

THE PROBLEMS INDUCED BY GLOBAL WARMING ON THE ECONOMY OF EKPOMA, EDO STATE, NIGERIA

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Abstract: *This paper investigates the problems induced by global warming on the economy of Ekpoma, Edo State, Nigeria. Global warming refers to the long-term rise in the average temperature of the earth's climate system, primarily driven by increased greenhouse gas emissions from human activities. Global warming is caused by natural events and human activities believed to be contributing to an increase in average global temperature. The specific objectives of this paper are to: examine the major causes of global warming in Ekpoma, the major problems induced by global warming on the economy of Ekpoma, assess the level of awareness of the inhabitants on the problems induced by global warming on the economy of Ekpoma, and identify the existing mitigating and coping strategies for alleviating the problems induced by global warming on the economy of Ekpoma. In order that these stated objectives are achieved, data were collected from both primary and secondary sources. The primary data were collected from the field through the administration of questionnaires and the conduct of personal oral interviews and personal observations in the field. The projected population of Ekpoma in 2025 at 2.5% growth rate is 176,089 persons. Out of this population, four hundred (400) respondents (sample population) which represent point two three percent (.23%) of the entire population in the study area were considered.. The data collected from the field were analyzed using frequency, tables and percentages. From the analyses, the paper depicts that burning of fossil fuels, deforestation, bush burning, urbanization, modern agricultural practices and industrial emissions are the major causes of global warming. In addition, it reveals that shortage of food (the most serious), emergence and spread of diseases, devaluation of infrastructure, seasonal bushfires,*

seasonal flooding, and shortage of water are the major problems induced by global warming on the economy of Ekpoma. The findings also show that more than half of the sample population possesses a very high level of awareness on the problems induced by global warming on the economy of Ekpoma. The mitigation and coping strategies on the problems induced by global warming on the economy of Ekpoma include: intensive farming/practicing of climate-smart agriculture, enhancing water conservation techniques, the use of alternative sources of power, evacuation of blocked drains; effective community awareness/sensitization, regular and effective immunization, hygiene, sanitation, and improving cultural practices, such as proper drainage and canopy management that are able to mitigate the risks induced by variable weather conditions. The paper concludes by advocating for the implementation of the recommendations, policy interventions and carrying out further researches on the subject matter to keep the people updated.

1 Introduction

Global warming, defined as the long-term increase in Earth's average surface temperature due to anthropogenic greenhouse gas emissions, presents a growing threat to local economies, particularly in climate-sensitive regions like Ekpoma, Edo State, Nigeria. As emphasized by Masson-Delmotte *et al.*, (2021) in the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, global warming is already causing more frequent and intense weather extremes such as heatwaves, heavy rainfall, and droughts, all of which have direct implications for rural economies dependent on natural resources. Ekpoma, located in southern Nigeria within the Esan West Local Government Area, is predominantly agrarian, with many inhabitants engaged in subsistence and small-scale commercial farming, alongside trading and education-related services anchored by the presence of Ambrose Alli University (Ede,

(2023). According to Ede, (2023) and NIMET, (2023), the town's geographical location in the tropical rainforest belt makes it highly vulnerable to the impacts of shifting climate patterns, such as increasingly unpredictable rainfall, prolonged dry spells, and occasional flooding-each of which disrupts agricultural productivity, damages infrastructure, and destabilizes local market dynamics.

The economic impact of global warming on the economy of Ekpoma is increasingly evident. Studies have shown that Nigeria's agricultural sector, which contributes nearly 25% of GDP and employs over 70% of the rural population, is among the most exposed to global warming risks in sub-Saharan Africa (Olomola, 2022; FAO, 2023). In Ekpoma, Edo State, Nigeria farmers over the years have observed decline in yields due to erratic rainfall, heightened temperature, pest invasions, and soil degradation, which align with findings by Ogunbameru *et al.*, (2021) that

global warming reduces crop output and rural income, while increasing food insecurity and poverty. As agricultural productivity declines, the local economy suffers downstream effects: market activities diminish due to reduced supply, food prices rise, and household expenditures on healthcare and food increase. Rising temperatures and humidity have also contributed to the spread of vector-borne diseases such as malaria and waterborne illnesses following seasonal flooding, which, as documented by Eze *et al.*, (2023) and WHO, (2023) reduce labor productivity and increase the burden on local health systems.

Ekpoma's economic drivers which are farming, petty trading, education-related services, and small-scale agro-processing are increasingly interconnected with environmental risks. With over 60% of the population reliant on farming as their primary source of income, any disruption in climate stability directly impacts household economies and the broader local market system. The degradation of farmlands and road infrastructure during rainy seasons limits transportation of goods to local markets, leading to supply chain breakdowns and income losses for traders. (Ede, (2023) and Olayide *et al.*, (2023) observed that the compounded effects of global warming on food production, logistics, and health systems threaten Nigeria's broader economic stability and local development. Moreover, increased climate-related migration from rural to urban centers in search of alternative livelihoods has become more pronounced. Ekpoma is experiencing this

transition, with many youth abandoning agriculture due to reduced profitability and moving toward informal urban jobs, which is consistent with findings by Nnaji and Anigbogu (2022) on climate-induced displacement in Nigeria.

Despite these risks, public awareness and proactive attitudes toward global warming in Ekpoma, Edo State, Nigeria remain limited. Global warming is often perceived as a natural occurrence rather than a result of human activity, reducing motivation to adopt mitigation or adaptation strategies. The lack of climate education in local institutions, limited access to agricultural extension services, and insufficient governmental support compound the problem. However, recent national policy shifts, such as the implementation of Nigeria's Climate Change Act (2021), offer a legal framework for integrating climate adaptation into sub-national planning, though practical application at the local level remains weak (Abdulkareem & Ibrahim, 2023).

2. Statement of the Problem

Global warming has emerged as a critical environmental challenge with profound economic consequences, particularly for communities that depend on climate-sensitive livelihoods. In Ekpoma, Edo State, the local economy is primarily driven by small-scale agriculture, informal trading, and education-related services. However, the increasing frequency of extreme weather events such as irregular rainfall, rising temperatures, and seasonal flooding have begun to disrupt these

economic activities. Farmers report declining crop yields, reduced soil fertility, and an increased prevalence of pests and diseases, all of which lead to unstable food supply and rising local food prices. These changes directly affect household income, market participation, health and general economic well-being ((Ede, 2023; Olayide *et al.*, 2023).

The economic disruptions linked to global warming are not limited to agriculture alone. Poor road infrastructure, often damaged by heavy rainfall and erosion, further constrains trade and access to markets. Additionally, health challenges related to global warming, including the spread of waterborne and heat-related illnesses, increase household medical costs and reduce workforce productivity (Eze *et al.*, 2023; NIMET, 2023; WHO, 2023). According to Nigeria's Climate Change Act (2021), & Ede, (2023), these problems are intensified and stultified by limited public awareness, low adoption of climate-smart practices, and the absence of structured climate adaptation policies at the local level.

From the above, it is clear that several studies have been carried out as regards the problems of global warming on the economy. Specifically, Okolo *et al.*, (2021) investigated the influence of environmental degradation on local economic development in Nigeria. Their analysis revealed a moderate yet statistically significant negative relationship between greenhouse gas emissions and sub-national economic performance. The study highlighted how unregulated emissions from bush burning, fuel wood consumption, and

deforestation not only contribute to global warming but also impose a cost on productivity and public health.

In a similar vein, Aigbedo & Omoruyi (2023) examined the macroeconomic effects of global warming in Nigeria using time-series data from 1981 to 2021. Their findings revealed a significant long-term negative relationship between carbon emissions and economic growth, suggesting that the nation's development is hindered by rising environmental stress. Though the study is national in scope, its implications are starkly visible in developing climes, possibly Ekpoma, where smallholder farmers are already reporting lower crop yields due to erratic weather patterns. In such areas, economic stagnation is compounded by underdeveloped infrastructure and limited investment in climate resilience.

Similarly, Udoinyang (2025) explored the relationship between ecosystem changes and economic wellbeing in Nigeria. Using a mixed-method approach involving rural communities across several states, including Edo, the study found that climate-induced water shortages, heat stress, and biodiversity loss directly reduce household earnings and increase health-related costs. Owing to the above, there is therefore, a pressing need to understand how global warming affects local economies including that of Ekpoma, where vulnerability is high and resilience is weak. While national policies on climate change exist, their translation into localized action remains inadequate. The gap between policy and practice, combined with socio-economic and infrastructural constraints,

continues to expose Ekpoma to the long-term risks of environmental and economic instability. This current research seeks to examine the specific problems induced by global warming on the economy of Ekpoma, assess the mitigation and coping mechanisms, as well as propose evidence-based recommendations for enhancing climate resilience in the community.

Available literature on the impact of the problems induced by global warming on the economy of Ekpoma, Esan West Local Government Area, Edo State, Nigeria, (some of which were reviewed in this paper), revealed that virtually all of them focused attention on closely related areas only so, bringing about a gap, that is, the problems induced by global warming on the economy of Ekpoma, Edo State, Nigeria. This non-existent situation of the above subject matter represents the research gap which this current paper intends to fill.

3. Aim and Objectives

The overall aim of this paper is to investigate the problems induced by global warming on the economy of Ekpoma, Esan West Local Government Area, Edo State, Nigeria. The specific objectives include to:

- i examine the major causes of global warming in Ekpoma
- ii examine the major problems induced by global warming on the economy of Ekpoma.
- iii assess the level of awareness of the inhabitants on the problems induced by global warming on the economy of Ekpoma;
- iv. identify the existing mitigating and coping strategies for alleviating the effects of the

problems induced by global warming on Ekpoma.

4. The Study Area

The study area is Ekpoma. It is one of the seven clans that constitute Esan West Local Government Area of Edo State, Nigeria (Eseigbe, 2011 and Ehisuoria, 2012; Ehisuoria & Ilenre, 2018). Ekpoma lies approximately within latitude $06^{\circ} 04'$ and $06^{\circ} 45'$ North of the Equator and longitude $06^{\circ} 05'$ and $06^{\circ} 10'$ East of the Greenwich Meridian (Ojiefo, 2005; Eseigbe, 2011). The study area comprises of twelve (12) communities which are Eguare, Emaudo, Ujoelen, Ukpenu, Uhiele, Illeh, Emuhi, Iruekpen, Uke, Ihumudumu, Idumebo and Ujemen.

Ekpoma is located in the humid tropics. It has the humid tropical climate characterized by wet and dry seasons. The climate is controlled by the position of the Inter Tropical Convergence Zone (ITCZ). The Northerly and the Southerly movements of the ITCZ throughout the year is marked by onset of the wet and dry seasons (Eseigbe, 2011). The hottest period of the year in the study area is recorded between January and March (34°C) while the lowest temperature is recorded between June and July (24°C).

The soils in Ekpoma are ferri soils on loose sandy sediments. These soils are less leached and consequently retain water and encourage agricultural practices. The soils encourage and support the production of food and cash crops.

The economic activities of the people of Ekpoma encompass agricultural and non –agricultural sectors. The agricultural sector includes crops

cultivation, and animal grazing. The crops cultivated include food crops such as yams, maize, cocoyam, pepper, plantain, banana, pineapple, and cash crops such as oil palm, cocoa, cashew, pear, orange and ducanut. The animals domesticated are goats, dogs, cows and sheep. Poultry farming is also a famous agricultural activity carried out by the people of Ekpoma. The non –agricultural sector is industrialization. The industrial sector of Ekpoma is comprised of both agro and non –agro based industries. The agro-based include cassava grating and processing, rice processing and milling, vegetable oil processing and palm oil milling. The non agro-based industries in the study area encompass block moulding, black smiting, welding, vulcanizing, hair dressing, entertainment/hospitality, banking industries and amongst others (Eseigbe, 2011; Ehisuoria, 2012; Ehisuoria & Ilenre, 2018).

The population of Ekpoma is relatively high. The 1991 population census estimated the population of Ekpoma at 45,488 persons. The population of the study area in 2006 population census rose astronomically (though the figures for the locality are not made available by the National Population Commission (NPC). However, the population census conducted in 2006 estimated the population of Ekpoma at 127,718. Today (2025), the population of Ekpoma is estimated to be 176,089, at 2.5% growth rate. Ekpoma has over 70% of the total population of Esan West Local Government Area because of the pull factor of Ambrose Alli University which is located in the study Area. The population of Ekpoma is made

up of indigenes as well as non indigenes (Ojiefu, 2005; Eseigbe, 2011; Ehisuoria & Ilenre, 2018). The non indigenes are the immigrants who are either staff or students of Ambrose Alli University, Ekpoma, Staff of Irrua Specialist teaching Hospital, Staff of Esan West Local Government Council, Ministries and parastatals. The other non indigenes are the workers employed by trading activities and industries located to service the University such as the banks, private schools, and hotels (Ojiefu, 2005; Ehisuoria, 2012; Ehisuoria & Ilenre, 2018).

5. Conceptual Issues, Theoretical and Literature Reviews

5.1 Conceptual Issues

Global warming, a long-term rise in Earth's average surface temperature primarily caused by human activities such as fossil fuel combustion and deforestation, has far-reaching economic consequences, especially for low-income, agriculture-based economies in sub-Saharan Africa (Masson-Delmotte *et al.*, 2021). In Nigeria, agriculture remains a vital sector, providing livelihoods for over 70% of the rural population and contributing significantly to food security and local economies (Olomola, 2022). Ekpoma, a semi-urban town in Edo State, is highly dependent on agriculture and informal trade, making it particularly vulnerable to climate-induced disruptions such as rainfall variability, rising temperatures, and flooding.

One key conceptual focus in recent literature is the effect of global warming on agricultural productivity and economic activities. Global warming leads to unpredictable rainfall patterns,

increased evapotranspiration, and a higher prevalence of crop pests and diseases, all of which reduce yields and increase the cost of production (Ogunbameru *et al.*, 2021; Ede, 2023). According to Nwafor & Anyanwu (2023), temperature increases of even 1-2°C can shorten growing seasons and cause severe yield losses in staple crops like maize and cassava, which are widely cultivated in Ekpoma. Reduced output translates into decreased income for farmers, higher food prices, and disrupted market dynamics, threatening the broader local economy.

Another critical area of concern is awareness and perception of global warming among local populations, which shapes their readiness and ability to respond. Research by Eze *et al.*, (2023) noted that awareness of global warming in many rural Nigerian communities remains low, with a significant portion of the population attributing changing weather patterns to natural causes rather than human activities. Factors influencing awareness levels include education, access to information, and extension services (Adepoju *et al.*, 2022; Nwafor & Anyanwu, 2023).

The third conceptual issue is the assessment of local coping strategies and sustainable adaptation measures. Communities across Nigeria have developed indigenous strategies to cope with global warming and climate variability, such as mixed cropping, early planting, and seasonal migration (Nnaji & Anigbogu, 2022; Aigbedo and Omoruyi, 2023). However, the effectiveness of these strategies is declining due to the increasing intensity and frequency of

extreme weather events. Studies by Olayide *et al.*, (2023) emphasized the need for community-based adaptation approaches that incorporate both traditional knowledge and modern climate-smart techniques, such as the cultivation of drought-resistant seeds, agro-forestry, and water conservation technologies such as rain water harvesting, sinking of bore holes, artificial recharge and so forth. In most areas, adaptation remains largely informal, with limited support from governmental or Non-Governmental Organisations (NGO) to scale up sustainable solutions.

Moreover, the link between global warming and rural-urban migration is becoming more evident and alarming. As farming becomes less viable, young people in most Nigerian communities (including Ekpoma) are increasingly migrating to urban centers, contributing to labour shortages in rural areas and increasing pressure on urban infrastructure (Ajaero & Onokala, 2020). This migration, often as a last resort, reflects the deepening vulnerability of rural economies under climate stress and highlights the urgent need for inclusive economic and environmental planning at the local level.

On the whole, the conceptual understanding of global warming's economic impact-especially in most Nigerian towns must integrate environmental science, social awareness, and development economics. The literature strongly supports a multi-dimensional framework that includes climate impact assessment, education, adaptive capacity, and institutional support as

key components for building resilience at the community level.

5.2 Theoretical Review

From the point of view of the scientists, global warming is a term that was introduced or used for the first time by geochemist/climatologist, Wallace Broecker of Columbia University's Lamont-Doherty Geological Observatory, (1975) in his article "*Climatic Change: Are we on the Brink of pronounced Global warming?*" Global warming to a scientist, describes the recent average global surface temperature increase from human emissions of greenhouse gases. Global warming is the observable increase in the global temperature of the earth (both land and water). Climate change is the effect brought about by the process of warming globally or in general, it is the overall long-term change in climate, including sea level rising, extreme weather, and ocean acidification. However, the term global warming and climate change are used interchangeably but there is a marked difference between them. Global warming is more sensitive and more diverging which results in less advocacy by some subpopulations (Poyntin, & Rivault, 2024). Furthermore, Krauss, (2021) & Letta, *et al.*, (2024), argued that just because there is an anomalous cold day in Washington, DC does not mean that global warming is not happening. Likewise, just because there is an ultra-hot week in Washington, DC also does not invalidate global warming. These submissions above indicate that global warming is recent, global and inducing multifaceted problems.

The study of global warming and the economic problems it induces can better be understood through several theoretical lenses that explain environmental change, human behavior, and socio-economic adaptation. Prominent among these are the Vulnerability Theory, Sustainable Livelihoods Framework (SLF), and the Theory of Planned Behavior (TPB). These theories provide a robust foundation for analyzing how most Nigerian communities such as Ekpoma experience, perceive, and respond to the economic consequences of global warming.

The Vulnerability Theory is central to understanding the degree to which a system or population is susceptible to, or unable to cope with, the adverse effects of climate change. According to Adger (2006), vulnerability is a function of exposure, sensitivity, and adaptive capacity. In the context of Ekpoma, the town's dependence on rain-fed agriculture, poor infrastructure, and limited institutional support increase its exposure and sensitivity to climate shocks such as erratic rainfall, high temperature, and flooding. Low adaptive capacity due to poverty, lack of awareness, and insufficient public investment further stultify economic vulnerability. This theory emphasizes that vulnerability is not just an environmental issue but a socio-economic construct shaped by governance, inequality, and access to resources (Turner et al., 2003; FAO. (2023) ; WHO, 2023). Therefore, applying vulnerability theory helps this paper assess not just the physical impacts of global warming, but the structural conditions that limit economic resilience in Ekpoma.

The Sustainable Livelihoods Framework (SLF), developed by the Department for International Development (DFID, 1999), offers another critical perspective by analyzing how households use different forms of capital human, natural, physical, social, and financial-to sustain livelihoods in the face of environmental and economic stress. The SLF is particularly relevant to understanding Ekpoma's economy, where households rely on natural capital (land, water) and human capital (labor, knowledge) for agricultural and other economic activities. Global warming depletes these capitals e.g., through land degradation, loss of biodiversity, and ill health thus undermining livelihood sustainability. Ellis (2000) further observed that diversification strategies, such as engaging in petty trading or seasonal migration, are key responses to livelihood shocks. This aligns with observations in Ekpoma, where climate-induced instability in farming pushes households toward non-farm income sources. The SLF allows this paper to investigate the strength and diversity of livelihood systems and to propose context-specific adaptation strategies.

In addition, the Theory of Planned Behavior (TPB), Ajzen (1991), is useful in assessing the behavioral dimension of climate response. The TPB posits that an individual's intention to act (e.g., adopt climate-smart practices) is influenced by their attitude toward the behavior, perceived social norms, and perceived behavioral control. This theory is particularly relevant in explaining why many residents of Ekpoma may not take proactive steps to address global

warming, even when they are aware of its impacts. For example, if farmers believe that adopting new practices is costly or socially unsupported, or that the government is responsible for action, their likelihood of engaging in adaptation declines. Applying TPB helps this paper understand how cognitive, cultural, and institutional factors shape public attitudes toward global warming and the adoption of sustainable practices.

These theories provide a multidimensional analytical framework. Vulnerability Theory helps assess structural risks and socio-economic exposure; the Sustainable Livelihoods Framework explains how climate change disrupts household economies and coping strategies; and the Theory of Planned Behavior expands on community awareness, motivation, and behavioral responses. Integrating these theories enables a comprehensive understanding of how global warming affects the economy of Ekpoma and how the mitigating and coping strategies can be enhanced.

5.3 Empirical Review

Global warming presents a growing challenge to local economies, particularly in developing regions heavily dependent on agriculture and natural resources. Ekpoma, a town in Edo State, Nigeria, is one such community where the effects of global warming are increasingly evident. Rising temperatures, unpredictable rainfall patterns, and land degradation are significantly impacting agricultural productivity, food security, and household incomes. Several

empirical studies conducted within Nigeria and its sub-regions provide a useful foundation for understanding the problems induced by global warming on the economy of Ekpoma.

Aigbedo and Omoruyi (2023) examined the macroeconomic effects of climate change in Nigeria using time-series data from 1981 to 2021. Their findings revealed a significant long-term negative relationship between carbon emissions and economic growth, suggesting that the nation's development is hindered by rising environmental stress. Though the study is national in scope, its implications are starkly visible in Ekpoma, where smallholder farmers are already reporting lower crop yields due to erratic weather patterns. In such areas, economic stagnation is compounded by underdeveloped infrastructure and limited investment in climate resilience.

Similarly, Udoinyang (2025) explored the relationship between ecosystem changes and economic wellbeing in Nigeria. Using a mixed-method approach involving rural communities across several states, including Edo, the study found that climate-induced water shortages, heat stress, and biodiversity loss directly reduce household earnings and increase health-related costs. In Ekpoma, where local economies depend on subsistence farming and sales of non-timber forest products, such environmental shifts are reducing both the availability of resources and the labour productivity of farmers. These changes are eroding the traditional livelihoods and pushing many households toward poverty.

In another study, Okolo *et al.*, (2021) investigated the influence of environmental degradation on local economic development in Nigeria. Their analysis revealed a moderate yet statistically significant negative relationship between greenhouse gas emissions and sub-national economic performance. The study highlighted how unregulated emissions from bush burning, fuel wood consumption, and deforestation not only contribute to climate change but also impose a cost on productivity and public health. These conditions are particularly evident in Ekpoma, where many residents rely on charcoal and wood fuel, further exacerbating deforestation and reinforcing the feedback loop of environmental and economic decline.

Edet, Udoe, and Abang (2018) conducted an empirical assessment of the economic impact of climate variability on crop revenues in cocoa-producing areas of southern Nigeria. Utilizing the Ricardian model, they found that over 70 percent of revenue variability could be attributed to changes in temperature and rainfall. Although Ekpoma is more focused on cassava, maize, and cocoa production than rubber, the underlying vulnerabilities are similar. Farmers in Ekpoma report significant income losses during years of late rains or excessive droughts, which increasingly characterize the growing season. The results suggest a strong causal link between climate instability and agricultural profitability in the region.

Further highlighting the socioeconomic vulnerabilities of climate-affected regions, Letta,

Montalbano, and Paolantonio (2024) studied how climate shocks create immobility traps among Nigerian farming households. They found that those with fewer assets and weaker institutional support are often unable to adapt, relocate, or diversify their income sources, leaving them more exposed to repeated shocks. In Ekpoma, where many farming households have limited access to credit, insurance, or extension services, this immobility leads to a cycle of poverty and economic stagnation. Repeated crop failures, coupled with rising input costs and dwindling land productivity, have left many residents unable to pursue alternative livelihoods or migrate to urban centers for better opportunities.

These empirical findings converge on a single conclusion: global warming, though a global phenomena, has deep local consequences that disproportionately affect vulnerable communities such as Ekpoma. The economic engine of the town rooted in agriculture, petty trade, and natural resource extraction-is slowing down under the weight of environmental stress. Productivity is falling, livelihoods are under threat, and many residents are caught up in the webs or traps of poverty with limited options for escape. Without targeted intervention, such as climate-smart agriculture, livelihood diversification, and environmental restoration, the economy of Ekpoma faces a future of deepening vulnerability. The collective insights from these studies provide both an advice, warning and a guidepost: the cost of inaction is

high, but informed, localized adaptation can offer a pathway toward resilience.

6. Research Methods

The data required and used for this paper were collected from both primary and secondary sources. The primary source formed the major source of data required for this paper. The primary data were collected by the use of apt questionnaire administration, conduct of personal oral interview and observation in the field. The projected population of Ekpoma in 2025 at 2.5% growth rate is 176,089. Out of this population, four hundred and forty (400) respondents (sample population) which represent point two three percent (.23%) of the entire population in the study area were considered. Consequent upon the above, four hundred questionnaires were administered in six selected communities in the study area. The four hundred questionnaires were retrieved and used for the paper appropriately. The communities where questionnaires were administered are Iruekpen, Ujemen, Emaudo, Eguare, Uhiele and Illeh. The stratified sampling method was used to select the communities while the random sampling technique was used to select the respondents for interview. Questions were asked on the causes of global global warming, the problems induced by global warming on the economy, the level of awareness of the inhabitants on the problems induced by global warming on the economy, and the adaptation and mitigation strategies adopted in the study area.

The secondary data required and utilized in this paper were collected from related and relevant published textbooks, relevant articles in journal publications, students' original essays, dissertations, theses and the internet. Others include but not limited to the data generated by Esan West Local Government Council and the National Population Commission. Simple random sampling techniques were used to select the respondents in each of the selected communities. Questions were asked in line with the objectives of the paper and other relevant areas that helped to achieve the aim of the study. The data collected from the field were analyzed using frequency tables and percentages.

7. Results and Discussions

7.1 The Major Causes of Global Warming in Ekpoma, Edo State, Nigeria

Table 1 shows clearly the response of the people of Ekpoma, Edo State, Nigeria on the causes of global warming. Specifically, Table 1 shows that 115 (28.75%) respondents are of the opinion that burning of fossil fuels is the major cause of global warming in the study area and it is followed by

deforestation which had 64 (16.00%) respondents in the study area. Bush burning recorded 48 (12.00%) respondents, urbanization recorded 42 (10.50%), modern agricultural practices recorded 37 (9.25%) while industrial emissions recorded 32 (8.005%) respondents in the study area. Others are natural forces with 23 (5.75%) respondents, increase in population with 14 (3.50%) respondents, spiritual forces 13 (3.25%) respondents, and finally neglect of traditions with 12 (3.00%) respondents in the study area. From this finding, it is crystal clear that the opinion of the people of Ekpoma, Edo State, Nigeria on the causes of global warming is in agreement with the findings of (IPCC; 2019, 2023; UNDP, 2023) that human activities-such as deforestation, fossil fuel combustion, industrial emissions, and unsustainable agricultural practices are the primary drivers of global warming.

Table 1 The Causes of Global Warming in Ekpoma, Edo State, Nigeria

The Causes of Global Warming in Ekpoma, Edo State, Nigeria	Frequency	Percentage (%)
Industrial emissions	32	8.00
Burning of fossil fuels	115	28.75
Spiritual forces	13	3.25
Deforestation	64	16.00
Urbanisation	42	10.50
Neglect of traditions	12	3.00
Modern agricultural practices	37	9.25
Natural forces,	23	5.75
Bush burning	48	12.00
Increase in population	14	3.50
Total	400	100

Source: Field survey, 2025

7.2 The Major Problems Induced by Global Warming on the Economy of Ekpoma

Table 2 shows the responses of the inhabitants of Ekpoma, Edo State, Nigeria on the major problems induced by global warming on the economy of Ekpoma. From Table 2, Shortage of food/food insecurity had 88 (22.00%) respondents is the most serious problem induced by global warming on the economy of Ekpoma and it is followed by emergence and spread of diseases which had 73 (18.25%) respondents, devaluation of infrastructure which recorded 58 (14.50%) respondents, Seasonal bushfires which had 53 (13.25%) respondents, seasonal flooding which had 48 (12.00%) and shortage of water which recorded 43 (10.75%) of the respondents in the study area. In addition, soil nutrient loss had 21 (5.25%) and the last on the major

problems induced by global warming on the economy of Ekpoma is migration and it had 16 (4.00%) respondents in the study area. From the above finding, it is obvious that the response of the people of Ekpoma on the major problems induced by global warming on the economy of Ekpoma tallies with the earlier findings of Eze *et al.*, (2023), NIMET, (2023) WHO, (2023) that the economic disruptions linked to global warming are not limited to agriculture alone. Poor road infrastructure, often damaged by heavy rainfall and erosion, further constrains trade and access to markets. Additionally, health challenges related to global warming, including the spread of waterborne and heat-related illnesses, increase household medical costs and reduce workforce productivity.

Table 2: The Major Problems Induced by Global Warming on the Economy of Ekpoma

The Major Problems Induced by Global Warming on the Economy of Ekpoma	Frequency	Percentage (%)
Seasonal flooding	48	12.00
Migration	16	4.00
Emergence and spread of diseases	73	18.25
Shortage of food/food insecurity	88	22.00
Seasonal bushfires	53	13.25
Soil nutrient loss	21	5.25
Devaluation of infrastructure	58	14.50
Shortage of water	43	10.75
Total	400	100

Source: Field survey, 2025

7.3 The Level of Awareness of the Inhabitants on the Problems Induced by Global Warming on the Economy of Ekpoma

Table 7.3 reveals the level of awareness of the inhabitants of the study area on the problems induced by global warming on the economy of Ekpoma. The Table shows clearly that 284 (71.00%) respondents of the sample population possess a very high level of awareness on the problems induced by global warming on the economy of Ekpoma. Also, 83 (20.75%) respondents of the sample population possess a high level of awareness on the problems induced

by global warming on the economy of Ekpoma. Moreover, 29 (7.25%) respondents of the sample population possess a low awareness level on the problems induced by global warming on the economy of Ekpoma. Finally, 4 (1%) respondents of the sample population possess a very low awareness level on the problems induced by global warming on the economy of Ekpoma. From the above findings, it is crystal clear that more than half of the sample population possesses a very high level of awareness on the problems induced by global warming on the economy of Ekpoma.

Table 3: The Level of Awareness of the Inhabitants on the Problems Induced by Global Warming on the Economy of Ekpoma

Level of Awareness	Number of Response	% Response
Very High	284	71.00
High	83	20.75
Low	29	7.25
Very Low	4	1.00
Total	00	100.00

Source: Fieldwork, 2025.

7.4 The Mitigating and Coping Strategies for Alleviating the Problems Induced by Global Warming On the Economy of Ekpoma

Owing to the obvious threat posed by the problems induced by global warming on the economy of Ekpoma, several mitigating and coping strategies have been evolved, put in place and implemented for decades to alleviate the wanton problems induced by global warming on the economy of Ekpoma. The mitigating and coping strategies include: intensive farming/practicing of climate-smart agriculture which includes incorporating climate-hazard resistant crops, enhancing water conservation techniques, the use of alternative sources of power, evacuation of blocked drains; effective community awareness/sensitization, regular and effective immunization, hygiene, sanitation, and improving cultural practices, such as proper drainage and canopy management that are able to mitigate the risks induced by variable weather conditions.

8 Conclusion

This paper examined the problems induced by global warming on the economy of Ekpoma, Edo State, Nigeria. The findings revealed that human activities such as burning of fossil fuels, deforestation, industrial processes, agricultural practices, use of fluorinated gases and so forth contribute significantly to global warming. The study also revealed that the Shortage of food/food insecurity, the emergence and spread of diseases, devaluation of infrastructure, seasonal bushfires, seasonal flooding and shortage of water are the major problems induced by global warming on the economy of Ekpoma, Edo State, Nigeria. The findings revealed that a very high percentage of the sample population possesses a very high level of awareness on the problems induced by global warming on the economy of Ekpoma. The findings highlight the need for urgent action to mitigate and cope with the problems induced by global warming on the economy of Ekpoma, Edo State, Nigeria.

9. Recommendations

This paper examined the problems induced by global warming on the economy of Ekpoma, Edo State, Nigeria. Consequent upon these findings, the following actionable policy recommendations are made and they include: intensive farming/practicing of climate-smart agriculture which includes incorporating climate-hazard resistant crops, enhancing water conservation techniques, and the use of alternative sources of power. Others are evacuation of blocked drains; effective community awareness/sensitization, regular and effective immunization, hygiene, sanitation and improving cultural practices, such as proper drainage and canopy management that are able to mitigate the risks induced by variable weather conditions.

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