

## **Perceived Effect of Industrial Water Pollution on the Livelihood of Rural Dwellers in Yewa Area, Ogun State, Nigeria**

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### **Abstract**

Environmental pollution arising from industrial activities causes economic hardship especially for rural dwellers whose livelihood and livelihood activities are sometimes completely destroyed. This study investigates the effect of industrial water pollution on the livelihood of rural dwellers in Yewa area.

Multistage sampling technique was used to select 182 respondents for the study. Purposive sampling method was used to select two L.G.As: Ado odo ota (where industrial effluents are released rivers) and Yewa south. 90 and 92 respondents were selected from Ado odo ota (downstream) and Yewa south (upstream) respectively. Response rate was 95%.

However the study shows that only a small proportion of respondents in Ado Odo Ota L.G.A are involved in non agricultural income generating activities.

There is a significant relationship between perceived effect of industrial water pollution and the livelihood activities of rural dwellers in the study area. ( $r = -0.253$ ,  $p < 0.05$ ). There is a relationship between perceived effect of industrial water pollution and respondents income ( $-196$ ,  $p > 0.05$ ).

The impact of industrial water pollution is highest in Ado Odo Ota where effluent from industries had damaged their water resources and affected their livelihood a great deal. However, measures must be taken to stem or eradicate the problems posed by these industries located near them. Members of the community should community watch dog directly monitoring the activities of these industries in their locality and report to the appropriate law enforcement agents.

**Keywords:** Perceived effect, water pollution, industrial and livelihood activities.

## 1. Introduction

Environmental problems have become a key issue globally. The environment and its significance on human life have increasingly come to national and international dimension.

Industrial pollution is a major environmental problem in Nigeria. It arises from lack of proper control of pollutant industries. Increased development of land for industrial use received greater impetus in the post independence era when national industrial policy revolved around import substitution as a panacea for the unfavourable terms of trade that Nigeria feature textiles, breweries, leather , tanning, pulp and paper industries, detergent, steel, etc., all of which have implications for overall quality in the affected areas. Most industries that have the potential of seriously degrading the environment are largely urban-based (Magbagbeola,2001).

Ideally, the siting of industries should achieve a balance between socio- economic and environmental considerations. Relevant factors are availability and access to raw materials, the proximity of water sources, a market for the products, the cost of effective transportation, and the location of major settlement, labour and infrastructural amenities. In developing countries such as Nigeria, the siting of industries is determined by various criteria, some of which are environmentally unacceptable and pose serious threats to public health (WHO/UNEP, 1997).

Industrialization, with its economic growth and prosperity can also bring unintended and adverse effects to the natural resources and livelihoods of farmers/ rural dwellers within the vicinity. This is an act of one agent affecting the live and livelihood of the other who are no way responsible for the act. In this case the farmers and rural dwellers are no way responsible for the water pollution done by the concerned industries.

Air, soil and water pollution frequently reduce agricultural yields, lower health status, increase the prices that consumers of agricultural product must pay and after the returns accruing to owners of agricultural inputs and increase morbidity pattern of the population (Adam and Crodar, 1991, Somorin, 1998). the effects of pollution can however, reveal themselves in many ways. Depending on their nature, the results can be felt over long distance. A critical aspect is water pollution, which can affect a river system for many Kilometers downstream from the point of release of pollutants.

Industrial waste water constants chemicals and biological matter that impose high demand on the oxygen present in water. Polluted water thus contains ion levels of dissolved oxygen demand (BOD) and chemical oxygen demand (COD) placed by industries ...discharged into water bodies and water systems, but above and below the earth surface. In addition to low levels of dissolved oxygen in water, industrial wastes (Effluents) also contain chemicals and metals that are directly harmful to human health and the ecosystem. (SIDA 1990). Apart from health effects, which indirectly affect human productivity, polluted water also affects land productivity. Crop production suffers from contaminated irrigation water from both surface sources and from ground water splifers.

Consequently, the following objectives where addressed in this study:

- a) Identify the socio-economic and personal characteristics of dwellers in yewa area Ogun State.
- b) Identify the livelihood activities of rural dwellers in the study area.
- c) Determine the rural dwellers knowledge of environmental problems in caused by effluents from the industries in study area.

## 2. Methodology

This study was conducted in Arobiya, Itele, Igbango, Itele, Abila and Oloya villages of Ado Odo Ota L.G.A and Idogo, Eggua, Oka Odan , Eyekose villages of Yewa south. Yewa South, two of the three (Yewa North inclusive) local government areas that make up Yewa area of Ogun state, Nigeria. The Yorubas are the major inhabitants. Farming and trading are the predominant occupations similar to the occupations of about 52% of the Nigerian population who are living in rural and semi urban communities (Olusimbo *et al*,2010).

Multistage sampling method was used to select 182 respondents from the two purposively selected L.G.A in Yewa area. Stratified sampling and purposive sampling techniques were used to select two LGA from the three L.G.As of Yewa area (comprising Ado odo ota, Yewa south and Yewa North).Ado Odo Ota (downstream) and Yewa south(upstream) were selected because the former host a number of various effluents releasing industries with specialities ranging from distilleries, battery production, asbestos making ,brewery etc some of these are located in the villages mentioned above while the later has no known industry. Proportionate and simple random sampling technique were used to select 91 respondents in Ado Odo Ota where there are industries and 92 in Yewa South with no known industries. A total of 183 where randomly selected from these communities. Information on the socio economic characteristics, livelihood activities, effect of industrial water pollution were collected using a pretested structured questionnaire. The response rate was 95%. Five-point Likert-scaled items were used to measure the effect of industrial water pollution. Mean value of each item were generated and use to get the level of impact of the effect of industrial pollution on the rural dwellers in the study areas. An interviewer assisted method was employed, after informed consent had been obtained from the respondents. Six trained personnel collected data over a 4 week period in August 2010.

Data was analyzed with SPSS version 15.0 (SPSS Inc,Chicago, Illinois). Frequencies were generated and associations explored with Chi-square tests and ANOVA. The level of significance was set to 5%.

### 3. Result and Discussion

**Table 1:** Respondents’ socio economic distribution.

Age Category (Years)	Ado Odo Ota LGA	Yewa South LGA	Yewa Area (Total)
	Freq (%)	Freq (%)	Freq (%)
Less than 26	8 (4.6)	3 (1.7)	11(5.3)
26-30	6 (3.5)	-	6(3.5)
31-35	13 (7.5)	8 (4.6)	21(12.1)
36-40	8 (4.6)	8 (4.6)	16(9.2)
41-45	13 (7.5)	11 (6.3)	24(13.8)
46-50	3(1.7)	16 (9.2)	19(10.9)
51-55	9(5.0)	11 (6.4)	20(11.6)
56-60	6(3.5)	8 (4.6)	14(8.1)
Above 61	16(9.3)	19(11.9)	19(20.3)
<b>Sex</b>			
Male	36(20.8)	52(30.1)	88(50.9)
Female	42(24.3)	31(17.9)	73(42.2)
<b>Marital status</b>			
Never married	-	3(1.7)	3(1.7)
Married	76(43.9)	76(43.9)	152(87.8)
Separated/Divorce	2(1.2)	2(1.2)	4(2.3)
Widow	1(0.6)	3(1.7)	4(2.3)
<b>Educational status</b>			
No formal	7(4.1)	13(7.5)	20(11.6)
Primary	4(2.3)	13(7.5)	20(11.6)
Modern	1(0.6)	22(12.7)	23(23.3)
Secondary	66(38.1)	20(11.6)	86(46.7)
Grade II	-	3(1.7)	3(1.7)
Tertiary	-	8(4.6)	8(4.6)

Source: Field Survey,2010.

#### 3.1. Personal Characteristics of Respondents

Table 1 shows that there are more respondents between the age of 19 and 40 years in Ado Odo Ota L.G.A(20.2%) than Yewa south L.G.A(10.9%). This could be due to the proximity of the area to the

industrial areas of Ado Odo Ota L.G.A which attracts more of youths as workers. This is an indication that there are more youths in the industrial area of Ado Odo Ota L.G.A than Yewa south L.G.A.

The table further reveals that majority of the respondents (87.9%) are married. The trend is similar in all the study areas Yewa south (43.9%) and Ado Odo Ota(43.9%). Akibile,2007 asserted that” marriage is an important factor in the livelihood of individuals. While those that are single consider the wellbeing of not only themselves but also of other members of the household”. These assertion was corroborated by the findings in Table 1.

Table 1 also reveals that there are 20.8% of male in Ado Odo Ota L.G.A and 30.1% account for the number of female. This could be attributed to more female headed family due to their spouse movement(in search of factory and other jobs) to urban industrial area of Sango Ota.

A total of 11.6% of respondents have no formal education, while the remaining has one form of education or the other while only 4.6% has tertiary education.

### 3.1.1. Perceived Effect of Industrial Pollution on Livelihood of Rural Dwellers in Yewa Area, Ogun State N = 173

**Table 2:** Distribution of Respondents by their level of agreement on their perceived effect of industrial pollution on Livelihood of rural dwellers’ in Yewa area, Ogun State

S/N	Perceptual Statements about perceived effect of industrial pollution on Livelihood	Level of Rural Dwellers Agreement					
		SD	D	U	A	SA	MEAN
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
1.	The water from streams always causes health problems for one or two people in the household/community	37(21.4)	46(26.6)	6(3.5)	8(4.6)	73(42.2)	2.8
2.	More of well water is used for drinking purpose now because it is more safe	5(2.9)	16(9.2)	4(2.3)	103(59.5)	42(24.3)	2.05
3.	Household members do not go to farm/work when sick	-	-	37(21.4)	57(32.9)	76(43.9)	1.77
4.	Farm productivity has decreased over the last 10 years	7(4)	32(18.5)	38(18.5)	56(32.4)	36(20.8)	2.52
5.	Farms need more fertilizer application (both organic and inorganic) to support more crop yield.	31(17.9)	10(5.8)	22(12.7)	64(37)	43(24.9)	2.54
6.	Skin itches more than it use to over the last 10 years	34(19.7)	42(24.3)	27(15.6)	51(29.5)	15(8.7)	3.17
7.	Health hazards posed by industrial activities result in rural dwellers/farmers spending more to maintain their health	28(16.2)	17(9.8)	61(35.3)	28(16.2)	36(20.8)	2.84
8.	More money is spent to provide the things the industries should have provided our communities (spent more to get safe drinking water).	29(16.8)	20(11.6)	79(45.7)	24(13.9)	16(9.2)	3.13
9.	The income generated from selling bush meat are no longer coming because noise and unsafe drinking water have scared wild animals aw	36(20.8)	48(27.7)	35(20.2)	34(19.7)	17(9.8)	3.31
10.	Our old men suffer more of Alzheimer’s disease and Parkinson disease	49(28.3)	49(28.3)	28(16.2)	18(10.4)	25(14.5)	3.47
11.	More pregnancy are recorded now than before	11(6.4)	29(16.8)	30(17.3)	45(26)	52(30.1)	2.41
12.	The source of drinking water makes us more tired and nauseated and loss appetite	47(27.2)	48(27.7)	21(12.1)	35(20.2)	19(11)	3.41
13.	More miscarriages are experienced now than in the last 20 years	35(20.2)	47(27.2)	40(23.1)	24(13.9)	40(23.1)	3.41
14.	Children are no longer staying to cultivate land because of the effect of pollution	9(5.2)	62(35.8)	31(17.9)	27(15.6)	53(30.6)	3.28
15.	Stream are not contaminated, therefore they are good for irrigation	10(5.8)	35(20.2)	18(10.4)	54(31.2)	53(30.6)	2.38
16.	The risk of health and crop failure is increasing by the day	59(34.1)	49(28.3)	18(10.4)	23(13.3)	20(11.6)	3.62
17.	People live longer here than the communities where there are no industries	33(19.1)	20(11.6)	45(26)	15(8.7)	57(32.9)	2.75
	Overall mean of Rural Dwellers level of Agreement						2.87

Source: Field Survey,2010.

Table 2 shows rural dweller agreement with statement about the perceived affect of industrial pollution from the table , the following assertions are attributed to respondents. Note: SA and A where added to get a sum level of agreement among respondent.

- a. The industrial activities around the study area coupled with it resultant environment problems have being perceived to have negative impact on their steams which always cause health problem for one or two people in their household (46.8%) as indicated by respondent and this causes respondents to miss a few numbers of days at work/farm (76.8%).
- b. Their activities have so much impacted their steams such that rural dweller has switch to the use of well water (83.8%). That effect has lead to decrease in farm productivity over the last 10 years (53.2%).
- c. Individual health of rural dwellers in around the study area is affect such as more itching of skin (48.2%); possibly contributed a great deal to miscarriage experienced by females (37.2%).
- d. Farm needs more fertilizer to support crop yield because of the effect of industrial pollution (61.9%).

**3.1.2. Perceived Effect of Industrial Pollution on Livelihood of Rural Dwellers Around Ado Odo Ota Local Government Area N = 82.**

**Table 3:** Distribution of Respondents by their level of agreement on their perceived effect of industrial pollution on Livelihood of rural dwellers in Ado Odo Ota L.G.A N=82

S/N	Perceptonal Statements about perceived effect of industrial pollution on Livelihood	Level of Rural Dwellers Agreement					
		SD	D	U	A	SA	MEAN
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	
1.	The water from streams always causes health problems for one or two people in the household/community	-	-	2(2.4)	7(8.5)	73(89)	4.9
2.	More of well water is used for drinking purpose now because it is more safe	-	-	-	76(92.7)	6(7.3)	4.1
3.	Household members do not go to farm/work when sick	-	-	30(36.6)	10(12.2)	42(51.2)	1.9
4.	Farm productivity has decreased over the last 10 years	-	10(12.2)	14(17.1)	28(34.1)	30(36.6)	4.0
5.	Farms need more fertilizer application (both organic and inorganic) to support more crop yield.	5(6.1)	2(2.4)	18(22)	36(43.9)	21(25.6)	3.8
6.	Skin itches more than it use to over the last 10 years	2(2.4)	6(7.3)	23(28)	35(42.7)	15(18.3)	3.6
7.	Health hazards posed by industrial activities result in rural dwellers/farmers spending more to maintain their health	3(3.7)	5(6.1)	12(14.6)	27(32.9)	35(42.7)	4.1
8.	More money is spent to provide the things the industries should have provided our communities (spent more to get safe drinking water).	2(2.4)	3(3.7)	36(43.9)	24(29.3)	15(18.3)	3.5
9.	The income generated from selling bush meat are no longer coming because noise and unsafe drinking water have scared wild animals aw	1(1.2)	14(17.1)	17(20.7)	33(40.2)	17(20.7)	2.4
10.	Our old men suffer more of Alzheimer’s disease and Parkinson disease 8(9.8)	12(14.6)	24(29.3)	16(19.5)	21(25.6)	3.3	
11.	More pregnancy are recorded now than before	4(4.9)	11(13.4)	20(24.4)	15(18.3)	31(37.8)	3.7
12.	The source of drinking water makes us more tired and nauseated and loss appetite	3(3.7)	9(11)	17(20.7)	34(41.5)	19(23.2)	3.7
13.	More miscarriages are experienced now than in the last 20 years	2(2.4)	11(13.4)	25(30.5)	22(26.8)	22(26.8)	3.6
14.	Children are no longer staying to cultivate land because of the effect of pollution	2(2.4)	15(18.3)	25(30.5)	20(24.4)	20(24.4)	2.5
15.	Stream are not contaminated, therefore they are good for irrigation	8(9.8)	24(29.3)	15(18.3)	16(19.5)	19(23.2)	2.8
16.	The risk of health and crop failure is increasing by the day 33(40.2)	10(12.2)	12(14.6)	16(19.5)	10(12.2)	2.5	
17.	People live longer here than the communities where there are no industries	14(17.1)	8(9.8)	3(3.7)	11(13.4)	46(56.1)	3.8
	Overall mean of Rural Dwellers level of Agreement						3.4

Source: Field Survey, 2010.

**Table 4:** Distribution of Respondents by their level of agreement on their perceived effect of industrial pollution on Livelihood of rural dwellers in Yewa South L.G.A N=91

S/N	Perceptual Statements about perceived effect of industrial pollution on Livelihood	Level of Rural Dwellers Agreement					MEAN
		SD	D	U	A	SA	
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	
1.	The water from streams always causes health problems for one or two people in the household/community	37(40.7)	46(50.5)	4(4.4)	1(1.1)	-	1.6
2.	More of well water is used for drinking purpose now because it is more safe	5(5.5)	16(17.6)	4(4.4)	27(29.7)	36(39.6)	3.7
3.	Household members do not go to farm/work when sick	-	-	7(7.7)	47(51.6)	34(37.4)	1.6
4.	Farm productivity has decreased over the last 10 years	7(7.7)	22(24.2)	24(26.4)	28(30.8)	6(6.6)	2.9
5.	Farms need more fertilizer application (both organic and inorganic) to support more crop yield.	26(28.6)	8(8.8)	4(4.4)	28(30.8)	22(24.2)	3.0
6.	Skin itches more than it use to over the last 10 years	32(35.2)	36(39.6)	4(4.4)	16(17.6)	-	2.0
7.	Health hazards posed by industrial activities result in rural dwellers/farmers spending more to maintain their health	25(27.5)	12(13.2)	49(53.8)	12(13.2)	25(27.5)	2.3
8.	More money is spent to provide the things the industries should have provided our communities (spent more to get safe drinking water).	27(29.7)	17(18.7)	43(47.3)	-	1(1.1)	2.1
9.	The income generated from selling bush meat are no longer coming because noise and unsafe drinking water have scared wild animals aw	35(38.5)	34(37.4)	18(19.6)	1(1.1)	-	4.0
10.	Our old men suffer more of Alzheimer’s disease and Parkinson disease	41(45.1)					
11.	More pregnancy are recorded now than before	37(40.7)	4(4.4)	2(2.2)	4(4.4)	1.7	
12.	The source of drinking water makes us more tired and nauseated and loss appetite	7(7.7)	18(19.8)	15(16.5)	30(33)	21(23.1)	3.3
13.	More miscarriages are experienced now than in the last 20 years	44(48.4)	39(42.9)	6(6.6)	1(1.1)	-	1.5
14.	Children are no longer staying to cultivate land because of the effect of pollution	33(36.3)	36(39.6)	3(3.3)	2(2.2)	1(1.1)	1.8
15.	Stream are not contaminated, therefore they are good for irrigation	7(7.7)	47(51.6)	6(6.6)	7(7.7)	20(22)	3.0
16.	The risk of health and crop failure is increasing by the day	2(2.2)	11(12.1)	3(3.3)	38(41.8)	34(37.4)	1.9
17.	People live longer here than the communities where there are no industries	26(28.6)	39(42.9)	6(6.6)	7(7.7)	10(11)	2.2
	Overall mean of Rural Dwellers level of Agreement	19(20.9)	12(13.2)	42(46.2)	4(4.4)	11(12.1)	2.6
							2.4

Source: Field Survey,2010.

The overall mean of rural dwellers level of agreement among respondents in Ado Odo Ota is more than Yewa south

### 3.2. Livelihood and Livelihood Activities

This section presents the discussion of the findings on the various livelihood activities (agricultural and non-agricultural income generating engaged in by rural dwellers in Yewa area, Ogun State.

#### 3.2.1. Agricultural Income Generating Activities

**Types of agricultural income generating activities, degree involvement and importance of the activities to rural dwellers in Yewa area, Ogun State.**

**Table 5:** Types of Agricultural income generating activities, involvement, degree of involvement and importance of the activities in rural dwellers in Yewa area. N=173

S/N	Agricultural Activities	Involvement	Degree of Involvement			Importance
			High	Moderate	Low	Most Important
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
1	Rice production	12(6.9)	5(2.9)	3(1.7)	4(2.3)	5(2.9)
2	Cocoyam production	37(21.4)	4(2.3)	30(17.3)	3(1.7)	6(3.5)
3	Green vegetables production	29(16.8)	10(5.8)	11(6.4)	10(5.8)	4(2.3)
4	Pepper production	57(32.9)	13(7.5)	30(17.3)	11(6.4)	8(4.6)
5	Tomatoes production	36(20.8)	13(7.5)	8(4.6)	14(8.1)	6(3.5)
6	Cassava peeling	29(16.8)	20(11.6)	6(3.5)	2(1.2)	4(2.3)
7	Gari frying	45(26)	20(11.6)	8(4.6)	16(9.2)	10(5.8)
8	Fufu making	25(14.5)	14(8.1)	3(1.7)	9(5.2)	4(2.3)
9	Goat rearing	46(26.6)	9(5.2)	24(13.9)	15(8.7)	14(8.1)
10	Cattle rearing	15(8.7)	4(2.3)	4(2.3)	5(2.9)	9(5.2)
11	Pig rearing	28(16.2)	7(4)	15(8.7)	4(2.3)	8(4.6)
12	Rabbit production	9(5.2)	1(0.6)	5(2.9)	4(2.3)	7(4.0)
13	Table egg production	11(6.4)	3(1.7)	3(1.7)	5(2.9)	9(5.2)
14	Broilers production	9(5.2)	1(0.6)	2(1.2)	6(3.5)	8(4.6)
15	Fishing	43(24.9)	12(6.9)	26(15)	5(2.9)	2(1.2)
16	Kolanut processing	12(6.9)	3(1.7)	7(4)	1(0.6)	-
17	Sugarcane Production	10(5.8)	2(1.2)	1(0.6)	7(4)	9(5.2)
18	Yam	4(2.3)	-	-	1(0.6)	1(0.6)
19	Sorghum	2(1.2)	-	1(0.6)	-	1(0.6)
20	Cocoa Production	19(11)	8(4.6)	9(5.2)	-	9(5.2)
21	Maize	46(26)	25(14.5)	18(10.4)	6(3.5)	13(7.5)
22	Oil palm	4(2.3)	4(2.3)	-	-	-
23	Cucumber	2(1.2)	2(1.2)	-	-	1(0.6)
24	Water melon	1(0.6)	1(0.6)	-	-	-
25	Cassava	39(22.5)	5(2.9)	20(11.6)	11(6.4)	7(4)

Source: Field Survey, 2010.

This finding corroborated with the assertion of Akinbile and Omotara (2000) that maize is one of the important crops that respondents grow in order to boost their income. Table 5 also shows that degree of involvement in these activities it shows that there is relative high involvement in maize production (14.5%), cassava production (11.6%), Gari frying (11.6%).

**Types of agricultural income generating activities, degree of involvement and importance of activities to rural dwellers around (Ado Odo Ota) Local Government Area.**

**Table 6:** Types of Agricultural income generating Activities, Involvement and degree of involvement and importance of activities to rural dwellers in Ado Odo Ota L.G.A. N=82

S/N	Agricultural Activities	Involvement	Degree of Involvement			Importance
			High	Moderate	Low	Most Important
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
1	Rice production	-	-	-	-	-
2	Cocoyam production	2(2.4)	-	2(2.4)	-	2(2.4)
3	Green vegetables production	5(6.1)	-	-	7(8.8)	2(2.4)
4	Pepper production	13(15.9)	-	3(3.7)	6(9.8)	3(3.7)
5	Tomatoes production	13(15.9)	-	-	13(15.9)	5(6.1)
6	Cassava peeling	-	-	-	-	-
7	Gari frying	21(25.6)	2(2.4)	3(3.7)	16(19.5)	6(7.3)
8	Fufu making	9(11)	-	-	9(11)	3(3.7)
9	Goat rearing	7(8.5)	1(1.2)	2(2.4)	5(6.1)	2(2.4)
10	Cattle rearing	2(2.4)	1(1.2)	1(1.2)	-	1(1.2)
11	Pig rearing	2(2.4)	-	2(2.4)	-	2(2.4)
12	Rabbit production	1(1.2)	-	-	1(1.2)	-
13	Table egg production	-	-	-	-	-

**Table 6:** Types of Agricultural income generating Activities, Involvement and degree of involvement and importance of activities to rural dwellers in Ado Odo Ota L.G.A. N=82 - continued

14.	Broilers production	-	-	-	-	-
15.	Fishing	4(4.9)	-	-	4(4.9)	-
16.	Kolanut processing	-	-	-	-	-
17.	Sugarcane Production	-	-	-	-	-
18.	Yam	-	-	-	-	-
19.	Sorghum	-	-	-	-	-
20.	Cocoa Production	-	-	-	-	-
21.	Maize	9(11)	1(1.2)	3(3.7)	5(6.1)	3(3.7)
22.	Oil palm	-	-	-	-	-
23.	Cucumber	-	-	-	-	-
24.	Water melon	-	-	-	-	-
25.	Cassava peeling	13(15.9)	1(1.2)	2(2.4)	9(11)	-

Source: Field Survey,2010.

The table shows that the most important agricultural income generating activities in Ado Odo Ota Local Government Area (Proximate precinct) is Gari frying (7.3%). Thus, it could be posited that maize may not be affected much by industrial pollution in the area.

**Types of agricultural income generating activities, degree of involvement and importance of activities to rural dwellers around (Ado Odo Ota) Local Government Area.**

**Table 7:** Types of Agricultural income generating Activities, Involvement and degree of involvement and importance of activities to rural dwellers in Ado Odo Ota L.G.A. N=82

S/N	Agricultural Activities	Involvement	Degree of Involvement			Importance
			High	Moderate	Low	Most Important
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
1	Rice production	-	-	-	-	-
2.	Cocoyam production	2(2.4)	-	2(2.4)	-	2(2.4)
3.	Green vegetables production	5(6.1)	-	-	7(8.8)	2(2.4)
4.	Pepper production	13(15.9)	-	3(3.7)	6(9.8)	3(3.7)
5.	Tomatoes production	13(15.9)	-	-	13(15.9)	5(6.1)
6.	Cassava peeling	-	-	-	-	-
7.	Gari frying	21(25.6)	2(2.4)	3(3.7)	16(19.5)	6(7.3)
8.	Fufu making	9(11)	-	-	9(11)	3(3.7)
9.	Goat rearing	7(8.5)	1(1.2)	2(2.4)	5(6.1)	2(2.4)
10.	Cattle rearing	2(2.4)	1(1.2)	1(1.2)	-	1(1.2)
11.	Pig rearing	2(2.4)	-	2(2.4)	-	2(2.4)
12.	Rabbit production	1(1.2)	-	-	1(1.2)	-
13.	Table egg production	-	-	-	-	-
14.	Broilers production	-	-	-	-	-
15.	Fishing	4(4.9)	-	-	4(4.9)	-
16.	Kolanut processing	-	-	-	-	-
17.	Sugarcane Production	-	-	-	-	-
18.	Yam	-	-	-	-	-
19.	Sorghum	-	-	-	-	-
20.	Cocoa Production	-	-	-	-	-
21.	Maize	9(11)	1(1.2)	3(3.7)	5(6.1)	3(3.7)
22.	Oil palm	-	-	-	-	-
23.	Cucumber	-	-	-	-	-
24.	Water melon	-	-	-	-	-
25.	Cassava peeling	13(15.9)	1(1.2)	2(2.4)	9(11)	-

Source: Field Survey,2010.



Table 7 shows that the involvement of respondents in Yewa south Local Government is high in maize (26.4%), cassava production (22%) and Gari frying (18%) while it is moderate in cocoyam production (30.8%), pepper production (29.7%) and goat rearing (24.2%).

### 3.3. Effect of Industrial Pollution on Livelihood and Livelihood Activities

It can be generally deduced according to the study that in Yewa area, Ogun State, industrial activities have been perceived to have negative impact on their streams which always cause health problems (46.8% i.e SA+A) and this causes respondents to stop/miss productive working hours either farm or at work (76.8%).

The negative impact on well water is the highest (83.6%) which has led to decrease in farm productivity (53.2%).

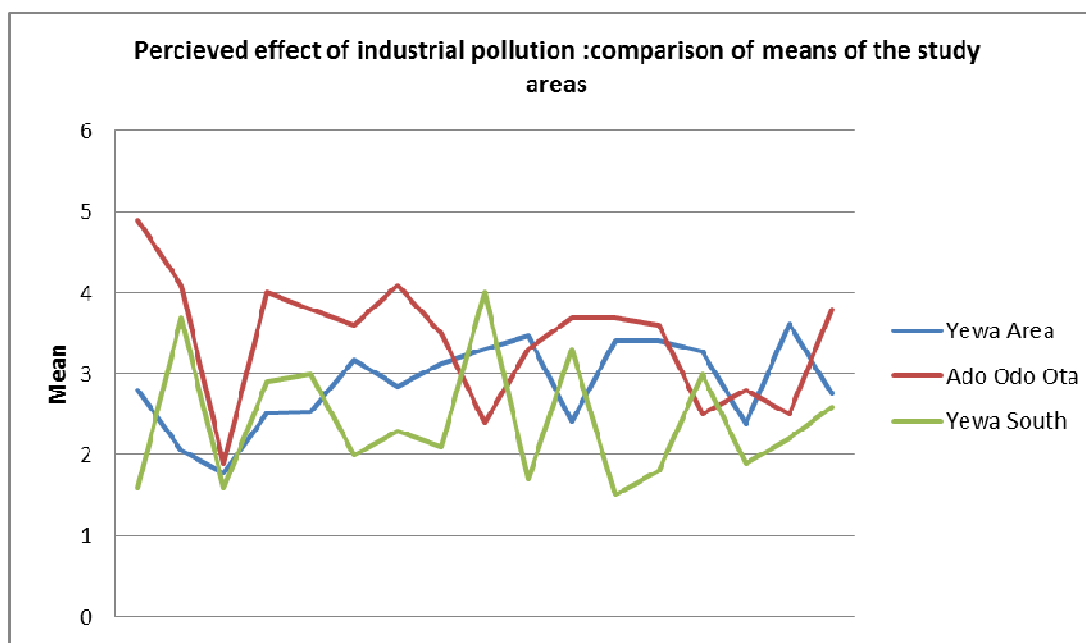
But specifically, Ado Odo Ota felt the negative impact of industrial activities the more (97.5%) on their streams, followed by high risk of health hazard (73.5%), decrease in farm productivity (70.7%), more fertilizer required to boost farmland (69.5%).

In Yewa South L.G.A majority of the rural dwellers there do not believe that industrial activities have impact on their stream (1%), source of drinking water (1%). This may be attributed to the fact that there are virtually no industries in that area.

The study shows that There is a significant relationship between the respondents age and perceived effect industrial pollution ( $r=0.736$ ,  $p<0.05$ ) i.e the more they are exposed to pollution the higher the effect of pollution experienced. There is no significant relationship between the number of children of respondents and the perceived effect of industrial pollution ( $r= 0.271$ ,  $p>0.05$ ) and also there is no correlation between the sex, marital status of respondents and their perceived effect of industrial pollution. ( $X^2=1.254$ ,  $p>0.05$ ;  $X^2=0.963$ ,  $p>0.05$  respectively). However, a significant level of relationship between respondents level of education, the income of respondent and perceived effect of industrial pollution was discovered. ( $X^2=49.802$ ,  $p<0.05$ ;  $r= -196$ ,  $p<0.05$  respectively). The later is an inverse relationship that is as the perceived effect of industrial water pollution increases the income of respondents decreases.

### 3.4. Effect of Industrial Water Pollution

Figure 1:



Source: Field Survey, 2010.

#### 4. Conclusion

This study investigated the effect of industrial water pollution on livelihood and livelihood activities of rural dwellers in Yewa area, Ogun State. In this study it was discovered that Ado odo ota L.G.A which host a significant number of industries felt the negative impact of perceived effect of industrial water pollution. It also revealed significant relationships between some selected socio economic characteristics and the effect of industrial water pollution on rural dwellers' livelihoods. Some the rural dwellers had been completely destroy which made livelihood diversification nearly impossible.

It is however important at this point to ring the alarm to the appropriate authority come to the rescue of rural dwellers whose livelihoods are at the brink of destruction due to the uncontrolled activities of industries around them.

Extension service programme should also be geared towards ensuring increase awareness and knowledge about environmental problems and their effects on their livelihoods. And the role the community dwellers can play in curbing the menace caused by the effects of these industrial activities.

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