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**Africa and Climate Change:
Desertification, Water Resources and Conflict**

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INTRODUCTION

What is important about framing this ecological challenge in terms of water resources, desertification and conflict is that the climate change threat in Africa and indeed throughout the global South - including Asia and Latin America - needs to be addressed holistically. It needs to be approached within a matrix of interacting factors that contribute to environmental degradation and a spiralling dynamic of socio-economic and political consequences. In fact, where Africa is concerned, the intersection between climate change and water resources is critical to conservation strategy.

HUMAN AND NATURAL FACTORS

While the science of climate change is incontestable, its consequences seem very much open to debate as a cause of worsening environmental conditions.¹ Here, Africa provides an excellent context within which to consider the interaction between climate change and a range of other related factors that can cause political tensions and conflicts. These can be divided into human phenomena and natural phenomena.

Africa provides an excellent context within which to consider the interaction between climate change and a range of other related factors that can cause political tensions and conflicts

Human phenomena include:

- Population expansion
- Resource exploitation
- Human survival cultural patterns
- Territorial boundary political constraints

Natural phenomena include:

- Water resource depletion
- Drought and desertification
- Deforestation
- Flooding
- Overall environmental degradation

Population Explosion

The ecological consequences and implications of the African political and socio-economic landscape are highly problematic because of the contradictions they present to a discussion of this nature. Africa generally, and several of its regions and sub-regions, are in the throes of a population explosion wherein by mid-century, the continent is projected to cross the 1 billion mark. According to these projections:

- Nigeria will have close to 300 million people by 2050, roughly the current population of the entire continental US packed into a territory the size of Texas! The ongoing conflict in Nigeria's oil-rich Delta Region is heavily environmentally related;
- Ethiopia, within roughly the same period if not sooner, will reach 173 million with neighbouring Somalia adding another 21 million in a Horn of Africa region that has been beset by cycles of drought and famine;
- The Great Lakes region reflects some of the highest population densities on the continent, packed into the Rwanda and Burundi mini-states alongside the Congolese mega-state which contains a plethora of ethno-linguistic regional faultlines;
- Tiny Rwanda will have 18 million people by 2035 alongside the Democratic Republic of Congo's 65 million currently (no future projections are available).
- Rwanda's neighbour, Uganda, will have 92 million by mid-century - almost the size of Nigeria today, but packed within a much smaller territory.²

Africa generally is in the throes of a population explosion and by mid-century the continent is projected to cross the 1 billion mark

State Boundaries

This demography is offset by a political map of Africa divided into 53 odd sovereignties. This raises questions not only about state capacity, but also inter-African governance capability to manage the socio-economic, environmental and political implications of this demographic revolution within the constraints of territorial boundaries that do not provide sufficient space for these countries' inhabitants. Insufficient space forces people to move to wetlands and/or flood prone areas - resulting in the worsening of floods due to socio-economic pressures. The same goes for people moving into drought-prone areas or semi-arid and woodland environments which are vulnerable to desertification. When such dynamics are joined with cross-border encounters between nomadic herders and sedentary farming communities, as is the case in the Sudano-Sahelian region which embraces Sudan and Chad, tensions are likely to emerge which can be politicized into full-blown conflicts with the potential to destabilize the entire region. The Darfur humanitarian crisis and its expansion into eastern Chad is indicative. Adam Lebor, for instance, contends that "For all its complications - pre-existing conflicts over water and agricultural land, desertification and arbitrary international borders - the crisis in Darfur is also simple..." referring to the underlying political cause wherein the Sudanese government is seen as "waging a sustained campaign of murder, ethnic cleansing and displacement against the people of Darfur..."³

Water Resources

The population pressures Africa faces impinge on another major environmental challenge: water resources.⁴ Africa's hydrological network is the least developed in the world, though many of its rivers have considerable hydropower potential. While 'energy geopolitics driving competition for hydrocarbon resources' describes the global picture, 'hydro-geopolitics aimed at competition for water resources', could easily describe many inter-state tensions in Africa. Egypt's national security interest in access to water from the Nile River is a major source of underlying tension in northeast Africa, in spite of the Nile Basin Initiative. Egypt's reliance on the Nile is an ongoing source of tension and geopolitical contestation between it and Ethiopia and also complicates relations between Egypt and East African Community states of Kenya, Uganda and Tanzania.

Africa's hydrological network is the least developed in the world

Water resource tensions have also arisen periodically in southern Africa between Botswana and Namibia, with implications for Botswana's Okavango Delta. Add to this the fact that South Africa is rapidly approaching the limits of its available water resources. Here, it has been suggested that the only viable alternative is energy-consuming seawater desalination - with the most economical source provided by coal-fired stations near site. If this is not possible because it will increase greenhouse gas emissions, the inevitable consequence, some argue, is that South Africa's future development will be increasingly constrained by lack of water supplies.⁵

Meanwhile globally, as different biofuel options come under serious scrutiny, the water resource depletion factor becomes increasingly salient. The recent focus on sugar-based ethanol, Brazil's comparative advantage, has generated questions about the water resource viability of this production methodology due to an observation that sugar is one of the most highly water-intensive crops in the world.

Biofuels

Alternatively, Africa's comparative advantage may be the little noted 'Cinderella plant' - the *Jatropha* bush - which has suddenly emerged as a biofuel option, prompting the notion that "Southern Africa has the potential to be the Middle East of biofuels".⁶ Apart from this potential, Africans have reportedly traditionally used *Jatropha* as "living fences meant to keep back the encroaching Sahara and Kalahari."⁷ This means it could also combat desertification and become factored into an African biodiversity defence strategy.

The Jatropha biofuel option is indicative of another observation that Africa needs to maximize the opportunity afforded by the global scramble for its resources to proactively develop a modern, highly- efficient, energy security system of its own. It needs to build internal capacity to understand international capital, political risk management and industrial technology as they relate, not only to hydrocarbons wherein Africa has emerged as a “swing production region”, but also to biofuel alternatives, so as to leverage all its advantages comprehensively in the global energy market.⁸ The goal: to fashion an African energy security-conservation paradigm as the basis of South-South and North-South cooperation.

THE WAY FORWARD: AN ENABLING FRAMEWORK

Ultimately, however, to defuse the conflict potential of resource-based conflicts, the African Union and its sub-regional economic communities will have to grapple with the following enabling political framework:

A beefed-up United Nations ECOSOC with an environmental security commission is needed

- Accelerated political and economic integration toward shared sovereignty regimes and ‘soft borders’ which facilitate the free movement of people - something that was the pre-colonial norm in Africa;
- The promotion of trans-national regional cooperation on river basins;
- The promotion of trans-frontier spatial development initiatives linking interwoven ecosystems that build on the Trans-Frontier Conservation Area (TFCA) concept that has featured as a major South African regional cooperation strategy over the past several years;
- The exploring of grassroots participatory development possibilities within the context of trans-frontier strategies that simultaneously promote cross-border peace and stability while introducing appropriate technologies that wean rural communities away from the kind of resource exploitation that is environmentally degrading.

Whether such potential can be realized within the current unreconstructed international system, however, remains to be seen. The North-South global governance paradigm is long overdue for a major overhaul. African countries, for example, would prefer to see the United Nation’s Economic and Social Council (ECOSOC) become the focal point of global governance pertaining to multilateral development as opposed to the Bretton Woods institutions which have yet to adapt to the changing world realities of the emerging global South. A beefed-up ECOSOC with an environmental security commission might serve as the multilateral centrepiece of a global energy-security/conservation system linked to helping poor countries achieve the Millennium Development Goals.

The above are suggestive of the type of macro-framework that needs to be explored to head off resource-based conflicts in Africa and to address those currently crying out for resolution and post-conflict recovery.

ENDNOTES

¹ “Alarmism will not help Africans,” Will Alexander, *Business Day* November 16, 2006.

² See: “Letter from China: China can teach Africa about population zeal,” by Howard French, *International Herald Tribune*, March 23, 2007, p.2; Also: “Runaway Growth: Africa’s population bomb,” by Howard French, *South China Morning Post*, March 15, 2007 in “A Glimpse of the World,” by Gwynne Dyer”; and: “Urban population to double - UNFPA,” *UN Integrated Regional Information Networks NEWS*, 27 June 2007.

³ See: “Human, All Too Human,” by Adam Lebor, *The Nation*, March 2, 2007. p.2.

⁴ See for example: “Sustainable Development of Africa’s Water Resources,” *Findings/Africa Region*, No. 74, Washington, D.C., World Bank, October 1996.

⁵ Op. cit., *Business Day*, November 16, 2007.

⁶ “The Cinderella Plant,” by Karen Palmer, *Newsweek*, February 19, 2007, p. 35. Also see: “Put food before fuel, says Sir Bob”, *Business Day*, July 17, 2007 and “Jatropha: fuel for thought?” in *Mail & Guardian* September 21-27, 2007.

⁷ Ibid. p. 35.

⁸ “Titans make Africa their stomping ground,” by Bright B Simons, Evans Lartey, Franklin Cudjoe, *Asia Times Online*, March 14, 2007.