ha <sup>-1</sup> )	213.2	351.2	200.7
Phosphorus ( kg ha <sup>-1</sup> )	29.68	10.39	11.38
Potassium( kg ha <sup>-1</sup> )	364.5	151.5	282.0
Calcium (meq/100 g)	10.0	5.00	11.8
Magnesium ( meq/100 g)	2.80	1.00	2.70
Sulphur (ppm)	9.44	8.51	8.75
Iron (ppm)	2.98	4.69	4.00
Manganese (ppm)	1.64	2.11	2.75
Zinc (ppm)	0.28	0.31	0.47
Copper (ppm)	0.16	0.28	0.30
Boron (ppm)	0.06	0.29	0.06

**Inference:** The three soil samples provided for analysis are alkaline in nature, low organic carbon content and contain low to medium quantities of major nutrients (N,P,K as per standards) and all other parameters vary from medium to high range as per standards). Therefore with proper amendment application soil is suitable for tree shifting .


The result should not be utilized for legal / commercial purposes without prior consent of the Director of Research.

Forwarded to  
Director of Research

NO. DR/STA/TT-105/2020-21 dt. 20/8/2020 Yours faithfully

COUNTERSIGNED

  
Director of Research  
University Of Agricultural Sciences  
G.K.V.K Bengaluru-560 065

  
Professor and Head  
Dept. of Soil Science & Agril. Chemistry  
College of Agriculture, U.A.S., G.K.V.K.  
Bangalore - 560 065

UNIVERSITY OF AGRICULTURAL SCIENCES, BANGLORE  
DEPARTMENT OF SOIL SCIENCE AND AGRICULTURAL CHEMISTRY  
COLLEGE OF AGRICULTURE, GKVK CAMPUS

Soil and Irrigation Water Parameters Interpretation  
**Limits of Nutrients in Soil / ಮಣ್ಣಿನಲ್ಲಿನ ಪೋಷಕಾಂಶಗಳ ಮಿತಿಗಳು**

Parameters				
pH	ರಸಸಾರ	<6.5 ಹಳಿ	6.5-8.5 ತಟಸ್ಥ	>8.5 ಕ್ಷಾರ
EC (dS/m)	ವಿದ್ಯುತ್ ವಾಹಕತ್ವ, ಡೆಸಿ, ಸೈಮನ್/ಮೀ	<0.8 ಸಹಜ ಸ್ಥಿತಿ	0.8-1.6	>1.6-2.5 ಹಾನಿಕಾರಕ

Parameters		Low/ಕಡಿಮೆ	Medium/ಮಧ್ಯಮ	High/ಹೆಚ್ಚು
OC(Organic Carbon%)	ಸಾವಯವ ಇಂಗಾಲ (%)	<0.50	0.5 - 0.75	>0.75
Nitrogen (Kg ha <sup>-1</sup> )	ಸಾರಜನಕ (N) ಕೆ.ಜಿ./ಹೆ.	<280	280-560	>560
Phosphorus (Kg ha <sup>-1</sup> )	ರಂಜಕ (P <sub>2</sub> O <sub>5</sub> ) ಕೆ.ಜಿ./ಹೆ.	<22.9	22.9-56.33	>56.33
Potassium (Kg ha <sup>-1</sup> )	ಪೊಟ್ಯಾಶ್ (K <sub>2</sub> O) ಕೆ.ಜಿ./ಹೆ.	<141	141-336	>336
Sulphur (ppm)/mg kg <sup>-1</sup>	ಗಂಧಕ(S) ಪಿ.ಪಿ.ಎಂ	<10	10-20	>20
Iron (ppm)/mg kg <sup>-1</sup>	ಕಬ್ಬಿಣ (Fe) ಪಿ.ಪಿ.ಎಂ	<2.50	2.50-4.50	>4.50
Manganese (ppm)/mg kg <sup>-1</sup>	ಮ್ಯಾಂಗನೀಸ್(Mn) ಪಿ.ಪಿ.ಎಂ	<1.00	1.00-2.00	>2.00
Copper (ppm)/mg kg <sup>-1</sup>	ತಾಮ್ರ(Cu) ಪಿ.ಪಿ.ಎಂ	<0.10	0.10-0.20	>0.20
Zinc (ppm)/mg kg <sup>-1</sup>	ಸತು (Zn) ಪಿ.ಪಿ.ಎಂ	<0.60	0.60-1.00	>1.00
Boron (ppm)/mg kg <sup>-1</sup>	ಬೋರಾನ್ (B) ಪಿ.ಪಿ.ಎಂ	<0.25	0.25-0.50	>0.50

**Irrigation Water Quality Parameters/ ನೀರಾವರಿ ನೀರಿನ ಗುಣಮಟ್ಟ ನಿಯಂತ್ರಕ**

Parameter	Low/ಕಡಿಮೆ	Medium/ಮಧ್ಯಮ	High/ಹೆಚ್ಚು
pH ರಸಸಾರ	<6.5	6.5-7.5	>7.5

**Salinity Classes**

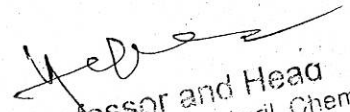
Parameter	Low/ಕಡಿಮೆ (C <sub>1</sub> )	Medium/ಮಧ್ಯಮ (C <sub>2</sub> )	High/ಹೆಚ್ಚು (C <sub>3</sub> )	Very High/ಅತಿ ಹೆಚ್ಚು (C <sub>4</sub> )
EC(dS/M) ವಿದ್ಯುತ್ ವಾಹಕತ್ವ	<0.25	0.25-0.75	0.75-2.25	>2.25
Chlorides(Cl)(ppm)/ಕ್ಲೋರೈಡ್	<2-5	5-12	12-20	>20

**Sodicity Classes**

Parameter	Low/ ಕಡಿಮೆ (S <sub>1</sub> )	Medium/ಮಧ್ಯಮ (S <sub>2</sub> )	High/ಹೆಚ್ಚು (S <sub>3</sub> )	Very High/ ಅತಿ ಹೆಚ್ಚು (S <sub>4</sub> )
SAR(Sodium adsorption ratio) ಸೋಡಿಯಂ ಹೊರಹೀರುವಿಕೆ ಅನುಪಾತ	<10	10-18	18-26	>26

**Bicarbonate (HCO<sub>3</sub>) Classes**

Parameter	Low (RSC <sub>1</sub> ) / ಕಡಿಮೆ	Medium (RSC <sub>2</sub> ) /ಮಧ್ಯಮ	High (RSC <sub>3</sub> ) /ಹೆಚ್ಚು
RSC(Residual Sodium carbonate) ಉಳಿದ ಸೋಡಿಯಂ ಕಾರ್ಬೋನೇಟ್	<1.25	1.25-2.50	>2.50

  
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