

Impact of Adult Education Programmes in Promoting Flood Resilient Communities in Bayelsa State, Nigeria.

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Abstract: Bayelsa State, located in the low-lying Niger Delta region of Nigeria, is recurrently afflicted by destructive floods that displace communities, damage property, disrupt livelihoods, impair education, and exacerbate socio-economic vulnerability. While infrastructural and environmental mitigation measures e.g., drainage, raised buildings, land reclamation, remain indispensable, non-structural interventions — particularly adult education and community awareness hold promise for strengthening long-term flood resilience. This paper investigates how adult-education programmes aimed at flood risk awareness, preparedness and adaptive behaviours can enhance community resilience in Bayelsa State. Drawing on existing studies of flood risk and coping strategies in Bayelsa, combined with qualitative insights on the role of awareness and preparedness at community level, the study proposes that adult education fosters increased understanding of flood hazards, encourages proactive coping measures (e.g., clearing drainage channels, elevating dwellings, relocation from high-risk areas), promotes early-warning responsiveness, and galvanises social cohesion and collective action. Where education and awareness programmes are deployed, this empowerment yields more sustainable, community-led flood-risk reduction, complementing structural measures and reducing vulnerability. The paper concludes that integrating adult-learning flood-resilience programmes into state and local disaster-risk reduction frameworks is vital, recommending institutional support and continuous, inclusive adult education as part of flood mitigation planning in Bayelsa.

Keywords: Adult Education, Adult Education Programmes, Flooding, Functional Literacy, Flood Resilient Communities.

Introduction

Adult education programmes are a crucial and often underestimated tool in promoting flood-resilient communities. A community's ability to cope with, respond to, and recover from floods is ultimately determined by the knowledge, skills and attitudes of its residents. Adult education empowers individuals to become proactive agents in their own safety and the resilience of their community. According to Chiadikobi, Omoboriowo, Chiaghanam, Opatola, and Oyebanji, (2011) flood is a large quantity of water covering a dry land as a result of flow from storm water (rain) and other sources such as river overflow due to the volume of water within a water body exceeding the total capacity of the body. Flood is a natural and manmade event that can have far reaching effects on people and the environment; it can simply be said to mean too much water in a wrong place. Flooding occurs when a body of water rises and overflows onto a normally dry land. As floods commonly pose hazard to man and his environment, it is important to emphasize that at the onset, they are natural phenomenon and are only a problem where man has chosen to use areas susceptible to flooding and where he has induced flooding that would not have naturally occurred (Nwogu & Bell-Gam) in Bell-Gam (2023).

Flood risk is increasing worldwide and there is a growing need to better understand the co-benefits of investments in disaster resilience. The Zurich Flood Resilience Alliance understands resilience as *“the ability of a system, community, or society to pursue its*

social, ecological, and economic development and growth objectives, while managing its disaster risk over time in a mutually reinforcing way.”

The Zurich Flood Resilience Alliance believes that in order to enhance flood resilience in a community we need properly understand, and measure it. Flooding impacts millions of people every year both locally and globally. They destroy livelihoods and cause huge and often irreversible damage to the economic, social and cultural fabric of communities and nations. The severity of flooding is closely associated with inequality, conflict, environmental degradation, badly planned and managed urban development and weak governance.

Adult Education Programmes are structured learning opportunities designed for individuals beyond the traditional school age, often targeted at people who missed out on formal education or who need new skills for social, economic, or personal development. They are flexible, practical, and often community-based, focusing on literacy, livelihood, civic awareness, health, and resilience. In the Report of the First Congress on Comparative Study of Adult Education reported by Okedara in Kobani & Alozie (2016). It runs thus:

Adult education is a process whereby persons who do not attend school on a regular and full-time basis programmes are especially designed for sequential and organized activities with intention of bringing about changes in knowledge, undertakings or skills, and attitudes or for the purpose of identifying and solving personal and community problems.

In this definition it is assumed that all adults have been to school for some period of their childhood and thereafter to undertake further studies for solving personal and community problems. Corroborating the above international concept of adult education, Houle in Kobani & Alozie (2016) agrees that:

Adult education is the process by which men and women (alone, in groups, or institutional settings) seek to improve themselves or their society by increasing their skill, knowledge, or sensitiveness, or it is any process by which individuals; groups or institutions try to help men and women improve in these ways.

Adult education is a lifelong learning process which aims to adapt man to changes in his life and his immediate environment (Kobani & Alozie, 2016). Knowles in Kobani & Alozie (2016) succinctly sums the functions of adult education as follows:

There are many things adults ought to know in order to survive, in order to be employable, in order to stay healthy, in order to be happy and in order to be good citizens. Adult education rather than formal education helps them to achieve these.

Importance of Adult Education Programmes

1. Empowerment – adults gain skills to make informed decisions.
2. Economic improvement – vocational training improves livelihood security.
3. Health and safety – knowledge reduces risks from disasters and diseases.
4. Community resilience – collective problem-solving builds stronger networks.

In the context of flooding disasters, Adult Education Programmes are essential because they equip communities with the knowledge, skills, and attitudes needed to anticipate floods, reduce vulnerability, respond effectively and recover sustainably. Adult Education keeps adults adaptive in changing social and environmental contexts. In Nigeria's flood-prone Niger Delta, the National Emergency Management Agency (NEMA) emphasises community-based preparedness through sensitization campaigns and local disaster volunteer groups (Nkwunonwo, Whitworth & Baily, 2016).

Adult Education Programmes that can promote flood resilient Communities

Adult education programmes promoting flood-resilient communities focus on functional literacy and environmental awareness to sensitize adults about flood causes, risks, and mitigation strategies. These programmes equip communities with the knowledge to engage in preparedness, mitigation, and adaptation, fostering self-sufficiency and linking local action with formal disaster management systems. Key components include understanding causes and effects of flooding, adopting reduction and recycling practices, implementing community-based adaptation strategies, and improving early warning systems for greater collective action. Key Components of Flood-Resilient Adult Education Programmes include:

1. Environmental Education:

This approach focuses on educating adults on the environmental factors that contribute to flooding and the actions they can take to prevent or mitigate it. Programmes should educate adults on the specific human-induced causes of flooding, such as deforestation,

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poor waste disposal that clogs drainages and building on waterways and consequences of local flooding to build critical awareness and a sense of urgency. This knowledge shifts the perception of floods from an unpredictable 'act of God' to a preventable disaster.

2. Disaster Management and Climate Change Education

There should be awareness of natural hazards such as early warning systems, preparedness and response training. Flood adaptation strategies: rainwater harvesting, elevated housing, crop diversification. Adults learn "preparedness conversion" and "mitigation behaviours," which includes understanding how to prepare for floods and apply appropriate actions before, during, and after a flood. Community trainings, drills, and participatory risk mapping raise risk perception and translate into preparedness behaviors (evacuation planning, asset protection, safe sheltering). A global scoping review links individual preparedness and training to higher readiness for floods and other hazards. In Bangladesh, when adults received understandable early flood forecasts, 93% took proactive measures (moving livestock, protecting documents, stocking supplies). Training local volunteers (warning dissemination, first aid, needs assessment) measurably improves last-mile early-warning performance in flood-prone areas

3. Basic Literacy and Numeracy Programmes

Basic literacy and numeracy programmes involves the teaching reading, writing and basic math. This programme targets illiterate or semi-literate adults. This education fosters the ability to read flood warnings, understanding safety instructions, adapt by understanding how to maintain early warning systems and build community competencies to reduce flood impacts. The programme also incorporate learning from past floods to improve future preparedness and resilience levels.

4. Functional Literacy and Vocational Training:

Beyond basic reading and writing, programmes emphasize functional literacy, enabling adults to understand and apply information to solve environmental problems, such as flood management. It also includes combining literacy with livelihood skills such as carpentry, tailoring, farming, ICT, entrepreneurship.

5. Civic and Citizenship Education

This programme teaches rights, responsibilities, and participation in governance. It includes community development, leadership, and decision-making which is relevant for flood-prone areas interventions such as advocacy for better drainage, disaster relief accountability and so on.

6. Health, Hygiene, and Environmental Education

Health, Hygiene, and Environmental Education programme includes emergency response training (First aid and CPR): Floods carry significant health risks for adults including education on preventing waterborne diseases (cholera, typhoid), safe water storage, and waste management, vector control, medication continuity, and injury prevention. Recent US data (2000–2016) linked major floods to increased hospitalizations among older adults. It focuses on sanitation, nutrition, disease prevention, reproductive health, and environment care. In flood contexts, preventing waterborne diseases such as cholera, typhoid, safe water storage, and waste management. Post-flood recovery education such as mental health and preparedness integration brief, community-delivered curricula that combine disaster education with psychosocial skills improved both preparedness and mental health in a randomized controlled trial with communities exposed to earthquakes and seasonal flooding.

Methods of Delivery in Adult Education Programmes

- Face-to-face classes which can hold in community halls, schools, churches, mosques.
- Workshops and simulations through role-play evacuation, and first aid drills.
- Radio & mobile learning (especially in rural flood-prone areas).
- Peer-to-peer learning (farmer-to-farmer extension).
- Participatory methods (group discussions, storytelling, drama, songs).

Case Study of Adult Education programme to Promote Flood Resilience: Amassoma Community, Bayelsa State

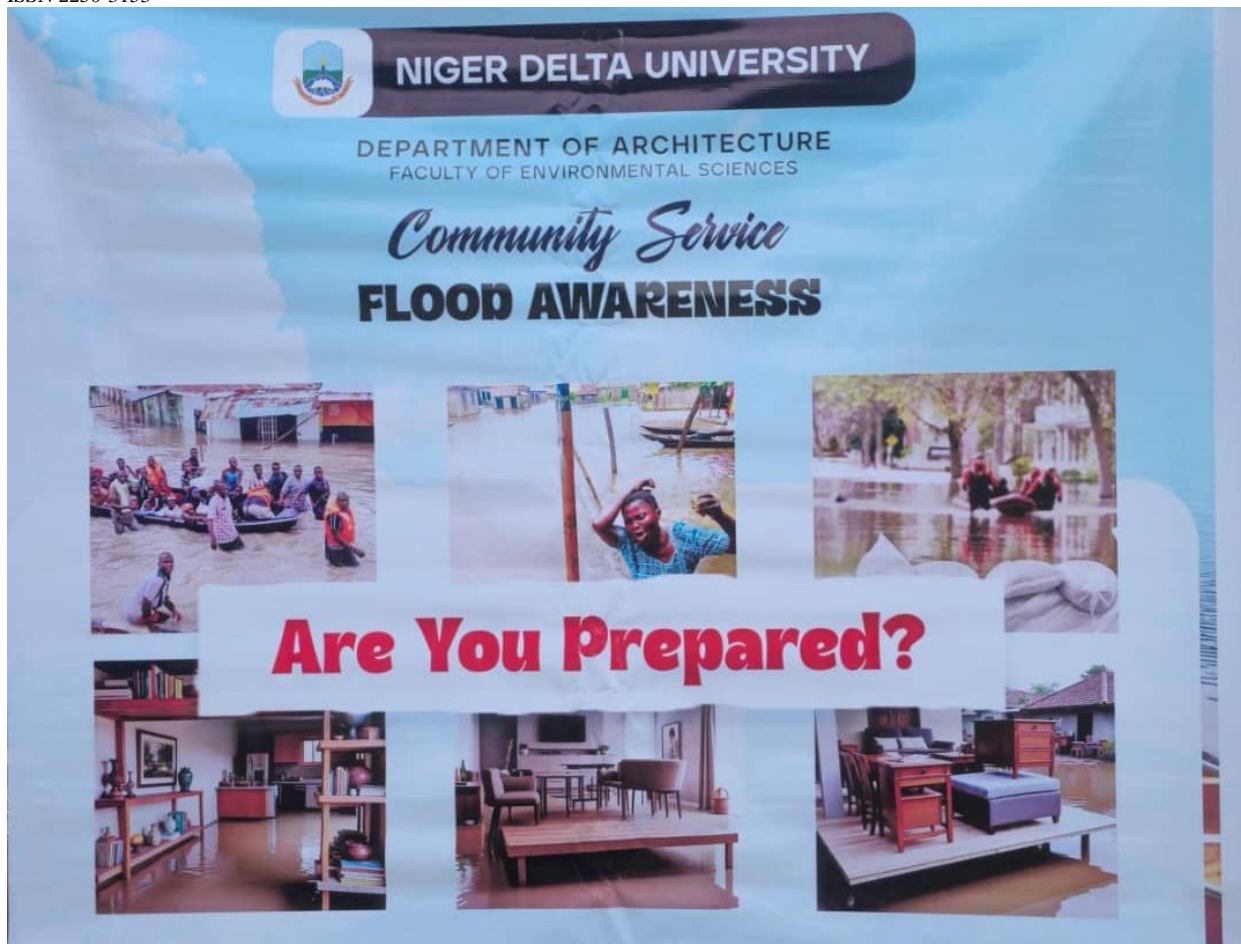
Amassoma is a community in Wilberforce Island of Southern Ijaw Local Government Area in Bayelsa State. It is located within the high-risk flood zone of the region, and as such is susceptible to perennial flooding, either by dam release floods or fluvial floods. In Bayelsa State, perennial floods are expected between the months of August and October, and it is the only State of the federation that observes flood breaks, where primary and secondary schools are shut for a month, usually in the month of October following the flood alerts. During these flood events, Amassoma has always being one of the hardest hit areas in Bayelsa state, suffering inundation and immense loss of property. Yet, since the first major flood of 2012, there has been no government support or interventions in the form of structural mitigation strategies for the community.

With the 2025 fluvial flood alert and rising waters coming up during the month of August, the community rallied around and organized themselves to undertake structural mitigation strategies to overcome the pending floods. Headed by the paramount ruler of Amassoma, they set up a flood committee, made up of built environment professionals from the community and indigenes with local knowledge of flood behaviour. They followed a 4-step agenda for flood mitigation, which included, Fact-finding, Awareness and Education, Fundraising and Structural mitigation. This protocol was in line with established adult education guidelines and programs, as most of the participants and volunteers were local tradesmen and artisans with limited levels of formal education.



Rising flood waters at the Amassoma jetty

Fact-finding commenced with a town hall meeting of persons and stakeholders in all of the 24 *Amas* (clans) that made up the Amassoma federated community. Series of meetings were held in the community town hall, during which the flood committee was selected. In addition, persons were delegated to find out the main ingress points (rivers or rivulets) through which flood waters are known to gain access into the Amassoma community. A total of 17 ingress points in 17 *amas* were discovered. The next step required raising awareness about the imminent flood and flood behaviour, and this is where adult education methods were adopted. For the adult education programs, three methods were adopted, which includes, Radio and mobile learning (information was disseminated via the gloryland radio airwaves and other stations covering Bayelsa State); face to face classes (this was carried out in the community halls and also involved schools coming to the community in a gown to town program, where the staff and students from the faculty of environmental sciences of the Niger Delta University in Amassoma came to give talks and engage with the community and offer insight on best practices for structural flood mitigation strategies); and lastly, participatory method (group discussions and work volunteers were assembled from within the community). The awareness and education included final designs for the dyke and also costing which amounted to #15m Naira, both done by community efforts, but led by High Chief Ere Efeke, a chartered architect and retired Permanent Secretary in Bayelsa State.



Flood awareness campaign banner done by the Department of Architecture NDU

Fundraising, commenced after one of the natives Agebo Fred, sold a piece of property he owned to finance the first dyke at Ibenikiri-ama, one of the sources of flood ingress into Amassoma. To ensure that his vision was not lost, the rest of the community levied themselves to finance the dykes in each of their *Amas* (clans). As at mid-September, over 8.7m Naira had been raised by individual donations and 12 out of the 17 dykes proposed had been completed. During the fact-finding and education and awareness stages, it was decided that dykes or concrete shore protection walls not exceeding 1.2m in height should be constructed as the most practical and cost-effective form of structural mitigation. At the time of compiling fieldwork data and writing of the report for this article, the concrete dwarf walls have been constructed to completion. The pathway or route the dyke followed was determined by the community but with input from each individual whose property was along the waterfront.



Concrete flood protection wall/ dyke at Amassoma waterfront

Conclusion

The case study is a clear example of community resilience and flood mitigation, developed through self-help adult education programmes and awareness creation. It is a case of community-based disaster management and mitigation by proactive protocol and preparedness. This timely act contributed to the aversion of flood disaster as opposed to post-flood recovery which can be deemed as medicine after death.

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