

Ungoverned Spaces and Weapons of Mass Destruction in Africa: Exploring the Potential for Terrorist Exploitation

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October 2008

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**Defense Threat Reduction Agency
Advanced Systems and Concepts Office
Report Number ASCO 2008-016**

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Terrorist Exploitation**



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October 13, 2008

Paper prepared for DTRA-ASCO through the Ungoverned Spaces project at the Naval
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Executive Summary

This paper assesses the potential for Africa's ungoverned spaces to facilitate the spread of weapons of mass destruction (WMD) within Africa and beyond the continent. To those based outside Africa, the large areas of the region that lie outside the control of formal state institutions provide opportunities for the production of WMD precursors and the storage and transport of WMD-related materials (from precursors to weapons). To those based on the continent, however, the threat of WMD seems negligible. No countries currently pursue weapons programs of a biological, chemical, nuclear or radiological nature, and those that in the past have had state-sponsored WMD programs, South Africa and Libya, have either dismantled or are in the process of dismantling these programs. No states have indicated interested in pursuing WMD programs; few countries have the industrial bases necessary to produce large quantities of chemical or biological weapons (as opposed to precursors); and only one currently has nuclear capabilities (South Africa).

If it exists, the threat would seem to come from the nexus of ungoverned spaces and how these areas create vulnerabilities that could be exploited by groups wishing to engage in WMD creation, storage or transport. This paper assesses the arguments for how "ungoverned spaces" in Africa could generate vulnerabilities to terrorism and create opportunities for the production, storage and transport of various forms of WMD. The paper represents a conceptual mapping of the issue space, rather than a detailed case study of actual examples with concrete evidence (of which there are precious few). The paper also considers the issues of small arms and light weapons (SA/LW).

On balance, the analysis suggests that the opportunities are there, but currently not well exploited and in many cases, not likely to be exploited. There is some valid concern about the potential to engage in uranium trafficking (particularly in U-238 yellowcake); though at present this seems to be the extent of the potential for ungoverned spaces to facilitate WMD proliferation.

There are a few countries that have had some form of state-sponsored biological, chemical and nuclear weapons programs in Africa in the past. Most of these have decommissioned their programs, though there have been allegations of recent chemical

weapons use by the Ethiopian and Sudanese governments. Aside from the state-sponsored initiatives, there have been a few limited indications that there might be non-state actors interested in creating or transporting biological, chemical or nuclear weapons within Africa. On balance, at present the WMD threat is not significant. The proliferation of small arms and light weapons is much more prevalent throughout the continent than biological, chemical, nuclear and radiological weapons of mass destruction. Small arms and light weapons are a perennial threat to the stability of the continent, and most African conflicts have been exacerbated by an influx of weapons that have come into the continent after the end of the Cold War, and more recently, through primarily French and Chinese suppliers.

Nevertheless, persistent concern with the WMD threat makes it worthwhile to consider whether and how groups could utilize Africa's physical and non-physical ungoverned spaces to produce and transport WMD. Opportunities could potentially arise from the porous borders, smuggling routes, unmonitored maritime passageways, and a matrix of localized conflicts that exacerbate the previous three dynamics. While there is only limited evidence that these vulnerabilities have been utilized for production and transportation, this paper runs through a conceptual mapping of how these vulnerabilities could create opportunities. The analysis finds that while there is cause for concern, it is tempered by larger issues involving targeting, capacity, ease and feasibility of transport, and motivation for use. The intersection of ungoverned spaces and the potential for WMD proliferation – understood as production, transport and storage – creates a concern with what could be done should a group wish to, and on that front, the academics, policymakers and government officials all agree that if a group should want to transport WMD through Africa, it would be possible, though at this stage highly unlikely.

The paper concludes with a brief review of areas for future projects and research that DTRA-ASCO might want to pursue in the future on this subject.

- A deeper investigation of ways that WMD can be produced, and of the African particularities here. While WMD seems an unlikely threat at present, the steady development of biological research and production facilities, and the interest in uranium exploration could open up opportunities for exploitation.

- Launch a full investigation of the practicalities of transport across very difficult terrain that could easily compromise the integrity of biological and chemical material and weapons containers. Uranium ore is the most likely precursor material to find its way out of Africa through the ungoverned spaces, and is worth monitoring. Nuclear weapons would be more readily transported than biological or chemical weapons, but at this stage are the least likely form of WMD to be found on the continent.
- Engage in a concrete mapping of facilities, groups, and specific locations where these dynamics all could take place, and then comprehensive analysis of the implications.
- Initiate a dialog between area specialists and functional specialists, who often disagree about the extent of vulnerabilities to WMD trafficking and proliferation in Africa, and an investigation into how these dynamics play out in other world regions.

Introduction: WMD in Africa?

The potential that in Africa, the twin threats of weapons of mass destruction (WMD) proliferation and terrorism could merge to create a serious threat to America's national security has captured the minds of many since President Bush's State of the Union address in February 2002. President Bush's allegations that Saddam Hussein's regime had been attempting to purchase supplies of uranium from Niger led to a series of investigations, though none were able to provide credible evidence that Hussein had, in fact, purchased uranium from this poor country in West Africa.¹ Nevertheless, the episode fueled an ongoing interest about terrorism and illicit networks on the continent. Concerns that there could be WMD smuggling and proliferation were bolstered by the "ungoverned" nature of Africa: large swathes of the continent and its people lay outside of the control of formal state agencies; borders are largely unpatrolled and un-enforceable; and the governments that do exist are often run by individuals who regard public office as an economic commodity rather than a public duty. Therefore, many regard the continent as a twentieth century version of the Wild West, in which smugglers and terrorists can travel, base themselves and trade goods without detection or control.

At the same time as analysts in Washington and the rest of the USA tend to see Africa's ungoverned spaces as an opportunity for terrorist exploitation and WMD trafficking, these concerns are met with skepticism when posed to US officials who are actually based in the continent. They and many others emphasize that there is a significant problem with small arms and light weapons (SA/LW), though this is not traditionally considered a form of WMD. Among those based in Africa there is little concern that there is an actual, WMD threat in any of the region's countries. Even those countries that in the past have had state-sponsored WMD programs, South Africa and Libya, have either dismantled or are in the process of dismantling their biological, chemical and nuclear weapons programs. None have professed an interest in pursuing WMD programs; few countries have the industrial base necessary to produce large

quantities of chemical or biological weapons (as opposed to precursors); and only one currently has nuclear energy or research capabilities (South Africa).

Continuing concerns about the potential for WMD proliferation or usage in Africa relate to the fact that there are reported stockpiles of chemical weapons in Ethiopia; that there is rising interest in several African countries in acquiring nuclear power technology; and that many countries are currently prospecting for uranium deposits. At present, as the remainder of this paper will analyze, these threats are limited. Only South Africa currently has the industrial capacity, technological infrastructure and human capital necessary to operate and maintain nuclear energy facilities. Of the countries that are interested in developing nuclear energy capacity, most remain committed to a nonproliferation of nuclear weapons. Approximately 26 countries have signed the Pelindaba Treaty, the African Nuclear Weapons Free Zone Treaty first created in 1996 at the Organization of African Unity and currently administered by the African Union.² The threat of biological, chemical and radiological weapons creation, development and usage is also limited.

The question becomes, therefore, what is the potential for non-state groups that wish to traffic in WMD to exploit the vast territorial areas within Africa that lie beyond formal state control? After the initial scorn about the potential for WMD proliferation in Africa dies down, US officials in Africa often pause and speculate even though there are few targets within Africa for the use of WMD and few sites for the production of WMD, that *if* a group wanted to, it could probably move or produce precursors or full-scale WMD without detection. *This* permissive climate is the prime reason why the question still arises. There is much vulnerability that organizations could exploit, even if difficult to do so, for the limited production and transport of biological, chemical or nuclear WMD. When considering SA/LW as also capable of creating mass casualties, the threats are much more concrete and prevalent.

Before proceeding, a brief review of definitions for the terms as used in the rest of the paper is in order. Following the terminology adopted by the US Department of Defense (DoD), the phrase weapons of mass destruction refers to “weapons that are capable of a high order of destruction and/or of being used in such a manner as to destroy large numbers of people;” they may be biological, chemical, nuclear or

radiological in nature.³ Small arms and light weapons (SA/LW) could also be included in this definition, as they are also capable of mass destruction, but due to the fact that SA/LW are used differently and require more personal involvement in the deployment of the weapons, they remain distinct from the originating concept behind the phrase “weapons of mass destruction.”

The DoD definition of proliferation is limited to nuclear: “The process by which one nation after another comes into possession of, or into the right to determine the use of, nuclear weapons; each nation becomes potentially able to launch a nuclear attack upon another nation.”⁴ This work will take a more concrete view of proliferation, using it to refer to the (1) the production of precursors to WMD; (2) the development or acquisition of biological, chemical, nuclear and radiological material intended to be used as or developed into a weaponized form; (3) the transport of this material, or (4) the development and transport of biological, chemical and nuclear weapons. In other words, the paper primarily discusses proliferation in terms of the production, storage and transport of various forms of and precursors to WMD. This is designed to capture the potential to exploit Africa’s natural resources and biological diversity for the purpose of assisting in the generation of weapons of mass destruction. In this paper, proliferation does not include the spread of expertise or initiation of research that could lead a country to develop a WMD program.

Ungoverned Spaces and Terrorism

Failed states and ungoverned spaces are often used as synonymous concepts, referring to geographic areas where state authorities do not exercise effective control.⁵ Yet there are many manifestations of ungoverned spaces, most of which do not involve the full-fledged failure of a state. Failed states, in the genuine sense of an absolute collapse or lack of any formal governance structures, are actually rather rare in the world. Africa is thought to be full of ungoverned spaces because state authorities are notoriously weak, countries include vast territorial expanses whose remote and challenging terrain would be difficult to monitor and control (if the states were capable), and borders are virtually un-enforceable and unpatrollable (due to natural terrain, nomadic populations, and ethnic groups that span borders). These are the physical

dimensions of ungoverned spaces. In turn, ungoverned spaces – conceived as areas outside of state control – are thought to facilitate terrorist recruitment and operation, and thus to pose a significant security threat.

Looking beyond the association of ungoverned spaces with state failure opens up the analysis to a broad array of alternative governance systems, and then to how these can impact on the formation and operation of “terrorist” movements. Often there is order within apparent chaos, but it is an order that escapes the notice of the Western observer, because it may rely on localized, traditional or non-formal systems of governance. Alternatively, many issues of “ungovernance” are intentional inversions of authority, where a state purposely seeks to control only a small geographical or functional area within the territory of the state.

Students of African politics have long discussed these various permutations of governance and authority, long before the concept of failed states and ungoverned spaces became commonplace terms in academic and policy analyses. Jackson and Rosberg early on discussed the concept of the empirical and the juridical in African politics, noting how the geographical expression of statehood, upheld by the international system predicated on nation-states, belied the reality of governance in Africa on the ground. States, in their analysis, really referred to capital cities linked to productive economic sites within a territorial expression, rather than to an actual extension of governance structures throughout a territory.⁶ A generation of Africanist scholars has come to treat the difference between the juridical concept of the state and its empirical reality on the ground as the basic starting point for all analyses of African politics.

The concept of ungoverned space is therefore best treated not just as a geographical expression, but also one of authority and political will. Central state leaders may not even try to project their power to the periphery of countries, willfully leaving large swathes of territory outside the purview of formal state structures. Instead, as Reno points out, state leaders may intentionally opt to control only specific geographic zones that contain lucrative resources, allowing the rest of the territory to be governed through localized forms of governance.⁷ Effective sovereignty, therefore, is

intentionally restricted to specific geographical locations that are economically productive.

Other governments may rely on the grey areas of patronage and corruption to maintain their power, and thus be unwilling to completely enforce the laws that are on the books. States, therefore, may intentionally undermine the rule of law, which yet again is completely different than the softening of sovereignty that occurs when alternative forms of governance challenge state authority. Vigilante groups, organized criminal networks, or international bodies that exert control over a country's economic policies unintentionally soften the sovereignty of a state, often causing the state to score lowly on any measure of formal governance.⁸ Finally, when nongovernmental organizations (NGOs) and intergovernmental organizations enter into a country and begin to provide services, they are taking over roles that states traditionally have filled, further enabling the state to restrict its engagement with the citizenry. These are three examples of ungoverned spaces that derive from a lack of political will to fully control the polity.

In this sense, creating a more flexible definition of the ungoverned space is similar to the long debate on the concept of "state strength," most recently expressed by Francis Fukuyama. Aside from the early works that pushed the idea of state responsibilities beyond the simple provision of law and order to include the functions of the welfare state, Fukuyama expressly depicted state strength in two distinct dimensions: scope versus capacity. States decide how many functions to undertake (scope) and are able to fulfill functions with varying degrees of success (capacity/strength).⁹

Interestingly, the United States DoD has long nuanced the concept of ungoverned spaces to reflect all of these issues. Under Deputy Assistant Secretary of State for Africa Theresa Whelan's influence, the DoD has moved the concept of ungoverned spaces from the early formulations that focused on just physical control over territory to incorporate notions of political will. According to the DoD, an ungoverned space is a "physical or non-physical area where there is an absence of state capacity or political will to exercise control."¹⁰ The full concept refers to areas where territories are physically uncontrolled or functional policy areas in which

governments have ceded control, often allowing other organizations to take over the provision of services and functions that the government, in conventional and Western understandings, should be providing.

Table One: The Full DoD Definition of Ungoverned Spaces¹¹

Physical	Ungoverned Territories	Rugged, remote, maritime or littoral areas not effectively governed by a sovereign state.
	Competing Governance	A sovereign state's inability or unwillingness to exercise authority over part or whole of a country.
Non-Physical	Exploitation of Legal Principles	Areas in which legal norms and processes can be exploited by actors who threaten domestic or international order.
	Opaque Areas of Activity	Areas created by the inability of a government to monitor or control certain illicit or facilitating transactions when they are conducted in a certain way.

In this paper, the analysis will be primarily concerned with the potential intersection of terrorism and WMD proliferation within this physical concept of ungoverned space.

The Ungoverned Spaces Paradigm and the African State

The issue of territorial governance has long bedeviled Africa's states. Jackson and Rosberg most effectively analyzed the effects of the disjuncture between the maps drawn by European colonizers, the central state authorities created at independence, and the reality of control in most African states in their classic analysis of the diverging "empirical" and "juridical" aspects of African states.¹² Despite the fact that most territorial boundaries had no relevance on the ground, frequently dividing ethnic groups between countries, post-colonial elites embraced the European model of the state and territory that had been implanted during colonization. There were a variety of reasons for this, but perhaps most compelling was that the nation-state created a center of

power for the post-colonial elites independent of the more complex network of pre-colonial governance systems.¹³ At its founding in 1962 the Organization of African Unity elevated the sanctity of the continent's borders to a core principle. Member states were not to interfere in the internal affairs of their sovereign brethren, nor would the OAU support the activities of any country that attempted to align territorial boundaries with lived-realities.

While the artificial borders of most countries created the first hurdle to effective governance, the extractive impulse that governed the design of infrastructure and the location of cities further compounded the problem. Colonial rulers had designed roads, railways and other infrastructure to facilitate resource extraction, rather than to link rural and urban communities in a way that facilitated effective governance, and post-colonial elites did little to change these patterns. Roads and railways were designed to take resources and get them out of the country, rather than to facilitate internal communication, interaction and integration. In fact, communication and interaction would have helped the nascent nationalist movements in the colonial era, and thus threatened colonial systems. At independence, therefore, elites inherited an apparatus that intentionally did not incorporate rural and peripheral areas into a coherent national unit. Similarly, capital cities were established near coastlines or in the domains of the ethnic groups that the colonizers appointed as rulers, rather than in central locations from which rulers could project power to the periphery. Post independence rulers quickly realized the benefits of these extractive apparatuses and in most countries continued the extractive policies of their former colonial masters.

“The notion that Africa was ever comprised of sovereign states classically defined as having a monopoly on force in the territory within their boundaries is false. Most colonial states did not make any effort to extend the administrative apparatus of government much beyond the capital city,” and colonial governments were, in most cases, “little more than ‘elementary bureaucracies with limited personnel...more comparable to rural country governments in Europe than to modern independent states.”¹⁴ After independence, African countries did try to extend the administrative reach of the state, but were always more focused on the urban populations. With few

exceptions (those being Rwanda and South Africa), therefore, African central governments simply never had the capacity to govern their territories.

During the 1970s and 80s, the limited degree of state capacities were further eroded by economic mismanagement and ensuing financial difficulties, corruption and a forced down-sizing of the state under structural adjustment programs (particularly in the 1980s). In response, societies adapted to the diminished state presence by renewing informal politics, adapting to the decline in already thin service provision.¹⁵ Into the vacuum stepped informal traders, smugglers, warlords, arms traffickers, youth militia, local civic organizations, women's organizations, and religious groups. Each element operated with "varying degrees of autonomy, interacting with state agencies and the external community – aid agencies, international donors, and international non-governmental organizations."¹⁶

This is not to label the African state completely inept, for at times most states were able to control certain territorial areas, regulate the formal economies, and create strong military forces that were capable of quelling internal dissent for long periods of time. Strong and capable states like South Africa and Rwanda, for example, were able to completely regulate their territories and peoples, with infamous results. The Hutu government in Rwanda produced detailed lists of virtually every street in the country, listing, household-by-household, who was Tutsi and who was Hutu. The South African government under apartheid erected one of the most elaborate and enforced systems of racial and ethnic classification and segregation that the world has ever experienced. There are also positive forms of strong governance: Botswana also has a capable state that actually governs both the polity and the economy, with beneficial economic and social benefits.

The point is to demonstrate that the current obsession with the "new" nature of state failure (to paraphrase Robert Rotberg), is not really new in Africa at all, and that there have long been hybrid forms of governance in both the center and periphery of most African countries. In this sense, the situation in Africa parallels insights offered by Phil Williams, who writes that the

story of medieval Wales is a cautionary tale for any attempt to analyze ungoverned spaces or lawless areas. While some of these spaces are

truly lawless and ungoverned, many of them simply have different, alternative, and sometimes even hybrid forms of governance. The terms we use are inherently state-centric and implicitly assume that the state, based as it is on centralized, top-down control and direction, better meets peoples' needs than any other form of governance.¹⁷

The current concern with ungoverned spaces - unpatrolled borders; unsecured littoral areas, coastlines and maritime passageways; and the unregulated trading/smuggling routes that cross the continent – constitutes an ahistorical discussion that seems to present these problems as new issues that a quick-fix, military-spearheaded capacity-building effort can solve.

The current analysis of how ungoverned spaces create “challenges” for Africa, therefore, represents a relatively simple mapping of how these problems manifest, with little attention to the underlying factors that create the problems. As depicted in table two, the DoD sees similar challenges across virtually all the regions: porous borders, unpatrolled coastlines, conflicts between and within countries, ineffective governments, and poor infrastructure and service provision (particularly in the health care sector).¹⁸

Table Two: DoD Mapping of Ungoverned States in Africa¹⁹

Western Africa	Eastern Africa	Central Africa	Southern Africa
<ul style="list-style-type: none"> - Generally uncontrolled coastline, air space - Porous, unpatrolled borders - Lack of effective governance - Ongoing conflicts (Ivory Coast, Nigeria, 	<ul style="list-style-type: none"> - Long unguarded coastline - Porous borders - Dysfunctional governments - Continuing conflicts - (Eritrea, Ethiopia, Sudan, Somalia) - Lack of adequate health care 	<ul style="list-style-type: none"> - Porous borders - Continuing conflict (DRC) - Most governments ineffective - Ethnic confrontation (Rwanda, Burundi) - Poor health 	<ul style="list-style-type: none"> - Long unguarded coastline - Poor health care systems - High HIV/AIDS rate - Growing gap between rich and poor - South Africa – own perceptions

Chad) - Terrorist safe havens and bases (Mali) - Fragile states emerging from failure (Sierra Leone, Liberia)		care systems - Corruption - Lack of infrastructure	of capabilities do not match reality
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Even taking this at face value, there remain factors that the paradigm should consider, such as localized pastoral conflicts that cross international borders; historical nomadic routes that transverse the Sahel and connect East Africa to the Middle East; and internal dynamics that create advantaged and disadvantaged populations that are often ethnically and religiously delimited.

Terrorism in Africa

But are there terrorist groups in Africa that are interested and attempting to capitalize on all these vulnerabilities? A casual reading of major newspapers would create the impression that there are so many physically ungoverned spaces in Africa that terrorists are running rampant across the continent. Terrorists are said to hide out in the multiple lawless and stateless areas that populate Sub-Saharan Africa, they supposedly gain recruits from among the starving and displaced masses who have been victimized by powerful warlords and governments that are fighting over the continent’s spoils. Militant Islamic recruiters are thought to prey on vulnerable communities, building radical organizations and recruiting the next generation of suicide bombers from the ranks of the poor Africans.

This is, to state it mildly, a vast oversimplification of both the nature of terrorist recruitment and the terrorist threat in Africa. First of all, organized terrorist groups do not rampantly proliferate across the continent. Prior to 2001, there were no designated “foreign terrorist organizations” in Sub-Saharan Africa.²⁰ There have been a number of

organizations that area governments label as “terrorists,” yet the United States has been hesitant to recognize the groups as such, for the understandable reason that in many cases, area governments are labeling opposition groups terrorists in order to gain support to combat their opponents.

Second, these sentiments are an overstatement of the influence of militant Islam across the continent, and a misunderstanding of the nature of terrorism. Terrorism in Africa is not confined to the realm of the radical Islamists, though those are the groups that receive the most attention. Of the three Sub-Saharan groups that have found their way onto the “other designated organizations” lists maintained by the State Department, only one (Al-Ittihad Al-Islamiyya, AIAI, of Somalia), was Islamist.²¹ The other two included the former military of Rwanda (the ex-FAR) and a Christian terrorist group in Uganda, the Lords Resistance Army (LRA). Al-Qaeda, obviously on the list of designated foreign terrorist organizations (FTOs), operates in Africa, but is not *from* Africa.

Third, the common mantra that failed states lead to terrorism is, in fact, belied by geography: the groups that do exist tend to organize in the countries with a modicum of law and order, such as South Africa and Kenya. Indigenous terrorist organizations (not designated by the United States) have originated and continue to operate in both unstable countries such as Somalia and Liberia, but they are more prolific in the territories that have more advanced infrastructures, such as South Africa, Nigeria and Kenya. Without a reliable and secure commercial infrastructure, it becomes difficult to move commodities and illicit goods to fund terrorist activities, to access the internet and make phone calls. The largest Al-Qaeda network in East Africa was uncovered in Kenya, one of the most politically stable and industrially advanced countries in the region. In fact, to date this cell has been the only direct Al-Qaeda group that has been uncovered since the Global War on Terror (GWOT) began in 2001.

Terrorist groups tend to use the failed states like Somalia more as staging grounds and transit points, rather than places where the groups build long-term organizational and financial networks. The stateless societies often have dense local networks that actually regulate society, and foreigners stand out starkly in this context. There simply is no way for a foreigner to blend into Somali society: even the Ethiopian-

born Somalis (who look the same and speak the same language) can be easily identified as outsiders once they begin to speak. The Harmony Project at the Combating Terrorism Center at West Point has provided excellent data on the organizational difficulties that Al-Qaeda faced in Somalia, which eventually led to the organization reducing its involvement in the territory.²² The same is true of Pemba, the smaller of the two islands off the coast of mainland Tanzania, and once thought to be a haven for terrorists.

Unlike in West Africa, where Hezbollah was able to enter into the chaos of Sierra Leone and engage in a lucrative diamond trade, in East Africa, whether stateless or semi-governed, foreign recruiters have had to marry into local communities before they can begin to gain any recruits. Furthermore, even in West Africa, while Hezbollah obtains diamonds from conflict zones and near anarchic territories, the organization found it necessary to transport the product via the Lebanese diaspora community that lived in the more politically controlled countries and maintained stable trading networks.²³

Finally, when understanding the nature of the terrorist threat in Africa, it is important to note that there are distinct regional variations to the presence and extent of terrorist networks across Africa. The threat in Southern and Central Africa is almost non-existent, and for a clear reason: there are relatively few Muslims in Central and Southern Africa. In these areas, Islamists are attempting to convert Christians to Islam, rather than developing radical Islamist networks.²⁴ With the exception of South Africa, there simply is no Islamist terrorism to discuss. There is little non-Islamic terrorism either, now that the liberation struggles and civil wars in the South have ended and the Rwandan Army disbanded.

Islam is much more prevalent in Northern, Eastern and Western Africa, and accordingly there are more Islamist groups, both radical and non-radical, in these areas than farther south. The LRA of Uganda is also active, and a current designated terrorist organization, though Christian, rather than Moslem. Therefore, when discussing the terrorist threat and the potential nexus between terrorism and WMD proliferation, regional variations in the number of groups, intensity of their activities and the nature of the Islamist terrorist threat, are important.

In both East and West Africa, Islam as a political ideology has capitalized on ethno-national struggles to create a potent force.²⁵ Focusing on West and Sahelian Africa, the US Government is concerned with the activities of Al-Qaeda, Hezbollah and a host of localized organizations, most notably the Salafist Group for Prayer and Combat (GSPC).²⁶ In 2006, the GSPC reportedly merged with Al-Qaeda, emerging with the new name Al-Qaida in the Islamic Maghreb (AQIM). According to the 2006 patterns of terrorism report compiled by the Department of State, throughout 2006,

AQIM/GSPC continued to operate in the Sahel region, crossing difficult-to-patrol borders between Mali, Mauritania, Niger, Algeria, and Chad to recruit extremists within the region for training and terrorist operations in the Trans-Sahara and, possibly, for operations outside the region. Its new alliance with al-Qaida potentially has given it access to more resources and training.²⁷

Tablighi Islamic sects, which themselves are nonviolent, recruit individuals in a missionary style that focuses on socially isolated young men. From these individuals, radical groups then recruit terrorists. For example, John Walker Lindh, the American Taliban soldier arrested in 2001, had been a member of a Tablighi sect before becoming radicalized. Radical groups have also been able to capitalize on local struggles for power and influence, as with the recruitment of militants from the Tuareg group in Mauritania and Mali.²⁸ Nigeria has seen major increases in sectarian strife and militarized Islam in recent years, further contributing to rising concern in the Western and Sahelian regions. Attacks against Western oil companies in the Niger Delta, however, come not from Islamist organizations, but from ethnic-nationalist movements seeking a more equitable share of oil revenues, to compensate for the environmental degradation wreaked by oil pipelines. They also happen to be devout Christians.

East Africa attracted special interest from the United States and the international community because of its early links to transnational Islamic terrorism. In 1998, United States Embassies in Dar es Salaam (Tanzania) and Nairobi (Kenya) were bombed, killing a handful of US citizens and hundreds of Kenyans and Tanzanians. Sudan and Somalia have both served as training grounds and transit routes for Al-Qaeda, and the agents who attacked the embassies in Kenya and Tanzania were closely linked to cells in Sudan and Somalia. In the wake of the embassy bombings, an organized Al-Qaeda

cell was uncovered in Nairobi, Kenya. In 2002, one of Kenya's most popular tourist destinations, Mombasa, experienced two further terrorist strikes, this time in the form of coordinated and simultaneous attacks on an Israeli-owned hotel popular with Western tourists (in Kikambala) and an Israeli-chartered aircraft departing from the Mombasa airport.

Most importantly, East Africa has also been home to both Al-Qaeda and Osama Bin Laden. Al-Qaeda's presence in the eastern region is both direct, with agents operating in several countries, as well as indirect, through the creation of satellite organizations and the recruitment of existing organizations to Al-Qaeda's cause. In 1991 the leader of Sudan's National Islamic Front (NIF) government, Hassan al Turabi, invited Osama bin Laden to live in Sudan. During this time, bin Laden established multiple businesses in Sudan, many of which he retains, and established Al-Qaeda training camps in the more remote areas.²⁹ During this time, Sudan provided both training camps and a source of financial support for Al-Qaeda during the early 1990s and fostered Islamic resistance movements in several neighboring countries in the Horn of Africa. As a result, the United States listed Sudan as a state sponsor of terrorism from 1993 until 2006.

With the support of the Sudanese government, bin Laden created the Islamic Army Shura, which he intended to function as a coordinating body for a consortium of terrorist groups allied to bin Laden.³⁰ In the wake of the bombings of the US embassies in Kenya and Tanzania in August 1998, the United States controversially destroyed a pharmaceutical factory (Shira) in Khartoum, the capital of Sudan.³¹ Groups from Somalia and Eritrea were formally associated with Islamic Army Shura, and informal ties were established with groups in Uganda and several West African states. Al-Qaeda has increased its direct presence in much of East Africa during recent years, extending from Sudan in the north to Tanzania, and perhaps even into Malawi in the south, which is why the region increasingly figures in US counterterrorism efforts.³²

Despite this permissive environment, the indigenous terrorist threat in much of Africa has not been considered a major threat in by the US government, as these groups have rarely sought to directly attack the US or its interests (aside from the three incidents listed above). The bulk of supposed-terrorist organizations throughout Africa

are those that originated in specific areas and operate with local or regional agendas, and the two designated FTOs were not even Islamist (the Lords Resistance Army in Uganda, and the Rwandan Armed Forces). For example, the Ogadeni National Liberation Front (ONLF) in Ethiopia originated as a Somali nationalist movement, seeking to rejoin the Somalis in the Ogaden region of Ethiopia with the country of Somalia. As with the Oromo Liberation Front (OLF) in the northern part of the country, the ONLF's Islamist agenda comes second to the nationalist.

In Kenya, Tanzania and Uganda, most of the local Islamist groups seek to advance the status of Muslims in each country, rather than to seek the creation of an Islamic state.³³ Many of these groups existed before Al-Qaeda attempted to organize them into a loose hierarchy, and so far these local groups have not become deeply entrenched in the Al-Qaeda network. The most important obstacle to a closer alliance has been that local Islamist groups have a primary loyalty to their clans and ethnic tribes that has not always been compatible with Al-Qaeda's transnational agenda.³⁴ Local Islamist groups are primarily concerned with the overthrow of their governments, and they focus on destabilizing neighboring governments in order to assist their ethnic compatriots that were stranded across the state borders established by colonial powers.

With such locally-delimited agendas, not only are these groups of only limited concern to the international community, it is also difficult for transnational terrorist organizations to successfully recruit them to the international radical Islamist agenda. Transnational terrorist organizations like Al-Qaeda and Hezbollah find it difficult to coordinate activities with local groups and have mostly given up attempting to organize them into larger associations and networks.³⁵ These difficulties are most extreme in East Africa, where the transnational groups find the clan-based warfare and seeming anarchy of acephalous societies like Somalia difficult terrain in which to recruit and prosper.³⁶

In West Africa, Al-Qaeda has experienced more success in co-opting local groups into a larger agenda, though the local struggle for recognition and opportunity still often dominates the goals of the groups.³⁷ Furthermore, the Sahelian and West African states have a longstanding tradition of strict separation between religion and the state, growing out of compromises made by the leaders of the Sufi brotherhoods during

the colonial era. As a result, most populations and area governments do not seek to merge religion and politics, which complicates the work of those advancing an Islamist agenda. In this context, religion has served as a basis of political struggle and legitimacy, in the context of contestation over political control. For example, Islamist movements have emerged out of the Tuareg rebellion in Mali and Islamist preaching has found most response amongst the Haratine living in poor suburbs of Nouakachott in Mauritania.³⁸

Terrorists, Ungoverned Spaces and WMD Proliferation

How, then, do we map the concern with terrorist onto the concern with ungoverned spaces, and then both of these onto the threat of WMD proliferation? Part of the exercise must take into account the fact that while the terrorist threat may not be as extensive as the US government and popular pundits claim, there has been an increase in militant Islamism across the continent in recent years. Conflicts in Nigeria, the recent rise of the Islamic Courts Union (also known as the Council of Islamic Courts) in Somalia, and the vulnerabilities to recruitment created by pervasive conflict zones, attest to the increasing influence that Islamists have on the continent.

Experiences with WMD on the Continent and the SA/LW Threat

At present, no African states currently have proven, active nuclear, chemical or biological weapons programs, though several have in the past and several are suspected of having active programs currently. Small arms and light weapons constitute the real weapons of mass destruction in the African context. For this reason, when discussing WMD in Africa, some analysts will use the phrase WMD but refer to SA/LW rather than the more traditional NBC – nuclear, biological and chemical weapons. Because of this tendency, in addition to discussing the WMD potential I will also review the SA/LW threat and how that can be mapped onto the vulnerabilities created by ungoverned spaces and the permissiveness introduced by corruption and the illicit economy. As a reminder of how these terms are used in this paper, for the most part the discussion revolves around the potential for the production, storage and transport of

various forms of and precursors to WMD. When treating SA/LW, for the most part the analysis revolves around issues of its prevalence and trafficking (transport).

State-Sponsored Biological, Chemical, Nuclear and Radiological Weapons Programs

There are a few countries that have had some form of state-sponsored biological, chemical and nuclear weapons programs in Africa in the past. Most of these have decommissioned their programs, though there have been allegations of recent chemical weapons use by the Ethiopian and Sudanese governments. Table three lists the countries in Africa that the Center for Non-Proliferation Studies (CNS) of the Monterey Institute for International Studies (MIIS) has identified as having current, past or potential CW or BW programs.

Table Three: Chemical and Biological Weapons Programs in African States³⁹

Country	Chemical				Biological			
	Program Status	Possible Agents	Signed CWC[1]	Ratified CWC[1]	Program Status	Possible Agents	Signed BWC[2]	Ratified BWC[2]
Algeria	Possible[3]	Unknown	01/13/93	08/14/95	Research effort, but no evidence of production[4]	Unknown	No	No
Egypt	Probable[12]	-mustard -phosgene -sarin -VX[13]	No	No	Likely maintains an offensive program[14]	Unknown[15]	No	No
Ethiopia	Probable[16]	Unknown	01/14/93	05/13/96	-	-	04/10/72	05/26/75
Libya	Known[44]	-mustard -sarin -tabun -lewisite -phosgene[45]	No	No[86]	Research, with possible production of agents[46]	Unknown	-	01/19/82*
S. Africa	Former program[61]	-thallium -CR -paraaxon -mustard (WW II)[62]	01/14/93	09/13/95	Former program Started: 1981 Ended: 1993[63]	-anthrax -cholera -plague -salmonella -gas gangrene	04/10/72	11/03/75

						-ricin -botulinum toxin[64]		
Sudan	Possible[66]	Unknown	No	05/24/99*	Possible research program[67]	Unknown	No	No

- South Africa decommissioned its CBW program in the late 1980s, as the end of apartheid approached. South Africa does utilize nuclear energy plants, and has uranium stores in its territory. As a well-governed and regulated state, the degree to which this represents a proliferation threat is questionable. There are lingering concerns regarding the potential to exploit dual-use technologies in this industrialized country, and regarding the potential sale of chemical weapons that have evaded the control of the current regime.
- Libya announced in December 2003 that it would decommission its chemical and nuclear weapons program (it had never really had a biological weapons program). The nuclear facilities were completely dismantled, and equipment shipped to various locations around the USA, in 2004. The large stockpile of mustard gas created by Libya's chemical weapons program is still in the process of being disposing of. Libya's two chemical weapons facilities at Rabata and Tarkunah supposedly shut down their operations over a decade ago. The Rabata facility produced over 100 tons of blister and nerve agents before it closed in 1990, and the underground facility at Tarkunah was re-opened in 1995 as a pharmaceutical plant. The Libyan biological weapons program was at a basic stage when decommissioned in 2000, and was not able to produce weaponized agents.
- Ethiopia was suspected of having a chemical weapons program since the 1970s, and to have used the products against both Eritrea and Somalia during the 1970s. The chemicals were primarily incapacitating agents, but there have been allegations that the USSR provided nerve agents as well.⁴⁰ These allegations are neither widespread nor well documented. Ethiopia is still discovering containers of mustard gas left over from the Italian occupation in the 1930s. Italy denies

responsibility for the items that are found. The latest was uncovered in 2001 while laying the foundation for a school in northern Ethiopia.

- Sudan has been accused of utilizing chemical weapons in the Darfur conflict, though these claims have yet to be widely substantiated and verified. The Shifa pharmaceutical community that the US bombed in 1998 was suspected of producing chemical weapons and a precursor to the VX agent (EMTP), but again, the evidence is inconclusive and the site does not seem to have had the security or containment provisions that a large-scale chemical weapons facility would mandate.⁴¹

Small Arms and Light Weapons Proliferation

The proliferation of SA/LW, which does not require state sponsorship, is much more prevalent throughout the continent than the more standard weapons of mass destruction (biological, chemical, nuclear and radiological weapons). Small arms and light weapons are a perennial threat to the stability of the continent, and most African conflicts have been exacerbated by an influx of weapons that have come into the continent after the end of the Cold War, and more recently, through primarily French and Chinese suppliers.⁴²

SA/LW has the potential to transform small, localized disputes into much larger conflict zones. Currently the Inter-governmental Authority on Development (IGAD) in the Horn of Africa monitors several clusters of cross-border pastoral conflicts through its Conflict and Early Warning and Response Network (CEWARN). CEWARN has noted that the prevalence of SA/LW in the border clusters between Somalia, Kenya and Ethiopia and between Sudan, Ethiopia and Uganda has enabled low-level insurgencies in those regions to persist for a long period of time, as arms smugglers take advantage of local level conflicts to transport their weapons.⁴³ These weapons can then find their way into more stable countries that have a more persistent terrorist threat, and from there to be used for other ends.

There are localized disputes in every sub-region on the African continent, and many of these occur in peripheral areas. The ability of governments to control these areas, already weakened, becomes even more tenuous when localized disputes are

elevated into regional insurgencies through the influx of SA/LW. Mapping these areas onto the areas of exploitation open to terrorists clearly demonstrates the very real threat that SA/LW proliferation – both its transport and use – opens up for terrorist movement and operations, as they can exploit the local insurgencies and/or use the contested areas as transport corridors.

Non-State Sponsored WMD Proliferation

Aside from the state-sponsored initiatives, there have been some indications that there might be non-state actors interested in creating or transporting biological, chemical or nuclear weapons within Africa. For example, AQ Khan is reported to have made three trips to Mali, Niger, Chad, Sudan and Nigeria, spanning from February 1998 to 2000, though it is an open question whether he made the visits to obtain uranium for Pakistan's nuclear weapons program or to liaise with Tablighi missionaries, who had started arriving in Mali in 1997-8.⁴⁴

Questions about the AQ Khan network's involvement in Western and Southern Africa leads one to investigate the ways in which terrorist groups *could* utilize Africa's physical ungoverned spaces to produce and transport WMD. Opportunities could potentially arise from the porous borders, smuggling routes, unmonitored maritime passageways, and a matrix of localized conflicts that exacerbate the previous three dynamics. While there is only limited evidence that these vulnerabilities have been utilized for production and transportation, it is worth considering how they might be exploited.

First, the continent's pervasive porous borders present areas through which anyone can move anything, should they want to. As the Defense Attaché in Nigeria phrased it during an interview with the author in April 2007 in Abuja, "Do I *think* there's WMD proliferation in Nigeria? No. However, is there the potential and opportunity for it? Yes. You can get anything into and out of this country." He stressed that Nigerians are not currently interested in any form of WMD proliferation, and that right now the country's Muslims are not radicalized in that way, but that some parts of the country could in the future get to the point where any spark would set them off. If that would happen, then the possibilities would open up.

William Reno's work in Western Africa has demonstrated that often rebels seek to physically control territories that contain productive resources (timber and rubber plantations, mines, oil extraction sites, etc) rather than an entire state.⁴⁵ These locations are often in remote parts of the countries well outside of formal government control, so that transport of sensitive material across the already porous borders could be more easily facilitated. This points us to examine the location of mines that might contain sensitive materials and to speculate (1) whether the simple presence of the mines might cause instability because they are attractive to potential rebels, and (2) whether this instability might then provide opportunities for trafficking in precursors and materials for nuclear WMD. Uranium mines in ungoverned areas are particularly vulnerable to exploitation, as demonstrated by an attack on the Cominak uranium mine in northwestern Niger in June 2008 by Tuareg rebels. While there is no indication that the rebels intended to steal and transport any of the uranium, the incident did point to a clear risk for the security of the facility and the materials it contains.⁴⁶ Decommissioned uranium mines are also at risk: in 2005 Tanzanian authorities reported confiscating a barrel of yellowcake (U-238) that had allegedly been smuggled out of a closed uranium mine in the Katanga region of the Democratic Republic of Congo.⁴⁷ Since uranium can be produced as a byproduct of other mining, one must consider the potential vulnerability of all mining sites in Africa.

Second, widespread smuggling routes for goods and people could potentially be utilized by potential traffickers of WMD or their precursors. Smuggling routes not only provide transportation routes for groups, they also offer opportunities for the groups to financially sustain themselves. For example, the GSPC survived in the southern Algerian/northern Malian region through cigarette smuggling and hostage ransom.⁴⁸ There have been links between Hezbollah and the diamond trade in Western Africa; as well as rumored links between AQ and the diamond trade, primarily in Sierra Leone. These linkages set a precedent for other groups to move high-value commodities, such as precursors for or weapons of mass destruction.⁴⁹ Routes across the Sahel, originating in Niger and northern Mali, which bring Cameroonians, Congolese, Ghanaians and Liberians through a trans-Sahara trade route into the Mediterranean,

could be used to transport individuals carrying biological or small quantities of chemical agents, as well as small arms.

This is a noted problem in Eastern Africa as well, as the nomadic people in each country migrate within countries and across international borders. To take just a few groups in the diverse Eastern African region, the Afar people migrate between Djibouti and Ethiopia; while the Somalis migrate between at least three countries: Somalia and Djibouti, Somalia and Kenya, and Somalia and Ethiopia. Given that many of these individuals are fleeing from persecution or wars, they become vulnerable both to terrorist recruitment and are in need of economic opportunities, so are likely to be willing to smuggle goods along their routes. This could present an opportunity for the movement of WMD, and it already provides for the transport of SALW.

Refugee flows within regions and out of the continent constitute additional migratory vulnerabilities. In Djibouti, for example, Ethiopian and Sudanese refugees depart in large numbers from Djibouti *en route* to the Middle East via Yemen. The Yemeni authorities accept these refugees and permit them to transit through the country into the broader Middle East. At present, this flow is mainly from East Africa to the Middle East, which would provide for the outflow of WMD from Africa, rather than an inflow.

Third, the unmonitored maritime passageways along the Eastern and Western coasts already provide major opportunities for both piracy and smuggling into and out of Africa, which already facilitate the flow of SA/LW, could provide opportunities for the transport of biological, chemical and nuclear WMD. Again, there is as yet no evidence of this, but the potential is worth considering. Narcotics trafficking from West Africa became a major problem in the 1990s, at times leading to the suspension of all commercial air traffic from Lagos, Nigeria to the United States. The trade continues today, and is complemented by a vibrant market in illegal oil bunkering in the Gulf of Guinea. While certain governments are complicit in the smuggling of oil, other actors in these trade flows are more shadowy, leading to an intersection of legality, illegality, corruption and smuggling that creates an obvious opportunity for WMD trafficking. The gap in maritime security is likely to remain a significant area of vulnerability into the foreseeable future, for a number of reasons.

Most African countries do not have coast guards, let alone blue-water navies. One of the major US Government initiatives to strengthen African security is to utilize US Navy and Coast Guard assets to help to train and equip African navies and coast guards. This is an ongoing project that has yet to yield results and any semblance of governance to the coast and littoral regions of Eastern and Western Africa. Security is also relatively lax in most African commercial ports. Kenya's second largest city, Mombasa, is also the major port on the Eastern Coast. In 2006 and 2007, embassy-based American survey teams noted significant problems in the security at the commercial port,⁵⁰ but the Mombasa officials have been attempting to improve the gaps. The port now x-rays 20% of the containerized cargo that come through the port.⁵¹ At the same time, there is virtually no security at the Old Port, where most dhow boats dock (when they need dock at all, which often they do not). As most smugglers operating in the waters off of Kenya utilize dhows rather than containerized ships, this leaves open a broad hole in the security of the Mombasa port. Whether or not this will allow for the movement of large quantities of chemical agents in heavy barrels (for large quantities of VX, mustard or similar chemical agents) is open to question, but the dhows have been noted for weapons, drug and human trafficking. The major increases in piracy along the Indian Ocean and Eastern coastline in the past decade only facilitate movement of such items.

Finally, mapped onto all of these recognized vulnerabilities are the localized conflicts that exacerbate all of the above dynamics. Pastoral conflicts abound in Eastern and Sahelian Africa, creating disputes among local communities that span territorial boundaries and create cross-border disputes. The pastoral disputes generate a nexus of vulnerabilities: weapons flows, refugee movements, arms and people smuggling, and a further degradation of already weak (or nonexistent) governmental services. This lack of control and the climate of conflict create situations ripe for smuggling both SA/LW and WMD, whether precursor material or actual weapons. Insofar as the localized conflicts interfere with local economies and local community self-help projects that supplement the dominant economy (in East Africa, cattle), the conflicts create local communities that are increasingly vulnerable and living in precarious situations. This will feed back into the conflict, while also making local communities more open to co-

optation by groups who wish to transport themselves and their materials through territories without detection, in exchange for food and other goods.

Complicating the matter, government militaries are occasionally involved in the fighting, and they often take sides. Once the governments involve themselves as parties to the conflict, they forfeit the ability to act as a neutral party to end or mediate between local groups. Therefore, the conflicts will become even harder to solve, leaving a persistent, low-level vulnerability to terrorist movement in these areas. CEWARN reports document the incidents in depth,⁵² so one example will suffice here. Between May and August 2006, cross-border pastoral conflicts occurred between the Turkana tribe and the Ethiopian villages across the border. The Kenyan military supported the Turkana in their raids against the Ethiopians, increasing the chance that the local disputes could escalate into an international incident.

Arguments Against Terrorism and Potential WMD Proliferation

Despite these vulnerabilities and opportunities, however, there are compelling reasons why the nexus is not as threatening as it may appear. The issues come to targeting, capacity, ease/feasibility of transport, and motivation. Across all of these issues, the SA/LW threat is much more genuine than the likelihood that terrorists groups will become involved in the production, transport or use of biological, chemical or nuclear WMD in Africa. Given that the SA/LW problem affects localized conflicts and some inter-state border issues, it is worth questioning the extent to which SA/LW and terrorism will ratchet up into a threat capable of threatening international and Western (or US) interests.

First – what would be targeted? We need to think through where African WMD would go, what role the continent would play, etc. There are few large-scale industrialized interests on the African continent that would attract infrastructural attacks with nuclear or high-yield explosive weapons. Most countries do not refine their own oil, which leaves petroleum-based targets to the resources utilized to extract crude oil. Most of these platforms are offshore, removing them from the immediate threat of overland-based targeting. For chemical and biological weaponry, the targets would be human populations, and again there are few concentrations on the continent that would serve

as viable targets for anti-Western Islamist terrorists. Lagos, Johannesburg and Addis Ababa would be the possible exceptions to this analysis, and of those, Lagos is the most vulnerable to attack.

Regarding capacity, it is questionable whether the industrial capacity exists in most countries to manufacture chemical, biological or nuclear weapons in the first place. Sudan's al Shifa pharmaceutical plant, destroyed by the United States in 1998, had been suspected of producing precursors to VX, but the evidence was highly inconclusive and for the most part seemed to indicate that the facility had actually produced human and veterinary pharmaceuticals.⁵³ South Africa decommissioned both its chemical and biological weapons programs in the late 1980s, reducing the capacity in that country as well. The country still retains dual-use vulnerability from its commercial pharmaceuticals plants, which could be pressed into the creation of chemical weapons.⁵⁴ South Africa is the most extensively governed country on the continent, and while it does have a persistent crime problem, the extent of the vulnerabilities created by the ungoverned spaces paradigm elaborated in the first part of the paper are much less severe than in other countries.

More importantly, Purkitt cautions that there are several poor countries in Africa that are developing civilian biotechnology research and production facilities that could produce sophisticated biotechnology products. At this point in time, however, this remains in the realm of the possible rather than actual threat. Yet should African states or commercial interests attempt to produce chemical and biological weaponry from these facilities, both the infrastructural modifications and the enhanced security measures should be easily detectable. While it is theoretically possible to create chemical and biological weapons without specialized facilities, this would threaten the populations surrounding the locations and lead to retaliation. These facilities would also have to be located near sites with operating infrastructure (water, electricity, sewage and transport), which means they would not be sited in the peripheral ungoverned spaces that evade domestic government and international detection. They would be more vulnerable to the grey areas of un-governance (those of political will), rather than the territorial dimension of lack of control. A perhaps more genuine vulnerability from

facilities such as those in South Africa would be through the diffusion of material into the commercial sectors, which presents a possible transport vulnerability.⁵⁵

African scientists and policy experts in this field are concerned about the potential release of biological agents, but do not consider their intentional use very likely. These specialists are more concerned with disease outbreaks rather than biological weapons. In May 2008, senior scientists from twelve Sub-Saharan African countries met at a regional biosecurity workshop in Pretoria. Following the event, they released a statement in which they stated, "In Africa, the primary concern is not the intentional misuse of science to cause harm, but rather, the risk to animal, plant and human health from natural disease outbreaks either originating on the continent or elsewhere."⁵⁶ The statement also indicated a concern with accidental contamination and the potential abuse of dual-use technologies, but the scientists argued that the benefits to advances in health care outweighed the risks. "It is recognised that there is, nevertheless, a risk that human, plant or animal disease could be caused by an accidental or deliberate release of pathogens and products from laboratories."

Referring back to the nature of terrorist groups in most of Africa and recalling that they are often fighting for localized freedoms and rights, this leads us to question whether these "terrorists" would seek to create biological or chemical weapons facilities that could harm the local populations that they represent. Harming these local populations is antithetical to both their ability to operate and the goals they seek to achieve. As many insurgent groups rely on local support, they are unlikely to risk alienating the local populations that provide them refuge and support and, when necessary, hide them from authorities. There is little motivation to use these weapons locally, and less to threaten their support bases by creating weapons to be utilized elsewhere. Therefore, the most basic kitchen-type facilities that can produce chemical and biological weapons are likely to be avoided. The one most notable potential exception to the logic of this argument is the larger-scale conflicts which generate the resource-seeking warlordism described by Reno in West Africa, and witnessed throughout the wars in Liberia and Sierra Leone. In these cases, however, the risk of contaminating the ground from which the rebels draw the resources that make them rich

could create the same constraint on their actions as those groups that rely on the support of local populations.

Finally, one should question whether or not biological or chemical weapons would even be effective in Africa. Burgess and Purkitt have argued that few African security experts believe that chemical weapons would even be effective in Africa, “given the heat, and the possibility that shifting winds could blow agents onto one’s own troops. Biological weapons could be delivered through food and water, but the weapons could spread into one’s own population.”⁵⁷ There is little motivation for terrorist groups to use these weapons on local populations to dabble in chemical, biological and nuclear WMD as opposed to SA/LW, which can be used in the immediate fight in the local arena more precisely, and with less chance of unanticipated effects.

Given that there are few targets for biological, chemical and nuclear weapon use, and few for the creation of these weapons, it is worth considering transport challenges. If the biological and chemical weapons are intended for use outside the region, then the agents must be transported from the relatively governed city centers into the less formally governed areas in order to get it out of the country and into another one. This is where the political will aspect of ungoverned spaces becomes important – if public officials are bribable, this effort becomes more likely to succeed.

Many of the larger airports in Africa have begun to utilize the Terrorist Interdiction Program (TIP) software, which increases surveillance capacity. Counter-narcotics measures in hubs such as the airports in Nairobi and Lagos further render smuggling more difficult than in previous periods. Most commercial transport within Africa takes place via air freight or shipping up and down the coasts, as the land-based infrastructure is poor to non-existent in many countries, or involves travel through or around large conflict zones. Air traffic is expensive, so only the well-funded terrorist groups would be able to utilize these networks, and there are few well-funded terrorist organizations operating in Africa.⁵⁸ While this is a viable transportation route, more research would need to be done to assess how much of a genuine threat and opportunity it poses.

One caveat to this skepticism regarding the likelihood that air transport could or would be utilized by terrorists to transport WMD pertains to the khat (chat, qatt, etc)

trade throughout East Africa, from Kenya through Sudan and into Yemen. The planes that transport khat from Yemen into Djibouti, Kenya into Ethiopia and Djibouti, etc, are not often subject to strict customs controls or inspections, as delaying the daily delivery of khat tends to cause social unrest. Taking advantage of this, Al-Qaeda has utilized khat planes to smuggle small arms and weapons, personnel and perhaps money,⁵⁹ and the potential could therefore to also transfer biological, chemical or nuclear precursors or weapons. There is no evidence that such transport has occurred, but it is an opportunity that should be considered.

If terrorists are taking advantage of the *ungoverned* areas of Africa to transport biological, chemical or nuclear WMD, then the routing will unfold either over inadequate roads or in rickety, small boats like the dhows. Overland travel has significant drawbacks for transporting WMD. Roads in most countries are heavily potholed and threat of banditry is high, even on major highways. Transport into the peripheral rural regions involves heavily degraded tar or dirt roads where the terrain is rough. Trucks often break down and/or mysteriously lose cargo. Delivery times are unreliable, which means that shipments could not be timed with any precision. The unreliability of the roads means that goods that need to be refrigerated – as do many biological weapons – may not survive long enough in transport; and those that require stasis in transport could be compromised while transported in this method. Stable forms of uranium are less vulnerable to these forms of transport.

If goods go through non-formal crossings (i.e., most crossings in the deepest of the ungoverned areas), then they could be transported via nomadic caravan routes, an even more precarious situation than relying on the poor road system. The risks of contaminating the product, the people carrying it, and the areas through which it is being transported increases further. Most of the railroads in these countries are non functional, eliminating that method of transport (for example, the existing rail systems in Nigeria and Ethiopia do not currently operate, which means that products exit the countries via overland trucks or airplane). These risks do not pose as much of a threat to the transport of small arms and light weaponry, which is one reason why the SA/LW threat in Africa is very prevalent in many areas and a much more genuine threat to proliferation and terrorism than chemical, biological and nuclear terrorism.

Way Forward

This paper is by nature more speculative than assessing actual threats on the ground. Little is known about the various local terrorist groups that operate within the ungoverned regions of Africa, aside from their basic motivations. Therefore, there are many areas for future research that DTRA-ASCO might want to pursue in the future on this subject.

- A deeper investigation of ways that WMD can be produced, and of the African particularities here. While WMD seems an unlikely threat at present, the steady development of biological research and production facilities, and the interest in uranium exploration could open up opportunities for exploitation.
- Full investigation of the practicalities of transport across very difficult terrain, which could easily compromise the integrity of biological and chemical material and weapons containers. Uranium ore is the most likely precursor material to find its way out of Africa through the ungoverned spaces, and is worth monitoring. Nuclear weapons would be more readily transported than biological or chemical weapons, but at this stage are the least likely form of WMD to be found on the continent.
- Concrete mapping of facilities, groups, and specific locations where this all could take place, and then comprehensive analysis of the implications.

Overall, there is not much of an actual WMD proliferation threat at present. It's more of a worry of what could be done should a group wish to, and on that front, the academics, policymakers and government officials all agree that if a group should want to transport WMD through Africa, it would be possible. The question becomes, where would they take it, are they intending to use the WMD on the continent or in other areas of the world, and how does this affect the threat calculations? Much of that is likely to be irresolvable at this stage, but the thought processes can be initiated.

Notes

I would like to thank the Advances Systems and Concept Office of the Defense Threat Reduction Agency for providing the resources to conduct and write up this report. Assistance was also provided by the Center for Stabilization and Reconstruction studies of the Naval Postgraduate School and the United States Joint Forces Command, each of whom have supported aspects of this research, including research trips to Nigeria, Kenya, Djibouti and Ethiopia between April and June 2007, and June 2008. Clay Moltz and Jennifer Perry offered insightful comments on earlier drafts of this paper. The sections dealing solely with ungoverned spaces will appear in a forthcoming volume from Stanford University Press, edited by Anne Clunan and Harold Trinkunas. All opinions, analysis and conclusions are the author's own, and do not represent the official viewpoints of the Naval Postgraduate School, the United States Government, or any of the sponsoring agencies

¹Joseph C. Wilson, 4th, "What I didn't Find in Africa," *The New York Times*, July 6, 2003. Accessible at <http://www.nytimes.com/2003/07/06/opinion/06WILS.html?ex=1372824000&en=6c6aeb1ce960dec0&ei=5007>, (first accessed January 14, 2007, last accessed July 31, 2007).

² For text of the treaty, see the African Union website: http://www.african-union.org/root/au/Documents/Treaties/Text/African_Nuclear_Weapon.pdf (verified on September 30, 2008). The United Nations lists 26 countries as signatories. See [http://disarmament.un.org/TreatyStatus.nsf/Pelindaba%20Treaty%20\(in%20alphabetical%20order\)?OpenView](http://disarmament.un.org/TreatyStatus.nsf/Pelindaba%20Treaty%20(in%20alphabetical%20order)?OpenView) (verified on September 30, 2008).

³ Joint Publication 1-02, "Department of Defense Dictionary of Military and Associated Terms," 12 April 2001 (As Amended through 26 August 2008), p. 594; accessed at http://www.dtic.mil/doctrine/jel/new_pubs/jp1_02.pdf on September 30, 2008.

⁴ Joint Publication 1-02, p. 439.

⁵ Vice Admiral Lowell E. Jacoby, "Current and Projected National Security Threats to the United States," Statement For the Record, Senate Select Committee on Intelligence, February 24, 2004; available at <http://www.dia.mil/publicaffairs/Testimonies/statement12.html> on June 30, 2007. Jacoby was the Director of the Defense Intelligence Agency at the time of this statement.

⁶ Robert H. Jackson and Carl G. Rosberg, "Why Africa's Weak States Persist: The Empirical and Juridical in Statehood," *World Politics*, Vol. 35, No. 1 (Oct., 1982), pp. 1-24.

⁷ William Reno, "War, Markets and the Reconfiguration of West Africa's Weak States," *Comparative Politics* 29, no. 4 (July 1997): 493-510.

⁸ Philip Morgan ("Interim Government in Liberia," in *Interim Governments: Institutional Bridges to Peace and Democracy*" eds Karen Guttieri and Jessica Piombo, Washington: USIP Press, 2007), discusses how in post-conflict Liberia, critical areas of economic activity have been kept outside the jurisdiction of the Liberian state and under the control of the international community, therefore depriving the state authority to determine policy in key sectors of its own economy, therefore softening the state's sovereignty and ability to control its own affairs. .

⁹ See Peter Evans for the seminal work on this dimension, *Embedded Autonomy: States and Industrial Transformation*, New Jersey: Princeton University Press, 1995; and for the most recent treatment, Francis Fukuyama, "The Missing Dimensions of Stateness," in *State Building: Governance and World Order in the 21st Century* (Ithaca and London: Cornell University Press, 2004).

¹⁰ For the more nuanced definition of ungoverned spaces, see the comments of DASD for Africa Theresa Whelan, available publicly at www.jhuapl.edu/POW/rethinking/SeminarArchive/121905_WhelanNotes.pdf (accessed March 17, 2005). The most recent iterations of the concept now speak of "areas of competing governance," in recognition that the true anarchical state of no control is extremely rare, and that in most "ungoverned" areas, there is a local pattern of control that is outside of formal state structures.

¹¹ Theresa Whelan, "Department of Defense Africa Strategy - Africa's Ungoverned Space: A New Threat Paradigm," presented to the 20th Century Marines in Africa conference, Quantico, VA, January 18, 2006, slide 5 of 20.

¹² Jackson and Rosberg, "Why Africa's Weak States Persist."

¹³ Jeffrey Herbst, "Responding to State Failure in Africa," *International Security*, 21, no 3 (Winter 1996 – 7): 120 – 144.

¹⁴ Herbst, "Responding to State Failure," p. 122. Herbst is quoting Robert H. Jackson, "Sub-Saharan Africa," in Robert H. Jackson and Alan James, eds, *States in a Changing World: A Contemporary Analysis*, (Oxford, UK: Clarendon Press, 1993), p. 139.

¹⁵ Crawford Young, "The End of the Post-Colonial State in Africa? Reflections on Changing African Political Dynamics," *African Affairs* 103 (2004): 23-49.

¹⁶ Young, "The Post-colonial State," p. 25.

¹⁷ Phil Williams, "Here be Dragons: Dangerous spaces and Early Warning," in *Ungoverned Spaces? Alternatives to State Authority in an Era of Softened Sovereignty*, eds Anne L. Clunan and Harold Trinkunas, (manuscript under review at Stanford University Press, 2008).

¹⁸ Whelan, "DoD Africa Strategy," slides 9 – 12. The wording is exactly the same as appears in Whelan's slides, though the order of the items is not. The lists have been standardized so that the items appear in the same order across the columns.

¹⁹ Adapted from Whelan briefing, op cit.

²⁰ Note that I am excluding Northern Africa here.

²¹ *Patterns of Global Terrorism*, Department of State Publication 10535, released April 2004. The full report is accessible at <http://www.state.gov/s/ct/rls/pgtrpt/2003/>; (last accessed on 31 October 2004). Of the Department of State's "designated foreign terrorist organizations" (FTOs), none were created in sub-Saharan Africa, and there are only two groups: the Armed Islamic Group (GIA) and the Salafist Group for Call and Conflict (GSPC) on the designated foreign terrorist organization list that developed in northern Africa. Both of those are from Algeria

²² "Al-Qa'ida's (Mis)Adventures in the Horn of Africa," Combating Terrorism Center at West Point, 2007; accessible at <http://ctc.usma.edu/ag/aqll.asp> (verified on October 7, 2008).

²³ Greg Campbell, *Blood Diamonds: Tracing the Deadly Path of the World's Most Precious Stones* (Colorado: Westview Press, 2002).

²⁴ The exception to this is the organizations Qibla and PAGAD (People Against Gangsterism and Drugs), which operate in Cape Town, South Africa. Their influence is limited to small areas of South Africa where there are large pockets of Muslims, and both organizations tend to advance local agendas rather than transnational Islamist ideologies.

²⁵ For reviews on Islamism and terrorism in Africa, see David McCormack, "An African Vortex: Islamism in Sub-Saharan Africa," The Center for Security Policy, Occasional Paper Series No. 4 (Washington, DC, January 2005), and David Dickson, "Political Islam in Sub-Saharan Africa: The Need for a New Research and Diplomatic Agenda," USIP Special Report No. 140 (May 2005), available online at www.usip.org/pubs/specialreports/sr140.html. For regional analyses, see Jeffrey Haynes, "Islamic Militancy in East Africa," *Third World Quarterly* 26, no. 8 (2005): 1321-1339; Lansine Kaba, "Islam in West Africa: Radicalism and the New Ethic of Disagreement," in *The History of Islam in Africa*, eds Nehemia Levtzion and Randall Pouwels (Columbus, OH: Ohio University Press, 2000); Mohamed A. El-Khawas, "North Africa and the War on Terror," *Mediterranean Quarterly* (Fall 2003): 176-191; and the International Crisis Group, "Islamist Terrorism in the Sahel: Fact or Fiction," Africa Report number 92 (March 31, 2005).

²⁶ For an analysis of the GSPC, see the November issue of *Strategic Insights*, which focused on the Algerian group.

²⁷ United States Department of State, *Country Reports on Terrorism, Chapter Two – Country Reports: Africa Overview*, (Washington, DC, April 30, 2007), accessed at <http://www.state.gov/s/ct/rls/crt/2006/82730.htm>, on July 1, 2007.

²⁸ See El Khawas, "North Africa and the War on Terror."

²⁹ For more information see Anne M. Lesch, "Osama bin Laden's "Business" in Sudan," *Current History*, 101 (2002), 203-209 and also Rohan Gunaratna, *Inside Al Qaeda: Global Network of Terror*, (New York: Berkeley Books, 2002).

³⁰ *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*, Authorized Edition (First Edition), (New York: WW Norton and Company, 2004), p. 58.

³¹ It is debatable whether or not the factory actually produced chemical weapons. See Michael Barletta for a detailed analysis of the evidence for and against

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- ³² See, for example: E. Blanche, "Africa- Is Al-Qaeda a Target in East Africa?" *Jane's Terrorism and Security Monitor*, July 1, 2003.
- ³³ Haynes, "Islamic Militancy in East Africa."
- ³⁴ International Crisis Group (ICG), "Somalia: Countering Terrorism in a Failed State," Africa Report No 45 (Nairobi/Brussels, May 2002) and International Crisis Group, "Counter-terrorism in Somalia: Losing Hearts and Minds?" Africa Report No 95 (Nairobi/Brussels, July 2005). See also Gunaratna, *Inside Al Qaeda*.
- ³⁵ Gunaratna, *Inside Al Qaeda*.
- ³⁶ International Crisis Group, "Counter-terrorism in Somalia."
- ³⁷ International Crisis Group, "Islamist Terror in the Sahel."
- ³⁸ Ibid.
- ³⁹ Accessed at <http://cns.miis.edu/research/cbw/possess.htm>, July 13, 2007. The data is derived from open sources.
- ⁴⁰ "Chemical Weapons Proliferation Concerns," The Henry L. Stimson Center; available at <http://www.stimson.org/cbw/?SN=CB20011220137#ethiopia>, accessed on July 13, 2007.
- ⁴¹ Michael Barletta, "Chemical Weapons in the Sudan: Allegations And Evidence," *The Nonproliferation Review* (Fall 1998): 115 – 136.
- ⁴² Ruchita Beri, "Coping with Small Arms Threat in South Africa," *Strategic Analysis: A Monthly Journal of the IDSA*, April 2000 (Vol. XXIV No. 1); International Crisis Group, "God, Oil and Country: Changing the Logic of War in Sudan," Africa Report no. 39 (January 2002).
- ⁴³ Author's interview with Raymond Kitevu of CEWARN in Addis Ababa, June 2007.
- ⁴⁴ International Crisis Group, "Islamist Terrorism in the Sahel: Fact or Fiction," Africa Report no. 92 (March 31, 2005). p. 17 – 18.
- ⁴⁵ Reno, "War, Markets and the Reconfiguration of West Africa's Weak States."
- ⁴⁶ The "armed bandits," as the Nigerien government labels them, meant to send a "warning" to foreign-owned mining companies, as the government had pledged to provide security to the enterprises and the rebels considered this a deployment of a commando unit into "their" territory. See "Niger Tuareg rebels seize 4 French uranium workers," Reuters (June 22, 2008); accessed at <http://www.reuters.com/article/latestCrisis/idUSL22731543> on October 12, 2008.
- ⁴⁷ Igor Khripunov, "Exploiting Africa: Securing the Continent's Uranium Resources," *Jane's Intelligence Review* (September 2007): 51-53.
- ⁴⁸ INTERNATIONAL CRISIS GROUP, "Islamist Terrorism in the Sahel."
- ⁴⁹ See, for example, the works of Greg Campbell, *Blood Diamonds*, and Douglas Farah [multiple], and Global witness [1999])
- ⁵⁰ Author's interview with US Embassy officials in Nairobi, May 2007.
- ⁵¹ Author's interview with Mombasa port security official, May 2007.
- ⁵² See www.cewarn.org.
- ⁵³ Barletta, "Chemical Weapons in the Sudan."
- ⁵⁴ Helen E. Purkitt, "What's Over the Biotechnological Horizon? R&D Trends in South African Civilian Biotechnology & Implications for Monitoring Future Dual Use Biotechnology Trends in the Developing World," Report prepared for the Advanced Systems and Concepts Office of the Defense Threat Reduction Agency, February 2004.
- ⁵⁵ See Helen E. Purkitt and Stephen F. Burgess. *South Africa's Weapons of Mass Destruction* (Bloomington: Indiana University Press, 2005).
- ⁵⁶ Noel Stott, "Dealing with Biosecurity in Africa," *Arms Control: Africa* 1, no. 3 (July 2008): 11 – 12. The workshop was co-hosted in May 2008 by the Center for International and Security Studies (University of Maryland) and the Institute for Security Studies (ISS, Johannesburg).
- ⁵⁷ Stephen Burgess and Helen Purkitt, *The Rollback of South Africa's Chemical and Biological Warfare Program* (USAF Counterproliferation Center, Air War College and Air University, Maxwell Air Force Base, Alabama, 2001), p. 99.
- ⁵⁸ Jessica Piombo, "Terrorist Financing and Government Response in East Africa," in *Terrorism Financing and State Responses: A Comparative Perspective*, eds Jeanne Giraldo and Harold Trinkunas (Stanford, CA: Stanford University Press, 2005).

⁵⁹ Piombo, "Terrorist Financing."

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