



Pedagogy of Environmental Education in Federal College of Education (Technical) Omoku: Waste to Wealth in Perspective

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Abstract

According to this saying, that no nation can rise above the level of its teachers or those teaching them/her, this invariably or necessitates the need for enculturation, pedagogy and enhanced curriculum for purposes of delivering impactful knowledge to the learners/students alike, the need to translate wastes to wealth through impactful learning, training, research and pedagogical tools cannot be over emphasized. Waste can be turned to wealth when we apply the right tools, right thinking, right education. To be exact, one can say that ingenuity occurs when opportunity meets with knowledge. It is my desire that this publication opens up further horizon for researches in similar ground breaking areas.

Keywords: Ingenuity, Enculturation, Pedagogy, Knowledge, Training Research

Introduction

Being mindful of the fact that one of the objectives of teacher education is to produce highly resourceful, motivated and conscientious manpower and personnel to serve/service all areas of human endeavor with the right moral and ethical orientation. Premised on improved teaching and learning for income generation, food security, environmental sustainability and entrepreneurial drive and zeal for self-reliance and to facilitate the hands-on of available resources in the teaching-learning process.

Pedagogy of Environmental Education

The concept of Pedagogy

Hornby 2012 defines pedagogy as “science of teaching”. Urevbu (2011) states that the word teaching appears simple at first yet it is very difficult to define. When anybody uses the word teaching, we might interpret the speaker as meaning any of the following under listed below:

- a. An occupation or profession
- b. An enterprise that is the normal activity of a teacher in the class room, and
- c. The very act of teaching.

As an occupation, it could simple be the work we do and by the means with which we earn our living. As an enterprise, it is a cluster of activities that have the teaching act itself as it center, which facilitates or promotes the teaching act that contributes towards the total education of children committed to the teacher’s charge. Teaching becomes an act when it involves many body movements, Samuel et al. (2013).

Teaching has been defined as the conscious and deliberate effort by a matured or experienced person to impart information, knowledge, skills and so on to an immature or less experienced person with the intention that the later will learn or come to belief what she/he is taught on good grounds. It therefore implies that teaching includes:

- a. A person who is consciously and deliberately doing the teaching
- b. Another person or oneself who is taught
- c. Some content or materials, information, knowledge etc that is being imparted
- d. At least an intention on the part of the person doing the act that the recipient should learn.

Hence, teaching must be socially acceptable and pedagogically sound.

The importance of schools teaching environmental education in Nigerian cannot be overemphasized, hence it needs to be carefully and methodically taught if its objectives are to be achieved. Obi (2015) views the pedagogy of environmental education as equipping the teacher with the ability to strengthen the confidence of his students in their capability. This should go beyond knowing the subject matter and transmitting this knowledge to the learner. The teacher should be able to relate the environment to the student's needs presently and later develop in them the effective skills of seeing the environment as fragile, be concern with teaching of how knowledge can be sought validated, assimilated, used as basis for further learning, forming and modifying goals for the teaching of environmental education. The ideal environmental education teacher should therefore function as a mediator by helping to develop the skill, attitude and behaviour that enable them live a successful and useful life. He should claim monopoly of knowledge but on a contrary he should realies that knowledge is all around us, overwhelming in its diversity and operative in its insistence challenge to our beliefs. It is also expected that he should understand the way in which people at various ages and stages of development perceive their environment and the way in which these perceptions are affected by cultural or social differences, needs and beliefs. Pedagogy will help us to know where particular sources of knowledge and skills are faceted and be able to organize children to have access to them when they are needed. Pedagogy will help the teacher/lecturers achieve the objectives and goals of environmental education through an organized coordination of the learning activities in the classroom. The environmental education teacher should also know how to diversify his functions in the instructional process and accept more responsibility for the organization of the content of learning and teaching. Pedagogy of environmental education is geared towards,

1. More diversified functions in the instructional process and acceptance of more responsibility for the organization of the content of knowledge for teaching and learning.
2. Maximum use of various sources of learning in the community to facilitate learning
3. The acquisition of the necessary knowledge and skills that will bring about the desired result in environmental conservation and management.
4. Cooperation between different nations in solving environmental problems and a changed structure of relationships between consumers and producers. To successfully achieve this, the teacher needs to have adequate knowledge of the requisite skill for teaching environmental education and the different approaches involved

Wastes

Solid Wastes: are referred to as all wastes arising from human and animal activities that are normally solid and that are discarded as useless or unwanted. This also include and encompasses the Heterogeneous mass of throw-away from the urban community as well as more homogenous accumulations of agricultural, industrial and mineral wastes.

Solid wastes management

Solid waste management may be defined as a discipline associated with the control, generations, storage, collection, transfer, transport, processing, recovery and disposal in a manner that is in accord with the best principles of public health, economics, engineering, conservation. Aesthetics and other Environmental considerations, and that also is responsive to public attitudes NES (2024).

Sources of Solid waste

- a. Domestic or residential wastes
- b. Trade or commercial wastes
- c. Municipal/Urban wastes
- d. Industrial wates
- e. Open areas wastes (streets, parks, vacant lots, playgrounds, beaches, highways etc.) sites
- f. Treatment plants (industrial treatment plants, petroleum treatment plants, sewage treatment plants) etc.
- g. Agricultural wastes

Types or Composition of Solid Wastes

1. **Food waste:** Animal, Fruits or vegetable residues (Also called garbage)
2. **Rubbish:** Combustible and non-combustible solid wastes of households, institutions, commercial activities etc. this does not include food wastes or other highly putrescible materials

Examples of combustible rubbish are: Paper, cardboard, plastic textiles, rubber, leather, wood, furniture and garden trimmings.

Examples of non-combustible rubbish are: Glass, crockery, ticans, aluminum cans, ferrous and other non-ferrous metals and dirt.

Ashes and Residues

- a. Materials remaining from the Burning of wood, coal, coke and other combustible wastes in homes, store, institutions and industrial and Municipal/Urban areas
- b. We also have residues from power plants residues are always composed of fine, powdery materials, cinders, clinkers and small amounts of burned and partially burned materials especially from urban or municipal incinerators

Demolition and Construction Wastes

Wastes from razed buildings and other structures are classified as demolition wastes, wastes from the construction, remodeling and repairing of residence, commercial buildings and other construction are classified as construction wastes.

Special wastes

Street sweepings, roadside litter, litter from municipal/urban center little containers, catch-basin debris, dead animals and abandoned vehicles all are classified as a special waste because it is impossible to predict where dead animals and abandoned automobiles will be found. These wastes are often identified as originating from non-specific diffuse sources.

Treatment plants waste:

Solid and semi-solid wastes from water, waste water and industrial waste treatment facilities are included in this classification. The specific characteristics of the materials vary, depending on the nature of the treatment process.

Agricultural wastes

Wastes and residues from diverse agricultural activities – such as the planting and harvesting of row, field and tree and vine crops, the production of milk, production animals for slaughter and the operation of feed lots – are collectively called Agricultural wastes.

Hazardous wastes:

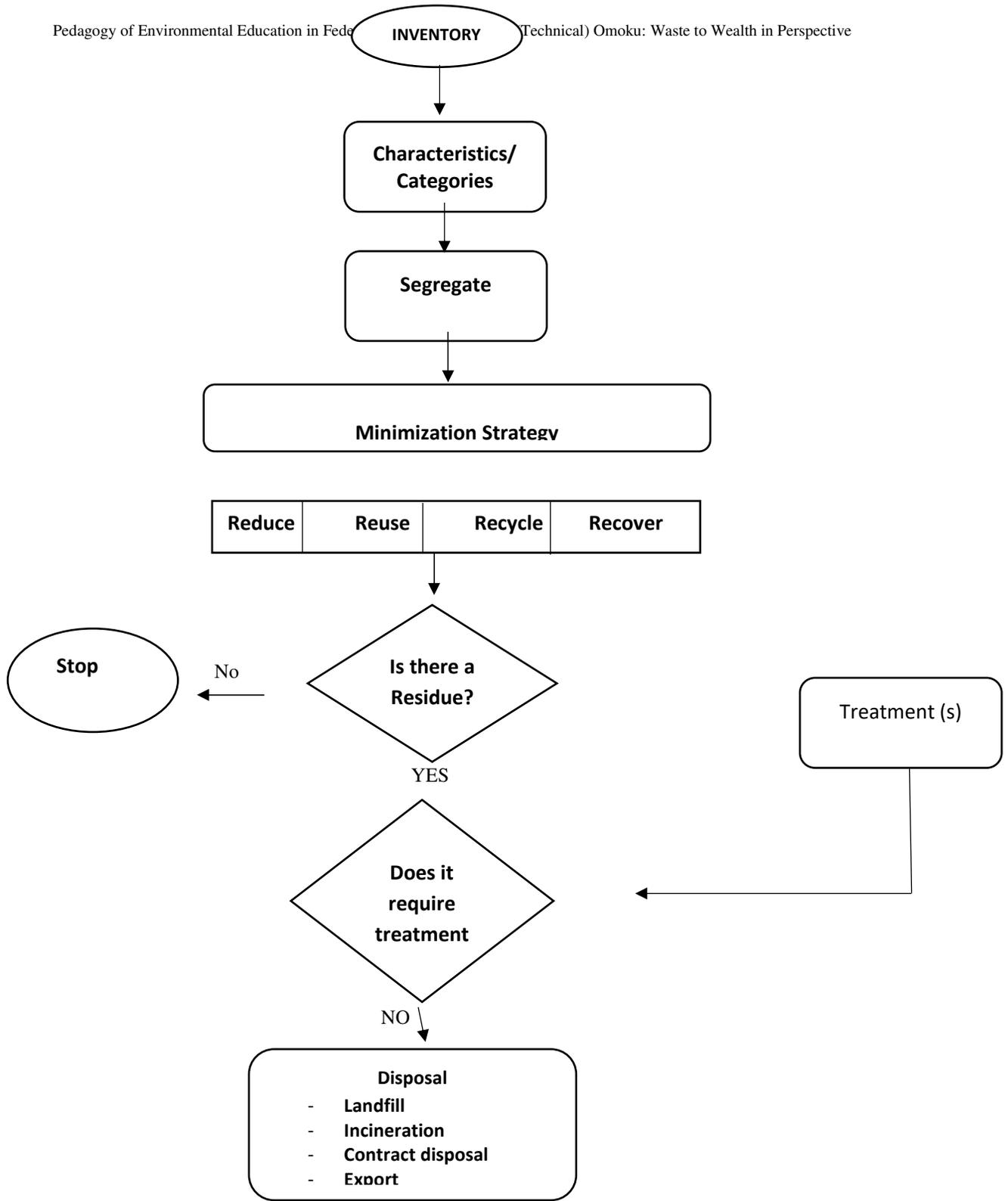
Chemical, biological, flammable, explosive or radioactive wastes that pose a substantial danger, immediate or over time, to human, plant or animal life are classified as hazardous e.g. Radioactive materials, laboratories wastes, hospitals/Health care wastes.

Toxic wastes:

Heavy metals, sludge, pesticides, pharmaceuticals materials, biological products e.g. Enzymes, antibiotics, pathogenic and pathological substances, inflammable, explosive and corrosive materials.

Strategies for Waste Management

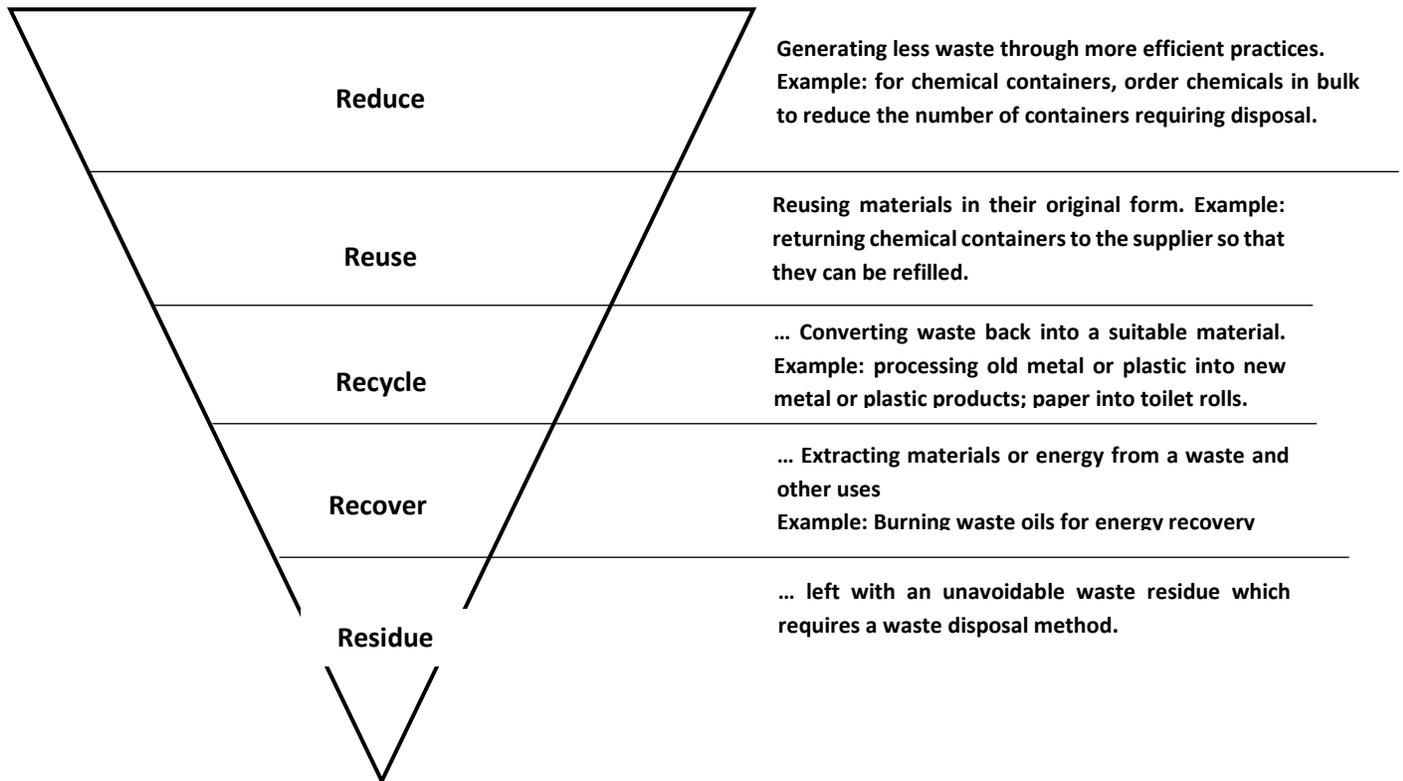
- ✚ To reduce the volumes of wastes generated
- ✚ To recycle and re-use wastes whenever feasible
- ✚ To treat hazardous waste and make then inert before disposal
- ✚ To ensure safe and responsible collection, storage and disposal of all wastes
- ✚ To provide audit able records of all waste streams
- ✚ To monitor waste disposal activities in order to prevent future liabilities
- ✚ To reduce the negative impact of the project operations on the environment



Waste Disposal Procedure

✚ Principles of waste management

Waste inventory ***if you cannot measure, you cannot control***



Waste treatment and disposal facilities:

✚ Waste transfer station

✚ Recycle and reuse

✚ Incineration

Waste to Wealth

Empowering people to create wealth

Waste to wealth project most times are usually designed to build capacities of all students/stakeholders in waste generation and management, to better manage waste to create business opportunities, employment and form public private partnerships.

Objective

Its overall objective shall be to reduce the prevalence of poverty in the context of sustainable development and so contribute to the achievement of MDG 1 in reducing poverty by 50% by 2028. Additionally, the project will contribute to four of MDG 7 (ensuring environmental sustainability), namely to achieve a significant improvement in the lives of slum dwellers by 2030

Specific objective

More specifically in Ogba/Egbema/Ndoni, waste to wealth if effectively implemented shall improve environmental sanitation services in Omoku communities through public private partnerships involving local authorities and other entrepreneurs and beyond.

Problems to be addressed

- ✚ Limited opportunities to earn a living: Despite the urban poor being creative and entrepreneurial, circumstances conspire against them and their economic activities. Lack of credit, training, skills and employment rights all restrict their ability to earn money. Informal workers and businesses are often harassed or shut down by the authorities and are vulnerable to the misapplication of bureaucratic rules. People must be enabled to increase their productivity and to participate fully in the process of income generation and remuneration employment
- ✚ Inadequate access to services: Limited or no access to services to mitigate the effects of disease and environmental hazards has a huge impact on the lives of people in the communities. The action will focus on waste management. Poor waste management as a consequence of inadequate collection and disposal has contributed to the degradation of the environment and is a health hazard. However, household waste presents an opportunity for recycling, reuse and processing; this opportunity for “wealth from waste”.
- ✚ Low level of awareness on rights and power often contribute to their vulnerability. Within the locale, people are often unaware of their entitlement to a clean environment and that this is a ‘right’. Even in cases where they are aware, it is unlikely that they will organize for change for fear that speaking out may lead to eviction or have their access to services reduced further.

Strategy

- ✚ **MSEs:** Micro and small scale enterprises involved in waste management within Ogba/Egbema/Ndoni(ONELGA) be identified and engaged. This is because they are primary stakeholders in waste management. This will include bona fide small business or the income generating arm of an organization with a wider social or environmental purpose, Living Earth (2018).
- ✚ **Capacity building:** All identified stakeholders will be given the necessary skills to enable them perform their tasks of either delivery or waste management. Capacities will be built in the following core areas as well as those yet to be identified
 - Micro enterprises training programme
 - Functional skills training
 - Advocacy training
 - Training programme for college/government officers responsible for contracting service providers.Project-Center Interphase will be established to build trust and foster dialogue with the institution, civil society and both formal and non-formal private sector and establishment of an agreed platform for dialogue and information exchange both formal and informal. These panels will be based in the communities, comprising selected project beneficiaries and stakeholders including community leaders, representatives of involved departments CSOs, local authority personnel and staff of implementing partner.
- ✚ **Public Private Partnership (PPPs):** Activities to establish working models of pro-poor public-private partnerships (PPP) which both delivers a service to poor urban residents and act as a stimulus for similar partnerships in non-target municipalities are a cornerstone of the action.

- ✚ **Awareness creation:** Implementation of waste to wealth in ONELGA by awareness creation as means to educate people on both their rights to a clean environment and their contributions towards a clean environment. This will ensure that the public are enlightened on the wider context of poverty reduction and sustainable development.
- ✚ **Partnership building:** Waste to wealth will build partnerships across identified institution/stakeholders. It will create a platform for the public, institution (s), government and private sectors to work together for the benefit of all involved. Through the establishment of the center interphase, this should also be created. Public private partnerships for MSEs will also be established. These PPPs will give identified MSEs the leverage to form partnerships with the government, build capacities, and create an enabling environment for wealth creation through waste.

Local economy: A high proportion of the populace are highly dependent on cash to pay for essential items such as food, rent, school, energy, transport, water and sanitation and so an absence of opportunity has many knock on effects for all areas of their lives. A particular disturbing trend is the incident of unemployment per household, with over 76 percent of households in the Niger Delta region having five or more dependents without a job. High unemployment increases the dependency ratio, which worsens poverty. By providing a stimulus to the cash economy in the form of employment opportunities and self-employment in this Local Government Area, this will set in train a process where the most fundamental causes of poverty shall be addressed as cash circulates more freely.

Health: Improperly managed waste can clog storm drains, cause flooding and provide breeding and feeding grounds for mosquitoes, flies and rodents. Subsequent associated health problems include cholera, diarrhea and dysentery, especially among children. Uncollected household waste is also associated with the spread of respiratory infections. Poor health, exacerbated by poor environmental sanitation conditions in urban slums, becomes a drain on vital funds to pay for medicine. The action will result in improved school attendance for children living in the target slums, with consequent gains in academic achievement, improved confidence and life opportunities. Additionally, cash otherwise spent on doctor's bills and medicine will be available for the household budget and the local economy in Ogbaland, ONELGA, Rivers state.

Anpez (2018) viewed Benefits of Waste To Wealth (W2W) thus;

1. Sustained environmental sanitation improvement with subsequent benefits in health and wellbeing for the inhabitants, in target Omoku communities through improved service provision as a result of partnerships involving local governments, the institution, the private sector and civil society.
2. The emergence of a skilled and effective business sector wherein social enterprises, founded by and in poor urban communities, derive wealth from the provision of environmental services and derivative recycling and re-use activities.
3. Improved awareness among all stakeholders of the rights and entitlement of poor urban dwellers to a clean environment and of the potential to harness local cost-effective resources to deliver these rights.
4. Enhanced capacity among local authorities to engage in public-private partnership (PPP development, particularly involving the less formal private sector.
5. Improved South-South linkages and networking between partners and associates to increase learning, information dissemination, consensus building and advocacy skills with which to influence policy makers.
6. Scaling up of the approach and methodology to other local Government areas

The Challenges/Conclusion

The environmental challenges are for all individuals, institutions, corporate bodies and various arms of the Government to work together while securing the future of this country. Any attempt by any of these team members to slack in their responsibilities will be equated with a strong chain having a single weak spot, and a single pull on the chain gives in at the spot.

Whenever the issue of Environmental Management is discussed, the focus is usually on waste disposal aspects. Many researchers find it easy to point accusing fingers at companies especially oils producing companies and the various arms of the governments. Under such circumstances, we end up passing the buck, chasing the shadow and leaving distantly the object. We should frequently take time to audit ourselves on our environmental performance and see if we are living up to expectations. If we take time to review ourselves on environmental performance we will be amazed to realize how much daily we are doing wrong. The number of wrongs we have done should not weight us down as environmentalist, what we should focus on is to correct our foot path by avoiding past mistakes and take realistic measures to improve the overall environmental management of our Local Government Area,our State, Country.

Suggestions, procedures and facilities that will help us to improve our waste management practices which have hitherto been down played:

- Establishment of waste collection system
- Establishment of sanitary dumpsites and landfill in all metropolis in Nigeria
- Procurement and operations of incinerators in all major quarters.
- Establishment of Central Sewage and Sullage Treatment plant.
- Establishment of composting centre
- Construction of solid drainage system.
- Establishment of recycling centres.

Recommendations

Public Awareness and Community/Stake Holders Involvement

✚ Awareness campaigns or programmes to be designed to:

- Effect changes in attitude
- Secure the cooperation of the stakeholders e.g. community
- Ensure compliance or cause stakeholders to take certain action

✚ Existing practice

- Tends to do too much within a short time and business man like

✚ Principles

- Message must be clear and simple
- Ensure that the awareness campaigns are lined to services or action-services must be operational before embarking on public campaign
- Do not impose action; allow action to evolve
- Message must explain what is required of the target audience and why they should respond or comply e.g. do not litter! Please use the bins!
- Must understand clearly the purpose of the campaign – what you want to achieve?

✚ Approaches

- Education: Formal – inclusion of solid waste management and environmental sanitation in school. Informal – sharing information and inculcating knowledge in to the citizens interactions
- Examples: Pilot projects , drawing attention to best practices and bad practices
- Enforcement: Using fines, sanction etc.

✚ How to do it

- Use of media: print and electronics, i.e. radio and television (effective use of jingles)
- Use of educational materials, posters and images
- Use of existing community structures – work alongside the communities/stake holders.

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