Evaluating the Implication of Flooding on the Value of Commercial Activities in Aba North LGA, Abia State Nigeria

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Abstract
The work examined the implication of flooding on commercial activities in Aba North LGA. Purposive sampling technique was used to select the 100 respondents that returned their copies of questionnaire distributed to them. Remarkably, the respondents observed that issues of reduction of profit margin, sales, and cost of transportation were commensurable high as compared with other options raised. Recommendations were made, at least for the commercial operators to adopt both mitigation and adaptation strategies to cushion the impacts of flooding in the area.

Keywords: *Implications flooding, commercial activities*

Introduction:

Aba, a city that used to compare with other cities in Nigeria, has been neglected by past government administrations by not providing enabling infrastructure like good road networks and drainage systems. This has made it impossible for traders who came from neighboring states and countries to have unimpeded access to the markets in Aba urban. Traders living in Aba experience much difficulty in traversing the area in the days it rained heavily. For instance; the A-line, in People acquire its infection by consuming contaminated water, seafood, or other foods. Once infected, they excrete the bacteria in stool. Thus, the infection can spread rapidly particularly in areas where human waste is untreated.

In 2012, Nigeria experienced its worst flooding in recent history (, Henah, & Ojeh, 2013). More than 2.3 million people were displaced, 363 lost their lives and another 16 million people were impacted in various ways and years of development gains were reversed (Oladokun & Proverbs, 2016; Nwigwe & Emberga 2014). Total losses were put at US$16.9 billion (Security, 2013). In reality, the extent and nature of Nigeria's flooding are such that the actual figures for displacements, losses, and fatalities cannot be truly ascertained (Cirella & lyalomhe, 2018; Nkwurionwo, 2015). Flooding are common features in some Nigerian urban centers. Flooding occurs in towns such as Aba urban, which is located on flat or low-lying terrain especially where little or no provision has been made for surface drainage, or where existing drainage has been blocked with municipal waste and eroded soil sediment (Folorunsho & Awosike, 2001). Flooding cannot be completely avoided, but damages from severe flooding can be reduced if effective flood prevention scheme is implemented.

It is high time Nigeria government decided on how to make the urban areas functionally efficient by the use of proper legislative act and policies. The knowledge of remote sensing and geographical information systems (GIS) is a tool which can be used to investigate and map areas that are less or more vulnerable

Socio Economic Impact of the Flood

The socio- -economic impacts of flooding are felt as soon as floods occur, as it instantly disrupts day to day businesses and activities In their study (Bariweni, 2012), revealed that the floods of 2012 had a major impact on socio-economic life for days, weeks and even months in some areas. Roads and buildings were submerged and victims were trapped due to blockage of road and damaged bridges. Children couldn't go to school, workers couldn't go to work and traders couldn't open their stores at the markets, these automatically took its toll on the economy as businesses were being affected. The damages and destruction of buildings, bridges, dams, embankments, drains, roads, railways, electricity wires/poles, all amounted to billions of Nigerian Naira due to the extent of property damage and infrastructures (NEMA, 2012). Health issues also became higher especially in the north. Cholera due to contaminated water and malaria due to stagnant waters all increased and of course, the most vulnerable are the poor rural areas with women and children affected the most (Aqwu & Okhimamhe, 2009), Also, the disruption of electricity and communication lines had its toll on all affected (Bariweni, 2012 & Ijioma, 2012), The year 2011, also had devastating effects on the north eastern states, completely destroying mud houses in the villages and washing away livestock (NASA, 2011), All together, the impact was overwhelming as today lifestyle and trades are put on hold. Farmlands, roads, railways, schools, hospitals (including maternity clinics), loss of lives and properties running into several millions of naira were the results of the 2012 floods (Aderogba, 2012).

Area of Study:

Aba urban is a city made up of many sub-sections namely; Umuokpoji-Aba, Eziukwu- Aba, Obuda-Aba, Aba - ukwu but the villages in Ohazu merged with Aba so as to achieve administrative convenience. Hence the indigenes of Aba are often referred to as Abaya Ohazu indigenes Chief Ogbonna Uruakpa Nkvwoha of Eziukwu village was the king of Aba and the only recognized Royal House since it became part of the old Eastern region. The Aro expedition, which was part of a larger military plan to quell ant-colonial sentiment in the region, took place in the area of Aba during 1901 and 1902. During this military action, the British easily beat the native Aro people with an unknown number (presumed to be heavy) of casualties. In 1901, the British founded a military post in Aba and in 1915; railroad was constructed to link it to Port Harcourt, which transported agricultural goods such as palm oil and palm kernels. In 1929 Aba was the site of revolt by Igbo women, historically known as: "The Aba Women Riot", a protest about the colonial taxation policy. The riot started first as a peaceful protest against the initial census of women in the region, and subsequently assumed wider proportion. The protests spread throughout the palm oil belt, but remained peaceful until a pregnant Woman was knocked over during a 'scuffle and the lady lost her child. The news of this "act of abomination" spread rapidly and violent reaction ensued. After more deaths, a mass of 10,000 woman marched on to Aba. In terms of atmospheric conditions, Aba North Local government area records not less than 2500mm of rainfall annually while average annual temperature is about 25°C.

Methodology:

The research design adopted for this work is the survey design. It relied on the distribution of copies of questionnaire to the 100 respondents selected who later returned their filled out copies of questionnaire. The selected 100 respondents were purposively chosen from the entire segements of the study area.

Results and Discussions:

Table 1: classification of respondents from Aba North Local Government Area

Location	Artisants	Traders	Civil Servants	Business Professional	Transport Operators	Planning Authority	Others	Total
Eziama	9	10	10	14	8	5	18	84
Brass St.	6	10	12	8	7	2	10	55
Nicholas Rd	4	8	12	6	4	2	12	48
Faulks Rd	13	28	8	22	4	2	21	98
Eziukwu Rd	8	12	10	10	8	2	17	62
Immaculate Rd	8	18	9	15	6	2	10	78
Margrat Avenue	5	10	5	5	5	2	43	31
Total	53	96	76	80	40	15	196	56
Percentage	11.62	21.05	16.67	17.54	8.77	3.3	21.05	100

From table 1: out of 456 respondents that returned their questionnaire in Aba North Local Government Area, 21.05% of them were traders; 16.67% Civil Servants, 11.62%. Artisans and 17.54% Business Professionals. Those classified as others were 21.05%, which represented various types of jobs and professions that exist in small portions like; barbing and Hair saloons (for men and women), radio electricians, shoe cobblers, motor cycle mechanics and watch repairs.

Table 2: Responses to the Existence of flooding in Aba North L.G.A

Location	Yes	No	Total
Eziama	82	2	84
Brass St.	51	4	55
Nicholas Rd	45	3	48
Faulks Rd	97	1	98
Eziukwu Rd	74	4	78
Immaculate Rd	58	4	62
Margrate Ave.	28	3	31
Total	435	21	456
Percentage	95.39	4.61	100

The result presented in table 2 is overwhelming in support of the occurrences of flooding in the area (95.39%). This result is expected because most of the drainage channels expected to evacuate the flood water is either blocked with wastes or destroyed, leaving the flood water to empty into the streets and even adjacent residential buildings.

Area Covered by Flood in The Year

Table 3: Some Places Specifically Affected by Flooding In Aba North Local Government Area

Location	**Covered with flood**	**Less covered with flood**	**Duration**
Faulks Rd to Abia Poly		✓	During Rainy season
Eziukwu Junction		✓	During Rainy season

Aba-Owerri by Immaculate Junction		✓	During Season
Brass Rd to Okigwe Rd Junction		✓	During the rainy season
Faulks Rd	✓	✓	Almost throughout the year
Eziukwu Rd Junction by Aba North L.G.A		✓	During the rainy season
Diobu Street		✓	During the rainy season

Source: Nwanorue, 2023

As presented in Table 3: only Faulks Road was covered with flood. other were with less flood, Infact from Osusu Junction towards Ariaria Market is almost all the care covered with water, for other places identified they are covered with water especially during the rainy season. In some cases, Brass Street, Faulks Rd Junction to Abia Poly and Aba North LGA Headquarter Junction and Eziukwu Rd Junction remain flooded at a lower rate for early December each year and fast food business. Other services also include; shoe cobblers, vulcanizers, barbing /hair salon, wheelbarrows, / truck pushers.

Specific Consequences of Flooding on the Commercial Activities in Aba Urban

There are commercial related consequences of flooding in Aba Urban as recorded by the respondents who are either directly or indirectly involved in commercial activities. The nature of Aba urban is such that most people engage in one form of commercial activities or the other, hence the need to employ all the selected respondents to respond to the investigation. For those who returned their copies of questionnaire as indicated in Table 1 and 2, questions on effects of flooding on commercial activities were administered on them. Respondents in the process are presented in Table 4 to 7.

Table 4: Consequences of Flooding on Commercial activities in Aba North Local Government Area

Consequences	Eziama	Brass St	Nicholas Rd	Faulks Rd	Eziukwu	Immaculate Rd	Margrate Ave.	Total	Percentage
Reduction in sales	10	8	4	13	8	6	4	53	11.62
Decrease in profit	11	9	8	13	11	8	5	65	14.25
Reduction in number of buyers and sellers	8	5	6	11	7	7	3	47	10.30
Reduction in the goods available	8	4	3	8	6	5	3	37	8.11
Loss on quality of goods	7	4	4	10	7	5	1	38	8.33
Increase in cost of transportation	10	5	6	11	10	7	4	53	11.62

Loss of goods stored in flooded shops, stores, warehouses	6	4	6	9	9	6	2	42	8.69
Increase in accident and breakage of vehicles	6	6	4	8	7	5	2	38	8.33
Loss of time due to flooded roads areas	8	6	5	5	3	6	3	36	7.89
Decreasing number of available shops	10	4	2	10	10	7	4	47	10.30
Total	84	55	48	98	78	62	31	456	100

Nwanorue, 2023

From Table 4, the respondents identified 10 consequences of flooding on commercial activities in Aba urban generally and Aba North Local Government Area specifically.
They are as follows, reduction in sales, 11.62%, decrease in profit, 14.25%; reduction in the number of buyers and sellers residing the area, 10.30% and

Table 5: Estimate of average volume of sales and profit lost to flooding per year (2022)

Location	**Sale (₦)**	**Mid point (₦)**	**Profit (₦)**	**Mid point (₦)**
Aba North L.G.A	40m – 5m	30m	10-200m	210m
Aba South L.G.A	10m-50m	30m	10-200m	210m
Osisioma LGA	10-100m	55m	10-50m	255m
Total		**115**		**675m**
Average		**38.333**		**225m**

Source: Nwanorue, 2023

In Table 5, estimates of sales and profit lost to flood were presented, for 2022.
Observations as made by the respondents shows that average estimate of ₦38.33m worth of sales was lost to flooding in one year. This means that in 5 estimated average loss in sales will be, ₦191,65m, and for 10 years and ₦383.3m Average estimated profit lost to flood per year is 275m and for 5 years it will rise to 1.375 billion then for 10 years will be ₦13.750 billion. Consequently, some locations in the area are covered with flood while others are less covered. For instance, Faulks Rd were covered with flood almost throughout the year than locations like, Eziukwu Rd Junction, Diobu Street and Brass Rd to Okigwe Rd junction. Consequences of flooding on commercial activities in the area include; Reduction in sales 11.62%, decrease in profit margin, 14.25% reduction in the number of buyers and sellers, 10.30% and reduction in the type of goods available, 8.11%. Others include; loss in the quality of goods, 8.33%, increase in cost of transportation, 11.62% and loss of time (man hours) due to the occurrence of flooding, 7.88%. Actual loss of commercial activities due to flooding in 2022 is about 210 million naira in profit were lost by commenced operators in Aba north local government area. The results presented in table 1 compares losses from the two remaining Local government areas that make Aba urban.

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