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An In-Depth Analysis of Climate Change as a Driver of Natural Resource Conflict: A Study in Sambang—The Gambia

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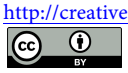

Abstract

Climate change is one of the most underreported triggers of conflict. The menace did not only cause crop failures and a decline in agricultural productivity but triggered violent resource conflicts in The Gambia. Drawing a case in Sambang, this paper seeks to provide a detailed analysis of climate change as a conflict driver. The study involved 258 persons through focus group discussions and interviews. The study found that climate change stressors caused violent conflicts within and amongst communities. Women and children bear the burden of these conflicts. Ownership and use of land in The Gambia remain a critical sector that is causing conflicts within and among communities and sometimes violent conflicts. The decline in agricultural productivity, increase in salt-water intrusion, food insecurity, increased poverty, and inequality due to climate change is the principal cause of resource conflict in many communities in The Gambia. As climate stressors exacerbate, they lead to a significant reduction in livelihood ventures thereby increasing competition over limited resources which eventually triggers conflict among competitors.

Subject Areas

Anthropology, Environmental Sciences

Keywords

Climate Change, Conflict, Driver, Resources, Sambang, Agriculture, Gambia

1. Introduction

1.1 Background

Over the years, natural resource-related conflicts are increasingly becoming an

unsupportable burden on communities in The Gambia. Clashes over land ownership and use are the most notable in the country. The extractive industry is another sector with emerging conflicts between mining companies, fishmeal factories, and communities. Population increase, socioeconomic deprivations, increased pressure on resources, greed, and the politics of our time are identified as causative challenges to the conflicts. However, climate change has proven to be a major driver of conflict in Sub-Saharan Africa. Inadequate or lack of achievable land policies, plans, and programs as well as community underrepresentation and participation in natural resource governance can lead to conflict and the emergence of militias (Sambou, 2023) [1].

There is a growing scientific validation that natural resources are catalysts for violent conflicts, especially in Africa. However, this is highly dependent on socioeconomic and political conditions. The complexities around resource conflicts cannot be only on scarcity but abundance as well. There is a likelihood of more frequent conflicts in resource-rich countries than in poor countries. However, scarcity of resources, demographic characteristics, uneven distribution, marginalization, and politics are factors of conflict (UNEP, 2009) [2].

The land tenure system in the country is a cause of conflict. However, communities lived in harmony for many decades until recently. As climate change hits, the fertility and productivity of farmlands dwindle due to erratic rainfall patterns, disease infestation, salt intrusion in fields leading to poor crop yield, and lack of grazing land for nomadic, floods, droughts, windstorms, and other climate stressors. The above-mentioned factors dwindle the food basket thereby causing the need for more farms and grazing lands. This is a cause for the emergence of minor and violent conflicts (Ajuang Ogallo *et al.*, 2018) [3].

The link between climate change and the outbreak of violent resource conflict is complex. The complexities vary from one community to the other depending on sociocultural settings, socio-economic activities, politics, resource abundance, or scarcity. Such problems emerge and interact with political, social, economic, and ecological factors to generate aggressive conflicts. Although natural resource-related conflicts cannot be entirely on climate stressors, they can be broader viewed within a social, economic, and political context. This paper will consider local politics, socioeconomic dominance, and ethnic linkages to conflicts with climate change as major drivers.

Climate Change continues to cause far-fetching impacts on the lives and livelihoods of people around the world, especially vulnerable and marginalized groups. It has been widely agreed by researchers that climate change affects brews conflict over natural resources, thus, a major threat to human security and the environment. Studies have outlined that the link between natural resources and conflict is an age-old phenomenon (Alao, 2007 [4]; Smith *et al.*, 2021 [5]).

The Gambia is one of the most vulnerable countries to the impacts of Climate Change, with excessive pressure on forest resources, high demand for farmlands, low agricultural productivity with fewer alternative sources of livelihood coupled

with natural phenomena such as flash floods, saltwater intrusion, decreased precipitation, drought spells, etc. These stressors are leading to increased inequality and extreme poverty in the country. The country continues to experience resource conflicts in different communities. This paper seeks to analyze the climate change stressors as causative factors to natural resource-related conflicts (Gomez *et al.*, 2020 [6]; Jallow *et al.*, 1996 [7]).

Land and water are essential for all humans across the globe. There is scientific consensus among researchers and decision-makers that in many fragile countries disputes over these resources often degenerate into violent conflict and instability (Schellens, 2020) [8].

The impacts of climate change such as rising sea levels have a strong correlation with the destruction of key natural resources. For example, in most cases, salt intrusion (salinity) reduces the arability level of farmlands, performance, and productivity of crops mostly grown in swampy areas such as rice. Such reductions in land arability coupled with increasing human populations leading to higher demand for land to produce for survival causes hostile confrontations between factions. This is particularly evident in settlements where swampy farmlands serve as major ecosystems requisite for the production of such crops as rice.

In The Gambia, most local communities especially those closer to flood plains, engage in rice production because rice is a staple food in the country. However, over the years, the salt intrusion has been posing worrying threats to traditional rice-growing communities, as their rice fields become increasingly less arable. This research seeks to provide a detailed analysis of how climate change and its impacts lead to conflict over resource ownership and use.

1.2. Site Description

The Gambia is the smallest country in mainland Africa with a population of 2.1 million inhabitants, surrounded by Senegal on three sides and the Atlantic Ocean on the other. The small country is famous for the hospitality of its people and is metaphorically referred to as the Smiling Coast of Africa. There are seven administrative regions in the country with over 51% of the people being residents in Kombo (Kanifing Municipality and Brikama). The country has over 31% youth unemployment while agriculture is the employer of over 68% of the country's workforce. Notwithstanding, poverty, inequality, and malnutrition levels are very high in the country. The agricultural sector though contributes about 25% of the GDP; food security remains a big challenge for the small nation (GBoS, 2013 [9]; Jaiteh, 2011 [10]; Komma, 2019 [11]).

Due to multiple factors, the size of the country is becoming an increasing challenge for her people. The current demographic realities of the country have led to increased pressure on the natural resources and as well as other factors such as climate change impacts on the major driver of the nation's economy-agriculture, the proliferation of real estate agencies, the poor land tenure system, lack of ef-

fective and efficient land-use policies among others.

Sambang is a small community with an approximated population of about 700 inhabitants located in the Niamina West Constituency, Central River Region of The Gambia. (Figure 1) A street divides the community based on ethnicity. The two major ethnic groups in the village are Fulas and Mandinkas. Therefore, the names Sanbang Fula and Sambang Mandinka are given. Sambang Fula has an approximate population of 450 people and Sambang Mandinka has about 230 inhabitants. Both of these communities have their own independent community "Alkalo" (village head). The Mandinkas and the Fulas are historically said to have a very cordial relationship in Sambang, however, this story has a different narration in today's Sambang. Although the inhabitants are engaged in other forms of socioeconomic activities like petty trading (mostly women), tailoring, fishing, baking, etc. Farming predominates with rice cultivation being the most prominent, especially among women. Crop production and cattle rearing dominate the area.

2. Methodology

This research is a community case study in Sambang Villages of the Central River Region of The Gambia. The site is chosen for the study because of the ongoing open conflict in the area. This paper used focus groups to get all the relevant information for the study through community consultations. The focus groups are as follows: Youth Groups (13 - 29), Women (age 30 - 45), Men (30 - 45), Older Men, and Women (46 and above). These groups discussed existing conflicts in light of climate change from an intergenerational perspective. Individual interviews were conducted with families involved in the conflict and the village heads including some prominent women and youth leaders. In each community, the

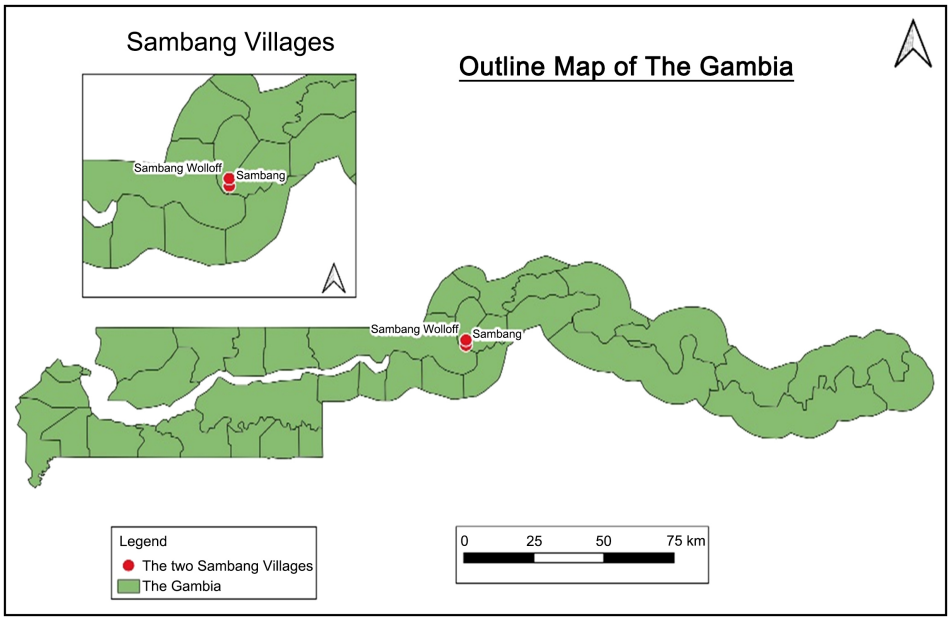

Figure 1. The map of The Gambia indicating the area of study.

focus groups held meetings separately. The groups in Sambang Fula held discussions separately likewise the groups in Sambang Mandinka. After all the meetings with the groups, a joint convergence with both communities was conducted.

As shown in Table 1, one hundred and sixty-four (164) persons were involved in the focus group discussions held in Sambang Fula among whom 84 were female and 80 were male representing 51.2% and 48.8% respectively.

In Sabang Mandinka, 94 persons were involved in the focus group discussions out of whom, 52 were female and 42 were male representing 55.3% and 44.7% respectively (Table 2). Overall, 258 persons were involved in the nine (9) group discussions held in both communities. 25 persons attended the joint meeting from each community. The selected persons were involved in previous meetings.

Table 1. Characteristics of participants in Sambaing Fula.

Youths within the age group (13 - 29)			
Sex	Male	Female	Total
Number of persons	37	28	65
Women between the age of 30 - 45			
Number of persons	44		44
Men between the age of 30 - 45			
Number of persons	33		33
People at 46 and above			
Sex	male	Female	
Number of persons	8	12	22
Total number of persons		**164**	

Table 2. Characteristics of participants in Sambang Mandinka.

Youths between the age (of 13 - 29)			
Sex	Male	Female	Total
Number of persons	15	24	39
Women between the age of (30 - 45)			
Number of persons	19		19
Men between the age of 30 - 45			
Number of persons	15		15
People at 46 and above			
Sex	Male	Female	
Number of persons	12	9	21
Total number of people		**94**	

3. Case (Sambang Fula vs Sambang Mandinka)

Drawing a case in Sambang, this paper seeks to provide a detailed analysis of natural resource conflict, especially about climate change. Sambang is a small community located in the Central River Region (North) of The Gambia. Two major ethnicities in The Gambia inhabit the community: Fula and Mandinka; thus, the dual nomenclature of Sambang Fula and Sambang Mandinka. A thin line (street) separates the two communities, and Sambang Fula is the largest by population size of approximately 450 people. These two communities have been undergoing conflict over their farmlands (rice fields), especially over the past five years. Thus, leading to serious escalated tensions affecting the most vulnerable folks—women. Although there was some progress in resolving the conflict, particularly among the youth, the communities still experience a rusty relationship as opposed to previous years. This study seeks to analyze climate change as a driver of conflict in the study area.

4. Climate Change as a Driver of Conflict in Sambang

Climate risks extend beyond the immediate domain of environment and development and into the political and social realms. When critical thresholds and coping capacities are exhausted, these risks can create a web of cascading effects that may ultimately threaten human, community, and national security. In the last five years, The Gambia has experienced more shocks in a climate characterized by rising sea levels, destructive storms as well as erratic rainfall patterns, causing a dramatic reduction in cultivated areas and yields. The climate change stressors have led to complex competition for agricultural land, increasing the burden on communities, and stoking both intra and inter-communal conflict. Heightened food insecurity and malnutrition have forced people to seek assistance from better-off community members. This increases pressure on natural resources and widens poverty among community members.

In Sabang Mandinka, such stressors have led to tensions within the community itself. Inter-community conflict takes place in the form of violence in disputed farms and homes of community members leading to livelihood restrictions and wounded individuals.

The two major climate-related conflict drivers in The Gambia are raising sea levels and erratic rainfalls, pushing communities to unprecedented levels of climate insecurity. Due to the rising sea level, saline water has intruded considerably into the freshwater of the river Gambia. This has affected some rice-cultivating communities along the banks of the river. The rice varieties that are cultivated in these regions have little or no tolerance to saline conditions, therefore leading to a decrease in cultivated farmlands, low yield, or even crop failure. This has resulted in increased food insecurity and exerted pressure on families' livelihoods and survival mechanisms. Women farmers in particular decried decreasing yield in the main crops they grow; stating that groundnut harvest dwindled from 10 to 2 bags per female farmer and rice production to nearly zero among their com-

munities leading to devastating economic hardships.

The effects of climate change have forced communities to encroach on lands belonging to others in the search for natural resources for survival. This was evident in Sambang Fula and Sambang Mandinka during the conflict analysis, where the former migrated to the farms of the latter due to salt intrusion and soil erosion. There are counterclaims over the rights of farmland usage with men and male youths domineering the discussions and arguments. Allegedly, both Sambang Fula and Sambang Mandinka have taken the case to court.

The court had ruled that neither community should use the disputed land while the case was under scrutiny, which deprived the communities of rice farming for 5 years as the court and community-level dispute mechanisms cannot solve the issue. Women have limited income and livelihood opportunities, as traditionally women take care of the rice farms.

The situation resulted in conflicts between communities, as not all parties allegedly respected the court's decisions equally. At the time of the study, the saltwater intrusion has expanded to the farms of Sambang Mandinka. The communities reported that the dispute had reached local courts, but was not resolved justly. As more stressors hit, further conflict over the remaining arable lands emerges. The two communities encroached into a third neighboring community's land, Njie Kunda. Salt intrusion remains a reason for escalated conflict across other nearby communities such as Njugga Kunda's farmland borders with Njie Kunda's farms and is located within short proximity to the river stream. This created a conflict trap, when climate change impacts the drivers of conflict, conflict affects communities' capability to adapt to climate change.

As communities' adaptive levels to the impacts of climate change are low, they have resorted to the employment of negative coping strategies including overexploitation of natural resources such as wood collection, charcoal burning, and hunting, which have dramatic long-term effects on the ecosystem vitality and environmental health. Such practices have led to other tensions and new conflicts over natural resources for income and survival like wood logging, as well as having environmental effects where the communities experience an increase in run-off water erosion, wind storms, and flash flooding during the rainy season due to lack of forest cover.

5. The Effects of Climate Change-Induced Natural Resource Conflict in Sambang

Using USAID's climate change-conflict typology nexus—the situation in The Gambia can be classified as "direct resource competition" by which the competition commonly arises through market/economic, or legal political/economic channels, and results in violence only in the worst-case scenario. Community-led dispute resolution platforms and monitors were weak in the consulted communities and did not include women (USAID, 2015) [12].

Beyond advocacy, the inclusion of women and youth in dispute resolution

mechanisms cannot effectively take place through the strengthening of dialogue platforms, awareness-raising, partnership development, and communication strategies together with collective mobilization.

Additionally, communities with the capacity to monitor emerging tensions are more likely to solve the matters before the escalation of tensions. For instance, there were cases in the Alkalo do not know what to do to address the climate change conflicts. This angered and frustrated the parties involved which led to violent clashes. The people of Sambang Fula burned two compounds in the Sambang Mandinka community during the conflict.

In some cases, the village headmen were arrested for allegedly conducting unlawful decision-making, which resulted in clashes among community youths. In the absence of dispute resolution mechanisms, the youths described themselves as "ready to take any action to retain what belongs to them". Some communities introduced youth monitoring groups to guard their natural resources such as community forests. While such structures have potential, their structures are limited and resulted in more conflict with illegal loggers when captors demand compensation.

Male youths are the protectors of natural resources. Under reduced access to arable farmlands, due to the effects of erratic rainfalls and salination, men have limited alternatives that require unskilled economic activities that are unrelated to natural resources while women are subjected to higher economic pressures—as opposed to rice and groundnut farming. Women have had to resort to complete reliance on basic vegetable gardening with minimal market access as opposed to cultivating more economically viable crops like rice and groundnut. Even that, water availability is a burden.

A report by European Institute for Gender Equality in 2016 highlighted that "While women are active in rural communities, their multiple roles and responsibilities are not well recognized. They often receive lower remuneration for their work than their male colleagues do. Women represent a significant share of the farming labour force, but mostly in the lowest paid, most insecure jobs. The time burden of unpaid household activities can significantly limit women's involvement in the labour market" (p. 8).

Women and girls are increasingly vulnerable to conflict as men attack them from opposing communities. The women explained that they experienced severe gender-based violence where they were attacked with machetes, axes, etc. The gender-based violence occurs when women carry out their livelihood activities on the remaining arable land demonstrating that gender influences access to natural resources. This resulted in women being terrified to enter farmlands, as there were extreme cases in which women were stabbed in their homes. Consequently, communal relationships such as intermarriages across communities, ceremonies, and joint sports stopped which exacerbated the entrenchment of views and community politics.

There are court cases in which the youths of Sambaing Fula burnt down

compounds in Sambang Mandinka over a land dispute. The youths of both communities were armed with crude tools to fight and harm anyone from the other community within their territory. These two communities, separated by a street and ethnicity became a violent conflict area due to climate stressors.

6. Conclusion

As climate stressors exacerbate, they lead to a significant reduction in livelihood ventures thereby increasing competition over limited resources which eventually triggers conflict among competitors. Women and children bear the biggest burden of these conflicts through direct harm and indirect impacts of the loss of livelihood ventures. The stressors increase food insecurity burdens on families' thereby adding pressure on the existing natural resources. This is the main cause of violent conflicts in Sambang. Ownership and use of land in The Gambia remain a very critical sector that is breeding emerging conflicts within and among communities. Overall, women remain the most affected by the conflict, as they become targets by other community people. In some cases, others forcefully encroach on lands farmed by women. This denies them access to their main sources of livelihood. The conflict in Sambang has no political affiliations. It is purely over resources and triggered by climate change. The decline in agricultural productivity, increase in salt-water intrusion, food insecurity, increased poverty, and inequality are all contributing factors. The lack of basic needs is a trigger for conflict, and climate change is causing a serious dwindling of The Gambia's food supply.

Conflicts of Interest

The authors declare no conflicts of interest.

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