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THE HOUSEHOLD PRACTICES BY WOMEN CIVIL SERVANTS AND WASTE GENERATION IN OSUN STATE, NIGERIA

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ABSTRACT

The polluted and degraded condition of the environment in Osun State, Nigeria was attributed to poor waste management practices of women who are responsible for 90% of household activities. Women civil servants who are educated but earn meager salaries, they are also positioned to influence policies and are not exempted from the poor waste management practices. These women, in carrying out their role as the primary care giver engaged in household activities and service-oriented activities. These activities generate huge amount of waste materials in solid, liquid and gaseous forms and are poorly disposed as inputs into the environment. Poorly disposed waste materials are threats to environmental sustainability in many ways. Therefore, this study was conducted to establish the household waste generating practices of women civil servants in Osun State. Also, ways by which these women disposed their wastes were also discussed. The study was guided by the environmental citizenship theory. Within the qualitative research method, the phenomenological design was employed to carry out the study. Purposive sampling technique was used at the various stages of the multistage sampling. Data was collected by conducting interviews using semi structured and open ended questionnaires as instruments as well as observation. A total of 19 female civil servants participated in the study. The study concluded with the findings that, the household practices of women involve generation of huge amount of waste that are poorly stored, irregularly collected and poorly disposed. The paper recommends knowledge of environmental issues such as the impact of poor waste management on the environment, good waste management practices and the practice of environmentally friendly economic activities as ways of improving the condition of the environment in the State.

Keywords: Women, Civil Servants, Household, Waste, Environment

INTRODUCTION

The condition of the environment about waste generation, waste storage, waste collection and disposal in Osun State, Nigeria was of utmost importance to this study. Environmental degradation involving massive deterioration of natural resources – air, water and soil, was easily observable in many parts of the State. The air, water and soil were heavily polluted with all manners of pollutants. Eroded soil forming gullies was evident around homes, on the streets, and even in the middle of the weathered tarred roads. The streets were filled with all forms of waste products. Many households were surrounded by landfills, smoke from cooking with firewood, paraffin stoves and saw dust (waste materials from processing felled trees) filled the air. Other constituents of foul odour in the air included emitted gases from landfills, overflown waste disposal drums around homes, and decomposed waste in roadside drainages. The drainages formed breeding grounds for malaria peddling mosquitoes and other health challenging rodents

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common along the streets and in homes in the State. (Yoada, Chirawurah & Adongo, 2014; Akinbami & Mamodu, 2013)

Osun State women civil servants were involved in cooking, using all sorts of fire-making means that emitted different substances into the atmosphere. These sources of energy for cooking included wood, charcoal, kerosene, dung, plant leaves, wastes (both safe and hazardous) and cooking gas (Barau, 2005). They were also involved in the management of waste in the process of domestic activities; these women used and dispose of different containers, tins, plastic bags papers, left over foods and so forth., that were degradable and non-degradable (Mbalisi & Ugwu, 2012). Within their schedules, the women were also involved in the fetching, conservation and management of water (Babalola et al., 2010). Some of these female civil servants also drove various types of cars, which emitted gases that polluted the environment (Babalola et al., 2010). They also carried out several service-oriented activities such as vending around their houses or premises, sewing and keeping of domestic animals and poultry (Ako-Nai et al, 2010,). All of these activities generated waste and contributed to environmental degradation in the State of Osun.

A woman's role as the primary caregiver to the family involves providing food for the family in the face of available meagre resources in many instances. A "woman" as a wife, mother, and unpaid worker suffers exploitation from many sources. In the process of carrying out these roles, women generate a lot of waste materials that are poorly disposed of, collected and managed around homes (Kollmuss & Agyeman 2002).

A female civil servant in Osun State is not exempted from any of the roles performed by other women in the state that generate waste materials. Even in instances where a man spends lesser hours at the place of work or earns lesser income than the woman, the woman is responsible for cooking, cleaning and backyard gardening. They sometimes get occupied with the rearing of domestic animals and they drive cars usually much older ones that the husbands, who usually pass down their older cars to their wives when newer ones are purchased. The man and every member of the family benefit from the role of the woman as a primary caregiver, but the woman takes responsibility for whatever damage that is inflicted on the environment. One of the consequences of climate change is the unavailability of potable water in the state. Potable water is rare in the State. Most households do not receive pipe-borne public water supply in the State. Each household has dug a well for domestic use. Predictably, a lot of the wells dug for human consumption are not far from soak ways where waste from neighbouring compounds seeps into the water. This health-threatening condition is commonplace in the State (Bogner et al., 2007).

Osun State is not an industrialized State. As a result, the immediately suspected causes of recent environmental degradation in Osun State are not industrial activities. Rather, they are factors that are linked to the domestic activities of women. The choice of female civil servants as the target population for the study was ignited by the fact that women are the main agents of domestic practices in the State (Ako-Nai, Ologunde & Adekola, 2010). Also, the women, being civil servants, seemed well positioned to contribute to policy formulation and implementation of waste management (WM) practices in the State. Moreover, women in their role as the caretaker of the family engage in activities (cooking, waste disposal, livestock rearing practices, and income generating activities such as gardening, sewing, rearing of domestic animals, roasting of

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plantain, maize, yams, and so forth). These activities generate a huge amount of waste and they have been identified as having the potential to negatively impact the environment (Abbas, 2014). Furthermore, the level of understanding of these female civil servants regarding environmental issues is suspected to constitute an obstacle to the promotion of environmental awareness and good condition of the environment in the State.

This paper is guided by the following research questions

1. What household practices by women civil servants led to waste generation in Osun State?
2. How did households of the women civil servants dispose of their wastes?

THEORETICAL FRAMEWORK

The theory that underpins this paper is Environmental Citizenship Theory. The environmental mindset can be examined as a progression of functions which include primitive awareness or knowledge, enhanced perception, attitude, motivation, and informed action. This strategy facilitates a multidimensional exploration of some of the activities that humans engage in with implications for environmental sustainability. This study focused on waste management – solid waste management – because of its enormous implication for environmental sustainability. The paper examined the type of household practices by women civil servants that can lead to waste generation and how households of the women civil servants dispose of their wastes. The process shed light on gaps and potentials only hinted at by earlier studies.

Within the theoretical framework of the environmental citizenship theory, therefore, rests prescriptions of three factors that women must uphold to contribute to environmental sustainability, namely, knowledge of environmental issues such as the impact of poor waste management on the environment, interrelationship and interactions between the components of the environment, practice of environmentally nonthreatening domestic practices such as good waste management practices and the development of environmentally friendly economic activities (several which are linked to domestic practices), since women must sustain themselves with certain income-generating activities albeit within the constraints of the world's globalized economy and capitalist form of patriarchy at home. Correct use of the various sources of energy for cooking, feeding domestic reared animals with correct feeds and consciously engaging in domestic practices with due consideration for the impact of such activities on the environment. The ownership level involves a willingness to invest in the environment. For example, women must be willing to pay for waste disposal if such action will sustain the environment. Also, the choice of source of energy for cooking should not only be based on economic reasons.

LITERATURE REVIEW

A good part of the quality of life of a community depends on the condition of its environment. Air quality, potable water, and fertile land provide for the basic livelihood of people and succeeding generations of people. Inability to access clean water and good sanitation is the cause of outbreaks of diseases and major epidemics and plagues. For environmental policies to succeed in developing countries, they must address issues of landlessness, poverty, and lack of access to

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vital resources (Todaro & Smith, 2009). Patriarchy and capitalist unfair division of labour prompted women to engage in activities that contaminate soil, water and air in some ways.

Good waste management practices usually involves collection in two important senses: a gathering of the waste together from the household points of generation into a refuse bin or onto an open dump in the yard before burning and collection by municipal agents in vehicles from collection designated points and transportation to process and disposal sites (Nzeadibe, 2015; El Nemr, 2010). This is referred to as refuse or municipal solid waste. Refuse consists of garbage and rubbish and garbage is decomposable food waste and garden waste. Rubbish is not easily decomposed and is made up of dry materials such as glass, paper, cloth, shoes, and bags. Trash is rubbish with bulky items such as old chairs and refrigerators (Nathanson, 2019).

Women in rural areas wash in nearby streams of water or river. Women dispose of waste indiscriminately around the home. When there is heavy rainfall, waste products are washed into streams and rivers and they further contaminate the water sources. The contaminated stream is sourced for water for domestic use cooking and drinking and bathing. Women also tend to keep backyard gardens. To grow the plants, they use chemical fertilizers – an uncontrolled use of which can produce toxic substances in the soil. Again, when it rains the torrents wash the toxins in the soil into the nearby stream or river and maybe the main source of water for the community, further endangering the health of the people living there. Adepoju et al. (2015) report that many households in Osun State source water for use from nearby streams and boreholes that are close to their homes.

Many rural households in Osun State engage in domestic rearing of livestock such as goats, sheep, turkey, ducks, fowls and many others, with a large number trying out snail and fish farming. Animal rearing is seen as a means of making money. The more livestock is possessed by a family the wealthier such families are thought to be. Ruminating livestock emit methane. Methane is a very reactive gas that together with carbon dioxide, nitrous oxide, water vapour and chloroform-carbon form greenhouse gases (GHG) (Akinbami & Mamodu, 2013; Babalola, Babalola, & Okhale, 2010).

GHGs are climate modifying and destabilizing agents. A high concentration of these gases in the atmosphere results in the so-called greenhouse effect which is a global warming effect caused by an unbeneficial increase in temperature in the atmosphere to heat the earth's surface. Under normal circumstances, sunlight radiates through the atmosphere unto the ground and warms the earth's surface. The heat is given off in the form of long wave radiation and reflects back into the atmosphere. The GHGs in the upper atmosphere form a protective "blanket'' that traps the out-going long-wave radiation to further warm the earth's surface. Ruminating livestock, especially cattle, release methane during anaerobic respiration in the rumen.

According to Shete and Tormar (2012) an animal releases about 50 to 100 kilograms of methane per year. Methane is also released during the burning of fossil fuels, emissions during coal mining, and prospecting for natural gases. Other sources of methane include fermentation of organic matter in swamps anaerobic fermentation of disposed waste, animal manure, and domestic sewage. Research shows that the quantity of emission from ruminating livestock depends on the body weight of the animal and the quality of food taken by the animal. Johnson & Johnson (1995) observe that when corn starch was replaced with purified cellulose to the

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extent of 40% the quantity of methane emission dropped by 30%. More substitution of animal feed with crude protein further reduces the emission of the gas.

RESEARCH METHODOLOGY

This is the process and procedure used to carry out particular research. This paper explores the type of household practices by women civil servants that led to waste generation and how households of the women civil servants dispose of their wastes.

Research Approach

The qualitative method was employed to carry out this research. The qualitative approach allowed the researcher to study the central concept of this study in natural settings by collecting non-numeric data (Sanjari et al., 2014). It was important to engage the qualitative approach for the purpose of carrying out this study because of its naturalistic approach. An in-depth comprehensive approach was necessary for knowledge production so as to address waste management problems within the community studied. The method also enabled the researcher to understand the phenomenon being studied from the perspectives of the participants (Sanjari et al., 2014).

Research Design

Phenomenological design within the qualitative research method was used in this study. The central phenomenon was waste management. This phenomenon was carefully explored to answer the research questions which formed the bases for this study. Individual experiences were brought into words in data collection. The researcher attempted to understand these experiences based on the statements made by the participants (Speziale & Carpenter, 2011). This process required conceptual probing which usually demands multiple levels of interaction between researchers and participants and in-depth interviews (Abakpa, Agbo-Egwu & Abah, 2017).

Sample Size and Procedure

The purposive sampling method was used at the various stages of the multistage. The purposive sampling method was used in the selection of the local government areas from the three ecological zones and for the selection of female civil servants from each local government area headquarters. The number of female civil servants who participated in the interview was nineteen (19).

Instrumentation

A semi-structured interview and observation guides were used to elicit information from the participants. The interview enabled the participants to amplify their opinion about the condition of the environment. They were also able to suggest and elaborate on the type of household

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practices by women civil servants that can lead to waste generation and how households of the women civil servants dispose of their wastes. An interview involved personal and direct contact between the interviewer and the interviewee. Such contacts aimed to assess participants' emotions, feelings and opinions regarding the subject under study (waste management practices and the impact on the environment (Creswell, 2014). Site visits were also undertaking to observe the general ondition of the evironments with regards to waste management.

Data Analysis

The procedure for data analyses are discussed as follows: The first step of the data analysis was reading and rereading through all the questionnaires (particularly the semi-structured and open-ended sections) to get familiar with the information provided. The video recordings during the focus group discussions were also played over several times in the process of transcribing. Also, note taken during the discussions were read on many occasions. These processes allowed the researcher to have a mental understanding of the information provided by the participants. The data was organised according to the questions asked during the interview. Such questions were categorized according to the original research questions. The data was organised in such a way that it was easy for the researcher to go through the topics to identify concepts and themes for analysis. Pictures of waste disposed in diferent forms as evident within the communities were also taken.

RESEARCH FINDINGS

The results and discussion are from the research questions below:

1. What household practices by women civil servants lead to waste generation in Osun State?
2. How did households of the women civil servants dispose of their wastes?

Waste Generated by Household Activities

Participants were asked to identify the waste generated in their households during the focus group discussions. Several types of waste were mentioned and some participants mentioned solid waste materials. Others indicated liquid wastes while others described waste in gaseous forms. Types of waste as described by participants are as presented below.

Solid waste

Many participants described the types of waste materials generated in their households as solid waste. One of the participants PI declared that:

> *"I generate common household waste like nylon, leftover food, paper, fruit peels, vegetable stalks, bottles, fruit and juice cans, milk and beverage tins, sometimes old used shoes, bags and clothes, etc."*

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As revealed by the participant's words, solid wastes are in different forms like nylon. By nylon, the respondent meant nylon plastic bags. Other types of solid waste described by participants included: old used clothes, bags and shoes. These types of waste materials are discarded occasionally.

Many participants supported the declaration that they generated solid waste in the forms listed by P1. In Nigeria, nylon bags are commonly used to pack almost anything bought from hawkers or the market. As P3 explained, *"every household would have many of these bags."* The picture below shows the types of waste generated and disposed of by households.

Figure 1: Waste Generated by Household

Picture was taken a by a research assistant in the household of one of the participants

The picture above shows the large open basket used for storing waste materials in one of the participants' homes. The content of the waste disposal basket is also observable. The waste disposed of included water sachets, plastic kegs, paper boxes, egg shells and fruit peels. The amount of plastic or nylon bags disposed of appears to be the largest, followed by the papers. The fruit peels and other disposed waste materials were minimal. To support the view that the major solid wastes generated and disposed of by households were plastic bags, waste disposed of by another household was examined.

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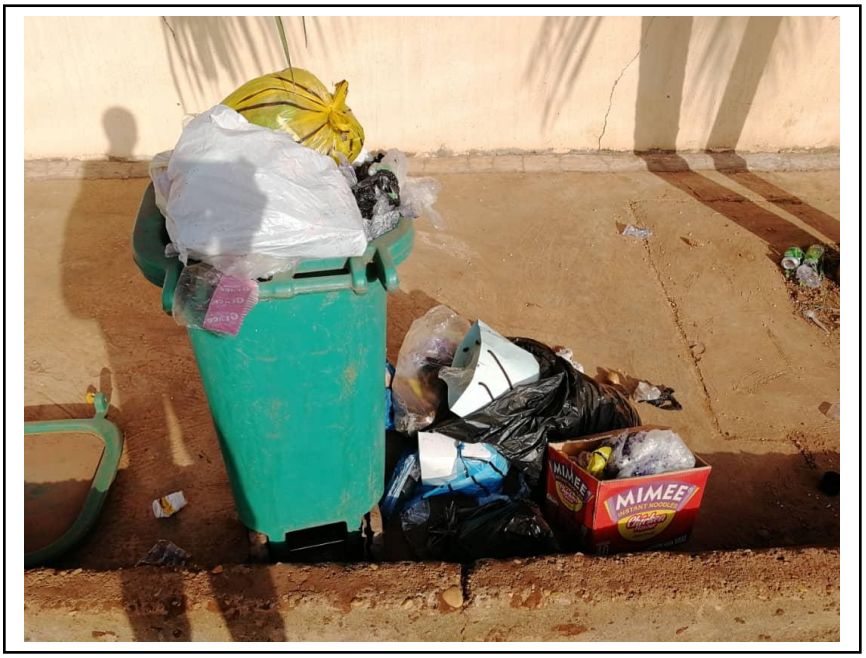
Figure 2: *Waste Materials Disposed of* by *a Household*.



The picture was taken by a research assistant at a participant's house

The picture above shows disposed waste material from another household, while the first picture shows a large open basket for storing waste. This picture shows a smaller waste disposal drum overflown with waste material. Although the waste disposal drum was supposed to have a cover to prevent disposed waste materials from flying about the yard, the cover was broken off (as shown on the left side of the drum). Waste materials overflowed out of the container and dropped around the storage container. The picture also shows the types of waste disposed of as Plastic bags in different shades and forms.

Water sachet

The participants further explored the forms of plastic waste materials disposed of in Osun State. Many of them from the urban location mentioned plastic waste materials that are different from nylon bags. For example, one of them P10 mentioned:

> *Pure water sachets, plastic shopping bags, food waste, paper waste and food cans and wastewater from washing."*

Many homes in Nigeria drink water that is processed and packed in plastic sachets for sale. Processed water that is packaged into plastic sachets is commonly referred to as *'pure water*. Participants from both urban and semi-urban locations explained that "households drink several of these sachets of water per day," After drinking water from the sachets "*the sachets were*

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usually disposed of as waste materials" as indicated by the participants. The picture below illustrates disposed pure water sachets by one of the participants' households.

Figure 3: Disposed Empty Pure Water Sachets

The picture was taken a by a research assistant in the yard of one of the participants

The picture shows the pure water sachets used by one of the household participants. The condition of the sachets revealed that they were poorly disposed of.

Plastic water bottles

Participants from the urban location also identified plastic water bottles as another form of plastic waste. Many participants also mentioned plastic water bottles as part of solid waste that has been generated from households. One of them P4 added: *"We also drink water from packaged plastic water bottles"*.

The participant further indicated that apart from drinking pure water packaged in plastic sachets, they also drank water packaged in plastic bottles. In Nigeria, processed drinking water is also packaged in plastic bottles which are also disposed of as waste materials. Predictably, processed bottled water is usually more expensive than the ones packed in nylon sachets. The picture below shows disposed plastic water bottles by one of the household of one of the participants.

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Figure 4: Disposed Empty Bottled Water Plastics

The picture was taken a by a research assistant in the yard of one of the participants

The picture shows empty bottles of water stored in one corner of a participant's yard. It is worthy of note that Pictures 3 (picture showing poorly disposed empty water sachets and 4 showing empty water bottles were taken in the same household. The same family drank water from the water sachets and the bottled packaged water as stated by the participant P2, who said *"We also drink water from packaged plastic water bottles"*

Paper

One other type of waste identified was paper. Many participants indicated that different types of papers were discarded as waste materials. These papers were of different types. Some were cartoons of packed food items while others were used paper around homes. The pictures of disposed waste above; figures 1 and 2 show varieties of waste materials in paper form.

Liquid wastes

In addition to solid wastes, liquid wastes were also mentioned by the participants as part of the wastes coming from households. P2 explained that liquid wastes include **"…***waste water from washing."*

Liquid waste was said to be generated during household chores, such as cleaning and washing. Other participants elaborated on the phrase "*wastewater from the washing*; to include *"Water from washing clothes and plates"*

Other participants also indicated that dirty water from washing done around homes was waste. One of them P5 explained *"…even when cleaning the house we use and dispose of water."* Yet, some other participants described another source of dirty water around their home *"…when we prepare food, we use a lot of water for cleaning"*

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In addition to dirty water being a waste generated by households, used oil also was mentioned. One participant P3 mentioned some waste and added that *"…and sometimes used oil."*

By used oil, the respondent meant *"cooking oil used for frying food such as plantain, fish and meat."* The participants indicated that *"Such cooking oil is reused several times before being disposed of as waste".* Using questionnaire items, 67% of participants attested to throwing oil waste into their gardens.

Therefore, the findings showed that oil waste was also a common type of liquid waste generated by households in Osun State. *"I also discard oil after using it to fry a number of times."*Still another one P6, reiterated *"I throw away overused oil."*

In general, the participants identified liquid waste as another type of waste. Liquid waste can be in the form of dirty water from washing clothes, plates, food items and cleaning the house, and this include used oil.

Wastes from Home-Based Income Generating Activities

Further investigation on other waste generating activities in the State revealed that women engaged in income generating activities around homes Such included: sewing, poultry farming, gardening and rearing of domestic animals. FGD was used to collect data. Below are the income generating activities that were done at home.

Sewing

Some civil servants indicated that they engaged sewing to sustain their families. One of them P7, FGDA presented her story;

> *"I am a sewing mistress. I get a small income to sustain me and my family beside the salary… I have been getting money to do many things to sustain my family including feeding, buying all necessary things at home***."**

This statement revealed that as a civil servant, the respondent still needed to engage in sewing. By introducing herself as a sewing mistress implied she identified with sewing as another profession she needed to engage in. *She said she "needed to do so to adequately sustain her family."*

Participants indicated that "*sewing generate a lot of waste as cut of clothes as well as the remains of other materials used for sewing clothes.*" The picture below shows the accumulated cloth waste for disposal from one of the participants' shop:

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Figure 5: *Waste Materials Disposed of* by *a Household*.

Picture taken at a participant's tailoring shop

The picture shows cut offs cloths and cloth linings from one of the participant's sewing activities. The participant P9, FGDB indicated that the clothes were **"…***set aside as waste materials."* She stated that *"the materials have accumulated over a period of ten days"*

Poultry farming

Poultry farming involves breeding chickens within the yards of the participants for the purpose of selling the eggs and the chickens at specific times. Many civil servants engaged in poultry farming for different reasons. One of the participants who owned a poultry said:*"I keep a few chickens so that I can make some money, Christmas is coming"*

The participant P4, FGDB indicated that she had poultry in her yard for the purpose of generating income.

During the Christmas season, many families celebrated by cooking plenty of chicken. Young children especially associated eating a lot of chicken with Christmas celebrations. Fowls were very expensive during the Christmas season; a lot of female civil servants bred chickens to sell. Another participant P9, FGDB admitted that*"I make a lot of money from selling my eggs and chicken during Christmas***"**

The participant indicated that she kept poultry so that she could sell eggs and chicken to generate income during the Christmas season.

The group discussions were held in December by which time the Christmas celebration was approaching and when participants were looking forward to selling their produce.

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Some participants, among those who do not keep poultry farm expressed concern that the activities generated a lot of waste materials. One of the participants P1, FGDB declared:*"…these activities yield a lot of waste materials that decompose to pollute the air."*

Other women also presented cases of poultry farming as waste generating activity. One of them P6, FGDA explained what happens in her neighbourhood

"In my area especially poultry farming by my neighbour does not allow us to sit in our sitting room."

The participant explained that neighbours engaged in poultry farming and that the activity produced waste materials that pollute the enviroenment. Another participant, participants P2, FGDA shared her experience*"…some people are keeping pigs, goats and sheep"* The participant explained that her neighbours engaged in the rearing of animals such as goats, pigs. These are domestic animals that produce waste in diferent forms that contribute to GHG.

Generally, participants were of the opinion that wastes were generated through different household activitieas as well as home based income generating activities. They identified that there are different types of waste generated. They also indicated that the waste generated are in deferent forms such as solid, liquid and gasses. Participants explained that both categories of activities; household and inclome generating activities were undertaken to sustain their families.

DISCUSSIONS

The women civil servants identified two categories of waste generating activities; household waste generating and home-based income waste generating activities. Both categories of activities generate huge amount of wastes that negatively affect the environment (Zhang & Wang, 2010). The waste generated were in different forms and types. Types of waste generated were determined by the activities engaged that bring about the waste products (Ako-Nai et al., 2010). Waste disposal usually involves collection in two important senses: a gathering of the waste together from the household points of generation into a refuse bin or onto an open dump in the yard before burning and collection by municipal agents in vehicles from collection designated points and transportation to process and disposal sites (Nzeadibe, 2015; El Nemr, 2010). This is referred to as refuse or municipal solid waste. Refuse consists of garbage and rubbish and garbage is decomposable food waste and garden waste. Rubbish is not easily decomposed and is made up of dry materials such as glass, paper, cloth, shoes, and bags. Trash is rubbish with bulky items such as old chairs and refrigerators (Nathanson, 2019).

The participants identified different types of waste generated as solid, liquid and gaseous wastes. Some of the solid waste mentioned, apart from plastic bottles, nylon sachets, paper, and waste from food peels in the process of food preparation and from food leftovers were used clothes, shoes and bags. The compositions of household waste generated by participants were consistent with certain aspects of the description of waste by the European Commission (EC) 2008 as reported by Gopinath (2020). They categorised household waste as biodegradable. Biodegradables are waste that can undergo both aerobic and anaerobic decompositions at the landfills to produce "dirty"methane (a greenhouse gas, GHG) when poorly disposed. Methane from landfills is described as "dirty" because it is contaminated by everything else that reacts with it from the dump De Beer (2013). He further indicated that, a higher than normal

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concentration of GHGs: carbon dioxide, methane, chloroflouro methane, in the atmosphere has led to the alteration of atmospheric chemistry, ozone depletion, degradation of the natural environment and environmental pollution. Also Abbas & Singh (2014) reported that household activities contributed to anthropogenic external factors that led to impacted on climate change. The women civil servants experienced the greater impact of environmental pollution, degradation and climate change as they worked long hours and earned low income for their efforts. They are saddled with the responsible of caring for the households. Osun State women are responsible for 90% of household chores such as food preparation and varied forms of cleaning homes and surroundings. All these activities involved waste generation in different forms.

Generation of plastics as waste were also presented by Yaoda et al. (2014) who reported that 78.8% of households in Ghana disposed of plastic materials. These types of waste are basically non-biodegradable (Zhang & Wang, 2010). De Beer (2013) describes plastic and rubber as combustible waste that take 10 to 30 years to decompose when exposed to the sun. They are easy to burn and when burned they cause air pollution by releasing highly toxic molecules into the atmosphere**.** Waste can be categorised according to their composition and characteristics as earlier mentioned. Waste composition plays a significant role in waste management strategies that can be employed by a community or municipal authority. Other considerations for waste management strategies are financial sustainability, technical feasibility, social, legal and environmental friendliness of the strategies (Mohee & Bundhoo, 2015). While the biodegradable waste type is easily reduced through decomposition, combustible and non-combustible waste can be managed by recycling the waste; Mohee & Bundhoo, 2015). Studies have shown that combustible waste and non-combustible items such as glass, metal, paper, plastic, rubber, can be recycled (Nathanson, 2019). Recycling involves the extraction and processing of these materials for reuse. Recycling these materials means lesser waste generation and littering of the environment. Recycling of waste involves some sort of sorting. Households were meant to separate waste from sources to make recycling of waste easy (Zhang & Wang, 2010). Other ways of managing waste involves re-use, recovery (energy recovery) and disposal (Gopinath 2020).

Apart from solid waste materials, the participants identified liquid waste as household waste. They indicated that the liquid waste generated were in form of dirty water from washing clothes, plates, food items, and from cleaning the houses. Liquid waste included spent oil (used oil, such as from deep frying with palm oil and groundnut oil). Waste water contaminates groundwater through leaching and this eventually leads to deleterious health effects (Mohee & Bundhoo, 2015; El Nemr, 2010). Oil poured on productive land pollutes the soil, hinders air circulation in the soil, destroys microorganisms in the earth, and hampers beneficial soil activities by macro organisms such as earthworms. The effect of this is that; the nutrients in the soil reduce and result in low food production. This has a negative effect on the standard of living of the people. As indicated by the study participants, the environment was highly degraded by badly disposed waste. Soil, water, and air pollution from waste materials is hazardous to human health. Also, improper waste disposal results in the outbreak of epidemics and the spread of diseases by different rodents and vectors and the anaerobic decomposition of waste (Zhang, & Wang, 2010; Akinbami & Momodu, 2013).

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CONCLUSION

This paper explored waste generation by household practices of women civil servants and poor waste disposal practices of the women. Waste generated from various activies were in different forms, solid, liquid and gaseous. The Osun State environment is highly polluted and degraded as a result of poor waste disposal practices of the people. Poorly disposed waste materia contribute to the so called climate change, ozone depletion and other environmental harzards that impact life greatly. The characteristics and composition as well as other factors such as financial sustainability, technical feasibility, social, legal and environmental friendliness of the strategies determine good waste management strategies. The theoretical framework of the behavioural change or environmental citizenship model provided a four-pronged approach to SWM and environmental sustainability at entry level, ownership level, empowerment and citizenship. The poor waste disposal practice by women civil servants confirmed literature that propounded the existence of a gap between awareness, attitude, and action in the behavioural change or environmental citizenship model of environmental education. It found that the gap was bridgeable to yield pro-environmental action. Therefore the study recommends that women be effectively equipped with the knowledge of environmental issues that will foster environmental sustainability. Such environmental issues should include the knowledge of impact of poor waste management on the environment, good waste management practices and the practice of environmentally friendly economic activities as ways of improving the condition of the environment in the State.

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