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Edited by Moses Ogunleye and Babajide Alo

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Chapter

5

Forestry, Wildlife Resources and Urban Greening Programmes

Musiliu Onilude, Saka Jimoh, Adebola Afun and Muiz Banire

5.1 Introduction

This Chapter describes the biodiversity of Lagos State and the on-going conservation efforts of the present administration in the State. It includes an expose on the greening programme of the administration that commenced with full vigour in 2007. As a one of the gains of democracy in the State, the greening programme is an accomplishment of one of the electoral promises of His Excellency the Governor, Mr Babatunde Raji Fashola, SAN.

Generally, the forest is a complex ecosystem consisting largely of trees that buffer the earth and support a myriad of life forms. The benefits of forests (in their broadest sense) and trees to the natural environment, as well as rural communities cannot be overemphasized. They span the social, aesthetic, health, environmental and economic spheres. For example, in an urban setting, the forests can help to reduce storm and water runoff. In addition, it could also improve air quality, reduce

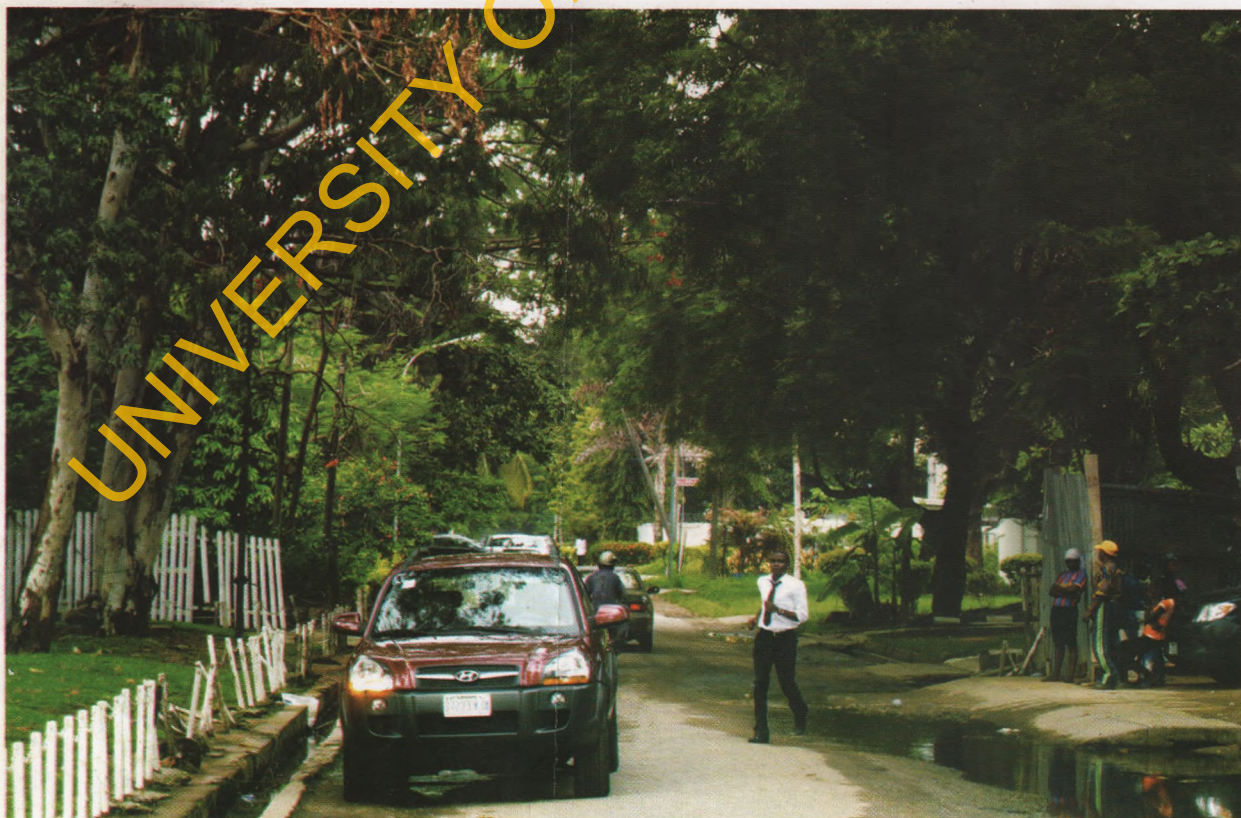


Fig 5.1: Shade bearing trees adding aesthetic beauty and natural richness



noise pollution, sequester carbon, provide wildlife habitats, and serve as cooling system in the city thereby, saving energy costs (Kollin 2005, Akbari 2002 and Ajewole 2005).

The value of wildlife resources to human livelihoods is equally very significant. Wildlife products are often major items of consumption, cultural displays and commerce in many human cultures. They also have high medicinal and spiritual values (Swones et al 1992). They often include a wide variety of foodstuffs such as bush meat, insect grubs, crustacean and eggs, as well as animal parts for clothing and display. Trading in wildlife products often entails differential gender dimensions, with the hunters being men and women dominating the commerce.

5.2 Vegetation Types

The eco-vegetational zones described in this Chapter are as defined by species assemblages and annual rainfall by Keay (1959) and as updated by FORMECU International Inc. et al (1998). According to FORMECU (1998) there are two distinct ecological zones in the State viz: the freshwater swamp ecological zone and the mangrove/ coastal ecological zone.

The freshwater swamp forest is composed of tall trees with broken canopy. The understory is an impenetrable, tangle of shrubs and vines. A number of timber species occur in this zone. Major portions of this zone have however been badly degraded as a result of farming encroachment. Relics of the freshwater swamp remain only along the Creeks and around the Lekki Lagoon.

The mangrove forest/ coastal vegetation ecological zone is represented by a strip 9 to 32 kilometres wide band parallel to the Atlantic Coast. This zone is typified by swampy ground with fresh or brackish water lagoons and winding strips of creeks. Numerous saltwater marshes can be found around Lagos Lagoon and along the creeks west of the city of Lagos. Tall mangrove species thrive on banks of the various murky creeks, some of which are of great economic potentials.

Along the coast lie patches of vegetation on a network of islands, sandbanks, creeks and lagoons giving way to swamp and mangroves inland. Another distinct vegetation type is the secondary re-growth of oil palm bushes located to the northern end of the swamp and mangrove patches. Around Badagry and Epe, there are areas of coarse grass, mangrove swamps and sandy beaches carrying stands of coconut palms. As stated earlier, the vegetation of the State has been badly devastated by farming encroachment and rapid urban development activities. For instance, some of the designated protected /conservation areas in the State have partly or completely given way to urban development. According to FORMECU(1998) the area covered by natural forest in the State reduced from 149,400 ha (38.8% of state) in 1978 to 63,500 ha (16.5% of state) in 1995. This represents 57% loss over a period of seventeen years and an annual loss of about 5,052.9ha.

Obviously the vegetation types contain various biotic and abiotic components which constantly interact between and among themselves to ensure a balanced environment. These various components provide goods and services which contribute to the development of the State. Some of the resources include timber, wildlife, fuel wood, chewing sticks, medicinal plants, wrapping leaves , palm wine , cane, and weaving materials. The resources abound in protected and free areas in various parts of the State. The locations of the various protected areas are presented in Figure 5.2

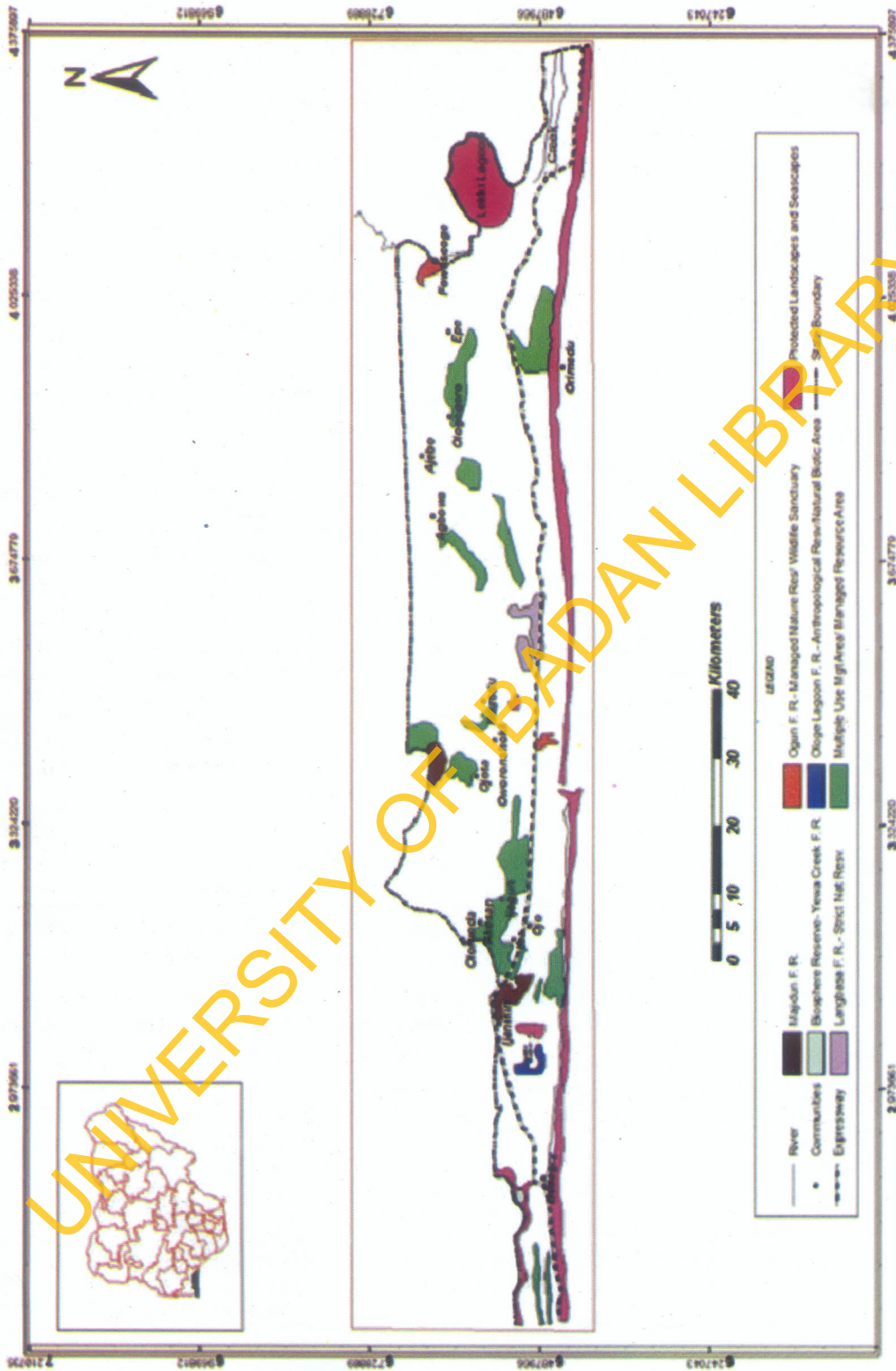


Fig 5.2: Conservation Sites in Lagos State
Source- Department of Forestry, Ministry of Agriculture and Cooperatives, Lagos State (2010)

There are at least 14 conservation areas in the State. Although, some of these reserves are in various stages of degradation, they still contain various

flora and fauna species of socioeconomic and ecological importance. Table 1 shows highlight of conservation sites in Lagos State



Table 5.1: Conservation Sites in Lagos State

Conservation site	Designation	Area (Km2)	Location	Available Resources	Current Status
Ogun River Forest Reserve	Managed nature reserve/wild life sanctuary	52.20	Ikorodu	Timber, wildlife, chewing sticks, medicinal plants	Partly degraded
Ologe Lagoon Forest Reserve	Anthropology reserve/Natural biotic reserve	47.84	Badagry	Timber, wildlife, NTFPs, coco nut, rattan cane	Seriously deforested
Langbasa Forest Reserve	Strict Nature reserve weaving	14.25	Lekki	Rattan cane, wildlife, materials, palm wine	Dereserved
Ishasi Forest Reserve	Resource Reserve medicinal	6.50	Ojo	Timber, fire wood, plants	Dereserved
Yelwa Creek Forest Reserve	Biosphere Reserve	5.00	Badagry	Timber, wild life, NTFPs, Coco nut, rattan cane	Partly degraded
Orimedu/Ibeju	Multiple Use / Managed resource reserve	80.00	Ibeju Lekki	Timber, fire wood, medicinal plants and wildlife	Badly degraded
Ologogoro	Multiple use / managed resource reserve	15.00	South Ijebu	Timber, medicinal plants, fire wood, bamboo	Badly degraded
Ijede East / Isiwu	Multiple-use/ managed resource reserve	25.00	Ikorodu	Timber, wildlife, NTFPs, chewing sticks	Partly degraded
Ibeshe/ Ilemere	Multiple use/ managed resource reserve	N.A.	South Ikorodu	Timber, wildlife, NTFPs, chewing sticks	Partly degraded
Olorunda	Multiple use/ managed resource reserve	30.00	Alimosho	Timber, Fire wood, medicinal plants	Degraded
Isolo /Ijegun	Multiple use/ managed resource reserve	30.00	Alimosho	Timber, Fire wood, medicinal plants	Dereserved
Majidun	North Multiple use/ managed resource reserve	20.00	Ikorodu	Timber, wildlife, NTFPs, coco nut, rattan cane, chewing sticks, medicinal plants	Deforested
Osun River	Multiple use/ managed resource reserve	10.00	Epe	Timber, wildlife, NTFPs, coco nut, rattan cane, chewing sticks, medicinal plants	Degraded
Lekki Conservation Centre	Strict Nature Reserve	0.78	Lekki	Wild life, rattan cane, raphia palm	Intact

Source- Department of Forestry, Ministry of Agriculture and Cooperatives



From Table 5.2 above it is obvious that although, many of the conservation areas have either been affected by degradation occasioned by the rapid urban and industrial development; the State still has some valuable resources which if managed sustainably, hold the potentials to contribute immensely to its economic development and environmental sustainability.

5.2.1 Timber Resources

Due to the unique ecology of the State arising from its location along the coast, some valuable timber species such as *Nauchlea diderichi*(Opepe), *Mansonia altissima*, *Uapaca togoensis*, *Herlia ciliata* (Abura) and *Lophira alata* (Eki) which are known to be either scarce or even locally threatened elsewhere in the country, still exist in some parts of the State. Amubode (1999 a &b) recorded over fifty species of plants some of which are woody perennial with excellent timber characteristics in the State. These included *Drypetes floribunda*, *Azalia africana* and *Nuchlea diderichi*. Other valuable timber species found in the State include

Danielia ogea, *Daniela olivera*, *Lophira alata* *Picnanthus angolensis*, *Alstonia congensis*, *Albizia* spp. and *Diospyros mobutensis*.

FORMECU (1998) estimated the volume of wood potentially available in the State at 8,148,693M3 out of which 3,604,727 M3 are industrial round wood. According to that estimate, only 150,651 M3 was from forest reserves and of this forest reserve figure 66,459 M3 were industrial round wood. This implies that the major supply of timber resources in the State are trees outside reserved areas. As development pressures push the vegetation in unreserved land further backwards, future supply of wood in the state is likely to be at the expense of the environment. In order to check this, the Lagos State Government has established a few plantations in various parts of the State. The species planted include: *Tectona grandis* and *Gmelina arborea* (*gmelina*). Table 4.2 shows the various forest plantations established by Lagos State. There is also minimal effort by private individuals. An example is the Abura Plantation at Epe.

Table 5.2: Government Owned Forest Plantations in Lagos State

No	Location	Species Composition	Area (Hectare)
1	Araga –Epe	Teak	25.0
2	Epe	Gmelina	6.0
3	Badagry	Gmelina	6.0
4	Temu Epe	Teak	5.0
5	Ikorodu	Teak	4.5
6	Ologe	Herlia ciliata (Abura)	2.5

Source : Forestry Department, Ministry of Agriculture & Cooperatives, Lagos State (2010)

Another important source of timber supply in the State is the natural forests outside forest reserves (free areas). This is estimated to be 61, 730 hectares. This comprises of 60,723 hectares of fresh water swamp and 1,007 hectares of riparian vegetations. See Table 5.3.



Fig 5.3 Teak Plantation, Temu, Epe

Table 5.3: Natural Forest Types and Distribution in Lagos State

Natural Forest Type	Area in Forest Reserves (Hectare)	% of Total Forested Area in Reserves	Area in Free Forest Areas (Hectare)	% of Total Free Forest Areas State	Total Area in Area in (Hectare)	% of Total Forested State
Freshwater Swamp	1154	100.0	60723	98.4	61877	98.4
Riparian	0	0	1007	1.6	1007	1.6
TOTAL	1154	100.0	61730	100.0	62884	100.0

It is important to note that only 1154ha of the total figure is located in reserved forest constituting less than 1% of total forest area in the State. This underscores the need to embark on aggressive forest plantation establishments in the State, since the free areas are continually shrinking as a result of rapid urban development. This implies that timber supplies in the State will depend on importation from neighbouring States or country.

5.2.3 Non-Timber Resources

Non timber forest products (NTFPs) are useful materials harvested from the forest, fallow land, farmland and other associated ecosystems for household consumption or for commercial purposes. Some important NTFPs found in the state include: chewing sticks, fire wood, medicinal plants, wrapping leaves, sponge, vegetables, weaving materials, palm wine and local gin. Details of important species of NTFPs found in the State are presented in Table 5.4



Table 5.4 Important Non Timber Forest Products in Lagos State

Scientific Name	Local /Common Name	Uses	Location
<i>Masularia acuminata</i>	Pako Ijebu/ Chewing sitck	Dental care	Epe
<i>Bambusa vulgaris</i>	Oparun /Bamboo	Constructions,fuel wood	Epe, Ikorodu, Eti Osa
<i>Raphia hookeri</i>	Paako/raffia	Constructions,palm wine, weaving material	Ologe,Epe, Ogun river
<i>Cocos nucifera</i>	Agbon/coco nuts	Snacks,cosmetics	Badagry, Epe, eti Osa
<i>Alstonia boonei</i>	Ahun	Medicine	Epe, Ikorodu,lekki
<i>Calamus deratus</i>	Pankere/cane	Cane furniture	Lekki,Eppe, Ikorodu
<i>Dialium guineensis</i>	Awin	Snacks	Eti-osa,Epe , Ikorodu
<i>Herlia ciliata (Mitragyna)</i>	Abura	Wrapping leaves/ fire wood	Epe, Ikorodu,Lekki, Badagry
<i>Pentaclethra macrophyla</i>	Oil bean seed	Snacks Ologe,	Ogun River, Epe
<i>Cola millenii</i>	Obi edun	Medicine	Ologe
<i>Bucholzia coriaza</i>	Wonderful kola	Medicine	Epe
<i>Momordica angusticephalas</i>	Kanhin-kanhin	Bathing/washing sponge	Epe, Badagry
<i>Thaumatococcus daniellii</i>	Ewe eeran	Wrapping leaves	Ogun River, Epe, Lekki
<i>Treculia africana</i>	Afon/Bread fruit	Snacks	Epe, Ikorodu
<i>Chrysophyllum albidum</i>	Agbalumo/star apple	Snacks	Ikorodu, Epe
<i>Elaeis guineensis</i>	Ope/palm trees	Palm oil, palm wine,	Ikorodu, Epe,Ologe, Lekki building materials

Source: Ministry of Agriculture and Cooperatives, 2010

5.3 Wildlife Resources

There are many species of animals and birds in various parts of Lagos State. Amubode et.al (1992) identified sixteen species of mammals in Ogun River and six in Ologe Lagoon Forest Reserves of the State. Some important animals in the State include reptiles such as python, boars, and black cobra. They also identified 72 species of birds in

Ogun River and forty five in Ologe Forest Reserves. These species of birds and animals contribute directly to household food security and income generation while also constituting important biodiversity with great potentials for ecotourism development. Table 5.5 presents important animal and bird species in the State.



Table 5.5: Some Important Animals and Birds Species in Lagos State

No	Common Name	Scientific Name
1	Tree hyrax	<i>Dendryhax arborea</i>
2	Bush buck	<i>Tragilaphus scriptus</i>
3	Green monkey	<i>Cercopithecus sabaew</i>
4	Leopard	<i>Panther pardus</i>
5	Fox	<i>Vulpes pallid</i>
6	Forest otter	<i>Aonyx capensis</i>
7	Potto	<i>Perodicticos potto</i>
8	Giant forest pangolin	<i>Manis tricuspis</i>
9	Grass cutter	<i>Trynomys swindrianus</i>
10	Mongoose	<i>Artifax paludinosus</i>
11	Genet cat	<i>Viverra civetta</i>
12	Blue duiker	<i>Cephalopus monticola</i>
13	Monitor Lizard	<i>Vananus niloticus</i>
14	Sitatunga	<i>Tragelaphus spekei</i>
15	Red river hog	<i>Potamocherus porcus</i>
16	Python	<i>Python sebae</i>
17	Black cobra	<i>Cobra sp</i>
18	Crabs	
19	Prawns	
20	Cray fish	
21	Grey heron	<i>Ardea cineria</i>
22	Black-headed Heron	<i>Ardea melanchocephala</i>
23	Hamercop	<i>Scopus umbretta</i>
24	White-necked stoch	<i>Ciconia episcopopus</i>
25	Hertlaub's Duck	<i>Pteronetta hartlaubii</i>
26	White faced Tree Duck	<i>Dendrcyngna vidaata</i>
27	Black kite	<i>Mulvus migrans</i>
28	Lzzard Buzzard	<i>Kaupifalco monogramicus</i>
29	River Eagle <i>Haliaeetus vocifera</i>	
30	Palm -nut eagle <i>Gypohierax angolensis</i>	
31	Red-necked kestrel <i>Falco chiquera</i>	
32	Senegambian Double- Bicalcaratus spurred Francolin	
33	Anania Francolin <i>Francolinus achantensis</i>	
34	Black crane <i>Limnocorax flovirostra</i>	
35	Pied king fisher <i>Ceryle rudis</i>	
36	Senegal king fisher <i>Halcyon senegalensis</i>	
37	Pygmy king fisher <i>Ceyx picta</i>	
38	White throated Bee- eater <i>Merops albicolis</i>	
39	Blue-checked Bee-eater <i>Merops superciliosus</i>	
40	Green-Backed wood pecker <i>Campethera caillantii</i>	
41	Cardinal wood pecker <i>Dendropicus fuscescens</i>	
42	Mosque swallow <i>Hirundo senegalensis</i>	
43	Pied Crow <i>Coruns alba</i>	

Source: Amubode et.al 1992



5.3.1 Developing Potentials for Forest Resources

Although, the forest resources of Lagos State are very scanty, they still hold great potentials for future development. Some of the potential areas for development are discussed below

Forest Plantation Establishment

There is opportunity for forest expansion through the establishment of forest plantations. There are vast hectares of land at Epe, Ikorodu and Badagry which may be planted with useful tree species such as *Tectona grandis*, *Gmelina arborea*, *Terminalia* sp. *Herlia ciliata*, *Nauclea diderichii* and *Pinus caribea* Jathroph among others. If this is done, it would have multiplier effects on job and income creation, timber, firewood and pulp wood production. It would also contribute to biodiversity conservation; and most importantly environmental protection and prevention of global warming and climate change.

Ecotourism Potentials

The fresh water swamp vegetation which dominates the vegetation of the State houses many species of plants, animals, birds and reptiles which are peculiar to the ecosystem. These resources located along the coast at Badagry, Epe and Lekki could easily be developed into ecotourism centres for activities such as wilderness contemplations, bird watching, sport fishing, boat cruising and nature trailing. Indeed, a study on the condition of wetland in the State which was completed recently made far reaching recommendations which when implemented will go a long way at promoting the ecotourism potentials of the State

Industrial Raw Materials

There are many species of medicinal plants which are utilized by the local people for their health care. These valuable materials could be developed into pharmaceutical drugs which make them more useful to mankind. Furthermore, species such as *Gmelina* and *Pine* if well developed make excellent raw materials for pulp and paper production. The soil of the State supports their growths and they can be harvested within seven to ten years of planting. This is a great investment opportunity for the

government and private investors. Fruits of species such as *Chrysophllum albidum*, *Treculia africana* and *Pentaclethra macrophylla* are potential raw materials in the production of jam, oils and baby food. If these resources are properly harnessed, they would contribute immensely to the development of the state.

Threats to Sustainable Forest Development

The most important threat to sustainable forest management in the State include: rapid urbanization, weak institutional support and inadequate manpower. Many of the designated forest conservation sites have been taken over by development drive either in part or wholly. The only gazetted forest reserve is Ogun River Forest Reserve. The other sites remain proposed conservation areas, hence it is very difficult for the State Forestry Department to enforce their protection. Parts of forest reserves had at one time or the other been taken over by housing projects. In addition, all categories of forestry staff in the State are in short supply, therefore forest monitoring activities are grossly inadequate.

Deforestation and Environmental Degradation

Tropical forests have the largest potential to mitigate climate change amongst the world's forests through conservation of existing carbon pools (e.g. reduced impact logging), expansion of carbon sinks (e.g. reforestation, agroforestry), and substitution of wood products for fossil fuels (Schlamadinger et al., 2007; Brown et al. 1996; Brown et al. 2001). Aforestation, agroforestry, reforestation and forest restoration are capable of sequestering large amounts of carbon. Tree-based land-use systems, natural forest, forest plantations and agroforestry systems sequester CO₂ through the carbon (C) stored in their biomass. Forest vegetation plays significant role in protecting water bodies such as streams, rivers, pools and lakes. It also help to filter erosion water thereby reducing the amount of load carried by erosion water. Furthermore, the forest is the natural habitat of 1417 known species of amphibians, birds, mammals and reptiles.

Unfortunately, the amounts of annual deforestation rate across Nigeria has been on the increase since



the year 1990-2005. Extensive loss of green vegetation covers between 1,230,000 hectares -6,145,000 hectares (Mongabay, 2009). Such vegetation removal leads to gradual blockage of water-ways and river channels, resulting in the siltation of water bodies. This may result in flooding in the short run and drying up of water bodies on the long run. In addition, many useful species of flora and fauna are displaced as a result of irreversible changes in their habitats.

The Lagos Megacity has its own share of pains of development which is most evident in rapid disappearance of natural vegetation as earlier discussed, rapid population growth, emission of green house gases and other particulates, threats of global warming, climate change and ocean surge. The evidences of these already abound.

It is on record that larger part of Victoria Island was sand-filled during the colonial era to make way for human habitation. Similarly, there has been continuous filing of Lekki swamps. No doubt, the swamp vegetation so removed had significant ecological roles in checking coastal erosion, soil stability and flood prevention. Therefore, the consequence of such actions is sporadic flooding and threats of losses of properties to ocean tides and rampant "collapsed building" syndrome. Other effects include loss of floral and faunal species diversities.

On June 25, 2009, a heavy thunder storm wrecked serious havoc at places such as Glover, Oke-Popo and Adeniji Adele areas, all on Lagos Island. It has also been reported that there was a higher volume of rainfall 48.0 to 741.0 (mm/month) and higher temperatures between 26-40oC during the second quarter of 2009. These are signs strong enough to sensitise the people of Lagos and Nigeria in general that the issue of global warming and climate change are neither a fabrication of environmentalists nor the result of undue curiosity of egg-heads scientists.

The presence of green house gases in the atmosphere is a major consequence of deforestation. In many parts of the State, cooking is done mainly through the use of fuelwood, a leading contributor to air

pollution. Fuelwood or Firewood is obtained by cutting down of the forest thus reducing the capacity of the forest, to act as carbon sink. In addition, actual burning of fire wood and charcoal generates green house gases particularly CO₂ and CO, which add to atmospheric carbon blanket.

Furthermore, in the last two decades, the unstable nature of public power supply across Lagos State, and other parts of Nigeria has led to widespread use of power generators to supply electricity for industrial and domestic consumptions. Similarly, there has also been a dramatic surge in the use of motorcycles for intra-city transportation in all the nooks and crannies of the State. This has contributed tremendously to increasing the load of poisonous gases in the atmosphere, while the ability of the environment to sanitize itself through sequestration is being simultaneously and progressively weakened due to deforestation.

The consequences are cases of carbon poisoning and increased incidence of respiratory diseases such as Asthma and Bronchitis. The sad case of the demise of 12 members of a family in Imo State {Daily Triumph Newspaper, January 16, 2009} is readily comes to mind. There are several other unreported cases.

Tree-based land-use systems, natural forest, forest plantations and agroforestry systems sequester CO₂ through the carbon (C) stored in their biomass. By promoting land-use systems which encourage the maintenance or retention of green vegetation on land surface, we can achieve a net gain in carbon sequestration and thereby, reduce the risks of atmospheric pollution, flooding, global warming and climate change.

5.4 Urban Forestry/Greening Programmes

Urban forestry which is synonymously referred to as "urban greening" does not imply the establishment of a forest within the urban centre. Rather, it is an integrated approach to planning, care, and management of all vegetation in cities, towns, and informal settlements in urban areas. Technically, urban forestry can be described as the sustained



planning, planting, protection, maintenance and care of trees, forests, green space and related sources in and around cities and communities for the economic, environmental, social and public health benefits of the people. Urban forests therefore, play important role in ecology of human habitats in many ways: they filtering of air, water, and sunlight, provision of shelter to animals and recreational areas for the people.

There is currently a growing understanding and awareness of the importance of the natural ecology in urban forests in Lagos Metropolitan Area. There are numerous on-going projects aimed at restoration and preservation of the ecosystems of the city ranging from open space landscaping and beautification, to full blown tree planting. Indeed, the tagging of trees in the State commenced in 2009 with a pilot programme in three old Local Government Areas of Ikeja, Apapa and Eti – Osa (Ikoyi). The success of the pilot programme culminated in conduct of the exercise in all the 20 Local Government Areas and 37 Local Council Development Areas. The tag on trees in various

areas shows botanical name of tree, the family name and the use(s). It is expected that the tagging will go a long way in raising awareness on the value of tree as important ecological elements.

5.4.1 Historical Perspectives

Lagos State was once aesthetically appealing, devoid of noise and air pollution and with a high tourist value. It was a city of gardens, race courses, parks, cricket grounds and generally famed for its holding of series of local and national flower competitions. All of these were lost with the advent of the oil boom in 1970 which witnessed construction frenzy in the State. The construction of highways, flyovers and bridges coupled with weakness of enforcement of planning regulations culminated in massive loss of green spaces and open parks. Thus, denying residents of the city of recreational opportunities, in what later became a barely liveable concrete labyrinth.

The city looked stark and lifeless and its air was stale and unhealthy. The green area gave way to legal and illegal structures. Trees were



Fig 5.4 Rows of Trees along Mobolaji Johnson Avenue, Alawusa, Ikeja



indiscriminately felled, leaving the hitherto green city bare. Open spaces such as lawns, loops, road verges, setbacks, recreational centres suffered great neglect and was taken over by traders, commercial transporters, the homeless and hoodlums who used such places as launch pads to terrorize members of the public thereby creating a sense of insecurity. It was therefore, resolved that the only way to make the citizens buy-in to the importance of greening was not to start with them but with the government and policy makers themselves by creating the Greening of Lagos Project. The process involved the government, private corporations, associations, schools and civil society.

5.4.2 The Birth of Operation Green Programme

In year 2007, the Lagos State Government decided it was necessary that decisive action be taken to rescue the state of the environment.

It commenced with Executive Council debates on how to make effective and efficient use of open spaces, as well as respond to challenges that led to the greening project.

5.4.3 First Key Steps and Challenges

Addressed by the State Government

The first step was the resettlement of traders, artisans and mechanics within the open spaces. Then, the re-orientation and empowerment of street urchins and gangs who had converted the spaces as hideouts to unleash terror on innocent citizens. There was also the restoration of law and order among motorcycle and bus operators who had for long and with impunity utilized the open spaces as motor parks and garages

Next was a State - wide census of potential and suitable areas in the City that will be amenable to greening. This consisted in essence of enumeration, tagging, tree planting, landscaping, beautification, creation of recreational parks, and provision of pedestrian walkways, as well as the provision of renewable energy sources such as solar and wind power, aimed also at mitigating the impact of climate change.

5.4.4 Goals and Objectives of Programme

The ultimate goal of the project is to restore order, improve quality of life in neighbourhood, mitigate the effect of climate change and ensure an environmentally sustainable, healthier and a more visually pleasing society.



Fig 5.5. Teachers and pupils of a secondary school actively involved in beautification programme of their premises



It also aimed at reclaiming open spaces from all agents of environmental degradation and preservation of biodiversity and ecosystem of the environment.

5.4.5 Key Strategies

The key strategies for implementing the goals included inter alia:

- Aggressive State - wide landscaping and beautification projects,
- Construction of pedestrian walkways
- Enumeration and tagging of trees with their botanical names and usefulness
- Establishment of recreation parks and gardens in various parts of the State,
- Provision of renewable energy such as solar and wind
- Tree planting aimed at mitigating the effect of climate change, stemming the tide of wind storm and checking the incidence of soil erosion in addition to environmental aesthetics
- Criminalization of unauthorized felling of trees in the State.
- Preparation and submission of a Bill to provide for the establishment of a Lagos State Parks and Gardens Regulatory Agency
- Establishment of plant and flower nurseries to complement supplies from private horticulturists and florists,
- Preparation of a Green Master Plan for the State,

- Legislation of 30% buildable area for landscaping,

- Introduced an advocacy programme in all State schools, teaching children the importance and process of greening; this is aimed at inculcating in them the culture of tree planting and gardening at an early stage

- Commencement of a competition in schools tagged "Me and My Tree" to motivate Pupils and make them vehicles of Change to the larger Society.

It needs to be emphasised that the landscaping and beautification of Lagos is an ongoing Project. In two years, over 1 million trees have been planted, surpassing the original plans to do the same in four years. The success of the Programme can be adjudged from the fact that in three years (since inception in July 2007 till date), 80% of identified project sites have been completed all over the State and work continues.

The citizenry are constantly persuaded to support the Operation Green Lagos Programme so that together all residents of Lagos State can bequeath a healthier, greener and more sustainable environment to posterity.



5.6: Landscaping and Beautification of outer Marina, Lagos

5.5 Benefits of the Urban Trees

The benefits of urban trees include improved aesthetic value and promotion of natural richness for city dwellers. Cities with properly managed and maintained urban trees are more desirable and healthy places to live. Planting of trees in urban areas has both direct and indirect benefits, which can be grouped under environmental, ecological, social and economic benefits.

5.5.1 Environmental Benefits of the Urban Trees

- (i) **Trees improve the quality of air:** Trees trap air borne particles on the surface of their leaves and filter large quantities of gaseous pollutants such as carbon dioxide, sulphur dioxide and the nitrogen oxides from the air. They can be seen as counteracting the global “greenhouse effect” by absorbing carbon dioxide. This is most useful, particularly due to industrial setting of Lagos.
- (ii) **Trees improve the quality of water:** Soil erosion and siltation of urban watercourses are reduced by the placement of trees and vegetation along watercourses. Most importantly, trees and vegetation act as a natural filter by intercepting fertilizer residues and other pollutants flowing into watercourses

through ground and surface runoff.

- (iii) **Trees reduce wind and protect Against Ultra-violet Rays:** The strategic placement of trees can moderate wind speed at ground level and protect residents of Lagos and city dwellers in other places against sun’s harmful ultra-violet rays.
- (iv) **Noise Pollution Reduction:** Tree planting can be used to diminish the psychological effects of noise pollution by visually eliminating the source. Effective noise barriers can be created when trees are planted in combination with earth berms and specialised forcing.
- (v) **Trees reduce temperature and smog:** With an extensive and healthy urban forest air quality can be drastically improved. Trees help to lower air temperatures and the urban heat island effect in urban areas. This not only lowers energy use, it also improves air quality as the formation of ozone is dependent on temperature
- (vi) **Reduction of Storm water Runoff:** Trees can significantly reduce storm water runoff. Their roots absorb the water, while their leaves slow the impact of rainfall thereby,



reducing the load on storm sewage systems. The city of Lagos and other towns in the State like Ikorodu, Epe and Badagry would reduced degradation which storm water runoff would have caused if many trees are planted.

5.5.2 Social Benefits of Urban Trees

- (i) **Trees impact a Distinctive Character to the City:** In urban settings, the beauty which trees add to any landscape can be better appreciated. They enrich the aesthetic experience of the city and establish a visual harmony and continuity along city streets. The example of Mobolaji Johnson Avenue, Oregun, Ikeja suffices.
- (ii) **Recreational Opportunities:** Tree provides passive recreational opportunities. As the city's population continues to age, there will be an ever increasing demand for more passive recreational opportunities in the form of tree planted parks and other green spaces. The use to which some Lagosians have put the gardens created in various parts of the State is indicative of the recreational power of trees dominated by gardens.
- (iii) **Promote Community Identity:** Trees offer beauty and create a sense of place in the community. A healthy urban forest can be a great source of civic pride. Tree planting programs allow citizens to participate in creating a city of which they can be proud.

5.5.3 Economic Benefits of the Urban Trees

- (i) **Trees Promote Growth and Prosperity:** A well maintained urban forest is a significant factor in promoting community prosperity and in attracting tourism and investments.
- (ii) **Property Value Enhancement:** Public trees and trees on private property substantially increase property values and sales. The economic return to the government in form of property sales taxes and other taxes may be substantial. The value which trees have added to property in Ikoyi and Ikeja Government

Reservation Area (GRA) substantiate this.

- (iii) **Employment Generation:** Trees create employment and contribute to the local economy through their production, importation, design, planting and maintenance.
- (iv) **Community Asset:** A properly maintained urban forest is an investment that appreciates in value over time. For example teak, (*Tetona grandis*) an economic timber species planted today may be converted into wood products in 15 to 25 years time to generate income.

5.5.4 Ecological Benefits of the Urban Trees

City trees and urban natural areas provide ecological diversity and are important habitat for a variety of flora, birds, small mammals and other wildlife. It also serves as a stopover point for the migratory birds. Hence, preserving such network of habitats and migration system assists in promoting a natural form of pest control in the urban areas.

5.6 Development of Urban Forestry in Lagos Metropolis

The development of urban forestry in Lagos Metropolis is still at its infancy. Street tree planting, development of parks/gardens and beautification exercise were carried out by the colonial masters before independence. The streets of Lagos, especially Lagos Island, Ikoyi, Apapa and Lagos Mainland were adorned with beautiful trees at the time. Those trees have been removed either for lack of maintenance or due to the need for city infrastructural development.

In recent years, issues that border on urban street tree planting, beautification and landscaping, as well as parks and gardens development in Lagos Metropolis have been the responsibility of two agencies of the Lagos State Government. These are the Department of Forestry in the Ministry of Agriculture and Cooperatives and the Ministry of the Environment. In a study on urban forestry development in Lagos Metropolis Ajewole (2005), it was reported that there is not yet an



effective structure fully established to develop and implement urban forestry programmes in Lagos Metropolis. However, the existing structure is that the Department of Forestry with two major divisions: (horticulture and regeneration) has been trees since 1985. The Ministry of the Environment have also been fully involved in tree planting particularly since 2007. The Ministry has an office (Environmental Services) which itself has four technical departments, vis; Conservation and Ecology, Monitoring, Enforcement and Compliance, Zero Tolerance, as well as Research and Development. The Ministry has been involved in the beautification and landscaping of the metropolis, through the development of nature's park and landscaping of roundabouts, as well as the road medians.

Recently the administration of Mr. Babatunde Raji Fashola, SAN commenced the street tree planting exercise in the Metropolis and other parts of Lagos State. The maiden edition of the tree planting campaign was held in September 2008 to educate and enlighten the public on the advantages of planting and tree maintenance. The Ministry of the Environment initiated the programme and a special

unit named Tree Planting Unit has been created to take care of the new dispensation.

5.7 Tree Planting Campaign in Lagos State

Specifically, the Tree Planting Campaign is aimed among others at:

- complementing the resolve of the administration in embarking on large scale beautification of major open spaces, highways loops and generally promote a green culture in the State.
- rekindling the Tree Planting Culture of Lagosians, which has been abandoned over the years.
- sensitizing and educating the public on the advantages of tree planting to individuals, communities and indeed mankind.
- strengthening advocacy as part of the various steps taken by the Administration to combat global warming and regenerate the environment for healthy living.



Fig 5.7: Governor Babatunde Raji Fashola, SAN during the Tree Planting Campaign exercise at the maiden edition, September 2008



The maiden edition was highly celebrated and well publicised as tree planting events took place simultaneously in so many locations throughout the State. Similarly, to underscore the significance of the campaign, members of the State Executive Council, members of the National and State Assemblies, traditional leaders, leaders of business community, religious leaders. Educational institutions from primary to tertiary levels, trade groups, transport unions, market women and men, as well as media organisations were also mobilised to be part of the event.

Tree Planting Campaign in Lagos State has since been institutionalized following the declaration by the Governor that July 14 of every year be marked in the State as the Tree Planting Day. The 2009 and 2010 Tree Planting Campaigns were celebrated on July 14, 2009 and 2010 state-wide. It recorded huge success.

The planting sites selection was based on field survey and inspection to identify plantable open spaces available for use. In doing this, each potential site was evaluated for its soil conditions, exposure, human activity, drainage, space constraints, hardness, zone slope and nutrient availability. For example, the amount of sunlight available affects tree and shrub species selection for a particular site or planting location. Table 5.6 shows the selected planting sites for the 2008 and 2009 Tree Planting Campaign in Lagos.



Fig 5.8: Tree seedling positioned for planting at one of the planting locations during the 2008 Tree Planting Exercise



Table 5.6 Planting Sites and Tree Species for Campaigns – 2008 – 2010

Year	Site	Planted Tree Species
2008	Obanikoro, Ikorodu Road	Masquerade Tree (<i>Polyalthia lonfolia</i>)
	Gbagada Estate Phase II, Shomolu	Cammeroon Ficus (<i>Terminalia montalis</i>)
	Ahmadu Bello Way, Victoria Island	Queen Palm
	Primary / Secondary Schools	Teak (<i>Tectona grandis</i>)
2009	Oba Ogunji Road, Agege	Queen Palms, Cammeroon Ficus (<i>Terminalia montalis</i>)
	Gbagada Estate Phase II Extension, Shomolu	Cammeroon Ficus (<i>Terminalia montalis</i>)
	Ozumba Mbadiwe Road, Victoria Island	Queen Palm
	Mobil Road, Apapa Ajegunle	Masquerade Tree (<i>Polyalthia lonfolia</i>)
	Primary / Secondary Schools	Teak (<i>Tectona grandis</i>)
2010	LASU Road Junction, Isheri	Masquerade Tree (<i>Polyalthia lonfolia</i>)
	Junction opposite Ifako International School, Iju Road	Masquerade Tree (<i>Polyalthia lonfolia</i>)
	Sabo/Itoikin Junction, Ikorodu	Masquerade Tree (<i>Polyalthia lonfolia</i>)
	Mojoda Market, Odo Ajan, Eredo, Epe	Cammeroon Ficus (<i>Terminalia montalis</i>)

Source: Ministry of the Environment, Lagos

When considering the tree species to be selected for the planting site, attention was paid to species requirements, so as to increase the trees chances for survival. Planting the “right tree in the right location” is key not only for healthy trees but also to reduce future conflicts with the many other utilities and amenities in an urban forest. This is so because when such conflicts are minimized, maintenance needs will be reduced, while public safety is enhanced and long term cost is reduced. As observed from Table 5.6, more than one species was selected for some locations which was done to account for the peculiarities of the respective sites. Figure 5.7 show part of the success stories of the tree planting exercises in the State.

It is noteworthy that the planting sites for the three years of tree planting campaign were not restricted only to the locations in Table 5.6. Indeed, tree planting event is already institutionalized and celebrated yearly across the State. Participation

in the programme has been extended to tertiary institutions, military formations, market / garages / artisans, ministries / parastatals, local governments. Community Development Centres (CDCs), schools, private organisations and corporate bodies. Organisations that participated in the tree planting campaigns of the last three years in Lagos State are shown in Table 5.7.

These organisations participated actively in the tree planting exercise by planting up their respective sites selected for the planting events. The tree seedlings planted were supplied by the State Ministry of The Environment. In a few cases, those organisations requiring additional tree seedlings, made special arrangements on their own for the supply of such seedlings.



Fig 5.9: Planted palms growing in the median of one of the planting sites at Victoria Island

Table 5.7 Participant in the 2008 Tree Planting Campaign

Local Government	Primary and Secondary School (Educational Districts)	Corporate Bodies	Military Formations	Tertiary Institutions	Govt Parastatals
Amuwo Odofin	Agege Ed. Dist.	Oando Plc	Army Rest	Lagos State	LAWMA, Ikorodu
Ojo	Oshodi	Council of	Oshodi	Polytechnic	
Badagry	Agege	Traditional		Univ. of Lagos	Lagos State Water corporation Ijora
Kosofe	Maryland	Obas	Prison Serv.		
Oshodi/Isolo	Yaba	Obas and Chief	Ikoyi Ikeja	Lagos State Univ.	
Somolu	Eti-Osa	in Badagry	Cantomet		Min. of Housing
Agege	Maryland		NNS	Yaba Tech.	
Ifako Ijaye		NASA, Ilasa,	Beecraft		Min. of Home
Ikeja		Lagos		Fed. College of	Affair and Culture
Mushin		Binukonu	NAF Base	Edu Akoka	
Surulere		Market	Ikeja		LAMATA
Lagos Mainland				Adeniran	
Apapa		Nucleus Group		Ogunsanya	Min. of Inf.
Ajeromi/Ifelodun				College of	
Eti- Osa				Education	
Lagos Island				LASUTH	
Ikorodu					
Alimosho					
Ibeju Lekki					
Epe					



The 2009 Tree Planting Campaign witnessed more participants than the previous year. A total of 241 schools participated. Almost all Ministries, Departments and Agencies (MDAs) in Lagos State participated in the planting exercise. Similarly, the participation in 2010 exercise was more. This is an indication that the public is gradually imbibing the tree planting culture which is one of the cardinal objectives of the Tree Planting Campaign.

5.7.1 Street Tree Planting

The experience of the Ministry of The Environment from the launching of the maiden edition of the 2008 Tree Planting Campaign enabled it to embark

on a large scale tree planting exercise outside of the ceremonial annual tree planting campaign in 2009 and 2010. In the realization of meeting the target of planting over one million trees in the lifetime of the present administration, the Ministry embarked on a systematic major and minor street tree plantings in Lagos Metropolis. Table 5.8 below shows streets on which trees were planted in 2009.



Fig 5.10: Growing palms on Hakeem Balogun Road, Agidingbi, Ikeja



Table 5.8: Major Roads and Streets Identified for Tree Planting in 2009

No.	Major Road/Street	Tree Specie Planted	Remark
1.	Moshalasi- Ota Road	Polyalthia Spp (Masquarade tree)	Both sides
2.	Jibowu- Ikorodu Rd.	Cassia Spp	Both sides
3.	Command Rd. Ipaja	Eucalyptu Spp	Both sides
4.	New Ipaja Rd	Polyalthia Spp (Masquarade tree)	Both sides
5.	Iju Ishaga, Pen Cinema Rd	Polyalthia Spp (Masquarade tree)	Both sides
6.	Oba Ogunji- pen Cinema Rd	Terminalia Spp Queen Palm Median	Both sides
7.	Meiran Command Rd	Eucalyptu Spp	Both sides
8.	Isheri Rd to Pen Cinema	Polyalthia Spp (Masquarade tree)	Both sides
9.	Oregun Rd	Polyalthia Spp (Masquarade tree)	Both sides
10.	Opebi Allen Street	Polyalthia Spp (Masquarade tree)	Both sides
11.	Ogolonto-TOS	Benson Largastromia Spp	Both sides
12.	Itamoja to Ijede	Miliama Spp	Both sides
13.	Oke-Afa to Ikoju	Polyalthia Spp (Masquarade tree)	Both sides
14.	Ikotu to Mosalasi	Polyalthia Spp (Masquarade tree)	Both sides
15.	Sabo to Odogunyan	Casuarinas Spp	Both sides
16.	Ikotun to Igando	Polyalthia Spp (Masquarade tree)	Both sides
17.	Capito Rd Miran- Oke-odo to Abule Egba	Queen of Philippians	Median
18.	Ekoru Agbelekale- Abule Egba	Polyalthia Spp (Masquarade tree)	Both sides
19.	Ikotun – Ijegun		

Source: Ministry of the Environment (2010)

5.8 Challenges of Urban Greening/ Forestry

Urban parks and gardens in cities have been regarded principally as recreational facilities or amenities. The concept of urban greening or urban forestry evolved from the recognition that such green areas can and should be used in an integrated holistic manner for many other environmental and social benefits, beyond recreational use and aesthetics. This is the approach the Lagos State Government is taking in the development of its urban forestry/greening projects. However, there are great challenges ahead for the sustainability of the urban greening, particularly tree planting. A few of such challenges and constraints are identified below.

- One of the major challenges is making the public and government officials to appreciate the importance and benefits of

urban greening environment. It is therefore, imperative that the campaign on tree planting and beautification of Lagos Metropolis be intensified and sustained.

- Among the institutional challenges to be overcome is the government capacity to successfully implement urban greening project. At present, it has been observed that there is a general lack of co-ordination between the various levels of government, in particular between the Local and State Government activities on the new tree planting initiatives. The urban greening initiatives must be implemented under the guidelines and regulations prescribed by the supervising agency which is the Ministry of the Environment on behalf of the State Government.



- In addition, another challenge to contend with is lack of skilled manpower resources to handle the various fields of knowledge that urban greening/tree planting encompasses. It is envisaged that a comprehensive urban greening/forestry programmes should involve experienced professionals in the fields of horticulture, forestry, landscape architecture and soil science. Since these crop of specialists are not in the services of the Ministry of Environment, it is imperative that efforts are put in place to train the available officers in necessary fields, so that they can perform their responsibilities efficiently.
- The financial sustainability of the urban greening programmes in the State has been a major concern. Efforts of the Ministry of the Environment with the introduction of the private sector initiative to support the greening projects is highly commendable and should be sustained. Additional efforts should be made in this regard to encourage private investments in funding tree planting programmes in Lagos Metropolis.
- Securing unencumbered land areas or open spaces for urban greening and tree planting projects has been difficult. Residents in the city who do not own a piece of land or do not feel partly responsible for one are not likely to care for trees or other vegetation planted on it. Thus, enlightenment and effective mobilization of residence should be on a continuous basis.
- Local participation in the urban greening or tree planting programmes is very essential. There is need to include as many stakeholders as possible from the very beginning of urban greening or tree planting projects.
- There are other practical constraints to contend with which could be ecological in nature. One of this is the condition of the soil in most parts of the State. Experience has shown that much of the soil in Lagos areas is either compacted or made up of fill. In addition, the designated commercial areas of the city, and densely populated communities in Lagos, have concrete pavements that

have to be broken through to allow for planting. This problem was experienced in the 2009 tree planting exercise in the built up commercial districts of the city.

- The gender issue. Women participation in urban greening programmes can be very important as it give responsibility for the family interaction with the environment. This could be through gardening, care of trees and visitation to parks by children. In this regard, urban greening/forestry programmes must therefore, seek the active participation of women.
- It is also instructive to note the nature of problems resulting from unmanageable environmental pressures imposed on the green spaces of Lagos Metropolitan Area. These include dumping of wastes on the planted areas, trampling of plants and cutting of the planted trees for firewood. In the densely populated areas, the browsing of the planted trees and trampling on the trees are the common constraints experienced.

5.9 Conclusion

The forest resources of Lagos State include timber, non-timber forest products, wild animals and various species of birds. Most of the timber resources are extracted from free areas with minimal contributions from forest reserves and plantations. Many of the designated conservation sites have been badly degraded due to rapid urban development. However, there are great development potentials in areas of plantation development, ecotourism and industrial raw materials. In order to achieve this development, the State Government need to institutionalize the existing designated conservation areas. There is need to reclaim lost forest lands, as well as embark on massive afforestation. More forestry personnel should be recruited, the State Forestry Department should be equipped. It is very important that the State Ministries of The Environment, as well as Agriculture and Cooperatives have extensive collaboration.

Planting of trees in urban areas has both direct and



indirect benefits. It is intended to improve basic sanitation, provision of potable water and control of floodwaters. It also has great values in reducing air pollution, disposal of solid waste, moderation of both macro and micro climates, increasing biodiversity and reducing poverty. The launching of the Tree Planting Campaign in Lagos State in 2008, has further created the awareness and understanding of the importance of the preservation in natural ecology in a metropolitan area like Lagos. Ongoing projects aimed at the restoration and preservation of the ecosystems of Lagos City give credence to this. These projects range from open space landscaping and beatification to full blown tree planting.

Urban greening and tree planting campaign programmes currently going on in Lagos Metropolis have given the city a beautiful look and should be sustained. These efforts are however not without great challenges. A few of such challenges that have been identified should therefore, be given due consideration for sustainability of the greening programmes.

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