DIVERSITY AND ROLES OF AMENITY TREES AT SECRETARIATS' PREMISES IN IBADAN METROPOLIS

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ABSTRACT

This study evaluated the diversity and technical suitability of amenity planting of tree species inside the premises of the secretariats at Ibadan metropolis as well as the users' perception of the trees. The trees in the seven secretariats in the metropolis were enumerated and identified to species level and were assessed for technical suitability for amenity use in work environment using selected attributes. Furthermore, forty questionnaires were administered to randomly selected respondents comprising staff in each secretariat. These questionnaires were used to examine the respondents' perception on the benefits, threat and management of the amenity trees in the selected secretariats. A total of 260 questionnaires were retrieved and 20 were not returned. The data were analysed using descriptive statistics. The highest number of trees was found in the Oyo state secretariat (660 trees) while the lowest was in Ibadan South-West Local Government Secretariat (2 trees). A total of 30 tree species in 17 families were identified in all the secretariats. Tree density of less than one tree per square meter of land was observed for all the secretariats. *Terminalia catappa* was the predominant species found in 5 of the secretariats surveyed and Fabaceae was the most common family with 5 different species found during the study. Moreover, 30.8% identified the trio of cooling the environment, provision of shade and beautification of environment as a group of benefits derived from these trees. Furthermore, 69.6% suggested that more trees should be planted because the benefits outweighed the problems. Based on the traits of the identified trees in the secretariats' premises, appropriate planting sites were recommended as suitable habitats for the trees. The study revealed that both the population and species diversity of trees in all the government secretariats with the exception of state secretariat were quite low. There is therefore a need to increase the population and diversity of the trees that will conform and be suitable for the built landscape of these premises.

Keywords: Amenity trees, tree traits, Secretariats, treescape

INTRODUCTION

The use of trees in urban settings, the knowledge of their growth and maintenance are vital for the success of urban forestry in Nigeria. Amenity trees in cities contribute significantly to human health and environmental quality. They provide multiple benefits such as protection, beautification and comfort to humans through contribution to the physiological, sociological, psychological and economic well-being of the populace (Pauleit and Duhme, 2000; Tyrväinen *et al.*, 2005). Generally, amenity trees often exist in collective masses found within the boundaries of cities, towns or neighbourhoods. It comprises natural woodlands within the urbanized zones, in adjacent suburban or peri-urban areas, parks and reserves, trees along highways, roads, in yards and home gardens, around public buildings, in playgrounds, cemeteries and other public places (Miller, 1997; Wiseman, 2010).

They aid in the mitigation of ecological effects of urban sprawl, improving the living environment in urban areas, attracting tourism, encouraging investment and creating opportunities for training and employment opportunities. Amenity trees have a positive impact on air quality through the deposition of pollutants in the vegetation, sequestration of atmospheric Carbon (IV) Oxide in woody biomass, and reduction of temperature and associated ozone formation (Akbari, 2002; Tyrväinen *et al.*, 2005; Rogers *et al.*, 2012). Socially, they provide shade for relaxation, pedestrians and vehicles; facilities for recreation, meditation and spiritual activities. The trees also have social vocation, playing an essential part in the life of many communities as a place for dialogue deliberation, education and leisure activities (Akbari, 2002; Tyrväinen *et al.*, 2005). Though, trees are planted mainly for greening of the environment, their presence in urban areas has both positive and negative values.

The management of trees should therefore embrace a number of strategies that will enhance beneficial objectives such as timber production, aesthetics, amenity and wildlife conservation, while at the same time limiting the occurrence of hazards (Miller, 1997; Ellison, 2005). Therefore, an integrated citywide approach to planting, care and maintenance of trees in the city is essential to secure multiple environmental and social benefits for urban dwellers (Miller, 1997; Nowak, 2006). The greater the tree cover, the greater their influence on the environment. On the other hand, amenity trees can create problems, especially when they are not properly selected, placed, and managed. Some of the common challenges with such trees are branch and root conflicts with infrastructure and site use as well as accidental tree fall. Errant branches can obstruct roadways, sidewalks, utility lines, signs, and buildings, and roots can heave pavements and infiltrate sewer lines. In addition, trees often drop leaves and litter on cars and sidewalks and have a great potential to harbour unwanted wildlife (Ellison, 2005; Lonsdale, 2000).

In Nigeria, public buildings often have trees planted in them and such present great potential for urban tree management. Unfortunately, these trees are often neglected, without proper management plans thus limiting the potential of the trees to offer inherent benefits and inadvertently making

the trees to become environmental hazards and threat to lives and properties (Lonsdale, 2000); Ajewole and Oladipupo, 2012). Hence, the existence and utilization of amenity trees without periodic assessment may be deleterious to the environment.

A large number of tree species have been adopted for amenity planting in different parts of Nigeria, due to the various characteristics each species possesses. The main challenge is to identify species with desirable characteristics that meet the objectives of the particular amenity planting. These characteristics range from seasonal behaviour (deciduous or evergreen), habitat (exotic or native), height (short, medium, tall or very tall,) crown spread (narrow, medium or wide), growth rate (low, medium or high), desirable traits (attractive foliage colour and shape, showy flowers, interesting tree form, hardiness, longevity or nitrogen fixation), undesirable traits (low crown base, fragile or brittle branches, susceptibility of the top to wind throw, formation of buttress roots, shallow rooting, aggressive searching roots, non-erect or leaning bole, thorns or sharp protrusions along the bole, to mention but a few (Lonsdale, 2000; Rogers *et al.*, 2012).

Tree managers work in a climate of increasing environmental awareness, in which trees are greatly valued and yet potentially hazardous. There is need to reconcile different management objectives, especially on sites (e.g. buildings) where old and perhaps structurally unstable trees are present. As trees age, they increasingly develop features that might compromise their mechanical integrity while providing increasingly diverse wildlife habitats and visual aesthetics.

The federal, state and local government secretariats in Ibadan, Oyo state possess matured established trees, many of which may be older than the premises as they might have been retained during the construction of the buildings. There is therefore the need to investigate the management of amenity trees and the perceptions of people that have regular contact with them. This study identified the types and population of amenity tree species growing within the premises of seven secretariats (1 federal, 1 state and 5 local government headquarters) in Ibadan metropolis. The study further evaluated the suitability of these species as amenity trees and examined the disposition of staff in the seven institutions to the presence of these amenity trees in their work environment.

METHODOLODY
The study areas

The study areas were the Federal, State, and five Local Government Secretariats in Ibadan metropolis. The five local government secretariats were Ibadan North Local Government Secretariat (INLG), Ibadan North-East Local Government Secretariat (INELG), Ibadan North-West Local Government Secretariat (INWLG), Ibadan South-East Local Government Secretariat (ISELG) and Ibadan South-West Local Government (ISWLG) Secretariat. Table 1 presents the location and size of the secretariat premises while Figure 1 is a map showing the secretariats within Ibadan metropolis

Table 1: Location and Size of the Secretariat Premises in Ibadan Metropolis

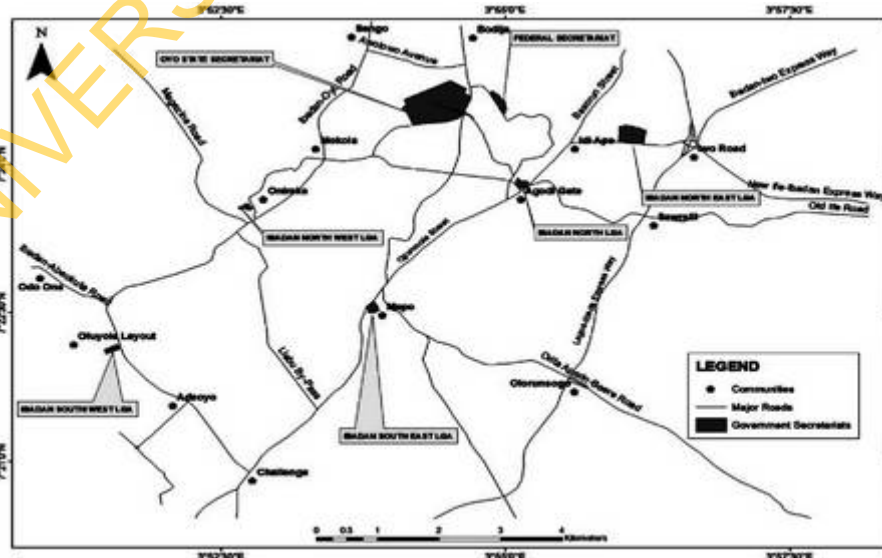| Name	Longitude	Latitude	Area (Km^2)
Oyo state secretariat	3° 54.6′ – 3° 54.72′	7° 24.42′- 7° 24.84′	0.58
Federal secretariat	3° 54.84′ – 3° 55.02′	7° 24.54′- 7° 24.72′	0.05
Ibadan North East	3° 55.98′ – 3° 56.22′	7° 24.18′- 7° 24.42′	0.12
Ibadan South East	3° 53.76′ – 3° 53.88′	7° 22.5′- 7° 22.62′	0.03
Ibadan North West	3° 52.68′ – 3° 52.8′	7° 23.52′- 7° 23.58′	0.01
Ibadan South West	3° 51.48′ – 3° 51.60′	7° 22.08′- 7° 22.20′	0.02
Ibadan North	3° 55.08′ - 3° 55.20′	7° 23.76′- 7° 23.88′	0.02

Figure 1: Map showing the Secretariats within Ibadan Metropolis

Sampling and data collection procedure

The study was carried out in each of the secretariat premises to identify and enumerate tree species, determine the population of tree species and their suitability in their current location. Forty questionnaires were administered to randomly selected staffs in each secretariat. These questionnaires were used to examine the respondents' perception on the benefits, threat and management of the amenity trees in the selected secretariats. A total of 260 questionnaires were retrieved and 20 were not returned. The data were analysed using descriptive statistics.

RESULTS

Tree species and population density in secretariats' premises

The results in Table 2 show that Oyo state secretariat had the highest number of trees (660 trees) while Ibadan South-West Local Government Secretariat had the lowest (2 trees). A total of 30 tree species in 17 families were identified in all the secretariats. *Terminalia catappa, Pinus bungeana* and *Azadicrata indica* respectively accounted for 18.94% 14.70% and 10% of the 660 trees found in the premises of Oyo State secretariat. *Azadicrata indica* accounted for 76.92% of the 13 trees surveyed in Ibadan North East Secretariat while *Senna auriculata* and *Pinus carrribea* accounted for 36.36% and 27.27% respectively of the 22 trees enumerated in Ibadan North West Secretariat. Furthermore, *Azadicrata indica* accounted for 62.5% of the eight (8) trees found in Ibadan South East secretariat while *Magnifera indica* accounted for 56.25% of the trees in the premises of Ibadan North secretariat. *Gmelina arborea* was the predominant species found in the federal secretariat accounting for 30.77% of the 65 trees found in this premises. This was followed by *Elaeis guinensis* which accounted for 15.38% of the trees in the premises. Moreover, *Azadicrata indica, Magnifera indica* and *Terminalia catappa* were the most common species having been found in five of the seven premises studied (Table 2). Results in Table 3 show that none of the secretariats had up to one tree per square metre of land, as revealed in the tree population density in the premises.

Table 2: Overall Species Distribution and Population in the Seven Government Secretariats Located in Ibadan Metropolis

Serial Number	Name of tree	Family	State Secretariat	Ibadan North East	Ibadan North West	Ibadan South West	Ibadan South East	Ibadan North	Federal Secretariat	Total	%
1	*Anacardium occidentalis*	Anacardiaceae	22							22	2.74
2	*Alstonia congensis*	Apocynaceae	1					1		2	0.25
3	*Azardirachta indica*	Meliaceae	66	10	2		5		6	89	11.10
4	*Bauhinia monandra sp*	Fabaceae	3							3	0.37
5	*Blighia sapinda*	Sapindaceae	3							3	0.37
6	*Casuarina equisetifolia*	Casuarinaceae	2							2	0.25
7	*Citrus sinensis*	Rutaceae	11				2	1		14	1.75
8	*Cocos nucifera*	Arecaceae	5							5	0.62
9	*Delonix regia*	Fabaceae	6							6	0.75
10	*Elaeis guineensis*	Arecaceae	44		1	1			10	56	6.98
11	*Eucalyptus sp.*	Myrtaceae							1	1	0.12
12	*Ficus exasperate*	Moraceae	8							8	1.00
13	*Gmelina arborea*	Verbenaceae	12						20	32	3.99
14	*Hura crepitans*	Euphorbiaceae	1							1	0.12
15	*Irvingia wombulu*	Irvingiaceae	1		2					3	0.37
16	*Mangifera indica*	Anacardiaceae	50	1	1			18	8	78	9.73
17	*Morinda lucida*	Rubiaceae	3					1	1	5	0.62
18	*Newbouldia laevis*	Bignoniaceae	2					3		5	0.62
19	*Persea Americana*	Lauraceae	1	1					2	4	0.50
20	*Pinus bungeana*	Pinaceae	97							97	12.09
21	*Pinus carribea*	Pinaceae	17		6					23	2.87
22	*Polyalthia longifolia*	Annonaceae	10			1			8	19	2.37
23	*Psidium guajava*	Myrtaceae	18		1				1	20	2.49
24	*Senna auriculata*	Fabaceae	22		8			7		37	4.61
25	*Senna siamea*	Fabaceae	1				1		4	6	0.75
26	*Senna siberiana*	Fabaceae	18						2	20	2.49
27	*Tectona grandis*	Verbenaceae	57							57	7.11
28	*Terminalia catappa*	Combretaceae	125	1	1			1	2	130	16.21
29	*Terminalia mentalis*	Combretaceae	8							8	1.00
30	*Theobroma cacao*	Sterculiaceae	46							46	5.74
	Total		660	13	22	2	8	32	65	802	100

Table 3: Tree population density in the government secretariats' premises in Ibadan Metropolis

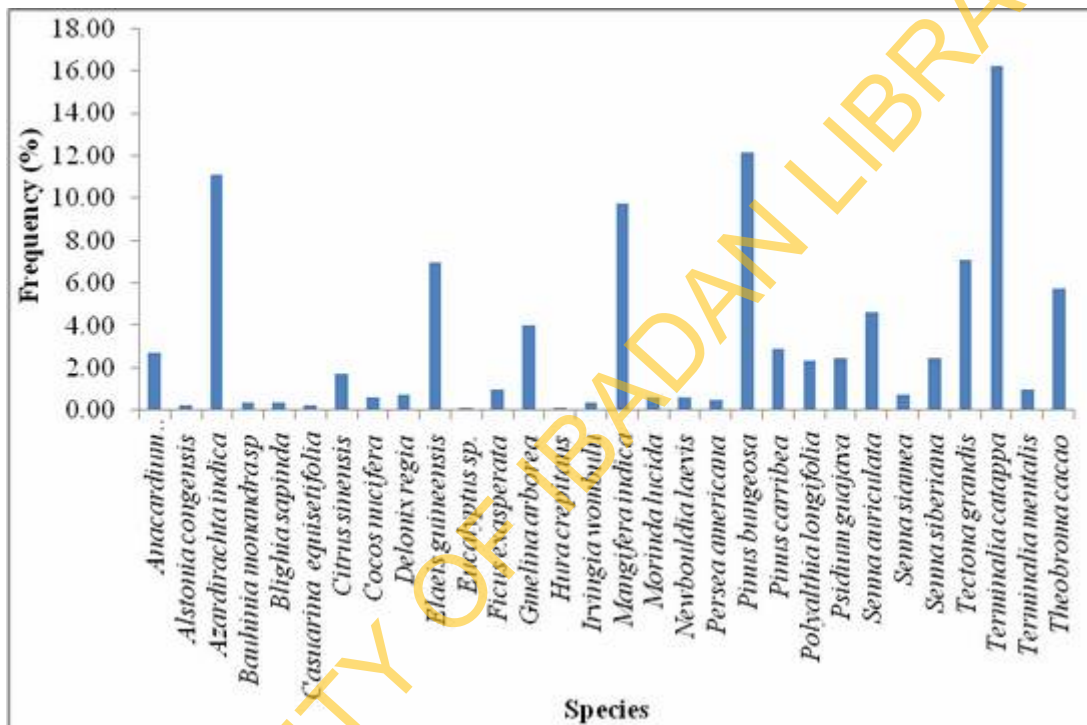| Name of Secretariat	Area (m^2)	Tree population	Tree population density
Oyo state secretariat	580744.78	660	0.001136
Federal secretariat	45051.50	65	0.001443
Ibadan North East	121678.53	13	0.000107
Ibadan South East	27343.53	8	0.000293
Ibadan North West	14669.87	22	0.0015
Ibadan South West	20821.60	2	9.61E-05
Ibadan North	22246.66	32	0.001438

Fig 2: Species distribution and population in secretariats' premises in Ibadan Metropolis

Work experience and perception of staff members

A significant number of workers interviewed had 10 to 19 years (42.3%) work experience while only 4.6% were in the >30 years category (Fig.3). The number of years of experience of workers may limit their knowledge on the history of trees in the secretariats. Most of the workers had a positive disposition to the presence of trees in their work environment (88.8%), with only 11.2% having a negative disposition.

It can be observed in Figure 4 that 30.8% identified the trio of cooling of environment, provision of shading and beautification as the bundle of benefits derivable from trees in the secretariats' premises, while 12.7% identified another bundle comprising cooling of environment, provision of shading and beautification as well as provision of fruits and medicine as benefits derivable from these trees. Results in Figure 5 show that when the bundles of benefits are disaggregated, cooling the environment/reduction in the temperature ranked highest in all the secretariats with the exception of the State and Ibadan South East secretariats where beautification ranked highest as benefit derivable from the trees in the premises. Be that as it may, cooling the environment was still the most prominent benefits derivable from trees in the secretariats as indicated by 28.73% of the respondents, followed by beautification (26.73%) and provision of shade (24.25%).

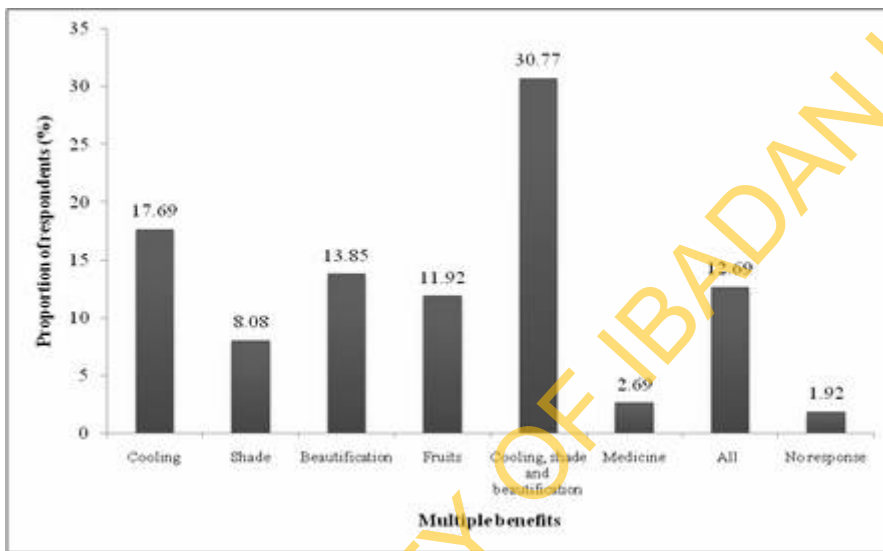**Fig. 3: Work experience of respondents in all the secretariats**

Fig. 4: Multiple benefits derived from trees in all the secretariats
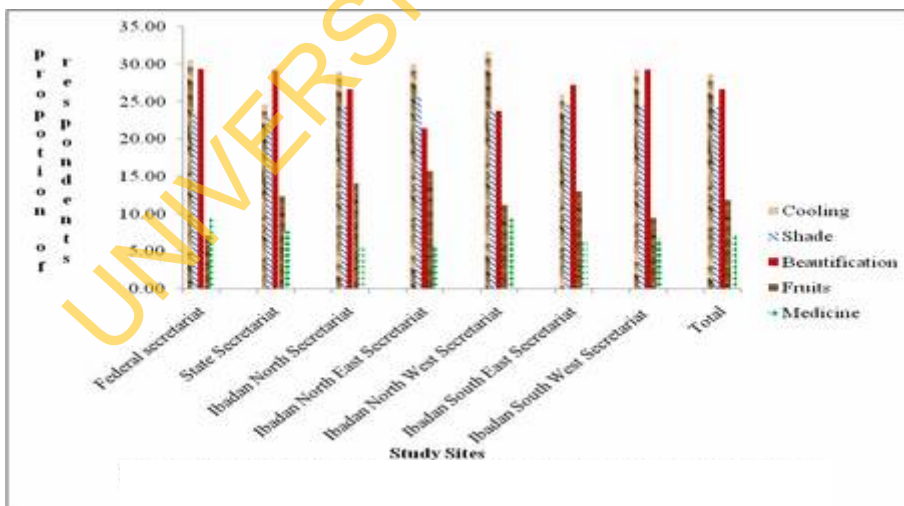

Fig. 5: Percentage Distribution of Derived Benefits from Amenity Trees in Secretariats Premises in Ibadan Metropolis

Respondents' perception of tree hazards

Results in Figure 6 show that 38.05% of the respondents identified littering of the environment with fruits and leaves by the trees as a principal tree hazard in the study areas. The other prominent tree hazard identified by 31.95% of the respondents is the falling of trees during windstorm. Other tree hazards include the fruits breaking the cars' windscreen (11.22%) and the roots causing damages to infrastructure such as the pipes and sewages (11.71%). The frequency of occurrence of these hazards as observed by the respondents are presented in Figure 7, wherein 63.08% of the respondents observed that littering of environment with leaves and fruits was a regular incidence in the premises. Trees falling as a result of windstorm was reported by 43.08% of the respondents to be an occasional incidence, 37.69% observed that trees damage infrastructure occasionally while 36.92% observed that never in the premises had fruits of the trees broken windscreen of cars. The high proportion of the respondents who did not respond to this issue is quite instructive particularly with regards to trees falling as a result of windstorm (32.44%), fruits breaking cars' windscreen (38.08%) and trees' roots damaging infrastructure (36.15%). Non response in a way can be taken as "I don't know" response and if rate of occurrence of these incidences is actually high as observed for littering of environment with fruits and leaves, the non-response will not be that high. Hence the trend of the non-response in this case corroborates the observation that the foregoing tree hazards with the exception of the trees littering the environment with fruits and leaves rarely happen.

Despite these challenges, 69.6% of the respondents suggested that more trees should be planted because the benefits outweighed the problems. The reasons for recommending planting of more trees in the secretariats are presented in Figure 8. The results in the figure can be grouped into two viz. those respondents who presented just one reason and those who presented more than one reason for wanting more trees planted in the secretariats. Beautification of environment (16.58%) ranked highest among the single reasons advanced by the respondents, followed by provision of shade (14.57%) and cooling the environment (14.07%). Provision of fruits (3.52%) and medicine (2.01) expectedly ranked very low among the reasons for wanting more trees planted since the premises are in any way work environment. In terms of multiple reasons, 19.60% wanted more trees planted in the secretariats so that the trees can serve three purposes of cooling the environment, providing shade and beautifying the environment; 17.09% wanted the trees to serve two more purposes of providing fruits and medicine in addition to the three foregoing purposes and lastly, 12.56% wanted more trees planted in the premises to serve a dual purpose of providing shade and fruits.
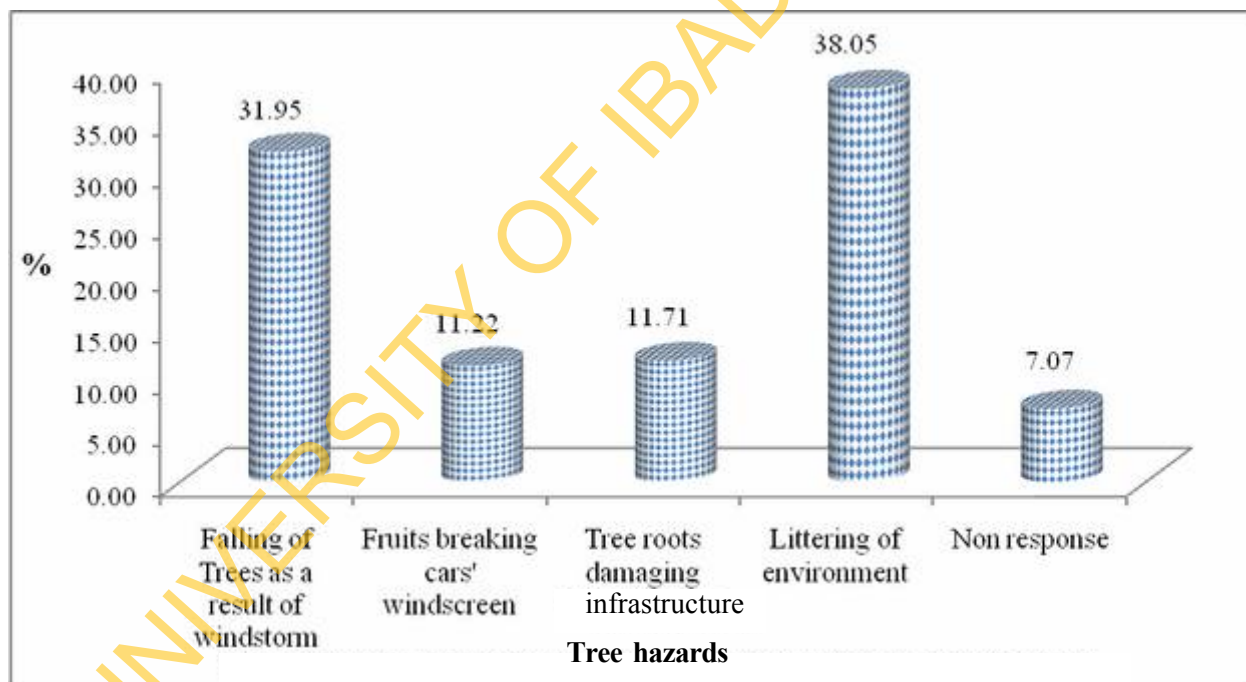

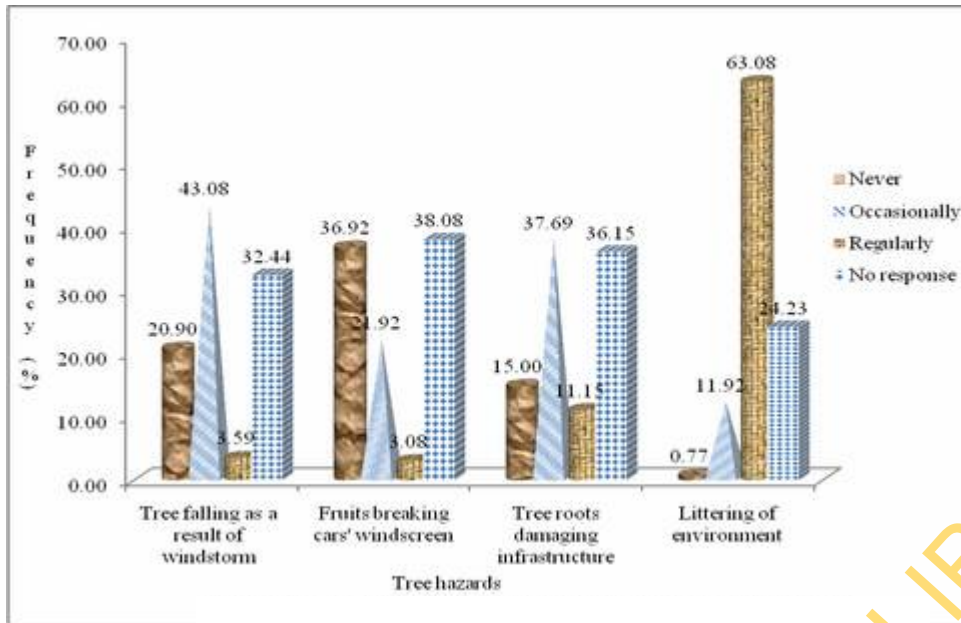**Figure 6: Awareness of occurence of tree hazards in the study areas**

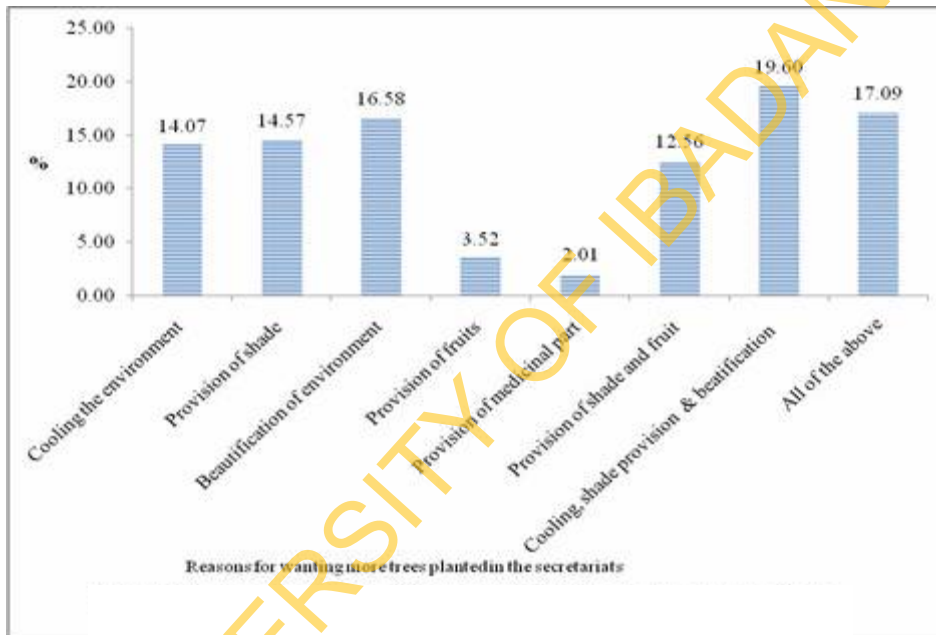**Figure 7: Frequency of occurrence of tree hazards in the study areas**

Figure 8: Frequency of distribution of the reasons for wanting more trees planted in the study areas

Species suitability for amenity planting

This analysis involved the assessment of certain characteristics inherent in each species to determine its suitability for amenity planting. The attributes that were considered include: nature of tree, final height, final crown spread, growth rate, environmental tolerance, fine or interesting leaves, foliage colour or colour change, showy flowers, tree form, shading effect, hardiness or longevity and nitrogen fixation. The undesirable traits on the other hand include: low crown base, fragile or brittle branches, top prone to wind throw, formation of buttress root, shallow roots, aggressive searching roots, non-erect or leaning bole and thorns or sharp protrusions. In Table 4, the foregoing attributes of each identified tree in the study areas were placed on each side of a divide of desirable and undesirable traits. Appropriate sites where trees with such traits can do well and benefit the society optimally without causing damages or injuries are recommended as suitable planting sites. The results in Table 4 show that only 7 out of the 30 or 23% of the species identified in all the secretariats were of native origin, while 63.33% were evergreen. As regards final height of the species, 36.67% and 26.67% of the identified species have the inherent ability to be very tall (greater than 24m) and tall (16-24m) respectively. Furthermore, 16.67% each are short

and medium height tree species respectively. Forty percent of the identified species have wide crowns, 36.67% have medium crown spread while 23.33% have narrow crowns. Seventy percent of the species are fast growing, 26.67% have medium growth rate while only 3.33% is a slow growing species. Also, 70% of the species can survive in multiple and diverse environmental conditions. Thus, 53.33%, 56.67% and

43.33%, can survive drought, infertile and skeletal as well as poorly drained soil respectively, while 36.67%, 26.67%, 20% and 6.67 can withstand strong wind, shade, salt spray and pollution respectively. The results further show that all the trees species surveyed in the study areas possessed one or more traits desirable for amenity purpose while some possessed one or more undesirable traits.

Table 4: Assessment of tree species suitability for amenity planting in secretariats in Ibadan metropolis

Name of tree	Origin	Growth Form	Final Height	Final Spread	Growth Rate	Desirable Traits	Undesirable Traits	Environmental Tolerance	Suitable Habitats
Anacardium occidentalis	E	E	B	B	C	A, B, D E, F	F,	B, C	B, C, D
Alstonia congensis	I	D	D	C	B	B, D, E, F		D	A, B, C, D
Azardirachta indica	E	E	B	C	C	A, B C, D, E, F		A, B, C, D	A, B, C, D, F
Bauhinia monandra	E	D	A	C	C	A, B, C, F	A, G, I	A, B, C, E, F, G	A, B, C, D, F
Blighia sapinda	I	E	D	B	B	B, D, E,, F	D	B, C, E	A, B, C, D
Casuarina equisetifolia	E	E	D	A	C	A, D, E, F, G	I	A, B, C, D, E, F, G	A, B, D, E, F
Citrus sinensis	E	E	B	A	C	D, E	A, H	B, C	A, B, D
Cocos nucifera	E	P	D	B	B	B, C, D, E, F		A,B, C, E, F	B, C, D, E, F
Delonix regia	E	D	C	C	C	A,B,C,D,E, F, G	B,D,E, F	A, B	A,B,D
Elaeis guineensis	E	P	D	C	A	A, D, E, F	-	C, E	A, B
Eucalyptus sp.	E	D/E	D	B	C	E, F	F	A, B, C, F, G	A,B. C. D. E, F
Ficus exasperate	I	D	C	C	C	A, B, E, F	0	A, C, F	A, B, C, D, E
Gmelina arborea	E	D	D	C	C	B, E, F	D, F	B, D	A, B, C, D
Hura crepitans	E	D	D	C	C	B, C, D, E, F	F, H, I	A, B, D, E	B, D
Irvingia wombulu	I	E	D	B	C	A,B, E		A, D	B, D
Mangifera indica	E	E	C	C	C	A, D, E, F,	-	A, E	B,D
Morinda lucida	I	E	A	A	B	C, D		A,B, C, D	B, D, E
Newbouldia laevis	I	E	B	B	B	B, C, D, E			
Persea Americana	E	E	B	A	B	E	A, B, C	D	A, B, D
Pinus bungeosa	E	E	C	B	B	A, D, E	B, C	C	A, B, D
Pinus carribea	E	E	D	A	C	A, D, F	-	C	A,B
Polyalthia longifolia	E	E	C	A	C	A,B, C, D E,H	-	F	A, B
Psidium guajava	E	E	A	A	C	D	A	A, B, C, D, F, G	A, B, C, D
Senna auriculata	E	E	A	B	C	A, B, C, D	A, B, C	A, B, C, D	A, B, C, D
Senna siamea	E	E	C	C	C	A, B, E, F G	E	B,E	D
Senna Sp.	E	E	C	C	C	A, B, E, F G	E	B,E	D
Tectona grandis	E	D	D	B	C	A,B,C,E	E	B	A
Terminalia catappa	E	E	C	C	C	A,B, E, F	D, E	C,F	B, D, E
Terminalia mentalis	E	E		B	C	D	A		
Theobroma cacao	I	D/E	A	B	B	B, D	A, G	D	B, D

KEY TO TABLE 4

I. NATURE/TYPE OF TREES: D=> Deciduous, E=> Evergreen, P =>Palm

II. FINAL HEIGHT: A => <8M (Short), B => 8-16m (Medium), C=>16-24m (Tall), D =>24m (very tall)

III. FINAL CROWN SPREAD: A => (4m (Narrow), B => 4-8m (Medium), C =>8m (Wide)

IV. GROWTH RATE: A => Low, B=> Medium, C=> High.

V. DESIRABLE TRAITS: A => Fine or interesting leaves, B => Foliage colour or colour change, C => Showy flowers, D =>Interesting tree form, E => Good shading effect, F => Hardiness or longevity, G => Nitrogen – fixation, H => Noise Mitigation.

VI. UNDESIRABLE TRAITS: A => Low crown base, B => Fragile or brittle branches, C => Top prone to wind throw, D => Formation of buttress root, E => Shallow roots, F => Aggressive searching roots, G => Non-erect or leaning bole, H => Thorns or sharp protrusions, I= Invasive.

VII. ENVIRONMENTAL TOLERANCE: A=> poorly drained soil, B=> Infertile and skeletal soil, C => Drought, D => Shading, E => Strong wind, F => Salt spray, G => Air pollution

VIII. SUITABLE HABITATS: A => Pavement and roadside, B => Garden and open space, C => Hill slope, D => Parks and school grounds, E => Coastal, F => Sandy Beach

DISCUSSION

Even though, the state secretariat appeared to contain many trees (660) and relatively vegetated compare with other government secretariats in the study areas, the tree population density of less than one tree per square meter in all the secretariats show that the secretariats were poorly vegetated. This however, indicates ample opportunities for planting of more trees to cater for the social and wholesome wellbeing of the staff working in the secretariats on one hand as well as help government to save cost on energy expenditure. Secretariats also present great opportunity for planting and conservation of indigenous tree species which are not common in the urban environment. The presence of considerable population of amenity trees in the work place will ultimately create an environment conducive to productivity and economic efficiency.

The high tree population and species diversity found in the Oyo State secretariat could be attributed partly to the fact that the secretariat which was established during the colonial days, had trees ab initio incorporated into its design and layout.

The respondents revealed the benefits derivable from the trees in order of preference and importance to be the cooling of the environment, beautification and provision of shade. This implies that tree planting in these premises should bear these aforementioned services in mind and should therefore look for species that can optimally provide these services without compromising the safety of the people and the totality of the work environment.

Minimization of tree hazards requires appropriate species selection and effective management regime. Appropriate tree selection requires a good understanding of the attributes of the trees and the desired purpose for the trees. Thus the main tree hazard of trees littering the environment with leaves and fruits can be minimized by good species choice and regular cleaning of the litters. Although other tree hazards such as tree falling as a result of windstorm, fruits of trees breaking windscreen of vehicles d tree roots damaging infrastructures were reported to occur occasionally, however, due to the influence of age, trees gradually become susceptible to wind-throws, thus it is important that the management of these premises have contingency plans that will ensure routine health checks of trees, regularly to identify potentially dangerous, weak, old or diseased ones (Lonsdale, 2000; Ellison, 2005). Such trees should be managed and replaced when necessary to ensure sustained provision of environmental services and avoid accidents as a result of tree fall, branch breakage and disease infestation in old or senescent trees. That the respondents still desired that more trees should be planted in the secretariats despite possible hazards is a reflection of the importance of the services the trees are providing.

Ajewole and Oladipupo (2012) opined that there was a tendency for people to take for granted the contribution of amenity trees to their welfare, if such trees were in abundant supply, and the absence of trees creates a desire for tree planting in the occupants of such premises. As a matter of fact, the ecological state of an environment e.g. work place, town, city; is dependent on the state of its amenity trees (Dobbs *et al.*, 2011) and thus the sustenance of the diverse and essential services of these urban trees is pertinent to sustainable development.

Although the use of exotic trees for amenity planting is a common phenomenon (Johnston *et al.*, 2012), there is a need to deliberately and consciously incorporate the planting of indigenous trees in our urban forestry programme. The study areas can be very useful in this respect since they are more stable environment with minimum physical and ecological disturbance and therefore be used in the conservation of the indigenous tree species. Furthermore, the presence of one or more undesirable traits in a tree does not render such trees useless or unusable for amenity purpose. It only means appropriate considerations for the peculiar traits have to be accorded such trees when deciding where to plant such trees and in the kind of management regimes that will be developed for them.

CONCLUSION

The treescape of work environments contributes to effective service delivery by ensuring comfortable atmosphere for staff. The study revealed that both the population and species diversity of trees in all government secretariats with the exception of state secretariat, were quite low; suggesting that the sources of these trees may have been natural regeneration of dispersed seeds with no institutional framework to create, fund and manage a functional treescape, that can sustainably provide the required and expected environmental and social services in these premises. There is therefore a need to increase the population and diversity of the trees that will conform and be suitable for the built landscape of these premises. Proper tree selection for such built and work places will engender a beautiful, comfortable and cool environment conducive to improved productivity and social interactions. It will also reduce the amount and cost of energy needed for air conditioning in the work places and subsequently contribute to mitigation of climate change.

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