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Security Governance and Climate Change: A Non-military Perspective in African Context

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Abstract: Traditionally, security is equated with national security, which has been seen as a matter of the military defense of states' geographical borders and a process of ensuring unity and integrity of a country. Security is no longer narrowly defined as military security. In the era of globalization, the contemporary society is not confronted with a single tangible threat, but a variety of challenges, which are more intangible and complex. Environmental problems, particularly climate change emerged as an important source of non-military threat along with others. Among various regions, Africa is considered as the most vulnerable region in the world in terms of climate change, because of its physical and socio-economic characteristics and its extreme climatic conditions. Though the climate change has various security implications, this paper analyzes few important aspects related to food security, desertification and migration and explains the link between the concept of security governance and the climate change in non-military perspective in African context.

Keywords: Climate change; Desertification; Food security; Migration; Security governance.

Introduction

The concept of security and the way in which it can best be conceptualized in the changing conditions are among the most controversial issues in international politics and global governance (GACGC, 2008). Globalization, improved connectivity, advancement of science and technology and changing socio-economic conditions of people in different parts of the world brought a paradigm shift in global security management. Today, the nature, source and impact of security threats have now acquired a system-wide significance at different levels that require an alternative conceptualization (Kirchner, 2007). Traditionally, security is equated with national security, which has been seen as a matter of the state's sovereignty. Also it is being considered as militarily defending the states' politically determined geographical borders in order to ensure unity and territorial integrity of a nation (Booth, 2005; Saleh, 2010; Liao, 2012; Chalecki, 2013).

For long, security concerns remained the exclusive domain of the state defense establishments, strategic security considerations and the process of surviving in war (Liao, 2012). However, today, security is no longer narrowly defined in terms of protecting the state through military that are found inadequate to guarantee security of a nation and its people (Kernic, 2006; Chalecki, 2013). In fact, defining national security primarily in terms of military threats conveyed a false image as the contemporary society is not simply confronted with a single, tangible threat, but variety of challenges, which are to a larger extent intangible and complex (Ullman, 1983; Sheehan, 2005; ESRAB, 2006; Saleh, 2010). Also a limited understanding of security allowed governments to ignore the emerging threats. These are more dangerous to human beings than the conventional

military related threat factors (Kirchner, 2007; Chalecki, 2013).

Globally, the non-military threats became the most important source of insecurity in global peace and security (Thomas, 2000; Rosenau, 1992; Tuathail et al., 1998; Krahmann, 2005). For example, of the fifty-seven major armed conflicts occurring from 1990 to 2001 across different regions, only three were inter-state conflicts (Saleh, 2010). The expansion of the global market economy, the integration of international finance, investment and production, the intensity of globalization and the advancement of modern information and communication technologies increasingly challenged the traditional state-centric security thinking.

Theoretically, the conceptual understanding of security is changed, based on what constitutes a security issue. Today, security is principally concerned with freedom from threat; thus, whatever constitutes a threat is, *de facto*, a security issue (Buzan et al., 1997; O'Neill, 2006). This shift goes along with the emergence of new understanding of security in terms of potential sources of threats and the number of actors involved (Buzan and Hansen, 2009; Ehrhart, 2014). Under this new framework, the individuals become the focus of security consideration. Accordingly, a state-centred to people-centred approach has emerged in the global security management (Cooper and Michael, 2002; Sedra, 2006). A number of cross-cutting issues and challenges became significant factors in influencing the security. These factors had never been considered as security threats under the traditional military-based security arrangements.

Environmental problems, particularly climate change, emerged as an important source of non-military threat along with others, since they have direct and immediate effects on human well-being (Khagram et al., 2003). Climate change has been identified as a *'threat multiplier'* in global security management (CEU, 2009) as it poses a threat to human security, particularly in societies that already lack significant progress in developmental sectors (GACGC, 2008). Today, climate change is considered as presenting a security challenge 'more complex than the Cold War' did (Van Wyk, 2010). The hierarchical based traditional security mechanism is not well-equipped to deal with emerging threats.

Among various regions, Africa is considered the most vulnerable region in terms of climate change, because of its physical and socio-economic characteristics and its extreme climatic conditions (Niasse et al., 2004). African eco-systems are very fragile and cannot absorb the shocks that climate change introduces (Tagbo, 2010). Because of these, even it has been called as *"ground zero"* for climate change (UNEP, 2011). Similarly, Africa's food production systems are among the world's most vulnerable as a result of extensive reliance on rain-fed agriculture, high climate variability and recurrent droughts and floods. Equally, persistent poverty limits the capacity of individuals to adapt (Boko et al., 2007; Lalthapersad-Pillay, 2010). Like rural areas, African cities and towns remain highly vulnerable to the impacts of climate change (Boko et al., 2007). The African citizens are at "*humanity's climate change frontline"* (Tagbo, 2010). For instance, Sub-Saharan Africa is being considered as *"the food crisis epicentre of the world"* where climate change will only make matters worse for those who are already poor and vulnerable (Lozet and Kim, 2013).

Under this background, the paper attempts to link the concept of security governance with effects of climate change in a non-military perspective in African context. Also this paper traces the conceptual evolution of security governance. Though the climate change has various security implications, this paper analyzes few important aspects such as food security, desertification and migration in order to explain the link between the concept of security governance and the climate change as non-military threat. This paper applies non-military perspective in analyzing the impact of climate change on security in African context. A non-military perspective is an approach that helps in identifying the potential security threats beyond the military domain and enables in assessing the major impact of these threats on human and national security.

Security Governance: A Conceptual Introduction

The conceptual interpretation of security and the existing security arrangements were increasingly being challenged. Over the past few decades, the transformation of the security conditions and the newly emerging source of threats following the end of the Cold War complicated the process of theorizing the concept of security (Krahmann, 2005; Bilgin, 2005; Saleh, 2010). However, the security governance framework, by capturing this new complexity, emerged as alternative paradigm to explain the changing nature of security concerns facing the contemporary globalized society and proposed a new mechanism to manage security situations (Ehrhart, 2014).

Security governance is the application of governance theory in global security management practices (Liao,

2012). The concept of security governance was first proposed by Krahmann while examining the major shift in security policies in Europe and North America (Bevir and Ian, 2013). This made the concept to be called as European specific, though, in part, it is a socially constructed theoretical framework (Christou et al., 2010; Ehrhart, 2014).

The existing military-based security models have comprehensively failed to explain the nature and origin of new threats, and the appropriate tools to address it in a sustained manner. Equally, there is an increasing gap between traditionally designed security mechanisms and actual challenges that exist, which is even termed as security deficit (Cooper, 2003; Bailes, 2005). This led to call for a comprehensive approach through broadening the concept of security (O' Neill, 2006; Booth, 2007; Liao, 2012). The new conceptual understanding of security shifted the focus from relatively restrictive definitions of applying military defense to more inclusive and also from states-centric to individuals (Ullman, 1983; Walt, 1991; Baldwin, 1997; Krause and Williams, 1997; Kirchner, 2007). Accordingly, the areas of non-military policies, known as 'soft fields' such as environmental problems have come to be 'securitized' (GACGC, 2008). Saleh (2010) argues that this paradigm shift not only incorporates the economic, the societal, the environmental, and the political dimensions, but brings a number of other actors in global security management. The emergence of security governance is, in fact, an attempt to move the security agenda beyond a traditional model, i.e. military one. This does not mean that the existing security structure is a process to replace it but to complement (Gregoratti, 2007).

A comprehensive approach in global security management, both in theory and practice, evolved over a period of time. The Independent Commission on Disarmament and Security Issues (1982) first advocated the need to extend the concept of security from state security to individuals. Also the Commission strongly criticized the application of military-oriented approach to security in a narrow perspective (Gregoratti, 2007). The Consensus on Development (2005) and the European Security Strategy (2013) acknowledges that achieving the core objectives of sustainable development remains impossible without peace and security. Today, the developed countries progressively perceive security in broader context than they did during the Cold War (Krahmann, 2005).

By adopting a broader understanding of security, security governance refers to any form of coordination of interdependent social relations in the field of security (Jessop, 1999; Ehrhart, 2014). Unlike the military-based security model, the security governance framework accommodates different kinds of issues and actors in global security management (Kirchner and Sperling 2007; Christou et al., 2010). Broadly, security governance is defined as an intentional system of rules primarily directed towards particular policy outcomes through coordination, management and regulation of security issues by multiple actors both public and private through formal and informal arrangements at different levels (Webber et al., 2004; Kirchner, 2007; Kirchner and Sperling, 2007; Christou et al., 2010; Bevir and Ian, 2013; Ehrhart, 2014). Similarly, these collective efforts made across the political and social spectrum ensure the health and survival of a given society and its people (Kernic, 2006). Security governance encompasses multi-dimensional indirect relationships with plural and dispersed societal entities (Krahmann, 2005; Liao, 2012). This paradigm shift in security management conceptualised as non-hierarchical interaction of a diverse set of actors in a broader context (Webber et al., 2004; Kirchner and Sperling, 2007; Bevir and Ian, 2013).

Global Security Management: 'State-Centric' to 'Governance-Centric'

Analyzing the security dynamics in a finite geographical space becomes difficult in the context of increasing global interdependence among nations. Also in the era of globalization, distant threats are as much a concern of international peace and stability as those that are near at hand (CEU, 2009). With the dawn of a global "common risk society" (Beck, 1999), an enlarged security concept emerged as a result of economic crisis, environmental degradation, food insecurity, illegal immigrant, religious conflict, and natural disaster (CEU, 2009; Liao, 2012). In a major challenge to the conventional security establishment, the asymmetric nature of these non-military threat departs from military, political and diplomatic affairs and often cross the political and geographical boundaries of the sovereign states at an unprecedented level which can cause disproportionate damage (Webber et al., 2004; Bailes, 2005; Liao, 2012; Bevir and Ian, 2013).

The ability of sovereign states to protect their citizens from non-military threats became critical (Arquilla and Ronfeldt, 2001; Krahmann, 2005). Equally, the governments are unable to face these unconventional threats alone by deploying traditional security instruments (ESRAB, 2006; Webber et al.,

2004; Christou et al., 2010), since these threats are beyond the reach of states through military means (Snyder, 1991; Kirchner, 2007). Application of traditional military practices to counter these threats will often make things worse (Bailes, 2005). Since the new threats are able to transgress national boundaries, states are increasingly required to cooperate with a number of non-State actors and institutions (Rosenau and Czempiel, 1992; Pint et al., 2001; Markusen, 2003; Krahmann, 2005; Mix, 2013; Chalecki, 2013; Ehrhart, 2014). This has brought number of actors, mechanisms and issues, which are beyond the military-focused security practices (Bevir and Ian, 2013; Ehrhart, 2014). Also there was a strong emphasis for a paradigm shift to counter the newly rising non-military security management issues (Liao, 2012).

Nations, both developing and developed, have failed to predict the changing nature of security threats and its implications for the state and its people (Krahmann, 2005) and had paid less attention (Chalecki, 2013). Tuchman Mathews (1989) called for a comprehensive re-assessment of security threats and corresponding policy adjustments. In 1994, the United Nations Development Programme (UNDP) introduced the concept of 'human security', and played a significant role in shaping the policy and governance discourse on international security (GACGC, 2008) by advocating the need to broaden the notion of security by placing individuals at the core of global security architecture (Gregoratti, 2007). The Commission of Global Governance (1992) suggested a number of new ways in which the global community could actively work in the expansion of global security agenda by incorporating military and non-military factors (Unterhalter, 2007). The need to shift the management of security from state-centric approaches based on formal institutions towards more diverse actors with flexible mechanism as per the governance framework was felt at different levels (Bevir and Ian, 2013).

Under these conditions, new ways to counter the emerging security threats in a fundamentally changed environment brought the framework of security governance (Cooper, 2003; Bailes, 2005). Though the states remain a central provider of security, it is not a sufficient condition for human safety and welfare (Gregoratti, 2007). The complex nature of socioeconomic conditions and environmental issues created a significant security challenges. Accordingly, new security threats need a paradigm shift in security management by applying appropriate instruments to match the new security challenges (Krahmann, 2003a, 2003b; Liao, 2012). Security governance has emerged as an alternative framework to effectively manage the complex security problems of the twenty-first century by shifting the focus of security management from government to governance (Keohane, 2001; Krahmann, 2003b; Holmberg, 2011).

Security Governance and Global Environmental Problems

Irrespective of their nature of military strength, the states, over the past few decades, saw themselves increasingly confronted with a number of newly emerging security threats (Kernic, 2006). Among them, there is an 'increasing securitization of two issues that had traditionally been considered as low politics: the international economy and the environment' (Saleh, 2010). Since 1960s, global environmental problems including climate change emerged as critical threats to peace and stability of a nation (Chalecki, 2013). For example, environmental crises such as water scarcity, soil depletion, and natural disasters can intensify conflict and potentially contribute to national security issues (Vaughn et al., 2000). Similarly, they have a major impact not only on human survival but on overall socio-economic development (Khagram et al., 2003).

The end of the Cold War era opened the avenue for new understanding on the complex relationship between security, development and environment (Sedra, 2006). There is rarely one causal chain to link between environmental drivers and security challenges and the relationships between the environment and human security are certainly close. The physical environment cannot be governed by means of political boundaries (Chalecki, 2013). The ecological problems experienced at any given political jurisdiction frequently have their origins at locations other than where their far-reaching consequences are most seriously felt (Caldwell, 1972; Ecchia and Marco, 1997; Seong-lin Na and Hyun Song Shinf, 1998; Kannan, 2012). The environmental problems undermine national sovereignty and routinely breach the militarily protected states' borders (French, 1992; Imber, 1996).

Many scholars dealt with the various referents of threats (Christou et al., 2010). At global level, a study by Kirchner and Sperling (2002) has identified twelve types of security threats including climate change, which are non-military in nature (Kirchner, 2007; Buzan and Wæver, 2009; Christou et al., 2010). A great deal of human security is tied to peoples' access to natural resources and vulnerabilities to environmental change

(Khagram et al., 2003). For instance, Darfur crisis in Africa is being labeled as an 'environmental conflict' (Moran et al., 2014). Considering the fact that climate change has major implications on human security and far-reaching consequences on the socio-economic development of a nation, this paper applies a non-military perspective to analyze the major security implication of climate change within the framework of security governance in African context, where the problem is severe.

Security Governance and Climate Change: An African Perspective

The United Nations identified five channels through which climate change can affect security. These include "increasing human vulnerability, retarding economic and social development, triggering responses that may increase risks of conflict, such as migration and resource competition, causing statelessness and straining mechanisms of international cooperation" (UN, 2009). Africa is often seen as a continent where climate change could potentially intensify or trigger conflict. As the effect of climate change undermine livelihoods, inter-ethnic clashes are breaking out within and across states and fragile states are turning to militarization to control the situation (UNCCD, 2014).

Africa is highly vulnerable to climate change due to reduction in water availability and arable agricultural land (GACGC, 2008). As it has been projected, by 2020, between 75 and 250 million Africans will be exposed to water stress caused by climate change (Van Wyk, 2010). One quarter of Africa's population is located in resource-rich coastal zones (UN, 2009). The rising sea level due to climate change will affect the coastal zones more seriously. The degradation of natural resources is likely to affect poverty trajectories, since the poorest are the ones who utilize these natural resources most (Lalthapersad-Pillay, 2010). Similarly, Africa is highly susceptible to land degradation and it is estimated that two-thirds of African land is already degraded to some degree. Currently, land degradation affects 65% of the people in Africa (ECA, 2007). Climate change may accelerate these trends. Since the population in Africa is growing at an unprecedented level, it cannot afford to lose fertile land, which is essential to food security, biodiversity conservation and climate change mitigation (FMECD, 2013). In terms of health indicators, Africa is currently undergoing high burdens of health outcomes whose magnitude, incidence and geographical coverage could largely be affected by climate change (Boko et al., 2007). The regional increase in temperature due to climate change will be higher in Africa than the global mean (GACGC, 2008). Such an increase may have serious consequences for socio-economic development of Africa. For example, in Burkina, if temperature increases by 1°C, farm revenue will fall by 19.9 US$/ha, while if precipitation increases by 1 mm/month, net revenue increases by 2.7 US$/h (Edame et al., 2011). Equally, the available resources to tackle these crises are very limited.

From prolonged droughts to heavy flooding and unpredictable weather patterns, climate changes are already wrecking millions of lives in Africa (Tagbo, 2010). In January 2007, the African leaders acknowledged that 'climate change could endanger the future well being of the population, ecosystems and socio-economic progress of Africa' (Van Wyk, 2010) and adopted a 'Declaration on Climate Change and Development in Africa.' In 2007, Yoweri Museveni, the President of Uganda, called climate change an '*act of aggression*' by developed countries against developing countries. In the same year, the Namibian representative at the United Nations, Kaire Mbuende, equated the Green House Gases (GHG) emissions of developed countries as 'low biological or chemical warfare' (Tagbo, 2010; Van Wyk, 2010). The region is not well-equipped to counter the impact of climate change. The African continent is less endowed than other regions with the adaptive capacities – technology, institutions, and financial resources – to buffer and cope with climate impacts (UN, 2009). A substantial infrastructure deficit is a major contributor to this vulnerability (Global Water Partnership, 2012). Climate change could strain governance capacity (Moran et al., 2014).

Climate Change and Food Security

As a multi-dimensional phenomenon, food security reflects the highly interacting concerns of food access, availability, and utilization and the dynamic dimensions of ecological sustainability (Tyfield, 2011). In relation to security, resource scarcity is the most obvious environmental security concern, because basic natural resources like food and water are critical for survival (Chalecki, 2013). Agricultural production, including access to food, in many African countries and regions is projected to be severely compromised by climate change (Leighton, 2007; Brown, 2008). Changed patterns of rainfall would have serious impacts on food security in sub-Saharan Africa (Brown, 2008). For example, climate change will have an overall negative effect on yields of major cereal crops across Africa (Boko et al.,

2007). The shortage of cropland, together with falling productivity, is a significant factor contributing to global food shortages and associated human malnutrition and hunger across the world especially in developing and under developed countries (UNEP, 2006).

Similarly, drylands are a major source of food security especially for the poor and play a vital role as a source and in maintaining biomass and biological diversity. These drylands account for about a fifth of the world's food production (Speth, 2006). The arable land in the drylands is being degraded at an unprecedented level. The decline in per capita cropland availability is particularly sharp in the developing countries. In sub-Saharan Africa, for instance, land holding per capita of 1.6 ha in 1990 will drop to 0.63 ha in 2025 (Katyal and Paul, 2000; Kannan, 2012).

As projected by the Intergovernmental Panel on Climate Change, the yields from rain-fed agriculture could fall up to 50% by 2020 (UN, 2009). Africa's agricultural drylands are significantly more degraded. Also, climate change will exacerbate this problem as it intensifies drought in the continent. Similarly, due to climate change, approximately 40% of sub-Saharan African countries will be at risk of significant decline in crop and pasture production (Fischer et al., 2005; Shah et al., 2008; Ludi, 2009). Also increased climate variability and droughts in Africa may lead to significant livestock loss (Ludi, 2009). Nearly 40% of the Sub-Saharan population is currently undernourished and this number is expected to increase (Lozet and Kim, 2013). As per the projection, climate change is expected to increase the number of undernourished people in Africa (Shah et al., 2008; Ludi, 2009). By the 2080s, 70–80% of the people experiencing hunger at global level will be in Africa (Parry et al., 2004). When agricultural yields fall due to climate change, the basic livelihood of a large proportion of people will be destabilized (Lalthapersad-Pillay, 2010). These trends will create serious security problems.

Climate Change and Desertification

Climate change might accelerate desertification and land degradation through significant changes in spatial and temporal patterns such as temperature, precipitation, solar insolation, and winds. Equally, the conditions of desertification are dictated by climatic factors since the process occurs mainly in arid, semi-arid and dry sub-humid regions (Kannan, 2012). For example, at a global scale, land degradation directly threatens the livelihoods of 1.5 billion people. One third of the world's arable land has been lost in the last 40 years due to soil erosion (FMECD, 2013). Current climate change intensifies and accelerates both biophysical and societal hazards and stresses, which represent a human security threat (Fisher, 2011). In Africa, climate change is set to increase the area susceptible to drought, land degradation and desertification which are more than two-thirds of the African continent (UNCCD, 2008). Under a range of climate scenarios, it is projected that there will be an increase of 5-8% of arid and semi-arid lands in Africa (ECA, 2007).

More than 50% of Africa's poorest people are concentrated on 'low potential' lands that are prone to degradation. Desertification especially around the Sahara has been pointed out as one of the potent symbols in Africa of the global environment crisis (ECA, 2007). About half of Africa's cultivable land is arid and semi-arid comprising mostly of desert soils, which have the least organic matter content, and is degraded (ECA, 2001). An estimated 500 million ha of land have been affected by soil degradation since about 1950 (Clarke, 2000). Environmental degradations such as soil erosion and lack of availability of water seriously affect agricultural production and its productivity which in turn has major impact on the livelihood of millions in Africa.

With regard to drought, the continent has witnessed an increasing number of drought and famine occurrences. Drought is one of the most important climate-related disasters in Africa (ECA, 2007). Seasonal temperatures in the Sahel have risen by 1.5-2.0 degrees Celsius (UNCCD, 2014). By 2050, the sub-Saharan African countries are predicted to have up to 10 % less annual rainfall in its interior (Brown, 2008).

Climate Change and Migration

The reasons for migration are often complex, but relationships between certain environmental conditions and population movements can be identified. International migration can raise security issues in countries of origin, transit and destination, both in terms of human security and national security. Spill-over migration occurring across borders of African countries can contribute to political instability (Leighton, 2007). The impact of climate change will accelerate the current situation in terms of migration in Africa (Lozet and Kim, 2013). Competition for natural resources over the next decades is likely to create further turbulence and migratory movements in various regions (CEU, 2009). According to the US National Security Strategy, climate change will lead to conflicts over refugees and resources, suffering from drought and famine, catastrophic natural

disasters, and the degradation of land across the globe (UNCCD, 2014).

The quality of farmlands, availability and reliability of water supply, and the management of lands play an important role in contributing to migration from rural areas. Specifically, land degradation and desertification frequently lead to migration when people can no longer subsist on the land (Schwartz and Jessica, 1994). For example, by 2020 an estimated 60 million people could move from the desertified areas of sub-Saharan Africa towards North Africa and Europe (UNCCD, 2014). By 2050, 200 million people may be permanently displaced as environmental migrants (UNCCD, 2014). By 2050, the IPCC has estimated that there may be as many as 150 million '*environmental refugees'* – people forced to leave their homes and lands for environmental reasons linked to global climate change (UNCCD, 2008). In Sub-Saharan Africa, the movement of large populations from one area to another can cause tension, hostility and sometimes violence among different ethnic groups. The decline in incomes from desertification, combined with factors such as population growth and limited access to employment opportunities, can intensify conflicts over land resources and stimulate migration (Leighton, 2007).

Conclusion

The concept of security and the way in which it can best be conceptualized in the changing conditions are among the most controversial issues in international politics. Generally, security is equated with national security. However, defining national security primarily in terms of military threats conveyed a false image as the contemporary society is confronted with variety of challenges. The existing military-based security models failed to explain the origins of new threats. Security governance is the application of governance theory in global security management practices and provides alternative framework in addressing non-military threats. Environmental problems, particularly climate change, emerged as an important source of non-military threats. Africa is considered the most vulnerable region in the world in terms of climate change, because of some of its physical and socio-economic characteristics and its extreme climatic conditions. Though the climate change has various security implications, this paper analyzed few important aspects related to food security, desertification and migration.

Under the framework of security governance, a part of the governments' public spending and developmental aid need to be invested in protecting the environment and conserving natural resources. Also the governments should formulate strategies for community participatory projects, such as rain water harvesting, minor irrigation projects, alternative employment opportunities for communities to discourage deforestation and introduction of renewable energies. In a paradigm shift, investments in security sector in African countries should be reduced and invested in climate change mitigation and adaptation efforts. Multi-sectoral collaboration among private investors, educational institutions, and civil society organizations need to be established to support the farmers not only in improving their agricultural productivity but ensuring proper market access for their produce. This will to a large extent reduce migration. Awareness on protecting natural environment needs to be created. The community should be taught on how to protect the natural environment through using simple techniques like constructing check dams.

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