



**AgEcon** SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

**THE STRATEGY AND IMPLEMENTATION OF URBAN FORESTRY FOR  
SUSTAINABLE DEVELOPMENT IN NIGERIA**

By

**Salaudeen, A. B. and Henry, U. I.**  
**Forestry Research Institute of Nigeria**  
**Federal College of Forestry, P. M. B. 2019, Jos**  
**Email: bayosalawu@yahoo.com.**  
**08036595490.**

**ABSTRACT**

Sustainable urban development requires providing a healthy and sustainable living environment with basic services for all and sundry. A healthy and multifunctional urban green structure is one of the basic services to provide. Urban forestry, focusing on the tree-dominated part of urban green space is a strategic integrative, interdisciplinary and participatory approach. Its goal is to sustainably develop the multiple benefits of forests and trees in urban environments. Recently, urban forestry has found broad footings across the world, but its potential for cities and towns in developing countries like Nigeria is yet to be realized. The paper therefore aims at raising awareness, developing state-of-the-art concept and generating new technology and knowledge. It also focused on strengthening institution and policy framework, disseminating information and knowledge and enhancing sustainable urban forestry program for sustainable development in Nigeria.

*Key words: strategy, urban forestry, sustainable, development.*

**INTRODUCTION**

Cities are considered to be places where millions of people are feeling lonely together (Ponting, 1990.). While Girardet (1993) perceived cities as centers of innovation and learning, transmitting accumulated knowledge on which future achievements can be built. This however gives a clear view that, some love cities and others hate them. Whether one likes cities or not, the reality is that, the majority of the world's population lives in them and that, further urbanization cannot be halted. Toer (2001) reported that by 2030 60% of the world population is expected to reside in cities and towns. The WRI (2004) also confirmed the fact that urban areas grow three times faster than their rural counterparts. Urbanization is no longer an industrialized world phenomenon as urban areas in developing countries by 2030 will account for nearly 90% of the projected world population increase (WRI, 2004).

Recent urbanization has brought about wide range of challenges across the globe which is not only in population growth. More land is needed for urban areas to provide inputs and outputs of resources and energy with detrimental effect on forests and other green areas. Especially in the developing world (like Nigeria) where most emerging mega-cities are located, managing and catering for urban population will be one of the main challenges of our time. Definitely the influx of rural populations will not stop. Continuing urbanization in the developing world has led to major problems such as hunger, poverty, inadequate shelter, social segregation and stratification, unemployment, pollution of soil, water and air and many numerous to mention. Those responsible for managing cities (like the planners, environmentalist etc) are under

tremendous pressure to develop strategies for alleviating poverty and sustaining urban livelihoods. This paper therefore argues that the development of multifunctional urban green structures can be an important contribution to sustainable urban development in terms of improving the quality of life and environment for current urban populations without endangering the opportunities of future generations. In the developing world, green structures have an important role to play in poverty eradication programme of the present administration.

#### **Urban forestry for sustainable cities**

As earlier described, problems concerning urbanization are very significant, especially in-developing countries. One could ask why basic concern (food, housing, sanitation and employment) are to be prioritized, so why focus on green areas. But experiences and research recently have shown that urban forestry is more than just “icing on the cake”. Far from being luxury goods, they deliver a range of goods and services to justifiably include them as part of the basic urban infrastructures.

#### **Economic empowerment values of urban forestry**

Global emphasis concern has been towards alleviating poverty and improving food security and urban agriculture should not be underestimated in this respect. Many countries have a long tradition of urban dwellers supplementing their economy with local agriculture produce and thus, providing urban employment. Kuchemeister (2004) reported that, timber and other wood products are also very important in urban areas as large parts of the urban population of African are still heavily dependent on fuel wood. In places like Malaysia and China, Webb (1999) confirmed the systematic planting of street trees for timber production. Timber from urban tree may provide construction materials for housing and other buildings. Urban forestry provide non wood forest product such as mushrooms, berries, medicinal herbs etc. In advanced countries however, focus has been on additional economic value such as green areas contributing to more attractive cities for people to work, live and relax. According to Tyrvaenen (1999) there is great positive impact of nearby forests and green on house prices.

#### **Biodiversity Values of Urban Forestry**

Trees reduce storm water runoff and can assist with processing waste water, especially where other waste water facilities are insufficient (Kuon, 2003). Urban forests protect soils and moderate harsh urban climate by cooling the air, reducing wind speeds, and by shading. In semi -arid and arid zones of Nigeria in particular, forest shelterbelts around cities can help combat desertification and dust storms (Salaudeen *et al.*, 2007). Trees and other vegetation intercept particles and gaseous pollutants (Burch and Grove, 2003). The level of biodiversity of urban green areas is often surprisingly high, representing nature close to where people live. Besides, they act as carbon sinks that help mitigate global warming.

#### **Socio-cultural Values of Urban Forestry**

The fact that people prefer outdoor recreational area close to their homes, urban green areas is the most popular outdoor recreational areas. Urban green has a positive impact on physical and mental health by providing settings for physical exercise, reducing ultraviolet radiation and air pollution and reducing stress. Active involvement of local communities in tree planting and management can go a long way to strengthen the sustainability strength of the third tier of government. In many developing countries,

trees often have cultural and spiritual values that could assist new urban dwellers in finding their place in cities and towns. Also the recreational values of forests parks and other urban green areas are especially well documented in the western world (Grahu and Stigsdotter, 2003).

### **Urban Forestry: An Integrative and Strategic Approach**

Innovative concepts such as urban agriculture, urban greening and even urban ecology as well as social and community forestry, all reflect the desire for innovative ways of managing natural resources. However, approaches are needed to extend beyond traditional boundaries, involving a wide range of disciplines and stakeholders. In the case of urban green, they should recognize the multiple values provided as well as the role these areas can play in sustainable development. The concept of urban forestry is however a promising approach to urban green space planning and management. It focuses on what are perhaps the main elements of urban green structure, like forests and other tree- dominated vegetation in and around urban areas (Johnson, 2006). Johnson further defined urban forestry as an integrated city-wide approach to multiple environmental and social benefits for urban dwellers. It is an approach, aimed at contributing to the physiological, sociological and economic well- being of urban society. It is a multifaceted concept which deals with woodlands, group of trees and individual trees where dense conglomeration of people lives. Urban forestry involves a wide range of habitats and is concerned with a great variety of benefits and problems. The strengths of the concept of urban forestry include being:

- Integrative- incorporating different elements of urban green structures into a whole.
- Strategic- at developing longer term policies and plans for urban tree resources connecting to different sectors agendas and program.
- Interdisciplinary-involving experts from natural as well as social sciences.
- Participating-aimed at developing partnerships between all stakeholders and;
- aimed at multiple benefits- stressing the economic, environmental and socio-cultural goods and services it provides.

### **Urban Forestry Strategy**

Lack of information and strategic coordinated action has hampered implementation of urban forestry in developing country like Nigeria (FAO, 2002). Based on this, the Food and Agricultural Organisation puts forward a strategic plan of Urban Forestry for developing countries like Nigeria (as given below).

**Table 1: Strategy of urban forestry as outlined by FAO (2002) (proposed for Nigeria).**

Strategies	Actions
-Raising awareness	<ul style="list-style-type: none"> <li>-Strengthen awareness of urbanization and urban forestry issues across the nation.</li> <li>-Strengthen awareness and role of urban forestry within each locality.</li> <li>-Establish urban forestry dimensions as formal development policy strategy within the country.</li> </ul>
-State -of-art-assessment	<ul style="list-style-type: none"> <li>-Assess good practice within urban forestry.</li> <li>-Assess relevant past and present activities within local government area.</li> </ul>
-New technology and knowledge generation	<ul style="list-style-type: none"> <li>-Undertake new projects aimed at developing good practice within urban forestry.</li> <li>-Develop strong national/urban forestry program, aimed at transforming new knowledge and technologies within urban forestry with emphasis on the need of each local government area.</li> </ul>
-Institutional Capacity and Policy Strengthening	<ul style="list-style-type: none"> <li>-Review national legal and policy framework.</li> <li>-Recommends strategies, guidelines and measures for the promotion of urban forestry in urban areas.</li> <li>-Establish urban forestry dimensions as formal development policy strategy within the nation.</li> </ul>
-Information sharing and dissemination	<ul style="list-style-type: none"> <li>-Establish network of urban forestry experts and stakeholders-Prepare urban forestry information dissemination system for the country.</li> <li>-Improve information sharing system through establishment of network of knowledge and network for people and turn Nigeria into the main provider of information on urban forestry for other developing countries.</li> </ul>
-Sustainable development of urban forestry	<ul style="list-style-type: none"> <li>-Develop and adopt a participatory approach for urban forestry program /project development.</li> <li>-Identify key issues and needs of the country and human development challenges with focus on poverty eradication.</li> </ul>

**Raising Awareness**

Urban forestry awareness can be increased amongst the populace through effective lobbying of the national, state and local councils for adequate funding. This will bring about a broad-based partnership based on a strategic approach to urban tree planting and management for generating multiple benefits. NGO awareness raising could lead to strong links among research, policy and implementation of urban forestry.

The newly established NGO in Federal College of Forestry, an affiliate of the Forestry Research Institute of Nigeria (FRIN), the Green Club is a right move in the right direction. The Club with the sole assistance from the college Provost has provided assistance to a number of schools through tree planting initiatives in Jos, Plateau State of Nigeria. The role of high level politician in awareness raising is important as this will create awareness amongst the populace, consequently getting involved in mass reforestation programme.

#### **State-of-Art- Assessment**

Before developing innovation approach and tools, an assessment of the status and past experiences concerning urban forestry would be beneficial. Unfortunately, comparative assessment of urban forestry resources at a level higher than the city or town is rare. However, in countries where this had been carried out (Egypt, Ecuador, Brazil, Iran, Senegal, Niger etc). The study showed that, about quarter of all trees in these countries are located in metropolitan areas and that their multiple values are considered. These studies showed the importance of urban forestry initiatives for urban development and compiled expertise for cities which are at earlier stages in the development of their urban forestry program (Dwyer *et al.*, 2000). It could be of great importance to assess the current level of research activities and higher education on urban forests and trees Webb (1999) affirmed. However, in the developing world like Nigeria, research and development networking in this direction has so far been limited. Therefore this need to be emphasized and followed up with positive actions.

#### **Technological Innovation**

New technology and knowledge could be extensively generated on urban forestry through special urban forestry research centers of which the Forestry Research Institute of Nigeria (FRIN) is one. This can assist local communities with assessing the value of their urban forestry resources in terms of environmental, social, economic and cultural values.

#### **Institutional Capacity Building**

There is the need to develop ways of integrating urban forestry into urban planning, hence incorporating multidisciplinary action into our city system. This will strongly institutionalize urban green space planning and management as done in Singapore (Nilsson *et al.*, 2003). Besides, degradation of plantations can be put to stop by attempting policy that stimulates private ownership. Palijon (2001) reported a national policy in the Philippines that requires residential commercial and industrial estates to allocate at least 30% of the gross area as open space for parks, playgrounds and recreational use which can also be experimented in Nigeria.

#### **Information Dissemination Partnership**

Networking among researchers, policy makers, practitioners and other stakeholders is crucial in the newly emerging field of urban forestry. This could be achieved through several seminars, pilot studies, reviews and other related activities. Nigeria government can also be part of the annual meeting of the European forum on urban forestry, where urban forestry practitioners exchange ideas and experiences. Also important for the Nigerian state in the "twining" cooperation between countries which serves as a

networking and information sharing tool. Currently, Malaysia and Denmark are on a sustainable forest management program with a component aimed at the advancement of urban forestry in both countries (Zwingle, 2002)

### **Sustainable Urban Forestry Development**

Sustainable development of urban forestry and the promotion of its contribution to sustainable development at the large require a bold and strategic approach. Urban forestry needs to be linked to a broad range of issues and agenda, if it must be sustainable. This could be achieved through community forestry program via planting and management of forest and trees as vehicles for social, economic and environmental regeneration. To maintain an attractive and livable city local authorizes needs to set up extensive greening program with keeping the city competitive by keeping it attractive as a major objective.

### **Conclusion**

The examples presented are but a glimpse of the huge potentials of urban forestry, especially in developing countries like ours (Nigeria). Urban forestry promotes the contribution of forests and trees to livelihoods in urban areas. FAO is currently developing capacities in urban forestry in developing countries, an opportunity which Nigeria can benefit. Considering this program, the country will experience enhanced capacities and knowledge that will assist with the development programs aimed at contributing to urban livelihoods. The concept of urban forestry promotes inclusiveness by involving experts' policy makers and stakeholders from all walks of life. The need to join forces with other initiatives, aimed at sustainable urban development is therefore crucial for Nigeria. The forest policy and institutions branch of the FAO and its long-running community forestry program are other possible allies for this country. Afterall, community forestry has primarily been taken place in rural areas but many of the tools developed are relevant to urban forestry as well (Zwingle, 2002). Close links with these and other existing initiatives will help in promoting urban forestry for sustainable urban development in Nigeria.

### **References**

- Burch, W. R and Grove, J.M. (2003). People, trees and participation in the urban frontier. *Unasylva* 44(174): 19-27.
- Dwyer, J.F., Nowak, D.J., Noble, M. H. and Sisinni, S.M. (2000). Connecting people with ecosystems in the 21<sup>st</sup> century: An assessment of our nation's urban forests. Gen. Tech.Rep.PNW-GTR-490.U.S.Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.
- Food and Agricultural Organisation (FAO) (2002). **Urban and Peri-urban forestry sub-programme: Strategic framework for the Biennium 2002-2003 and Midterm 2002-2007.** Forest conservation, Research and Education services, Food and Agriculture Organization, Rome, Italy,44pp
- Grahu, O. and Stigsdotter, U.A. (2003). Landscape planning and stress. *Urban Forestry and Urban Greening*. 1 (3):1-8

- Girardet, H. (1993). **The GAIA Atlas of Cities: New Directions for Sustainable Urban Living**. Anchor Books/ Doubleday, New York, NY. 192pp
- Johnson, M. (2006). A brief history of urban forestry in the United States. *Arboriculture journal* 20:257-278
- Kuchelmelster, G. (2004). Urban forestry in the Asia-pacific. Region status and prospects. APFSOS working paper No. 44. FAO, Rome, Italy, 66pp.
- Kuo, F. E. (2003). The role of arboriculture in a healthy social ecology. *Journal of arboriculture*. 29(3) ;( 48-55)
- Nilsson, k., Schripperijn, j. and Tvedt, T. (2003). Greenspaces stimulate sustainable urban development. *Park and anlegg*, Norwegian .8:19-23.
- Palijon, A.M. (2002). Urban forestry in Asia: State of the Art. Paper presented at the IUFRO European regional Conference. "Forestry serving urbanized societies". 27- 30 August 2002, Copenhagen.
- Ponting, C. (1991). **A Green History of the World**. Penguin Books London, England. 430pp.
- Salaudeen, A.B., Mbah, J. J and Okoroafor, L. (2007). Using Ecosystem Based approach and Traditional landuse planning in Green space conservation in Nigeria. Paper presented at the Botanical Society of Nigeria (BOSON) 16<sup>th</sup> Annual Conference "Reestablishment of the central role of plants for sustainable economic development. 11<sup>th</sup> -15<sup>th</sup> March, Benin, Nigeria.
- Tooper, K. (2001). The Crucial importance of urban- rural linkages. In: Virchow, D. and Braun, J. (Eds). **Villages in the future: Crops, jobs and Livelihood**. Springer Berlin, Germany. pp 21-24
- Tyvainen, L. (1999). Monetary Valuation of Urban Forest Amenities in Finland. Academic dissertation. Research papers 739. Finish Forest Research Institute, Vantaa, Finland.
- Webb, R. (1999). Urban and peri-urban forestry in Southeast Asian. A comparative study of Hongkong, Singapore and Kuala Lumpur, pp 30-74. In: El Lakany, H. (Eds). (1999). **Urban and peri-urban forestry: Case study in developing countries**. FAO, Rome, Italy.
- World Researches Institutes (WRI) (2004). Earthtrends: The Environmental information portal. WRI, Washington DC earthtrends.wri.org (accessed 7/16/04).
- Zwingle, E. (2002). Cities National Geographic. 2002 (5): 72-99