



Urban environmental injustice in Ghana: The activities of small-scale palm oil producers in the Ahanta West District

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Abstract

Urban residents are often subjected to different forms of environmental injustices that often ruin their well-being. This paper sought to examine environmental injustices caused by activities of small-scale palm oil producers in the Ahanta West District of Ghana and devised practical solutions to address the problem. A total of 152 respondents were used. Questionnaires (small-scale palm oil producers), focused group discussions (residents of the study area), in-depth interviews (2 key informants) and personal observation on the physical environment of Ahanta West District constituted the data collection techniques for the fieldwork. Incidents of pollution of water bodies, land degradation and bad environmental odour were key environmental problems caused by the activities of small-scale palm oil producers. It is therefore recommended that the Environmental Protection Agency (EPA) and the Ahanta West District Assembly should collaborate to strictly enforced Ghana's environmental regulations. The activities of all small-scale palm oil producers should be constantly monitored by the EPA and those whose operations are deteriorating the environment should be sanctioned accordingly. The EPA should also organise frequent educational programmes for the small-scale palm oil producers to educate them on good environmental management practices to enhance the environmental sustainability of Ahanta West District.

Keywords: Urban, Environment, Injustice, Ghana

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1. Introduction

Over the past twenty years, environmental issues together with matters on peace, freedom and development have dominated local and international discussions. Urban environment in particular has been on top of debates on sustainable development due to many activities and high population growth taken place in these areas. For the first time in the history of the world, more than half of the world's population lives in urban areas (Fuller and Gaston, 2009). For urban dwellers, the physical environment is of great importance because healthy living standards primarily depend on the quality on the environment (Van Leeuwen et al., 2006). As there has been a tremendously increase in the global urban population over the last few years, so has been a rise in industries (small, medium and large scale) in urban areas to support the job needs of urban dwellers. A typical example of such industries is the palm oil industry.

Palm oil contributes substantially to the global total vegetable oils accounting for about 34 percent of the global annual production of vegetable oil and more than 60 percent of the world's export of vegetable oils (Initiative for Public Policy Analysis, 2010). It is extracted from palm fruit and thrives well in tropical climate areas with about 42 countries worldwide engaging in its production (Initiative for Public Policy Analysis, 2010). The majority of the global production of palm oil (about 90 percent) occurs in South-East Asia with Indonesia, Malaysia and Thailand been predominant producers (United Nations Department for Agriculture, 2010). According to Bastard (2010), palm oil and palm kernel oil were the largest contributors to the world's production of oils and facts in 2008 which was about 160 million tonnes. They pulled together 48 million tonnes (about 30 percent) of the total output. Soybean oil was second accounting for 37 million tonnes (about 23 percent). He further stressed that about 38 percent of the global production of oils and facts are shipped across countries with palm oil and palm kernel oil making up about 60 percent of oils and facts exported across the world. Malaysia dominates the world trade on palm oil; it produces more than 40 percent of the global total output of palm oil (Bustard, 2010).

Palm oil is produced in many African countries for commercial purposes. Nigeria for example, produces large quantities of palm oil and it is ranked as the third producer of palm oil after Indonesia and Malaysia (Initiative for Public Policy Analysis, 2010). Palm oil is a major source of foreign exchange to the Nigerian economy as the country started producing palm oil to the world market around early part of 1900. According to Olagunju (2008), Nigeria in the early part of 1960s produced 43 percent of the global stock of palm oil (1.5million tons), making them a leading producer of palm oil at that time. In 1995, the total palm oil production of Nigeria was 898,000 tonnes which was a slight increase from 640, 000 tonnes in 1975 (Opeke, 2005). At the moment, Nigeria contribute less to the global production of palm oil with a production of only 1.7 percent which is not even enough to meet its local consumption which is about 2.7 percent (Initiative for Public Policy Analysis, 2010).

Ghana, another African country has an extensive history on palm oil. In the late 19th Century and early part of the 20th Century, palm oil was a primary export of Ghana but now palm oil is produced in limited quantities in Ghana (Gyasi, 2008). This is due to the use of traditional methods of production coupled with the low quantity of palm oil produced which could not make Ghana to meet the rising global and domestic demand. The 2008 annual production was put at 109,000 metric tons down from 121,000 in 2006. The

domestic consumption level is estimated to be around 230,000 tonnes. The shortfall is being filled by import (Gyasi, 2008).

The production of palm oil under go several processes and uses different methods as well. In general, processing palm oil involves the reception of fresh fruit bunches (FFB) from the plantations, sterilizing and threshing of the bunches to free the palm fruit, mashing the fruit and pressing out the crude palm oil (Poku, 2002). The crude oil is further treated to cleanse and afterwards dried for storage and export. Broadly, four main methods or approaches are often used to process palm oil: the traditional methods, small-scale mechanical units, medium-scale mills and large industrial mills. Palm oil processing units that handle up to 2 tonnes of FFB per hour are classified as small-scale. The technology that process between 3 and 8 tonnes FFB per hour are referred to as medium-scale, while large-scale refers to mills that process more than 10 tonnes per hour (Poku, 2002). Small-scale palm oil production is one of the major agricultural ventures that many people depend on for their livelihood in Ghana. According to Imani (2010), palm oil production provides a major source of employment and revenue for many Ghanaians, with about 27,000 farmers engaged in the industry. The Ghanaian government, recognizing the huge role palm oil plays in the economy, has invested millions of Ghana Cedis in the industry and in 2009 announced a “master plan” to support the expansion of palm oil production.

The palm oil industry is dominant in the forest areas of Ghana where the oil palm that is used as raw material for the production of palm oil is produced in abundance. The Western Region of Ghana play host to a lot of small-scale palm oil producers. Despite the phenomenal role played by the production of palm oil in the country, the management of waste by small-scale palm oil producers has been found to be a major problem that needs urgent attention (Ghana News Agency, 2010). Poku (2002) observed that most of the small-scale palm oil producers in Ghana do not treat the waste they generate before disposing them off. This creates bad odour and other environmental problems. A survey on the operations of small-scale palm oil producers in Ghana (Poku, 2002) revealed that most of the small-scale palm oil producers indiscriminately dispose of their liquid waste into gutters, open places and even in water bodies close to their activities. This has consequences on water bodies and the environment which in the long run affect the health conditions of human beings.

Ahanta West District is one particular urban area in the Western Region of Ghana where waste generated by small-scale palm oil producers is found to be causing many environmental hazards (Imani, 2010). International bodies such as the United Nations, World Health Organization and the Environmental Protection Agency in USA have strongly indicated that all individuals have the right to live in clean and healthy environment, and they should also be treated fairly irrespective of their socio-economic status on all environmental problems. This ideology is referred to as environmental justice. Despite the environmental problems caused by small-scale palm oil producers in Ahanta West District, little has been done to protect the environmental well-being of residents of the area. It is therefore against this backdrop that this study was undertaken to examine the waste management practices of small-scale palm oil producers in the Ahanta West District and its effects on the environmental justice of the residents of that community.

This paper is structured in five sessions. The first session gives a broad introduction of the paper. The second section gives a theoretical support of the paper by focusing on urban environment and the concept of environmental justice. The third and the fourth sections deal with methods and data; and results and discussion of the paper respectively. The fifth section provides conclusion and the way forward to protect the right of the residents of Ahanta West District to live in clean and safety environment.

2. Urban environment and the concept of environmental justice

Urban areas play key roles not only as avenue for many employment opportunities, shelter and services but also serve as centres of culture, learning and technological development, industrial centres for the processing of agricultural produce and manufacturing, and places to generate income (UNEP, 2002). Despite these benefits, much of the environmental problems that are affecting the world today have their origin in urban areas partly due to the presence of many industries in these areas (OECD, 1994). Cities for example, serve as places for the generation of high volumes of waste and destruction of natural resources; they also generate the majority of the greenhouse gases that are triggering global climate (OECD, 1994).

Environment in broad terms signify a place where we live, work or play. In the context of urban areas, four main components constitute urban environment; natural, built, social and cultural environments. To have a healthy and sustainable urban environment, all these four components should be in good condition. In contemporary urban development, some key factors or features have been found to undermine the quality or successful growth of urban environment. A report by the National Environmental Justice Advisory Council (1996) highlighted the following features as among the key features deteriorating the quality of urban environment: (a) co-existence of residential and industrial sites as a result of bad land use planning; (b) an oversaturation of communities with multiple sources of environmental pollution in highly congested spaces; (c) inadequate documentation of most environmental health risks in urban communities; (d) lack of a comprehensive environmental enforcement and compliance activity which results, for some communities, in a virtual non-existence of such activity; (e) lack of health services and adequate information on environmental risks; (f) the severe decay in the institutional infrastructure; and (g) a high rate of social alienation and decay caused by living in degraded physical environments (National Environmental Justice Advisory Council, 1996). All these features show that almost all aspects of the urban environment especially the physical environment (natural and built) are in the state of jeopardy and that most urban dwellers are living in unhealthy environmental conditions.

As a means of protecting the health and environmental well-being of urban dwellers especially the less privileged ones came in to the lamplight the concept of environmental justice. Environmental justice emerged in USA in the 1980s as grass root social movements (Agyeman, 2007). It is one of the key concepts in geography that is concerned with fair treatment of people irrespective of their colour, race, ethnicity and socio-economic status concerning environmental problems such as pollution, degradation and waste management problems. According to the Environmental Protection Agency of USA, environmental justice covers the following:

The fair treatment and meaningful involvement of all people regardless of race, colour, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people including racial, ethnic, or socio-economic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programmes and policies.

(Bullard, 2004: 144)

The emergence of environmental justice in USA was necessitated by major landmark studies which enhanced the understanding of what environmental justice represents and also provided empirical support for environmental justice claims (Brulle and Pellow, 2006). Notable among these studies is the study conducted by the United Church of Christ in the 1980s entitled "toxic waste and race in the United States". This study found out that race was an important factor that influenced the location sites of toxic wastes, being that about 40 per cent of the USA landfills at that time were situated near African-American neighbourhoods who were less privileged compared to other category of people in USA (United Church of Christ Commission For Racial Justice, 1987). The finding of this study together with other studies led to the coining on the term "environmental racism" by Benjamin Chavis (Bryant, 1995) which later on metamorphosed to the concept of environmental justice.

Environmental justice as a principle connotes four main things. These are protection from environmental degradation; prevention of health impacts from deteriorating environmental condition before the harm is done; avenue for assigning culpability and shifting burden of proof of contamination to polluters; and using fair means to address environmental hazards with target remedial action and resources (Cutter, 1995). Failure to achieve these principles with some group of people in the society disproportionately suffering from the burden of environmental hazards leads to environmental injustice (Pellow, 2000).

Since the operation of the concept of environmental justice in the 1980s, its scope has now broaden from its initial focus on anti toxic waste to matters cutting across political, social and economic arenas. Locally Unwanted Land Uses (LULUs) such as waste facility siting, transfer storage and disposable facilities, and other issues like public health, lead contamination, transportation, housing, sanitation, resource location, economic disinvestment, community participation and empowerment are now all incorporated into the discourse of environmental justice (Agyeman and Evans, 2004; Agyeman et al., 2002; Bullard, 2001). Political and distributive justices are often highlighted under environmental justice. The political justice is associated with fairness in decision making on the environment whilst distributive justice concern equity in the distribution of environmental risks and benefits. According to Kaswan (1997), distributive justice eliminate disproportionate burden of environmental hazards or undesirable land uses borne by low-income or minority communities while political justice on the hand helps to address the discrimination manner in which decisions on environmental hazards are made without fair involvement of the poor or less privileged communities. In the views of Agyeman and Evans (2004), the concept of environmental justice has both procedural and substantive underpinnings. The procedural aspect deals with meaningful involvement of all

people into decision making on the environment whilst the substantive facet is centred on the right to live in and enjoy a clean and healthy environment.

In urban environment, in order to have a good understanding of environmental justice and devise probable measures to achieve it, three aspects of environmental problems or injustices have been identified by Gelobter (1993). These aspects are health-related injustice, spatial injustice and structural/economic injustice. Health-related environmental injustice cover poor health conditions of urban dwellers especially among less developed communities arising from low environmental quality. Lack or inadequate attention in addressing such problems end up in easy spread of environmental diseases such as asthma, respiratory illness, diarrhoea, cholera, malaria and typhoid fever in such areas. Factors such as poor waste management practices, water pollution, and air pollution are often proximal causes for these unhealthy environmental problems. Disproportionate siting or location of environmental hazardous facilities such as incinerators and solid waste facilities in or near less endowed communities constitutes spatial injustice. In addition to this, unfair share of social services within the neighbourhoods of less privileged communities is also under the ambience of spatial injustice. The structural/economic injustice is often explained under the context of urbanization in less developed countries. Poor socio-economic factors influence people to move to urban areas to improve their well-being. This high influx of immigration to urban areas often results in poor or abusive urban land management practices with poor communities suffering the most. Urban environmental problems of this nature are recognised as structural/economic injustices. In all, although environmental justice is used to cover a wide range of urban environmental problems, it generally provides a framework for examining matters of inequality, justice and fairness in an environmental context (Schlosberg 2007, Ageyman et al., 2003).

3. Methods and data

This paper is based on a study at Ahanta West District, an urban area surrounded by the activities of many small-scale palm oil producers. It can be found in the Western Region of Ghana and located at the Southern most part of Ghana. Agona Nkwanta is its capital and has a total land size of 591 square kilometres with an estimate population of 95,140 people (Ghana Statistical Service, 2008; Ahanta West District Assembly, 2006). (Ghana Statistical Service, 2008). The district lies between latitude 4°45"N and longitude 1°58"W. It is bounded on the east by the Sekondi-Takoradi Metropolis, on the west by the Nzema East Municipality, and the north by Mpohor Wassa East and Wassa Amenfi West districts and the Gulf of Guinea to the south (Figure 1). Five neighbourhood/communities which are noted for high level of small-scale palm oil production in Ahanta West District were selected for the study. These communities were Hotopo, Akentenkyie, Ewusiedjoe, Bokro and Azani (Figure 1).

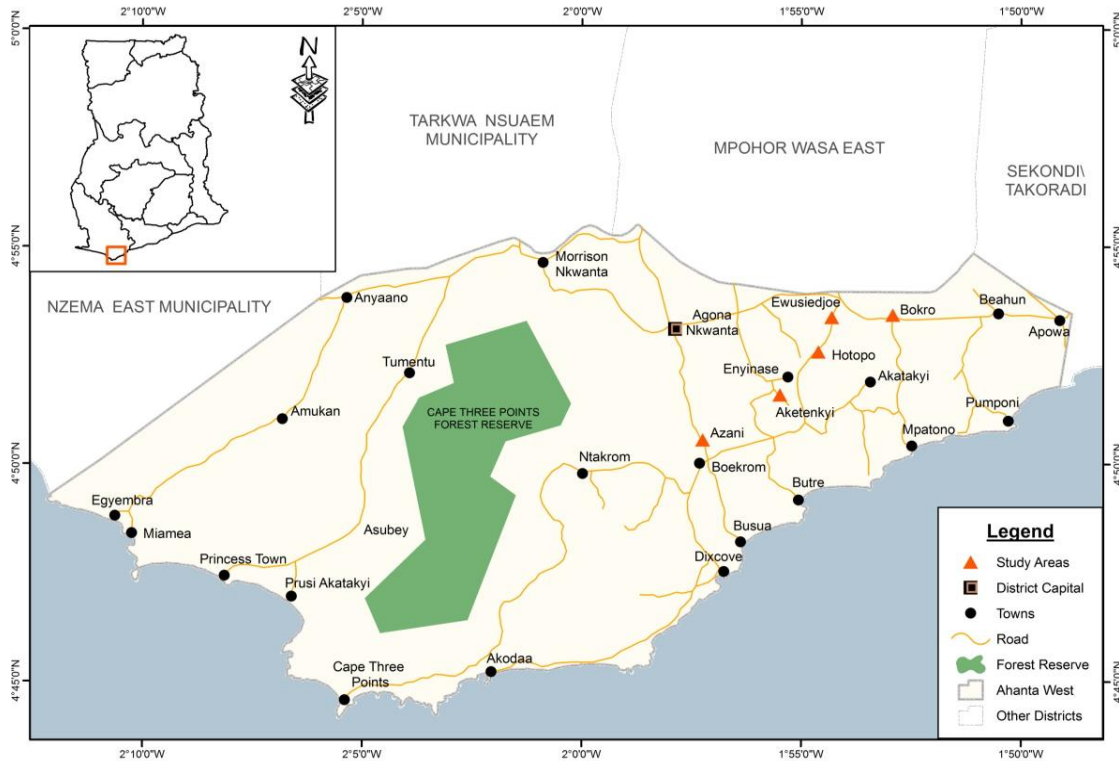


Figure 1. Map of Ahanta West District showing selected sites for the study (Source: Department of Geography and Regional Planning, University of Cape Coast, 2011)

Cross-sectional design was used for the study. This type of research design involves the collection of data from research participants at a defined point in time or relatively brief period of time. The data are typically collected from multiple groups (Olsen and George, 2004). The cross-sectional design helped the study to get rich and varied data from many participants within a short period of time (Mann, 2003). Three categories of people constituted the study population. These were small-scale palm oil producers, residents of the study area and key informants from the Environmental Protection Agency (EPA) and the Ahanta West District Assembly. The selection of these people was based on the fact that their expertise on issues being investigated was considered paramount. Thus, small-scale palm oil producers were involved in the study because they were the main stakeholders of palm oil production in the area and their involvement benefited the study in terms of getting vital information on their activities and waste management practices. The residents in the study area were selected because they live in the area and hence were in good position to provide information on environmental problems affecting them as a result of the activities of small-scale palm oil production. The key informants on the other hand were involved to find out the roles they are playing to ensure environmental justice in Ahanta West District that the residents are entitled to.

Both qualitative and quantitative research techniques were relied upon in the study. A total of 152 respondents were used. This comprised 100 small-scale palm oil producers, 50 residents of the study area and one representative each from the EPA and Ahanta West District Assembly. The selection of the small-

scale palm oil producers was done quantitatively through the usage of IFAD sample size formula (see Appendix 1). Cluster and purposive sampling techniques were used to select the respondents. The small-scale palm oil producers were selected through cluster sampling. Each of the 5 neighbourhoods shortlisted for the study represented one cluster and from each cluster 20 small-scale palm oil producers were randomly selected. The residents and the key informants were purposively selected. Ten (10) residents each were selected from each of the 5 neighbourhoods. In line with the mixed method research approach that the study adopted, both quantitative and qualitative data collection techniques were used. Questionnaire (quantitative technique) was used to collect data from the small-scale palm oil producers whilst Focus Group Discussion and In-depth Interview (qualitative techniques) were used for the residents and the key informants respectively. In addition to this, personal observation was also made on the physical environment of the study area. The Statistical Product and Service Solutions (SPSS) version 17 was employed to process and analyse the questionnaires. The qualitative data from the Focus Group Discussions (FGDs) and In-depth Interviews (IDIs) were analysed manually. In doing this, the data were first transcribed, categorised under specific themes and used for the analysis. Frequencies, percentages, tables, charts and direct quotations were used to present the results. Digital photos that were taken during the observation sessions were also used to support the results of the study.

4. Results and discussion

This section of the paper presents the findings of the study. It is organised under three broad areas. These are the activities and waste management practices of small-scale palm oil producers; environmental problems caused by small-scale palm oil production; and lack of protection against environmental hazards.

4.1. Activities and waste management practices of small-scale palm oil producers

The activities of small-scale palm oil producers generate much waste on the environment. These wastes are either in a form of liquid or solid waste. To find out the dominant form of waste generated by small-scale palm oil production in the study area, the 100 small-scale palm oil producers selected for the study were asked to indicate the various waste generated by their activities and the volume of such waste on the environment. Their responses are shown in Table 1.

Table 1. Forms of waste generated by small-scale palm oil producers (percent)

Forms of waste	Tonnes	High 10+	Normal (5-9)	Low (up to 4)	Total
Empty fruit brunch		63	32	5	100
Palm fibre		84	13	3	100
Shell (palm kernel shell)		27	22	51	100
Oil sludge		81	17	2	100

Four forms of waste were generated by small-scale palm oil producers in the Ahanta West District. These forms of waste were empty fruit bunch, palm fibre, palm kernel shell and oil sludge. Among these forms of waste generated, palm fibre, oil sludge and empty fruit bunch were the predominant as more than half of the respondents admitted that they were produced in high quantities. As indicated in Table 1, palm fibre, oil sludge and empty fruit bunch had 84 percent, 81 percent and 63 percent responses respectively.

The FGD sessions conducted for the residents of the area confirmed this finding. Most of the discussants said that palm fibre and oil sludge were the dominant waste products generated on the environment by the activities of small-scale palm oil producers. Some of the discussants had this to say:

Small-scale palm oil producers produce large volumes of palm fibre waste and oil sludge onto our environment. The quantity of these wastes is too high that it has destroyed the beauty of our environment [Discussant K].

Although the small-scale palm oil producers help us to easily get palm oil for our domestic use, the waste that they generate on our environment is bad. Most parts of the environment of this community is destroyed by the waste generated by small-scale palm oil producers especially oil sludge and palm fibre [Discussant Z].

Similar observations were made on the physical environment in and around where some of the small-scale palm oil productions were carried out. Large quantities of palm fibre, empty fruit bunch and oil sludge were observed during the observation sections (see Plate 1).



Plate 1. Forms of wastes generated by small-scale palm oil producers (Source: Fieldwork, 2011) / Top: Palm fibre, Bottom: Oil sludge

Palm fibre, oil sludge and empty palm fruit being the dominant forms of wastes generated by small-scale palm oil producers in the Ahanta West District was contrary to the observation made by Lartey, Acquah and Nketia (1999) that palm kernel shells constituted greater proportion of the waste generated by small-scale palm oil producers in Ghana.

Having examined the various forms of waste generated by small-scale palm oil producers in Ahanta West District, it was expedient to find out how these wastes were produced. Several activities or processes are carried out by small-scale palm oil producers to produce palm oil for human consumptions. It was found out that eight (8) processes or stages were followed to obtain palm oil, the final product. Each of these activities in one way or the other generated some form of waste onto the environment. Table 2 shows the various activities of small-scale palm oil producers in Ahanta West District that generated waste onto the environment.

Table 2. Activities of small-scale palm oil producers that generate waste

Activity(process)	Frequency	Percent
Bunch reception	2	2
Clarification and drying of palm oil	2	2
Storage of palm oil	3	3
Digestion of palm fruits	5	5
Threshing (removal of fruits from the bunches)	8	8
Sterilization of palm fruits	14	14
Palm pressing(extraction of palm oil)	66	66
Total	100	100

Large volumes of waste produced by small-scale palm oil producers were generated at the palm oil extraction stage (pulp pressing). Most of the small-scale palm oil producers (66%) attested to this. It was followed by the sterilization of palm fruits (14%) and threshing (8%). Personal observation made on the processing of palm oil by small-scale palm oil producers corroborated the responses from the small-scale palm oil producers. It was observed that during the extraction stage large quantities of palm fibre and oil sludge wastes are generated (Plate 2).

This finding is in line with that of Rock (2001) which revealed that large amount of oil sludge and palm fibre wastes of small-scale palm oil producers are produced at the palm oil extraction stage. The management practices used to manage these waste were also ascertained to see whether they were appropriate or not. Small-scale palm oil producers around the world use different methods to dispose off wastes that are generated by their activities. Whilst some of these methods are the same others differ. To find out the form of waste management practices adopted by small-scale palm oil producers in the Ahanta West District, the respondents were asked to indicate the type of management practice that they frequently used to dispose off their waste (Table 3).



Plate 2. Extraction stage of the processing of palm oil by small-scale palm oil producers (Source: Fieldwork, 2011)

Table 3. Waste management practices used by small-scale palm oil producers in the Ahanta West District

Waste management practice	Frequency	Percent
Burning	12	12
Reuse	21	21
Disposal of waste (landfills, water bodies etc.)	67	67
Total	100	100

Depositing waste into landfills and water bodies was a dominant waste management method that was used by the small-scale palm oil producers. More than half of the respondents (67%) confirmed this (Table 3). Next was reuse of waste. Twenty-one percent (21%) of the respondents indicated that they reuse some of their waste especially the palm fibre to generate heat for their activities. Recycling of waste as a waste management option had no responses from the respondents. This shows that the most preferred waste management method used by small-scale palm oil producers in Ahanta West District was disposing wastes into landfills and water bodies. This finding supports the waste management hierarchy which has waste disposal as the most preferred method at the bottom of the hierarchy because of less or no financial cost involved in using that method (Bharat, 2003).

Having revealed that disposal of waste into landfills and water bodies was the dominant method used to dispose of waste by small-scale palm oil producers, it was ideal to ascertain whether the wastes were

treated before disposal. All the 100 respondents said that they do not treat the waste they generate before disposal. This means that the various wastes generated through the activities of these small-scale palm oil producers are disposed off in their raw state without any treatment done to them. This finding corroborates with Poku’s (2002) finding of the majority of small-scale palm oil producers in Ghana not treating their waste before disposing them off.

4.1.1. Consequences of waste generated by small-scale palm oil producers on the environment

The wastes produced by the activities of small-scale palm oil producers either liquid or solid has some harmful effects on the environment. These wastes affect the environment in diverse ways. The nature of the consequences of wastes generated by small-scale palm oil producers onto the environment varies from one location or area to the other depending on the nature of the operation of the small-scale palm oil production taking place in that area. Three main consequences of the waste produced by small-scale palm oil producers on the environment were noticed. These consequences were bad odour, pollution of water bodies and land degradation. For easy interpretation, the contribution of liquid and solid wastes generated by small-scale palm oil producers to the environmental consequences in the study area have been discussed (Figures 2 and 3).

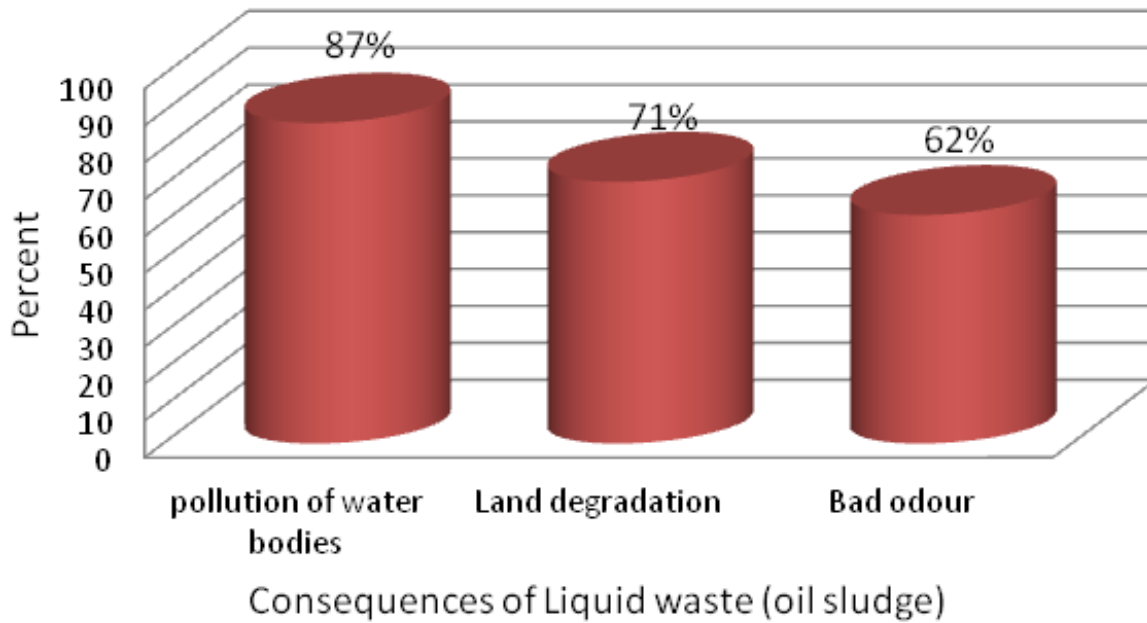


Figure 2. Consequences of liquid waste on the environment (Source: Fieldwork, 2011)

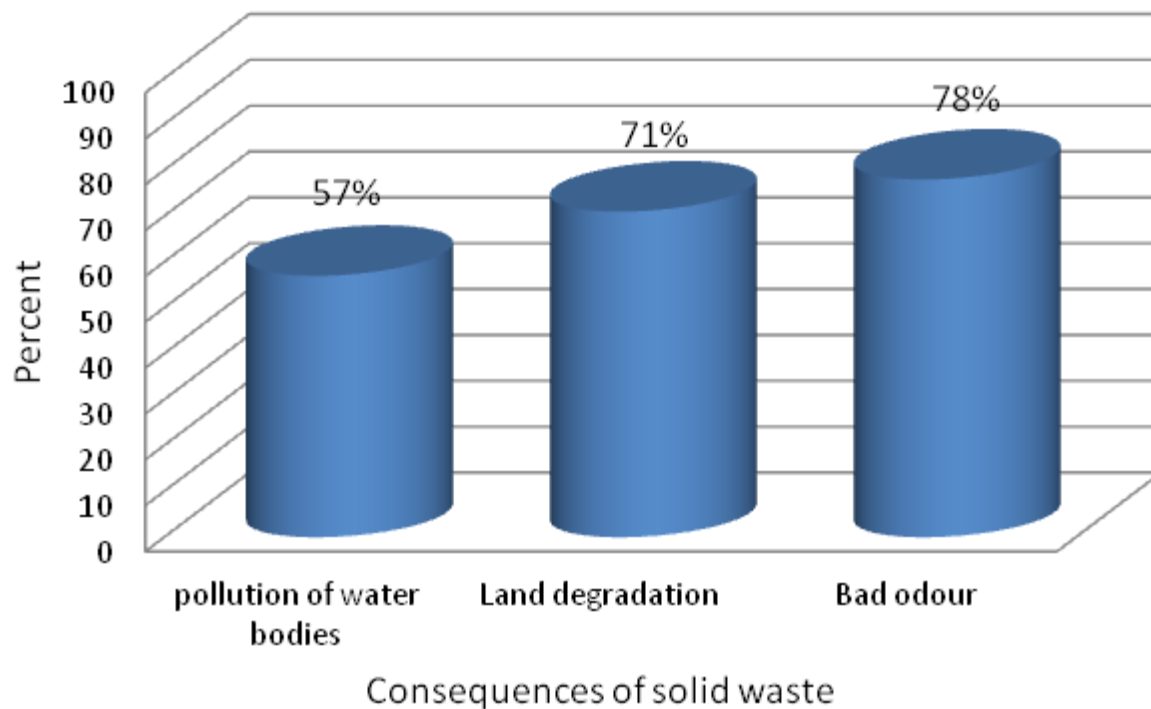


Figure 3. Consequences of solid waste on the environment (Source: Fieldwork, 2011)

Each of the three environmental consequences had more than 50 percent responses from the respondents. With respect to liquid waste, the major environmental consequence was pollution of water bodies (87%) whilst bad odour was the lowest consequence with 62 percent. This confirms Ahmed's (2009) finding of oil sludge of palm oil producers polluting many rivers/streams in developing countries. Concerning solid waste, bad odour was the major consequence; this was indicated by 78 percent of the respondents whilst pollution of water bodies was the lowest with 57 percent. This finding affirms Orathai's (2006) observation of solid wastes from palm oil producers causing bad odour around the surrounding communities they operate.

The FGD sessions confirmed that bad odour, pollution of water bodies and land degradation were the notable environmental consequences of small-scale palm oil production in the study area. Some FGD discussants remarked as follows:

We are really suffering from the activities of small-scale palm oil producers. Their activities have destroyed our water bodies, forests and gives out bad odour which is causing much health problems for us [Discussant U].

Most of the lands that we were farming on have been destroyed by the waste products from small-scale palm oil producers. Such lands have now become marshy areas and do not support the cultivation of most of our farm products [Discussant T].

The small-scale palm oil producers always dump their untreated wastes into our streams/ivers. This has destroyed the quality of water we get from our rivers for domestic purposes. In fact, this has made the water from the streams/ivers oily, dirty and gives out bad smell. This is affecting our health and livelihoods severely [Discussant N].

Observation of some aspects of the physical environment of Ahanta West District with respect to dumping of waste products by small-scale palm oil producers showed widespread negative effects of oil palm wastes on the environment. The waste products of the small-scale palm oil producers were seen to have destroyed the environment in many ways. Plates 3 and 4 show the extent to which the activities of small-scale palm oil producers especially their waste products were causing many problems for the residents of Ahanta West District. It is really making life difficult for the people in the community.



Plate 3. River Butre polluted by the activities of small-scale palm oil producers (Source: Fieldwork, 2011)

River Butre which is one of the major water bodies in the area was found to be polluted. The residents of the area rely on this river for domestic purposes such as cooking and washing of clothes. The acidic nature of the liquid wastes dumped into this river has ruined the quality of the water in the river and made it unsafe for human consumption. What was even worse was the extent to which most of the lands in the study area were degraded. Communities surrounding the activities of small-scale palm oil production were essentially farming communities. Most of the dwellers in these communities depend on farming either as their main source of economic activity for their livelihood or practice subsistence farming to supplement the little incomes they earn from other sources to make ends meet. Many aspects of the land in the area were

degraded to the point that no crop could be grown on them. This has brought much economic and financial hardship to the people living in the study area.



Plate 4. Land degraded by the activities of small-scale palm oil producers (Source: Fieldwork, 2011)

4.1.2. Lack of protection against environmental hazards

In Ghana, the overall management and proper functioning of towns is under the control of some bodies. Metropolitan, Municipal and District Assemblies (MMDAs) is one of the key bodies entrusted by law to ensure proper growth of towns. The MMDAs are the planning authorities and are backed by legislative and executive powers (Local Government Law of 1993, Act 462) to ensure proper development of towns. Each district in Ghana is under the jurisdiction of one specific MMDA. The study area was under the authority of Ahanta West District Assembly (AWDA). In view of this, an official from this Assembly was contacted to deliberate on the environmental problems caused by the activities of small-scale palm oil producers in the area.

It was realized that the Ahanta West District Assembly was aware of the environmental hazards faced by the inhabitants of the area. The official admitted that his outfit has received several complains about how the activities of small-scale palm oil producers are impacting negatively on the environments of the area. A further probe into the matter revealed that, for close to 10 years, the residents of the area have been complaining to the Assembly about how their right to live in safe and healthy environment was being trampled upon by the activities of small-scale palm oil producers. The official from the Ahanta West District

Assembly was not able to pin-point any practical measure that the Assembly has put in place to address these environmental problems. He attributed the failure of his outfit to deal adequately with the environmental problems caused by small-scale palm oil producers to many challenges with financial and logistical constraints been predominant. The official from the Ahanta West District Assembly remarked:

Ensuring that the residents in Ahanta West District especially those around the activities of small-scale palm oil producers live in good and healthy environment is one of the key priorities of the Assembly. As at now we have not been able to achieve this as a result of some challenges. Financial, logistical and other miscellaneous challenges are making it difficult for us to constantly monitor the activities of small-scale palm oil producers and punish those destroying the environment.

The seriousness to which the activities of small-scale palm oil producers were destroying the environment raised a lot of questions about how they obtained permission to operate in the Ahanta West District. Questions that come up include: Was proper environmental impact analysis done on the activities of small-scale palm oil producers before they were given permission to start business? To what extent are Ghana's environmental laws enforced? These questions and others warranted an interview with an official from the EPA at Ahanta West District. The 1994 EPA law of Ghana (Act 490) requires that the EPA should conduct environmental impact analysis on any activity taking place on the environment before permission is given to such activity to commence. The environmental impact analysis is intended to help the EPA ascertain the likely adverse effects that any undertaken on the environment will have on the environment and the health of the people, and possibly devise measures to safe the situation. However, the interview with the official from the EPA revealed that most of the small-scale palm oil producers were operating without any environmental impact assessment carried on their activities. The official from the EPA had this to say:

Small-scale palm oil producers are making our work very difficult. Most of them start operation anyhow without passing through the due processes to acquire permits. This has resulted in many of them not having environmental impact audit on their activities.

What was even appalling was the poor enforcement of environmental laws by the EPA in the area. Whilst the EPA Act, Act 490 gives power to the EPA to punish and also stop any activity causing environmental hazards, it was realized that this stipulation was not strictly adhered to. Although it was clearly evident that most of the small-scale palm oil producers were seriously destructing the environment, they were left to still go on with their activities with impunity. The interaction with the official from the EPA showed that no penalty has been given by his outfit yet to culpable small-scale palm oil producers. Besides, no substantive efforts have been put in place to bring the culprits to book and punish them accordingly. He attributed the delay in addressing this problem to long bureaucratic processes that have to be followed, inadequate logistics and uncooperative attitudes of small-scale palm oil producers.

From the foregoing, it could be deduced that both the EPA and the Ahanta West District Assembly are not able to adequately cater for the environmental health and safety of the residents of Ahanta West District.

Consequently, the residents are environmentally unprotected and lived in a state of helplessness with virtually no body at their aid.

5. Conclusion and the way forward

In all, it can be concluded that the right of the residents of Ahanta West District to live in a community free from environmental hazards is taken for granted. What is going on in the area is a clear manifestation of environmental injustices. Both the procedural and substantive connotations of environmental justice as expressed by Agyeman and Evans (2004) have eluded the residents of Ahanta West District. The residents of the District continue to live in a hazardous environmental condition caused by the activities of small-scale palm oil producers without necessary action taken to address the situation. The concerns and the views of the residents on the poor environment they are living in is persistently down played or neglected.

To protect the environmental well-being of the residents of the Ahanta West District, the following recommendations have been suggested. The Ahanta West District Assembly and the EPA of the area should collaborate to frequently monitor the activities of small-scale palm oil producers. Small-scale palm oil producers whose activities are contrary to the environmental regulations of Ghana should be sanctioned to serve as a deterrent to others. An urgent environmental impact assessment should be conducted by the EPA on all the activities of small-scale palm oil producers in the area and stop the operation of those whose activities are deteriorating the environment. The government of Ghana should adequately equip the EPA and Ahanta West District Assembly logistically and financially to enable them to undertake their activities as expected of them. Regular environmental education should be organized by the EPA for all small-scale palm oil producers to sensitize them on good environmental practices and the need to protect the environmental rights of residents in the surrounding neighborhoods.

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APPENDIX

IFAD FORMULA FOR SAMPLE SIZE DETERMINATION

IFAD sample size formula:

$$n = \frac{t^2 \times p(1 - p)}{m^2}$$

Description of variables in the formula

n = required sample size

t = confidence level at 95% (standard value of 1.96)

p = estimated proportion of the study population with similar characteristics.

m = margin of error at 5% (standard value of 0.05)

With proportion of the small-scale palm oil producers with similar characteristic (p) set at 93 percent which is equivalent to 0.93 the sample size for the study was calculated as follows:

Calculation of the sample size

$$n = \frac{1.96^2 \times 0.93(1 - 0.93)}{.05^2}$$

$$n = \frac{3.8416 \times 0.0651}{0.0025}$$

$$n = \frac{0.2500}{0.0025}$$

$$n = 100$$