

## Introduction:

Urban flooding in recent times has resulted in the loss of human lives; the destruction of economic and social infrastructure such as water supply, electricity, roads, and every other means of livelihood. Several research papers have been written to explore the impact of flooding in Nigeria. In this research, we proposed a three-step process: data collection, text classification, location extraction and geocoding, and visualization of location on the map.



Fig 1: A Flooded Area and Online Report of a flooded Location on Twitter

## Methodology

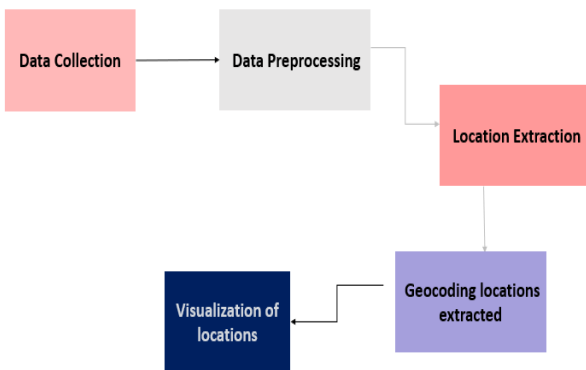


Fig 2: Methodology Workflow of Research Work

Date	Sentences	Locations Identified	Address	Longitude	Latitude
2019-11-15	Farmers have decried the loss of over 300 hectares of rice farms to a ravaging flood at Omeligboma, Oke in Oshimili South Local Government Area of the state	Oshimili South Local Government Area	Oshimili South, Delta, Nigeria	6.0698	6.6210
2019-11-07	The communities affected are: Anebette, Udaba, Osomegbe, Ugochi, Ofukpo, Agbaburu, Uzanu, and Ifeko	Uzanu	312107, Uzanu, Edo, Nigeria	7.1943	6.6352
2019-11-07	The communities affected are: Anebette, Udaba, Osomegbe, Ugochi, Ofukpo, Agbaburu, Uzanu, and Ifeko	Udaba	312111, Udaba, Edo, Nigeria	6.8525	6.5933

Fig 3: A Table Showing the Coordinate of Locations Extracted from Text



Fig 4: A map Showing the Counts of Locations affected by Flood in three LGAs



Fig 5: A map showing locations affected by flood in 2022



Fig 6: A map showing locations affected by flood in 2019

## Conclusion and Recommendation

- This study initially proposed to use tweets extracted from Twitter, but due to the challenges in acquiring from Twitter, we resolved to using reported online news articles
- Unavailability of Gazetteer related to Nigeria to look up locations extracted for Accuracy
- A real-time dashboard can be made to enhance usage by emergency responders further
- Comparative analysis of NER models to extract locations within Nigeria

## References:

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2. Nura Umar and Alison Gray. Flooding in Nigeria: a review of its occurrence and impacts and approaches to modeling flood data. International Journal of Environmental Studies. <https://doi.org/10.1080/00207233.2022.2081471>
3. Lingad, J., Karimi, S., & Yin, J. (2013). Location extraction from disaster-related microblogs. Proceedings of the 22nd International Conference on World Wide Web - WWW '13 Companion. doi:10.1145/2487788.2488108 disaster-related