

FLOOD IMPACT

Socio-Economic Impact of Flood on Ilaje Community, Bariga Local Council Development Area (LCDA) of Lagos State

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Abstract

This study evaluated the socio-economic impact of flood on the Ilaje community, Bariga area of Lagos. Floods are common natural disasters occurring in most parts of the world, resulting in damage and loss to human life and livelihood sources, deterioration of the environment and retardation of development. The problem which this study addressed is the impact of floods on the socio-economic livelihoods of the people of the Ilaje community, Bariga area of Lagos State. The study established that the Ilaje community, Bariga Local Council Development Area of Lagos, is a major area in Lagos State and has suffered a lot from flooding. A very high percentage of the sampled population confirmed that the study area, Bariga Local Council Development Area (LCDA) of Lagos State, is a slum, and the people of the study area are aware that poverty, hunger and crime are socio-economic impacts of flood. Human impacts on river catchments influence flood behaviour. Land use changes in particular have a direct impact on the magnitude and behaviour of floods. The legislation lacked teeth, and environmental damage continued to worsen. It should be remembered, though, that the flood control measures were introduced in the context of the main priority of promoting environmental, social and economic growth, and were therefore designed to avoid conflict with that overriding objective.

Keywords: environmental degradation; behaviour of floods; slum areas; natural disasters; socio-economic; human impacts; livelihoods; deterioration of the environment; social and economic growth; magnitude and behaviour of floods

1 Introduction

1.1 Background of the study

Floods are common natural disasters occurring in most parts of the world, resulting in damage and loss to human life and livelihood sources, deterioration of the environment and retardation of development. Hewitt (1997) explained that floods are the most common natural disasters that affect humans and their surrounding environment. In tropical regions, flooding of high magnitude that has resulted in serious consequences has been caused by heavy rainstorms, hurricanes, snow melt and dam failures (Jeb and Aggarwal, 2008). Asia and the Pacific regions are the most vulnerable, and this has affected the social and economic stability of countries. The worst flooding in China, which occurred in 1998, affected 223 million people; 3,004 people were reported dead, 15 million were homeless and the economic loss was over US\$23 billion for that year. Due to heavy floods in Cambodia and Vietnam during the year 2000, 428 people were reported dead and an estimated economic loss of over US\$250 million was recorded. In 1991, 140,000 people across the world were reported dead and in 1998 floods affected 25 million lives (UNEP, 2006). For the last 10 years, due to

the frequent occurrence of floods, thousands of people have been affected by floods in India, Pakistan, Korea, China and Bangladesh, with their agricultural fields, residential areas, livelihoods and food grossly impacted. The effect of floods in less developed countries is greater. They are linked to poverty, lack of knowledge, low livelihood sources, lack of insurance, weak institutions and, above all, many problems with emergency response and early warning preparation.

Flood occurs when a river or stream breaks out through its natural or artificial bank due to heavy rainfall, melting of snow, dam failure, etc. Floods are mainly of three types: flash flood, river flood and coastal flood. Such flood occurrences are influenced by natural phenomena and human involvement such as deforestation, land management (timber harvest, reforestation and afforestation, herbicide application and controlled burning), industrial development, agriculture and regulation of rivers. In addition, the recent causes of frequent flooding of some areas are mainly unplanned land use and the construction and operation of dams upstream. If a hydraulic structure is not designed properly, it could even lead to catastrophe: the dam can fail, the highway can be flooded and a bridge can collapse, thus increasing the risk of flood (Gebeyehu, 1989). Despite this, the obvious reason for flooding, especially in municipalities and coastal areas in Nigeria, lies in the wide distribution of low-lying coastal areas and river floodplains, and because these areas have long been an attraction for human settlement (Ologunorisa and Abawua, 2005).

Floods are the most costly and wide-reaching of all natural hazards. They are responsible for up to 50,000 deaths and adversely affect some 75 million people on average worldwide every year. [Borrows and De Bruin \(2006\)](#) indicated that among natural catastrophes, flooding has claimed more lives than any other single natural hazard. According to data from the Spatial Hazard Events and Losses Database for the United States (SHELDUS), floods claimed the lives of 2,353 people from 1970 to 2000. In support of this observation, the Federal Emergency Management Agency (FEMA) estimates that flood events have been responsible for the deaths of more than 10,000 people in the US since 1900. The study undertaken in Texas established that socially vulnerable populations suffer disproportionately in terms of property damage, injury and death as a result of the physical impacts of disaster. Economic disadvantage, low human capital, limited access to social and political resources, residential choices and evacuation dynamics are the social factors that contribute to observed differences in disaster vulnerability and economic class.

Disease outbreak is common, especially in less developed countries. Malaria and typhoid outbreaks after floods in tropical countries are also common. It has been estimated that in India and Bangladesh 300 million people live in areas that are affected by floods (Nott, 2006). Nott (2006) further stated that physical damage to property is one of the major causes of tangible loss in floods. This includes the cost of damage to goods and possessions, loss of income or services in the aftermath of floods, and clean-up costs. Some impacts of floods are intangible and hard to place a monetary figure on. Intangible losses also include increased levels of physical, emotional and psychological health problems suffered by flood-affected people. Studies show that the economic impact of natural disasters has had a marked upward trend over the last several decades. In the decade 1986 to 1995, flooding accounted for 31% of the global economic loss from natural catastrophes and 55% of the casualties ([Borrows and De Bruin, 2006](#)). The hazards tend to hit communities in developing countries, especially the least developed countries, increasing their vulnerability and setting back their economic and social growth, sometimes by decades. The floods have led to loss of human life, destruction of social and economic infrastructure and degradation of already fragile ecosystems. The study indicates that social impacts include changes in people's way of life, their culture, community, political systems, environment, health and wellbeing, their personal and property rights, and their

fears and aspirations. The study undertaken in Scotland suggests that social impacts are linked to the level of wellbeing of individuals, communities and society. This includes aspects related to the level of literacy and education, the existence of peace and security, access to basic human rights, systems of good governance, social equity, positive traditional values, knowledge structure, customs and ideological beliefs, and overall collective organizational systems. Some groups are more vulnerable than others, mainly those less privileged in society (Living with Risk, 2002).

Different population segments can be exposed to greater relative risks because of their socio-economic conditions of vulnerability. Because of this, disaster reduction has become increasingly associated with practices that define efforts to achieve sustainable development. The links between disaster and the economic system, another pillar of sustainable development, are essential for disaster reduction. Risk management planning should therefore involve an estimation of the impacts of disasters on the economy, based on the best available hazard maps and macroeconomic data (Living with Risk, 2002). The 2012 rainy season in Nigeria was worse than earlier years, and heavy rains at the end of August and the beginning of September led to serious floods in most parts of the country. The Nigerian authorities contained the initial excess run-off through contingency measures, but during the last week of September water reservoirs were overflowing and the authorities were obliged to open dams to relieve pressure in Nigeria and neighbouring Cameroon and Niger, leading to destroyed river banks and infrastructure, loss of property and livestock, and flash floods in many areas. By 29 September, the floods had affected 134,371 people, displaced 64,473, injured 202 and killed 148. By the end of October, more than 7.7 million people had been affected by the floods, and more than 2.1 million were registered as internally displaced persons (IDPs). About 363 people were reported dead; almost 600,000 houses had been damaged or destroyed. Of Nigeria's 36 states, 32 were affected by the floods (OCHA, 2008).

1.2 Statement of the problem

The problem which this study addressed is the impact of floods on the socio-economic livelihoods of the people of the Ilaje community, Bariga area of Lagos State.

Flood is caused by heavy rainfall, cloudburst, melting of glaciers, river bank erosion and siltation of the river bed, depression of land, shifting of the river course, river channel widening, etc., due to high water discharge, variation of elevation, volume and longer duration. It leads to poverty, agricultural deficiency, extensive damage to infrastructure, unemployment, sexual exploitation, starvation, death and other problems.

It is very important to remember that the severity of flood disasters is not solely linked to the intensity of the natural hazard but also to many human-driven factors that increase the risk of flooding and magnify its impacts, such as construction activities, soil degradation, deforestation, overgrazing, faulty agricultural practices, urbanization and poor urban drainage. Urbanization is the process which reduces the potential for land to absorb heavy precipitation and hence strongly contributes to the risk of flooding.

This may also force people into unsafe and flood-prone areas, notably impoverished people in the context of rural-to-urban migration. Examples include the unsafe peripheral areas of cities, where the poorest settle in urban slums located in highly disaster-prone (and especially flood-prone) areas, on unstable slopes or in flood-prone basins. Over the last 30 years, 3,119 floods occurred worldwide, resulting in the deaths of more than 200,000 people and affecting more than 2.8 billion others, according to EM-DAT.

1.3 Objectives of the study

The objectives of the study were:

1. to identify the impact which floods have had on the socio-economic livelihoods of the people of the Ilaje community, Bariga area of Lagos State;
2. to establish and analyse the underlying causes of vulnerability of the people in Ilaje, Bariga area of Lagos State;
3. to establish the vulnerable groups that are most affected by floods, including gender considerations, in Ilaje, Bariga area of Lagos State;
4. to identify coping mechanisms employed by the community during floods and strengthen positive coping strategies; and
5. to establish the cultural impact on traditional patterns of life and work, family structures and authority, religious and tribal factors, archaeological factors and social networks in Ilaje, Bariga area of Lagos State.

1.4 Research questions

This study addressed the following research questions:

1. Are poverty, hunger and crime socio-economic impacts of flood in the Ilaje community, Bariga, Lagos State?
2. Are construction activities, soil degradation, deforestation, overgrazing, faulty agricultural practices, urbanization and poor urban drainage causes of floods in the Ilaje community, Bariga, Lagos State?
3. Can flood problems lead to insecurity in the Ilaje community, Bariga, Lagos State?
4. Are there underlying causes of flood vulnerability of the people in the Ilaje community, Bariga, Lagos State?
5. Is there a cultural impact on traditional patterns of life and work, family structures and authority, religious and tribal factors, archaeological factors and social networks of the people in the Ilaje community, Bariga, Lagos State?
6. Can floods lead to agricultural deficiency, extensive damage to infrastructure, unemployment, sexual exploitation, starvation, death and other problems in the Ilaje community, Bariga, Lagos State?

1.5 Research hypothesis

The study tested the following hypothesis:

H_0 : Flood has a great socio-economic impact on rural settlements.

H_1 : Flood does not have a great socio-economic impact on rural settlements.

1.6 Purpose of the study

The research aims to:

1. identify the impact which floods have had on the socio-economic livelihoods of the people in Ilaje, Bariga area of Lagos State;
2. establish and analyse the underlying causes of vulnerability of the people; and

3. establish the vulnerable groups that are most affected by floods, including gender considerations.

1.7 Significance of the study

The study is important because it assesses and estimates the effects of the floods on the community's socio-economic livelihoods. The study also endeavours to establish the underlying causes of vulnerability of the people of Ilaje, Bariga area of Lagos State. More importantly, it is envisaged that the outputs of the study will be key inputs in the design of sustainable mitigation measures to minimize the impact of floods and the associated risks.

1.8 Scope and limitation of the study

The study was undertaken at schools, markets, commercial business centres and residences in Ilaje, Bariga area of Lagos State. The study also covers the autonomous communities of the study area. The research was challenging, but it gave the researchers the opportunity to study the socio-economic impact of flood, a form of anthropogenic disaster, on the livelihoods of the people. The study was limited to the Ilaje community, Bariga area of Lagos State.

2 Literature review

2.1 Conceptual framework

The various rolling vulnerability assessments conducted in Zambia indicate that the last two decades have seen an increase in the frequency and occurrence of climate-induced hazards such as floods and drought in the country. It is worth noting that studies undertaken in the past have not looked at the impact on socio-economic livelihoods in depth, and the response has therefore remained ad hoc, focusing on short-term measures (Concept Note on the Vulnerability Assessment and Analysis Survey for Zambia, 2006).

According to Nott (2006, p. 51), the causes of floods can be broadly divided into physical, such as climatological forces, and human influences, such as vegetation clearing and urban development. The most common causes of floods are climate related, most notably rainfall. Prolonged rainfall events are the most common cause of flooding worldwide. These events are usually associated with several days, weeks or months of continuous rainfall. Human impacts on river catchments influence flood behaviour. Land use changes in particular have a direct impact on the magnitude and behaviour of floods. Deforestation results in increased run-off and often a decrease in channel capacity due to increased sedimentation rates.

Nott (2006, p. 54) correctly points out that a flood event is not considered to be a natural hazard unless there is a threat to human life and/or property. The most vulnerable landscapes for floods are low-lying parts of floodplains, low-lying coasts and deltas, and small basins subject to flash floods. Rivers offer human populations transport links, a water source, recreational amenities and fertile plains, and are an attractive place for settlements. Floods then become a major natural hazard because of the high human population densities that inhabit these lands. He indicated that the direct impacts of a flood are closely related to the depth of inundation. The extent of a flood has a direct relationship with the recovery times of crops and pastures and the social and economic dislocation of populations. Floods are the most costly and wide-reaching of all natural hazards. They are responsible for up to 50,000 deaths and adversely affect some 75 million people on average

worldwide every year. Disease outbreak is common, especially in less developed countries. Malaria and typhoid outbreaks after floods in tropical countries are also common. It has been estimated that in India and Bangladesh 300 million people live in areas that are affected by floods (Nott, 2006, p. 57).

Nott (2006, p. 60) further stated that physical damage to property is one of the major causes of tangible loss in floods. This includes the cost of damage to goods and possessions, loss of income or services in the aftermath of floods, and clean-up costs. Some impacts of floods are intangible and hard to place a monetary figure on. Intangible losses also include increased levels of physical, emotional and psychological health problems suffered by flood-affected people. Know Risk (2005, p. 74) observed that the economic impact of natural disasters has shown a marked upward trend over the last several decades. The hazards tend to hit communities in developing countries, especially the least developed countries, increasing their vulnerability and setting back their economic and social growth, sometimes by decades. The floods have led to loss of human life, destruction of social and economic infrastructure and degradation of already fragile ecosystems. The study indicates that social impacts include changes in people's way of life, their culture, community, political systems, environment, health and wellbeing, their personal and property rights, and their fears and aspirations.

The study undertaken in Scotland suggests that social impacts are linked to the level of wellbeing of individuals, communities and society. This includes aspects related to the level of literacy and education, the existence of peace and security, access to basic human rights, systems of good governance, social equity, positive traditional values, knowledge structure, customs and ideological beliefs, and overall collective organizational systems. Some groups are more vulnerable than others, mainly those less privileged in society (Living with Risk, 2002, p. 47).

Different population segments can be exposed to greater relative risks because of their socio-economic conditions of vulnerability. Because of this, disaster reduction has become increasingly associated with practices that define efforts to achieve sustainable development. The links between disaster and the economic system, another pillar of sustainable development, are essential for disaster reduction. Risk management planning should therefore involve an estimation of the impacts of disasters on the economy, based on the best available hazard maps and macroeconomic data (Living with Risk, 2002, p. 13). However, hazard maps for Zambia are non-existent, making the response to floods ad hoc.

A study by the International Flood Initiative (2003) suggests that floods are the most taxing of water-related natural disasters to humans, material assets, and cultural and ecological resources, affecting people and their livelihoods and claiming thousands of lives annually worldwide.

According to the Australian experience, the emotional behaviour of many flood victims was shocking. The emotional cost of flooding was long-lived. Follow-up studies found that about one-quarter still had not recovered from the emotional trauma of the event. Factors that contributed to the non-recovery included the severity of the flooding, the degree of the resulting financial hardship, age and socio-economic status. Elderly people on low incomes whose houses were deeply flooded were the most affected (Floodplain Management in Australia, 1998, p. 81). Thus, a severe flood can impose a range of emotional costs on flood victims, many of them quite severe. Moreover, the emotional strain may linger for years after the event. Flood-aware communities can be expected to suffer less social and financial disruption than communities with a low level of flood awareness (Floodplain Management in Australia, 1998, p. 82).

Lindsell and Prater (2003) argue that social impacts can cause significant problems for the long-term functioning of specific types of households and businesses in an affected community. A better understanding of the socio-economic impacts of disasters can therefore provide a basis for prediction and the development of contingency plans to prevent adverse consequences from occurring.

Ariyabandu and Wickramasinghe (2005, p. 22) observed that some groups are more vulnerable to floods than others. Vulnerability is not just poverty, but the poor tend to be the most vulnerable due to their lack of choices. The influences of both poverty and development processes on people's vulnerability to disaster are now well established. Class, ethnicity, gender, disability and age are some of the factors affecting people's vulnerability. They further noted that because vulnerability plays such an important part in why natural hazards become human disasters, it is worth spending time examining the characteristics of vulnerability.

Conditions of vulnerability are a combination of factors that include poor living conditions, lack of power, exposure to risk and the lack of capacity to cope with shocks and adverse situations. As noted earlier, poverty does not equal vulnerability, but being poor makes people more vulnerable to disasters because poor people lack the resources (physical, social and knowledge-based) to prepare for and respond to such threats and shocks as natural hazards. Poor people often get locked in a cycle of vulnerability. Because they are poor, they become vulnerable. Because they are vulnerable, they are at great risk in the face of a natural hazard, leading to disaster. Close analysis of disaster impact shows that the vulnerability of men and women to disaster, their capacities and the options available to them differ in character and scale according to their gender (Ariyabandu and Wickramasinghe, 2005, p. 25).

Ariyabandu and Wickramasinghe (2005, p. 26) suggest that although women are often more vulnerable to disasters than men (owing to conventional gender responsibilities and relations), they are not just helpless victims, as often represented. Women have valuable knowledge and experience in coping with disasters. Yet these strengths and capabilities of women are often ignored in policy decisions and in mitigation, allowing these valuable resources to go to waste and sometimes creating dependency situations. Thus, ignorance of gender differences has led to insensitive and ineffective relief operations that largely bypass women's needs and their potential to assist in mitigation and relief work.

The impact of disasters is usually measured in quantifiable ways, such as adding up the number of the dead and injured and estimating the physical damage to housing, land, livestock, agriculture, stores and infrastructure. But attention is not necessarily paid to how disasters impact on different categories of people: men, women, children, the aged, etc. Disasters affect men and women differently because of the different roles they occupy, the different responsibilities given to them in life, and the differences in their capacities, needs and vulnerabilities. Family size may change at household level due to disasters. For example, in Chitwan district, Nepal, during the floods the extended family system collapsed, leaving women and the elderly without support (Ariyabandu and Wickramasinghe, 2005). The floods that occurred in Sarlahi district in Nepal left many houses damaged, washed away and uninhabitable. The type of construction (thatched homes) influenced the extent of flood damage (Kimbrough et al., 2007, p. 57).

Sinclair and Pegram (2003, p. 1) stated that floods cannot be prevented, but their devastating effects can be minimized if advance warning of the event is available. With the large increase in population and increasing urbanization (mainly driven by poverty), more people are living in informal settlements, which are often on floodplains, as this is the only undeveloped land available near cities. The

people living in these settlements are those most at risk, not only due to their geographical location in the floodplain but also because they do not have the financial resources to recover from the damage caused by flooding. Early warning information can, therefore, allow disaster managers to take steps which may significantly reduce loss of life and damage to property.

According to Smith and Ward (1998, p. 5), there is more evidence that the flood problem is getting worse in terms of the damage caused by flooding. Despite massive expenditure on flood defence, flood damage losses continue to rise in many countries. Although most floods are more or less natural phenomena (albeit intensified by human action such as land use change), the flood hazard is largely of human origin. Most floods result from moderate to large events occurring within the expected range of stream flow. Floods constitute a "hazard" only where human encroachment into flood-prone areas has occurred. [African Wildlife \(2000, p. 24\)](#) also points out that the cumulative impact of human activities without regard for nature has turned the recent floods from a natural phenomenon into a man-made disaster of epic proportions.

When severe floods occur in areas occupied by humans, they can create natural disasters which involve the loss of human life and property plus serious disruption to the ongoing activities of large urban and rural communities. Flood losses are therefore essentially human interpretations of the negative economic and social consequences of natural events. The impact of the flood hazard will in part be determined by the magnitude and the duration of the event. But the true significance of the flood disaster will depend primarily on the vulnerability of the local community. The relationship between physical exposure and human vulnerability is highly dynamic and can change through time (Smith and Ward, 1998).

3 Research methodology

This section describes the methods used in this research: the area of study, research design, sources of data (primary and secondary), method of data collection and technique for data analysis.

3.1 Area of study

The study covered schools, markets, commercial business centres and the people of Ilaje, Bariga area of Lagos State. The study also covered the autonomous communities of Ilaje, Bariga area of Lagos State: Ago-Egun, Seriki Kusein and Seriki East.

3.2 Research design

A survey design was used, in which a group of people is studied by collecting data from a few people considered to be representative of the entire group.

3.3 Sources of data

The sources of data used in this study were primary and secondary data.

3.3.1 Primary data

The primary data were collected with a questionnaire. First, the questionnaire survey was conducted. Second, interviews were conducted with staff of schools, market men and women, commercial business centre operators and people living in Ilaje, Bariga area of Lagos State.

3.3.2 Secondary data

Secondary data aided the formulation of the background information and included literature reviews needed to build a well-structured study and to help the reader understand the survey outcome. These included textbooks, journals, magazines, articles, presentations, libraries and internet resources.

3.4 Population of study

The study area chosen for this research was carefully selected, with a considerable population which could be accessed and investigated, for accurate results.

3.5 Sample and sampling techniques

A sample of 100 people was randomly selected using stratified random sampling. The sample consisted of people from schools (30), markets (20), and people living in Ilaje, Bariga area of Lagos State, including the autonomous community Ago-Egun (50).

3.6 Instrument for data collection

The instrument used for data collection was a questionnaire. The questionnaires were administered to the respondents and collected after completion by the respondents. This was done by the researcher in order to keep track of the questionnaires.

3.6.1 Validity of the research instrument

The instruments used for this research were primary and secondary data, which are valid for this mode of research. The primary data were collected with a questionnaire. First, the questionnaire survey was conducted, and the questionnaire was properly monitored by the researcher to keep track of it; second, interviews were conducted.

3.6.2 Reliability of the research instrument

The questionnaires were administered to the respondents and collected after completion by the respondents.

3.6.3 Administration of the instrument

The major instrument used for collecting data was the questionnaire, which was administered to the respondents.

4 Data analysis and interpretation

This section presents the analysis, interpretation and discussion of the findings of the study on the socio-economic impact of flood on the Ilaje community, Bariga, Lagos State.

4.1 Method of data analysis

The data were collected through questionnaires from respondents at the sample sites and were analysed using frequency tables of the respondents' age, gender, marital status, religion, qualifications, working experience and responses, in order to ascertain the outcome of the study.

4.2 Results and discussion

Table 1 shows that 52 respondents (52%) were aged below 25 years, 26 respondents (26%) were aged between 25 and 35 years, 12 respondents (12%) were aged between 36 and 45 years and 10 respondents (10%) were aged 46 years and above.

Table 1. Age distribution of respondents.

Age (years)	Frequency	Percentage (%)
Below 25	52	52
25–35	26	26
36–45	12	12
46 and above	10	10
Total	100	100

Source: Field survey, August 2026.

Table 2 shows that 72 respondents (72%) were male, while 28 (28%) were female.

Table 2. Gender of respondents.

Gender	Frequency	Percentage (%)
Male	72	72
Female	28	28
Total	100	100

Source: Field survey, August 2026.

Table 3 shows that 67 respondents (67%) were single, 30 respondents (30%) were married, 2 respondents (2%) were divorced and 1 respondent (1%) was a widow or widower.

Table 3. Marital status of respondents.

Marital status	Frequency	Percentage (%)
Single	67	67
Married	30	30
Divorced	2	2
Widow/widower	1	1
Total	100	100

Source: Field survey, August 2026.

Table 4 shows that 19 respondents (19%) had 'O' level qualifications, 20 respondents (20%) had NCE/OND, 54 respondents (54%) had HND/BSc, 5 respondents (5%) had MSc and 2 respondents (2%) had PhD qualifications.

Table 4. Qualification of respondents.

Qualification	Frequency	Percentage (%)
'O' level	19	19
NCE/OND	20	20
HND/BSc	54	54
MSc	5	5
PhD	2	2
Total	100	100

Source: Field survey, August 2026.

Table 5 shows that 45 respondents (45%) were Christian, while 55 respondents (55%) were Muslim. No respondents reported other religions.

Table 5. Religion of respondents.

Religion	Frequency	Percentage (%)
Christian	45	45
Muslim	55	55
Others	0	0
Total	100	100

Source: Field survey, August 2026.

Table 6 shows that 18 respondents (18%) had working experience of less than 5 years, 32 respondents (32%) had 5–10 years, 40 respondents (40%) had 11–20 years and 10 respondents (10%) had 21 years and above.

Table 6. Working experience of respondents.

Years	Frequency	Percentage (%)
Less than 5	18	18
5–10	32	32
11–20	40	40
21 and above	10	10
Total	100	100

Source: Field survey, August 2026.

In Section B of the questionnaire, respondents identified two major human activities that lead to flooding:

- improper waste management;
- lack of drainage system.

The major impacts of flood in slum or wetland environments, particularly the Ilaje community, include:

- poverty;
- destruction of life and property;
- insecurity;
- epidemics.

Table 7 shows that 40 respondents (40%) said yes, and 60 respondents (60%) said no.

Table 7. Responses to "Are poverty, hunger and crime socio-economic impacts of flood in the Ilaje community, Bariga, Lagos State?".

Response	Frequency	Percentage (%)
Yes	40	40
No	60	60
Total	100	100

Source: Field survey, August 2026.

Table 8 shows that 60 respondents (60%) strongly agreed and 40 respondents (40%) agreed; no respondents disagreed or strongly disagreed.

Table 8. Responses to "Are construction activities, soil degradation, deforestation, overgrazing, faulty agricultural practices, urbanization and poor urban drainage causes of floods in the Ilaje community, Bariga, Lagos State?".

Response	Frequency	Percentage (%)
Strongly agree	60	60
Agree	40	40
Disagree	0	0
Strongly disagree	0	0
Total	100	100

Source: Field survey, August 2026.

Table 9 shows that 20 respondents (20%) strongly agreed, 50 respondents (50%) agreed, 15 respondents (15%) disagreed and 15 respondents (15%) strongly disagreed.

Table 9. Responses to "Can flood problems lead to insecurity in the Ilaje community, Bariga, Lagos State?".

Response	Frequency	Percentage (%)
Strongly agree	20	20
Agree	50	50
Disagree	15	15
Strongly disagree	15	15
Total	100	100

Source: Field survey, August 2026.

Table 10 shows that 30 respondents (30%) strongly agreed, 40 respondents (40%) agreed, 15 respondents (15%) disagreed and 15 respondents (15%) strongly disagreed.

Table 10. Responses to "Are there underlying causes of flood vulnerability of the people in the Ilaje community, Bariga, Lagos State?".

Response	Frequency	Percentage (%)
Strongly agree	30	30
Agree	40	40
Disagree	15	15
Strongly disagree	15	15
Total	100	100

Source: Field survey, August 2026.

Table 11 shows that 30 respondents (30%) strongly agreed, 40 respondents (40%) agreed, 15 respondents (15%) disagreed and 15 respondents (15%) strongly disagreed.

Table 11. Responses to "Is there a cultural impact on traditional patterns of life and work, family structures and authority, religious and tribal factors, archaeological factors and social networks of the people in the Ilaje community, Bariga, Lagos State?".

Response	Frequency	Percentage (%)
Strongly agree	30	30
Agree	40	40
Disagree	15	15
Strongly disagree	15	15
Total	100	100

Source: Field survey, August 2026.

Table 12 shows that 15 respondents (15%) strongly agreed, 15 respondents (15%) agreed, 30 respondents (30%) disagreed and 40 respondents (40%) strongly disagreed.

Table 12. Responses to "Can floods lead to agricultural deficiency, extensive damage to infrastructure, unemployment, sexual exploitation, starvation, death and others in the Ilaje community, Bariga, Lagos State?".

Response	Frequency	Percentage (%)
Strongly agree	15	15
Agree	15	15
Disagree	30	30
Strongly disagree	60	60
Total	100	100

Source: Field survey, August 2026.

Overall, 70% of the sample population have been engaged in research on the socio-economic impact of flood on the Ilaje community, Bariga area of Lagos.

A very high percentage of the sampled population confirmed that the study area, Bariga Local Council Development Area (LCDA) of Lagos State, is a slum, and the people of the study area are aware that poverty, hunger and crime are socio-economic impacts of flood. Human impacts on river catchments influence flood behaviour.

Land use changes in particular have a direct impact on the magnitude and behaviour of floods. Deforestation results in increased run-off and often a decrease in channel capacity due to increased sedimentation rates.

Seventy per cent of the sampled population also agreed that the causes of floods in the Ilaje community, Bariga, Lagos State, include construction activities, soil degradation, deforestation, overgrazing, faulty agricultural practices, urbanization and poor urban drainage; that flood problems can lead to insecurity; that floods can lead to agricultural deficiency, extensive damage to infrastructure, unemployment, sexual exploitation, starvation, death and other problems; and that there are underlying causes of flood vulnerability of the people in the Ilaje community, Bariga, Lagos State.

4.3 Discussion of findings and results

The study established that the Ilaje community, Bariga Local Council Development Area of Lagos, is a major area in Lagos State and has suffered a lot from flooding. The study shows that environmental practice is poor and needs to be improved. In the Ilaje community, Bariga, a very high percentage of the sampled population confirmed that the study area, Bariga LCDA of Lagos State, is a slum, and the people of the study area are aware that poverty, hunger and crime are socio-economic impacts of flood. Human impacts on river catchments influence flood behaviour. Land use changes in particular have a direct impact on the magnitude and behaviour of floods.

Seventy per cent of the sampled population also agreed that the causes of floods in the Ilaje community, Bariga, Lagos State, include construction activities, soil degradation, deforestation, overgrazing, faulty agricultural practices, urbanization and poor urban drainage; that flood problems can lead to insecurity; that floods can lead to agricultural deficiency, extensive damage to infrastructure, unemployment, sexual exploitation, starvation, death and other problems; and that there are underlying causes of flood vulnerability of the people in the Ilaje community, Bariga, Lagos State.

Furthermore, the residents of the study area now understand the need to participate in and celebrate tree planting, understanding that human activities in terms of infrastructural development are the major causes of flood, and that flood is also a major item on the United Nations Sustainable Development Goals (SDGs) agenda for 2030.

4.4 Test of hypothesis

The chi-square (χ^2) goodness-of-fit test was used to determine whether there is a significant difference between the observed and expected frequencies. The chi-square statistic is a measure of the discrepancy between the observed and expected frequencies:

H_0 : Flood has a great socio-economic impact on rural settlements.

H_1 : Flood does not have a great socio-economic impact on rural settlements.

The test statistic is given by Equation (1):

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} \quad (1)$$

where O_i is the observed frequency, E_i is the expected frequency and Σ denotes summation. The calculation is shown in Table 13.

Table 13. Chi-square test of the hypothesis.

Variable	Observed frequency (O)	Expected frequency (E)	$O - E$	$(O - E)^2$	$(O - E)^2/E$
Yes	80	33.3	46.7	2180.89	65.50
No	4	33.3	-29.3	858.49	25.78
I don't know	16	33.3	-17.3	299.29	8.98
Total	100	100	0	3338.67	100.99

Source: Field survey, August 2026.

Degrees of freedom = 3 - 1 = 2. From the chi-square table, the critical value at the 0.05 level is 7.815, and the calculated value is 100.99. Since the calculated value is greater than the tabulated value, we accept the null hypothesis and reject the alternative hypothesis, meaning that flood has a great socio-economic impact on rural settlements.

4.5 Answers to the research questions

Research question one: flood has a great socio-economic impact on rural settlements. Table 13 shows that, out of 100 respondents, 80 said yes, flood has a great socio-economic impact on rural settlements; 16 said no, flood has no great socio-economic impact on rural settlements; and 4 said they did not know. This simply means that flood has a great socio-economic impact on rural settlements.

4.6 Discussion of findings on the hypothesis

The hypothesis test showed that flood has a great socio-economic impact on rural settlements. All residents of this area must avoid illegal waste disposal and implement a proper drainage system in the area, or ultimately vacate that environment for conservation reasons.

5 Summary, recommendations and conclusion

5.1 Summary

This study examined the socio-economic impact of flood on the Ilaje community, Bariga area of Lagos. Floods are common natural disasters occurring in most parts of the world, resulting in damage and loss to human life and livelihood sources, deterioration of the environment and retardation of development. Hewitt (1997) explained that floods are the most common natural disasters that affect humans and their surrounding environment. In tropical regions, flooding of high magnitude that has resulted in serious consequences has been caused by heavy rainstorms, hurricanes, snow melt and dam failures (Jeb and Aggarwal, 2008).

Asia and the Pacific regions are the most vulnerable, and this has affected the social and economic stability of countries. The worst flooding in China, which occurred in 1998, affected 223 million

people; 3,004 people were reported dead, 15 million were homeless and the economic loss was over US\$23 billion for that year. The problem which this study addressed is the impact of floods on the socio-economic livelihoods of the people of the Ilaje community, Bariga area of Lagos State.

The study established that the Ilaje community, Bariga Local Council Development Area of Lagos, is a major area in Lagos State and has suffered a lot from flooding. The study shows that environmental practice is poor and needs to be improved. A very high percentage of the sampled population confirmed that the study area, Bariga LCDA of Lagos State, is a slum, and the people of the study area are aware that poverty, hunger and crime are socio-economic impacts of flood. Human impacts on river catchments influence flood behaviour. Land use changes in particular have a direct impact on the magnitude and behaviour of floods.

Floods become a major natural hazard because of the high human population densities that inhabit flood-prone lands. The direct impacts of a flood are closely related to the depth of inundation. The extent of a flood has a direct relationship with the recovery times of crops and pastures and the social and economic dislocation of populations. Floods are the most costly and wide-reaching of all natural hazards; they are responsible for up to 50,000 deaths and adversely affect some 75 million people on average worldwide every year.

This research shows that the residents now understand the need to participate in and celebrate tree planting, understanding that human activities in terms of infrastructural development are the major causes of climate change, and that climate change is a global problem and a major item on the United Nations Sustainable Development Goals (SDGs) agenda for 2030.

5.2 Recommendations

To reduce or correct this situation, the following are recommended:

1. The government should provide solutions meeting modern-day standards in terms of robotics, artificial intelligence and surveillance, and prioritize restructuring the ecology of the area for environmental sustainability.
2. The government should provide an enabling environment for environmental conservation practices and rigorous awareness programmes for the residents of the area to reduce anthropogenic pollution impacts.
3. Enforcement should prohibit illegal and environmentally unfriendly construction in the area that can lead to flooding.
4. The government should provide awareness on issues pertaining to flood, adaptation, intelligence and resilience.
5. The area should be environmentally monitored using drone technologies.
6. A proper environmental impact assessment (EIA) of the area should be conducted.

5.3 Conclusion

The legislation lacked teeth, and environmental damage continued to worsen. It should be remembered, though, that the flood control measures were introduced in the context of the main priority of promoting environmental, social and economic growth, and were therefore designed to avoid conflict with that overriding objective.

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