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Review Article

HOUSEHOLD SOLID WASTE AS A PRODUCT OF MAN ENVIRONMENT INTERACTIONS AND ITS HEALTH IMPLICATIONS

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ABSTRACT

The national environmental setting covers the atmosphere, lithosphere, hydrosphere and biosphere. Within these spheres are a number of interactions that propel different types of human related activities. Environment is defined as a system where living organisms interact with the physical elements (Sada 1988). This system is alternatively known as the Ecosystem, Man as part of the living organism interacts with other organisms within the environmental setting. We have four main types of environment, example physical, biological, social and cultural environments. The mode of man environmental interactions had been in terms of what can be abstracted from the environment. Thus man often fails to consider the accompanying consequences of many of his activities. As a result such interactions easily translate into a number of environmental related problems like health problems. Thus, this work is interested in the health implication of man environment interactions.

INTRODUCTION

From origin of creation, man and his environment have remained two of a sort. These two have been with each other, sometimes living in harmony or conflict and sometimes one rises against the other. Once this disequilibrium is attended, one party sustains damages that may be irreparable in a short period of time. Despite this apparent contention, man-environment interactions remained multi-dimensional even as man often pays the price of his exploitative

excesses which could manifest through household waste accumulation in most cities of the world.

Household solid waste represents any movable solid objects which the owner wishes to dispose of and is no longer useful to his immediate family (Akpofure 2009). The quantity and composition of waste varies from one household to the other. Also, what one household may consider as solid waste may become a vital resource or raw material to the next door neighbor, depending on the perception of both the generators and managers, their level of awareness and technological advancement. The rubbish heaps of the past cultures suggest that mankind has always been faced with the problem of riding itself of materials that is no longer needed. The problem of the contemporary cities in both developed and less developed countries, with their ever great varieties, amount and duration of refuse is even more serious because households mostly produce waste which is a product of their interaction with the environment. These wastes may be small tonnage when compared with those from agriculture and mining, yet they are every where, an outstanding issue which each individual and municipality must deal with.

Issues that agitate the mind of the observers of space have been “why modern man with all his scientific and technological achievements allows himself to degenerate into the habit of degrading his environment through incessant waste generation, accumulation and disposal. The obvious consequences stare man (in most cities of the developed nations) at the face, yet he spares no thought for such. Contemporary, researches tend to advance more on measurable factors as answers to the needless despoliation of the aesthetic environment (Ojinma 2005). Those measurable factors include affluence that accompanied family level of waste generation, laws and policies guiding the disposal of such waste and believe that diverse household waste be converted to wealth through technology transfer (Sridhar, 2006 and Akpofure 2009). At this juncture, it can be assumed that the existing management strategies for household waste in Owerri and other cities within Nigeria is still inadequate hence, there is need to adapt and adopt more sophisticated management options that are feasible in most developed societies and avert the negative effects of environmental degradation.

WASTE MANAGEMENT OPTIONS AND THEIR CHALLENGES

Waste management involves the collection, organization, transfer, treatment, storage, recovery, disposal and any other activities directed towards regulating generation and dumping. Although Akpofure (2009) and Rosenbaum (1974) has observed that waste is an unofficial

measure of wealth, allowance should be made for individual and societal differences on one hand, the volume of waste that is actually generated and the rate at which it is evacuated or accumulated on the other. These are indices of measuring how effective a given waste management option could be.

In Nigerian cities and Owerri in particular, the challenges of household waste management is palpable. The volume of waste that is visible at some junctions and open spaces, emitting nauseating smells and causing aesthetic nuisance is a measure of the extent of failure of the current management practice and such examples abound in Douglas road, works layout and others. This invariably make parts of our cities unhealthy places to live and interact with Government, individuals and organizations lack the capacities or willingness to collect and dispose household waste properly. Certain factors militating against effective waste management according to Akpofure (2009), Montgomery (2004) and Sada and Omuta (1998) include inadequate waste generation and collection data, neglect of informal sector, poor management technologies, inadequate unified rules and policies, finance and low level of awareness on the part of the public.

In context of solid waste management options, open dumps, sanitary landfill and incineration are dominant in major cities of Nigeria including Owerri. This implies that the management of waste within the developing societies like ours is still in its infant stage, whiles the systematic options-segregation, recycling, reuse and recovery is yet to be adequately employed.

- A) OPEN DUMPS: This is a long established method for waste disposal demands a minimum effort and expense has been the open dump site has many challenges because most of the facilities are fairly obvious to those that live nearby. The United States Environmental Agency (USEP, 2006), observed that open dumps are unsightly, unsanitary and generally smelly; attracts insects, rodents, birds and pests and should be rejected in all ramification due to the direct health implication and the environment in general.
- B) SANITARY LANDFILLS: Similarly, Montgomery (2004) opined that sanitary landfills which is practiced in many parts of the world attract not only infiltration of degradation of soil, ground water but also facilitate the escape of free gases like carbondioxide, sulphur dioxide, methane and hydrogen sulphide which are integral gases that cause global warming and ozone layer depletion and climate change.

C) **THE CINERATION:** This as a means of waste management provides a partial solution to the space requirements of landfills. However, Montgomery (2004) and Akpofure (2009) view it as an imperfect solution because of its contribution to air pollution and carbon emission. The recent technology of incineration has been improved and the temperature change is plausible. Considering the short comings associated with the identified management options, Holloway (1995), Adelogan (2001) and Sridhar (2006) have emphasized that the need for adoption of systematic options which encompasses waste segregation, recycling, refuse and recovery. These scientific approaches according to them implies that waste is prosperity; and what certain household rejected as waste could definitely be a veritable tool and raw materials for agricultural and industrial transformation of our societies and environment.

HEALTH IMPLICATION OF WASTE

As has been noted earlier, man environment interaction creates waste. These wastes are a money making ventures in areas where there are technologies, man-power and willingness to manage them on a sustainable. A disposition in Owerri and other cities in Nigeria, household waste is a money spending venture because the generation, management and disposal fall below the required standards. Consequently, the inadequate waste management remains two of the main transmitters of diseases in many developing societies – including ours (Adelogan 2001 and Akpofure 2009).

For instance, studies carried out in many African and Asian countries showed that the presence of health problems among urban waste pickers, scavengers and those living in close proximity to dump sites (Sridhar 2006, Onyemade 1999). WHO (1995) has observed a direct link between poor urban solid management and public health hazards especially in terms of water related diseases (cholera, dysentery, typhoid and diarrhea). Case studies reveal that **616,960** incidents of cholera reported in Angola, Malawi, Democratic Republic of Congo, Mozambique and Tanzania resulted in **4389** deaths (WHO 1995). Similarly, Venkateshwaran (1994) attributed the outbreak of epidemic in Surat India to uncontrolled fermentation of waste which created conducive conditions for the breeding and spreading of insects and rodents that serve as vectors of diseases like cholera and dysentery. In Malawi, Mozambique and Zimbabwe, it was established that over **600** deaths occurred out of **171,000** incident of dysentery (Holloway 1995).

The cases identified have established that old methods (open dumps, landfills) of waste disposal which is mostly used in African countries including Nigeria creates avenues for not only

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ground water, surface water and soil pollution but also indirectly causing hepatitis, gastroenteritis and poliomyelitis due to the influence of the viruses and other that seep through the dump site. Once any component of the environment (biosphere, hydrosphere, atmosphere or lithosphere) is contaminated, the health implications on man are multiple regardless of location. This is more evident because environmental resources are often shared among community of nations hence man often pays the ultimate price of sickness which most of it are communicable and then death.

SUMMARY AND SUGGESTIONS

Man-environment interaction via activities for his welfare demands harmony rather than conflict and degradation. Therefore, basic environment friendly approaches must be employed to facilitate sustained waste generation, disposal and management. The onus of a balanced and equitable relationship rest upon man onto whom it has been given not to dominate, subdue and degrade the environment but to care for and dress the resources for maximum production and management. On that basis, social-economy and selfish degradation must be avoided while stimulating and applying rational use of waste as scarce resources. Therefore, systematic approach which include waste segregation, recycling, reuse and recovery is very crucial in this regard because it addresses the short-comings associated with the open dumps, landfills and other old methods of waste management.

Where the existing technology is inadequate, government, organizations and individuals should partner to enhance technology transfer coupled with man-power training to handle the complex components of modern machineries and waste management rather than indiscriminate bury and dumping of supposed resources (waste).

Appropriate laws, principles and policies regarding solid waste generation disposal and management need to be strictly implemented and enforced while offenders are dealt with accordingly. Such could deter others from indiscriminate waste dumping.

Practical environmental education should be introduced to ensure that household members in the various localities comply with standards and appreciate the aesthetic values of their environment only then the diverse negative health implication associated with urban waste can be averted.

CONCLUSION

Man is a product of the environment, as the later is also an important component in the life of the former. Thus protecting the environment of man from destruction is inevitable, recently in

Nigeria, a number of measures have sprang up, at both state and national levels, dumpsites have been cited at strategic locations to minimize the incidence of waste which when left to litter the town could constitute a health hazard. A number of Agencies have been established to address these problems.

Public enlightenment campaigns, seminars and workshops centered on environmental problems should be the rule rather than the exception. There is need to carry out the environmental impact assessment of every major projects.

Finally, there is need to embrace an environmental education. This programme should focus on the mode of man’s environmental interaction. This is in the hope of highly intervening in good time the consequences of whatever form of interaction man engaged with his environment.

The net effect of this type of development will be the emergence of a healthy environment that holds a lot of prosperity for both the present and future man.

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