CLIMATE CHANGE AND THE ENVIRONMENT INTEGRATION IN NORTH AFRICA: ISSUES AND OPTIONS

Climate Change & Human Security: African Perspectives

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1. Major climate-related concerns in Africa

Africa is the continent most vulnerable to the impacts of the projected changes (IPCC, 2007). The Africa Sahel has experienced a pronounced drop in rainfall over the past quarter-century. This decline coincided with a rise in the surface temperature of the neighboring Indian Ocean, a hint that the decline in rainfall is in fact part of the longer-term process of man-made global warming. .

For Africa climate change is not just an environmental question, it could have a massive impact on sustainable development human security. Based on IPCC, 2007, people in Africa will likely suffer most, as climate change will make the resources they depend on scarcer: fresh water, cropland, forests and fisheries. Across the Horn of Africa, between 10 and 12 million people are now affected by the worst drought in more than 60 years. However, vulnerability of Africa is not only attributed to climate change, as a number of underlying causes contribute to increasing the vulnerability- what can be grouped under "multiple stressors". These include 1- **Inherent environmental problems:** considering that more than 43% of the land area in Africa is arid or semi-arid, coupled by a frequent exposure to drought and related disasters (20% of all disasters occur in Africa- 53% climate related- suffers 60% of all disaster-related deaths;2- **Socio-economic stresses**

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such as: the unbalanced increase in population, widespread hunger and poverty, chronic health problems, low HDI, poor infrastructure, low technology and poor governance.

2. Food insecurity, a major human security threat in Africa

Africa is already struggling with chronic environmental problems e.g. water shortages, and declining crop yields. Climate change has impacts on different elements of food security. Higher temperatures will worsen drought, driving desertification and water scarcity- impacting food production leading to mass hunger and famine. With more famines comes more health problems and disease. Extreme climatic events such as floods will impact access to food- this can also be associated with health problems which can impact food utility and poverty which in turns impairs people's ability to access food. Food security problem in Africa is expected to gain importance with declining natural resources and available livelihood options, leading to a high competition over resources and a greater instability in the region.

3. Climate change is a human security issue

Human security is defined as the 'safety from chronic threats such as hunger, disease, and repression as well as protection from sudden and harmful disruptions in the patterns of daily life – whether in homes, in jobs or in communities.' (UNDP-HDR, 1994). Climate change is not just an environmental question, it could have a massive impact on international security it poses cultural, health, and life threatening risks - its impacts on people's livelihoods can lead to migration and trigger tensions and conflicts. People in Africa suffer from the impacts of climate change on the resources they depend on such as fresh water, cropland, forests and fisheries, making them less and less available. This in turn will have grave humanitarian consequences. Historically, the impacts of climate variability in Africa such as water shortages and food scarcity has triggered disputes over resources and threatening human security

Climatic stresses interact with other existing stresses to result in increased competition over declining resources; rising tensions among & between natural resources users; refuel past tensions and rivals; and bring to surface ethnic and tribal dimensions. The lack of

equity in resource use could also widen the gap between users, increase tensions and lead to conflicts.

4. Impacts of conflict on the Environment

The environment and natural resources in many countries which are already facing conflict or tensions are severely impacted and will be put under more pressure as fresh water becomes scarcer, fuel and food production declines, storms and floods increase and more people are forced to migrate to survive. Currently the small scale farmers and pastoralists in the SAHEL region are experiencing continuous resource-based confrontations and competition which could lead to the loss of all means for generating livelihoods. According to Bruce H. Moore, Director ILC, in the past few decades, the loss in access to land for pastoralists has been greater than for almost any other resource users, seriously compromising their livelihood options. Climate change is expected to exacerbate their problems leading to more cross-border conflicts, civil wars and refugee flows

4.1 Darfur Case study

Vulnerability of Darfur stems from climatic, social and economic factors these include:

- Highly arid region vulnerable to climate variability and change. The region experienced major historical drought and climate change is expected to have negative impacts on rainfed agriculture, water, health and major economic sectors & systems leading to increased vulnerability and low adaptive capacity. The regional is characterized by high tribal diversity and the livelihoods mainly dependent on natural resources. Darfur has undergone a general decline of rainfall since the late 1960s. Bet. 1961 and 1998, episodes of drought have inflicted the whole Sudan with varying severity. The frequent drought and variability resulted in a state of chronic food insecurity and high competition over resources by the different stakeholders.

A study conducted under AIACC[2], (Osman, 2008), identified number of factors that increase the vulnerability of Darfur and triggered the conflicts. These include the high exposure to frequent disasters-noting that policies employed in the past to address these disasters were focusing mainly on short term solutions (emergency relief) i.e. addressing the symptoms not the causes – This has further aggravated vulnerability/ undermining traditional coping capacity. This is coupled with the collapse of traditional Administration system, which in the presence of free moving arms coming from Libya and Chad has larrgey fueled the conflicts between the different stakeholder groups depending on natural resources. Another factor is the late responses from the central government, taking into consideration the large distance between the local areas where conflicts start. This very local problem if not be given due consideration at the right time will escalate up and may be too late to contain.

5. Solving the problem

" *A big part of the future, and central to keeping the peace will be the way in which Sudan's environment is rehabilitated and managed."*

5.1 Peace Building: Refers to the full spectrum of interventions that is focused on restoring relations between groups that have been in conflict. As such peace building involves a number of different aspects, which may include forgiveness, cooperation, negotiation, mediation, facilitation, creation of mutual understanding, and/or reconciliation. (Restoring/rehabilitating social capital)

5.2 Developing Sustainable livelihoods:[3]

Sustainable livelihood capitals or assets:
Livelihood assets are considered to be stocks of different types of capital that can be used directly or indirectly to generate livelihoods. They can give rise to a flow of output,

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[2] Assessment of Impacts and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC)
[3] http://www.aiaccproject.org/working_papers/Working%20Papers/AIACC_WP_No017.pdf

possibly becoming depleted as a consequence, or may be accumulated as a surplus to be invested in future productive activities.

Based on the five types of capital identified by the sustainable livelihood framework, five assets are identified:

Natural capital: consists of land, water and biological resources such as trees, pasture, and biodiversity. The productivity of these resources may be degraded or improved by human management**. Financial capital:** Consists of stocks of money or other savings in liquid form. In this sense it does not includes financial assets only but should also include easily disposable assets such as livestock, which in other senses may be considered as natural capital. It includes **i**ncome levels, variability over time, and distribution within society of financial savings, access to credit, and debt levels. **Physical capital:** Is that created by economic production. It includes infrastructure such as roads, irrigation works, electricity, reticulated equipment and housing. **Human capital:** is constituted by the quantity and quality of labour available. At household level, therefore, it is determined by household size, but also by education, skills, and health of household members**.**

Social capital: Any assets such as rights or claims that are derived from membership of a group. This includes the ability to call on friends or kin for help in times of need, support from trade or professional associations (e.g framers' associations) and political claims on chiefs or politicians to provide assistance**.**

The activities implemented in Darfur to support [4]

Local communities in Darfur developed a number of adaptation measures to improve their different livelihood capitals. Examples of these measures include trus cultivation and traditional water harvesting, magun cultivation, use of home gardens, and shifting cultivation. In relation to **Natural capital the measures include the r**ehabilitate and conserve natural resources, stabilization of sand dunes through re-vegetation and shelterbelts to check soil erosion and sand encroachment, improve resource management, and use of adaptive technology.

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[4] http://www.aiaccproject.org/working_papers/Working%20Papers/AIACC_WP42_Osman.pdf

In relation to human & social capitals the measures were supported by an Ngo (Intermediate Technology-UK) , including education, capacity building and training of farmers e.g.   skills to diversify their production activities, involvement of women in production activities and strengthening of social networks through the formation of Unions such as Farmer Union, Pastoralists Union etc and cooperation.

The same goes for physical capital- support include water pumps and the use of improved crop varieties. The use of micro credits- revolving funds helped developing the Financial Capital:

5.3 Recommendation

5.3.1 Understand the various needs and livelihood dynamics of stakeholders

- Many studies indicate that: where resources will become increasingly variable without necessarily leading to the collapse of rangelands, mobile livestock keeping is the best way to diminish risk.
- Conflicts represent an additional risk that threatens the sustainability of the people's livelihoods in many parts of Africa.
- There is a need for more scientific knowledge to understand the linkages between vulnerability to climate change and conflicts.
- So far few studies have been conducted to explore this, and a more integrated approach is needed to research the different dimensions contributing to conflict i.e. environmental, social, economic and political   and their interaction with climate change.

5.3.2 Revive social capital

➢ Revive Local institutions and promote the role of Traditional Leaders as they play a pivotal role in the promotion of wisdom, culture and knowledge in matters related to community's livelihoods

➢ Their role extends to cover issues related to:

- Mobilization of communities during disaster episodes (social networks and organizational set up).
- Conflict resolutions e.g. between nomads and farmers or between different neighboring tribes
- Attune government laws with orders issued by local councils and customary laws and facilitate their implementation.