

PRELIMINARY SURVEY OF CHARACTERISTICS AND INSTITUTIONAL  
FRAMEWORK FOR SUSTAINABLE DEVELOPMENT OF LAGOS  
METROPOLITAN FOREST



Ajewole O. I. and Popoola L.

\*Department of Forestry, Wildlife and Fisheries Management,

University of Ado-Ekiti, Ado-Ekiti, Nigeria (E-mail: dropeajewole@gmail.com)

\*\*Department of Forest Resources Management, University of Ibadan, Ibadan, Nigeria.

(E-mail: labopopoola@yahoo.com)

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### ABSTRACT

The aim of this study is to provide overview information for the development of a long-term plan for Lagos Metropolitan Forest (LMF). A survey was carried out in order to examine treescape, parks and potential planting sites in the metropolis. Information bordering on essential institutional arrangement for sustainable management of the metropolitan forest was obtained from relevant states' agencies. The survey of the metropolis revealed about 11 tree species as the commonly planted and naturally grown species along roadsides and medians; evidence of government-private partnership in the development of parks and landscaping of roundabouts; and ample potential planting sites in the metropolis. The study also discovered that there is no systematic management regime for the trees on public roadsides and that the prerequisite institutional structures for sustainable urban forestry development were absent. Sustainable development of Lagos Metropolitan Forest (LMF) will require the development of a visionary urban forestry movement, as well as the establishment of policy, legal, administrative and structural information frameworks.

**Key words:** Urban forestry, Institutional frameworks, Government-private partnership, Lagos metropolis.

### INTRODUCTION

Structural information framework within the context of urban forestry refers to the scenic physiognomy of the urban environment. It is made up of the general vegetation distribution of the urban area especially the treescape and the distribution of nature parks and potential planting sites. Structural information framework, according to Kaplan (1995) establishes a basis for comprehensive management that recognizes linkages among the multiple land uses and owners of the urban forest. It also provides a means to estimate the actual and potential physical, biological, social, and economic functions of the urban forest, over which urban foresters can develop plans and programme that provide for these functions across the urban landscape. Institutional structures on the other hand are the policy, legal and administrative frameworks that are put in place to achieve sustainable urban forestry development.

Apparently, sustainable urban forestry, which aims at achieving and maintaining a balanced age structure within each urban locality, to ensure continuous tree cover for the production of benefits for current and future generations, will require the establishment of institutional frameworks and provision of information on all vegetation and other attributes of the system across the urban landscape. The objectives of this study therefore are to assess the characteristics of Lagos Metropolitan Forest (LMF) and the institutional structures put in place for sustainable development of the urban forest in order to provide overview information for the development of a long-term plan for Lagos Metropolitan Forest (LMF) which is in its early state of development

### METHODOLOGY

#### *The Study Area*

Lagos metropolitan forest (LMF) comprises trees and related green as well as potential planting sites within Lagos metropolis. The metropolitan Lagos

which is located on latitude 6°27' north and longitude 3°2' east, is situated within Lagos State in the South Western part of Nigeria. Its rainfall and temperature range between 1524mm -2540mm and 23.8°-36°C respectively. Lagos metropolis is a contiguous urbanised land area comprising 16 of the 20 local government areas (LGAs) that make up Lagos State. These LGAs are Lagos Island, Lagos mainland, Eti-Osa, Apapa, Somolu, Kosofe, Ikeja, Agege, Alimoso, Ifako/Ijaye, Osodi/Isolo, Mushin, Surulere, Ajeromi/Ifelodun, Ojoo and Amuwo Odofin.

Lagos metropolis which sprang up from a narrow low-lying island, along the West African Coast has developed northward to the mainland up to about 6°40' north; spreading over 405.53 square kilometre. With annual population growth rate of about 13.6% (about five times as fast as the national growth rate of 2.83%), Lagos is Africa's second fastest growing urban centre after Cairo. It is a focal point for regional, national and international trade, and equally well served by considerable road, rail, ocean and air transport facilities (Aluko, 1999).

According to Arikawe (1993), the metropolis is served by major classes of roads in the country, all summing up to total road length of 2700km. Lagos metropolis is Nigeria's business, industrial and commercial cosmopolitan nerve centre with diversified internal, national and international linkages.

Lagos, which as at 1980 had the largest urban population (17%) in Nigeria (Okorodudu-Fubara 1998), is the first African metropolis to accommodate over 10 million inhabitants. It has an escalating population density of 3146 persons/km<sup>2</sup> (Obudho 1996), and astounding vehicle density of 245 vehicles/km<sup>2</sup> (Coker 2000) The foregoing situations, no doubt, make the development of urban forestry in the metropolis very essential. This will provide a biological and environmentally friendly means of allaying the impact of the urbanisation induced social and environmental problems in the metropolis.

### **Data Collection**

Structural informational need for assessment of urban forest according to Kaplan (Op-Cit) can be obtained in several ways. These include direct observation while riding or walking and the use of low altitude aerial photographs. General idea of whether a particular area is in need of additional planting, hazard

removal, corrective pruning or other action could be obtained during direct observation. Information as to the relative sizes of trees could be got from low altitude aerial photographs, while infrared and other photographs can reveal the presence of certain insect or disease.

However, it is necessary to differentiate between urban forest structural informational requirements for a functioning city forestry programme and that of a programme in early state of development. With the former, there is the need for site-specific information to facilitate establishment, maintenance, and removal of urban vegetation. This information must be obtained through formal inventories. With the latter, the need is for overview information to develop a long-range plan or to help make a convincing case for putting in place or improving a city forestry programme. This information can be gathered by less formal surveys which fulfil the need to acquire relatively low-cost information to facilitate long-range planning or programme development.

Since urban forestry programme is in its formative stage in the metropolis, and the objective of this study is to provide overview information for the development of a long-range plan, an informal survey approach was adopted for the study. Thus the characteristics of the Lagos metropolitan forest was observed by moving round the major road networks in the metropolis, making a checklist of the tree species and their health status, the treescape, nature's parks and potential planting sites (PPS).

Information bordering on essential institutional structures (policy, administrative, and legislative frameworks) for sustainable management of the metropolitan forest was obtained through literature and interviews of relevant officials in the State's Ministry of Environment and the Department of Forestry in the Ministry of Agriculture and Cooperative also from the.

## **RESULTS AND DISCUSSIONS**

### ***Institutional Issues in Urban Forestry Development in Lagos Metropolis***

Investigations in the course of the study revealed that issues that border on planting of street trees; development of parks; environmental beautification and landscaping in the metropolis fall principally under the domain of two agencies.

These are the Department of Forestry in the Ministry of Agriculture and Cooperatives, and the Ministry of Environment. The Department of Forestry has two major divisions: horticulture and regeneration. The later has been responsible for planting and maintenance of street trees since 1985. Ministry of environment on the other hand has seven units comprising: environmental services, conservation and education, waste to wealth, research and development, escue, vegetal control, advisory and beautification and landscaping which is vested with the responsibility of beautifying and landscaping the metropolis through the development of parks and landscaping of roundabouts and medians (Plate 1). With this background in mind, assessment of the prerequisite institutional frameworks for sustainable management of the metropolitan forest was carried out.

### **Policy**

A policy is a documented statement of intent and plan articulating a definite and purposeful course of action capable of affecting a large number of people, and which has important consequences for a significant number and magnitude of resources (adapted from Konijnendijk 1997). A good forest policy should have clear goals, objectives and instruments that will guide forest management into the future. It should respond to public interests/demands and exist in writing, making its purposes and how the benefits will be distributed among the actors and the public explicit. It should also establish the rights and responsibilities of actors and mechanisms for dealing with conflicts. Using the foregoing parameters, it was found out that Lagos state does not have substantive and concrete policy document articulating the goals, objectives and instruments to achieve sustainable development of the state's urban forests.

### **Legislation**

For effective, planned and systematic management of trees and forests in cities, a measure of legal control is necessary. Laws may be necessary both to protect trees from removal, and to protect residents from hazardous trees. Legislations provide in many cases the basis for street tree and urban forestry programme and also empower governments to develop, fund, and recruit staff for the programme as well as acquire,

preserve, and maintain urban green space. According to Grey (1996), the general legal environment in which urban forestry operates has three primary components; ordinances, regulations and liability considerations. None of these is in place for urban forestry development in Lagos metropolis. Although, botanical and zoological gardens, city parks, amenity planting and leisure were mentioned under recreational forestry, while urban forestry, avenue planting and community forestry were listed under social forestry in the state's Forestry Development and Forestry Trust Fund Edict of 1996, it was discovered that there is no concrete evidence of legal empowerment of urban forestry development in the metropolis.

### **Administrative Framework**

Administrative framework relates to the mechanisms established to develop and implement urban forestry programme. Such mechanisms include open space and street tree departments, city/urban forestry department etc. in charge of creating and maintaining a planting area. Successful development of urban forestry programme requires that someone orchestrates the management of the total urban forest. Such function is the duty of the city forestry department (the city forester and staff) supported or administered by an administrative board. Tree board is a generic title for such board with official support or administrative responsibilities for city forestry programme. Such groups may be known variously as commissions, committees, boards, or possibly other names. Established in most cases by ordinances, tree boards have varying official roles, which may be advisory, policy-making, administrative or operational.

Administrative mechanisms for urban forestry development in Lagos metropolis can be studied in parallel with the above framework. In the past, the Department of Forestry under the Ministry of Agriculture and Cooperatives made some efforts to plant trees in some parts of Lagos metropolis. The Ministry of Environment is also making vigorous efforts in the establishment of parks and landscaping of medians and roundabouts in the state (Plate 1). This has been achieved through the support of private sectors. Nevertheless, there is yet to be a substantive administrative mechanism in place to orchestrate an holistic development of the entire metropolitan forest. Presently, there is no city or metropolitan Forestry

Department in the state. In addition, there neither is yet an urban forester employed to manage the entire urban vegetation of the metropolis nor a board specifically inaugurated to administer the forest of Lagos metropolis. These structures are necessary to promote urban forestry in Lagos metropolis.

Bearing the foregoing, the existing arrangement of urban forestry management in the metropolis can only be best referred to as ad-hoc, which is far from a substantive administrative mechanism required for sustainable urban forestry development.



Plate 1: On-Going Median Landscaping and Beautification Project along Ikorodu Road, Lagos Metropolis. *Characteristics and Management Regimes of Lagos Metropolitan Forest*

Lagos metropolitan forest is made up of street trees comprising species such as *Azadirachta indica*, *Casuarina equisetifolia*, *Pinus carebia*, *Gmelina arborea*, *Terminalia catapa*, *Delonix regia*, *Albizia saman*, *polyalthia longifolia*, *Lagerstromia speciosa*, *Haura crepitans* and various species of Palm. The shrubs involved is *Ixora* sp. This is the major species planted along some roadside, parks (gardens) and landscaped roundabouts and medians.

The overview of the metropolitan forest revealed a generally low vegetation covered metropolis and a non-appealing forest structure for scenic purposes, except in very few private premises. Most of the street trees in the metropolis are suffering from either total negligence or at best inadequate management, resulting to non-attractive structure and appearance as shown in Plate 2.



Plate 2: An Improperly Managed *Terminalia catapa* and *Delonix regia* in a Median in Victoria Island

It was also observed that these street trees serve various purposes like provision of shades for pedestrians, street hawkers and destitutes, as well as parking spaces for vehicles (Plate 3). The trees

are serving as residence for destitutes because of lack of systematic management regime for the public roadside trees. On the contrary, planted trees on some private roadsides and lawns are well maintained.



Plate 3: Streets planted with *Delonix regia* serving as parking space for vehicles and shade for man.

However, the State's Ministry of Environment recently established a partnership with a private sector in developing parks and landscaping of medians and roundabouts (Plate

4). The establishment and management of these parks (gardens) and roundabouts are the responsibilities of the donor institutions, though subject to approval and supervision by government officials.

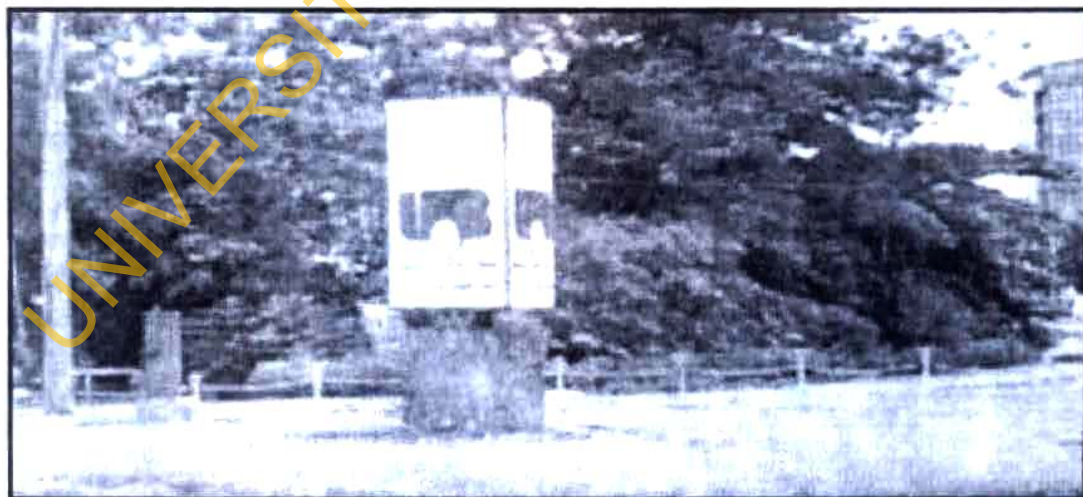


Plate 4: Privately sponsored roundabout landscaping and beautification project in Victoria Island, Lagos.



Plate 5: A potential planting sites in the metropolis at the ojota side of the third mainland bridge.

Despite the high level of urbanisation in the metropolis, there still exist ample potential planting sites such as the space shown in Plate 5, which with proper planning can be properly developed to give the metropolis the several benefits of urban forestry.

## CONCLUSION AND RECOMMENDATIONS

The absence of policy, administrative and legislative frameworks as revealed by this study implies that the present urban green management in the metropolis lacks the three salient components of planning, integration and systematic management regimes essential for sustainable urban forestry development. Sustainable development of the Lagos Metropolitan Forest (LMF) will require among other things the following:

### *Development of a Visionary Urban Forestry Movement*

Sustainable urban forestry development requires the development of a visionary urban forestry movement. The activities of such a movement often involves the development of an urban forestry vision and also the development of supporters or an enthusiastic constituency that will garner resources to make the vision of sustainable development of urban forest landscape a reality. Such roles were prominently played by such organisations as the International Society for Arboriculture (ISA), the Society of American Foresters (SAF) and the American Forestry Association (ASA) in the development of urban

forestry movement in the United States, Arboricultural Association in the development of urban forestry in the United Kingdom and Environmental Conservation Organisation (ECO) in the early development of urban forestry in Republic of Ireland.

The foregoing instances place a challenge and responsibility for the development of visionary urban forestry movement in Nigeria, on the Forestry Association of Nigeria- the leading organisation for forestry profession in Nigeria, and also on prominent non-governmental organisations like the Nigeria Conservation Foundation (NCF). The activities of such a movement will to a large extent be political-serving as pressure/lobby groups that can push for the formulation of concrete policy and appropriate legislation, establishment of suitable administrative mechanism, networking with other organisations and development of programmes etc. The other function of the movement will be propaganda, whereby the advocating organisations can use their machineries to identify, support and create awareness for and develop urban forestry project.

### *Development of Policy and Legal Frameworks*

Sustainable urban forestry development requires putting in place concrete policy framework and enactment of appropriate legislations to give the policy a legal backing and authority. The policy which must exist in writing will articulate urban forestry vision, comprising clear goals, objectives and instruments germane to actualising the vision.

In addition, such a policy should make its purposes explicit, and also establish the mechanisms for dealing with conflicts

### **Development of Administrative Frameworks**

The success of urban forestry development programme is a function of how well the advocates and planners such as the government officials, politicians, professional/trade organisations, non-governmental organisations, researchers, academics, etc articulate their vision, and extent to which they are effective in bringing their vision to reality. Therefore, successful development of urban forestry programme requires the establishment of a board by the state government. This board should be vested with responsibility and effective empowerment for sustainable green development of the metropolis. The functions of the board will include securing resources through fund raising, legislative appropriations and acquisition programmes, programme development (establishment and maintenance), long-term monitoring activities and general networking required for sustainable urban forestry development.

Expectedly, the agency will take over the present similitude of urban forestry efforts by the state's Ministry of Environment and the Department of Forestry in the State's Ministry of Agriculture and Cooperatives. The organisation

must be headed by an urban forester, and supported by a multi-disciplinary board members comprising of professionals from various sectors whose activities are germane to urban environmental management. Such sectors include; town planning, public works, utility providers, environmental non-governmental organisations etc.

### **Development of a Structural Information Framework**

Successful urban forestry development requires information on all vegetation and other attributes of the system across the urban landscape. Although this study has provided overview low cost information necessary for long term planning for sustainable development of Lagos Metropolitan Forest, there is still a need to develop a general vegetation map of the entire urban area according to land use patterns. This will identify open areas such as grassland, cultivated fields, wetlands, open water and tree-covered areas by type, size, density and arrangement. There is also a need to develop a data base that will consist of the overall urban forest need of the metropolis as well as detailed information about the trees and associated vegetation in the metropolis. This structural information will establish a basis for sustainable urban forestry development both in the public and private lands in the metropolis.

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