CPED POLICY BRIEF SERIES 2024 NO. 2

The Synergistic Effect of Climate Change and Zoonotic Diseases on Women in Pastoral and Agropastoral Communities of Nigeria: The Case of Bauchi and Gombe State

By

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PROJECT PROFILE

Project Title: "Empowerment of Women in Pastoralism and Agriculture in Nigeria's Sahel Region"

***Funding*:** IDRC, Ottawa, Canada

Implementing Partners: Centre for Population and Environmental Development and Cowater International

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Published by **Centre for Population and Environmental Development (CPED) Benin City, Nigeria**

First published in 2023

"This work was carried out with the aid of a grant from Canada's International Development Research Centre (IDRC), awarded in partnership with the Supporting Pastoralism and Agriculture in Recurrent and Protracted Crisis (SPARC) Programme, which is funded by the United Kingdom's Foreign, Commonwealth and Development Office (FCDO). This material has been funded by the Canadian government and by UK aid from the UK government. However, the views expressed do not necessarily reflect the official policies of the Canadian or UK governments."

PREFACE

This policy brief is the fifth in the series of communication to policy and decision makers as well as other researchers on the on-going research project of the Centre for Population and Environmental Development (CPED) titled "Empowerment of Women in Pastoralism and Agriculture in Nigeria's Sahel Region" funded by Supporting Pastoralism and Agriculture in Recurring and protracted Crisis (SPARC) under its Advancing gender equality in fragile food systems in the African Sahel programme.

CPED's policy brief series is designed to draw attention to key findings and their policy implications as projects are being executed. This edition presents effect of climate change and zoonotic diseases on women living in pastoral communities of the Northeast region of Nigeria.

We are very grateful to SPARC and IDRC for the support in implementing this project. We are particularly grateful to the Officer in charge of our project, Dr. Pauline Njiriani for her support to CPED which has enabled the Centre to continue the implementation of the action research project and the publication of this policy brief. We also appreciate the cooperation of policymakers in Bauchi and Gombe States for their collaboration with CPED in the on-going implementation of the project.

Introduction

Pastoralism is a livelihood strategy that depends on the rearing of livestock for achieving income and food security. Pastoral communities in the semi-arid regions of Africa are one group that have had significant negative impacts of Climate Change, even when they have little to no responsibility for the current climate crisis. (Field, 2014). At the heart of this inequitable paradox is the pastoral woman. Pastoral women face "double marginalization" due to the intersection of their identities as women and pastoralists (Eneyew and Mengistu, 2013). They are significantly burdened by the vulnerability to and responsibility for responding to changing climates (Walker et al., 2022). In order to respond to climate change, they bear a significant part of the household burden such as collecting water and firewood, taking care of sick livestock, and herding small livestock that becomes increasingly labour intensive due to Climate Change and simultaneously face multiple gendered barriers (e.g., lack of access to credit, land tenure rights, gendered violence) that makeS it difficult to do so (Anbacha and Kjosavik, 2019, Gurmu, 2018).

Zoonotic Diseases are Diseases that are transmissible between animal and humans. Diseases such as bovine tuberculosis, anthrax, brucellosis, rabies, hydatidosis, toxoplasmosis, fasciolosis, sleeping sickness, rift valley fever, leptospirosis, leshmaniasis etc are commonly occurring in the pastoral community throughout the globe (WHO, 2010). These diseases are of high impact on public health, food safety and food security and livestock economies as they have high incidence rates and cause significant morbidity and mortality cases worldwide especially in poor and marginalized communities in developing countries who live in close contact with animals. (Taylor et al., 2001). These diseases are under-diagnosed and underreported because not enough focus is given by clinicians as well as policy makers. Zoonotic diseases often share clinical features, particularly fever, with other more common diseases or require complex diagnostic tests to confirm their presence (WHO, 2010).

Zoonotic infections are closely associated with pastoralism because the pastoralists have an intimate relationship with their animals. Factors such as proximity to animals, food consumption behaviour, problems related to contamination of milk and meat, inadequate supply of treatment drugs, harsh environmental conditions, and socioeconomic and cultural practices have exposed the pastoralists to different zoonotic diseases.(Desta , 2016). In addition to this, consumption of raw milk and meat, together with handling of sick animals and animal products with bare hand facilitates transmission of zoonotic diseases to the pastoralists.

Climate change and zoonotic diseases therefore impose a burden on Nigeria, which requires an advanced policy response in particular to communities where livelihoods are strongly and directly dependent on natural resources.
Women pastoralists are particularly predisposed to both Climate change and zoonotic diseases as both jointly increases women pastoralist workload and the risk of contracting diseases due to the traditional role they play as home managers and tenders of livestock.

The linkage between Climate change and Zoonotic Diseases

Climate change can have a complex impact that also influences human and animal health. For example, climate change alters the conditions for pathogens and vectors of zoonotic diseases.(Filho et al., 2022). Climate change can also influence the geographical distribution of insect spread diseases(Fouque and Reeder, 2019). Globally, zoonotic viruses which were previously confined to areas with high temperatures such as the tropics have been observed and are spreading into subtropical climates and regions of higher altitudes. Climate change has caused temperature changes in various geographical regions, meaning that areas previously free from certain diseases now see rises in infection prevalence. Furthermore, climate change is causing people's general health to deteriorate, making it easier for zoonotic infection to spread (Fouque and Reeder, 2019). Aside from this, the changes in climatic conditions have forced pathogens and vectors to develop adaptation mechanisms. Such development has resulted in the diseases becoming resistant to conventional treatments due to their augmented resilience and survival techniques, thus further favouring the spread of infection (Huber et al., 2020) In some contexts, changes in climate conditions may help to increase the resistance of microbes, such as bacteria and viruses, making treatment more difficult and contributing to an increase in the disease spread. Migration which could be exacerbated by Climate Change may put nomadic pastoralists at periodical risk of infection, especially around water points (Rahman, 1996).

METHODOLOGY

This study is based on action research being implemented by Centre for Population and Environmental Development (CPED) with funding from International Development Research Centre (IDRC), Canada, through the SPARC program to support women and girls in Pastoralism and Agro pastoralism in Nigeria's Sahel region. This is a mixed study that combined both quantitative and qualitative technique in data collection in Bauchi and Gombe States of the Northeast region of Nigeria.

The data for this study is derived from Key Informant interviews and Focused Group Discussion conducted with respondents in Gombe and Bauchi states. A total of 37 key informants, comprising 57 percent females and 43 percent males were interviewed across 6 local government areas (LGAs). Majority of those interviewed were between the ages of 40 – 59 years accounting for 51 per cent of the total respondents followed by those who were 60 years in age and older.

Table 1:

Percentage distribution of Key Informant Respondents by Sex

Sex	Count	%
Female	21	57
Male	16	43
Grand Total	**37**	**100**

Table 2:

Percentage distribution of Key Informant Respondents by age

Age (Years)	Count	%
20-39	7	19
40-59	19	51
60 and above	11	30
Grand Total	**37**	**100**

A total of 12 FGDs were conducted comprising female only groups and male only groups in each target LGA. Participants selected for the FGD were people of similar background or experiences and have lived in any of the target communities for more than 3 years. Each group whether male only or female only groups was made up of between 10 to 13 participants.

FINDINGS

The interviewed respondents recognized advent of crop diseases and pest invasion of farmlands to be more prominent now compared to situation 10 years ago which they attributed to changing climate. Others also complained of excessive heat, flooding, shift in rainfall patterns and longer period of dry season now compared to the past decade. Other respondents also complained of low farm yield and produce. Drought and land degradation was largely reported as indications of climate change that has made animal rearing and agricultural practice more difficult for the pastoralist compared to the situation about ten years ago. Extreme cold due to climate change was highly reported amongst the pastoralists as it affects their livestock and make them to die.

A Respondent highlighted shift in rainfall patterns as a major climate change impact witnessed in her community:

> *"Ten years back, raining season can last up to November, but these days it only lasts till September thereby making their crops to die and dry, sometimes the crops in the farm get dried up before producing. Due to climatic condition some of their animals especially chickens die due to the cold weather and the cost of feeding the chickens are so expensive".....**Thamar Daniel (F), Bundot Community, Bauchi State.***

For some respondents who combined Agriculture and pastoralism increase in the incidence of diseases was reported as one of the impacts of Climate Change.

> *"The climate condition is worse now compared to ten years back. With increase in population, access to farmland is limited and land has depreciated in fertility. The raining season starts very late now and ends too early. The vegetation, the trees are destroyed due to the activities of man thereby increasing global warming. We experience excessive heat making other crops not to survive. Irrigation farming in some of our communities is not possible. We are experiencing low yield in our farm produce. The air is no longer filtered because we have less trees and that alone has exposed us to different kinds of diseases unlike ten years back were we have forest, and we receive fresh air, and we have less sickness. Most of our lands then were not eroded due to scanty vegetaton. We had more food crops and tree crop. Hunger was not an issue that time. We have higher yield from our farm produce. The soil was highly fertile and doesn't need much fertilizer about ten years ago".....**Alhaji Umaru Amadu (M), Billiri LGA, Gombe state.***

"The community experience drought, late rain falls and early end of the rainfall, low agricultural yield (led to breaking of marriages) deforestation erosion. Sickness to livestock. The climate change-related problems affect the livelihood activities of the community in diverse way; The resultant effect of the late rainfall led to low agricultural produce .The late rainfall by June and the early ending of the rainfall by October lead to no harvest from the farm, Lost of livestock and High price of agricultural produce in the market"… ***Bununu Male FGD***

Furthermore, some respondent complained of the increased outbreaks of diseases within pastoral communities as well as migration as a coping mechanism for climate change impact.

The climate related problems are low farm yield which leads to famine, migration to other communities, water scarcity, recurrent droughts, cold wave, poor access to appropriate seeds/planting material. live and lively hoods are abruptly affected. It causes inflation, ***outbreak of diseases*** *It force many people to* ***migrate*** *to other communities that will be favourable for them and that can support their live hood activities for example when theirs much rain most of our animals like cows and goat will be affected so they migrate them to upper land area where cold and masher environment will not affect them. There will be increase in poverty* ***FGD Male Billiri LGA***

Recommendation

Even though zoonotic diseases are found in a significant rate in pastoral communities, there is often a general lack of focus to prioritize their control by human and animal health sectors. Therefore, integrated intervention among veterinarians, health professionals, governmental and nongovernmental bodies and the community is mandatory to effectively address the health problems. Community based programs such as health education on zoonotic diseases, establishing diagnostic and therapeutic facilities of zoonotic diseases in the health centers and.There is also the need to Enlighten pastoralist on the practice of good hygiene during handling of livestock.

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