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Converging Stresses: Ecology, Power and Conflict in West Africa's Oil-Rich Context

Introduction

A decade and half ago, Kaplan's influential thesis on 'The Coming Anarchy' placed the West African sub-region at the heart of an imminent demographic-environmental stress. In the portrayal of a region waiting to explode, Kaplan vividly pointed to the potential of disease, over-population, unprovoked crime, scarcity of resources, refugee migrations, the increasing erosion of nation-states and international borders, and the empowerment of private armies and security firms.[1] This 'Hobbesian' view of West Africa includes environmental threats like resource scarcity and security, and the need to avoid environmental conflicts and resource wars that could emanate from them. Kaplan's perspective aroused a great deal of controversy and concern, but has assumed renewed emphasis since the late 1990s when West Africa's Gulf of Guinea became a critical energy repository and a major frontier of global oil extraction. The transformation of the region into a source of increased and steady supply of oil has generated multiple lines of interests from American, European and Asian concerns whose search for strategic and economic opportunities may intensify existing contradictions and inequalities in the region. This translates into the designation of the region's resources to the forces of global extraction, the relative incapacity of these states to mediate the pressures on it internally and externally, and the struggle for access to finite hydro-carbon sources and oil reserves between the world's dominant powers in a post 9-11 global context.

The importance of the region has been intensified by the resource boom on the continent, the rise of new energy consumers globally (India and China) and the advent of new boom states like Mauritania, Ghana, Chad, Equatorial Guinea, and Sao Tome and Principe which have joined the ranks of prominent oil producers like Nigeria, Angola, Cameroon, Gabon and Congo Brazzaville.[2] The political economy of oil in the Gulf of Guinea presents a mixed picture.[3] This stems from the

fact that oil states in the region have different colonial backgrounds and struck oil at different points in their history, but collectively harbour some of the most visible forms of (mis)governance, environmental degradation, insecurity, political instability and conflict on the continent. The critical lesson for emerging oil states as they begin to experience novel forms of integration into transnational networks of oil production, these are bound to spawn new environmental, political and social challenges locally. The rise of new consumers globally and the resource boom on the continent means that the region will be exposed to global oil extraction for decades to come. This will usher in far-reaching implications on how oil is produced, how the environment is regulated and accounted for, and how the politics of local protests plays out against global resource extraction, environmental degradation and dispossession. The geo-political implications of these developments stem from the centrality of oil to global extractive capitalist interests and national security of oil producing states in the region.

This paper is premised on the notion that the world will remain 'hooked' on fossil fuels for decades to come. At the heart of the paper is the examination of the linkages between globalised oil extraction, climate change and environmental rights/security. Beyond these linkages, there is a bifurcation of the main task of the paper. The first explicates how globalised oil extraction intensifies conflict in a region that is gradually hitting the 'limits' of oil extraction environmentally, politically and socially. Oil extraction in Africa is increasingly being associated with the encroachment and dispossession of indigenous lands, environmental degradation, disruption of the environmental basis of indigenous ways of life, social conflict and the militarization of indigenous communities in the quest for oil. This in turn has provoked resistance and emerging claims resulting in local and global campaigns against the state-oil alliance. The second examines the effects of various forms of environmental stress caused by climate change on cropland degradation, deforestation, scarcity of water, outbreak of agricultural pests, low crop yields due to excessive heat and drought in semi-arid locations. In volatile locations in West Africa, climate change has produced severe environmental stress which feeds into existing vulnerabilities to give rise to ethnic clashes, guerrilla attacks and

insurgencies. While the first task draws on a local or sub-national focus based on the experiences of Nigeria, Africa's most populous country and the continent's leading oil producer; the second draws on a regional focus with illustrations from critical 'hotspots' in West Africa. However, they both explicate the ways in which the environment has become one of the main triggers of contestations, conflict and insecurity in Africa.

Issues related to ecology, global climate crisis and environmental degradation are currently receiving priority research attention in the natural and social sciences, but these global discourses and the response mechanisms they have engendered are still being increasingly treated in a manner that 'moves the problem around'. At the crux of the policy solutions designed to address oil-induced environmental degradation is a policy-mix made up of 'knowledge fixes' that attempt to suppress climate/environmental crisis; 'technological fixes' that ignores the debates on the dangers of fossil fuels; and 'market fixes' that leads to the 'commodification' of the environment by an internationalist politics of neo-liberalism.[4] Part of the focus of this paper is to reflect on converging stresses which are reinforced and transformed in a logic that links climate change and environmental stress to existing vulnerabilities in societies, such as, (mis)governance, ethnic cleavages, economic inequality, dispossession, and skewed distribution of power, wealth and resources. The paper stresses the argument that local or national policy issues related to the environment are not solely local or national, but must be understood against the backdrop of global political and economic environment into which they are being inserted.

In setting about this task, the paper is divided into six sections. The introduction identifies the major issues and sets out the aims of the paper. The second section examines the historical and conceptual framework for understanding the critical role of the environmental in conflict and insecurity in Africa. The third engages with core (oil and gas) industry practices and global response mechanisms to environmental and climate issues in Nigeria's oil-rich context. The fourth section serves as the fulcrum of the paper. It explores the 'converging stress' thesis which ties the region's environmental crisis into broader security issues in the region. The fifth

examines how indigenous communities and environmental movements seek to transform power relations in Africa by challenging state and global oil hegemonic interests that monopolize Africa's environmental resources. The final section sums up the arguments and what this portends for Africa's environmental governance in a post-Copenhagen-Cancun world.

Historical and Conceptual Issues in Africa's Environmental Governance

Dominant conceptions of the African environment have largely been embedded in the continent's history. These conceptions are rooted in the legacies of the colonial project and the rich corpus of Africa's environmental history. From a colonial standpoint, Lord Lugard, the architect of British colonial policy in Africa referred to the 'Dual Mandate' as a project aimed at developing Africa's resources to benefit both Africa and the whole world. Tacitly and implicitly, this meant that the exploitation of Africa's resources was central to the logic of the colonial enterprise. This tendency accounted for the environmental consequences of colonial incursions, and led to the appropriation of natural resources, such as, minerals, land, forest and wildlife by European concerns and interests.[5] The colonial enterprise challenged African cultural views on land, water and other resources which were held in sacred trust or deified, and subsequently laid it open to global predatory extraction, pollution, exploitation and degradation by global extractive forces.[6] As such, nationalist resistance to colonialism in Africa incorporated a heavy dose of environmental logic, and demonstrated the centrality of conflicts over natural resources and environmental issues in anti-colonial struggles.[7] These developments pitted the state's (colonial and post-colonial) extractive activities against local forces resisting the appropriation of natural resources from below.

There is a dialectic relationship that arises between resource (oil) extraction and the environment. The dialectical relationship propels the exploitation and extractive activities on the environment for profit on the one hand; and this in turn leads to mobilization, resistance and protest against impoverishment, pollution and degradation by local forces on the other hand. Irresponsible oil extraction kills the environment, destroys ways of livelihoods and impoverishes the people who fight back in response to these developments. The inability of the

state to rein in the worst excesses of environmental irresponsibility on the part of oil multinationals or to push for effective clean-up measures to redress environmental change on the part of oil actors inevitably leads to conflicts. The reality of the African situation is that oil multinationals exercise a dominant influence over the environment and its ecosystems, and possess immense leverage over the host African state in which they operate. The heavy cost of oil production and its deleterious effects are borne by local and indigenous oil communities, leading to crisis and conflicts.

In many ways, environmental factors assumed prominence in shaping global politics and international relations since the end of the Cold War.[8] With end of the East-West ideological faceoff, critical debates began to emerge over the redefinition of national security and the need to respond to emerging global challenges which had the environment at its core.[9] Driven by a US approach to security issues, this perspective sought a broadening and re-engagement with global security issues to include the environmental degradation and resource wars in critical areas of the third world that could affect US national interests.[10] Drawing a linkage between the environment and security, Homer-Dixon premised his influential thesis on the argument that human-induced environmental pressures could provoke social conflicts and pose significant threats to national and global security.[11] The critical issue in this context relates to the need to place emphasis on environmental-related threats to local, national and global security, and reflect on the insertion of particular locales into extant patterns of production and power. The conceptual gap inherent in most analysis of the environment in Africa has to do with the exoneration of external actors and global forces that compounds the environmental crisis in Africa. This has been refereed to as the 'fit the model' approach, that excludes hegemonic factors in African environmental crisis and how they propel and profit from inequitable global relations from the analysis and discussions of the environment. Issues of democratization of access, control, and equitable distribution of resources remains a critical issue in environmental conflicts in Africa, but these are reinforced by external actors and historically-rooted contradictions.[12]

Unlike any other commodity, oil is a commodity of immense economic and strategic value. It is the critical to the modern age and remains the most viable source of energy, economic, military and political power. It is also a source of immense profit and wealth to oil multinationals who act at the behest of their home governments and their allies in oil-rich locales and petro-states. As such, the environment has always been perceived in parochial and managerial terms as something that has to be subdued and exploited for the purposes of national development.[13] This accounts for the near absence of environmental considerations in official perceptions of national security and development, and the non-recognition of security issues that are related to environmental degradation. The subjugation, exploitation and degradation of the environment emerge as the proper price for development. The implication of this development for the oil-rich Nigerian context is that issues related to whose security is at stake, who benefits from environmental degradation and who pays the price of development become the focus of an inevitable crisis, resistance and conflict.

This scenario brings together disparate internal and external actors under a framework that involves oil multinationals, petro-states, local authorities, and the forces of local resistance. The bifurcation of this framework places the external extractive interests and the state who seek optimal exploitation of the environment on one end of the spectrum, while the other end captures the opposition to extractive state-oil activities that results in degradation, inequitable distribution of oil proceeds and the outright destruction of indigenous ways of life and survival. Conceptually, the fact that the state's view of national security lacks the incorporation of environmental issues partly accounts for conflict. More so, the inability of the state to challenge or rein in unsustainable environmental practices by global extractive actors, partly because of its weak regulatory institutions and excessive dependence on oil multinationals, makes the indigenous communities and peoples to bear the brunt of environmental degradation. The relative weakness of state institutions and the overt dependence on oil multinationals renders the state incapable of engaging with, or regulating the 'foreign goose that lays the golden egg'.[14] Considering the fact that the state lacks the appropriate technology to monitor the impact of oil production on the environment and is lethargic in its response so as not to ward

off potential gains accruable from foreign oil exploration, then little or nothing is done in relation to environmental repair as the extractive process continues. Such a scenario elicits concrete contradictions which the state is incapable of mediating, while the threats to indigenous land seizure, environmental pollution and degradation intensifies tensions and insecurity in society.

The 'Global Extractive Regime' and the Ineluctability of Climate-Environmental Stress

Oil is perceived both as a blessing and a curse, but its preponderant negative effects particularly in developing countries have linked it to a popular idiom known as the 'devil's excrement'.[15] This is because of the unfortunate consequences that befall those who inhabit or claim ownership of oil resources and the fragile environment which bears the brunt of oil exploitation, environmental degradation and pollution. The recent Deepwater Horizon explosion in the United States Gulf of Mexico has elicited renewed attention on the potential damage and far-reaching implications of oil spills to the environment globally, and specifically, to Nigeria's Niger Delta where the practice has been rampant after five decades of oil production. Aside the seizure of land for extractive purposes, oil pollution damages the forests, ecosystem, waters and life, and the victims of these processes become victims of production. This is the scenario in Nigeria's Niger Delta where socio-economic and environmental concerns of oil-bearing communities to hydrocarbon exploitation have gone unheeded. Located in the central part of Southern Nigeria, Niger Delta region comprises over 800 communities and a land mass that spans 70,000km^2. According to the Oil and Gas Journal estimates, Nigeria's proven oil reserves are estimated at 37.2 billion barrels and its proven natural gas reserves stands at 185 trillion cubic feet (tcf) as at January 2010. This ranks Nigeria as the largest natural gas reserve holder in Africa and the 8th in the world.[16]

The Nigerian National Oil Spill Detection and Response Agency (NOSDRA) estimates put the record of oil spills that have been recorded since 2006 at 2,400.[17] In a 2006 report cited in the New York Times, the Nigerian government, international and local environmental groups concluded that as much as 546 million gallons of oil or nearly 11 million gallons of oil per year

may have been spilled in the Niger Delta.[18] Gas flaring is far from uncommon in the region and gas flaring activities from oil fields in the Niger Delta is more than that of any African country, and more than that of the entire sub-Saharan Africa combined.[19] The National Oceanic and Atmospheric Administration (NOAA) estimates that Nigeria flared 532 (bct) of natural gas in 2008 most of which occurred owing to the lack of infrastructure to produce and market associated natural gas.[20] A Shell report in the mid-1990s estimated that '1,000 cubic feet (30 cubic meters) of associated gas was being produced with each barrel of oil that reached the surface'. The World Bank also estimates that natural gas flaring 'was responsible for 35 million tons of CO2 with 12 million tons of methane' produced in only two of the Niger Delta states.[21] In 2004, this figure has risen to 2.5 billion cubic feet of associated gas flaring on a daily basis and 70 million metric tons of CO2 emissions annually.[22] Different estimates put the cost of gas flaring at $1.46 billion[23] and $2.5 billion[24] in lost revenues per annum.

Gas flares lights up the night sky, produces continuous noise and leads to rise in temperatures ranging from 133 to $1400^{0.25}$ These activities produce a toxic cocktail of pollutants and particulate matter, sulphur and nitrogen dioxides, benzene, toluene, xylene and dioxins.[26] While gaseous flares mix up with humid air to produce contaminated rain or 'acid rain', the heat produced by these activities kills the vegetation, suppress the growth and flowering of plants, reduce agricultural production, cardiovascular diseases, acidification and deterioration of zinc roofing sheets.[27] The adverse effect of this activity is that it is a key contributor local, regional and global pollution, as well as, contributing to a substantial proportion of Green House Gases (GHG) and global warming. Statistically, it is estimated that gas flaring in the Niger Delta is likely to contribute to '49 premature deaths, 5,000 respiratory illnesses among children and some 120,000 asthma attacks and 8 additional causes of cancer each year'.[28] The Niger Delta Environmental Survey (NDES) report captured the alarming impact of gas flaring at the Izombe flow station where it reported an 'almost 100% loss in crop yields cultivated about 200 meters away from the flow station, 45% loss for those about 60 meters away, and about 10% loss for crop yields 1 kilometer away from the flow station'.[29] Across the West African sub-region, several communities in Ghana and Nigeria are falling victim of climate change and

environmental degradation linked to the oil industry, and these indigenous communities have resisted the construction of the West African Gas Pipeline that would pass over their communities.

On a global dimension, it is estimated that the flaring and venting of natural gas results into the emission of about 390 million tonnes of carbon dioxide annually, approximately one-third of the European Union's annual gas consumption.[30] This is compounded by the fact that there are global tendencies and practices currently driving a shift to more carbon-intensive fuels worldwide, such as the heavy and intensive industrialization processes rapidly occurring in India and China. The world appears to be in a transition of some sorts owing to the fact that we are gradually inching closer to the peak of global output of conventional oil and the energy cost of conventional oil is equally rising apace. In 2008, Thomas Homer-Dixon made the following remarks in a presentation at the Canadian International Council Foreign Policy Conference in Ontario:

> *'Global oil discovery peaked … around 1964 at around 60 billion barrels of oil, and has declined more or less steadily since then, with a reversal in the 1970s … But the thing to notice, of course, is this gap … this yawning gap between production and consumption and discovery. On an annual basis, humankind around the globe is consuming around 30 billion barrels of oil, but we are discovering, on an annual basis, when we talk about conventional oil, somewhere between 3 and 5 billion barrels. So on an annual basis we are consuming somewhere between 5 and 10 times as much oil as we are discovering'.*[31]

This scenario points to the inevitability of decline, even in existing oil fields that have produced oil for decades. Oil companies and explorers now have to venture into hostile regions and uncharted waters to drill deeper for smaller pools of low quality oil. The geopolitical implications of this development for West Africa is that the search for new oil and gas reserves has resulted into a shift to politically unfavourable territories for exploration. The extraction of previously unreachable oil and gas deposits have now commenced with the advent of technological innovations such as the ultra-deep water machinery and 3-D seismic expertise.[32] This means it is increasingly becoming expensive, both in terms of price and energy to get oil, hence, a shift to more carbon-intensive sources of energy (tar sands and coal) by economies

and companies, and a concurrent and rapid increase in carbon emissions globally.[33] For the most part, both at the local and global levels, the rich countries contribute the more to the world's emissions through the use of their complex and energy-intensive systems of production. The big actors are the United States and China, who together account for over 40% of global emissions, and when the EU and other key polluters like India, Japan, Russia are included the figure rises to about 80% global emissions.[34] The consequences of these emissions are felt more gravely in poor countries of the global south that make very minimal contributions to global warming.

Apart from a broad social and political change, climate change issues require democratic mobilization and governance which will have implications for industrialized countries, multinational oil corporations, energy-intensive private sectors and oil-rich countries that depend on oil rents for their survival. The overarching discourses that go along with climate change issues are frequently articulated in a manner that intensifies the politics and promotes the economics of climate change, while its dangers and detrimental consequences are exacerbated. Larry Lohmann's identification of 'fixes' as response to global climate change is of particular interest.[35] These fixes are categorized into three. The first involves a 'knowledge fix' driven by corporations and actors in the oil industry to steer the climate change debate and present it as a non-threat, and to reformulate the issues to benefit them. Efforts have been made in this connection to deny the scientific basis of climate change, and even where the scientific basis for action exist, they have been made to reflect the need to turn to technological and market fixes. The second approach is a 'technological fix' that permits, supports and prioritizes the continuous exploitation of coal, oil and gas. The technological fixes include proposed country-sized tree plantations in the global South to soak up carbon emissions and genetically-engineering these trees to soak up more carbon emissions, among others. These measures, though, relatively tested by corporate experiments, have proved to still be hazardous. Yet, they are currently at the forefront of mainstream discourse on climate fixes. The third refers to the 'market fix' which unites corporations, academics, industrialized countries, United Nations agencies and environmentalist in a neoliberal market approach that

creates new opportunities for corporate profit. The 'market fix' to climate change constitute part of a broader and long-standing historical onslaught of neoliberalism which uses institutions like the World Bank, IMF, WTO and other treaties to establish hegemonic control over resources. The neoliberal approach to climate and environmental issues opposes regulation, reduces the power of national governments and local over their resources and environments. This ideology of efficiency and 'making the most of what we have' now dominates all climate debates from Kyoto to Copenhagen and Cancun, reducing them into a set of market mechanism negotiations.

Since the 1990s, international climate change politics have been dominated by neoliberal innovations like the 'Carbon Trading System'[36] and the 'Clean Development Mechanism'.[37] The predilection towards a 'market fix' have been promoted by academic theories in climate science and economics, corporations, international financial institutions, while the gamut of opposition have come from critical NGOs in the global South. Proposals from climate-interested actors, governments, World Bank and corporations reveal how these proposals relegate critical issues pertinent the survival of local oil-producing regions in the global South, such as, environmental pollution, livelihoods and control of resources. Critical issues of local importance to oil communities in Nigeria, their socio-economic and environmental concerns on global extractive activities remain unaddressed. Framed in a manner that discards any form of precaution and a penchant for narrow issues involved in climate crisis, market fixes are set to aggravate the social dynamics of accumulation, dispossession and disempowerment of indigenous oil-bearing communities by the state-oil alliance.[38] The rise of carbon trading in a neoliberal context accounts for a revival and re-legitimation of corporate rule of the market.[39]

Converging Stresses: What do these Trends Mean for West Africa?

The prominence assumed by environmental factors in shaping the nature of post-Cold War international relations spawned a long list of interesting literature. They range from Homer-Dixon's link between environmental change and violent conflict,[40] to Myers securitization of environmental issues,[41] and attempts by Matthews and Rothschild to redefine security.[42] After two decades of debates and analysis, emerging studies are beginning to stipulate precisely how

complex issues and questions bordering on climate changes and the environment raise security concerns. Central to these findings are arguments recognizing that climate crisis and environmental degradation are not in themselves capable of eliciting major conflicts and political instability, but they are capable of exacerbating local tensions and conflicts in vulnerable locations where these potentials exist. These challenges feed simultaneously into existing levels of distress and conflict at different levels of society leading to the occurrence of massive state breakdown through a phenomenon known as 'converging stresses'.[43] What emanates from the foregoing is a situation where climate crisis and environmental degradation interact with vulnerable political and economic structures to produce conflict and insecurity.

Thomas Homer-Dixon's recent work links energy, climate change and security in new and seminal ways, arguing that 'complex systems behavior' are characterized by several variables composed of a multiplicity of entities, components and parts, which are locked in a dense web of causal connections with each other in a manner that reinforce or amplify changes, and are inherently unstable. In particular, the occurrence of conflict in specific contexts will be aggravated precisely for the following reasons: the openness of the social systems to influences from the larger climate system; the causal interactivity with a society's existing social, political, economic and ecological vulnerabilities; the production of changes and effects that are not proportionate to the size of the system; and the generation of a 'threshold effect' when the critical threshold is crossed leading to the outbreak of violence.[44] In view of these linkages, how do these concepts translate into a better understanding of Africa's environment, its multiple crises and conflicts? How do they explicate the interface between Africa's natural environment and society?

It is possible to predict the potential for conflict, political instability and likely locations of vulnerabilities in Africa by tracking social, political and economic indicators. Based on the February 2008 'Index of State Weakness in the Developing World', in which the Brookings Institution evaluated the performances of 141 developing countries using 20 indicators grouped into economic, political, security and social welfare baskets; 32 African countries were among the top 50 worst performers. Surprisingly, 12 of those were oil producing African states. Closely

following other African oil states in the Gulf of Guinea (Angola, Chad, the Republic of Congo, and Equatorial Guinea), the index ranked Nigeria 28th on the list of 'critically weak' states, falling within the bottom quartile on critical issues such as inflation, rule of law, control of corruption, conflict intensity, gross human right abuses, incidences of coups, political instability and absence of violence, child mortality, access to improved water and sanitation.[45] The data shows that despite the enormous earnings from oil receipts, these states have not matched their earnings with commensurate increase in economic growth, social and welfare schemes.

Specifically, in the Nigerian context, the mono-cultural basis of its economy and its inherent structural distortions was severely exposed during the collapse of global oil prices in the 1980s. This resulted in a debt overhang which compelled the government to adopt austerity measures in the mould of the World Bank/IMF structural adjustment programmes. Among other things, the adjustment package came with the deregulation, privatization and commercialization of the economy, the removal of subsidies and cut in government expenditure. This meant that government had to produce more oil, shore up levels of profits and revenues to service its external debt obligations. This inevitably exerted enormous pressures on the fragile oil-rich Niger Delta environment, and further compounded the collapsed living standards, alienation and impoverishment in the region. Within the context of scarce resources, social and political tensions intensified, local oil-bearing communities began to articulate their grievances in a manner that sought to redress the power relations between them and the state-oil alliance for decades of exploitation, disregard and devastation of the environment.

Precipitated largely by the intent to dominate and control oil proceeds from the Niger Delta, and crush all manner of protests against the state and oil multinationals, every facet of oil production and society in the region has been subjected to unbridled militarization. The militarization of the region is driven by the lack of state capacity or the absence of effective governance and authority within the region, thereby, leading to the 'de-legitimization' of state power, with the state responding with hard power.[46] A 2007 UNDP Report states that three key oil producing states of the Niger Delta account for 120-150 'high risk and active violent conflicts'.[47] This is aggravated by a series of military assistance programmes and partnerships,

the most prominent being the African Command (AFRICOM) which has integrated resource-rich African states into the US-led global counter-terrorist agenda, and the more recent attacks by the Movement for the Emancipation of the Niger Delta (MEND) on Western and Asian oil interests in the region in the quest for resource-control and redistribution of centrally-controlled oil revenues in Nigeria. Given these developments, the region has been deeply immersed in a maze of treachery, criminality and greed which constantly features gang wars, kidnapping, hostage-taking, cult activities, arson, attacks on oil personnel and installations, and military adventurism by state security operatives. Hence, the Niger Delta region has become the epicenter of insecurity and conflict, reinforcing other kinds of potential crisis in the West African oil triangle.

Despite the increased militarization of the Niger Delta and its reputation as the epicenter of an unmitigated security enigma, tensions, passions and the crushing of diverse protests against the state-oil alliance have continued to intensify. Identity-based movements (youth, ethnic and gender), and environmental movements have continued to agitate for environmental and human rights recognition in form of providing employment for indigenes of local communities, cleaning up the polluted environment and pay compensation to the communities for the destruction of the fragile ecosystem. Oil multinationals claim to have spent huge amounts on community partnerships and corporate social responsibility projects,[48] but the critical issue of addressing the damage done to the fragile ecosystem remains unaddressed. Several levels of deep-seated mistrust seem to have crystallized over time. On one level, the oil multinationals in the region tend to drag their feet when the state that should share in the cost of addressing these issues seem to be falling behind, and incapable of regulating, monitoring or managing the situation. On another level, oil-bearing communities throughout the years of military rule have developed a perspective that positions the oil multinationals enemies of the people who are only interested in the exploitation and degradation of the environment in search of profit. Yet, at another level, the local indigenous peoples whose land and waters produce the wealth, the critical issues are about rights, equity and the future of their generations after the resources are depleted and oil multinationals move on to new oil finds. Against this background, power

relations in the region are heavily steeped in favour of oil multinationals and the state, while the environment continues to be neglected.

In the West African region, the crisis of state legitimacy, market reforms and commoditization of natural resources, forests, water and minerals have opened up the state to exploitation. The crucial element here appears to be the masses that have been further impoverished by the crises of structural adjustment policies and have now relied on the fragile environment for cheaper food, fuel and other forms of livelihood. What emerges is a scenario in which the struggle for survival relegates environmental concerns to the background. The consequences arising from this is that the 'pull' and 'push' factors pitches those with control over the environment against those whose survival are threatened by their lack of power over it, thereby, reinforcing the cycle of resistance, repression and conflict in the region. In developing regions of the world, like West Africa, environmental and natural resource scarcities often aggravate violent conflicts. This is attributed to the fact that in a situation of scarcity, migration in search of environmental resources often occurs, and where one group migrates into another area considered to be the 'homeland' of another group, the former tends to challenge the dominance of the latter. This often escalates into struggle and contests for the political control of the space in question, and sometimes into genocide and ethnic wars.[49]

As we move into an era of increased climate and environmental stress, the demands for redistribution, citizenship and social justice will be critical to the sustenance of democratic structures in West Africa. Climate and environmental stresses will intensify violence, insurgencies, guerrilla attacks and ethnic clashes on a region-wide scale in critical 'hotspots' of West Africa. In the absence of a meaningful land reform programme, the balance between small elites holding a majority of the land and large populations with a minority of the land will exacerbate an imbalance and fuel rural, class or ethnic conflict. Climate and environmental stress feeds into a new and potentially disastrous dynamic, and has the potential to unfold into a major security issue. The problems include: parched and degraded land, water shortages, grain crop scarcity, livestock over-grazing, wood fuel shortages and deforestation – all of which are prevalent in poor tropical regions of Africa and in areas affected by expanding deserts in

sub-Saharan Africa. This has resulted in the forced migration of millions of people, creating a category of refugees known as 'climate refugees', and has increased the chances of conflict over shrinking land and other depleting resources, particularly where access to these resources are politicized.

For example, in the Cassamance region of Senegal, the issues of citizen rights and access to resources have played a crucial role in the land conflict between the Northerners, who migrated into the region, and the Joola peoples, who are the indigenes. Several thousand parcels of land have been expropriated and allocated exclusively to non-indigenes, while the indigenous population have been driven to the undeveloped outskirts of the urban centre and denied other benefits in their own territory. Many resource-conflicts involving herders and farmers in the Sahel region of West Africa are presently rooted and driven by global warming, particularly in a context characterized by widespread social tension and political instability. Hence, various groups in the sub-region have cultivated ethnic identities and differences as a means of attaining a position of superiority in situations of competition for resources. The most prominent example in this context is the conflict in the Darfur region of Sudan, which has claimed over 300,000 lives. The conflict erupted partly as a contestation between the mostly nomadic Arabs and farmers from the Fur, Massaleet and Zagawa communities, over land and grazing rights which have become scarcer due to climate change.[50] In Ghana, skirmishes have occurred between Fulani cattle herdsmen and local farmers in a confrontation over water and land as the effects of climate change expands in the Sahara Desert.[51] Other climate and environment driven conflict include the conflicts in central Nigeria between the Tiv and the Jukun ethnic groups, which have been aggravated by attempts to legitimize control of land and access to economic life in the area between the different groups in the face of ever scarcer resources. The competition for access to resources have also been politicized, while the Jukun regard themselves as 'indigenes', they consider the others as more recent 'settlers'[52]

Political Ecology and Environmental Movements in West Africa

Africa's multiple environmental crises have led to the emergence of social forces and environmental movements who challenge the state and its foreign extractive allies, and contest power over environmental resources. These movements link political, economic and social struggles with environmental issues and climate change on the continent. Given their emergence and structure, and their acute immersion in the social struggles for environmental rights, power, space and resources, these movements have become critical players in politics and society in Africa. Systematic documentation of the activities of environmental movements in Africa is relatively new, and there seems to be a general weakness in trans-boundary linkages between environmental movements in Africa.[53] While emerging initially from social movements, environmental movements have transformed themselves to provide a basis for engaging the diverse social, political and economic responses to Africa's environmental crises. In grappling with the full ramifications of Africa's environmental issues, Salih argues that the 'environment therefore is much broader than nature or resources. It encompasses the dialectics of the changing relations between society, the state and nature and involves a continuous transformation of both nature and society'.[54] The state in Africa is central to the process of accumulation, political transformation and social reproduction. Environmental movements emerge as autonomous entities separate from the state, and define themselves as bearers of the rights of peoples whose survival depends on the environment.[55]

Mohammed Salih identifies two broad categories of environmental actors in Africa: the urban, and the rural. The urban includes the state, Non-Governmental Organizations (NGOs), indigenous peoples, women and youths; while the rural include movements that depend on traditional mechanisms of collective action and community responsibility, and on the use of counter-violence as a response to state violence.[56] But as Obi points out, owing to the overlapping tendencies for addressing environmental problems across the rural-urban divide, it is no longer a logical necessity to demarcate between the rural and the urban in Africa because the actors involved actually straddle the rural-urban divide and transnational processes cuts across both spaces.[57] In spite of this, Salih articulates the social make-up of environmental

movements in Africa by observing that they emerge 'either as a reaction to development intervention by capitalism, grievances emanating from a subdued state and civil society relations or political discontent engendered by those excluded from access to power, the state apparatus and institutions.[58] Conceptualized in this manner, the emancipatory, pro-democratic and liberationist struggles of environmental movements in Africa is broadly articulated, and unveils these movements as targets for state repression.[59]

This form of state repression is explicitly illustrated in the struggle between the Ogoni people of Nigeria's Niger Delta and the Nigerian state through the Movement for the Survival of the Ogoni People (MOSOP) in the 1990s. MOSOP waged a global and local campaign for environmental rights and justice against Shell Petroleum Development Company (SPDC) and the Nigerian State. Critical to MOSOP's campaign are intersections of ethnicity, ecology, minority rights and self-determination, and the movement latched on the emerging global context to empower local resistance against state repression and environmental degradation by the state-global oil alliance. MOSOP was supported by International Non-Governmental Organizations like Gaia Foundation, Pen International, Unrepresented Nations and Peoples Organization (UNPO), Amnesty International, Friends of the Earth, Green Peace and Human Rights Watch.[60] Apart from the violent repression of the Ogoni resistance, Shell approached the resistance in the language of public relations which aimed at protecting its reputation. Covertly, Shell also sponsored rival factions within MOSOP to discredit Saro-Wiwa and portray MOSOP leaders to the international community as bent on destabilizing the country and its economy.[61]

The Ogoni resistance suffered some remarkable reverses and setbacks with the extra-judicial execution of the leader of MOSOP, Ken Saro-Wiwa by Nigeria's military regime in 1995, but not had provided the platform on which local struggles against environmental degradation have continued in the Niger Delta. Since 2005, the pattern of resistance in the Niger Delta has assumed a militant strain with the emergence of the Movement of the Emancipation of the Niger Delta (MEND). The movement which has its roots in the Ijaw ethnic minority group dispersed across six states in the Niger Delta gained international attention with the attack on Shell oil installations and personnel in January 2006.[62] As an alliance of Ijaw groups, its primary

aim is to control oil produced in the region by attacking transnational oil installations and kidnapping its personnel. Reports states that since its inception, MEND has drastically reduced Nigeria's oil output by 25 percent, with as much as $4 billion lost in yearly revenues.[63] Responses by the state-oil alliance to MEND's resistance have resulted in the militarization of the Niger Delta environment, the dismissal of the movement as a crop of criminals and terrorists. As such, the state-oil interests privilege the security dimension of its extractive practices which tends to subdue the forces of local resistance and entrench its extractive practices and degradation in the region.

Conclusion: Critical Issues in African Environmental Governance

The impact of environmental degradation and climate change on political instability and insecurity in Africa is not unidirectional. While oil related environmental pollution and degradation are mostly linked to political crisis and instability in oil-rich locales, the practices of global oil extractive actors contribute to global problems associated with climate change which are refracted into the most vulnerable regions of the world. These tendencies are of critical importance in the sense that they simply reinforce each other. On a global scale, these practices have inflicted their own share of impairment, disease, dispossession, inequality and conflict on vulnerable communities. The militarized quest by industrialized economies and their multinational allies for oil impacts the security of indigenous communities and imposes deleterious effects on local political processes. The effects of these processes on the climate in vulnerable regions of the world like sub-Saharan Africa has reinforced classic struggles and conflicts over oil and gas-related exploration, extraction, pollution, militarization and insecurity on the one hand, and intensified struggles over limited environmental resources in vulnerable 'hotspots' across the region. The critical lessons embedded in these developments amounts to finding an alternative to fossil fuels and tackling climate issues appropriately, so as to contain the various political unrest and instability that follows from these climate disasters.

Climate change issues are not simply bilateral, regional or multilateral, but are truly global in scope and require a global solution. With the advent of renewed attention to climate issues

globally, emphasis have been placed the need to reach an international climate policy consensus. However, evidence from United Nations climate conferences, and recently, at the Copenhagen (2009) and Cancun (2010) conference suggests that these conferences are beginning to take on the mantle of mere 'talk shops' and trade fairs, rather than being the stage of international environmental negotiations. Climate negotiations are now being mushroomed by carbon traders, consultants, manufacturers associations, companies associated with fossil fuels, mining, nuclear energy and forestry, as well as lobbyists and corporate representatives, which all outnumber government delegates and environmentalists.[64] The idea of marketing the environment as a response to climate change has been pushed by developed countries and neoliberal institutions, particularly, in the United States. Coming from a position of power, developed countries and in conjunction with the World Bank, billions of dollars have been provided for fossil fuel companies.[65]

Given the fact that fossil fuels will continue to drive global capitalist expansion and incipient industrial processes in South East Asia, China, India, Europe and North America, it means that in the near future conflicts arising from the climate will intensify. If the current trajectory is continued, climate change will exacerbate systemic breakdown of economies and agricultural systems in the most vulnerable regions of the world. Tendencies exists that as whole societies succumb to converging climate, resource and economic stresses, internal instability and political violence may be widespread in the region. The reality is that in the threshold of a new era of security where environmental changes have become traditional sources of insecurity and instability, specific aspects of environmental crisis and climate change intersects with recurring political, economic and social crisis to produce wholesale societal dislocation and instability in vulnerable countries across the weak zones of the global system like West Africa.

[1] Robert Kaplan, 'The Coming Anarchy: How Scarcity, Crime, Over-population, Tribalism and Disease are Rapidly Destroying the Social Fabric of our Planet', Atlantic Monthly, February 1994.

[2] Nigeria, Angola, Congo Brazzaville, Cameroon and Gabon have been oil producers for decades. Equatorial Guinea became a producer in 2005, Chad in 2003, Sao Tome and Principe in 2007, while Ghana and Mauritania are the latest entrants in the oil production business. The Jubilee oil and gas field of the coast of Ghana recently commenced oil production.

[3] This paper uses the 'Gulf of Guinea' in a broad geographical sense to refer to the oil-bearing territorial waters outside the coast of West Africa that also includes oil-producing countries in Central and Southern Africa. This does not preclude the global energy strategic context of its usage as adopted by military strategists, political scientists, the media, global and local oil actors. However, the emphasis on West Africa is due to incipient oil exploration activities by US, French, British, Canadian and Chinese oil firms in hitherto non-oil producing countries in the region (Senegal, Guinea-Bissau, Sierra-Leone, Mauritania, Cote d'Ivoire, Liberia and Togo).

[4] Larry Lohmann, Carbon Trading: A Critical Conversation on Climate Change, Privatization and Power, Development Dialogue, No. 48, September 2006.

[5] William Beinart, African History and Environmental History', African Affairs, 99, 2000.

[6] Cyril Obi, Environmental Movements in Sub-Saharan Africa: A Political Ecology of Power and Conflict, Civil Society and Social Movements, Paper No. 15, United Nations Research Institute for Social Development (UNRISD), 2005.

[7] Obi 2005, p. 3.

[8] Marian Miller, The Third World in Global Environmental Politics, Boulder and London, Lynne Reiner, 1995; Michael Klare and Daniel Thomas, eds. World Security: Challenges for a New Century, New York, St. Martin Press, 1994.

[9] Norman Myers, 'Environment and Security', Foreign Policy, 74, Spring 1989; Jessica Matthews, 'Re-Defining Security', Foreign Affairs, 68, 2, Spring, 1989.

[10] Myers 1989, pp. 38-41.

[11] Thomas Homer-Dixon, 'On the Threshold: Environmental Changes as Causes of Acute Conflict', *International Security*, 6, 2, Fall 1991; Environmental Scarcities and Violent Conflict: Evidence from Cases, *International Security.* 19, 1, Summer 1994.

[12] Cyril Obi, Oil, Environmental Conflict and National Security in Nigeria: Ramifications of the Security-Ecology Nexu for Sub-Regional Peace, University of Illinois-Urbana Champaign, 1997.

[13] Tade Aina and Ademola Salau, eds. The Challenge of Sustainable Development in Nigeria, NEST, Ibadan 1992; Cyril Obi, Political and Social Considerations in the Enforcement of Environmental Laws, in M. Ajomo and O. Adewale, eds., Environmental Law and Sustainable Development in Nigeria, Nigerian Institute of Advanced Legal Studies and the BRITISH Council; Lagos, 1994.

[14] Cyril Obi, The Oil Paradox: Reflections on the Violent Dynamics of Petro-Politics and (Mis)Governance in Nigeria's Niger Delta, University of Leipzig Papers on Africa, Politics and Economics, No. 73, 2004.

[15] This phrase is popularly linked to Juan Pablo Perez, the founder of the Organization of Petroleum Exporting Countries (OPEC). It was quoted in Terry Karl, 'Perils of the Petro-State: Reflections on the Paradox of Plenty', Journal of International Affairs, 53, Fall, 1999, p. 32.

[16] These figures are from Oil and Gas Journal (OGJ) estimate cited in Energy Information Administration (EIA) 2010…

[17] Energy Information Administration 2010

[18] Adam Nossiter, 'Far From Gulf, A Spill Scourge Five Decades Old', New York Times, 16 June 2010.

[19] Oil Change International 'The Price of Oil: Gas Flaring'.

[20] Energy Information Administration 2010

[21] Oil Change International 'The Price of Oil: Gas Flaring', Ibid.

[22] Joint UNDP/World Bank Energy Sector Management Assistance Programme (ESMAP), 'Strategic Gas Plan for Nigeria', International Bank for Reconstruction and Development/ World Bank, 2004, p.3.

[23] Nigerian National Petroleum Corporation (NNPC) source cited in EIA 2010.

[24] Joint UNDP/World Bank Energy Sector Management Assistance Programme (ESMAP), 'Strategic Gas Plan for Nigeria', 2004, p.3.

[25] Niger Delta Environmental Survey (NDES), Phase-1 Report ERML, Lagos, 1999, pp.48-72.

[26] Oil Change International 'The Price of Oil: Gas Flaring'.

[27] Leo Osuji and Greg Avwiri, 'Flared Gases and other Pollutants Associated with Air Quality in Industrial Areas of Nigeria', Chemistry and Biodiversity, 2, 2005, p.1279.

[28] Oil Change International 'The Price of Oil: Gas Flaring'.

[29] Niger Delta Environmental Survey (NDES).

[30] 'Billion Dollar Bonfire', BBC/Earth Report documentary: Global Gas Flaring & Climate Change.

[31] Thomas Homer-Dixon, 'Energy and Climate: A Sustainable Future'. Presentation to the Canadian International Council National Foreign Policy Conference, Toronto, Ontario, 20 June 2008.

[32] Godwin Onuoha, 'Energy and Security in the Gulf of Guinea: A Nigerian Perspective', South African Journal of International Affairs, Vol. 16, No. 2, 2009, p. 246.

[33] This is a critical relationship between energy and climate change which Dr. Homer-Dixon points out in his presentation.

[34] 'Top 20 Emitting Countries by Total Fossil-Fuel CO_2 Emissions for 2007', Carbon Dioxide Information Analysis Center (CDIAC). Available at: http://cdiac.ornl.gov/trends/emis/tre_tp20.html (Accessed: 04. 01. 2011).

[35] Larry Lohmann, Carbon Trading: A Critical Conversation on Climate Change, Privatization and Power, p. 33-53.

[36] There are two dimensions to the Carbon Trading idea and they both create allowances or permits to pollute. The first is Emission Trading Scheme which gives certain allowances or permissions to pollute to companies which are carbon emitters. Those companies that emit more than the regulated amount buy from those who emit less and this leads to an aggregate amount of GHG emitted into the atmosphere. The second refers to 'Trading in Project-Based Credits' that requires companies to invest abroad in projects that reduce the emission of carbon dioxide.

[37] The procedures of the Clean Development Mechanism (CDM) permits carbon credits to be awarded to projects aimed at reducing gas flaring. The classic failure of the CDM is evident in Nigeria's Niger Delta, where activities surrounding the West African Gas Pipeline (WAGP) elicit the prospects of oil multinationals making additional profits from the practice, while the distortions of the local communities remain unaddressed. See below Isaac Asume Osuoka, 'Paying the Polluter?

[38] Isaac Asume Osuoka, 'Paying the Polluter? The Relegation of Local Community Concerns in 'Carbon Credit' Proposals of Oil Corporations in Nigeria', in Steffen Bohm and Siddhartha Dabhi, eds., upsetting the Offset: The Political Economy of Carbon Markets, Mayfly Books, London, pp. 86-97.

[39] Larry Lohmann, 'Neoliberalism and the Calculable World: The Rise of Carbon Trading', in Steffen Bohm and Siddhartha Dabhi, eds., upsetting the Offset: The Political Economy of Carbon Markets, Mayfly Books, London, pp. 25-40.

[40] Thomas Homer-Dixon, ‚On the Threshold: Environmental Changes as Causes of Acute Conflict', *International Security*, 6, 2, Fall 1991; Environmental Scarcities and Violent Conflict: Evidence from Cases, *International Security.* 19, 1, Summer 1994.

[41] Norman Myers, Ultimate Security: The Environmental Basis of Political Stability, W. W. Norton, New York, 1993.

[42] Jessica Matthews, 'Redefining Security', Foreign Affairs, 68: 162-177, 1989, and Emma Rothschild, 'What is Security'?, Daedalus, 124: 53-91, 1995.

[43] Jack Goldstone popularized the 'converging stress' thesis through his works, titled: Revolutions and Rebellion in the Early Modern World, University of California Press, Berkeley and Los Angeles, 1991; and 'Demography, Environment and Security', in P. F. Diehl and N. P. Gleditsch, eds. Environmental Conflict, Westview Press, Boulder, Colorado, 2000, pp. 84-108. However, in recent times, Thomas Homer-Dixon has drawn extensively on this thesis in illuminating the impact of climate change on global developments.

[44] For an elaboration of these views see Thomas Homer-Dixon, 'Conflict in a Non-Linear World: Complex Adaptation at the Intersection of Energy, Climate and Security', speech delivered at the Ingar Moen Memorial Lecture, Science and Technology Symposium, Defense, Research and Development, Canada, 25 April 2007.

[45] Susan Rice & Stewart Patrick, Index of State Weakness in the Developing World. Washington, D C: The Brookings Institution, February 2008.

[46] Charles Ukeje, 'The Changing Paradigm of Pacification? Oil and Militarization in Nigeria's Delta Region', paper presented at the International workshop on Violent Conflict in the Niger Delta organized by the Nordic Africa Institute (NAI) and the International Peace and Research Institute (PRIO) in Oslo, Norway, 18-19, 2008, p. 3.

[47] UNDP Report cited in Michael Watts, 'Petro-Insurgency or Criminal Syndicate? Conflict, Violence and Political Disorder in the Niger Delta', Economies of Violence Working Papers, No. 16, 2008, p. 5.

[48] A. Peddleton et al, Behind the Mask: The Real Face of Corporate Social Responsibility, Christian Aid, London, 2003.

[49] See Michael Teitelbaum and Jay Winters, A Question of Numbers: High Migration, Low Fertility and the Politics of National Identity, Hill and Wang/Farrar, Straus, Giroux, New York, 1998.

[50] BBC News, 'Q&A: Sudan's Darfur Conflict', 23 February 2010.

[51] Julian Borger, 'Climate Change Could Lead to Global Conflict Says Beckett', *The Guardian*, 11 May 2007.

[52] World Organization Against Torture, Hope Betrayed? A Report on Impunity and State Sponsored Violence in Nigeria, World Organization Against Torture, Geneva, 2002, p. 133.

[53] Cyril Obi, Environmental Movements in Sub-Saharan Africa, 2005, p. 1.

[54] M. Salih, Environmental Politics and Liberation in Contemporary Africa, Kluwer Academic Publishers London. Cited in Cyril Obi, Environmental Movements in Sub-Saharan Africa, 2005, p. 5.

[55] Cyril Obi, Environmental Movements in Sub-Saharan Africa, 2005, p. 5.

[56] M. Salih, Environmental Politics and Liberation in Contemporary Africa, Kluwer Academic Publishers London. Cited in Cyril Obi, Environmental Movements in Sub-Saharan Africa, 2005, p. 6.

[57] Cyril Obi, Environmental Movements in Sub-Saharan Africa, 2005, p. 6

[58] M. Salih, Environmental Politics and Liberation in Contemporary Africa, Kluwer Academic Publishers London, p. 8. Cited in Cyril Obi, Environmental Movements in Sub-Saharan Africa, 2005, p. 6.

[59] Cyril Obi, Environmental Movements in Sub-Saharan Africa, 2005, p. 6

[60] Carr et al, 'The Ogoni Peoples Campaign Over Oil Exploitation in the Niger Delta'. In S. Thomas, S. Carr and D. Humphreys, eds. Environmental Policies and NGO Influence, Routledge, London, p. 159-161.

[61] See Cyril Obi, 'Restructuring Transnational Spaces of Identity, Rights and Power in the Niger Delta of Nigeria', ***Globalizations***, 6, 4, p. 477, 2009.

[62] Ukoha Ukiwo, 'From Pirates to 'Militants': A Historical Perspective on Anti-Oil Mobilization among the Ijaw of Warri, Western Niger Delta, African Affairs, 106, 425: 587-610, 2007.

[63] William Minter and Anita Wheeler, 'Climate Change and Africa's Natural Resources: African Governments and Outside Powers Must Be Accountable', AfricaFocus Bulletin, October 29, 2009.

[64] See UNFCCC list of observers http://unfccc.int/parties_and_observers/items/2704.php (Accessed: 24 January 2011).

[65] World Bank, 'Carbon Finance Annual Report 2005', World Bank, Washington, DC, 2006, http://www.seawaterfoundation.org/newSite/articles/2005_CFU_Annual%20SF.pdf (Accessed: 24 January 2011).

References

Aina, T & A. Salau, eds, 1992. The Challenge of Sustainable Development in Nigeria. Ibadan: National Environmental Study Action Team. Cited in Cyril Obi, 1997. ***Oil, Environmental Conflict and National Security in Nigeria: Ramifications of the Security-Ecology Nexus for Sub-Regional Peace***. Chicago: University of Illinois-Urbana Champaign.

BBC/Earth Report documentary: Global Gas Flaring & Climate Change. 'Billion Dollar Bonfire'. Available at: http://www.tve.org/earthreport/archive/doc.cfm?aid=1842 (Accessed: 03. 01. 2011).

BBC News, 'Q&A: Sudan's Darfur Conflict', 23 February 2010. Available at: http://news.bbc.co.uk/2/hi/africa/3496731.stm (Accessed: 13 January 2011).

Beinart, W. 2000. 'African History and Environmental History', ***African Affairs***, 99: 269-302.

Borger, J. 2007. 'Climate Change Could Lead to Global Conflict Says Beckett', ***The Guardian***, 11 May. Available at: http://www.guardian.co.uk/world/2007/may/11/politics.greenpolitics (Accessed: 13 January 2011).

Carr et al. 2001. 'The Ogoni Peoples Campaign over Oil Exploitation in the Niger Delta'. In S. Thomas, S. Carr and D. Humphreys, eds. ***Environmental Policies and NGO Influence***. London: Routledge.

Goldstone, J. 1991. ***Revolutions and Rebellion in the Early Modern World***. Berkeley and Los Angeles: University of California Press.

Goldstone, J. 2000. 'Demography, Environment and Security'. In P. F. Diehl and N. P. Gleditsch, eds. ***Environmental Conflict***. Boulder, Colorado: Westview Press, pp. 84-108.

Homer-Dixon, T. 1991. 'On the Threshold: Environmental Changes as Causes of Acute Conflict', ***International Security***, 6, 2, Fall.

Homer-Dixon, T. 1994. 'Environmental Scarcities and Violent Conflict: Evidence from Cases'. ***International Security***. 19, 1, Summer.

Homer-Dixon, T. 2007. 'Conflict in a Non-Linear World: Complex Adaptation at the Intersection of Energy, Climate and Security'. Speech delivered at the Ingar Moen Memorial Lecture, Science and Technology Symposium, Defense, Research and Development, Canada, 25 April. Available at: www.**homerdixon**.com/download/**conflict_in_a_nonlinear_world**.pdf (Accessed: 07. 01. 2011).

Homer-Dixon, T. 2008. 'Energy and Climate: A Sustainable Future'. Presentation to the Canadian International Council National Foreign Policy Conference, Toronto, Ontario, 20 June.

Joint UNDP/World Bank Energy Sector Management Assistance Programme (ESMAP), 'Strategic Gas Plan for Nigeria', International Bank for Reconstruction and Development/ World Bank, 2004, available at: http://vle.worldbank.org/bnpp/files/TF027963ESMANigeriaGasPlan.pdf (Accessed: 30 December 2010).

Karl, T. L. 1999. 'Perils of the Petro-State: Reflections on the Paradox of Plenty'. ***Journal of International Affairs***, 53, Fall.

Kaplan, R. 1994. 'The Coming Anarchy: How Scarcity, Crime, Over-population, Tribalism and Disease are Rapidly Destroying the Social Fabric of our Planet', ***Atlantic Monthly***.

Klare, M & D. Thomas, eds. 1994. ***World Security: Challenges for a New Century***. New York: St. Martin Press.

Lohmann, L. 2006. ***Carbon Trading: A Critical Conversation on Climate Change, Privatization and Power***. Development Dialogue, No. 48, September.

Lohmann, L. 2009. 'Neoliberalism and the Calculable World: The Rise of Carbon Trading'. In Steffen Bohm and Siddhartha Dabhi, eds., ***Upsetting the Offset: The Political Economy of Carbon Markets.*** London: Mayfly Books, pp. 25-40. Available at: http://mayflybooks.org/wp-content/uploads/2010/07/9781906948078UpsettingtheOffset.pdf (Accessed: 04. 01. 2011).

Matthews, J. 1989. 'Re-Defining Security', ***Foreign Affairs***, 68, 2, Spring.

Miller, M. 1995. ***The Third World in Global Environmental Politics***. Boulder and London: Lynne Reiner.

Minter, W & A. Wheeler. 2009. 'Climate Change and Africa's Natural Resources: African Governments and Outside Powers Must Be Accountable'. ***AfricaFocus Bulletin***, October 29. Available at: http://allafrica.com/stories/200911030971.html (Accessed: 24 January 2011).

Myers, N. 1989. 'Environment and Security'. ***Foreign Policy***, 74, Spring.

Niger Delta Environmental Survey (NDES). 1999. Phase-1 Report ERML, Lagos, 48-72.

Nossiter, A. 2010. 'Far From Gulf, A Spill Scourge Five Decades Old', ***New York Times***, 16 June, available at: http://www.nytimes.com/2010/06/17/world/africa/17nigeria.html?_r=1 (Accessed: 30 December 2010).

Obi, C. 1994. 'Political and Social Considerations in the Enforcement of Environmental Laws'. In M. Ajomo and O. Adewale, eds., ***Environmental Law and Sustainable Development in Nigeria***. Lagos: Nigerian Institute of Advanced Legal Studies and the British Council.

Obi, C. 1997. ***Oil, Environmental Conflict and National Security in Nigeria: Ramifications of the Security-Ecology Nexus for Sub-Regional Peace***. Chicago: University of Illinois-Urbana Champaign.

Obi, C. 2004. The Oil Paradox: Reflections on the Violent Dynamics of Petro-Politics and (Mis)Governance in Nigeria's Niger Delta. ***University of Leipzig Papers on Africa, Politics and Economics, No. 73.***

Obi, C. 2005. ***Environmental Movements in Sub-Saharan Africa: A Political Ecology of Power and Conflict, Civil Society and Social Movements***, Paper No. 15, United Nations Research Institute for Social Development (UNRISD).

Obi, C. 2009. 'Restructuring Transnational Spaces of Identity, Rights and Power in the Niger Delta of Nigeria', ***Globalizations***, 6, 4: 467-481.

Oil Change International, 'The Price of Oil: Gas Flaring', Available at: http://priceofoil.org/thepriceofoil/human-rights/gas-flaring/ (Accessed: 30 December 2010).

Onuoha, G. 2009. 'Energy and Security in the Gulf of Guinea: A Nigerian Perspective', ***South African Journal of International Affairs, 16, 2: 245-264.***

Osuji, L & G. Avwiri. 2005. 'Flared Gases and other Pollutants Associated with Air Quality in Industrial Areas of Nigeria', ***Chemistry and Biodiversity***, 2: 1277-1289.

Osuoka, I A. 2009. 'Paying the Polluter? The Relegation of Local Community Concerns in 'Carbon Credit' Proposals of Oil Corporations in Nigeria'. In Steffen Bohm and Siddhartha Dabhi, eds., ***Upsetting the Offset: The Political Economy of Carbon Markets***. London: Mayfly Books, pp. 86-97. Available at: http://mayflybooks.org/wp-content/uploads/2010/07/9781906948078UpsettingtheOffset.pdf (Accessed: 04. 01. 2011).

Peddleton, A. et al. 2003. ***Behind the Mask: The Real Face of Corporate Social Responsibility***. London: Christian Aid.

Rice, S & P. Stewart. 2008. ***Index of State Weakness in the Developing World***. Washington, D C: The Brookings Institution, February.

Rothschild, E. 1995. 'What is Security'?, ***Daedalus***, 124: 53-91.

Teitelbaum, M & J. Winters. 1998. ***A Question of Numbers: High Migration, Low Fertility and the Politics of National Identity***. New York : Hill and Wang/Farrar, Straus, Giroux.

Ukeje, C. 2008. 'The Changing Paradigm of Pacification? Oil and Militarization in Nigeria's Delta Region'. Paper presented at the International workshop on Violent Conflict in the Niger Delta organized by the Nordic Africa Institute (NAI) and the International Peace and Research Institute (PRIO) in Oslo, Norway, 18-19.

Ukiwo, U. 2007. 'From Pirates to 'Militants': A Historical Perspective on Anti-Oil Mobilization among the Ijaw of Warri, Western Niger Delta, ***African Affairs***, 106, 425: 587-610.

Watts, M. 2008. 'Petro-Insurgency or Criminal Syndicate? Conflict, Violence and Political Disorder in the Niger Delta', ***Economies of Violence Working Papers, No. 16***. Available at: http://geography.berkeley.edu/ProjectsResources/ND%20Website/NigerDelta/WP/16-Watts.pdf (Accessed: 10. 01. 2011).

World Bank. 2006. 'Carbon Finance Annual Report 2005', World Bank, Washington, DC. Available at: http://www.seawaterfoundation.org/newSite/articles/2005_CFU_Annual%20SF.pdf (Accessed: 24 January 2011).

World Organization Against Torture. 2002. ***Hope Betrayed? A Report on Impunity and State Sponsored Violence in Nigeria***. Geneva: World Organization Against Torture.