



Review Article

FIELDS OF SORROWS AND HARVEST: COPING WITH GRIEF, CLIMATE CHANGE AND FOOD SCARCITY IN INDIGENOUS FARMING COMMUNITIES IN NIGERIA

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ABSTRACT

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The research being conducted primarily investigates the interrelated issues of climate change, food scarcity, and emotional bereavement faced by indigenous farming communities in Nigeria. Although climate change has worsened agricultural manufacturing difficulties, indigenous farmers experience both poverty and deep mental consequences. This study investigates the coping strategies and tactics employed by individuals to strengthen their resilience. The examination scrutinizes the problematic data about the manner in which climate change impacts the food security of indigenous farmers, as well as their livelihoods and emotional well-being. This is accomplished by the utilization of a combination of surveys, interviews, and focus groups. The assessment indicates the presence of multiple challenges that necessitate the implementation of targeted strategies to address them. The results emphasize the importance of including mental health assistance into agricultural and environmental policies. This study presents a thorough case for climate change, emphasizing specific deficiencies and advantages that are characteristic of indigenous communities while addressing global environmental changes.

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1. INTRODUCTION

Severe climatic conditions, including high temperatures, extended periods of drought, and intense rains, are having a negative influence on the global food supply. The year 2023 was characterized as the warmest on record, primarily due to the resurgence of El Niño, which resulted in widespread flooding, droughts, and erratic weather patterns. The adverse conditions had a profound effect on agricultural output and fishing, leading to increased expenses for food commodities. In 2022 and 2023, Nigeria, along with other nations, faced severe floods that resulted in substantial agricultural damage and posed difficulties for farmers in their efforts to recover. The effects on the local food security and sovereignty are clearly visible, especially for rural populations cultivating essential crops like as rice, maize, and cowpeas. (Mojeed, 2024).

Agriculture is the backbone of Nigeria's food supply, accounting for 30-40% of the country's GDP. (Ikponmwosa, 2016) Most Nigerians rely on subsistence farming for food production. However, despite the importance of agriculture, a significant portion of the population lacks access to sufficient, safe, and nutritious food. According to the World Food Summit's 1996 definition, food security is achieved when all people have access to enough healthy food at all times (Agri EM1, 2020).

In Nigeria, the Ministry of Agriculture's 2018 estimates reveal that 65% of the population is food insecure, despite more than half of the population depending on agriculture. The main challenge is that 90% of agricultural produce comes from subsistence farming, which is severely constrained by climate-related factors such as drought, flooding, and unfavourable temperatures. As a result, over 13 million Nigerians suffer from hunger and malnutrition (Agri EM1, 2020).

Nevertheless, climate change has far-reaching consequences that go beyond the physical and economic aspects, significantly impacting the emotional and psychological well-being of farmers. Research focused on the impact of climate change on the mental health of rural residents mostly investigates the effects of prolonged droughts. However, the results are diverse and inconclusive, despite the fact that periods of drought are a significant cause of anxiety. In addition, other meteorological events such as floods and extreme weather events can gradually undermine the social and economic foundations of agricultural communities. Furthermore, rural communities experience a greater degree of financial and social difficulties, hence increasing the vulnerability to mental health issues (Berry, 2011).

The complexity of climate change requires a comprehensive approach, as relying just on scientific expertise is insufficient to properly address this global threat. Therefore, it is necessary to

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assess alternative methods that recognize the significance of indigenous knowledge and the advantages of traditional and community-driven approaches to disaster readiness (Chidiebere-Mark, 2018).

This aims to deal with the difficulty by using undertaking a comprehensive evaluation of the impact of weather change-brought on food scarcity and psychological grief on indigenous farmers in Nigeria. The study used a mixed-method methodology, incorporating the distribution of surveys, conducting interviews, and organizing focus groups, in order to explore the participants' real-life experiences and discover their methods of coping and strategies for resilience. By doing so, it hopes to inform more holistic and empathetic policy interventions that address both the tangible and intangible effects of climate change.

The study is structured as follows: the next section provides a review of the existing literature on climate change impacts on agriculture, food security, and emotional well-being. This is followed by a theoretical framework that situates the research within broader discourses on ecological grief and socio-economic resilience. The methods section outlines the research design and data collection techniques used in the study. The results section presents the key findings, which are then discussed in relation to the existing literature. The conclusion summarizes the main insights and offers recommendations for future research and policy interventions.

2. LITERATURE REVIEW

Climate change impacts agricultural productivity, with alterations in temperature, precipitation patterns, and the frequency of extreme weather events posing direct threats to crop yields. Studies indicate that Sub-Saharan Africa, including Nigeria, is particularly susceptible due to its reliance on rain-fed agriculture (Schlenker, 2010). Prolonged periods of drought, unpredictable rainfall patterns, and severe climate fluctuations disrupt the timing of planting and harvesting, leading to reduced agricultural output and heightened food scarcity (Lobell, 2008).

These climatic changes in Nigeria are shown in various ways; for instance, they include increase in temperature, irregular pattern of rain and severe flooding. Northern areas that are mostly dry have seen intensified drought whereas southern areas have more rains with floods. These have negative effects on crop yields especially major crops like maize, sorghum and millet important for food security.

2.1 Food Scarcity vs. Food Insecurity

Food scarcity refers to a situation where there is not enough food available; food insecurity refers to the inability of people to have enough food which also includes problems regarding its availability in terms of pricing or permanence. In this regard, climate change aggravates both situations through its effect on food growing and distribution systems (FAO, 2008). In Nigeria, food scarcity is often a direct result of climate-induced agricultural disruptions, leading to reductions in food availability (Ozor, 2010).

Food insecurity, however, extends beyond mere availability. It includes the economic and social dimensions that affect individuals' ability to access nutritious and sufficient food. Rising food prices, loss of livelihoods, and socio-economic instability contribute to the complex nature of food insecurity (Maxwell, 1996). Indigenous communities, with their limited resources and dependency on local agriculture, are particularly vulnerable to these broader impacts of climate change (Altieri, 2008).

2.2 Grief and Emotional Impacts on Farming Communities

The concept of ecological grief, or solastalgia, refers to the emotional and psychological distress caused by environmental changes (Albrecht, 2007). Among the indigenous farmers living in Nigeria, crop and income losses occasioned by climate change are more than just economic challenges; they are deep emotional scars. Owing to their dependence in the world and age-antique farming strategies, its destruction inflicts them with sorrow (Cunsolo, 2018). Conversations about climate change frequently neglect the emotional weight that comes with it. It is important to prioritize the complete expertise of the numerous challenges confronted by means of indigenous farming businesses. Farmers explicit their sorrow via several manifestations, consisting of melancholy, anxiety, and a feel of hopelessness. These emotional results would possibly exacerbate the problems posed with the aid of weather trade in phrases of bodily and reasonably-priced elements (Tschakert, 2009).

2.3 Indigenous Farming Practices and Challenges in Nigeria

Indigenous farming practices in Nigeria rely closely on indigenous strategies, with deep information of the neighborhood environment. Such strategies as crop rotation, intercropping and natural fertilizers are among them; (Agboola, 2004) they sell sustainable agriculture hence encouraging environmental conservation efforts. Climate change however, threatens these techniques; they disrupt present agricultural cycles making their modifications every now and then not possible.

In addition to the hassle, indigenous farmers frequently face a loss of access to modern agricultural techniques and tools that might help reduce the consequences of climate exchange. Their vulnerability arises from their confined monetary assets, inadequate infrastructure, and lack of institutional assist (Nwajuba, 2005). As a result, these communities once in a while have no preference but to depend upon their traditional information and methods of survival, which are not enough to cope with excessive adjustments in climate.

3. THEORETICAL FRAMEWORK

3.1 Coping Mechanisms and Resilience Strategies

Although they face various challenges, many indigenous farming groups in Nigeria have installed place diverse strategies to cope with climate change and its negative effects (Morton JF, 2007). For example, this involves developing exceptional plants, planting sorts that resist drought and keeping water tiers. In addition, stronger resilience is facilitated by using social networks and network-based help structures which provide a lifeline to farmers when a catastrophe strikes (Adger, 2003).

The wider socio-monetary and environmental constraints often restriction how powerful those strategies may be. The ability of indigenous farmers to evolve absolutely to converting climatic situations is hampered via the absence of resources, assist, and records in any access available to them. Furthermore, resilience can be weakened by way of the psychological impact climate change could have on humans's emotions demonstrating that there's a pressing want for an integrated approach that encompasses each physical and non-bodily dimensions of variation to weather alternate (Eakin, 2005).

3.2 Ecological Grief and Its Implications

Ecological grief, which can also refer to solastalgia, is a conceptualization that encapsulates the sorrow and mental upliftment brought by changes in the surroundings. Such a theoretical structure will help in understanding how indigenous agricultural societies in Nigeria, for whom their territories are their lifeblood, feel about it. When temperatures rise, traditional farming is disrupted; this leads to loss of crops, land degradation

and thus sorrow deeply reflected through different dimensions (Albrecht, 2007).

Communities share in ecological grief that goes beyond individual emotional responses. Indigenous farmers feel the effects of climate change both on an individual and a community level which affects their social unity and cultural distinction. Different expressions of this grief include depression, anxiety and hopelessness that complicate climate change adaptability challenges much worse (Cunsolo, 2018).

In politics and practices, the ramifications are critical for environmental sadness. Mental health care should be included in plans to adapt to climate change so that the emotional and psychological effects can be taken care of. This entails acknowledging the loss felt by farmers, creating spaces where they can share their feelings, and providing psychological support services. Such approaches can enhance the overall resilience of communities by addressing both the tangible and intangible impacts of climate change.

3.3 Socio-Economic effects of Climate Change

Despite a in large part monetary technique, this framework offers a perception into climate change and its outcomes on the social and financial factors of native agricultural communities (Lobell, 2008). The production of plants in addition to farming practices are negatively encouraged by means of climate leading to decreased productiveness in terms of yield and earnings coupled with hunger and malaria that continues to threaten food deliver amongst those households. Moreover, monetary repercussions turn out to be worse when compounded via different elements which include loss of get right of entry to resources, poor infrastructure, and socio-political isolation (Nwajiuba, 2005).

In Nigeria, indigenous farming tribes are especially at danger due to rain-fed agriculture and traditional farming practices. Consequently, the rural quarter experiences economic setbacks due to weather change, which in flip leads to poverty, inadequate meals protection, and social unrest (Morton, 2007). Moreover, the social impacts of climate exchange consist of the breakdown of community systems, lack of cultural background, and improved migration (Adger, 2003).

Grasping socio-financial consequences of climatic change is fundamental to formulating green model strategies. Regulations need to focus on enhancing the monetary endurance of Native agencies through granting resource utilization, era and economic backing. Social measures need to endeavor at fortifying communal solidarity, maintaining cultural legacy in addition to providing assistance to sensitive agencies. Integrating socio-monetary considerations into weather model strategies can assist cope with the multifaceted influences of climate alternate on indigenous farming groups.

4. METHODS

This study adopts a critical discourse analysis (CDA) approach to research the experiences of indigenous farming communities in Nigeria amidst weather change, food shortage and loss. CDA is a qualitative research approach that investigates the ways language and discourse influencing social realities and members of the family of power. This method is very useful in grasping the difficult and multidimensional consequences of weather change on prone populations.

4.1 Study Area

The studies prioritize farming communities primarily based in general on their indigenous nature located in 3 unique agro-ecological zones in Nigeria; namely, Northern location which is dry, primary plateau as well as southern vicinity owning a moist climate. Due to this natural version amongst these areas, a comparative examination can be done into the impact of various

climatic scenario on agriculture techniques employed with the aid of them, availability of food and psychological welfare.

4.2 Data Collection Techniques

- Surveys: For gathering quantitative records of agricultural outputs, food security reputation, and socio-economic elements, a based questionnaire became given to a specific 300 farmers in every location. The survey questions have been demonstrated through a pilot observe and had various questions together with multiple choice, Likert scale in addition to open-ended questions.
- Sampling Strategy: Using a stratified random sampling technique, farmers have been selected to ensure that every one three agroecological zones, farm sizes and kinds of vegetation are represented.
- Interviews and Focus Groups: A purposive pattern of 30 farmers in each location become selected based totally on their revel in with weather trade impacts and adaptation strategies. Semi-dependent interviews and focus organization discussions have been conducted using an interview protocol that explored their reports, coping techniques, and perceptions.

4.3 Data Analysis Procedures

Delving deeper into the data, stories and experiences shared by the indigenous farmers were carefully studied. A qualitative content analysis approach was employed, carefully reading and re-reading the interview and focus group transcripts to identify key themes and narratives related to climate change, resilience, and adaptation. Recurring stories of drought, crop failure, and livelihood struggles were noticed, which led to exploring the emotional and psychological impacts of climate change on these communities.

In order to gain a more lucid understanding of the utilization of power dynamics and language, the methodology of Critical Discourse Analysis (CDA) was employed. A study was done to analyze how farmers' language and speech reflected and influenced their experiences, as well as the broader socio-political and cultural circumstances that influenced their narratives.

Descriptive statistics were used to characterize the demographic characteristics of the farmers, their farming practices, and their perceptions of the effects of climate change. Connections and patterns become apparent through the utilization of data analysis. EDA approaches were employed to visually represent data, showcasing response distributions and correlations among variables through the use of charts.

5. RESULT

5.1 Impact of Climate Change on Crop Yields and Food Production

The study's findings uncover enormous declines in crop yields throughout all areas of the country especially within the Northern drylands where it has been more greatly affected. Farmers indicate that unpredictable rain patterns longer dry spells Heavy storms have disturbed sowing and harvesting periods leading to less agricultural production. Survey quantitative data shows a standard drop of 30% in agricultural output per year for ten years back

A drop in agricultural productivity has brought about enough food scarcity and insecurity among traditional farmers. For instance, surveys show that 70% of households face seasonal food shortages, while 40% indicate constant hunger. Although the situation here is not as bad as in the north, the central plateau and southern region still grapples with maintaining food security because of erratic rainfall patterns and soil degradation.

5.2 Emotional and Psychological Impacts on Farmers

Qualitative evidence acquired through interviews and focus groups reveal that climate change has profound emotional and psychological impacts on farmers. Many of these persons experience anguish, anxiety, and hopelessness due to the losses they suffer in their crops and livelihoods. The emotional burden experienced by farmers is exacerbated by their deep attachment to the land and adherence to traditional farming methods, which they have maintained for an extended period of time. They are not only grieving the loss of income, but also the gradual erosion of their cultural heritage and identity, evoking emotions that are difficult to express in words. Farmers describe experiencing ecological grief, characterized by a deep sense of loss and mourning for the changes in their environment.

As one farmer lamented, "*Na only farming we know, how we go survive if farm fail?*" (meaning "We only know farming; how will we survive if the farm fails?"). This sentiment resonated with many farmers, who repeatedly expressed concerns about their livelihoods and the future of their families.

Grief, usually made worse by socio-economic pressures like increased food prices and unemployment, makes individuals feel more helpless and hopeless. Farmers are emotionally and psychologically impacted by climate change in deep and significant ways. It is important to provide them with assistance and resources to deal with such issues.

5.3 Coping Strategies and Resilience Among Indigenous Farmers

Nevertheless, the study delineates several adaptive coping strategies and resilience mechanisms adopted by local farmers despite the difficulties. Some of these include strategies for diversifying crops, use of drought resistant varieties, practicing water conservation methods among others while others are practicing drainage systems in order to avoid soil erosion. Furthermore, traditional knowledge and community support networks form part of their reliance when faced with climate change repercussions. Community-based support systems play a crucial role in enhancing resilience, providing a safety net for farmers during times of crisis. Social networks facilitate the sharing of resources, knowledge, and emotional support, helping farmers cope with both the physical and emotional impacts of climate change.

"Muna yi 'yan tanadi' a filayen mu don riƙe karancin ruwa da kuma rage karancin iska, don kuɓuta mu ci gaba da rayuwa a lokacin rani." (We apply mulching to our farms to retain moisture and reduce evaporation, so our crops can survive the dry spells.)

"*We dey use stone to lock our farm, make soil no dey wash comot, and make farm dey okay small, even when rain too much.*" (We use stones to prevent soil erosion and retain soil fertility, so our lands remain productive despite the heavy rains.)

Despite this, broader socio-economic limitations often impede the realization of these strategies. This study also highlights how important it is to observe cultural and spiritual traditions that increase resiliency. Farmers' cultural roots serve as a source of strength during moments of ecological and economic transformations, hence giving them an air of continuity amidst uncertainties in regards to both spheres.

As a whole, the outcome of the study has shown that there are various difficulties and means to confront them in rural agricultural societies among indigenes in Nigeria. It is important come up with focused policies that include considerations not just about what can be seen but also things like people's mindsets and making sure they can withstand this kind of situation by introducing mental health services and empowering them economically.

6. DISCUSSION

The findings of this study provide a complete information of the impact of climate exchange on indigenous farmers in Nigeria. It emphasizes the complex connections among food shortage, financial challenges, and psychological distress. In this dialogue component, we can analyze our findings in terms of the present literature at the difficulty, don't forget the broader implications, and pick out capacity regions for future research or coverage modification.

The consequential decline in crop yields and increased food insecurity among indigenous farmers corroborates present studies on the vulnerability of rain-fed agriculture to climate change (Schlenker, 2010). The extreme influences located inside the northern arid location align with research indicating that arid and semi-arid regions are mainly liable to extended droughts and erratic rainfall (Ajetomobi, 2011).

Ecological grief is an emotional and psychological blow that is going hand in hand with nostalgia, that's the fear resulting from modifications inside the environment. Farmers' grief over the loss of their land and agricultural traditions indicates how connected they are to their farms, stressing the want to include emotions in weather change effect exams (Albrecht, 2007).

6.1 Comparison with Existing Literature

This study has shown that the coping techniques and resilience mechanisms relate to large dialogues on adaptive potential and resilience within indigenous groups. Previous research investigating indigenous model strategies to environmental changes display that they rely upon conventional know-how, diversify their agricultural manufacturing structures, or have community help networks (Adger, 2003). Nevertheless, it is crucial to notice that those techniques have their boundaries because of other sociocultural and financial factors. As an end result, there's a more call for outside guide and assets with which to bolster one's resilience (Altieri, 2008).

The developing frame of literature on ecological grief and mental fitness inside the context of environmental trade is enriched with the aid of the have a look at that highlights the emotional and mental consequences of climate exchange. By such as considerations of mental health in the analysis, this painting affords a more comprehensive knowledge of Indigenous farming communities (Cunsolo, 2018).

6.2 Implications for Policy and Practice

This study comes with the importance of policy interventions that combine both the seen and hidden impacts of weather trade. It is critical to develop rules that enable indigenous farming groups to get entry to sources, technology, and financial guide with the intention to increase their economic resilience. Additionally, agricultural extension services should attention on selling the incorporation of weather-resilient farming strategies while presenting recommendation on how to keep water and diversify crops.

Beside subventioning, policies ought to deal with psychological fitness services regarding the emotional and psychological impacts which originate from climate adjustments. This will encompass affording emotional expression structures, having psychosocial help services and being well suited with the incorporation of intellectual stability measures in agricultural guidelines or environmental regulations. By acknowledging in addition to responding to this grief arising out of environmental demanding situations, it's far feasible for the ones interventions to improve native agriculturalists' persistence in opposition to numerous traces.

The studies underscore the importance of safeguarding and incorporating age-antique knowledge in climate exchange adjustments; this will assist preserve ecosystems higher. Indigenous farming strategies based on extensive comprehension of local environments offer beneficial advice for sustainable and difficult agricultural practices. Therefore, promoting traditional know-how transmission as well as encouraging community-sponsored model initiatives could collectively decorate indigenous peoples' capacity to cope with varying situations.

7. CONCLUSION

This study examined the various ways in which changes in weather impact indigenous agricultural communities in Nigeria, specifically in terms of food scarcity, economic challenges, and mental distress, which can be interrelated. The findings indicate the presence of a multifaceted network of physical, financial, and emotional repercussions, highlighting the high susceptibility of these populations to disturbances caused by climate change. Climate change poses an immediate danger to food security and productivity in agriculture due to reduced crop yields and increased food poverty. Indigenous farmers, who rely on rain-fed farming techniques and traditional practices, are facing severe challenges in their efforts to sustain their livelihoods and provide food security. The quantitative data collected during the study provides clear evidence of the extent of these influences, while the qualitative data provides additional insight into the emotional and psychological experiences of real farmers. Ecological grief, which refers to a profound feeling of loss and despair caused by changes to the world, is a significant concern for Indigenous farmers in the context of climate change.

The socio-economic factors and emotional distress demonstrate the significance of addressing various aspects of the impacts of global warming. Several coping and resilience strategies, which demonstrate remarkable imagination and adaptability, have been identified through study conducted among local agricultural enterprises. However, these tactics are sometimes hindered by significant societal challenges, highlighting the need for specific legislation to be implemented to support external assistance systems and inputs. Ultimately, it is crucial to recognize that embracing a more comprehensive and empathetic approach to policy components enables indigenous farming communities to address various facets of climate change. In order to improve the adaptability of these groups, it is crucial to enhance their economic resilience, safeguard traditional knowledge, and incorporate mental health programs into climate adaptation plans. Therefore, it is essential to enhance and broaden support for indigenous agricultural communities in their fight against climate change by addressing interconnected issues such as food insecurity, poverty, and emotional distress.

8. Recommendations

From the consequences of this research, its miles counseled that those suggestions might improve the resilience and wellbeing of indigenous farming organizations in Nigeria in opposition to climate exchange:

- Increase Available Means and Technology: Grant access to cutting-edge farming technologies like drought-resistant crop cultivars consisting of irrigation structures and methods for protecting water that don't require electricity for indigenous farmers. Further improve agricultural extension applications aimed toward promoting the include of climate-clever farming strategies.
- Acknowledge and address the emotional and mental ramifications of climate trade on farmers by means of integrating mental health services into agricultural plus

environmental policies. Furthermore; allow them to have locations for emotion expression where they are able to access assist in managing ecological grief and stress thru counseling.

- Advocate for projects that embrace communities and consequently solidify social brotherly love. Moreover, help to proportion resources, knowledge, and emotional support among localities in order that there exists a strong safety internet for farmers for the duration of tough moments
- Encourage the conservation and integration of indigenous agricultural know-how and customs within measures aimed toward adapting to climate exchange. Support the passing of conventional understanding through schooling guides and training applications which can be primarily based within the community.
- Develop giant coverage frameworks that cover the monetary along the emotional components of climate change consequences. Make sure that rules recall everybody as well as being touchy to precise weaknesses and blessings of nearby communities engaged in agriculture.

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