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Waste management policy and Implementation in Nigeria

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Abstract
This paper examined the waste management policies, laws and regulations in Nigeria from colonial era till date against the background of current deplorable environmental sanitation scenario in the urban cities with a view to addressing the challenges. The problems of lack of awareness and knowledge of policy makers and the judiciary in environmental pollution, sanitation and waste management, non -domestication of most of the line Ministries and Agencies, as well as role conflict amongst the stakeholders involved in environmental protection and waste management were identified as the major challenges. Thus, the harmonization of existing environmental laws, review of the Constitution of the Federal Republic of Nigeria and training of judiciary officers to increase their knowledge of waste management, pollution and the public health implications are recommended.

Keywords: waste management, waste management policy, environment, environmental law

Introduction
Nigeria has adopted the definition of environment as "… water, air, land and all plants and human beings or animals living therein and the inter-relationships which exist amongst them (FEPA, 1988). The ecosystems must be safeguarded for the benefit of present and future generations through careful planning or management as appropriate. Past efforts of the pre- and post Nigerian Government on environmental protection was geared primarily either towards safety or the protection and conservation of the economically important natural resources. While municipal waste management was taken care of by the Ministries of Health in various States, there were no specific laws on industrial pollution and hazardous wastes. Industrialization was considered a key indicator of development. States and Municipal governments gave tax and other concessions to lure industrialists to their domain, and the citizens being uninformed, lived happily with the resultant pollution and hazardous wastes.

Waste is defined as any matter which has no further use, based on the composition, e.g. garbage, trash, junks, domestics or ashes. It may be domestic, non-hazardous, hazardous or infectious. Nigeria with its over 5,000 industrial facilities and over 10,000 small scale industries scattered among urban and semi-urban areas contribute more serious problems. These are mostly concentrated in Lagos, Kano, Port Harcourt, Kaduna, Ibadan, Sango-Otta, Warri and Aba. Some of them operate illegally or under some business venture cover. Textiles, tanneries, breweries, process industries and other food and beverage industries discharge their liquid and solid wastes indiscriminately without concern for the environment or the existing laws. More conspicuously, municipal solid wastes, particularly non-biodegradable household petrochemical products (e.g. polythene bags, plastic containers, Styrofoam packages and tyres) litter every corner in the cities causing environmental degradation and threats to human health. In addition, over 80 million litres of crankcase oil disposed off from mechanic workshops, industries, power stations and commercial houses find its way into drains and ground surfaces in the cities. In 1998, 40,000 barrels of crude oil from Mobil off-shore platform in Idoho spread to nine coastal States including Lagos (Osibanjo, 1998) [33]. Besides, there is no sewerage system in any of the cities, hence domestic waste water (sullage or grey water) is channeled through the innumerable open drains to rivers, streams and sea. Some treatment plants built in Lagos, Ibadan, Jos and other major cities many years ago are nonfunctional, due to lack of maintenance and poor design. Thus, the discharges of untreated industrial and municipal effluents pollute the streams and rivers, contaminating aquatic foods like fish, crabs, periwinkles etc., which are caught and eaten freely by the innocent and illiterate folk, despite the risks of chemical poisoning. The same applies to sludge and sediments used as manure for cultivation of fresh vegetables and other food crops (Abiodun *et al.* 1999) [1[]].

The various sources of wastes, their nature and management policies are given in Table 1.

Table 1: Wastes, major sources and management policies

Waste type	Sources	Management Policy
Urban solid wastes, putrescible and non-putrescible solids, semi-solids and liquids (Residential, commercial, institutional)	Human activities	Reduce, Reuse, Recycle, Dispose
Inorganic nutrient runoffs	Fertilizers	Reduce, Recycle
Demolition waste, quarry rejects	Construction sites, quarries	Reuse, Recycle, Dispose
Oils and oily wastes	Industries, mining,	Reduce, Recycle
Hazardous (including clinical), expired drugs, bye-products of metabolism, chemical toxins, faecal pellets in benthos, contaminated sludge, incineration ash, leachates, ignitable, corrosive, reactive or toxic	Industries, healthcare facilities, household hazardous wastes, waste disposal facilities	Reduce, Dispose, for healthcare wastes incineration was adopted by Nigeria
Radioactive waste	Spent fuel from reactors, tailings from the mining /refining of uranium, medical/academic	Reduce, Reuse, Dispose
Electronic waste (E- waste)	Cell phones, computers, etc.	Reduce, Recycle
Ammonia and its oxidative products	Industries, fertilizers	Reduce, Recycle
Mixed wastes (N and P containing) from livestock	Livestock	Recycle
Synthetic chemical wastes	Pesticides, biocides, fuel additives, cosmetics, etc.	Reduce, Dispose
Waste products from combustion (greenhouse gases)	Vehicle engines, sea craft, energy production	Reduce, Alternate fuel use

Wastes and Public health

The history of waste in general is intricately bound with the history of solid waste, given its ubiquitous nature and visibility. It is also inevitably tied to civilization. For most of the last two million years man generated little "garbage" which was easily disposed of through biodegradation. The aborigines of Australia, for example, typically generated debris in all the rooms and threw "it out of the windows and doors". Thus, man was faced with his first "garbage crisis" when he became a "sedentary animal". The rate of garbage piled up in the ancient city of Troy was calculated to be 1.4m tons per century (Rathje 1990) [35]. The ensuing accumulation of waste prompted a response by way of incineration as reported for New York City (Breen 1990). Following this seeming success, as many as 700 cities adopted the use of incineration as a viable societal response. The policies on incineration also created air pollution, necessitating the use of sanitary landfill. Understanding microbiological principles encouraged waste conversion to compost. Legal response was later provided by the enactment of the US Solid Waste Disposal Act of 1965 and the Resource Conservation and Recovery Act of 1976. This Act established what later became the 'Cradle-to Grave' system of Hazardous Waste Management (Soesilo and Wilson 1995) [36]. In the developing countries, however, from the 1930s to date, their own response to the need to manage wastes has been the use of "open dump sites" as in China (Gao 1994) [22], Africa (Onibokun 1995), Asia (Hoornweg 1999, Zurbrug 2002) [23, 42] and others. Garbage mountains point to an important truth that "Efficient disposal is not always completely compatible with other desirable social ends – due process, human dignity, and economic modernization (Rathje, 1990) [35].

The sanitary revolution of the 19th century was credited to Sir Edwin Chadwick as the first initiator of sanitary policies in 1829 when water filtration was initiated in London. Sir Edwin Chadwick in 1842 wrote the classical report on "Sanitary Conditions of the Labouring Population of Great Britain". The resulting cholera epidemics of 1849 and 1853 created the need for a response by way of societal demand for the "removal of dirt". Subsequently the Royal Commission on the health of Towns was established in 1843 bringing out the first Public Health Act for London in 1848. John Simon in 1848 evolved the famous British Public Health System, which was accepted by the US and some parts of Europe. A New York City report of 1865 cited "a slaughterhouse next to a public school … large collections of offal are allowed to accumulate…. constantly undergoing decomposition …fearful overcrowding and neglected sewers" that led to the formation of the Metropolitan Board of Health in 1866 (Dubos *et al.* 1980; Rathje, 1990) [35].

The history of other forms of wastes is not as richly detailed as that of liquid and solid wastes. From these arose comprehensive and standardized analytical techniques during the 1970s (USEPA 1979) [39], with applications to different ecosystems, notably freshwater, wetlands, forests, arid and semi-arid lands and soils (Linthurst *et al.* 1995) [28]. Wastes impact on ecosystem health where man plays a pivotal role. Thus, waste management takes a very important position in safeguarding public health. Every country in its developmental cycle went through problems associated with poor waste disposal and the concomitant diseases. Winslow defined public health as far back as in 1920, as: a science and art of preventing disease, prolonging life and promoting health and efficiency through organized community effort for the sanitation of the environment; the control of communicable infections; the education of the individual in personal hygiene; the organization of the medical and nursing services for the early diagnosis and preventive treatment of diseases; and the development of the social machinery to insure everyone a standard of living adequate for the maintenance of health, so organizing these benefits as to enable every citizen to realize his birth-right of health and longevity (Egwu 1996) [13].

Nigerian Efforts on Environmental Laws and Policy on Waste Management

Customary law is a major source of Nigerian law and varies from place to place. It is also a blanket description for several variations of traditional regulations. Customary courts and Magistrate Courts used to handle Nigeria environmental matters. From time to time during various military and civilian regimes attempts were made to maintain a healthy environment through several programmes. The 'War Against

Indiscipline' (WAI), monthly sanitation days, market cleaning days and several others were attempted particularly in many States without success. Rather, the situation became worse by the day as most of the roads and streets in the major towns and cities were always littered with refuse dumps due to ineffective or absence of waste collection services.

During the colonial period, various legislations were enacted to safeguard public health and the environmental sanitation of the towns. These include:

- Cantonment Proclamation of 1904 on Layout and Sanitation of GRA.
- Water Ordinance of 1913
- The Township Ordinance of 1917
- The Lagos Colony Ordinance of 1928
- The Town and Country Planning Ordinance of 1946
- Mineral Act of 1945 on Trench and Drainage Pollution etc.
- Building Lines Regulations of 1948
- Public Health Laws of 1957 to check Overcrowding, Disease and Squalor
- The Public Health Laws of 1917, (later amended as Public Health Law Cap 164 of 1958
- Local Government Ordinance of 1950/54-58.
- Nigerian Criminal Code Cap 42, LFN, 1958
- Factories Act of 1955 and later amended in 1958.
- Births, Deaths and Burial Act of 1958 (Ogu,1996)
- Public Health Laws, Laws of Eastern Nigeria, Cap 103, Vol. 6, 1963
- Public Health Act of 1909 (subsequently amended in 1978)

The Public Health Law of 1958 amended in 1978 made provision for solid waste management. Since independence in 1960, Nigeria's waste management has been crippled as a result of several factors, notably lack of proper governance, inadequate infrastructure, inability of the Local Government to bear the cost of waste manage and dependence on State funds and lack of enforcement agencies for local laws and by-laws such as the use of local police to handle waste disposal during colonial and post colonial era (Abumere, 1998) [3].

The 1972 Stockholm Conference on Human Environment which was attended by a Nigerian delegation ignited the consciousness of the world governments on the need to evolve a holistic rather than sectoral approach to environmental protection. The milestones at global level are given in Table 2. In Nigeria in 1975, a Division of Urban Development and Environment was created in the Federal Ministry of Economic Development which was named "Environmental Planning and Protection Division" in the Federal Ministry of Works and Housing in 1979.

Other efforts and regional initiatives such as the Lagos Plan of Action of 1980 also reinforced this emerging consciousness for environmental protection. In 1981, a bill for the establishment of a Federal Environmental Protection Agency (FEPA) was placed before parliament. Meanwhile a small unit named 'Environmental Planning and Protection Division' in the Federal Ministry of Works and Housing was handling environmental protection. But nothing happened to the bill and the situation of industrial pollution continued throughout most of the 80s. Even though, from time to time laws were formulated, in the absence of functional infrastructure the implementation was rather difficult.

Prior to the establishment of the FEPA there were sectoral environmental regulations with various significant responsibilities relating to environmental protection improvement. Also in existence were commissions with advisory capacity in environmental matters. The various activities and the complex combination of interdependent operations of the oil industry more than any other sector, adversely affect the environment. In the oil industry, the Department of Petroleum Resources (DPR) adopted remedial, though inadequate, enforcement tools which included compliance monitoring and the issuing of permits/licenses. Studies indicated the extent of devastation the oil industry has caused to aquatic and terrestrial ecosystems and cultural and historical resources. This coupled with the community's dissatisfaction and agitation, especially in the Niger Delta, reinforced the need for the sector to plan, protect and enhance prudently environmental resources for a better environment. These sectoral regulations were, however unsuccessful due to the absence of effective sanctions. Economic considerations and fundamental lack of knowledge of interdependent linkages among development processes and environmental factors, as well as human and natural resources, resulted in an unmitigated assault on the environment (Echefu and Akpofure, 2004) [12].

Table 2: Milestones in waste management responses and policies at global level

Year	Response
1972	▪ UN Conference on the Human Environment, Stockholm, Sweden ▪ UNEP established ▪ UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage
1980	▪ International Water Supply and Sanitation Decade begins
1982	▪ UN Convention on the law of the sea (UNCLOS)
1987	▪ The World Commission on Environment (Bruntland Report) titled "Our Common Future"
1989	▪ Basel Convention on the Transboundary Movement of Hazardous Wastes and Their Disposal
1990	▪ Eco-efficiency established as a goal for industry
1992	▪ UN Conference on Environment and Development (the Earth Summit), Rio de Janeiro, Brazil Convention on biological diversity
1996	▪ UN Conference on Human Settlements (Habitat II), Istanbul, Turkey ▪ ISO 14000 created for Environmental Management systems in industry
1997	▪ Kyoto Protocol adopted ▪ Rio+5 Summit reviews implementation of Agenda 21
2000	▪ Cartagena Protocol on Biosafety adopted
2001	▪ Stockholm Convention on Persistent Organic Pollutants (POPs)
2002	▪ World Summit on Sustainable Development, Johannesburg

Evolution of the Federal Environmental Protection Agency (FEPA)

The need for environmental preservation, in spite of efforts by United Nations Environment Programme (UNEP) and International Conventions which Nigeria ratified took the centre stage after the momentous and singular event of the secret dumping of toxic waste in Koko Port, Bendel State (now Delta State) in May 1988 by foreign parties. The creation of the Federal Environmental Protection Agency (FEPA) by Decree 58 of 1988 as a parastatal under the Federal Ministry of Works and Housing was the first real attempt to give coherence and visibility to environmental issues in Nigeria. The Decree was later amended by Decree 59 of 1992, to strengthen responsibility for control over Nigerian environment and for the development of processes and policies. Apart from publishing the National Policy on the Environment in 1989, with the goal of achieving sustainable development, it published other sectoral regulations including the National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulation 1991, wherein EIA was made obligatory and compliance was within 90 days of such a demand. This was followed by the promulgation of the Harmful Wastes (Special Criminal Provisions) Act 1990 and subsequently international seminars and workshops were held in Abuja and Lagos, resulting in the establishment of appropriate environmental legislation to discourage short-term plans and 'fire brigade' approaches to environmental issues. An institutional framework was put in place to deal with the problems of the Nigerian environment.

However, in the oil industry, the principal legislation is the Petroleum Act 1969 and all derivative regulations charged DPR among others with pollution abatement. States and Local Government Councils were encouraged under Decree 59 of 1992 to set up their own environmental protection agencies. An EIA Decree 86 of 1992, was promulgated establishing FEPA as the apex regulator, making EIA mandatory for all development purposes (although with some exceptions). Consequently, FEPA published various sectoral EIA procedures and guidelines in 1995.

There were no laws on industrial pollution before the creation of FEPA, hence there was no culture of pollution control. Therefore it became fashionable for State and municipal governments to designate certain areas in their major towns as industrial estates. But these estates lacked central waste treatment plants and properly lined hazardous waste landfills for effective waste management. Many do not even have basic infrastructures such as tarred roads, pipe-borne water supply or electricity. The most advanced industrial estate in Nigeria - The Agbara Industrial Estate, Lagos was the only one with a central waste treatment facility connected to the National Electric Power Grid in 1992, 15 years after establishment. With the national economic recession, majority of the industries were operating well below capacity without any attention to environmental problems. During the period Nigeria recorded at least three major industrial accidents (Owolabi, 1997) [34]:

1. Industrial pollution of effluent from the WEMABOD Waste Water Treatment Plant at Idimangoro, Agege (Lagos) in 1979, which had broken down and polluted the drinking water wells, killed livestock and caused the collapse of a house;
2. Spillage of petroleum product from the Kaduna Refinery into the Romi and Rido Rivers in1987 resulting in gross surface and ground water pollution in Rido village, loss of aquatic life and payment of 3 million Naira compensation to the villagers;
3. Illegal dumping of 3,888 tons of assorted toxic wastes at Koko, Delta State (Formerly Bendel State) in June 1988.

In order to stop the unwholesome practices of industries and toxic waste merchants, government enacted a number of laws which spelt out specific offenses, requirements and penalties for contravention. The following are the instruments of intervention for pollution control in Nigeria from 1988 to date:

- The Hazardous Waste Criminal Provisions Decree 42 of 1988.
- The National Guidelines and Standards for Environmental Pollution control in Nigeria.
- The National Effluents Limitations Regulations S.I.8. of 1991 which make it mandatory for industrial facilities generating wastes to retrofit or install at commencement of operations, anti-pollution equipment for detoxification of effluents and chemical discharges. The regulations also spell out by industrial categories, crucial parameters and their limits in effluents or emissions and prescribe penalties for their contravention.
- The Pollution Abatement in Industries and Facilities Generating Regulations S.I.9. of 1991 which spell out: restrictions on release of toxic substances into Nigeria's ecosystem; the pollution monitoring requirement for industries, the strategies for waste reductions, requirements for environmental audits and penalties for contravention.
- The Management of Solid and Hazardous Wastes Regulations S.I.15 of 1991 which give a comprehensive list of dangerous and hazardous wastes, the contingency plans and emergency procedures; The regulations also prescribe the guidelines for ground water protection, toxic waste tracking programme, and the environmentally-sound technologies for waste disposal.
- The Environmental Impact Assessment (EIA) Decree 86 of 1992 which is to infuse environmental considerations into development project planning and execution. It prescribes the guidelines for EIA studies; spells out the project areas and sizes of projects requiring EIA in all areas of national development and the restrictions on public or private projects without prior consideration of the environmental impact.
- The 1999 Constitution of the Federal Republic of Nigeria, Chapter II, Section 20 provides that the state shall be responsible for the protection and improvement of the environment to safe guard the water, air, land, forest and wild life.
- Factories Act of 987, Part 111-General Health Provisions
- National Environmental (Sanitation and Wastes Control) Regulations, S. I. No. 28 of 2009, provides the legal framework for the adoption of sustainable and environment friendly practices in environmental sanitation and waste management to minimize pollution.
- National Environmental (Permitting and Licensing System) Regulations, S. I. No. 29 of 2009, is to ensure the

consistent application of environmental laws, regulations and standards in all sectors of the economy and geographical regions.

- National Environmental (Mining and Processing of Coal, Ores and Industrial Minerals) Regulations, S. I. No. 31 of 2009, seeks to minimize pollution from mining and processing of coal, ores and industrial minerals and encourage the application of up-to-date efficient cleaner production technologies.
- National Environmental (Ozone Layer Protection) Regulations, S. I. No. 32 of 2009, is to prohibit the importation, manufacture, sale and the use of ozone-depleting substances.
- National Environmental (Food, Beverages and Tobacco Sector) Regulations, S. I. No. 33 of 2009, is to prevent and curtail pollution from all operations and ancillary activities of food, beverages and tobacco sector to the Nigerian environment.
- National Environmental (Textile, Wearing Apparel, Leather and Footwear Industry) Regulations, S. I. No. 34 of 2009 is to ensure that all operations and ancillary activities from this sector do not have significant negative impact on the Nigerian environment.
- National Environnemental (Noise Standards and Control) Régulations, S. I. No. 35 of 2009 is to ensure tranquillity of the human environment or surrounding and their psychological well-being by regulating noise levels.
- National Environmental (Chemicals, Pharmaceuticals, Soap and Detergent Manufacturing Industries) Regulations, S. I. No. 36 of 2009: This Regulation seeks to ensure the safe use of chemicals in line with best practices including the adaptation of the 3R principles namely-reuse, recover and recycle.
- National Environmental (Standards for Telecommunications/ Broadcasting Facilities) Regulations, S. I. No. 11 of 2011, is to ensure that activities of the telecom industry do not negatively impact on the environment and human health.
    - National Environmental (Soil Erosion and Flood Control Regulations, S. I. No. 12 of 2011, is to regulate all earth disturbing activities, practices or developments for non-agricultural, commercial, industrial and residential purposes.
    - National Environmental (Base Metals, Iron and Steel Manufacturing/Recycling Industries) Regulations, S. I. No.14 of 2011, is to control all operations and ancillary activities of this sector in order to safeguard the Nigerian Environment from their negative impact.
    - National Environmental (Control of Bush/Forest Fire and Open Burning) Regulations, S. I. No. 15 of 2011 is to prevent and minimize the destruction of ecosystem through fire outbreak and burning of any material that may affect the health of the ecosystem through the emission of hazardous air pollutants.
    - National Environmental (Domestic and Industrial Plastic, Rubber and Foam Sector) Regulations, S. I. No. 17 of 2011, is to prevent and curtail pollution of the Nigerian environment from all operations and ancillary activities of this sector.
    - National Environmental (Coastal and Marine Area Protection) Regulations, S. I. No. 18 of 2011, provides for the regulatory framework for the application of preventive, precautionary and anticipatory approaches so as to avoid degradation of the coastal and marine environment
    - National Environmental (Construction Sector) Regulations, S. I. No. 19 of 2011, is to prevent and minimize pollution of the Nigerian Environment from the impacting activities of Construction, Decommission and Demolition.
    - National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, S. I. No. 20 of 2011, is to safeguard the Nigerian environment against pollutants from vehicular emission.
    - National Environmental (Non-Metallic Minerals Manufacturing Industries Sector) Regulations, S. I. No. 21 of 2011: provides the regulatory framework for the control of all activities of this sector in order to protect the Nigerian environment from their negative impact.
    - National Environmental (Surface and Groundwater Quality Control) Regulations, S. I. No. 22 of 2011, is to restore, enhance and preserve the physical, chemical and biological integrity of the nation's surface waters, and to maintain existing water uses.
    - National Environmental (Electrical/Electronic Sector) Regulations, S. I. No. 23 of 2011: is to ensure that best practices are applied and maintained in the operation of this sector in order to safeguard the Nigerian Environment against pollution hazards.
    - National Environmental (Surface and Groundwater Quality Control) Regulations, S. I. No. 22 of 2011, is to restore, enhance and preserve the physical, chemical and biological integrity of the nation's surface waters, and to maintain existing water uses.
    - Nigerian Standard for Drinking Water Quality, 2007 is to ensure safety of drinking water supply and protection of consumers from disease.
    - National Building Code, 2006 (Section 12- Post Construction Requirements) is to ensure building safety and protection of occupants from health hazards, including waste disposal.

The following extant laws, regulations and guidelines were also put in place by Government:

- Harmful Waste Act retained as Cap HILFN2004 (prohibits the carrying, depositing and dumping of harmful waste on the land and territorial waters of Nigeria;
- Environmental Impact Assessment Act retained as Cap EI2LFN2004 (Sets out the general principles, procedures and methods of Environmental Impact Assessment for various sectors;
- National Environmental Protection (Effluent Limitations) Regulations S.I.8 of 1991 (to ensure the installation of anti-pollution equipment for the detoxification of industrial effluent chemicals discharge;
- Environmental Guidelines and Standards for the Petroleum Industry in Nigeria 2002-seeks control and prevention of pollution from petroleum operation;
- Mineral Oil Safety Regulations 1997 to ensure that oil and

gas operators provide necessary material to their employees;
- Petroleum Drilling and production Regulation 1967- regulates the licensing of oil exploration, prospecting and mining;
- National Environmental Health Practice Regulations 2007 regulates environmental health practice.
- National Environmental Protection: Management of Hazardous Wastes S. I. 15; 2009
- Guidelines on Hazardous Chemicals Management;
- Guidelines on Pesticides Management;
- National Chemical Management Profile to assess chemicals management infrastructure;
- National Implementation Strategy for Chemicals Hazard Communication;
- The National Implementation Plan for Persistent Organic Pollutants; and
- National Environmental Health Practice Regulations, 2007.
- National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007, established NESREA and charged it with the responsibility of protecting and developing the environment in Nigeria, as well as enforcing all environmental laws, regulations, standards, policies, guidelines and conventions on the environment to which Nigeria is a signatory.
- Environmental Impact Assessment Act Cap E12 LFN 2004 sets out the general principles, procedures and methods of environmental impact assessment in various sectors.
- Harmful Waste (Special Criminal Provisions, etc.) Act Cap H1 LFN 2004, prohibits the carrying, depositing and dumping of harmful waste on any land and territorial waters of Nigeria.
- National Policies, Guidelines and Standards Corporate Strategic Plan describes the scale of the environmental and social challenges, and explains how NESREA, with the support of other key stakeholders, will address these issues in year 2009-2012.
- Environmental Enforcement Policy aims at providing actions to take in enforcing environmental legislation, standards, regulations and guidelines fairly and appropriately in a manner that will protect environmental quality and safeguard public health.
- National Environmental Sanitation Policy seeks to stimulate, promote and strengthen all government regulations concerned with housing and urban development, food security water supply, sanitation related endemic diseases and illnesses, flood and erosion control, drought control, school health services and environmental education.

State Environmental Sanitation Laws are available in the various states:
- Abuja Environmental Protection Board (Solid Waste Control/ Environmental Monitoring) Regulations 2005'
- Lagos State Environmental Protection Agency Law
- Akwa Ibom State Environmental Protection and Waste Management Agency Law,
- Ondo State Waste Management Law 2002
- Rivers State Environmental Sanitation Edict, 2004
- Bayelsa State Environmental Sanitation Authority Law, 2006, among others.

In addition to the National Policy on Environment, there are other policy documents on some thematic areas of the Ministry's mandate. These include:
- National Policy Guidelines on Sanitary Inspection of Premises: seeks to promote clean and healthy environment for the populace.
- National Policy Guidelines on Solid Waste Management is to improve and safeguard public health and welfare through efficient sanitary Solid Waste Management methods that will be economical, sustainable and guarantee sound environmental health.
- National Policy Guidelines on School Sanitation is to protect school children from hazards and to encourage the provision of sanitary facilities in schools.
- National Policy Guidelines on Pest and Vector Control is to establish and strengthen pest and vector control units at the three tiers of government.
- National Policy Guidelines on Market and Sewage Management is to ensure the provision of adequate and sustainable sanitary facilities in and around markets and abattoirs.
- National Policy Guidelines on Food Sanitation is to enhance food security, public health and quality of life through the promotion of sound food sanitation practices in all food premises in the country.
- National Environmental Sanitation Action Plan is aimed at increasing National productivity and foster Economic Development through improved Environmental sanitation practices.
- National Training Manual on Food Sanitation for Food Handlers is is to provide food handlers with the knowledge and skill required to ensure sound food sanitation practices in order to protect public health, promote quality of life and reduce poverty.
- National Training Manual and Trainers Guidelines on Food Sanitation for Environmental Health Practitioners is to equip Environmental Health Practitioners with the knowledge and skills in food sanitation and to empower them with the capacity to train food handlers and other stakeholders.

The Ministry further initiated numerous Bills, some are before the National Assembly and others have been forwarded to the Federal Ministry of Justice for processing while a number of them are at the levels of preparation within the Ministry:
1. Bills before the National Assembly:
   - Response, Compensation and Liability for Environmental Damage (RECLED) Bill
   - Petroleum Products and Other Oil Related Activities Compensatory Relief Bill.
   - National Building Code Bill 2016, before the National Assembly for review.
2. Bills at the Federal Ministry of Justice for processing:
   - Climate Change Agency Bill
   - Forestry Bill
   - Domestication of the Kyoto Protocol Bill.

- Review of the Ozone Depleting Substances (ODS) Bill

3. Bills Being Prepared at the Ministerial Level
   - National Biodiversity Conservation Agency Bill;
   - National Environmental Management Bill;
   - Chemicals Management Bill.
4. Draft Policies Being Prepared at the Ministerial Level
   - The National Globally Harmonized System (GHS) Implementation Strategy (NIS);
   - Guideline for proper disposal of Impounded/Seized goods;
   - The National Biosafety Policy;
   - NESREA Strategic Action Plan;
   - Review of the National Oil Spill Contingency Plan;
   - Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants (POPs) for Nigeria;
   - Classification Of The National Park Service As A Para-Military Organization;
   - Climate Change Action Plan;
   - National Policy on Climate Change (Ibrahim & Imam, 2015 [24]; EHORECON, 2012 [14] and Environmental Law Research Institute, 2011) [15]

In 2000 an amendment was made to the Public Health Law of 1978 (referred to as Principal Law) and 'Mobile Courts' was added to the list of courts empowered to try matters relating to sanitation. They are established "for the purpose of trying offenders summarily under the law and making any order for the abatement of any nuisance and imposing punishment. The mobile courts also have the jurisdiction of a Senior Magistrate who may sit alone or in the company of the Chief Environmental Health Officer". In addition, a National Committee on Ecological Problems (NCEP) was established in 1985 to assist States in controlling environmental degradation. The projects to be funded under this scheme include oil spillage, industrial pollution and general environmental pollution control. Nevertheless, the environmental laws e.g. FEPA guidelines, standards and criteria are adaptations of Europe and America without taking into consideration Nigerian ambient levels of the pollutants (Ezeala 1999) [16].

Creation of the Federal Ministry of Environment

Prior to the establishment of the Federal Ministry of Environment, over 16 legislations were made which are related to environment without adequate mechanism for coordination. FEPA provided the nucleus for the creation of the Federal Ministry of Environment in 1999. "The personnel, structures and functions of FEPA were subsumed in the Ministry" (Lolo, 2004) [29]. The mandate of the Federal Ministry of Environment includes (Jauro, 2003) [25]:

1. Preparation and periodic review of a comprehensive National Policy for the protection of the environment and conservation of natural resources, including procedure for environmental impact assessment for all development projects,
2. Preparation in accordance with national policy, periodic master plans for the development of the environment, sciences and technology and advise the Federal Government on the financial requirement for the implementation of such plans, and
3. Advise the Federal Government on the conservation of natural resources and sustainable development, and scientific and technological activities affecting the environment and natural resources; utilization of the ecological funds for the protection of the environment; establishment of national standards, codes and guidelines for water quality, effluent limitation, air quality, atmospheric and ozone layer protection, noise control and hazardous substances to protect the health and welfare of the population from environmental degradation.

To achieve the policy objectives, the Ministry is guided by eight principles which include: respect and care for the community, conservation of the earth, vitality and diversity, change of personal attitudes and practices, keeping developmental process within the earth's carrying capacity, enable communities to care for their environment, implementation of the national framework which integrates development and conservation, creation of global alliance and minimizing the depletion of non-renewable resources. In 2004, the Ministry of Environment also drafted the Policy on Environmental Sanitation and policy on Healthcare Waste management, respectively.

Current Status of Implementation of Waste Management Policy in Nigeria

In Nigeria, implementation of environmental policies, including waste management has been generally slow due to various bureaucratic bottle necks, lack of political will and continuity of programmes and policies by successive governments. A good example is the National Environmental Sanitation Policy, established by the Obasanjo administration in 2005 which was intended to address the country's daunting waste management challenges as a major environmental issue, Regrettably, this laudable policy has not been fully implemented in all the states, since it was launched. However, the Federal Government has made tremendous efforts in trying to sanitize the environment and get rid of wastes through the implementation of waste management projects in selected states. To achieve this objective, the Federal Ministry of Environment carried out initial studies of waste generation and characterization in 2001/2002 in 15 states. This was followed by a stakeholders' workshop in 2006 which recommended the Integrated Waste Management (IWM) approach, using private sector participation as the driver. Pursuant to the implementation of this strategy the federal government embarked on various waste management projects in 26 major cities involving private partnership which are ongoing. These include;

1. National Hospital Intervention Scheme, involving biomedical waste incinerators. So far 8 incinerators have been installed and commissioned in selected Federal Health Institutions by Federal Ministry of Environment;
2. Integrated Waste Management Facility based on public/ private partnership, involving federal, state and private sectors;
3. Scrap metal recovery and recycling facilities to handle metal scraps and abandoned vehicles;
4. Community-based solid waste management projects to achieve environmental sustainability;

5. Transfer loading stations to facilitate waste collection, transportation and recycling of useful materials;
6. Briquette plants to be established in 26 cities by Federal Ministry of Environment in collaboration with EFO for plastic waste recycling;
7. Subsidy Re-investment Empowerment Programme (SURE-P) comprising Integrated Waste Management Facility, Material Recovery Facilities and Compost plants/ Plastic Recycling Plants.

These projects have been stalled as a result of poor funding, lack of policy and legal/regulatory framework at all levels of governments, inadequate manpower etc. (Olori 2006) [31].

At the state level, waste management policy is poorly implemented where it exists let alone the National Environmental Sanitation Policy. The process of implementation of such policy is uncoordinated or haphazard and often marred by political influence. Currently many states are without any clear cut policy on waste management hence they depend on ad-hoc arrangement, using local contractors who lack the technical skills and adequate equipment for proper waste collection and disposal. Perhaps, the only state that has an effective waste management policy is Lagos State which operates an Integrated Waste Management system through the Lagos State Waste Management Agency (LAWMA). This comprises:

- Compost plant for the treatment of market waste, which generates approximately 24,000 tons - 42,000 tons of
- Waste-to-energy plant for generation of biogas from market waste that is used to operate a 2KVA generator at the market;
- Plastic recycling plant for that converts empty plastic water packets into garbage bags (Uchendu, 2016) [37].

Policy failures

Environment in Africa is closely woven into the traditional and cultural lives of the people. Therefore close linkages between environment, poverty, trade, health, sanitation, education, housing, law etc., should be integrated for sustainability. Where policies ignore these components it may become disastrous. This explains why some environmental experts in Nigeria still operate with the mind set of the environment as an exclusive domain and overriding factor in all national activities, seeking to defend his/her own territory at the expense of the other. Apart from 'policy somersaults and lack of linkages', there is also 'implementation deficit'. The 'gap between policy and implementation is the root cause of policy failures. The best policy will not mean anything unless it is given expression through implementation. Over the years functionaries and policy makers have brought their individual perspectives to bear on policy implementation, sometimes to the good of the people but most often at the detriment of the larger public. Nigeria has not been consistent in the realm of policy implementation. In the words of Lolo (2004) [29], "Reorganization" is a phrase used to describe a sweeping action by the government of the day and dictated by the exigencies of the time, but has come to dominate every facet of public policies with every change of political leadership for nearly thirty years. There should be a gestation period allowed before rushing for a change. Lagos waste management is a clear case of lack of clear and continued policies (Box 1). Another problem related to failures is that the right people are not given the right jobs. The person to occupy any position should be able to consolidate the needs of today and meet the demands of tomorrow. Policy implementation should not be dictated by self-indulging interest and nepotism. National policies should not be framed in isolation but should be consistent and coherent with the commitments of the major United Nations conferences and summits so as to achieve the internationally agreed development goals (Lolo, 2004) [29].

It is also realized that there are some administrative bottlenecks in the way the laws are drafted or amended. This creates confusion and delays in the system of waste management which is controlled by State to a large extent, including the Mobile Sanitation Courts that have become non-functional due to logistic and funding problems. Similarly, some of the Edicts are not faithfully executed in many States and cities due to lack of enforcement by Environmental Health Officers. Also, some of the regulations are not achievable. The environment and human right is an example. The Nigerian Constitution says "The State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria" (Nigerian Constitution, Chapter IV). However, 'a healthy environment is not an enforceable right in Nigeria' and as such they become mere guidelines rather than a law. Thus, politicians and extremists often quote the loophole in the constitution as "… no law not specifically authorized or backed up in our constitution can be lawfully passed for the Federation of Nigeria by the Federal Legislature. It is the limits set under relevant provisions of the constitution that define and determine the frontiers of the law that can be enacted (The Nigerian Constitution, page 55).

Box 1. Policy Failures: A Case of Lagos Metropolis (Williams, 2004)

"Faced with the problem of repeated failure in the waste management sector in Lagos, waste authorities have been making frequent policy somersaults. Ironically, the resultant policies always centre on evacuation of domestic waste by Private Sector Participants (PSP), as if no other viable alternative can be contemplated". The mistakes seem to be:

Abolishing the community waste dumps which are popular as they are an eye sore - but alternatives were not provided;

Newly registered private waste collectors were asked to carry the waste directly to the final dumpsite which is far away from the generation site;

Cart pushers who are popular among the inner core high density areas are banned in spite of resistance from the beneficiaries; they are forced to operate underground as public patronage is very high due to reliability, low fees they charge and ability to penetrate inaccessible areas;

Lack of integration of waste management strategies around scavengers, PSP operators, and community dumps

"What is needed is cost effective waste management policies fashioned around existing institutions the people are thoroughly familiar with. The intensive manual nature of such strategies for instance, is desirable in an environment with abundant, affordable, unskilled and unemployed labour".

Institutional and Regulatory Framework

According to Section 20 of the 1999 Constitution of the Federal Republic of Nigeria, "The State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria". This has thrown a lot of confusion into the polity regarding the devolution of legislative powers therein, between the Federal and the State Governments. The Federal Military Government during the Buhari/ Idiagbon regime gave environmental sanitation and issues of waste management top priority and mandated all states to enact Environmental Sanitation Edicts to address problems of public sanitation. As early as 1989, a year after FEPA establishment, many States followed suit with Kano State as the first to establish the State Environmental Planning and Protection Agency Edict. The Agency had power to make regulations on environmental issues within what was perceived to be their areas of Authority. It combined Environment with Urban and Physical Planning functions. In Lagos State the law subsumed the power of its Agency under the Federal Government guidelines and policies, while FEPA's function is "to cooperate with Federal and State Ministries, Local Governments, Statutory bodies and research agencies on matters and facilities relating to the protection of the environment and the conservation of natural resources …". During the military administration environmental issues attained a high profile and masked the potential conflict inherent in the fact that there was no instrument of devolution of powers between various tiers of governance (Awogbade, 2003) [7].

However, the National Policy on Environment has clearly defined institutional and intergovernmental arrangements: It states that "A viable national mechanism for environmental management requires cooperation, coordination and regular consultation, as well as harmonious management of the policy formulation and implementation process through the establishment of effective institutions and linkages within and among various tiers and levels of government – Federal, State and Local. For this purpose, Government will "…clarify and reinforce the role of Local and the State government administrations in the management of wastes and other forms of pollution". Government is to ensure this role, and action shall be taken from time to time "to prescribe jurisdictional boundaries for law making among the various tiers of government". Agenda 21 also stipulated "Harmonizing Federal and State responsibilities for environmental and resource management" and emphasized extension of control of environmental issues beyond the federal to all levels of government. In Lagos State, the Supreme Court ruled that "urban and regional planning is an exclusive preserve of States and environment is an exclusive preserve of the National Assembly" (Awogbade, 2003) [7].

Conflicts resolution amongst stakeholders

In the emerging trends in environmental protection in Nigeria, two types of role conflicts can be identified:

1. Conflicts in Federal/States/Local Government relations.
2. Conflicts in Environmental-Line Ministries/Agencies relations: e.g. PIDPR vs FEPA; NAFDAC vs FEPA; NARESCON vs FEPA.

The first deals with line of authority and delineation of designated responsibilities, while the second relates largely to the apparent overlap in functions of Federal Ministries/Agencies dealing with environment resources and/or issues.

Going by the Nigerian constitution, municipal waste disposal and sanitation are the responsibility of Local Government Authorities (LGAs) which also have powers to make By-laws. The failure of the LGAs is their continued insistence on treating municipal waste disposal as more or less a free social service. What is not so clear is the responsibility of the States on industrial pollution control especially in the many situations where industrial wastes are mixed with municipal waste. This is because industry is a federal concern even though states have the responsibility to designate areas as industrial estates. Similarly, although State Governments can enact environmental pollution edicts, they derive their powers to prescribe and enforce standards from the Federal Environmental Laws vested in the FEPA. A statutory arrangement therefore has to be put in place to enable FEPA (now Federal Ministry of Environment) share its enormous powers with the State EPAs or to designate State EPAs to perform certain functions for which states have developed capacity on its behalf. This has worked fairly well especially under the auspices of the National Council on Environment (NCE), the consultative forum where policies implementation processes are harmonized and conflicts resolved.

For the financial year 1994, FEPA tried to infuse the FEPA officers operating in States into a State EPA administrative structure in advisory and operational capacity. That was meant to remove the direct inspection and enforcement schedules of FEPA which tend to undermine the authority of the State EPAs to enforce. FEPA envisages that by such an arrangement State EPAs will develop capacity to monitor and enforce in the shortest time possible. In regard to other Federal Ministries/Agencies that perform environment related functions, FEPA has set up several inter-ministerial committees which regularly deliberate upon specific issues to harmonize functions and remove overlaps. However, there are three of these Agencies whose disputes have shaken the Agency. The first is the Petroleum Inspectorate Department of the Ministry of Petroleum Resources (PIDPR). Prior to the creation of FEPA the Department had been responsible for monitoring pollution in the petroleum sector. Apart from the usual inter-ministerial committees on environment in which FEPA ensures that PIDPR is represented, the Department co-sponsors with FEPA a Biennial International Seminar on Petroleum Industry and the Nigerian Environment which has over the years produced far-reaching recommendations influencing government policies. In the last three years, two controversial issues have emerged: Who should set the Guidelines and standards for Pollution Control in the Oil industry? Who is to enforce those standards?

After two years of strained relationship, FEPA finally resolved the issue as follows:

PIDPR can set Guidelines and Standards on Operational Safety and Environmental Pollution Control in the Petroleum Sector. However such standards cannot be weaker than and must be subordinate to, the National Standards that would be set by FEPA for the Petroleum Sector. PIDPR would continue to monitor pollution and enforce compliance in the

Petroleum Sector but on behalf of FEPA who reserves the right to carry out check inspections to determine how effective PIDPR is carrying out those functions.

The second case is the dispute between the National Agency for Food and Drug Administration and Control (NAFDAC) of the Federal Ministry of Health and FEPA on which of the two Agencies is responsible for the control of hazardous chemicals. Prior to the establishment of FEPA, NAFDAC used to grant permits to industries for the importation of chemicals along with narcotics, foods and drugs. NAFDAC granted the permits by a special arrangement with the Pharmacist's Registration Board of Nigeria (PBN) which issues the permits on behalf of NAFDAC under the provisions of the Poisons and Pharmacy Act cap 152 Section 40 (5)1. It was one of such permits, IMPORT PERMIT NO 676 granted to Iruekpen Construction Company of 126A Nnebisi Road, Asaba for the importation of "industrial and Laboratory chemicals" that was used to import toxic waste into Nigeria in 1988. The report of the Ministerial task Force set up to evacuate the toxic wastes recommended that authority to issue permit for importation of chemicals should be withdrawn from the Pharmacists Board. The President-in Council approved the recommendation among others. Shortly after FEPA was created, Government also created the National Drug Law Enforcement Agency (NDLEA) to handle narcotics.

Local Government vs State Government in Waste Management

It is realized that top-down waste management strategies have failed in Nigeria. The defunct FEPA had two main organs: the Ministerial Governing Council and the Technical Committee. It also had a liaison office in Lagos, Zonal offices at Kaduna, Kano, Port Harcourt, Maiduguri, Owerri and Ibadan and State offices at Makurdi, Bauchi, Minna and Uyo. The main functions were the development of National Policy on Environment as well as development of guidelines, standards and regulations for environmental management.

The state organs involved in waste management include:

- Specialized Waste Management Agency: Under this category are Lagos State Waste Management Authority (LAWMA), Kano State Refuse Disposal Agency (REDA), Ibadan Waste Management Authority (IWMA), and Abuja Environmental Protection Board (AEPB).
- State Environmental Protection Agency: These were created to take the responsibility of refuse collection and disposal where Local Governments had no capacity.
- Physical Planning and Development Board: These were involved in physical development of the States capitals through proper planning of public services and amenities and the promotion of residential, commercial and industrial projects.
- Task Forces and Ad hoc bodies

Furthermore, the States established Waste Management Authorities which could be upgraded to Ministries of Environment in due course and this gave opportunity to many of the south western States to implement this strategy.

Even though Local Governments are constitutionally responsible for the solid waste management, their roles are controversial. Solid waste management at the Local Government level is handled by the Health Department. In some State capitals (e.g. Calabar, Dutse, Benin etc.) the Local Governments exclusively provide solid waste management services. In most States the LGAs perform some type of waste management / sanitation through enactment of Edicts, Task Forces, 'Issue and Pass-by Laws', making use of State Edicts. The limitations and constraints identified are: ineffective institutional arrangement, incessant political interference, poor management capacity, poor staff development programme, and poor community participation. Lack of harmonization of legal provisions on waste management at the various tiers of government provides a loop-hole for willful non-compliance by waste generators and collectors (Odubela, 1995 cited in Onibokun *et al.* 2000) [32]. A forum at Urban Development Bank recommended that Local Governments in rural and semi-urban areas with less than 10,000 population should take full advantage of their most important source of internally generated revenue such as tenement rates and raise loans for waste management (Abumere, 1998; Urban Development Bank, 1998) [3, 38].

National Environmental Regulations and Policy

Environmental control policies define not only the responsibilities of the industry, but also the limits on the government's power to intervene. Implementation agencies should weigh economic and social considerations together with public health aspects in reaching a decision concerning regulation (de Koning, 1987) [10]. The UK makes extensive use of self-regulation and encourages close cooperation between government officials and representatives of industry. In the USA, however, the legislature and courts play a more active role in making and enforcing environmental policy (Vogel, 1986) [40]. Also, in the Federal Republic of Germany Environmental Policy is aimed at 'uniting economy and ecology in an ecologically-committed, social market economy' using precautionary principle, the polluter pays principle and the principle of cooperation. The precautionary principle sets standards for environmental policy decisions that prevent possible risks to human beings and the environment. The polluter pays principle is oriented towards the fact that the costs for failing to take anticipatory environmental protection measures and for inadequate stewardship of the environment, must be borne by the polluter. The principle of cooperation is based on voluntary willingness to cooperate in the ecologically oriented, social market economy, and uses market-economy incentives (e.g. taxation incentives and fiscal charges, compensation, voluntary undertakings) to bring about innovations (Federal Environment Ministry, 1991) [18].

The waste management strategies currently implemented globally follow the principles of waste avoidance, waste reuse, and recycling which take priority over waste disposal. These emphasize waste minimization, reuse and recycle at all levels to achieve waste management goals. Nigeria should adopt this approach as it is environmentally friendly.

Poverty Alleviation and Environmental Policy

Poverty remains Nigeria's biggest domestic challenge as about 89 million people live in abject poverty below the stipulated US$1 a day subsistence (Lawal, 2004) [23]. There is an inextricable link between poverty and environmental

degradation. Poverty is a complex multidimensional problem with origins in both the national and international domains. While managing resources sustainably, an environmental policy that focuses mainly on the conservation and protection of resources must take due account of those who depend on the resources for their livelihoods. A specific anti-poverty strategy is, therefore, one of the basic conditions for ensuring sustainable development. The long-term objective of enabling all people to achieve sustainable livelihoods should provide an integrating factor that allows policies to address issues of development, sustainable resource management, and poverty eradication simultaneously. Environmental management was hitherto viewed as a non-revenue yielding activity that did not attract small entrepreneurs.de to lack of assistance by financial institutions. The 'waste-to-wealth' programme introduced in most of the States, should be viewed as an important enterprise and integrated into poverty alleviation programmes. Small enterprise development, agriculture and informal sector involvement are the areas emphasized in poverty alleviation strategy and waste management can contribute effectively in all these strategies. Reuse and recycling and waste utilization for agriculture are striking examples in the developing countries including Nigeria.

Several policies have been adopted by government to improve urban management. The National Urban Development Policy was formulated in 1992 to provide guidelines for urban development and management and was backed up by the establishment of Urban Development Bank.

Challenges in Enforcement of Waste Management Law and Policy Implementation

Despite the significant achievements so far, the following are some of the major constraints of policy implementation/ enforcement of environmental Laws in Nigeria:

- Inadequate awareness amongst policy makers relegates environmental matters to the background, with decimal appropriation;
- Inadequate awareness and knowledge of the judiciary arm of government about issues concerning environmental pollution, sanitation and waste management
- Lack of devolution and decentralization of powers and regulatory functions at federal level.
- Lack of effective working relationships between NISREA and other agencies
- Difficulty in getting Police Cooperation in terms of arrest and custodial facilities
- Non domestication of most of the MEAs
- Lack of effective monitoring, evaluation and reporting on the state of the environment and access to information
- The capacity and awareness of officers (enforcers), facilities, and operators on legal requirement are poor. etc (Ibrahim & Imam, 2015 and Ladan, 2015) [24, 26];

Conclusions and the Future Outlook

It is realized that waste problems in the country are social, technological, political and financial (Falade, 1998) [17]. Rising volumes of wastes is unchecked due to lapses on the harmonization of environmental laws and the conflicts in waste management at the three tiers of government. Community involvement in environmental management is not fully integrated into governance. There is a need to enforce waste minimization strategies, e.g. waste reduction, reuse and recycling. Implementation of existing laws must be ensured and reviewed periodically for improvement. Coercion will not solve the problem rather persuasion and involvement of youth in environmental matters will help a long way.

Based on the above observations, the following recommendations are made

- Harmonize the existing laws to make them efficient and enforceable. Amend the constitution to reflect environmental rights as a significant component of the nation's well-being.
- Devolution of powers and regulatory functions from central to local governments; Improve overall governance given priority to environmental consideration in judicial decision-making. Define the waste management responsibilities of various tiers of government and parastatal and ensure that there are no conflicts or duplication of work. Effective working relationships between NESREA and other agencies.
- Effective monitoring, evaluation and reporting of the state of the environment and access to information. Ensure appropriate implementation and monitoring of master plans for major towns where they exist, and prepare and implement new ones where they are non-existent or out of date.
- Capacity building through training of judicial officers on environmental pollution, sanitation and waste management etc.to increase their level of awareness and knowledge.
- The informal sector plays a vital role in waste management and should be made part of the system as one of the stakeholders.
- Strengthen institutions with a view to making them more responsive and accountable; ensure effective implementation and enforcement of all existing relevant sectoral laws, standards, and regulations that make for sustainable human settlements. The regulatory framework should focus more on pollution control rather than revenue generation for the government.
- Develop an integrated approach to the provision of water, electricity, sanitation, drainage, and solid waste management so that the environmental issues are tackled holistically.
- Raise awareness on environmental issues needed for sustainable development.
- Introduce mobile courts and dispose the cases promptly without delays.
- International obligations on environmental conventions and fora should be integrated into the legislation and make them appear in the legal system.
- Hazardous and infectious wastes should be segregated appropriately and effective edicts should be put in place to pretreat, label, colour code and dispose in a manner not detrimental to the ecosystems and human well being.

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