

# Land pollution in ibadan assignment



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A TOWN PAPER ON LAND POLLUTION IN IBADAN, THE CAUSES, EFFECTS, REMEDIAL MEASURES AND HOW EFFECTIVE THEY ARE. COMPILED BY ONIFADE SADIAT T MATRIC NO. 073862 TO BE SUBMITTED TO THE DEPARTMENT OF URBAN AND REGIONAL PLANNING FACULTY OF ENVIRONMENTAL SCIENCES LADOKE AKINTOLA UNIVERSITY OF TECHNOLOGY, OGBOMOSHO. COURSE CODE: URP 305 COURSE TITLE: PLANNING STUDIO III LECTURERS IN CHARGE: TPL A. O AKINDELE TPL E. A TOYOBO MARCH, 2010 CHAPTER ONE INTRODUCTION LAND POLLUTION Land Pollution is the degradation of earth's land surfaces.

Land can be polluted through soil or water. Human activities are the main factor and their misuse of land resources. Urbanization and industrialization are major causes of land pollution. Indiscriminate disposal of domestic (solid and liquid) and industrial wastes, exploitation of minerals, and improper use of soil by inadequate agricultural practices are a few factors. Taking Ibadan as a case study, we are going to discuss the causes of land pollution in Ibadan, the effects, the remedial measures and how effective they are.

#### BACKGROUND OF STUDY

Ibadan was historically an Egba town. The Egba occupants were forced to leave the town and moved to present-day Abeokuta under the leadership of Sodeke when the surge of Oyo refugees flocked into the towns as an aftermath of the fall of Oyo Kingdom. Ibadan grew into an impressive and sprawling urban center so much that by the end of 1829, Ibadan dominated the Yoruba region militarily, politically and economically. The military sanctuary expanded even further when refugees began arriving in large numbers from northern Oyo following raids by Fulani warriors.

After losing the northern portion of their region to the marauding Fulanis, many Oyo indigenes retreated deeper into the Ibadan environs. The Fulani Caliphate attempted to expand further into the southern region of modern-day Nigeria, but was decisively defeated by the armies of Ibadan in 1840. The Ibadan area became a British Protectorate in 1893 and by then the population had swelled to 120, 000. The British developed the new colony to facilitate their commercial activities in the area, and Ibadan shortly grew into the major trading center that it is today.

At independence, Ibadan was the largest and the most populous city in Nigeria and the third in Africa after Cairo and Johannesburg. It is located in south-western, 128 km inland northeast of Lagos and 345 km southwest of , the federal capital and is a prominent point between the region and the areas to the north. The population of Ibadan was 2, 550, 593 according to 2006 census results, including 11 local government areas. The principal inhabitants of the city are the Yorubas. OBJECTIVES The objectives of this study are; To identify the major sources of waste in Ibadan

To identify the factors leading to land pollution To identify the effects of land pollution CHAPTER TWO WASTE GENERATION Waste which is one of the sources and causes of environmental pollution has been defined under Resource Conservation and Recovery Act (RCRA) (2000) as any solid, semisolid liquid or contained gaseous materials discarded from industrial, commercial, mining or agricultural operations and from community activities. Waste also includes garbage, construction debris, commercial refuse, sludge from water, control facilities and other discarded materials.

Most of the solid wastes, like paper, plastic containers, bottles, cans, and even used cars and electronic goods are not bio-degradable, which means they do not get broken down through inorganic or organic processes. Thus, when they accumulate they pose a health threat to people. Decaying wastes also attract household pests and result in urban areas becoming unhealthy, dirty, and unsightly places to reside in. Moreover, it also causes damage to terrestrial organisms, while also reducing the uses of the land for other, more useful purposes.

Some of the sources of solid, liquid and gaseous waste that cause land pollution are: \*Wastes from Agriculture: This comprises of waste matter produced by crop, animal manure, and farm residues. \*Wastes from Mining: Piles of coal refuse and heaps of slag. \*Wastes from Industries: Industrial waste matter that can cause land pollution can include paints, chemicals, and so on. \*Solids from Sewage Treatment: Wastes that are left over after sewage has been treated, biomass sludge, and settled solids. \*Ashes: The residual matter that remains after solid fuels are burned. Garbage: This comprises of waste matter from food that are decomposable and other waste matter that are not decomposable such as glass, metal, cloth, plastic, wood, paper, and so on. WASTE GENERATION IN IBADAN Solid waste Although it is generally agreed that enormous quantities of solid waste are generated in Ibadan daily, the exact figures have not been determined, probably owing to the use of diverse methods of calculation. Maclaren International Ltd (1970) found that the average per capita quantity of solid waste generated was 0.37?? 0.5 kg/day for the traditional areas of the city and 0.53 kg/day for the newer areas.

According to Egunjobi (1986), 38 million kg of solid waste was collected in the suburbs of Ibadan in 1986. The suburbs constitute about 21% of the city. On this basis, it can be estimated that 181 million kg of solid waste was generated in the city as a whole in 1986. This gives a per capita waste-generation rate of 0.31 kg/day, using the 1986 estimated population of 1.6 million for the city. In 1982, PAI Associates recorded the volume and weight of solid waste generated per household per day in Ibadan. The study revealed that waste generation varied according to land use, with residential land use taking the bulk of the share. The generation rates were 3.4 kg/household per day in the traditional areas, 3.2 kg/household per day in the newer areas, and 3.3 kg/household per day in the whole city (altogether giving a per capita generation rate of 0.33 kg/day). Several researchers have studied the volume of refuse generated in the city. For example, Maclaren International Ltd (1970) estimated this volume at 182 900 t. The latest study, conducted by Haskoning and Konsadem Associates (1994), estimated the per capita rate at 0.6 kg/day, with a density of 300 kg/m<sup>3</sup>.

The projections are based on an annual growth rate of population per year. The solid-waste composition in Ibadan comprises leaves, paper, food waste, tins, glass, and rags (Maclaren International Ltd 1970). This is because Ibadan is located in the heart of a rich agricultural land and has a large old and unplanned section. PAI Associates (1983) made a comparative analysis of the composition of solid waste from two acres of Ibadan in 1970, which showed that residential land use accounted for 70.1% of the waste generated, followed by commercial land use (18.8%) and industrial land use (9.7%). Institutional and other land use accounted for 0.4% each. The mean

percentage composition of solid waste in Ibadan in 1982 for different parts of the city is summarized in the table below. Mean % composition by weight

Category	Mean % composition by weight
GRABodijaMokola & SangoOke AdoAguguOjaba leaves	7. 54. 333. 223. 532. 626. 5
Food remnants	35. 519. 29. 13. 65. 46. 9
paper	15. 126. 210. 719. 415. 216. 6
Cartons	. 31. 54. 86. 84. 510. 9
Plastic & polythene	4. 18. 93. 711. 54. 85. 1
Tins & metals	20. 811. 415. 416. 47. 712. 8
Bones, ash dust & stones	5. 916. 719. 118. 128. 821. 0
miscellaneous	0. 811. 83. 00. 51. 02. 2
Liquid waste	

The Ibadan metropolis has a lot of problems with the management of its liquid waste.

PAI Associates (1983) estimated the magnitude of liquid waste within Ibadan at 22 650 million L (an average of 6. 2 L per household), and Akintola and Agbola (1989) projected the amounts of liquid waste for 1990 and 1995 at 113. 7 million and 126. 5 million L, respectively. Liquid waste in Ibadan also contains tins, sticks, excreta, oil, pieces of iron scrap, and refuse. Outside of large institutions, such as the University of Ibadan's Teaching Hospital and the International Institute of Tropical Agriculture, Ibadan has no sewerage system. The city's human waste is disposed of largely by means of septic tanks, pit latrines, and buckets.

The uncontrolled disposal of liquid waste into open gutters, open spaces, along roads, etc. , poses serious health hazards. Bodies of stagnant water produce bad odours, breed mosquitoes, and sometimes obstruct the movement of people and goods. For instance, the 1983 study by PAI Associates revealed that 50% of the stagnant pools emitted bad odour, 70% bred mosquitoes, 24% obstructed the movement of people, and 12% bred worms and other germ-breeding pests. Poor practices for liquid-waste

disposal are responsible for waterborne diseases that are common in the city, particularly in its inner core.

The unwholesome environment forces the populace to spend appreciable portions of their low income and time on improving their personal health, with adverse consequences for general economic well-being. Industrial waste  
The industries in Ibadan generate a lot of waste, particularly chemical and toxic waste, explosives, and ash, but the exact quantities have not been measured. The industries make private arrangements for disposal of their waste, with little or no monitoring. Groundwater pollution is a possibility, as companies do not take precautions at disposal sites to supervise and ensure proper sanitary conditions.

**CAUSES OF LAND POLLUTION** Some of the causes of land pollution according to Ukpong are; \*Improper resources management \*Destructive logging of the forest \*Overgrazing and overcropping of animals \*Flooding and wind erosion menace \*Destruction of wetlands and marshes for development \*Strip mining He also identified other indirect causes of land pollution to include population growth and population influx, lack of control of enforcement measures and jurisdictional overlap which are due to unclear authority and the use of inappropriate technology for farming and even for producing manufactured goods.

This above listed causes persisted for the past decades (since independence) and will continue to be so in Ibadan because of the following factors: (i) High rate of illiteracy (ii) Ignorance (iii) Uncivil culture of indiscriminate waste littering (i. e. throwing of wastes on bare ground) (iv) People inability to

maintain a sanitarily clean environment (v) Reluctance of people to cooperate with the authority by disposing solid waste in illegal dumps, rather than using the means provided by the Government; Other factors that militate against decent environment in Ibadan include i. Uncontrolled population creating slum condition; i. Poor planning; and iii. Violation of town planning regulations. EFFECTS OF LAND POLLUTION The increasing amount of solid waste and its disposal have become a serious environmental problem, leading to visual pollution, public health hazards, and water and air pollution. With the growth of the population and the wider use of ' throw-away' bottles and cans, the problem of litter and waste spoils the beauty of our environment . In addition, the discarded solid waste , if untreated, will decay, producing bad smells polluting the air and water. EFFECTS OF LAND POLLUTION IN IBADAN Unarguably, one of the main problems facing.

Ibadan City and which has become an intractable nuisance is open and indiscriminate dumping of refuse, human and animal faeces on land. Piles of decaying garbage which are substantially domestic in nature dominate strategic locations in the heart of the city including the Ibadan Lagos express way. The risks that may be anticipated include bad odour, aesthetic nuisance, fire out break, water pollution, proliferation of insects, flies, cockroaches, rats and other small and dangerous insects which can endanger public health through breeding of ailments such as dysentery, cholera, diarrhea, yellow fever, plague and filariasis.

There is also reduction in the property value of land close to a dump site. Regrettably, this condition characterizes environmental culture in Ibadan. It is important to note that endangered public health situation can exert

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excessive pressure on the health budget, curtails productivity and worsens urban condition of health. CHAPTER THREE REMEDIAL MEASURES TAKEN BY THE GOVERNMENT

The government established three institutions charged with the responsibility of overseeing the environment of Ibadan city. They are; (i) Ibadan Solid Waste Board. (ii) The Local Government Councils, and (iii) Ministry of Environment. Prior to the enactment of edict No 8 of 1997, Ibadan city and its environs were constitutionally broken into (11) eleven Local Government Councils which now shoulder the collection and disposal of solid wastes in Ibadan.

With the commencement of the edict, the functions of the Local Government councils in the Ibadan urban area under the 1979 Nigerian Constitution, and the instrument establishing them to collect, transfer and dispose solid waste were delegated to the new Authority. The functions of the Authority are: (a) Collection, transfer, and disposal of solid wastes for the Ibadan urban area directly or indirectly; (b) Collection and registration of private refuse contractors in the city.

Each refuse collection firm will need to pay specified amounts to the authority annually; (c) To hire or lease out and sell its equipment to refuse contractors at profitable rates (d) To enforce all regulations concerning refuse collection, disposal and any other sanitation laws as obtained and as may be promulgated in the city of Ibadan; (e) To make effective use of Sanitary Inspectors from the Local Government Service and to impose sanctions on any refuse contractor or citizen in form of fines for the

contravention of any of the law in accordance with provision under Offences and Related Matters; (f) To maintain land fill sites around Ibadan and to charge economic rates; (g) Holding meetings concerning planning and strategy to be adopted for the success of its operations; (h) Approving the budget estimates based on the planning and strategy; (i) Ensuring proper use of governmental budget allocated for solid waste collection; (j) Improving the management and operations continuously in such a way that the best service is given against the lowest possible cost; (k) Maintenance and proper use of vehicle and buildings from the State Government entrusted to the Board; (l) Preparation of management information on sanitation and environment; PROBLEMS FACED BY THE ADMINISTRATION OF ENVIRONMENTAL POLLUTION IN IBADAN The problems facing administration of environmental pollution in Ibadan are multi-faceted.

There are four main factors responsible for the problems faced by the Administration of Environmental Pollution in Ibadan. They are (i) Poor funding (ii) Culture of the people (iii) Limited technology (iv) Human resources (i) Poor Funding: Essentially, refuse collection and disposal in Ibadan city have become such complex, capital intensive and expensive project such that it is a futile effort to expect a single institution of local government or state ministry, talk less of a parastratal to finance it from its own limited source. (ii) Culture of the People: One of the factors that pose a great challenge to the management of environmental pollution in Ibadan has to do with the culture of the people. The city is not well organized and planned.

The city has for long been a commercial centre for marketers of maize, yam and other food stuff that generate heaps of refuse which are unmanageable.

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The illiterate culture of the people seems not to respect human dignity and decency. Many houses are without toilet facilities especially in the core of the city. People defecate indiscriminately in any available plots of land which are uncleared or along the streams. Even when toilets are built by the Local government Councils, they are carelessly used and within a short period they get spoilt. Added to this, is the poor maintenance culture of our public facilities. The provision of water to service these facilities is, to the least epileptic, if it runs at all.

Finally, the socio-cultural attitude, lack of awareness and traditional syndrome of dumping refuse very close to their houses constitute a serious health hazard. (iii) Limited Technology: A visit to the garage of the Ibadan Waste Disposal Management Authority revealed that most of its operational vehicles are grounded because of minor technical problem. Even at the dumping site at Aba Eku, the scavengers are self-employed with all the health risk. The compactors relatively new are grounded with just minor complaints and little expenditure to repair them. Again this condition affirms the underfunding of the Authority earlier mentioned. Still on technology, the land fill designed to be operated sanitarily are operated as open dump due to limited technology.

Furthermore, it was observed that medical refuse are deposited at the dumping site which technically ought to have been sorted out. There is also the problem of plastic and polythene products which are not bio-degradable.

**CONCLUSION RECOMMENDATION** Ibadan being the largest and most densely populated West African city should be a state on its own. Fund allocated to the state will be used in managing Ibadan only and this will therefore reduce

the pressure on the fund allocated to the present day Oyo State. There should be an intensive teaching of health education in primary and secondary schools hoping that the children would be able to influence their illiterate parents in complying with simple environmental habits and laws.

Compact incinerator method should be introduced to neighbourhoods because this burns not only the waste but also the smoke and dust arising from leaves and a very small quantity of ashes i. e. about 10% of the original weight of wastes is left back in the incinerator. CONCLUSION This town paper concluded that the management of environment of Ibadan city is a function of the concerted efforts of the three agencies charged with the environmental sanitation being a capital intensive project coupled with adequate manpower and the government should regard the care of the environment as a social service by enlightening and educating the citizens on proper waste disposal methods, otherwise Ibadan city will continue to remain as the city of refuse.