

IMPACT OF FLOODING DISASTER ON THE ACADEMIC PERFORMANCE OF PUPILS IN ANAMBRA EAST LOCAL GOVERNMENT AREA OF ANAMBRA STATE

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ABSTRACT

The general purpose of this study was to investigate Impact of Flooding Disaster on the Academic Performance of Pupils in Anambra East Local Government Area of Anambra State on the academic performance of primary school pupils in Anambra East LGA. Specifically, the study aimed to determine the challenges posed by flooding to academic performance, and the possible solutions for pupils. Three research questions guided the study. This study employed a survey research design method. The population of the study consisted of all primary school teachers in the fifty (50) state-owned schools located in Anambra East Local Government Area of Anambra State. Samples of 100 teachers from ten primary schools were randomly selected. These are schools closest to river line area of the local government. Primary data was collected using questionnaires as the instrument for data collection. This instrument was validated by three experts and tested for reliability. Cronbach alpha was used to establish the reliability which yielded a reliability of 0.80. The researchers analyzed the data using mean scores. The findings of this study revealed that flooding affects pupils' ability to attend school regularly in the past year, flooding have affected the availability of school learning materials (books, stationery, etc.) for studies. It also indicated that flooding events have caused delays or interruptions in the school calendar and causes the school management to end term academic activities prematurely, and delays pupils' learning time in the Anambra East Local Government Area of Anambra State. Based on the findings of the study, it was recommended that emergency shelters should be provided for vulnerable pupils, especially those whose homes were destroyed by flooding. It was also recommended that health facilities should be stocked with essential drugs to treat basic health issues in the event of a possible health emergency.

Introduction

The growing frequency, intensity, and widespread impact of floods universal in recent years have become an increasing concern for humanity. These concerns arise primarily due to the devastation that often tails flooding (Askew & MunichRe, 2015; UNESCO, 2021). More worrisome is the fact that recent flood incidents are not limited to coastal or low-lying regions but also extends to places previously not known for flooding (Achoka & Maiyo, 2020). Besides, the frequency of floods and the dangers they present appear to defy human abilities and knowledge to predict them accurately. Teachers, being the primary architects of education, are uniquely positioned to observe and report the multifaceted effects of flooding on students. This study explores impact of flooding disasters on pupils' academic outcomes, including school attendance, classroom engagement, and long-term learning accomplishments (Eze & Abba, 2021). Flooding is a global environmental issue, and its occurrence is unequally dispersed in both time and space among nations (Anagbogu, 2020). Flooding, as a natural disaster, is generally associated with social, economic, and environmental consequences that often threaten the ecosystem and human survival (Anderson, Panter-Brick & Granger, 2018). It can occur when a normally parched area of the earth's surface becomes inundated with water due to heavy rainfall or the overflow of a water body. River floods occur when rivers overflow their banks due to numerous reasons, such as prolonged intense precipitation, rainstorms, dam failures, the accumulation of water in low-lying areas (Kousky, 2016), and the interruption of seawater onto land due to tidal actions (Handmer, Dovers, & Downing, 2016). According to MunichRe (2015), the economic damage caused by floods is increasing.

In Nigeria, many severe flood disasters have happened in urban areas, with the 2012 and 2022 events heightening the need for improved coping skills. Kousky (2016), in his study of cities in Nigeria, identified the frequency and duration of floods, signifying that Anambra State experienced one of the most devastating floods in the country (Ujumadu, 2024). According to Fatoye (2024), this flood significantly impacted 57 communities in eight local government areas of Anambra State, ending farms and businesses. It was caused by a combination of heavy rainfall and the release of water from Cameroon's Lagdo Dam in 2012. Moving over 35,000 individuals across seven local government areas, the 2022 flood was one of the most severe in recent times. Flood incidents in 2024 include flooding in areas like Ngozika Estate, caused by blocked drainage systems, leading to massive property harm and displacement of residents (Ujumadu, 2024; Fatoye, 2024). In addition, the National Emergency Management Agency (NEMA, 2022; Olowu, Sako & Olowoyo, 2020), in partnership with the United Nations Development Programme (UNDP, 2022) and the National Bureau of Statistics (NBS), provided insights into the socio-economic impacts of flooding in Nigeria, concentrating on states like Anambra. The report also highlighted

annual flooding in nine local government areas of Anambra due to heavy rains and water releases from the Lagdo Dam in Cameroon. This has indeed led to dislodgment, loss of livelihoods, and damage to infrastructure and agriculture (The International Organization for Migration, 2022; Anagbogu, 2020).

The high frequency of flooding, together with urbanization, extensively exacerbates flooding by restricting the flow of floodwater (Anderson, Panter-Brick & Granger, 2018). In most cases, the destruction caused by floods, especially on households, reflects a lack of preparedness. According to the NEMA (2022) inadequate preparedness and low budgetary allocations for disaster prevention in developing countries worsen the impacts of natural disasters. No country is immune to flooding, and the impacts are intensified by a lack of capacity and preparedness. While natural hazards like flooding cannot be prevented, the vulnerability associated with flood disasters can be alleviated through adequate preparation (World Bank, 2020). Preparedness actions are closely related to how individuals perceive and respond to risk information (Anagbogu, 2020). Preparedness measures have the important advantage of addressing root causes and dynamic pressures rather than symptoms, leading to a more stable system after a disaster (NEMA, 2022).

In coastal plains and swamp lands like Anambra East, flooding is exacerbated by blocked channels and the indiscriminate filling of coastal swamp areas and natural drainage channels for urban development, apart from climate change. The National Emergency Management Agency (NEMA, 2018) noted that Anambra State is situated at the lowest point of the River Niger and, as such, is prone to flooding (Eric, 2019; Fatoye, 2024; Ujumadu, 2024). This was why Anambra State was significantly affected by floods, particularly in 2012 and 2022. The number of Internally Displaced Persons (IDPs) ran into the thousands, with an estimated 10,000 homes fully or partially submerged (Handmer, Dovers & Downing, 2016). Leading industries in the south of the Onitsha Metropolis were submerged and ceased operations during those periods. The situation for these communities remained terrible and bleak, with homes, farmlands, and properties estimated at billions of naira lost, along with some, though minimal, loss of life. Key approaches adopted to increase the coping skills of pupils affected by floods included relocating to primary schools designated as IDP camps and to distant places where close relatives reside. According to Achoka and Maiyo (2020), climate change and its special effects, such as flooding, are not new to Asia, Africa, and Africans (Eric, 2019).

Flooding disasters have profound psychological impacts on pupils, affecting their academic performance. Trauma, stress, and anxiety are common among children exposed to disasters, leading to difficulties in concentration and reduced motivation to learn (Anderson, Panter-Brick & Granger, 2018). Teachers often report behavioral changes in pupils following flooding events, such as increased absenteeism and reduced classroom participation (Save the Children, 2019). Flooding often exacerbates socio-economic inequalities, as families in affected areas may lose their homes, livelihoods, and savings. These economic hardships directly impact pupils' education, with many dropping out to support their families financially (Eric, 2019). Teachers frequently observe a decline in academic performance among pupils from economically disadvantaged households during post-disaster recovery periods (UNICEF, 2020; Handmer, Dovers & Downing, 2016).

Indeed, flooding disasters have a significant impact on school attendance rates among pupils, particularly in vulnerable areas such as the Anambra East Local Government Area. Floods often lead to the closure of schools, disrupting academic activities for weeks or months (Adeoye et al., 2021). This disruption not only interrupts the learning process but also discourages parents from re-enrolling their children in schools due to safety concerns or financial challenges caused by property and livelihood losses. In many cases, families displaced by flooding prioritize immediate survival needs over education, leading to increased absenteeism or permanent dropout among pupils (Okoye & Chukwuemeka, 2020). Overall, the combination of disrupted learning environments, financial strain on families, and health challenges significantly reduces school attendance and enrollment rates in flood-affected areas like Anambra East. Addressing these issues requires implementing proactive measures such as building resilient educational infrastructure and providing targeted support to affected families and schools.

Flooding disasters significantly affect educational resources and facilities, which in turn hampers the academic performance of pupils in Anambra East Local Government Area. When schools are inundated by floods, critical infrastructure such as classrooms, libraries, laboratories, and teaching materials are often destroyed or rendered unusable, leading to prolonged disruptions in academic activities (Eze & Obi, 2022). Pupils are frequently relocated to makeshift classrooms or community centers that lack essential learning resources,

resulting in suboptimal learning environments. Overcrowding in temporary classrooms often diminishes teacher-pupil interaction, leading to reduced comprehension and academic performance (Okonkwo & Ude, 2021). Furthermore, flooding damages critical school infrastructure, such as classrooms, libraries, and teaching materials, making schools unsuitable for learning (Eze & Obi, 2022). When schools reopen after a flood, overcrowding and resource shortages often deter pupils from attending consistently. Additionally, pupils in flood-affected areas may face health issues such as waterborne diseases, which further contribute to absenteeism (Ogbonna & Nwankwo, 2021).

The destruction of instructional materials like textbooks, computers, and writing supplies forces teachers to adopt less effective teaching methods, further hindering pupils' progress. The lack of functional sanitation facilities and safe drinking water in flood-affected schools also poses significant health risks, leading to frequent absenteeism among pupils (Nnaji et al., 2020). These health challenges, coupled with psychological stress from the displacement and loss caused by flooding, exacerbate the decline in pupils' academic outcomes (Ogbonna & Nwankwo, 2021). The socioeconomic impact of flooding on families also plays a role, as many parents struggle to afford the costs of replacing damaged school supplies or paying school fees. This financial strain often results in reduced school enrollment and higher dropout rates, particularly among marginalized groups (Adeoye et al., 2021). Consequently, the cumulative effects of damaged facilities, resource shortages, and financial hardship significantly impair pupils' academic performance in Anambra East. Addressing these challenges requires robust disaster management strategies, including flood-resilient school infrastructure and emergency educational support programs.

Natural hazards have been happening all over the world, and people have been living in hazard-prone areas for centuries sometimes thousands of years. Inevitably, they have developed their own methods for protecting themselves and their livelihoods, based on their skills, resources, and experiences. These knowledge systems, skills, and technologies are often referred to as 'indigenous knowledge systems (Achoka & Maiyo, 2020). Local populations, through their indigenous knowledge systems (IKS), have come up with and implemented extensive coping strategies that have enabled them to reduce their vulnerability to past climate variability and change, often exceeding those predicted by models of future climate change (Eric, 2019). The fact that local communities have survived to this day, despite fast population growth rates, testifies to their development of indigenous mechanisms and strategies to cope with changes in environmental conditions such as flooding. It has been suggested that community-based coping strategies for flooding should be supported (Kousky, 2016). The gap being addressed here is the limited understanding of teachers' perspectives on the academic effects of flooding disasters on pupils, particularly in terms of their observations, coping strategies, and the role they play in mitigating these effects. While much research has focused on the general impact of flooding on education, such as infrastructure damage and school closures, there is a lack of in-depth analysis of how teachers perceive and respond to these challenges in real-time (Mustapha, 2017). Against this backdrop, the present study seeks to investigate teachers' perception on the effect of flooding disaster on the academic performance of pupils in Anambra east local government area of Anambra state

Statement of the Problem

Flooding has become one of the most destructive environmental difficulties pervasive in Anambra State. Over 30% of the inhabitants of Anambra State live along riverine areas and survive mostly on fishing and agriculture. The problem of flooding due to sea-level rise and storm surges establishes a significant threat to life, property, livelihoods, and infrastructure in the riverine region (World Bank, 2020). The Anam community, located on a low-lying peninsula in Anambra State, Southeast Nigeria, is bounded by both the River Niger and the Anambra River and has been annually ravaged by floods, resulting in enormous damage to infrastructure, farmlands, shops, schools, etc. These floods arise from the overflowing of the riverbanks by the two rivers in the area, typically happening between the months of August and October (Olowu, Sako & Olowoyo, 2020).

Given the damage patterns caused by flooding in recent times, one begins to fear greatly about the effectiveness of these indigenous coping strategies, which, according to Olowu, Sako and Olowoyo (2020) are essential for managing and controlling hazards. To this end, this work seeks to disparagingly evaluate the indigenous coping strategies in flood management and control in some selected flood-prone communities in Anambra State, both prior to 2012 and from 2012 to the present (World Bank, 2020).

Research Questions

To achieve the aim of this study, the following research questions were posed:

- What is the impact of flooding disaster on school attendance among pupils in Anambra East Local Government Area of Anambra State?
- How do flooding disaster on educational resources and facilities affect pupil's academic performance in Anambra East Local Government Area of Anambra State?
- What are the coping skills to the challenges of flooding on the academic performance of pupils in Anambra East Local Government Area of Anambra State?

Methodology

The research design used for this study was the survey research method. This design was considered appropriate for assessing the perceived influence of flooding on the academic performance of pupils in Anambra East LGA. The population of the study consisted of all primary school teachers in the fifty (50) state-owned schools located in Anambra East Local Government Area of Anambra State. Given time constraints and the need for manageability and empirical conclusions, a sample was drawn from this population. The sample size consisted of 100 teachers, who were randomly selected from ten (10) public primary schools in Anambra East LGA, with ten questionnaires administered to ten teachers from each selected school. The researcher adopted an opportunity sampling technique, which involved selecting teachers available on the day of the field survey at random to obtain their views on the research questions. The data for this study were collected using an instrument titled "Flooding Disaster on Academic Performance Questionnaire" (FDAPQ). The instrument was validated by three lecturers two from the Department of Early Childhood and Primary Education of the Faculty of Education, and one from the Measurement and Evaluation unit, all from Nnamdi Azikiwe University, Awka. Data were tested using a test-retest reliability tool, and the same results were obtained, indicating that the information was reliable.

The researcher administered the questionnaires to the ten (10) selected primary schools in Anambra East LGA. A total of 100 questionnaires, distributed by the researchers to each teacher in the selected schools, were retrieved through direct collection and used for data analysis. The data were analyzed based on information obtained from the completed and returned questionnaires. The researcher analyzed the data using the mean. Section "A" was analyzed using percentages, while Section "B" was analyzed using the mean. Research questions were answered using assigned point values of 4+3+2+1, totaling 10. This was obtained by adding the points on the Likert scale; a normal value was assigned to each statement accordingly.

Results

Research Question 1: What are the impacts of flooding on the academic performance of pupils in Anambra East Local Government Area of Anambra State?

Table 1: Mean ratings of the responses on the impacts of flooding on the on the academic performance of pupils

S/N	ITEMS	SA	A	D	SD	MEAN	REMARK
1	Flooding affect pupils' ability to attend school regularly in the past year	12	5	4	2	3.21	Agree
2	Flooding disrupt transportation or access to school in the past year	13	4	3	3	3.17	Agree
3	Flooding have affected the availability of school learning materials (books, stationery, etc.) for studies	10	8	3	2	3.13	Agree
4	Flooding affect the concentration and focus of pupils during lessons	11	9	2	1	3.30	Agree

5	Flooding events have caused delays or interruptions in the school calendar	15	6	1	1	3.52	Agree
6	Flooding has positively impacted pupils' academic performance (e.g., grades, participation, completion of assignments)	14	8	1	0	1.56	Disagree
Grand Mean						2.98	

Data in the table 1 discovered that the respondents accepted that Flooding affect pupils' ability to attend school regularly in the past year disrupts transportation or access to school in the past year, affect the availability of school learning materials (books, stationery, etc.) for studies and the concentration and focus of pupils during lessons. It has also caused delays or interruptions in the school calendar. They disagreed that Flooding has positively impacted pupils' academic performance (e.g., grades, participation, and completion of assignments). Therefore the challenges of flooding on the academic performance of pupils in Anambra East Local Government Area of Anambra State have mean score of 3.21, 3.17, 3.13, 3.30, 3.52 and 1.56 respectively.

Research Question 2: How is flooding disaster on educational resources and facilities affecting pupils' academic performance in Anambra East Local Government Area of Anambra State?

Table 2: Mean ratings of the responses on how flooding disaster on educational resources and facilities affect pupils' academic performance of pupils

S/N	ITEMS	SA	A	D	SD	MEAN	REMARK
1	Flooding has damaged essential school facilities (e.g., classrooms, libraries, laboratories) in your school	11	9	2	1	3.30	Agree
2	Flooding have often caused disruptions in the availability of teaching materials (e.g., textbooks, computers, writing supplies) in your school	11	10	1	1	3.34	Agree
3	Flooding Has led to overcrowding in temporary classrooms or alternative learning spaces at school	12	7	2	2	3.26	Agree
4	Flooding has damaged school infrastructure (e.g., collapsed buildings, destroyed furniture) affected your learning experience	9	8	3	3	3.0	Agree
5	Lack of proper sanitation and clean water during flooding events has affected pupils' health at school	10	7	4	2	3.08	Agree
6	Flooding events has led to a decrease in the quality of teaching and learning in school due to damaged facilities or lack of resources	11	9	2	1	3.30	Agree
Grand Mean						3.34	

Data in the table 2 showed that the respondents agreed that school buildings collapsed and properties destroyed. Flooding have often caused disruptions in the availability of teaching materials and led to overcrowding in temporary classrooms or alternative learning spaces at school. Lack of proper sanitation and clean water during flooding events has also affected pupils' health at school. These are the impacts of flooding on the on the academic performance of pupils in Anambra East Local Government Area of Anambra State with mean score of 3.30, 3.34, 3.26, 3.0, 3.08 and 3.30 respectively.

Research Question 3: What are the coping skills to the challenges of flooding on the academic performance of pupils in Anambra East Local Government Area of Anambra State?

Table 3: *Mean ratings of the responses on the coping skills to the challenges of flooding on the academic performance of pupils*

S/N	ITEMS	SA	A	D	SD	MEAN	REMARK
1	Current effective coping strategies (e.g., relocation of pupils, use of temporary classrooms) are minimizing disruptions to learning during floods	13	5	4	1	3.30	Agree
2	Teachers and school staff are prepared to support pupils during and after flooding events	14	4	4	1	3.34	Agree
3	Alternative methods (e.g., online learning, mobile classrooms) can help in continuing education during flooding	11	7	4	1	3.21	Agree
4	Teachers participate in community-based activities (e.g. parent-teacher associations, local flood response teams) aimed at improving flood preparedness	12	7	2	2	3.26	Agree
5	Counseling services for affected pupils are available and helpful in managing stress caused by flooding	10	6	4	3	3.43	Agree
6	It is important for schools to have flood-resilient infrastructure (e.g., elevated buildings, waterproof materials) to continue during flood	15	4	4	0	3.47	Agree
Grand Mean						3.47	Accept

Data in the table 3 revealed that the respondents agreed that channeling of streams and construction of drainage systems, provision of flood regulation and other preventive methods, construction of reservoirs, good urban planning, creating of public awareness on how to manage waste and proper waste system should provide by government. It is agreed that Alternative methods (e.g., online learning, mobile classrooms) can help in continuing education during flooding. It is also accepted that Counseling services for affected pupils are available and helpful in managing stress caused by flooding. It is important for schools to have flood-resilient infrastructure (e.g., elevated buildings, waterproof materials) to continue during flood are the possible solutions *on the* coping skills on the academic performance of pupils in Anambra East Local Government Area of Anambra State with mean score of 3.30, 3.34, 3.21, 3.26, 3.43 and 3.47 respectively.

Discussion of findings

The first research question investigates the impacts of flooding on the academic performance of pupils in Anambra East Local Government Area of Anambra State. The findings revealed that the respondents strongly agreed that school buildings collapsed, properties were destroyed, floods affected pupil enrollment, led to

dropouts, and negatively impacted academic performance (Hallegatte, Rentschler & Walsh, 2017). Additionally, floods affected school attendance and hindered pupils' access to school. These findings align with Achoka and Maiyo (2020), who stated that flooding is a global disaster affecting school attendance in both developing and developed nations (Eze & Abba, 2021).

The second research question explored on how flooding disaster on educational resources and facilities affect pupils' academic performance in Anambra East Local Government Area of Anambra State. The results disclosed that the respondents agreed that flooding has destroyed reading materials, made classrooms unconducive for learning, led to early dismissal of pupils from school, caused school management to end term academic activities, and delayed pupils' time for learning. These challenges are consistent with Eric (2019) who noted that flooding has contributed to pupil dropout rates in schools.

The third research question sought to investigate *the* coping skills to the challenges of flooding on the academic performance of pupils in Anambra East Local Government Area of Anambra State. The findings indicated that the respondents agreed on several solutions, Alternative methods (e.g., online learning, mobile classrooms) can help in continuing education during flooding, Teachers participate in community-based activities (e.g. parent-teacher associations, local flood response teams) aimed at improving flood preparedness, Counseling services for affected pupils are available and helpful in managing stress caused by flooding etc. It is important for schools to have flood-resilient infrastructure (e.g., elevated buildings, waterproof materials) to continue during flood. These solutions are in line with World Bank (2020), who suggested measures such as flood forecasting, insuring buildings and school property, stockpiling food, providing emergency health services, building flood shelters, digging trenches around compounds, and planting trees and sisal fences around schools to mitigate flood damage and prevent erosion.

Conclusion

It is determined that globally, floods are the most significant natural disaster, negatively impacting pupils' academic performance as well as causing human and economic losses. Education is seen as a human right, a key to civilization and enlightenment, and a source of wealth and power. It is the cornerstone of the growth and development of any country's socio-economic and political institutions. Children have a right to education, even in the face of a flooding disaster. Flooding disaster risk reduction has not yet received serious attention as a facet of development, despite the increasing severity of its impacts on the education sector and general development. There is an urgent need, therefore, for all educational stakeholders to seek strategies to address this challenge.

Recommendations

Amongst many opinions, some recommendations were made.

1. Health facilities should be stocked with essential drugs to treat basic health issues in the event of a possible health emergency.
2. Educating families and pupils about flood preparedness can reduce the risks associated with such disasters, while flexible academic calendars and online learning alternatives can ensure pupils do not miss out on their education during the flood season.
3. Scholarships and grants are essential to alleviate the financial burdens on families affected by flooding, enabling children to continue their education without undue hardship.
4. Early warning systems in collaboration with meteorological agencies can help schools prepare in advance for potential floods, ensuring that educational disruptions are minimized.

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REFERENCES

- Achoka, J. S. K., & Maiyo, J. (2020). Horrifying disasters in Western Kenya: Impact on education and national development. *International Journal of Education Research and Review*, 8(1), 001–008. <https://doi.org/10.2329/9843>
- Adeoye, A., Adebayo, B., & Adeniyi, C. (2021). Flooding and its effects on education in Nigeria. *Journal of Environmental Studies*, 15(3), 45–56.
- Anagbogu, M. (2020). Flooding and flood risk reduction in Nigeria: Cardinal gaps. *Journal of Geography and Natural Disasters*, 5, 136. <https://doi.org/10.1016/j.jgeonat.2020.05.006>
- Anderson, C., Panter-Brick, C., & Granger, D. A. (2018). Resilience interventions for youth exposed to disaster. *Journal of Adolescence*, 67, 18–31. <https://doi.org/10.1016/j.adolescence.2018.05.009>
- Askew, A., & MunichRe, H. (2015). Effects of drought and floods on crop and animal losses and socio-economic status of households in the Lake Victoria basin of Kenya. *Journal of Emerging Trends in Economics and Management Science (JETEMS)*, 4(1), 31–41.
- Eric, G. (2019). Plant genetic resources (PGR) in Nigeria and the reality of climate change: A review. *Asian Journal of Environment and Ecology*, 2, 1–24. <https://doi.org/10.2136/ajee.2019.02.0001>
- Eze, C. E., & Abba, S. A. (2021). Flooding and education: Assessing the effects of recurrent floods on school attendance in Anambra State. *Journal of Disaster Studies*, 12(3), 45–56. <https://doi.org/10.5958/2321-8762.2021.00045.x>
- Eze, J. O., & Obi, K. C. (2022). Impact of natural disasters on educational infrastructure in Nigeria. *African Journal of Development Studies*, 10(1), 77–89.
- Fatoye, T. (2024, October 18). News Anambra activates emergency response, relocates residents from flood-prone areas. Digital Media. Retrieved from <https://diasporadigitalmedia.com/anambra-activates-emergency-response-relocates-residents-from-flood-prone-areas/>
- Hallegatte, S., Rentschler, J., & Walsh, B. (2017). Building back better: Achieving resilience through stronger, faster, and more inclusive post-disaster reconstruction. The World Bank. <https://doi.org/10.1596/978-1-4648-1008-7>
- Handmer, A., Dovers, G., & Downing, H. (2016). Towards resilience: A guide to disaster risk reduction and climate change adaptation. Practical Action Publishing Ltd.
- International Organization for Migration (IOM). (2022). Flood rapid needs assessment dashboard: Anambra State. Displacement Tracking Matrix. Retrieved from <https://dtm.iom.int>
- Kousky, C. (2016). Impacts of natural disasters on children. *Future of Children*, 26(1), 73–92. <https://doi.org/10.1353/foc.2016.0004>
- Mustapha, D. (2017). Review article: A review and critical analysis of the efforts towards urban flood risk management in the Lagos region of Nigeria. *Natural Hazards and Earth System Sciences*, 16, 349–369.
- National Emergency Management Agency (NEMA). (2018). Flood management strategies in the Niger Basin: Implications for communities in Anambra. Retrieved from <https://nema.gov.ng>
- National Emergency Management Agency (NEMA). (2022). Flood disaster situation report: Anambra State and nationwide. In collaboration with UNDP and the National Bureau of Statistics. Retrieved from <https://nema.gov.ng>
- Nnaji, C. E., Egbuna, A., & Okoro, P. (2020). Flood disasters and their effects on school children in rural Nigeria. *Journal of Disaster Risk Studies*, 12(4), 98–106.

- Nwaogazie, I. L., & Ume, M. E. (2019). Gendered impacts of flooding on education in rural Nigeria. *Gender & Society*, 33(4), 112-130.
- Ogbonna, O. A., & Nwankwo, L. U. (2021). Flood-induced health challenges and school attendance in southeastern Nigeria. *Nigerian Journal of Public Health*, 14(2), 89-98.
- Okonkwo, O. C., & Ude, F. C. (2021). Impact of flooding on educational outcomes in Nigeria's rural communities. *Journal of Educational Research*, 18(3), 56-70.
- Okoye, T. O., & Chukwuemeka, U. (2020). Environmental disasters and their implications for child education. *International Journal of Social Sciences*, 19(2), 65-78.
- Olowu, G., Sako, H., & Olowoyo, E. (2020). Floods claim 363 lives, displace 2.1 million people, says NEMA. *All Africa*. Retrieved from <https://allafrica.com>
- Save the Children. (2019). The impacts of disasters on education: Evidence from Save the Children programs. Save the Children International.
- Ujumadu, V. (2024, September 24). Floods wreak havoc on Anambra's Ngozika Estate: Residents call for government aid. *Vanguard*. Retrieved from <https://www.vanguardngr.com/2024/09/floods-wreak-havoc-in-anambra-ngozi-estate-residents-call-for-govt-aid/>
- UNESCO. (2021). The impact of natural disasters on education systems. UNESCO Report.
- United Nations Development Programme (UNDP). (2022). Socio-economic impacts of floods in Nigeria: Addressing vulnerabilities in Anambra. UNDP Nigeria Publications. Retrieved from <https://undp.org/nigeria>
- World Bank. (2020). Managing flood risks for urban resilience in Nigeria: Anambra case study. Retrieved from <https://worldbank.org>