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RESOURCE CURSE REVISITED: CLIMATE CHANGE, ARMS PROLIFERATION, AND THE CRISIS OF GOVERNANCE IN THE GULF OF GUINEA

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ABSTRACT: The Gulf of Guinea, a strategically vital maritime region in West and Central Africa, faces compounding threats from climate change and arms proliferation that undermine its socio-economic stability. This study explores how rising sea levels, extreme weather events, and environmental degradation intersect with the spread of small arms and light weapons (SALWs) to intensify conflict, displacement, and economic decline. Through qualitative analysis of policy documents, regional reports, and case studies, the paper examines the cyclical relationship between climate change, the resource curse, and armed violence in fuelling a governance crisis. Findings reveal that climate change acts as a threat multiplier, escalating competition over dwindling fisheries and arable land, while arms proliferation empowers criminal networks and non-state actors. The study introduces the concept of a "climate-resource-conflict trap," offering new insights into environmental security and concluding with multi-level policy recommendations for community-based adaptation, regional arms control, and climate-resilient peacebuilding.

Keywords: Climate Change, Arms Proliferation, Resource Curse, Governance Crisis, Environmental Security

INTRODUCTION

The Gulf of Guinea, spanning twelve coastal states from Liberia to Angola, presents a paradox of immense natural wealth and persistent insecurity. Despite supplying 25% of Africa's maritime trade and holding 4.5% of global oil reserves (U.S. EIA, 2023), the region is plagued by overlapping crises of climate change, arms proliferation, and weak governance. Decades of extractive development and resource exploitation have produced environmental degradation and governance voids, now exploited by criminal networks and armed groups (Omitola, 2016).

Climate change poses existential threats to coastal communities. Lagos, for instance, experiences a 2–3 cm annual sea-level rise, endangering $26 billion in port infrastructure (IPCC, 2023). At the same time, porous borders facilitate the circulation of over 500,000 illicit firearms, contributing to the Gulf accounting for nearly 40% of global piracy incidents (UNODC, 2023). These challenges are not isolated but deeply interwoven. As climate-induced livelihood losses drive young people into piracy and armed groups, violence, in turn, exacerbates resource scarcity. For example, declining fish stocks along Ghana's coast have coincided with a 70% surge in piracy since 2015, as desperate fishermen turn to maritime crime (International Maritime Bureau, 2021).

While regional initiatives such as ECOWAS's conflict prevention frameworks exist, they remain largely disconnected from national and local climate adaptation strategies. This is concerning given that 65% of communal conflicts in the Gulf of Guinea are linked to land or water-related disputes (Balogun, 2024). Orthodox security approaches, such as naval patrols, have had limited success because they ignore underlying terrestrial drivers like drought, displacement, and inequitable resource governance (CSIS, 2023).

This study argues that the interplay of climate change, arms trafficking, and extractive governance in the Gulf of Guinea perpetuates a self-reinforcing crisis. Addressing this "climate-resource-conflict trap" requires integrated, multi-scalar policy solutions that bridge climate adaptation, arms control, and inclusive governance (CSIS, 2023).

The paper addresses three main gaps in the literature: (1) the lack of attention to micro-level climate-conflict dynamics in fishing communities; (2) limited analysis of China's dual role in arms transfers and coastal infrastructure projects; and (3) the policy disconnect between maritime security efforts and climate resilience planning. Using a political ecology lens, the paper examines how historical inequities, environmental degradation, and fragmented responses converge to deepen insecurity in the region.

The paper proceeds as follows: A detailed methodological approach, then conceptual clarification and the theoretical framework on environmental security and the resource curse, followed by a section that presents empirical cases that discuss the implications for regional security and development. It then concludes and provides policy recommendations for integrated governance and peacebuilding in the Gulf of Guinea.

METHODOLOGY

This study adopts a qualitative research design to explore the interlinked challenges of climate change, arms proliferation, and governance in the Gulf of Guinea. The research relies exclusively on secondary data drawn from a wide range of sources, including regional policy documents from ECOWAS and the Gulf of Guinea Commission, international agency reports such as those from the UNODC and IPCC, national strategies including Nigeria's Deep Blue Project, and scholarly literature comprising peer-reviewed journal articles, academic books, and working papers on environmental security and arms trafficking in West Africa.

An interpretive thematic analysis was applied to the collected documents. Through repeated readings, key themes were identified, including governance gaps, climate impacts, resource-based conflict, and illicit arms flows. These themes guided the systematic coding and organization of the data, allowing for the emergence of patterns and relationships relevant to the research questions. While the analysis was conducted manually, it followed a structured and transparent process to ensure coherence and consistency across sources.

To strengthen the credibility of the findings, triangulation was employed by cross-checking information across different types of documents. Conflicting accounts, such as varying estimates of illicit firearms in circulation or the scale of climate-related displacement, were assessed by

evaluating the methodological rigor and institutional credibility of each source. Divergent perspectives were reconciled by drawing on stakeholder analyses already embedded within the secondary literature and cited in NGO or policy reports, allowing for a more balanced and nuanced interpretation of contested issues.

The study acknowledges certain limitations. These include the politicisation of climate vulnerability data by some Gulf states, gaps in disaggregated information on arms flows, and the uneven availability of up-to-date regional data. Despite these constraints, the reliance on diverse and credible secondary sources provides a comprehensive foundation for understanding the evolving security and environmental dynamics of the Gulf of Guinea.

Conceptual Clarification

The study operationalizes key concepts to delineate their manifestations in the context of the Gulf of Guinea. Climate change refers to anthropogenic global warming impacts, including sea-level rise (projected to displace 10 million people in the region by 2050) and ocean acidification, reducing fish stocks by 30% (IPCC, 2023). Arms proliferation encompasses both the legal trade in SALWs and illicit trafficking through porous borders, with an estimated 100 million illicit firearms circulating in West Africa (Small Arms Survey, 2023). Socio-economic impacts are measured through indicators such as GDP loss from piracy (estimated at $2.3 billion annually) and climate-driven declines in agricultural productivity (OECD, 2008). The Gulf of Guinea's unique vulnerability stems from its resource curse paradox, where oil wealth coexists with governance deficits that enable both environmental exploitation and arms trafficking (UNODC, 2023).

Climate Change

Climate change refers to long-term alterations in global temperature, precipitation patterns, and other climatic phenomena occurring over decades or centuries. Unlike natural climatic variations, contemporary climate change is largely anthropogenic, driven by human activities such as fossil fuel combustion, deforestation, and industrial processes that release significant amounts of greenhouse gases (GHGs) into the atmosphere (Intergovernmental Panel on Climate Change (IPCC, 2023). These gases, including carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), trap heat, leading to global warming and its cascading effects such as rising sea levels, extreme weather events, and shifting ecosystems (IPCC, 2023). The implications of these changes extend across security, economics, and public health.

The recognition of climate change as a pressing environmental issue gained momentum in the mid-20th century. Scientific contributions provided empirical evidence linking human activity to rising atmospheric CO_2 levels (IPCC, 2023). The establishment of the Intergovernmental Panel on Climate Change (IPCC) in the late 1980s solidified the consensus on anthropogenic climate change, leading to the development of global policy frameworks aimed at mitigation and adaptation. The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as a shift in climate patterns attributable directly or indirectly to human activities that alter the composition of the global atmosphere (United Nations Framework Convention on

Climate Change [UNFCCC], n.d.). This definition underscores the distinction between human-induced climate change and natural climatic variability.

The fundamental science behind climate change is rooted in the greenhouse effect, a natural process whereby certain gases in the Earth's atmosphere trap heat from the sun. However, since the Industrial Revolution, human activities have dramatically increased the concentration of these gases, intensifying the warming effect. The major contributors include CO_2 from fossil fuel combustion, CH_4 from agricultural and industrial processes, N_2O from fertilizer use, and fluorinated gases from industrial applications (IPCC, 2023). The IPCC's Sixth Assessment Report confirms that human influence has unequivocally warmed the climate, with global surface temperatures rising by approximately 1.1°C above pre-industrial levels. This warming has resulted in glacial melting, sea-level rise, and more frequent extreme weather events (IPCC, 2023).

The primary sources of GHG emissions include energy production, which accounts for over 75% of global CO_2 emissions; deforestation; industrial processes; and poor waste management (Royal Society, n.d.; U.S. Environmental Protection Agency [EPA], 2024). Rapid urbanization and population growth further exacerbate emissions, particularly in developing nations where reliance on fossil fuels remains high (EPA, 2024).

Theoretical Framework

This analysis examines the crises in the Gulf of Guinea through an interdisciplinary lens, integrating environmental security, political economy, and postcolonial critiques to unpack the complex relationships between climate change, arms trafficking, and governance failures.

At the core of this framework is environmental security theory (Homer &Dixon, 2010) which conceptualizes climate change as a "threat multiplier," exacerbating existing tensions over resources like land and water. In the Gulf of Guinea, this dynamic is starkly evident: coastal erosion and overfishing have led to the collapse of local fisheries, pushing vulnerable communities toward piracy and illicit economies (UNODC 2013). This pattern aligns with broader trends observed across Africa, where climate stressors such as drought and desertification increase the likelihood of conflict (Busby et al., 2014).

The conflict ecosystem theory (Kaldor, 2012) further illustrates how violence becomes self-perpetuating, particularly in regions where access to arms is widespread. In the Gulf of Guinea, arms proliferation, facilitated by porous borders and corrupt supply chains, allows armed groups to exploit environmental grievances for political and financial gain. For example, militant groups like Nigeria's Niger Delta Avengers have fused oil-related grievances with criminal rackets, intensifying instability. This phenomenon is directly linked to the resource curse theory (Ross, 2012), which argues that despite abundant natural resources, resource-rich regions often suffer from poor governance and corruption. In the Gulf of Guinea, the wealth generated by oil extraction rarely benefits local communities; instead, it exacerbates institutional weakness and fuels elite capture. As a result, governments are ill-equipped to respond to climate shocks or control the flow of arms (World Bank, 2020).

A postcolonial political ecology perspective provides additional context by highlighting how the Gulf's extractive economies, shaped by colonial exploitation, continue to prioritize foreign investment over sustainable development. Historical legacies such as weak land rights, environmental deregulation, and militarized policing are rooted in colonial systems (Mbembe, 2001). These structural weaknesses not only amplify climate vulnerabilities but also create environments where arms traffickers can operate with impunity.

Lastly, the framework critiques the growing trend of securitization in regional responses to piracy. While efforts like the Yaoundé Code of Conduct focus on military solutions, they often neglect the root causes of insecurity: degraded ecosystems, high unemployment, and weak governance structures (Bueger & Edmunds, 2020). Effective interventions must integrate climate adaptation, arms control, and anti-corruption measures, moving beyond isolated solutions to address the systemic factors driving both environmental degradation and armed conflict.

The Resource Curse and Climate-Conflict Nexus

The Gulf of Guinea faces significant challenges stemming from the resource curse and the exacerbating effects of climate change. This analysis examines how resource wealth contributes to governance failures and environmental vulnerabilities, creating a nexus between resource exploitation and climate-induced insecurity.

The resource curse theory, as articulated by Michael L. Ross in The Oil Curse: How Petroleum Wealth Shapes the Development of Nations (2012), explains how resource wealth, particularly oil, often leads to poor governance, corruption, and socio-economic inequality. In the Gulf of Guinea, oil-producing nations such as Nigeria, Equatorial Guinea, and Ghana have experienced institutional weaknesses that hinder equitable development. For instance, Nigeria’s oil wealth has fuelled elite capture and rent-seeking behaviour rather than broad-based economic benefits (Ross, 2012). Similarly, Equatorial Guinea’s petroleum revenues have reinforced authoritarianism and political extraversion (Campos Serrano, 2010).

In Ghana, conflicts have emerged between small-scale fishers and the oil industry due to restrictions on fishing around offshore rigs. These restrictions have reduced fish stocks and threatened food security for coastal communities (Owusu, 2018). Such dynamics illustrate how resource exploitation can undermine traditional livelihoods and intensify socio-economic disparities.

Climate-Conflict Nexus Climate change acts as a "threat multiplier," amplifying existing vulnerabilities in resource-dependent regions like the Gulf of Guinea. Coastal erosion, rising sea levels, and declining fisheries due to overfishing have destabilized local economies. These environmental stressors often push marginalized communities toward piracy or other illicit activities as alternative livelihoods (UNODC, 2013).

In Nigeria's Niger Delta, the intersection of environmental degradation and resource-related grievances has fuelled insurgencies. Militant groups like the Niger Delta Avengers exploit ecological damage caused by oil extraction to justify their violent campaigns. These groups also

engage in criminal activities such as oil theft to fund their operations (Roll & Sperling, 2011). This dynamic demonstrates how environmental degradation linked to resource extraction can perpetuate cycles of violence.

Strategic Importance of the Gulf of Guinea

The Gulf of Guinea, extending approximately 2.3 million square kilometres from Senegal to Angola, occupies a vital position within the Atlantic Ocean. This maritime region is abundant in hydrocarbons and natural resources, serving as a crucial conduit for global trade. It accounts for about 25% of Africa's maritime traffic and hosts nearly 20 commercial seaports. According to the Africa Centre for Strategic and International Studies (2022), the Gulf contains approximately 4.5% of the world's proven oil reserves and 2.7% of natural gas reserves, with Nigeria contributing around two-thirds of these resources. Furthermore, it produces nearly 4% of global fishery output, which sustains millions of jobs in coastal communities and underscores its economic significance (Africa Centre for Strategic and International Studies, 2022),

The economic value of the Gulf is immense, particularly for countries like Nigeria and Angola, which play key roles in the global oil and gas markets. In 2020, Nigeria accounted for about 60% of Africa's total oil production, reinforcing its status as a primary exporter of liquefied natural gas (LNG), (Ayuk, 2025)). While this dependence on hydrocarbons offers opportunities for economic growth, it also exposes these nations to vulnerabilities from market fluctuations and conflicts over resource control.

As a critical maritime trade route, the Gulf connects Europe, the Americas, and Asia along significant Atlantic corridors. Major ports such as Lagos, Tema, and Abidjan are integral to international shipping and regional trade, making the assurance of maritime security paramount to maintaining commerce and safeguarding these strategic assets. Geopolitically, the Gulf of Guinea has become an arena for competition among global powers, with nations vying for influence due to the region's energy resources and strategic location. The engagement of external powers with Gulf nations through investment and security partnerships raises the potential for both collaboration and tension, further complicating the regional security landscape (Lodge, 2020).

This strategic importance has drawn increased attention from major global players, including the United States and the European Union, who have intensified their involvement in the region to combat maritime security threats such as piracy and illegal fishing. Their efforts primarily focus on security initiatives aimed at protecting essential maritime routes. However, a notable shift is occurring with China's expanding influence. China has made substantial investments in infrastructure and oil exploration, particularly in Nigeria and Angola, and its attempts to establish a naval base at Equatorial Guinea's Mainland Port of Bata have raised geopolitical concerns among Western nations (Ibeh, 2023; SG MORGEN, 2023).

These dynamics highlight the necessity for enhanced regional cooperation to tackle the challenges facing the Gulf. The Yaoundé Protocol, established in 2013 and involving 25 West and Central African governments, aims to bolster maritime security through information sharing and coordinated efforts against piracy and other illicit activities (Centre for Strategic and International

Studies, 2023). While the protocol's goals are commendable, implementation faces challenges such as insufficient staffing, inadequate equipment, and limited funding. In this context, Nigeria has emerged as a pivotal player in regional security efforts by implementing initiatives like the Suppression of Piracy and Other Maritime Offenses Act of 2019 and the ambitious Deep Blue Project to foster a secure maritime environment (Institute for Peace and Conflict Resolution, 2024).

Nonetheless, the Gulf of Guinea grapples with significant security challenges. The rise in piracy and illegal fishing undermines the safety of maritime trade; alarming statistics from the International Maritime Bureau indicate that these issues are on the rise (International Maritime Bureau 2021). Added to this, the proliferation of small arms and light weapons exacerbated by weak governance and porous borders poses more security threats, as armed groups exploit these vulnerabilities to disrupt trade and incite violence.

Moreover, climate change vulnerabilities complicate the strategic significance of the Gulf. Climate change poses threats to livelihoods and critical infrastructure, resulting in rising sea levels, coastal erosion, and extreme weather events. As environmental degradation escalates, socio-economic instability intensifies, creating conditions that are ripe for conflict over dwindling resources. The intricate relationship between environmental challenges and security threats has increased the socio-economic challenges in the region.

The socio-economic dynamics of the Gulf of Guinea are deeply linked with its twin challenges. High levels of unemployment, poverty, and inequality foster societal discontent, making populations more susceptible to recruitment by criminal groups and insurgents (Institute for Peace and Conflict Resolution, 2024). To enhance stability and foster peace in the region, addressing these socio-economic challenges is essential to targeted efforts to alleviate poverty and promote equitable resource distribution; the Gulf of Guinea risks becoming further entrenched in cycles of violence and insecurity. Compounding these socioeconomic issues are the impacts of climate change, which exacerbate existing vulnerabilities that threaten the region's stability (Institute for Peace and Conflict Resolution, 2024). As rising sea levels, flooding and environmental degradation continue to unfold, they not only undermine livelihoods but also intensify resource competition and social unrest. Understanding the implications of climate change in the Gulf of Guinea is critical for devising comprehensive strategies that address both environmental and socio-economic challenges.

Climate Change Impact in the Gulf of Guinea

The Gulf of Guinea is particularly vulnerable to climate change, facing multiple environmental challenges that threaten socio-economic stability. One of the most pressing issues is rising sea levels and coastal erosion, which significantly impact countries like Nigeria and Ghana. In Nigeria, the Lagos coastline is experiencing severe erosion, endangering communities, infrastructure, and local economies dependent on coastal resources (Doherty, 2024; Muis et al., 2023). Similarly, Ghana's coastal towns, such as Ada Foah, are losing arable land and property, forcing displacement and migration to urban centres. This migration strains city infrastructure and public services (Salata Institute, 2024). The economic fallout extends to key sectors such as fishing and

tourism, where ecosystem degradation threatens livelihoods and increases competition for dwindling resources, potentially leading to social tensions (Okafor-Yarwood et al., 2020).

Extreme weather events, including heavy rainfall, floods, and droughts, have become more frequent in the region. Flooding has severely impacted agriculture, reducing productivity and exacerbating food insecurity and poverty in West African nations like Nigeria. The agricultural sector struggles with erratic climate conditions, making farming increasingly precarious. Declines in agricultural output drive food prices up, disproportionately affecting low-income households (Popoola et al., 2019). Moreover, businesses face difficulties recovering from climate-induced disasters, further weakening economic resilience and fostering resource-based conflicts. The lack of sufficient tide gauge stations in the Gulf limits understanding of sea-level changes and hampers effective adaptation strategies (Muis et al., 2023).

Biodiversity loss and resource depletion are also critical concerns. Overfishing and habitat destruction in the Niger Delta are exacerbated by changing marine conditions, depleting fish stocks and destabilizing fishing-dependent communities. The decline in fish populations not only threatens food security but also intensifies competition among fishing communities, increasing the risk of conflicts (Okafor-Yarwood et al., 2020; Popoola et al., 2019). The degradation of marine and coastal ecosystems further amplifies the environmental crisis by reducing ecological resilience and compounding the effects of climate change.

The socio-economic vulnerability of communities in the Gulf of Guinea is heightened by high unemployment and poverty levels. Erratic rainfall patterns have led to crop failures in countries like Togo, increasing food prices and deepening poverty levels (Popoola et al., 2019). Such economic instability often fuels social unrest as communities face worsening conditions. In response, some individuals resort to illicit activities or align with extremist groups, further undermining regional stability (Doherty, 2024). This vulnerability is exacerbated by weak infrastructure, limited access to education, and inadequate healthcare systems—all of which reduce the resilience of affected populations to climate shocks.

Arms Proliferation in the Gulf of Guinea

Arms proliferation in the Gulf of Guinea is driven by a combination of local, regional, and global factors. These factors perpetuate insecurity, violence, and economic instability, contributing to a vicious cycle of weak governance, armed conflict, and socio-economic stagnation. Such dynamics undermine the region's ability to effectively address critical challenges (Waziri, 2024).

Organized Crime and Piracy

A significant driver of arms proliferation in the Gulf of Guinea is the rise of organized criminal activities, particularly piracy. The region has become a hotspot for maritime insecurity, with armed criminal groups engaging in piracy, hijacking, kidnapping, and theft of cargo (Balogun, 2024). The availability of firearms and military-grade weapons fuels these illicit activities. As piracy intensifies, the demand for more advanced weaponry grows, which in turn sustains arms trafficking

networks (UNODC, 2023). These criminal networks disrupt regional economies by affecting trade and exacerbating political instability.

Militancy and Insurgency

The growing influence of militant groups is another key factor in the proliferation of arms in the Gulf of Guinea. Insurgents, particularly in regions like the Niger Delta, are heavily armed, using weapons to pursue their goals of resource control, environmental justice, and resistance against state authority. These groups are sustained by the illegal arms trade, which supplies them with the necessary firepower to continue their operations, often sabotaging oil installations and confronting government forces (Institute for Peace and Conflict Resolution, 2024). The persistence of militancy has had severe economic consequences for Nigeria, particularly in the oil sector, where it has disrupted production and deterred foreign investment.

Weak Governance and Law Enforcement

Arms proliferation is closely tied to weak governance structures and inadequate law enforcement in the Gulf of Guinea. Porous borders, limited capacity of security agencies, and corruption create an environment where arms trafficking can thrive. Ineffective border controls and the weakness of agencies such as customs and border security have allowed criminal organizations to bypass regulatory frameworks and flood the region with illicit weapons (Waziri, 2024). This lack of law enforcement exacerbates insecurity and empowers armed groups, deepening the governance crisis in the region.

Cross-Border Smuggling

Cross-border smuggling is another critical driver of arms proliferation in the region. The porous borders of West and Central Africa are exploited by traffickers, who use well-established routes to move arms across countries with relative ease (UNODC, 2023). These weapons, often sourced from conflict zones or countries with surplus stockpiles, are funnelled into the Gulf of Guinea, arming insurgent groups, criminal syndicates, and local militias. This continuous flow of arms fuels conflict and complicates efforts to restore stability (Waziri, 2024).

The Political Economy of Arms Proliferation

A political economy analysis of the Gulf of Guinea reveals that arms proliferation is partly driven by elite capture and the mismanagement of resources. Oil revenues in countries like Nigeria have been systematically siphoned off by political elites, reducing funds for essential services like social welfare and climate adaptation programs. This mismanagement exacerbates resource scarcity, particularly in coastal regions where fishing communities depend on dwindling fish stocks. This resource scarcity, combined with poor governance, provides fertile ground for piracy and other forms of violence.

A deeper political economy perspective also highlights the failure of regional policies, such as the Yaoundé Protocol, designed to combat maritime insecurity. Despite the protocol's creation in 2013

to encourage cooperation among Gulf of Guinea states, piracy and armed robbery have continued to escalate. This failure is attributed to a lack of political will, inadequate resources, and a fragmented approach to security. Countries like Nigeria, which are most affected by piracy, have not adequately addressed the root causes of maritime insecurity, such as weak governance and poor economic conditions in coastal communities. Thus, while the protocol aims to establish a collective security framework, it has been undermined by broader political and economic factors (Institute for Peace and Conflict Resolution, 2024).

Comparison with Other Regions: The Climate-Resource-Conflict Trap

The Gulf of Guinea's "climate-resource-conflict trap" differs from other regions like the Sahel, despite both areas experiencing resource-based conflicts exacerbated by climate change. In the Sahel, desertification and scarce resources fuel conflicts primarily between pastoralists and agricultural communities (Balogun, 2024). In contrast, the Gulf of Guinea's conflict is driven by a complex interplay of environmental degradation, resource control, and the flow of illicit arms, further exacerbated by global demand for oil and gas (Balogun, 2024).

This distinction underscores the importance of tailoring conflict resolution strategies to the unique economic, environmental, and political contexts of each region. In the Gulf of Guinea, the challenge lies not only in addressing the environmental impacts of climate change but also in confronting political and economic structures that perpetuate arms proliferation, such as elite capture of resources, corruption, and weak governance.

The Regional Commitment to the Gulf of Guinea

Nigeria has taken significant steps to safeguard the region's maritime security, particularly through legal reforms and technological advancements. The Suppression of Piracy and Other Maritime Offenses Act of 2019 is a landmark piece of legislation aimed at combating piracy and armed robbery at sea. However, its success has been limited by the failure of regional frameworks, like the Yaoundé Protocol, to address the root causes of maritime insecurity, including poverty, political instability, and corruption (Institute for Peace and Conflict Resolution, 2024).

The Deep Blue Project (DBP), designed to enhance Nigeria's maritime domain awareness through advanced technologies like satellite surveillance and the Global Maritime Distress and Safety System (GMDSS), represents significant progress in maritime security. However, the success of the DBP will depend on overcoming the political and economic constraints of governance in the Gulf of Guinea, highlighting the need for an integrated and politically informed approach to security.

Regional cooperation remains crucial. Nigeria's Memorandum of Understanding (MOU) with Ghana and Sierra Leone's maritime authorities illustrates the importance of cross-border collaboration. Yet, until underlying political and economic issues are addressed, such agreements will have limited impact on the region's security (Institute for Peace and Conflict Resolution, 2024).

Conclusion

The Gulf of Guinea's intertwined crises of climate change and arms proliferation demand urgent, integrated solutions. As rising seas erode livelihoods and illicit weapons fuel violence, the region's stability hinges on breaking this vicious cycle through coordinated action. Local communities require climate-resilient livelihoods and conflict mediation, while national governments must strengthen maritime security and arms control. Regionally, the Gulf of Guinea Commission should harmonise policies and enhance joint patrols, supported by international partners providing climate finance and technical assistance. Nigeria's leadership through initiatives like the Deep Blue Project offers a model, but lasting peace requires addressing root causes: environmental degradation, inequality, and weak governance. Only by merging climate adaptation with security reform can the region transform its resource wealth from a curse into a foundation for sustainable development. The Gulf of Guinea's experience demonstrates how climate change transforms the traditional resource curse into a more complex "climate-resource-conflict trap" that demands innovative governance solutions. Without addressing these interconnected challenges, sustainable development will remain elusive in the region.

Recommendations

To effectively address the interconnected crises of climate change and arms proliferation in the Gulf of Guinea, a multi-stakeholder approach is essential. This approach should integrate local resilience-building initiatives, national governance reforms, and regional-international cooperation. The following recommendations are directed towards specific actors, including community leaders, national governments, regional bodies such as ECOWAS, and global partners like the UN, to implement actionable measures that disrupt the cycle of climate-induced conflict. This framework seeks to promote long-term stability, economic recovery, and environmental protection in the region by aligning climate adaptation efforts with arms control, maritime security, and inclusive development strategies. The success of these initiatives depends on coordinated actions, accountability mechanisms, and sustained investments in human security and ecosystem restoration.

- Establish community peace councils to mediate resource conflicts through monthly meetings.

- Identify and mentor at-risk youth vulnerable to recruitment by armed groups, guided by the National Action Plan on Youth Peace and Security with quarterly reporting mechanisms.

- Implement local surveillance programs to monitor and combat illegal arms trafficking through community watch initiatives.

- Provide vocational training programs focused on climate-resilient livelihoods.

- Operate trauma healing centers for ex-combatants with permanent facilities.

- Conduct public awareness campaigns to promote arms surrender programs in collaboration with ONSA.

- Allocate annual budgets for funding mangrove restoration projects.

- Invest in the IPCR early warning systems for climate disasters with 24/7 monitoring capabilities.

- Facilitate joint military-civilian patrols in piracy hotspots.

- Implement arms marking and tracking systems via the ONSA digital registry by 2024.

- Establish marine police quick response units with a 72-hour deployment readiness.

- Create special maritime courts dedicated to hearing piracy cases.

- Develop cross-border prosecution agreements with neighboring nations through bilateral treaties.

- Form asset recovery units that target piracy financiers with permanent task forces.

- Harmonize Small Arms and Light Weapons (SALW) legislation across member states.

- Coordinate a multinational naval task force for permanent deployment in the region.

- Manage a regional climate-security early warning system utilizing AI-powered platforms.

- Standardize fisheries monitoring through enhanced vessel tracking technologies.

- Administer a regional maritime domain awareness center.

- Facilitate an intelligence-sharing portal on an encrypted platform.

Additionally, engage with the following:

- UNDP for climate adaptation funding.

- UNODC for arms trafficking interdiction via Task Force JITOC.

- IMO for enhancing shipping corridor security through certified transit routes.

- EU for coastguard capacity building initiatives under the CRIMGO program.

- US-AFRICOM for maritime surveillance support with ISR aircraft.

- China for port infrastructure security investments under the OBOR initiative.

- World Bank for resilient infrastructure loans totaling a $200 million package.

- AfDB for implementing youth employment programs through the Jobs for Youth Initiative**.**

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