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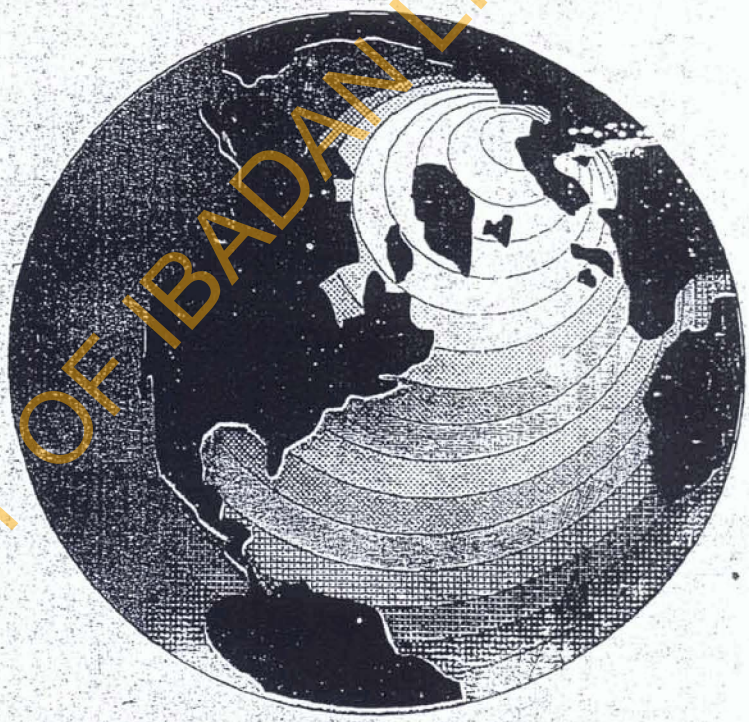
Sharing Concerns for the Future



CRUDE OIL, WOMEN AND THE ENVIRONMENT: A CASE STUDY OF DELTA STATE OF NIGERIA.

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ABSTRACT

The study of effects of petroleum pollution on the general environment with peculiar relevance to women in Delta State was carried out for a period of nine months, by using structured questionnaire and personal observations.

The study was basically focused on women of all age groups and generalized all sources of pollution in the area. Among all, oil spillage to the rivers, streams, and farmlands (44.8%) was most rated, while other sources like explosive chemicals, household waste, and other industrial waste were rated: 10.2%, 18.2%, 13.5% respectively.

As mothers of household, these have serious effect on their best source of protein like fish (62.1%), and affect their occupational status that is based on peasant farming (33.7%) and fishing (52.1%). However, there is high significant effect ($P<0.05$) of the sources of pollution to the environment related to women livelihood in the area. While responses to the effect were in form of cooperative (2.3%), individual (2.1%), the oil companies compensation (41.9%) and sometimes government assistance (33.2%).

It was therefore suggested that women should be given advantage of both formal and informal education, adequate supply of funds in form of loan, with other amenities such as good source of water, alternatives to fishing and farming to alleviate the poverty conditions that oil spillage has caused.

INTRODUCTION

Nigeria is an important oil-producing nation of the world. It derives about 90% of its revenue from oil (NEST, 1991). Petroleum-related activities such as exploration, drilling, refining, transportation, storage marketing and its use has caused the increased introduction of pollutants into the Nigerian environment (Okonya *et al.*, 1988).

The Niger Delta area of Nigeria is a heterogeneous, ethnically diverse and multi-cultural area. There are many problems encountered in the

area among which are, oil pollution, inadequate housing and lack of municipal waste disposal systems in many areas of the region. The problem of oil pollution in the Niger Delta is compounded by the presence of many oil companies whose operations fail to meet international standards.

Crude oil spillages occur regularly and the associated natural gas is usually flared. The presence of oil films on the water bodies after each spillage incident prevents aeration, which causes the death of aquatic organisms such as fish. Apart from fish, the oil also destroys wildlife such as aquatic birds. Ingestion of the oil by fish may also make them unpalatable due to tainting or off-flavour. Refinery effluents, which may contain oil, grease, phenol, cyanide, sulphide, suspended solids, chromium and biological oxygen-demanding organic matter also pollute the water bodies and surrounding farmlands.

Other important environmental problems within the Niger Delta area that need to be mentioned are the over-exploitation of the forest reserves, overcrowding, domestic and industrial effluent discharges. Some forest reserves have actually been converted to oilfields while there is no active conservation of the game or forest reserves. This has led to the loss of biodiversity, which cannot be qualified.

The link between women and their environment has been established. As mothers and homemakers, they need to be actively involved in the development and programmes involving their environment (Aina and Salau, 1992). They are daily involved in producing food, fetching water, fuel, and environmental sanitation. They are therefore severely affected and exposed to the consequences of environmental degradation.

The aim of this work is to study the effects of environmental degradation from oil pollution in the Niger Delta using Delta State Women as subjects.

METHODOLOGY

Two methods were employed in collecting data during the study. These were the "i" and "k" model, that is individual household and knowledge (Ajayi, 1971). Personal field observations were also made and necessary information collected to facilitate the study. The questionnaire administered had three sections namely, Demographic, biocentric and ecocentric. All three sections were addressed to women living in the oil-producing areas of Delta State. A total of one hundred and twenty copies were administered. All the respondents were females.

Description of the study area

Nine Local Government Areas of Delta State were randomly selected for this study namely, Warri central. Warri North, Warri South, Ndokwa East, Udu, Ughelli North, Isoko North, Ndokwa West and Ughelli South. Delta State is one of the six states located within the Niger Delta area of Nigeria.

The vegetation types include fresh water, mangrove swamps, rainforest and derived Savanna woodland. The state is bounded in the West by Ondo State, North/Northwest by Edo State, last by Anambra and South by both Bayelsa and Rivers States. Its total land area is 16,842km^2 with an estimated population of 2,570,181 (National Population Census, 1991).

Demographic information:

The age group of the respondents ranged between twenty and Sixty years. Age groups 31 – 40 and 51 – 60 years made up 28.3 and 27.7 percent of the respondents. This indicated that the middle aged and those chose to retiring age were abundant.

The occupational activities identified were farming, fishing, trading and civil service work. Fishing was the most practiced occupation (52.1%) followed by farming (33.7%).

TABLE 1: Meat Preference in Study Area:

Variables	Rate of preference (%)
Fish	62.1
Bush meat (game)	21.9
Snail	1.8
Egg	3.8
Beef	10.4

The meat preference of the respondents is shown in Table 1. 62.1% of the respondents preferred fish while snail meat was the least preferred (1.8%).

TABLE 2: Types of waste and methods of waste disposal in the study area

Waste Sources	Area Affected/Disposal	Rate of Effect (%)
Household wastes	Streams	18.2
Oil Spillage	Rivers,	18.8
	Streams	13.9
	Farmland	12.1
Total	Rivers, Streams & Farmland	44.8
Herbicides	Farms	4
	Streams	8.3
Total	Farms and Streams	12.3
Explosive chemicals	Rivers	5
	Streams	5.2
Total	Rivers and Streams	10.2
Industrial waste	Open land	4
	Rivers	4.5
	Streams	5
Total	Open land, Rivers & Streams	13.5

The types of wastes and their methods of disposal are presented in table 2. The most serious source of pollution identified by the respondents was oil pollution (44.8%).

TABLE 3: The environment and oil spillage effects

Variable	Effect	Rate (%)
Fishing	Loss of Stock, poor taste/flavour	32.7
River/Stream	Pollution	25.0
Communities	Loss of land and increased poverty	15.7
Crop Production	Decreased harvest	18.9
Domestic Animals	Poor rangeland, No water	7.7

The Effect of Oil spillage on the environment is shown in table 3. The effect of oil spillage on fishing activity was rated highest (37.7%) by the respondents and the effects included loss of stock, presence of off flavour or tainting of the fish. Other effects, which were identified, included decreased availability of water for domestic use and decreased crop production.

TABLE 4: Response to oil pollution in the study area

Variable	Response	Rate (%)
Co-operative	Loans	2.3%
Oil companies	Scholarships; Job opportunities, Amenities, Compensation	41.9
Government	Compensation, Amenities	33.2
Individuals	Indifferent	2.1
Environmental/Youth groups	Violence, Enlightenment	21.5

There were many responses to oil pollution in the study area as shown in Table 4. Oil companies and governments responded by way of scholarships, provision of job opportunities, compensation and some amenities (41.9%). The indigenes formed themselves into co-operatives and environmental groups, which served as pressure groups.

TABLE 5: The interaction between oil spillage (pollution) and the effect on the environment

Oil Spillage	Rate %	Response to Effect	Rate %	Waste Source	Rate
Fishing	32.7	Cooperative	2.3	Household	18.2
River/Stream	25.0	Oil companies	41.9	Oil Spillage	44.8
Communities	15.7	Government	33.2	Herbicides	12.3
Crop Production	18.9	Individual	2.1	Explosive chemicals	10.2
Domestic	7.7	Environmental clubs	21.5	Industrial waste	13.5

The interactions between the environmental pollution, waste sources and their effects are shown on Table 5. They were statistically tested and found to be significant ($P<0.5$). Strong interactions were indicated between oil pollution and other environmental conditions.

DISCUSSION AND CONCLUSION

Oil pollution resulting from spillages and poor effluent management or disposal occurs regularly in the Niger Delta area of Nigeria (N.E.S.T., 1991; Fojekwu, 1996). Delta State produces about thirty-five percent of Nigeria's crude oil and the second largest refinery in Nigeria is sited in Warri. Four Seaports are also located in Delta State. They are located at Sapele, Warri, Burutu and Koko (Otuno, 1999). According to Egbuche (1998), Delta State does not have municipal waste treatment facilities-wastes are dumped directly into drains, and other open water bodies. All these added together make Delta State a very vulnerable area for pollution studies.

vast areas of agricultural land, fishing sites and sources of drinking water have become so polluted that water for domestic use is brought in from long distances at exorbitant cost (Aina and Salau, 1992). This situation has made life very difficult for the inhabitants of this area. Fishing and farming have been affected due to loss of stock land an increased cost per unit effort.

This study showed that the predominant occupation of the respondents is farming (52.1%) while the meat preference is fish (62.1%).

Pollution from oil spillages and oil-related activities accounted for 44.8% while other sources of pollution included household, agricultural chemicals such as herbicides explosive chemicals and industrial wastes. The effects of pollution on fishing activity were rated highest (32.7%) according to the present study.

These findings confirmed that oil pollution severely affects fishing and farming in which the women of Delta State are involved. This increases their level of poverty and also emphasizes a need for an urgent government rehabilitation programme. Also, hours spent on the procurement of water increase leaving less time for other activities (NEST, 1991).

In response to oil pollution, some of the respondents joined co-operative societies and environmental pressure groups (2.3 and 25% respectively). These societies speak for the people, in some cases provide loans for members and enlighten the public. The oil companies in conjunction with the government usually paid compensation on the plants, topsoil or damaged buildings but not on the land itself owing to the land used decree of 1978 which invested all ownership of land on the state (Constitutional Right Project, 1999). Job opportunities and some amenities are also provided to some indigenes while scholarships are given to some students.

However, oil pollution has a significant effect on the environment. The loss of the traditional occupation of the women has led to increased unemployment, poverty and a lot of social vices such as prostitution.

As wives and mothers, they are forced to choose other meat types apart from fish, which is preferred. This in some cases leads to reduced meat intake and precipitates malnutrition as observed during this study. A lot of time, energy and resources are spent in procuring water. They are likely to become poorer due to diminishing returns from the resource base (Oladipo & Tseavo, 1992).

In conclusion, this study recommends the strict enforcement of environmental laws already passed in the country. There is a need to ensure that oil companies operating in Nigeria operate within internationally accepted environmental standards and reduce the contact of the oil as much as possible with the environment. To rehabilitate the inhabitants, there is a need to disburse ecological funds to improve the environment and provide employment opportunities. This will go along way in reducing sabotage.

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