



JOURNAL OF ENVIRONMENTAL EXTENSION

ISSN: 1595-5125

Sharing Concerns for the Future

Volume 10: January 2012



UNIVERSITY OF IBADAN LIBRARY

For online access:
<http://ajol.info/index.php/jext/index>

STUDENTS' KNOWLEDGE AND PERCEPTION OF FUNCTIONS AND MANAGEMENT OF TREES IN THE UNIVERSITY OF IBADAN

Ajewole Opeyemi Isaac and Owoeye Folake Abosede

Department of Forest Resources Management, University of Ibadan.

ABSTRACT

This study assessed the perception and level of information about trees possessed by the students in the University of Ibadan in order for the trees' managers to develop appropriate management strategy for sustainable production of the trees' service functions for the optimal and continuous benefits of the students.

A two-stage stratified random sampling procedure was used to administer questionnaire on 315 respondents drawn from all the halls of residence (11) and faculties (10) in University of Ibadan. Hence, 165 respondents were randomly selected from the 11 halls of residence, while 150 respondents were randomly selected from the 10 faculties, making a total of 315 respondents. The data collected were analysed with descriptive statistics and Chi-square (χ^2) at $p = 0.05$.

Most (90.6% and 95.2%) were aware of presence of trees around their classrooms and halls of residence respectively. Students' awareness of presence of trees around classrooms is not dependent on the faculty of the students while awareness of presence of trees around halls of residence is dependent on the halls of residence of the students. Cooling the environment ranked highest (31.3%) among the identified functions, while provision of shade ranked highest (30.1%) among the benefits derived from the campus trees. Although 68.2% iterated that trees do not pose danger on the campus, 82.8% identified falling down of trees during windstorm and falling of old weak trees as major threats by trees, while 56.7% identified old age of trees as a major reason for tree hazards. Furthermore, 72.9% was of the opinion that the trees on the campus should not be removed, 95.4% was of the view that trees are necessary within the premises of the campus; 90.9% opined that more trees should be planted in the university; 94.2% agreed that trees beautify and make the environment attractive; 90.9% indicated that trees purify the air we breathe; 89.0% was of the opinion that trees in the University premises make the environment to be serene while 74.1% consented that presence of trees marks the university premises out from the surrounding environment. Moreover, 92.6% believed that proper management of trees in the University can reduce hazards associated with the trees, 74.7% was at variance with the statement that trees in the University campus are too many and should be reduced, 80.7% concurred with the statement that old trees within the premises should be replaced by newly planted ones, 77.5% acceded that besides replacing old ones, more trees should also be planted on the University campus. Moreover, 75.5% subscribed to forestry education not being limited to the Department of Forest Resources Management while 77.5% saw the need for awareness campaign for planting of trees on the campus.

The Campus Tree Management Committee will have to expedite actions towards mitigation of tree hazards and have to be more feasible, proactive and creative in developing sustainable greenery for the University environment. Also the Department of Forest Resources Management course on Introduction to Forestry (FRM 210) and that of the Faculty of Agriculture and Forestry General Study course (GES 105) will have to be reviewed to incorporate a chapter each on the fundamentals of Arboriculture.

INTRODUCTION

Trees within University campuses play immense beneficial roles in making the University environment conducive for teaching and learning. Shade provided by the trees reduces the temperature resulting in the cooling of the environment which is a requisite and facilitative condition for reading, concentration and assimilation. According to TREEPEOPLE (2012), exposure to trees and nature aids concentration by reducing mental fatigue. Furthermore, shade protects the students from the heat of the Sun while walking around the wide expanse of the University premises. The shade also serves as venues for reading and relaxation for students and other users of the University premises. Trees within University

premises are on hand educational materials for both research and teaching. Trees also muffle urban noise almost as effectively as stone walls (About.com 2011). Trees, planted at strategic points within the University campus can abate major noises. Trees as landmarks can give a University a new identity and encourage civic pride. The forms, textures, colours, fragrances and the ways trees move in a breeze impact serenity and beauty as well enliven the University environment giving it the needed condition for research, teaching, learning and relaxation. Arbor Day Foundation (2010) reported that visual exposure to settings with trees has produced significant recovery from stress within five minutes, as indicated by changes in blood pressure and muscle tension.

The sustainability of the benefits of trees in the University's premises depends largely on the respect and concern students who are major beneficiaries have for the trees. Respect and concern on the other hand will depend on the level of knowledge and the consequent perception of the students on the usefulness of the trees in the University campus. Thus, sustainable urban forestry development in tertiary institutions of learning requires that students have a good knowledge of the social and environmental service functions of the trees and how the University urban forest is being managed to sustain the provision of these services. This knowledge will to a large extent influence the students' perception and consequently their disposition to the conservation of the trees. Information about students' perception and disposition to campus trees will afford campus tree managers opportunity to know the needs and expectations of students from the trees and invariably from the managers of the trees. It is therefore necessary to assess the perception and level of information about trees possessed by the students in the University of Ibadan in order for the trees' managers to develop appropriate management strategy for sustainable production of the trees' service functions for the optimal and continuous benefits of the students.

METHODOLOGY

The study area

The University College, Ibadan, now University of Ibadan founded in 1948 is located in Ibadan, Nigeria. It is about 6km to the North of the city of Ibadan metropolis at longitude 3° 54' East and Latitude 7° 26' North and at a mean altitude of 27m above sea level. The land area of the University of Ibadan is over 1032 hectares and trees of different species are lining the major road networks of the University. It is bounded in the North by Ajibode settlements, in the South by Emmanuel School of Theology, in the East by Agbowo settlement and in the North by The Polytechnic, Ibadan.

The University of Ibadan campus is made up of two halls of residence (Queen Elizabeth II and Queen Idia) for female undergraduates; six (Mellanby, Tedder, Kuti, Bello, Nnamdi Azikiwe and Independence) for male undergraduates and two (Tafawa Balewa and Abdulsalam Abubakar) for postgraduate students. Obafemi Awolowo hall is special in the sense that it has both undergraduate and post graduate male and female students co-inhabiting in the hall. The University has ten Faculties, viz. Science, Technology, Agriculture and Forestry, Clinical Sciences, Pharmacy, Veterinary Medicine, Arts, Education, Social Sciences and Law. These faculties are exclusive of the ones in the College of Medicine, in the University College Hospital.

The treescape of the University campus is made up of about 88 species in 29 families. The species include:

Adansoniadigitata, *Azeliabella*,
Albiziaferruginea, *Albizialebeck*, *Albiziasaman*,
Albiziazygia, *Alstoniaboonei*,
Anacardiumoccidentale, *Anogeissusleiocarpus*,
Anthocleistadjalonensis, *Anthocleistanobilis*,
Antiaris Africana, *Azadiracthaindica*, *Bauhinia monandra*,
Blighiasapida, *Bombaxcostatum*,
Borassusaethiopum, *Bosqueiaangolensis*,
Brideliamicrantha, *Cassia senegalensis*,
Casuarinaequisetifolia, *Ceibapentandra*,
Celtiszenkeri, *Citrus senensis*, *Cleistopholis patens*,
Cocosnucifera, *Cola nitida*,
Dacryodesedulis, *Danielliaogea*, *Delonixregia*,
Dialiumguineense, *Elaeisguineensis*,
Entandrophragmacylindricum,
Enterolobiumcyclocarpum, *Eucalyptus camadulensis*,
Casuarinaequisetifolia,
Eucalyptus torreliana, *Ficuscapensis*,
Ficusexasperate, *Ficusmucoso*, *Funtumiaelastic*,
Gliricidiasepium, *Gmelinaarborea*,
Hildegardiabarberi, *Hollarrhena floribunda*,
Huracrepitans, *Khayasenegalensis*,
Lagerstroemia speciosa, *Lanneaspp*,
Lecaniodiscuscupanoides,
leucaenaLeucocephala, *Magniferaindica*,
Meliciaexcelsa, *Morindalucida*, *Morusmesozygia*,
Nesogordoniapapaverifera, *Newbouldialeavis*,
Peltophorumpterocarpum, *Persea Americana*,
Phyllanthusdiscoideus, *Phyllanthusmicrantha*,
Pinuscarribea, *Pitanga cherry*, *Plumeriarubra*
Polyalthialongifolia, *Psidiumguajava*,
Pycnanthusangolensis, *Rauvolfiavomitoria*,
Ricinodendronheudelotii, *Roystonearegia*,
Sennasiamea, *Spathodeacampanulata*,
Spondiasmumbis, *Sterculiatragacantha*,
Tabernaemontanapachysiphon, *Tecomastans*,
Tectonagrandis
Terminaliacatappa, *Terminaliaivorensis*,
Terminaliamentalis, *Terminaliasuperba*
Tabebuiaarosea, *Thevetianeriifolia*, *Treculia Africana*,
Tremaorientalis, *Trichiliaheudelotii*
Triplochitonscleroxylon and
Xantozyllunsspp (Jimoh 2012).

Data collection and analysis

A two-stage stratified random sampling procedure was used to administer questionnaire on 315 respondents drawn from all the halls of residence (11) and faculties (10) in University of Ibadan. In each hall of residence, three blocks were randomly selected. From each of the three blocks, five rooms were randomly selected and one respondent was randomly selected from each of the five rooms. Similarly, three departments were randomly selected from each of the 10 faculties. Five respondents were thereafter randomly selected from each of the three departments. Hence, 165 respondents were randomly selected from the 11 halls of residence, while 150 respondents were randomly selected

from the 10 faculties, making a total of 315 respondents. However, 311 questionnaires were retrieved and used for the analysis. Halls of residence and Faculties were used as basic sample units because these are the places where students spend most of their time. Thus the students will have a first-hand experience and information on at least the trees in these two environments. Furthermore, the two basic sample units were used in order to ensure that at least 15 respondents were taken from each of the units, since the respondents are randomly selected from each of the units. The data collected were analysed with descriptive statistics and Chi-square (χ^2) at $p = 0.05$.

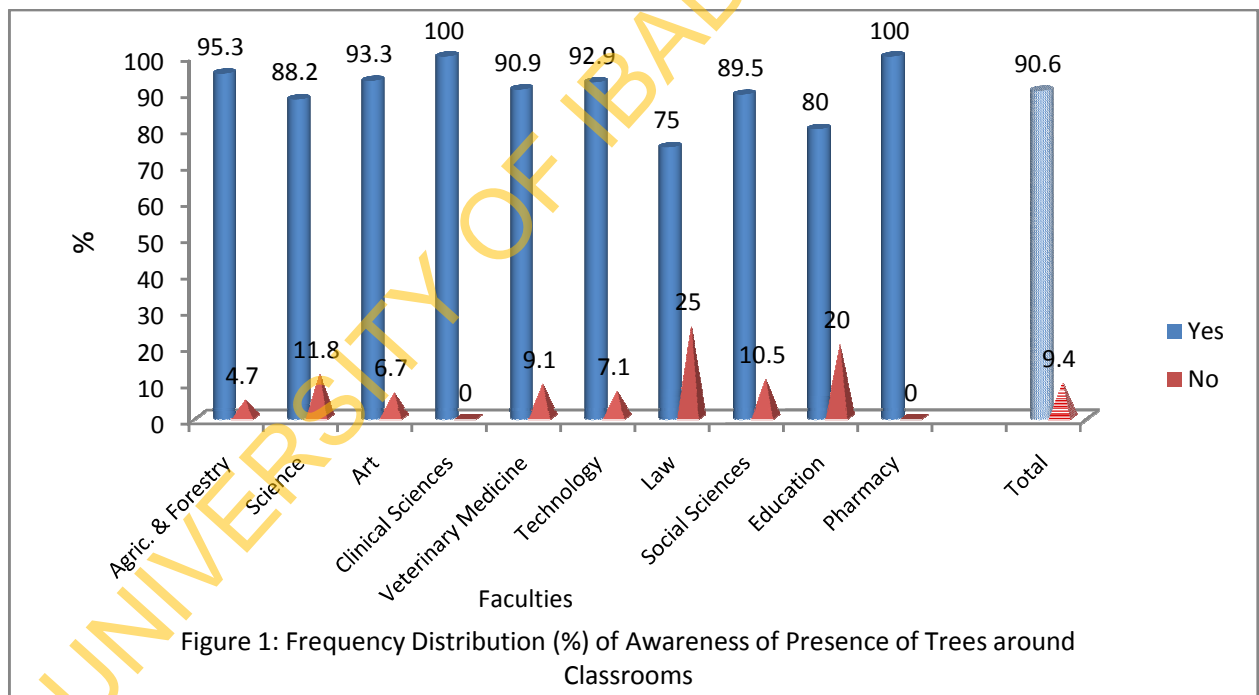
RESULTS AND DISCUSSIONS

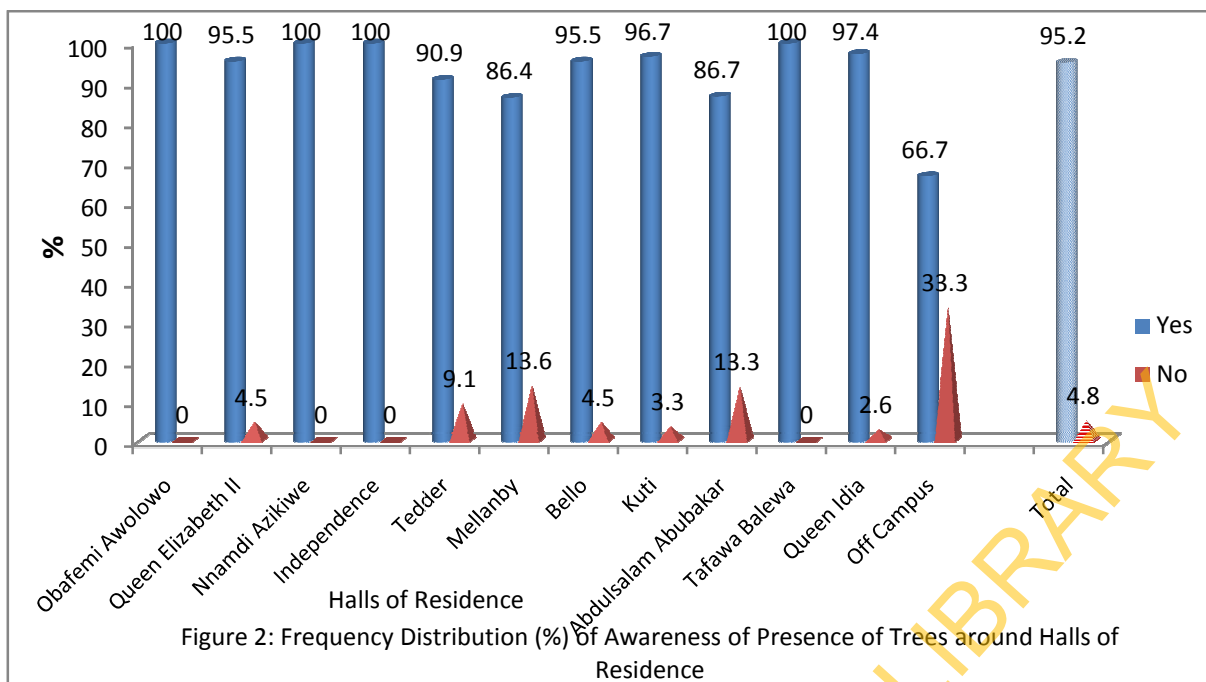
Awareness of presence of trees around classrooms and halls of residence

For an individual to be able to comment effectively on a resource, such individual must be aware of the existence of the resource and probably has some level of direct or indirect contact with the resource. This background explains the reason why respondents were asked if they were aware of presence of trees around their classrooms or halls of residence.

Results in Figure 1 indicate that 90.6% of the respondents were aware of presence of trees around their classrooms. This shows that most of the classrooms in the University of Ibadan have trees around them to conduce to a productive teaching and learning environment. The results are further indications of relative abundance of trees in the Faculties as can be observed in the relative high proportion of respondents from the faculties of Law (25%) and Pharmacy (20%) who were not aware of presence of trees around their classrooms.

Similarly, 95.2% of the respondents were aware of trees around their halls of residence. Presence of trees around halls of residence is conducive to a healthy living condition. A considerable proportion (33.3%) of the students living outside the University campus were not aware of presence of trees around their houses which can also be taken as indirect measure of relative abundance of trees around houses outside the campus. This also suggests that the living condition in terms of the availability of the beneficial environmental service functions of trees is better in the campus than many neighbourhoods outside the campus.



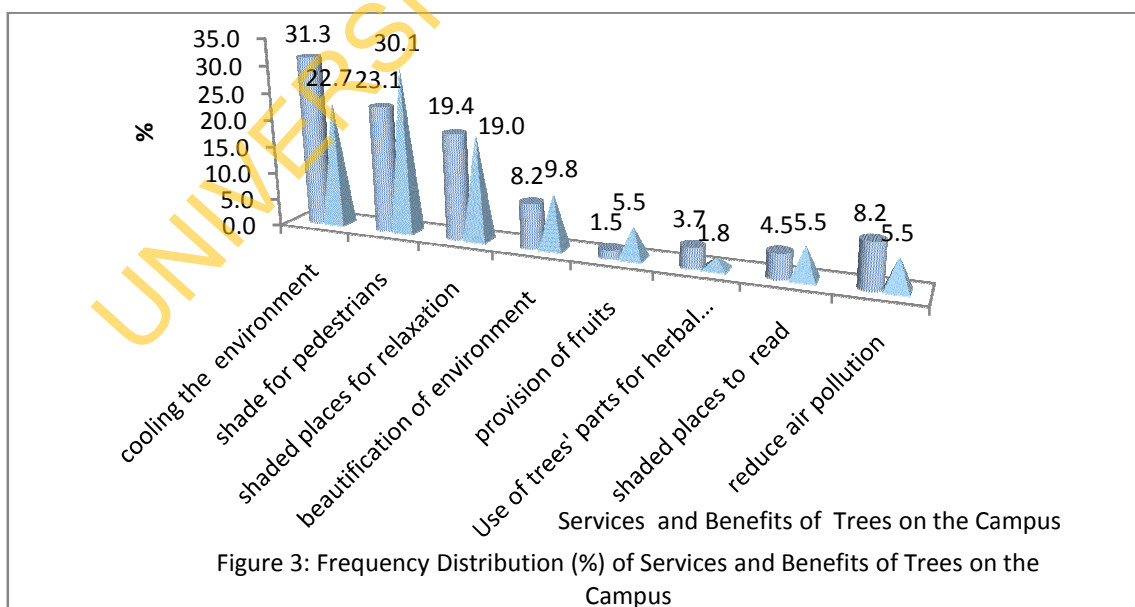


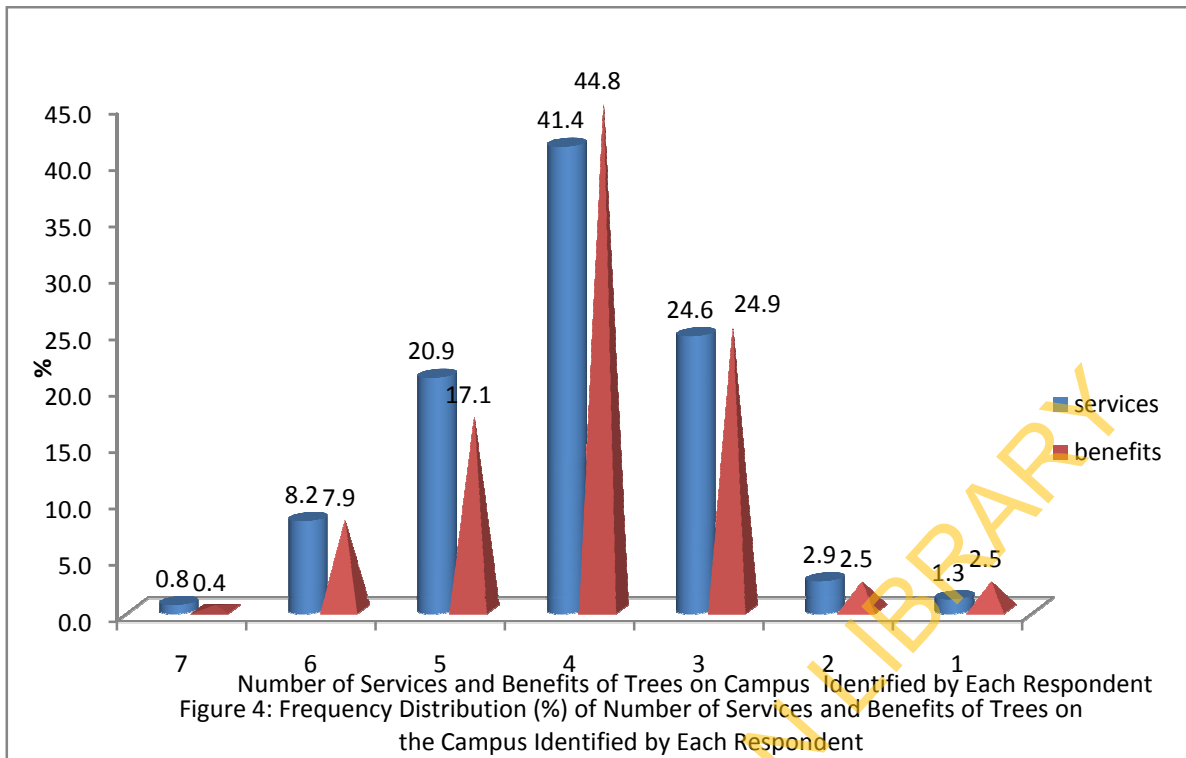
Chi square (χ^2) value of = 16.82, ($p = 0.05$) implies that students' awareness of presence of trees around classrooms is not dependent on the faculty of the students while on the other hand, χ^2 value of 22.58 ($p = 0.02$) implies that awareness of presence of trees around halls of residence is dependent on the halls of residence of the students.

Functions and benefits of trees on the campus

The cylindrical bars in figure 3 indicate respondents' awareness of functions of trees on the campus, while the pyramidal bars indicate the personal benefits of the trees to the respondents. The results show marked

difference between awareness of the functions of trees and personal benefits derived from the trees on the campus. In terms of functions, cooling the environment ranked highest (31.3%) while provision of fruits ranked lowest (1.5%). On the other hand, shade for pedestrians ranked highest (30.1%) as benefits derived from the trees, while the use of tree parts for herbal medicine ranked lowest (1.8%). The next important benefit is cooling the environment (22.7%), followed by shaded places for relaxation (19.0%) and beautification of environment (9.8%). Reduction of air pollution, shaded places to read and provision of fruits ranked same (5.5%) as benefits derived from the trees.





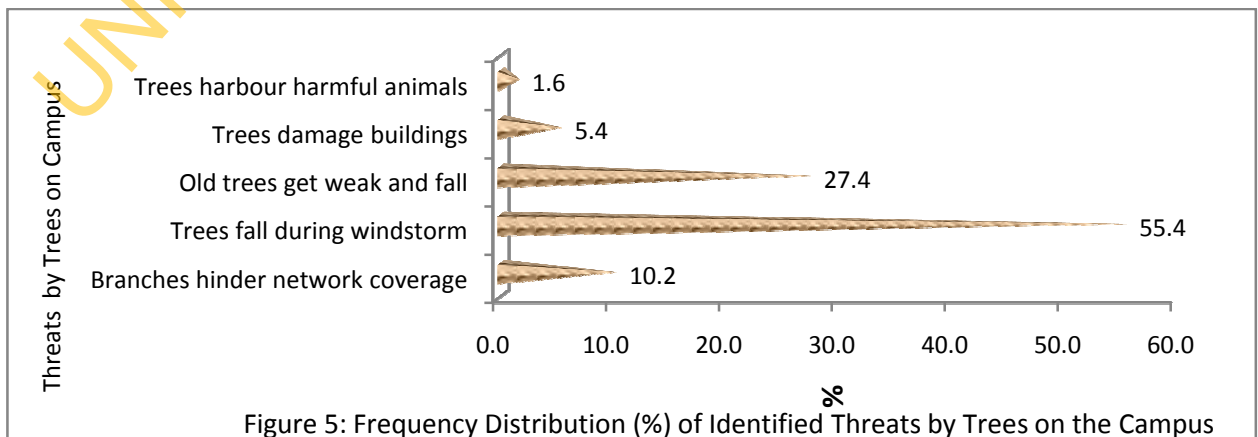
The number of functions of trees on the campus identified by a respondent can in a way be used to indicate the extent of knowledge of such a respondent on the services of the trees, while the number of benefits a respondent claims to have enjoyed from the trees can also be used to indicate the importance of the trees to such an individual. Results in Figure 4 show that 41.4% was aware of four of the social and environmental services of the trees on the campus while 44.8% has personally benefited from four of these services. Furthermore, 24.6% and 24.9% were aware and have benefited respectively from three of the services, while 20.9% and 17.1% were aware and have benefited respectively from five of the services. The results show that the respondents by and large have a good knowledge of the social and environmental service functions of the trees on campus and also that the trees are important to them providing them with more than one benefit.

Tree hazards

In spite of the many and various benefits of trees in working and living environments, trees for various reasons may constitute hazards to the community. It is therefore important to explore the respondents' knowledge and experience of tree hazards on the campus. Their experience of tree hazards will no doubt affect their disposition to the trees on campus. From Table 1, it can be observed that 68.2% of the respondents were of the opinion that trees do not pose danger to the University community.

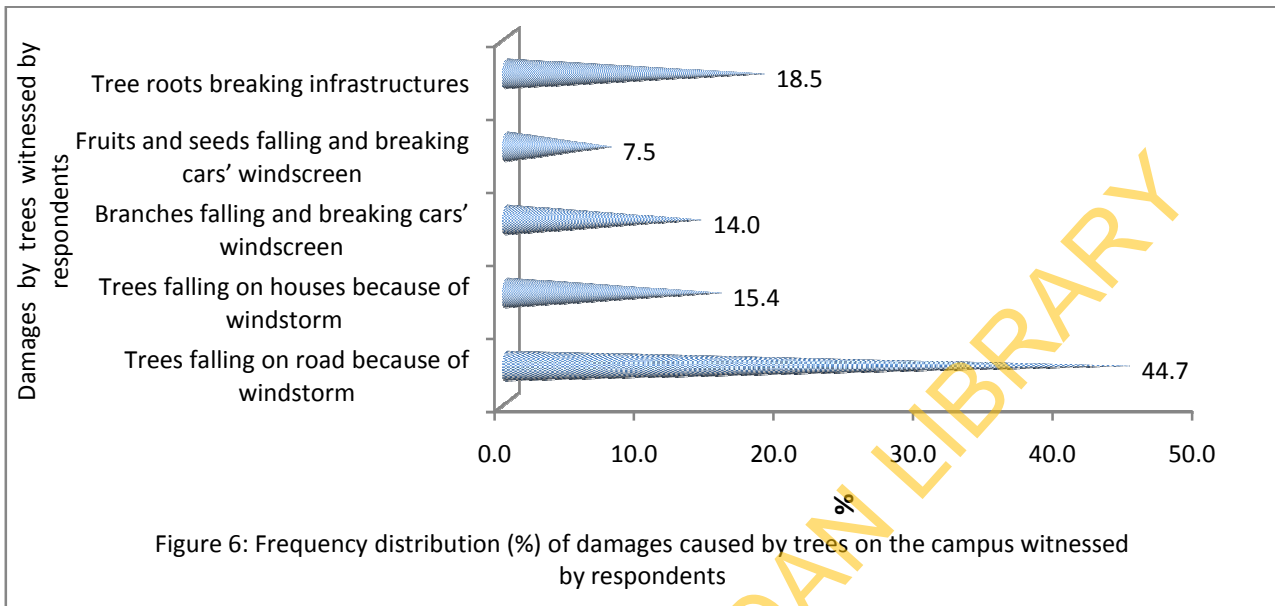
Table 1: Respondents' view of trees posing danger to the community

	Count	Percentage
Yes	92	29.6
No	212	68.2
I don't know	7	2.3
Total	311	100

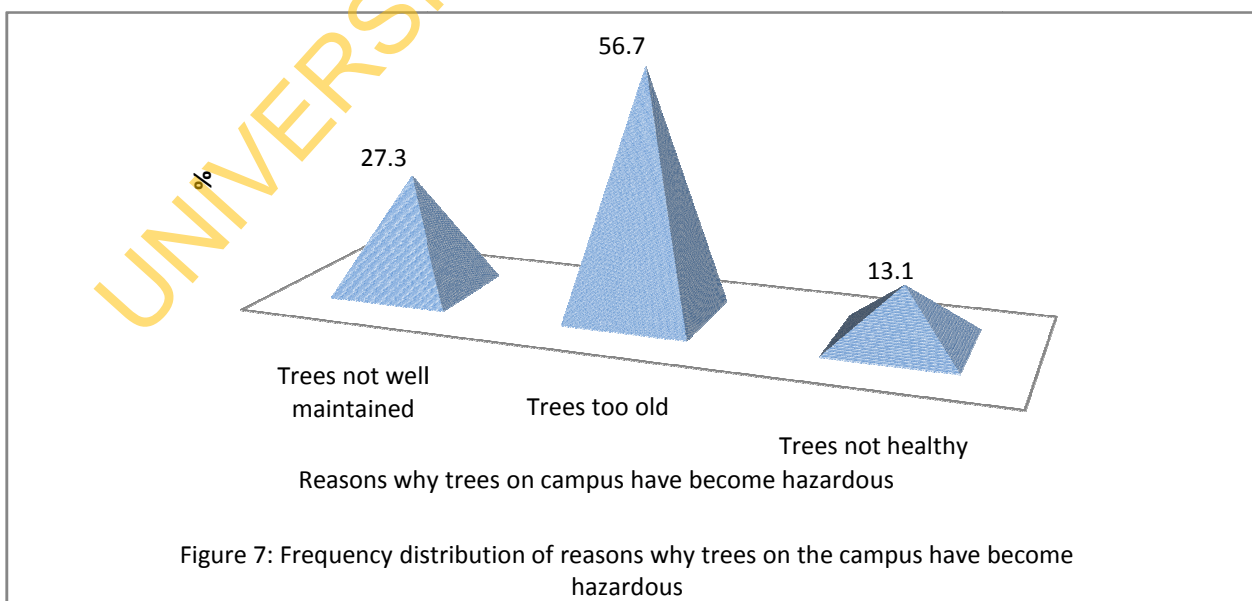


From Figure 5, it can be observed that falling of trees during windstorm and falling of old weak trees account for 55.4% and 27.4% of threats by trees on the campus mentioned by the respondents respectively. Other interesting threats mentioned include tree branches

hindering the effectiveness of internet coverage (10.2%), tree branches or roots damaging buildings (5.4%) and trees harbouring wild animals (1.6%). Obviously from the results, falling of trees take precedence in the concern of respondents for trees on the campus.



Furthermore, results in Figure 6 show that trees falling on roads and houses as a result of windstorm cumulatively accounting for 60.1% is the most common tree hazard witnessed by the respondents. Tree roots damaging infrastructures accounts for 18.5%, branches falling and breaking car's windscreen accounts for 14% while fruits and seeds falling and breaking car's windscreen accounts for 7.5%. Various factors can be responsible for frequent falling of trees on the campus. Some of these include trees being unhealthy, old and weak or trees having weak branches or heavy asymmetrical crown susceptible to wind throw. As regards the reasons for the challenges posed by the trees on campus, it can be observed from Figure 7 that 56.7% was of the opinion that the trees are old, 27.3% iterated that the trees are not well maintained while 13.1% believed that the trees are not healthy. These challenges can be addressed by proper choice of tree species and appropriate and adequate management practices.



Perception on challenges posed by trees on the campus of University of Ibadan

This section presents the respondents' agreement or disagreement with some statements bordering on issues which revolve around the trees on the campus. The statements were made with the aim of getting the perception of the respondents on the trees.

The perception of the students regarding challenges posed by the presence of trees on the campus is quite favourable as can be observed from the results in Table 2 where 41.3% and 33.9% of the respondents respectively disagreed and strongly disagreed with the statement that trees on the campus are appearing to constitute nuisance. In essence, 75.2% of the respondents were of the opinion that trees are not nuisance on the campus. Furthermore, 43.3% and 29.6% respectively disagreed and strongly disagreed that the solution or response to the challenges of trees damaging the roads or encouraging snakes or falling on houses and across roads is to just

remove the trees without delay. This implies that 72.9% of the respondents were of the opinion that despite the probable challenges posed by the trees on the campus, the trees should not be removed. Likewise, 35.6% and 37.2% disagreed and strongly disagreed respectively that due to the risks associated with trees in living and working environment, trees should not be planted around homes and offices especially in the University of Ibadan. The foregoing also implies that 72.8% of the respondents were of the opinion that trees should still be planted around homes and offices despite probable associated risks. The inference that can be drawn from the results in this section is that trees do not constitute nuisance on the campus of University of Ibadan and that though they may appear as threats, yet they should not be removed but rather they should continue to be planted. This suggests that the trees must be very important and crucial resources on the campus proving several services to the students.

Table 2: Frequency distribution (%) of perception on challenges posed by trees on the Campus of University of Ibadan

Statements	Strongly agree	Agree	I don't know	Disagree	Strongly disagree	Total
Trees are now appearing to be a nuisance within the premises of University of Ibadan	4.5	11.3	9.0	41.3	33.9	100
Trees in the University damage roads, encourage snakes; fall on houses and across roads. The solution is just to cut them without delay	3.6	12.1	11.4	43.3	29.6	100
Due to the risks associated with trees in living and working environment, trees should not be planted around homes and offices especially in the University of Ibadan	4.2	13.6	9.4	35.6	37.2	100

Perception on the benefits of trees on the Campus of University of Ibadan

Results in Table 3 show that respondents were unequivocal in their opinion and appreciation for the roles of trees in a university campus. For instance, 43% and 52.4% agreed and strongly agreed respectively that trees are necessary within the premises of University of Ibadan because they are beneficial to man and the environment; 48.9% and 42.0% agreed and strongly agreed that trees should still be planted in the University since the benefits seem to surpass the associated risks; 44.5% and 49.7%

agreed and strongly agreed respectively that presence of trees make university beautiful and attractive; 33.7% and 57.2% agreed and strongly agreed respectively that trees purify the air we breathe and therefore promotes healthy living; 44.2% and 44.8% agreed and strongly agreed respectively that trees in the university premises make the environment to be serene, which is essential for learning and productivity; while 44.6% and 29.5% respectively agreed and strongly agreed that presence of trees marks the University premises out from the surrounding environment.

Table 3: Frequency distribution (%) of perception on benefits of trees on the Campus of University of Ibadan

Statements	Strongly agree	Agree	I don't know	Disagree	Strongly disagree	Total
Trees are necessary within the premises of University of Ibadan because they are beneficial to man and the environment.	52.4	43.0	2.9	0.3	1.3	100
Although there are risks associated with presence of trees within the university premises, the benefits of trees in the university seem to surpass the risk therefore, trees should still be planted in the university	42.0	48.9	3.9	2.9	2.3	100
Presence of trees makes University of Ibadan to be beautiful and attractive	49.7	44.5	4.2	0.0	1.6	100
Trees purify the air we breathe and therefore enhances healthy living	57.2	33.7	7.2	1.0	1.0	100
Trees in the University premises makes the environment to be serene, which is essential for learning and productivity	44.8	44.2	7.8	1.0	2.3	100
Presence of trees marks the university premises out from the surrounding environment	29.5	44.6	19.0	4.6	2.3	100

In summary, 95.4% of the respondents were of the view that trees are necessary within the premises of University of Ibadan because of benefits derivable from them; 90.9% subscribed to more being planted in the university because the benefits derivable from them surpass the risk; 94.2% observed that trees beautify and make the environment attractive; 90.9% indicated that trees purify the air we breathe and therefore promotes healthy living; 89.0% accorded with the view that trees in the University premises make the environment to be serene, which is essential for learning and productivity while 74.1% consented that presence of trees marks the university premises out from the surrounding environment. These results imply that the trees within the premises of

University of Ibadan are relevant, useful and have a crucial role to play in the tranquillity of the environment of the institution.

Perception on the management of the trees on the Campus of University of Ibadan

From Table 4, it can be observed that 44.4% and 30.3% disagreed and strongly disagreed respectively with the statement that trees in the University campus are too many and should be reduced, rather 44.2% and 36.5% agreed and strongly agreed respectively that old trees within the premises should be replaced by newly planted ones, even as 40.4% and 37.1% agreed and strongly agreed respectively that asides replacing old ones, more trees should be planted on the University campus.

Table 4: Frequency distribution (%) of perception on the management of the trees on the Campus of University of Ibadan

Statements	Strongly agree	Agree	I don't know	Disagree	Strongly disagree	Total
Trees in University of Ibadan premises are too many and I therefore suggest that they should be reduced	4.0	10.4	10.8	44.4	30.3	100
Old trees within the premises of University of Ibadan should be replaced by newly planted ones in order to enjoy the benefits.	36.5	44.2	11.6	4.5	3.2	100
More trees should be planted within the premises of University of Ibadan	37.1	40.4	11.4	7.4	3.6	100
Proper management of trees in the University can reduce hazards associated with the trees particularly when growing old	54.4	38.2	4.9	0.3	1.3	100
In my opinion, trees in the University are presently well managed	5.8	33.7	23.9	16.8	19.7	100
Forestry education should not be limited to the department of forest resources management	30.5	45.0	20.2	2.3	2.0	100
Awareness campaigns on planting more trees for environmental sustainability is not necessary in the University of Ibadan	5.8	14.1	12.5	29.6	37.9	100

While 38.2% and 54.4% respectively agreed and strongly agreed that proper management of trees in the University can reduce hazards associated with the trees particularly when growing old, there is a sort of division of opinion with regard to how well the trees are managed. The results show that 33.7% and 5.8% agreed and strongly agreed respectively with the

statement that trees on the campus of University of Ibadan are presently well managed, 16.8% and 19.7% disagreed and strongly disagreed respectively with the statement while 23.8% was undecided. This implies that 39.2% was of the view that the trees are well managed while 36.2% had a contrary opinion. The narrow margin between these two groups of

respondents and the magnitude of the undecided suggest that the campus tree managers have to improve on their activities to be able to be well above board in the management of these very important resources.

It is indeed very interesting that the concern for the campus trees is so great that 45.0% and 30.5% agreed and strongly agreed respectively that forestry education should not be limited to the Department of Forest Resources Management. Furthermore, 29.6% and 37.9% disagreed and strongly disagreed respectively with the statement that awareness campaign on planting trees on the campus is not necessary.

It can thus be inferred from the foregoing results that 92.6% believed that proper management of trees in the University can reduce hazards associated with the trees, 74.7% was at variance with the statement that trees in the University campus are too many and should be reduced, 80.7% concurred with the statement that old trees within the premises should be replaced by newly planted ones, 77.5% acceded that besides replacing old ones, more trees should also be planted on the University campus. Moreover, 75.5% subscribed to forestry education not being limited to the Department of Forest Resources Management while 77.5% saw the need for awareness campaign for planting of trees on the campus.

CONCLUSION

The findings of this study have revealed that University of Ibadan students are aware of the functions of the trees on the campus and have personally benefitted from the trees' service functions. Most of them can identify at least four of the services they have benefitted from the trees. Furthermore, the students do not consider trees as hazards on the campus but rather as resources that provide essential services conducive for healthy living and productive academic activities.

The students agreed that trees on campus purify the air while presence of trees within the University premises not only marks the University premises out from the surrounding environment but also makes the University to be serene, beautiful and attractive. Although, old and weak trees falling during windstorm and reduction of the effectiveness of internet coverage and strength within the campus were identified as

major issues of concern, yet the students were unequivocal in their requests that the trees should not be removed or reduced, but rather old and weak ones should be replaced and in addition new ones should be planted. Furthermore students agreed that knowledge about planting and care of amenity trees should be made available to students in other Departments and Faculties aside the Department of Forest Resources Management and Faculty of Agriculture and Forestry.

Consequent on the foregoing, the Campus Tree Management Committee will have to expedite actions towards mitigation of tree hazards and have to be more feasible, proactive and creative in developing sustainable green university environment. Some of the ways to mitigate tree hazards include selection of species with suitable ecological attributes for amenity planting; regular maintenance and scheduled diagnostic activities. Furthermore, the current Department of Forest Resources Management's course on Introduction to Forestry (FRM 210) and that of the Faculty of Agriculture and Forestry in the General Study Programme (GES 105) will have to be reviewed to incorporate a chapter each on the fundamentals of Arboriculture. This will help in teaching students outside the Department of Forest Resources Management and Faculty of Agriculture and Forestry the basics of amenity tree planting and care.

REFERENCES

- About.com (2011):** The Top Reasons Trees Are Valuable. http://forestry.about.com/od/treephysiology/tp/tree_value.htm)
- Arbor Day Foundation (2010):** *The Value of Trees to a Community*; <http://www.arborday.org/trees/benefits.cfm>)
- Jimoh Folorunsho A. (2012):** Management of Amenity Trees in the University of Ibadan and the Polytechnic Ibadan, Ibadan, Nigeria. Unpublished B.Sc. Project Submitted to the Department of Forest Resources Management, University of Ibadan, Ibadan, Nigeria.
- TREEPEOPLE (2012):** Top 22 benefits of Trees; <http://www.treepeople.org/top-22-benefits-trees>)