Ghana J. Sci. **64** (2), 2023, 39 - 48 *Original scientific article* https://dx.doi.org/10.4314/gjs.v64i2.5

WILLINGNESS OF IBADAN RESIDENTS TO PLANT TREES TO COMMEMORATE SOCIAL EVENTS

FASORO, O. A., AJEWOLE, O. I. & SIYANBOLA, R. A.
(F. O. A., A. O. I. & S. R. A.: Department of Social and Environmental Forestry University of Ibadan, Nigeria.)
**Corresponding author's email address: oyinlola4christ@gmail.com*

ABSTRACT

Trees in cities contribute significantly to human health and environmental quality, thus, planting trees to Commemorate Social Events (CSEs) can be a unique green gift that celebrate people while also restoring urban environmental quality. This research examined respondents' willingness to plant trees to CSEs in order to promote sustainable greening of Ibadan. A multistage random sampling procedure was used to obtain primary data from 450 respondents from five purposively selected local government areas. Data were subjected to descriptive statistics and logit regression analysis. Results showed that 57.8% respondents were male, 56.2% were married and 95.3% had formal education. Furthermore, 62.1% stated that trees were present in their environment; 78.4% agreed that trees are valuable and useful resources, and thus they are willing to plant trees to CSEs. The following factors were mentioned by respondents as motivating factors for tree planting: guaranteed investment after retirement (60.5%), knowledge of global environmental issues (67.9%), guaranteed alternative source of income (73.5%), and securing of land from land grabbers (63.5%). Age (-0.030) had a significant influence on willingness to plant trees to CSEs. Residents believe that tree planting is a good initiative; however, incentives should be provided to increase individual participation.

Keywords: Trees, urban greening, environmental restoration, incentives

Introduction

World's population is increasing, and cities are becoming more complex, with a large number of interconnected citizens, businesses, modes of transportation, communication networks, services, and utilities (Neirotti *et al.,* 2014). This culminate in the urban environment being generally characterized by impervious surfaces, highly reflective and radiating materials like concrete, and toxic metals (Fasoro & Ajewole, 2022).

Ahmed (2016) submitted that cities are sources of economic growth and development and thus the engine of any country's sustainability. But the environmental implications of such growth and development need to be thoroughly managed to suppress copious and hazardous consequences. Fasoro (2019) reposed that urbanization and industrialization, most importantly, growth in human population is contributing significantly to the loss of tree cover, thereby posing a grave threat to the conservation of biodiversity and sustainability of resources. Large tracts of forest land have been reported to be constantly cleared and converted to agricultural land, settlements, and industries as a result of population growth (Fasoro, 2019). The United Nation World Population Prospects (2019) reported that in Nigeria, the human population is 206,139,589, and the total population of Nigeria will reach around 401.31 million by the end of 2050, and by 2100, if current projections hold, Nigeria's population will

indeed be over 728 million. Implicitly, there will be a continuous increase in population and, consequently, a continuous increase in forest clearing to make way for urbanization and industrialization.

Fortunately, one way for cities to mitigate and adapt to the effects of urbanization and climate change is through the implementation of urban greening. Miller (1997) and Nowak *et al.* (2006) submitted urban forest as an integrated citywide approach to planting, caring, and maintaining trees in the city, which is essential to securing multiple environmental and social benefits for urban dwellers. A tree, as a tangible symbol of the environment, can significantly contribute to human health and environmental quality by providing ecological (energy savings, improved air quality, aesthetics, health benefits, wildlife habitats, and recreation opportunities), economic (productivity, quality, and quantity of forest resources), and social (employment and health safety) services. Thus, urban trees can be introduced to city centers, recreation and car parks, gardens, residential areas, roads, cemeteries and fields. The greater the tree cover, the greater their influence on the environment because trees had been observed to reduce mortality and improve human health in general (Fasoro & Ajewole. 2022).

Bayram and Ercan (2012) opined that urban green spaces provide ecosystem benefits ranging from biodiversity conservation to urban climate regulation. Mikias (2015) also reported that nature provides ecosystem services that are critical to human well-being and have the potential to improve the quality of life of urban citizens, while also offering cost-effective solutions to global challenges. Furthermore, Nowak *et al.* (2006) submitted that urban greening is a good strategy for improving the landscape, reducing pollution, filtering dust, providing shade and sheltering wildlife, and provides fruits and vegetables to humans, thereby improving a national food security. This implies that tree planting not only improve the environmental quality of cities but that of the global environment in general.

In Nigeria, a variety of social gatherings take place in households. Birthdays, holidays, graduations, weddings, new births, anniversaries, and other special occasions allow for the gathering of groups of people who will successfully interact around an event of particular interest to them at a specific location and time. These are organized and planned events, which appeal to and attract a large number of participants. Celebrants or organizers impressive expressions through music, dances, distinctive clothing (sometimes uniform, popularly known as Aso-ebi), various foods and drinks are characteristics of such gatherings. Planting trees to commemorate such gatherings can be an effective strategy for increasing sustainable availability of trees and improving environmental quality in urban areas. Planting trees to commemorate social events can thus be a one-of-a-kind and environmentally friendly way to honour people and pay tribute to friends and loved ones. Such a gift would be a wonderful, thoughtful, living, growing, and lasting way to honour loved ones.

In this regard, as cities become more vulnerable to the effects of climate change, planting trees to commemorate social events could be used as a strategy for restoring urban environmental quality. This study therefore assessed the benefits of trees to residents, as well as residents' willingness to plant trees to commemorate social events in order to promote sustainable greening of the metropolis.

Experimentation

The study area

Ibadan covers a total area of 3,080km^2. The ancient city is the capital and most populous city of Oyo State, Nigeria. It lies between Latitudes 7^0 20' 03" N and 7^0 26' 12" N and Longitudes 3^0 50' 65" E and 3^0 57' 48" E. Ibadan is located in south-western Nigeria and at about 119 km (74 miles) northeast of Lagos and 120 km (75 miles) east of the Nigerian international border with the Republic of Benin. It lies completely within the tropical forest zone but close to the boundary between the forest and the derived savanna. The city ranges in elevation from 150 m in the valley area to 275 m above sea level on the major north-south ridge which crosses the central part of the city (Fasoro & Ajewole, 2022).

Sampling procedure

In the Ibadan Metropolitan Area, there are 11 local government areas (LGA), five of which are urban and six of which are semi-urban. The data for this study were purposively collected from the five urban LGA, namely; Ibadan North, Ibadan North West, Ibadan Northeast, Ibadan South East and Ibadan South West. Each LGA has 12 wards in Nigeria (a ward is an administrative/electoral subdivision of LGA) (Popoola & Ajewole, 2002; Fasoro & Ajewole, 2022). A multistage random sampling procedure was used to collect primary data from 450 respondents from the selected LGAs using structured questionnaires. Three wards were randomly sampled from 12 wards in each selected LGA using a sampling intensity of 25%. Two settlements were then chosen at random from each ward, and three streets were sampled at random from each settlement. Following that, five respondents were chosen at random from each household, for a total of 90 respondents from each LGA. The number of respondents from each LGA is shown in Table 1, and the map of the study area is shown in Figure 1.

Data analysis

Data were subjected to descriptive statistics and logit regression analysis at p=0.05.

A logistic regression analysis was performed to determine the impact of some socioeconomic variables on respondents' willingness to plant trees to commemorate social events.

$$Y = Y = \frac{\exp (b0 + b1\,X\,1 + \ldots\ldots\ldots bn\,Xn)}{1 + \exp (b0 + b1X1\ldots\ldots\ldots + bnXn)}$$

Where Y = dependent variable (willingness of respondents to plant trees to commemorate social events)

X = Independent variable (gender, age, educational background, occupation and State)

B_0 = constant

e = exponential

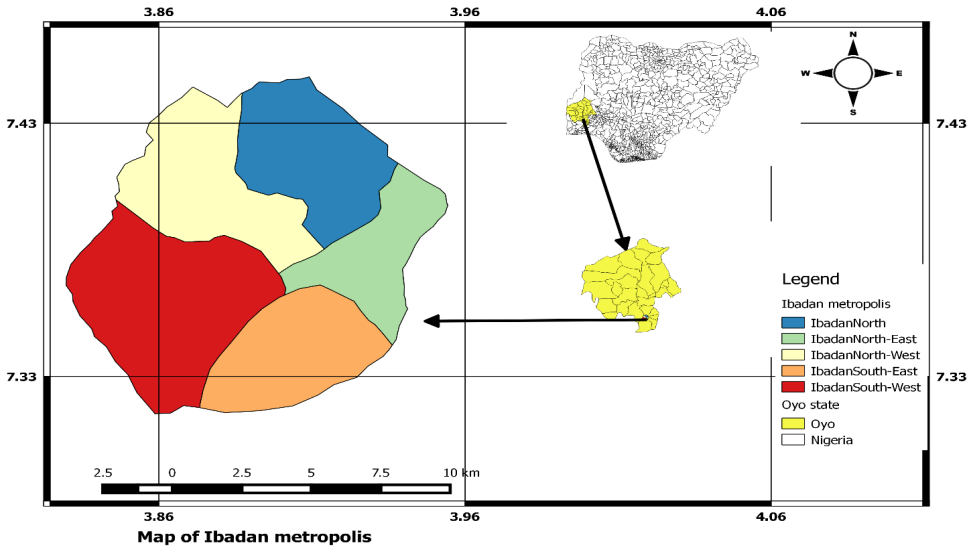

Fig. 1: Map of the study area

Source: *Quantum Geographic Information System (2021)*

TABLE 1

Summary of Data Collection and Sampling Procedure

Local government	Wards (INEC 2015)	Selected wards (25%)	Settlement	Street	Respondents	Total respondents
Ibadan North	12	3	2	3	5	90
Ibadan Northeast	12	3	2	3	5	90
Ibadan North West	12	3	2	3	5	90
Ibadan South East	12	3	2	3	5	90
Ibadan South West	12	3	2	3	5	90
Total						**450**

Results

Socioeconomic characteristics of respondents

Results in Table 2 show that 57.8% were male, 42.0% were female and 56.2% were married while 42.7% were single. The ages of respondents ranged from 20 to above 50 years of age with a mean age of 35.7±14.1 years. Educational attainment was classified into five categories, no formal education (1.3%), primary school (6.0%), secondary school (29.3%), tertiary education (58.5%), and missionary school (1.5%).

TABLE 2
Demographic characteristics of respondents

	Options	Frequency	Percentage (%)
Gender			
	Male	260	57.8
	Female	189	42.0
	No response	1	0.2
	Total	450	100
Age (years)			
	<21	66	14.7
	21-30	130	28.9
	31-40	105	23.3
	41-50	85	18.9
	>50	61	13.6
	No response	3	0.7
	Total	450	100
Marital status			
	Married	253	56.2
	Single	192	42.7
	No response	5	1.1
	Total	450	100
Level of Education			
	No formal education	6	1.3
	Primary	27	6.0
	Secondary	132	29.3
	Tertiary	261	58.0
	Missionary	7	1.5
	No response	17	3.8
	Total	450	100

Awareness of the Presence of Trees in the Living Environment

Table 3 shows that 62.1% of respondents confirmed that there are trees in their living environment, while 37.9% claimed that there are no trees in their living environment. This indicates that there are residential areas with no trees.

TABLE 3
Availability of trees around respondents' living environment

	Frequency	Percentage
Yes	280	62.1%
No	170	37.9%
Total	450	100%

Respondents' Perception on Tree Benefits

According to Figure 2, 65.7% of the respondents stated that trees provide food (fruits and nuts), 62.4% of the respondents affirmed that trees beautify the environment, 47.4% of the respondents claimed that trees are sources of phytomedicine, 45.9% identified that trees prevent environmental hazards such as wind, erosion, pollution etc., 39.9% observed that trees provide shade for man and animal, and 24.5% of respondents iterated that trees provide fuelwood and timber. However, 75.5%, 60.1%, 54.1%, 52.6%, 37.6% and 34.3% of the respondents disagreed that trees serve the purposes of providing fuelwood and timber, shade, reduce environmental hazards, phytomedicine, beautify the environment, and provide food for man and animals, respectively.

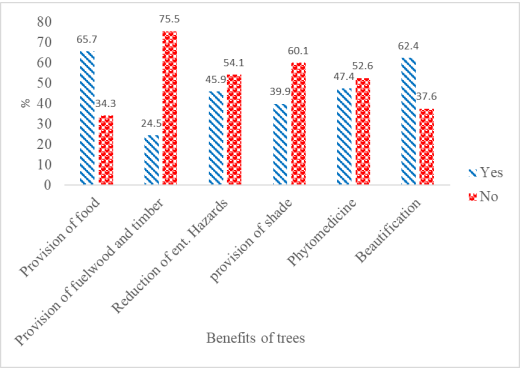

Fig. 2: Frequency Distribution (%) of Perceived Benefits of Trees

Respondents' Personal Experience of Tree Benefits

According to Figure 3, the provision of fruit and food was the highest personal benefit derived from trees (31.3%), while the use of tree parts for phytomedicine was the lowest (12.1%). Shaded places for relaxation are the next most important personal benefit derived from the environment by respondents (28.7%), followed by cooling the environment (27.9%). This demonstrates that respondents have directly benefited from the services provided by trees in their environment.

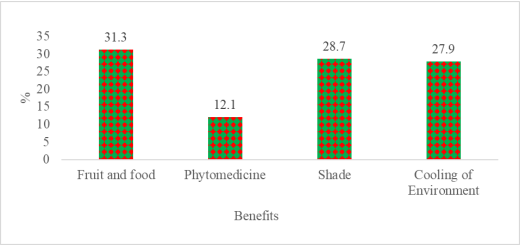

Fig. 3: Frequency Distribution of Personal Benefits Derived from Trees

Frequency of Social Events in the Study Area

In their environment, according to Figure 4, 52.7% of respondents said there are always social events, 23.3% said there are usually social gatherings, 20.7% said there are social events often, and 3.3% said there are social events sometimes. The study revealed that no one said there was never a social event in the neighbourhood, indicating that celebrations of occasions like birthdays, weddings, and funerals is popular in the study area.

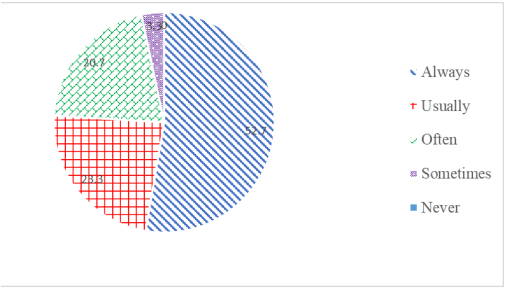

Fig. 4: Frequency Distribution of Social Events Occurrence

Respondents' Willingness to Plant Trees to Commemorate Social Events

As shown in Figure 5, most of respondents (78.4%) indicated that they would be prepared to plant trees at any time to celebrate social occasions because they think that trees are important and useful resources that can enhance environmental quality. This backs up the findings of Popoola & Ajewole (2002) about the willingness of the public to pay for forestry projects to enhance the urban environment of Ibadan. Numerous respondents in Ibadan, Nigeria, who participated in the survey agreed

with its conclusions that many people prefer a green urban environment and thus favour urban reforestation.

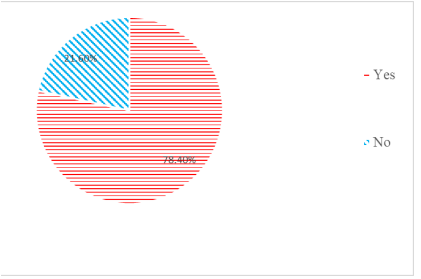

Fig. 5: Frequency Distribution of Respondents' Willingness to Plant Trees

Motivating Factors for Respondents to Plant Trees during Social gatherings

This investigated how the public may become interested in planting trees considering the current global environmental challenges. The findings (Figure 5) shows that 60.5% of respondents would be motivated to plant trees during social occasions in order to boost their income both before and after retirement. They were of the opinion that planting trees could be a long-term investment that would pay planters and their families since trees might later be sold. According to respondents (67.9%), knowing the impact of climate change on the environment and the possibility that tree planting could mitigate the effect may influence their decision to plant trees during social gatherings. From the study, it shows that people are becoming more aware and interested in planting trees to improve environmental quality and save energy. Most of the respondents (73.5%) also mentioned that social media education campaigns and advice from friends and family facilitated them to recognize that planting trees may be a source of making money, which in turn creates job prospects. Additionally, 63.5% of the respondents stated that their interest in planting trees has increased due to the movement to secure and defend their land from government and land grabbers. According to the respondents, planting trees on their undeveloped land would provide security and protect their land from outside forces.

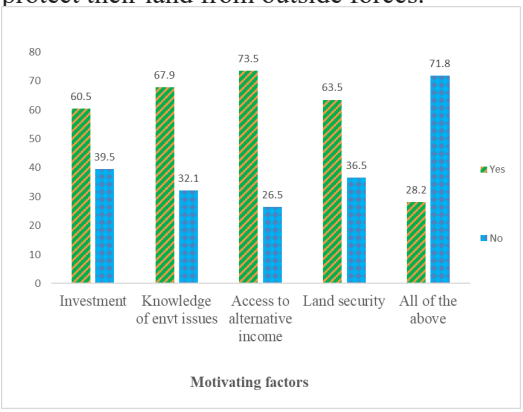

Fig. 6: Frequency Distribution of Respondent's Motivation to Plant Trees

Logistic Regression Analysis on Willingness to Plant Trees to Commemorate Social Events

Table 4 reveals that males are more likely (1.187) than females to plant trees to commemorate social events, thus, respondents' willingness to plant trees to commemorate social events was influenced significantly by gender. The age of respondents had a significant relationship with their willingness to plant trees to commemorate social events, as indicated by the p-value. Furthermore, respondents' marital status has a negative coefficient and the p-value is not statistically significant, indicating that there is no statistically significant relationship between willingness to plant trees to commemorate social events and marital status. However, respondents' willingness to plant trees to commemorate social events was not significantly influenced by their educational background.

TABLE 4

Logistic Analysis on Willingness to Plant Trees to Commemorate Social Events by Respondents

Variables	B	S.E	Wald	Df	Sig.	Exp(B)
Male	0.172	0.253	0.461	1	0.497	1.187
Age	-0.030	0.009	10.747	1	0.001	0.971**
No formal education	0.350	1.424	0.060	1	0.806	1.419
Primary education	0.062	1.264	0.002	1	0.961	1.064
Secondary education	0.103	1.156	0.008	1	0.929	1.419
Tertiary education	1.012	1.137	0.792	1	0.374	2.751
Married	-0.525	-0.379	1.925	1	0.165	0.591
Constant	-1.836	1.322	1.929	1	0.165	0.159

*Significant at $p<0.05$, B= Regression coefficient, S.E = Standard error, Wald= Test statistic, df= Degree of freedom, Exp(B) = Exponential of B coefficient

Discussion

Most of respondents (98.7%) had formal education and are married (56.2%). This demonstrates that a sizable portion of respondents are literate, suggesting that they have access to information. Studies show that scientists and academics are primarily focused on the urgent global issue of climate change, and urban greening is one of the ideas put out to restore the environment. As a result, Ibadan's educated population is aware of how human activity affects the climate, as well as the benefits and services that greenery can provide to people's working and living settings. Furthermore, the study found that a high proportion of respondents are married, and married people tend to celebrate new births, birthdays for themselves and their children, anniversaries, accomplishments, retirements, and the burial ceremonies of their elderly loved ones. Thus, commemorating their joyous occasion with tree planting can be a strategy to improving the greening of the living and working environment while also protecting the planet's health. According to Fasoro & Ajewole (2019), education is a powerful change agent that improves health and livelihoods, contributes to social stability, and drives long-term economic growth. As a result, the socioeconomic characteristics of the respondents are critical to the planting, care, and maintenance of trees in cities.

The awareness of respondents is essential because it aids in conceptualizing the relationships between humans and the environment, as well as how these relationships may shape human behaviour. (Turner-Skoff & Cavender, 2019) stated that people and cities require efficient and effective solutions to address today's challenges. Examining respondents' knowledge of trees in their living environment is thus critical to assisting respondents in coping with climate change or any unpleasant situations. It's also worth noting that residents' awareness of trees in the environment is vital for making management decisions that affect the trees' long-term viability. This is similar to the report of (Fasoro & Ajewole, 2022) that nearly all of the University of Ibadan Residents staff (98%) were aware of the presence of trees in their surroundings.

Hirons & Thomas (2018) stated that the direct and indirect benefits of trees and nature are numerous; however, residents' perceptions of tree functions and services are critical for revealing residents' preferences and evaluations of trees, which can then be used to assess their behavior toward urban greening. Many respondents identified various functions

and services provided by trees in this study; however, as illustrated in Figure 2, the degree to which people recognize the benefits of trees varies. Pataki *et al.* (2021) affirmed that trees in residential areas have varying levels of importance to individuals, and awareness of the existence of the benefits they provide influences society's attitude (either positive or negative) toward the resource. Thus, it was clear from the list of tree benefits in Figure 2 that certain benefits, such as the provision of food (fruits) and the beautification of the environment, were recognized more by the respondents.

Turner-Skoff & Cavender (2019) confirmed that trees play an important role for people and the environment, though the benefits derived from these trees vary from person to person. According to the study, people's perceptions of the benefits derived from trees vary, and some respondents are unaware of the numerous benefits that trees can provide. Further investigation revealed that some respondents believed that the functions and services provided by trees would be limited because their environment had a limited number of trees with a limited diversity of tree species. Individuals' personal benefits from trees may influence explicit management decisions, and specific tree species found in residential areas may reflect people's preferences for specific tree characteristics. As a result, the personal benefits of trees may be an important psychological driver influencing the composition of trees in residents' residential environments.

Social events allow people to connect with their community, spend time together, celebrate and experience the diversity of cultures, and foster creativity and innovation. Thus, the frequency of a social event is the number of times it occurs during a given time period (Bowdin, 2011; and Ferdinand & Kitchin, 2012). A strategy for recommending potential environmental interventions, such as tree planting, could be based on evaluating the frequency of social events and the activities that go along with them. This would significantly contribute to community building, lifestyle and leisure enhancement, cultural development, tourism promotion, increased numbers of visitors, volunteer participation, fundraising, and economic development.

This study discovered that a variety of factors influence the public's decision to participate in tree planting, including investment, knowledge of environmental issues, access to alternative income, and land security. This is similar to the report of (Fasoro & Ajewole, 2019), which states that investment in forest plantation development can ensure income generation, provide an alternative source of income, and secure and protect land from land grabbers.

Conclusion

The study revealed that there is a great opportunity for greening in the Ibadan metropolis through peoples' participation in planting trees to commemorate social events. As a result, environmental conservation organizations such as Forestry Association of Nigeria (FAN), Nigerian Environmental Society (NES), Nigeria Environmental Study Group (NEST) and Nigerian Conservation Foundation (NCF) among others are needed to promote awareness campaigns for enlightening and educating people about the various environmental concerns, as well as to spearhead projects and programmes that provide incentives to encourage public participation. Also, many of the respondents in the study area were married, and married respondents may be more willing to plant trees to commemorate social events such as new births, birthdays for themselves and their children, anniversaries, achievements, retirements, and burial ceremonies for

their aged loved ones. Thus, environmental education should be brought to communities to encourage them to plant trees to commemorate social events, with a focus on understanding tree benefits and services as a vital part of a community's health, essential services, and infrastructure.

References

AHMED Y. (2016) Menace of illegal motor parks in Nigerian urban environment: Example from Ilorin city. *Journal of Geography and Regional Planning*, **8** (2), 37-46. DOI:10.5897/JGRP2014.0466

BAYRAM C. B. & ERCAN G. (2012) Urban Green Space System Planning, Landscape Planning, Dr.Murat Ozyavuz (Ed.), ISBN: 978-953-51-0654-8.

BOWDIN, G. A. J. (2011) Events management. 3rd ed. London: Butterworth-Heinemann.

FASORO, O. A. (2019) Investment Analysis of Medium Scale Private Forest Plantation Development in Oyo State, Nigeria. *Asian Journal of Research in Agricultural and Forestry,* **3** (3), 1-9. https://doi.org/10.9734/ajraf/2019/v3i330040

FASORO, O. A. & AJEWOLE, O. I. (2019) Investment Analysis of Small Scale Private Forest Plantation Development in Ogun State, Nigeria. *Asian Journal of Advances in Agricultural Research,* **10** (1), 1-8. https://doi.org/10.9734/ajaar/2019/v10i130020

FASORO, O. A. & AJEWOLE, O. I. (2022) Resident Staff's Awareness and Perception of Services and Disservices of Trees in University of Ibadan, Nigeria. *Journal of Agriculture and Environment*, **18** (1), 95-106. https://www.ajol.info/index.php/jagrenv/article/view/240954

FERDINAND, N. & KITCHIN, P. (2012) Events Management: An international approach. Los Angeles, [Calif.]: Sage. Book 2nd edition. ISBN: 978-1473919099 https://www.researchgate.net/publication/258513159

HIRONS A. & THOMAS P. A. (2018) Applied Tree Biology. https://onlinelibrary.wiley.com/doi/book/10.1002/9781118296387

MIKIAS B. M. (2015) The Value of Urban Green Infrastructure and Its Environmental Response in Urban Ecosystem: A Literature Review. *International Journal of Environmental Sciences*, **4** (2), 89-101

MILLER R. W. (1997) Urban forestry: planning and managing urban green spaces. 2nd ed. Prentice Hall, Upper Saddle River, NJ.

NEIROTTI, P., MARCO, A., CAGLIANO, A. C., MANGANO, G., & SCORRANO, F. (2014) Current trends in smart city initiatives: some stylised facts. *Cities*, **38** (1), 25–36.

NOWAK, D.J., CRANE, D.E., STEVENS, J.C. (2006) Air pollution removal by urban trees and shrubs in the United States. *Urban Forestry and Urban Greening*, **4**, 115–123.

PATAKI D. E., ALBERTI M., CADENASSO M. L., & FELSON A. (2021) The Benefits and Limits of Urban Tree Planting for Environmental and Human Health. *Frontiers in Ecology and Evolution* 9:603757. DOI:10.3389/fevo.2021.603757

POPOOLA, L. & AJEWOLE, O. (2002) Willingness to Pay for the Rehabilitation of Ibadan Urban Environment through Reforestation Projects. *International Journal of Sustainable Development,* **9***,* 256-268.

TURNER-SKOFF J. B. & CAVENDER N. D. (2019) The Benefits of Trees for Livable and Sustainable Communities. *Plants, People, Planet*, **1** (4), 323-335. DOI:10.1002/ppp3.39

WORLD POPULATION PROSPECTS (2021) United Nations, Department of Economic and Social Affairs, Population Division. The 2019 Revision. https://www.worldometers.info/

Received 05 May 23; revised 17 Jan 24.