



THE IMPACT OF CLIMATE CHANGE-INDUCED DISASTER AND HUMANITARIAN RESPONSE ON FARMERS IN RURAL COMMUNITIES OF OYO STATE, NIGERIA

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ABSTRACT: *In low-income communities, climate change has intensified the occurrence and severity of environmental shocks, causing disproportionate damage to rural agricultural communities. Climate variability has induced a growing vulnerability among smallholder farmers in Nigeria, particularly in Oyo State, due to a lack of institutional support and insufficient access to climate risk mitigation tools. This study examines the complex interplay between climate-induced disasters, humanitarian response mechanisms, and farmer vulnerability in selected rural communities of Oyo State. The study employed a mixed-method approach, drawing data from 72 respondents who comprised farmers and humanitarian actors; structured questionnaires and key informant interviews were utilized. An analysis of the relationships among disaster experiences, preparedness, and institutional responses was conducted using descriptive statistics and inferential methods, particularly Chi-square tests. The study's findings showed that a majority of rural farmers are low-income males, with little to no access to information regarding climate preparedness information and early warning systems. The study found no significant correlation between climate disasters and farmer protection, mitigation strategies, or direct government intervention despite the existence of various governmental and non-governmental disaster management frameworks. Notwithstanding, respondents reported that there were notable inconsistencies in the humanitarian engagement and support from civil societies and local agencies. Identified as key challenges were issues like a lack of inter-agency coordination, a lack of post-disaster recovery mechanisms, insufficient funding for disaster mitigation, and poor policy implementation. Through these findings, the study infers that such gaps as these aggravate farmers' vulnerability and complicate efforts targeted at resilience-building. Policy-wise, the study recommends the strengthening of early warning communication through local education initiatives, improvements in multi-agency coordination, and the expansion of access to climate adaptation finance. Insight from past humanitarian appeals from countries most vulnerable to climate change, such as those in 2020, emphasize the need for inclusive and proactive disaster preparedness strategies, tailored to the local socio-economic realities of rural farming communities.*

KEYWORDS: Humanitarian response, Rural communities, Climate change, Climate-induced disasters, Emergency responses.



INTRODUCTION

Climate change impacts on agriculture are expected to increase due to greater climate variability and increased frequency and intensity of extreme events. Hundreds of millions of people worldwide are affected by humanitarian crises, including armed conflict, forced displacement, natural disasters, and major disease outbreaks. UN Under-Secretary-General for Humanitarian Affairs, Mark Lowcock, emphasized the need for action to support vulnerable communities, stating that humanitarian aid is only a temporary band-aid (United Nations, 2021). Therefore, this study highlights the link between climate-induced disaster and humanitarian response needs by the affected farmers in the rural areas of Oyo State.

Climate change and insecurity have led to economically devastating impacts on food and land use systems worldwide. Crop yields in northern Nigeria have dropped by 50% or more due to drought, flood, and man-made disasters. Climate variability and extremes are driving global hunger, with 25% of damage and losses in the agriculture sector (Sambo & Sule, 2023). Smallholder farmers need to be helped to mitigate climate change by practicing adaptation strategies that will enhance food production and lead to sustainable livelihoods. Climate change is driven by current flood and land use systems, which account for 21-37% of global greenhouse gas emissions (Shukla et al., 2019). According to Ibe & Amikuzuno (2019) and Okon et al. (2021), Nigeria is one of the world's most vulnerable countries to climate change, with a low level of adaptation and readiness. Climate change is predicted to reduce area productivity in sub-Saharan Africa by 14-27% by 2080, with an 18-32% decrease projected for Southeast Asia; therefore, an efficient and effective humanitarian response is crucial for positive outcomes in disasters. Accessing and implementing adaptation measures is also critical to better understanding farm households' beliefs, mitigation measures, and attitudes toward climate change.

Climate change significantly impacts farmers' lives, and the agricultural sectors of many countries face serious threats from climate change and disaster risk. To protect future agricultural production and livelihoods, adaptation strategies must be prioritised. Food production needs to increase to meet global demands, and adjustments in diets are necessary to prevent undernutrition and obesity (Akinagbe & Irohibe, 2014). The global population is expected to grow rapidly, with estimates of 9.4 to 10.1 billion by 2050 and an additional 0 to 0.7 billion people by 2100 (United Nations, n.d.).

Agriculture underpins the livelihoods of over 2.5 billion people worldwide. The population of sub-Saharan Africa is expected to reach 3.1 billion in 2100, almost 2.5 times what it is now and for this reason, the humanitarian response to climate and disaster risk in both public and private agricultural development programs is crucial. To this effect, Mirzabaev et al. (2023) and Kumar et al., (2022) opined that climate change is increasing the magnitude and frequency of extreme weather events, causing devastating effects on farms and negatively affecting farmers' lives and livelihoods. The number of farmers in need of humanitarian assistance due to climate-related disasters is projected to double to hundreds of thousands by 2050. Agriculture, a major contributor to economic growth, provides food security to prevent hunger and starvation. In the face of disasters, there is the looming threat of food insecurity. Climate change-induced disasters increase the frequency and severity of extreme weather events, reducing incomes and resilience of climate-vulnerable farmer communities. This leads to a growing need for humanitarian aid and mitigation strategies, as the scale of humanitarian needs



is increasing due to disaster attacks on farms and depletion in food production (Malhi, Kaur, & Kaushik, 2021).

However, the agricultural productivity of the food crop sector has stagnated over the last two decades due to a lack of humanitarian assistance for climate-induced disasters (Shimada, 2022). This has led to problems of diseconomies of scale, difficulty of mechanization, low profitability, high production costs, labour scarcity, low productivity, and marketing problems. The heavy dependence on rain-fed agriculture has also led to loss during droughts due to climate change. Enhancing the productivity and competitiveness of food crops is crucial for increasing sustainable food production and improving farm family income, ensuring household food and nutritional security and agriculture export earnings while conserving natural resources. Small-scale farmers in rural areas face challenges due to inadequate climate change adaptation in humanitarian organisations. In sum, Malhi, Kaur, & Kaushik (2021) and Oyekale et al. (2013) concluded that agricultural development programmes face escalating climate-related disasters, necessitating policy changes, operations, and communications. In essence, climate issues often contribute to humanitarian crises which negatively impact livelihoods and socioeconomic conditions.

Significance of the Study

The study highlights the importance of addressing the increasing frequency of natural hazards, conflicts, and attacks on farms in the rural areas of Oyo State, Nigeria. These challenges adversely affect agricultural development programs, food security, and the livelihoods of people in the impacted communities. The research aims to analyse the effectiveness of humanitarian interventions and responses to climate change-induced disasters in the agricultural sector of Oyo State. By focusing on selected local governments with significant donor intervention projects, the study seeks to provide valuable insights for policymakers, donor agencies, and humanitarian organisations. The scope of the study includes assessing the impact of disasters on agricultural development programs in the chosen areas and exploring ways to enhance preparedness, response, and mitigation efforts. This research is crucial not only for the farmers and communities directly affected but also for informing policies and strategies at both the state and national levels. By evaluating past interventions and their outcomes, the study aims to contribute to the scholarly debate on humanitarian response and disaster risk management related to agriculture in Oyo State. The findings of the study will assist stakeholders in better understanding the needs of the affected communities and improving the effectiveness of future interventions in addressing climate change-induced disasters in the agricultural sector.

LITERATURE REVIEW

The extant literature presents different but ultimately important perspectives about the impact of climate change on agriculture in developing countries. Developing countries like Pakistan, India, and Brazil experience unique challenges in this light, leading to problems like inconsistent temperatures, water scarcity, and extreme weather events (Mendelsohn, 2008; Nugroho, Prasada, & Lakner, 2023). According to Batool et al. (2023), farmers face risks due to heavy metal contamination from using wastewater for irrigation, highlighting the need for adaptation strategies and innovative agricultural practices. Interestingly, the sum of Dooley &



Grady Roberts' (2020) research highlighting the interconnections of climate change, agricultural sustainability, and community resilience implicitly underscores the importance of timely adaptation measures to protect livelihoods and ensure food security. A thought-provoking view by Jamshed et al. (2020) reveals that the spatial proximity of rural areas to cities often increases their vulnerability to flooding, constituting a significant environmental hazard for rural communities that focus on farming activities. In cause-and-effect fashion, Mirzabaev et al. (2023) argue that the major impact of climate change on the agricultural sector is the perpetuation of food insecurity and the concomitance of rural poverty. As a heuristic measure, Ugochukwu (2018) finds that lack of finance, inadequate information and absence of early warning systems are the bane of resilience-building for farmers affected by climate-change-induced disasters. Therefore, the importance of adaptation strategies for disasters caused by climate change cannot be understated as it defines the line between agricultural advancement and the threat of food insecurity.

In Nigeria, the humanitarian response is coordinated by the UN Humanitarian Coordinator, facing challenges such as lack of access, security risks, and funding constraints. Grace (2020) confirms that access to people in need is hindered by non-state armed groups, security threats, and bureaucratic hurdles, emphasizing the need for engagement with government and military officials. These challenges are aggravated by the fact that Nigeria is a developing country whose level of agricultural transformation is crucial for the country's development, emphasising the need for adaptation strategies in the face of climate change-induced disasters (Adama, Ohwofasa, & Ogunjobi, 2016). Vollset et al., (2020) confirmed that the international humanitarian system relies on funding from OECD nations for immediate life-saving assistance and rebuilding efforts after crises, with organisations like the UN and Red Cross playing key roles. Rehman et al. (2021) also stated that agricultural producers manage risks through federal risk management programs and evolving strategies in production and markets. Partners in the humanitarian response are selected based on needs, operational capacity, and expertise in areas such as protection, health, and food security.

Various organizations in Nigeria focus on delivering essential assistance like nutrition, health, Water, Sanitation, and Hygiene (WASH), and protection to vulnerable populations in conflict-affected areas, integrating protection and disaster preparedness into their programs. Recommendations from past conferences highlight the importance of promoting humanitarian values, disaster response, and preparedness in addressing climate change challenges. To that end, the statement was confirmed by Addison (2021), in a study carried out by IIED. Therefore, emergency response planning, business continuity planning, and federal risk management programs in agriculture help mitigate risks and ensure services are maintained during crises. Climate-resilient food and land use systems are crucial for global food security and climate change mitigation. Climate risk country profiles from the Philippines, Afghanistan, and Indonesia emphasize the vulnerability of agriculture to climate change impacts, focusing on addressing labour productivity, health, and adaptation technologies to mitigate risks in crop production. Emergency Management Theory is discussed as a tool to analyse and address disasters, recommending proactive measures to prevent, mitigate, respond to, and recover from disaster impacts, particularly on food security (Bryant, 2003; McEntire, 2021).



Methods

Research Design

This study adopted a mixed-methods approach, combining both quantitative and qualitative strategies to gain a comprehensive understanding of the impact of climate change-induced disasters and humanitarian responses on rural farming communities in Oyo State, Nigeria. Specifically, the study utilized a survey design complemented by a case study strategy within a phenomenological framework. The phenomenological approach aimed to capture how farmers subjectively experience climate-related events and humanitarian responses, focusing on lived experiences rather than causal explanations (Lindgren & Kehoe, 1981, as cited in Vaughn et al., 1986).

Study Area

The research was conducted in Oyo State, located in the southwestern region of Nigeria. Covering approximately 28,454 square kilometres, Oyo is Nigeria's 14th-largest state by land area. The region is predominantly agrarian, with favourable climate conditions supporting the cultivation of crops such as maize, yam, cassava, and cocoa. The state also benefits from natural resources such as clay, kaolin, and aquamarine, alongside livestock farming activities including cattle ranches and dairy production. Numerous state-sponsored agricultural development initiatives and federal institutions are present, further framing the agricultural landscape of the study area.

The rural areas of the state, which host a population of over 774,000 people and span 4,819 square kilometres of farmland, were selected due to their direct exposure to climate-induced challenges and limited institutional support.

Sampling and Participants

A purposive sampling technique was used to select 72 respondents, comprising smallholder farmers and humanitarian officials working within the rural communities. This sampling strategy ensured the inclusion of participants with direct experience of climate-related disasters and engagement with local or national humanitarian interventions.

Data Collection Methods

Primary data were collected through structured questionnaires, semi-structured interviews, and key informant interviews. The questionnaires captured demographic profiles, access to early warning systems, perceptions of disaster preparedness, and evaluations of institutional responses. Qualitative interviews explored deeper narratives around lived experiences, challenges, and coping strategies related to climate shocks and disaster response mechanisms.

Data Analysis

Quantitative data were analysed using descriptive statistics (frequency counts, percentages, means, and standard deviations) and inferential statistics, particularly Chi-square tests, to assess relationships between variables such as disaster exposure, preparedness levels, and institutional support. Qualitative data were thematically analysed to identify recurring patterns in the experiences and perceptions of farmers and humanitarian actors.



RESULTS AND DISCUSSION

The analysis in Tables 1-3 and Figures 1-5 presents data on the socioeconomic characteristics of respondents, including age group, tribe types, and the impacts of climate change-induced disasters. It also examines how humanitarian response considers disaster management variables like Preparedness, Mitigation, Response, Recovery, and Rehabilitation.

Table 1: Demographic Features of the Respondents

Respondents Factors	Frequency	Percentages	Valid Percentages	Cumulative Percentages
Gender of Respondent				
Male	45	78.9	78.9	78.9
Female	12	21.1	21.1	100.0
Marital Status				
Single	6	10.5	10.5	10.5
Married	49	86.0	86.0	96.5
Divorced	1	1.8	1.8	98.2
Widowed	1	1.8	1.8	100.0
Education of Respondent				
No formal education	1	1.8	1.8	1.8
Primary	8	14.0	14.3	16.1
Secondary	12	21.1	21.4	37.5
Certificate	14	24.6	25.0	62.5
Diploma	6	10.5	10.7	73.2
Degree	15	26.3	26.8	100.0
Respondents' Livelihood				
Employment full time	14	24.6	30.4	30.4
Self-employed	25	43.9	54.3	84.8
Part-time/Contract/Temporary	1	1.8	2.2	87.0
Casual	3	5.3	6.5	93.5
Unemployed	2	3.5	4.3	97.8
Pensioner	1	1.8	2.2	100.0
Respondent Real Job				
Farming	32	56.1	68.1	68.1
Trading	3	5.3	6.4	74.5
Government	6	10.5	12.8	87.2
Artisan	3	5.3	6.4	93.6
Unemployed	2	3.5	4.3	97.9
Student/Scholar/Child	1	1.8	2.1	100.0



Tribes of Respondent				
Yoruba	51	89.5	89.5	89.5
Benue	2	3.5	3.5	93.0
Bini	3	5.3	5.3	98.2
Hausa	1	1.8	1.8	100.0
Age Group of the Respondents				
18-24	5	8.8	8.9	8.9
25-34	3	5.3	5.4	14.3
35-44	22	38.6	39.3	53.6
45-54	11	19.3	19.6	73.2
55-64	13	22.8	23.2	96.4
65+	2	3.5	3.6	100.0

Field Survey, 2023

Most farmers in the study area are aged between 35-64 years, with 39.3% between 35-44 years, 19.3% between 45-54 years, and 22.8% between 55-64 years. This ageing population may be more vulnerable to farming risks. Most of the respondents are male (78.9%), indicating the predominance of males in farming in rural Nigeria. Most respondents are married (86.0%), and a significant portion have attained higher education levels, with 26% having a university degree. This reflects the trend of educated individuals turning to farming in Nigeria for agricultural transformation, evidenced by Adama, Ohwofasa. & Ogunjobi's (2016) suggestion. Many respondents are self-employed (54%), while 30.4% are full-time farmers. The small percentage of unemployed individuals (2.2%) highlights the importance of farming as a source of livelihood in the community. The majority of respondents have been in the local area for over 20 years, with the majority being Yoruba (89.5%).

Table 2: Climate Change-induced Disasters experienced by Correspondents and its effects

Respondents' Factors	Frequency	Percentages	Valid Percentages	Cumulative Percentages	
Common disasters/emergencies experienced in the past five years					
Floods	16	28.1	28.6	28.6	
Herdsmen Attack	13	22.8	23.2	51.8	
Fire	7	12.3	12.5	64.3	
Storm surges	2	3.5	3.6	67.9	
Disease outbreaks on crops and animals	8	14.0	14.3	82.1	
Drought	9	15.8	16.1	98.2	
Other (specify)	1	1.8	1.8	100.0	



Types of crops or animals affected by disaster					
Maize	36	63.2	63.2	63.2	
Cassava	13	22.8	22.8	86.0	
Yam	2	3.5	3.5	89.5	
Rice	1	1.8	1.8	91.2	
Poultry	1	1.8	1.8	93.0	
Fishery	3	5.3	5.3	98.2	
Cattle	1	1.8	1.8	100.0	
Personal rating of Respondents' living condition as a result of Disaster					
Poor	17	29.8	30.4	30.4	
Very Poor	29	50.9	51.8	82.1	
good	9	15.8	16.1	98.2	
Very good	1	1.8	1.8	100.0	
The number of people living with respondents as dependants in the family					
1 - 4	29	50.9	50.9	50.9	
5 - 8	20	35.1	35.1	86.0	
9 - 12	8	14.0	14.0	100.0	
Satisfied with current dwelling place					
Very satisfied	2	3.5	3.7	3.7	
Neither Satisfied nor Dissatisfied	10	17.5	18.5	22.2	
Very dissatisfied	8	14.0	14.8	37.0	
Dissatisfied	26	45.6	48.1	85.2	
Satisfied	5	8.8	9.3	94.4	
Don't know	3	5.3	5.6	100.0	
Other occupation engaged in to augment the effects of disaster					
Dry Cleaning	6	10.5	10.7	10.7	
Renters	7	12.3	12.5	23.2	
Labour work (Agbase)	32	56.1	57.1	80.4	
Artisans	11	19.3	19.6	100.0	
Income category per month of Respondent					
#5,000 - #10,000	7	12.3	12.5	12.5	
#10,001 - #15,000	3	43.9	44.9	57.4	
#15,001 - #20,000	11	19.3	19.6	77.0	
#20,001 - #25,000	10	17.5	17.9	94.9	
Over #30,000	25	5.0	5.1	100.0	

Field Survey, 2023



Access to assets affects livelihood strategies, with more choices leading to greater resilience to disasters. Disasters mainly damage farms (61.8%) rather than houses in the Oyo State area where rain-fed agriculture is common. Poor building materials increase vulnerability to flood disasters. The study shows that most respondents are farmers (68.1%) and engage in farming activities. Settlement preferences are influenced by the availability of land for farming or proximity to relatives. This confirms the findings of Jamshed et al. (2020) which show a positive relationship between the proximity of assets to disasters and their vulnerability.

The majority of respondents (50.9%) have 1-4 people in their households, while 35.1% have 5-8 people, indicating a heavy burden on the respondents in terms of dependants. Over 50% of respondents are living in poor conditions, reflecting a decline post-disaster. Climate change-induced disasters like heavy floods and herdsmen significantly impact farming activities, leading to poverty and food insecurity, corroborating the findings of Mirzabaev et al. (2023).

Maize and cassava crops are the most affected by climate change-induced disasters, leading to food insecurity. Respondents engage in alternative occupations like labour work to mitigate disaster effects. A large percentage (83.9%) of respondents do not have 24-hour warning devices for disasters, highlighting the importance of early warning systems. Sensitization and awareness programs by the government or NGOs are considered important for disaster preparedness by a majority of respondents. This is consistent with findings from Ugochukwu (2018), highlighting the essence of early warning systems as a pre-emptive tool to enhance the resilience of farmers vis-à-vis climate change-induced disasters.

Table 3: Emergency Management and Remedy to Climate Change Induced-Disasters Experienced by Correspondents

Respondents' Factors	Frequency	Percentages	Valid Percentages	Cumulative Percentages
Rate of Disaster or emergency management challenges addressed in the community				
Very well	2	3.5	3.6	3.6
Well	5	8.8	9.1	12.7
Neither good nor bad	12	21.1	21.8	34.5
Poorly	23	40.4	41.8	76.4
Very Poorly	9	15.8	16.4	92.7
Don't know	4	7.0	7.3	100.0



Rate of emergency preparedness handouts and other information distributed to the community on disaster or emergency management				
Yes	7	12.3	12.7	12.7
No	48	84.2	87.3	100.0
Participating in the disaster or emergency planning process as a community member				
Never	18	31.6	32.7	32.7
Once or twice	25	43.9	45.5	78.2
13 to 26 times	7	12.3	12.7	90.9
More than 26 times	5	8.8	9.1	100.0
Community has 24-hours-a-day warning devices				
Yes	9	15.8	16.1	16.1
No	47	82.5	83.9	100.0
The rate of sensitization or awareness from the government or NGO about likely disaster or humanitarian response of any kind				
Very important	16	28.1	29.6	29.6
Somewhat important	20	35.1	37.0	66.7
Not all important	7	12.3	13.0	79.6
Don't know	11	19.3	20.4	100.0
Assessment of the role of government in the community				
Very well	1	1.8	1.9	1.9
Well	4	7.0	7.5	9.4
Neither good nor poor	13	22.8	24.5	34.0
Poor	20	35.1	37.7	71.7
Very Poor	13	22.8	24.5	96.2
Don't know	2	3.5	3.8	100.0



Assessment of the community's overall disaster preparedness				
Very good	1	1.8	1.8	1.8
Good	9	15.8	16.4	18.2
Neither good nor poor	11	19.3	20.0	38.2
Poor	24	42.1	43.6	81.8
Very poor	10	17.5	18.2	100.0
Participating in the disaster or emergency planning process as a community member				
Never	18	31.6	32.7	32.7
Once or twice	25	43.9	45.5	78.2
13 to 26 times	7	12.3	12.7	90.9
More than 26 times	5	8.8	9.1	100.0
Ever received volunteer training in the past year				
Yes	24	42.1	43.6	43.6
No	31	54.4	56.4	100.0
Regular community meetings based on disaster preparedness with all stakeholders including officials				
Yes	21	36.8	37.5	37.5
No	35	61.4	62.5	100.0
Warning about imminent disasters				
Yes	14	24.6	25.5	25.5
No	41	71.9	74.5	100.0
Kinds of warning materials or information circulated in the community				
Pamphlet	5	8.8	18.5	18.5
Newspapers	2	3.5	7.4	25.9
Television	2	3.5	7.4	33.3
Radio	13	22.8	48.1	81.5



Municipal Officials	4	7.0	14.8	96.3
Other (specify)	1	1.8	3.7	100.0
Major precautionary measures identified in the farm				
Yes	19	33.3	35.8	35.8
No	34	59.6	64.2	100.0
Adequate protection from fire and flood				
Very Safe	4	7.0	7.3	7.3
Very Unsafe	18	31.6	32.7	40.0
Neither safe nor unsafe	10	17.5	18.2	58.2
Unsafe	15	26.3	27.3	85.5
Safe	8	14.0	14.5	100.0

Field Survey, 2023

The International Federation of the Red Cross defines disasters as events exceeding the coping capacity of individuals and communities, leading to damage and disruption. Proper disaster management requires early warning and awareness creation. Ensuring information availability on disaster preparedness is crucial for community resilience. Despite the challenges posed by climate change-induced disasters, efforts are being made by individuals and communities to adapt and mitigate the impacts (Dooley & Grady-Roberts, 2020).

Table 3 indicates that 83.9% of respondents disagree that the community has twenty-four-hour warning devices, highlighting a lack of information available to villagers about preparedness and warning on disasters. The Disaster Management Act defines a disaster as an event that exceeds individuals' and communities' coping capacity, underscoring the need for early warning systems. Further, 37% of respondents consider government or NGO sensitization on disasters somewhat important, while 29.6% view it as very important. Twenty per cent claim ignorance, and 13% do not see the need for such awareness. Table 4.20 shows that close to half of respondents believe the community's disaster preparedness is poor, with 20% expressing neither good nor poor assessment, and 18.2% rating it as very poor.

The table also reveals that 37.7% of respondents rate the government's role in community disaster preparedness as poor, with 24.5% rating it as neither good nor poor, and another 24.5% rating it as very poor. Disaster relief involves responding to disaster events and providing aid to affected individuals, which is primarily the responsibility of the government and NGOs. In addition, 45.5% of respondents report minimal involvement in disaster planning, with 32.7% claiming to not participate, highlighting the importance of community-driven decision-making. Table 3 shows that 56.4% of respondents have not received volunteer training in the past year, affecting their ability to give appropriate responses to disasters. In the same light, Table 3 reveals that 61.4% of respondents have not attended regular community meetings on disaster preparedness, emphasizing the need for stakeholders to be familiar with disaster preparedness. Over 40% of respondents in Table 3 believe that disaster management challenges are poorly

addressed in the community, with 21.8% expressing neutral opinions and 16.4% rating it as very poor.

Furthermore, the table shows that emergency preparedness handouts and warnings about imminent disasters are lacking in the community, leaving residents exposed to climate-induced disasters. The table further indicates that radio, pamphlets, and municipal announcements are sources of disaster warnings for 48.1%, 18.5%, and 14.8% of respondents, respectively. In addition, 64.2% of respondents report a lack of major precautionary measures on their farms, while 35.8% acknowledge the presence of such measures. In other words, many residents feel unsafe from exposure to climate change-induced disasters due to the absence of farm protection measures and information to mitigate disasters. Finally, the table demonstrates that 48.1% of respondents are dissatisfied with their living conditions due to uncontrolled exposure to disasters. Furthermore, respondents highlight the importance of nutrition, housing, health, water, sanitation, electricity, transport, education, clothing, and employment as essential needs they lack due to disasters.

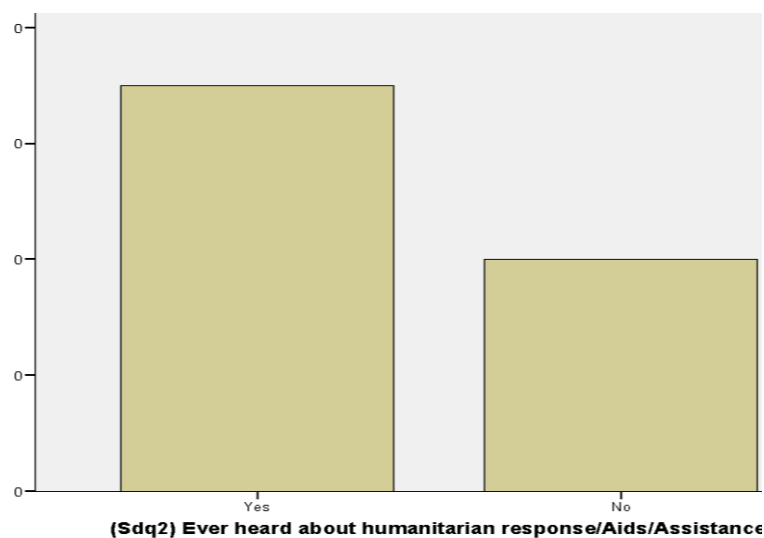


Figure 1

Figure 1 above shows that most affected farmers do not have pre-existing knowledge of either humanitarian response or assistance.

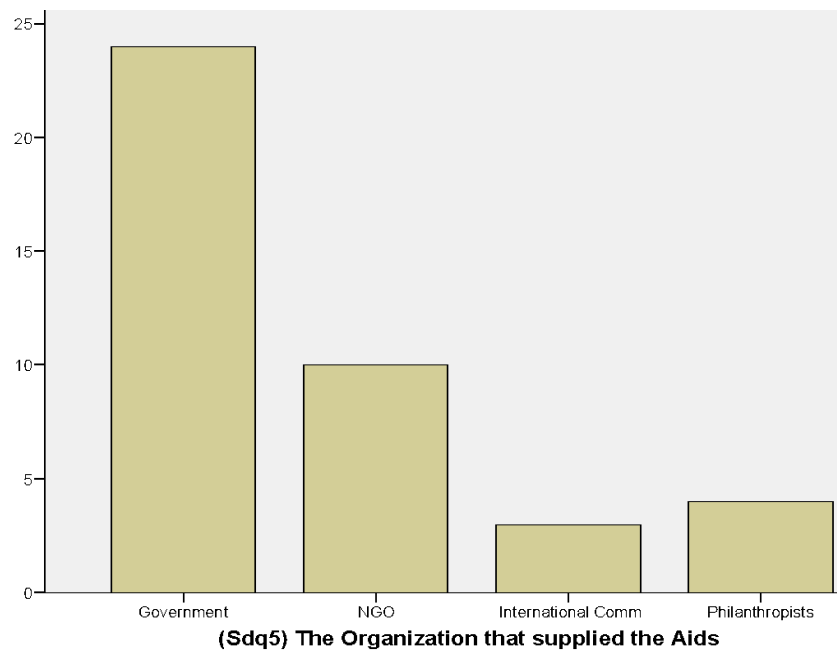
**Figure 2**

Figure 2 reflects that the little humanitarian aid obtained so far is mainly through the government.

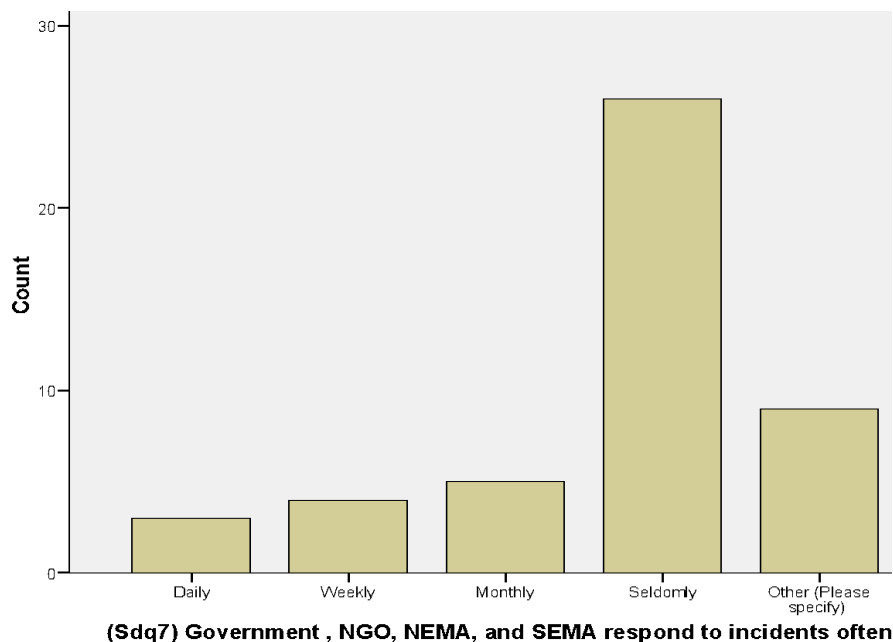
**Figure 3**

Figure 3 shows that the humanitarian agencies seldom come to their aid.

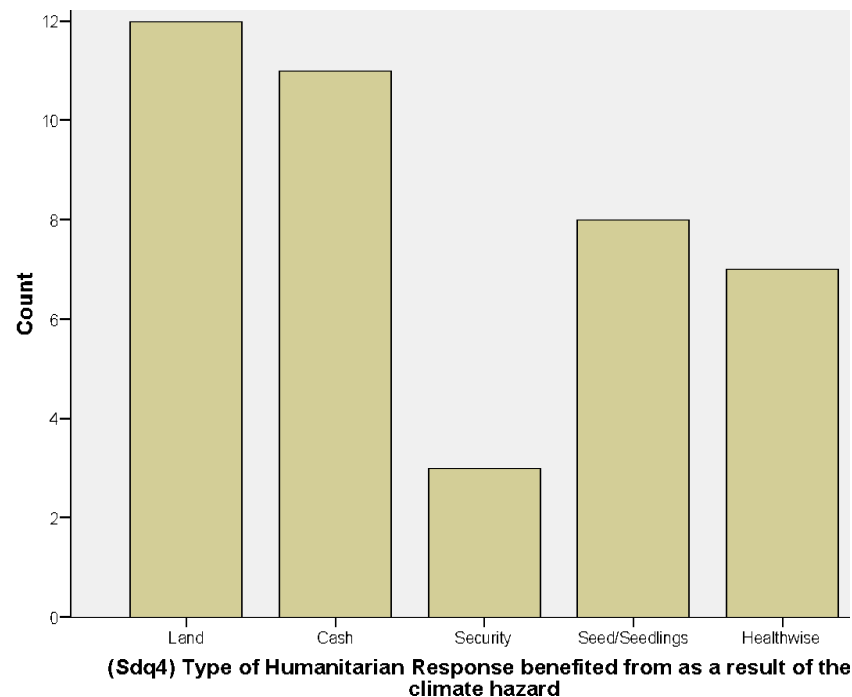


Figure 4

Land and cash formed the major humanitarian response benefited by farmers as a result of climate change-induced disasters experienced as reflected in Figure 4 above.

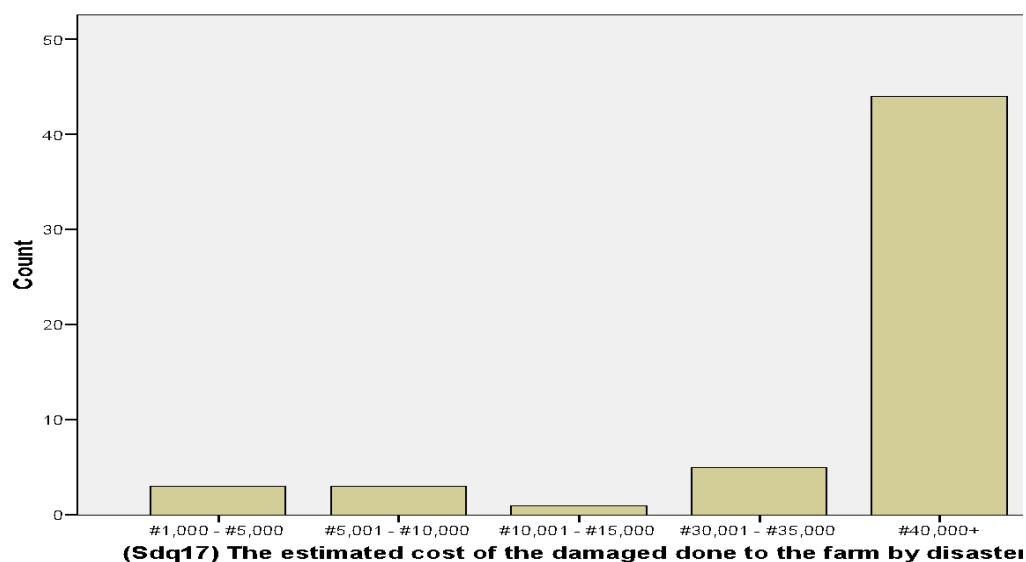


Figure 5

Farmers lost huge amount of property above forty thousand naira as at the time of data collection as reflected in Figure 5.

Table 4: Rate of the role of civil society during and after the disaster

												Chi-square	df	P
		Very important		Somewhat important		Not at all important		Don't know		Total				
		N	%	N	%	N	%	n	%	N	%			
Municipal officials	Yes	3	2.1%	1	0.7%	5	3.6%	1	0.7%	10	7.1%	7.923	3	0.048*
	No	71	50.7%	19	13.6%	39	27.9%	1	0.7%	130	92.9%			
Police	Yes	18	12.9%	8	5.7%	22	15.7%	1	0.7%	49	35.0%	8.476	3	0.037*
	No	56	40.0%	12	8.6%	22	15.7%	1	0.7%	91	65.0%			
Health workers	Yes	2	1.4%	1	0.7%	1	0.7%	0	0.0%	4	2.9%	0.450	3	0.930
	No	72	51.4%	19	13.6%	43	30.7%	2	1.4%	136	97.1%			
NEMA/SEMA	Yes	2	1.4%	1	0.7%	2	1.4%	0	0.0%	5	3.6%	0.476	3	0.924
	No	72	51.4%	19	13.6%	42	30.0%	2	1.4%	135	96.4%			
Fire fighters	Yes	61	43.6%	18	12.9%	37	26.4%	1	0.7%	117	83.6%	2.322	3	0.508
	No	13	9.3%	2	1.4%	7	5.0%	1	0.7%	23	16.4%			
NGOs	Yes	39	27.9%	12	8.6%	9	6.4%	2	1.4%	62	44.3%	16.770	3	0.001*
	No	35	25.0%	8	5.7%	35	25.0%	0	0.0%	78	55.7%			

Field Survey, 2023

**p<0.01

*p<0.05

Table 4 shows a significant correlation between the ratings of civil society and municipal officials, police, and NGOs at different levels of significance. It also reveals the percentage of respondents rated each group as unimportant, somewhat important, or very important. The data highlights the varying importance placed on these institutions by the respondents in the study.

CONCLUSION

The research findings showed no significant relationship between disasters and farmers' protection. Mitigation information and preparedness handouts did not impact preparedness. The study highlighted the role of government, civil society, and NGOs in assisting disaster victims. The farmers face physical vulnerability due to socioeconomic conditions, lack of consultation, and disruptions in agriculture. Climate change-induced disasters threaten agriculture in Oyo State, impacting farmers' livelihoods. Vulnerabilities vary among farmers, with farmlands and products affected by floods. Adaptive capacities vary, with challenges in early warning systems and insurance, leading to heavy losses. Recommendations include improving drainage systems, weather broadcasts, security, and warning systems. Challenges in humanitarian responses include insufficient resources, corruption, political interventions, and lack of coordination. Lack of public education and awareness, poverty, and political involvement contribute to challenges in humanitarian efforts. The study also found a lack of a



humanitarian response plan, coordination issues, and mismatches between expectations and aid distribution. The absence of a response plan document and clear guidance poses challenges for practitioners during disaster relief. Legislation or policies are also missing, hindering disaster response implementation.

SUMMARY

Disasters like floods, fires, and extreme temperatures affect rural areas of Oyo State due to poor disaster management knowledge. Farmers suffer economic instability and property loss without insurance. Therefore, Prevention, response, and recovery efforts are crucial while collaboration among NGOs, government entities, and professionals in legal, social, and built environments is needed for effective disaster management.

The study found no significant relationship between farmer protection, mitigation information, and preparedness. However, government officials, civil society, and NGOs play a crucial role in providing assistance post-disaster. Challenges faced by farmers include inadequate planning policies and practices affecting agriculture activities like crops and fisheries.

RECOMMENDATIONS

Recommendations include government intervention in drainage systems and weather forecasts, security measures against cattle destruction, and a comprehensive humanitarian response plan to address resource shortages and coordination issues. Proactive measures are essential to improve disaster management strategies and protect farmers in rural communities. Cooperation between government, NGOs, and communities is key to ensuring long-term resilience and support for farmers affected by disasters.

AREA OF FURTHER STUDIES

Future studies in Oyo State should focus on the agrarian local governments in the State, examining the impact of disasters on rural and urban populations. Research should also consider public involvement in preparedness planning, GIS applications, legal liability, and intergovernmental tensions in disaster management. Additionally, investigating traditional leadership structures and indigenous knowledge in disaster management is recommended for future research.



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