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Climate Change and Poverty in Africa: Challenges and Initiatives

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EDITORIAL INTRODUCTION

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The International Panel on Climate Change (IPCC), the world's leading independent body on climate change, believes that human activities are already affecting some natural systems. Their reports state that unmitigated climate change would, in the long term, likely lead to going beyond the capacity of natural, managed, and human systems to adapt. The climate is constantly changing, but scientists are concerned that global warming caused by humans has overtaken natural fluctuations in climate and that this is having serious consequences for people (mostly the poor) and the planet.

True also is the fact that poverty and climate change are intrinsically linked, and one cannot be tackled without addressing the other. It is clear that the poor are increasingly most directly affected by the impact of climate change. People living in the poorest countries of the world such as Bangladesh and Mozambique will be, and already are, most affected by flooding, deforestation, and desertification. In the Pacific islands, a rapid rise in sea levels is already endangering people's livelihoods and homes. Climate change will affect the income-generating capacity of vulnerable populations, potentially increasing the number of people experiencing hunger.

Impacts of Climate Change on Poverty in Africa

Climate change is already having serious impacts across Africa, although the continent is least responsible for the change. Emissions of carbon dioxide, the gas that predominantly causes global warming, are quite low in the continent compared to the developed world.

The African continent is particularly susceptible to climate change because it includes some of the world's poorest nations; it has undiversified economic structures, poor infrastructure, fragile governance structures and institutions, poor human development and, most importantly, a heavy reliance on agriculture by the majority of the population. Its populations are also growing quickly, and natural resources are being lost through environmental degradation.[1]

Millions of Africans are already feeling the impacts of climate change. This is resulting in significant economic and human losses and hindering efforts to meet the Millennium Development Goals (MDGs). Poverty and

a low capacity to adapt to a changed climate, are exacerbated by rises in sea level and temperature. Increasingly, variable seasons, rainfall, drought, and weather extremes are also problematic.[2]

The African continent has experienced general increases in warm spells since the industrial era. Variable rainfall has also become more significant over the last century.[3] In West Africa, mean annual rainfall has declined steadily since the end of the 1960s. Other regions, particularly Southern and Eastern Africa, have seen more intense and widespread droughts and a significant increase in heavy rainfall.

One-third of Africans now live in drought-prone areas, mainly in the Sahel, around the Horn of Africa and in Southern Africa. Climate change is putting a range of pressures on people living in these areas, not least because their crops are less productive and water in shorter supply.[4]

Projected Impacts of Climate Change and Poverty

The United Nations Framework Convention on Climate Change (UNFCCC) Report warns that the effect of climate change in Africa is "even more acute" than experts had feared. Up to 70 million people could be at risk from rising sea levels, while droughts, which have overwhelmed the Horn of Africa with increasing regularity, will be more common.[5]

Climate change is likely to disproportionably affect the continent's development trajectory. The threat to economic growth, which is central to development and poverty reduction, is among the most significant consequences of climate change. Overall, some models suggest that an increase in temperature of about 1.5^{o}C by 2040 could lead to an annual loss in Africa's gross domestic product (GDP) of 1.7 per cent.[6]

The impact of climate change is a threat to Africa's aspirations for growth and poverty reduction, directly through the effects of changing water availability, loss of biodiversity, declining or volatile agricultural yields, climate-related humanitarian disasters (including floods and droughts), increased incidence and prevalence of vector-borne diseases, weakened infrastructure, political instability due to heightened conflict over resources, and movement of people, as well as through the secondary effects of these phenomena. The effects of climate change are more severe for vulnerable and disempowered groups in the community, including women and children who have the potential of being strong actors in current and future development. Also, a hostile climate will make achieving development goals, such as the MDGs, much more costly for African countries.[7]

Climate change affects Africa's growth and poverty rates in a variety of ways, such as its adverse impact on agriculture, the engine of growth and mainstay of the poor in many African countries. Some 70 per cent of the people in Africa and nearly 90 per cent of the poor work in agriculture and depend on natural resources for survival. When rains fail, or are unpredictable, agricultural yields and therefore food security issues arise and, thus, the poor are forced to rely on emergency food aid. It affects people's access to water in already water-stressed regions. Rural people are compromised by the impact on ecosystems that support their livelihoods.

It also affects tourism, an important source of foreign currency, and productive factors (land, labour, and capital). Also, confronting the challenge of climate change will affect the ability of the State to sustain sound macroeconomic policies and make the necessary growth-enhancing public investment, deliver services, and undertake poverty-

reducing social spending. By weakening the capacity of the State to deliver services and maintain a sound institutional environment, climate change is likely to have a negative impact on capital flows, private investment, and development finance.

Lastly, it is now recognized that not only does the nature and extent of climate change hamper human development, but it also forms a major threat to human security and political stability. Massive migration resulting from climate change could spark violent conflicts over resources such as land and water, complicating economic management and governance. A recent study indicates that, if not checked, climate change could increase the likelihood of civil conflict in Africa by 54 per cent in the coming two decades.[8]

Possible Mitigation and Adaptation

Confronting these challenges requires adaptation and mitigation strategies that are fully integrated into national development frameworks. However, such strategies could not be delivered without sufficient financial resources, bold structural reforms, adequate technological know-how, good governance, and sufficient institutional capacity.

The consequences of climate change are multidimensional and interrelated. Therefore, rolling out adaptation and mitigation activities demands a holistic perspective, which can be achieved only by mainstreaming adaptation and mitigation measures into wider development planning and budget processes. The success of an integrated adaptation and development framework hinges on several key actions. These actions include:[9]

(a) **Raising awareness and enhancing capacity for integrating adaptation, mitigation, and development.** Integrating climate change adaptation must start with raising awareness that more variable and more intense climatic conditions are expected, and encouraging policy changes that reflect this change. Special consideration should be given to how climate change may affect vulnerable and disempowered groups such as women, children, migrants, and people with disabilities. Raising the awareness of development advisers and others and augmenting their ability to respond efficiently through appropriate training and support will facilitate integration of National Adaptation Programmes of Action (NAPAs) into national development plans and poverty reduction strategies. Proposing coherent national action plans as a means to implement adaptation, mitigation, and development measures, will also help to secure adequate domestic funding as well as the required additional external funding in both the short and long term.

(b) **Integrating climate risk management into development practice.** While agriculture has traditionally been the focus of attention on climate change impact, nearly every sector is sensitive to climate change and will need to adapt to future conditions. Adaptation must be approached as a cross-sectoral issue and should no longer be perceived as the sole responsibility of the ministry of environment. Involving the ministries of planning and finance is crucial to reflect adaptation efforts in the budget. Efforts should be made to increase coordination across ministries and sectors and raise the issue of climate change to a higher level of political and policy priority.

(c) **Learning from good experiences in Africa and elsewhere.** Some examples of the incorporation of appropriate climate information into development decisions exist in Africa. These include early warning systems in Ethiopia, the exemplary meteorological information dissemination system in Mali, and innovative private sector efforts for managing climate-related risks in Malawi. Effective peer-learning among African countries will assist in effective utilization of best practices and accumulated knowledge.

In conclusion, climate change will have a dramatic social and economic impact on Africa, tax individuals, firms, and governments, and reduce growth by drawing resources away from development. Even if global carbon emissions were reduced tomorrow, Africa would still be faced with the massive challenge of adapting to climate change while promoting faster economic and social development. Based on existing evidence of the extent of climate change on the continent, future climatic shocks of particularly larger magnitude and frequency may further affect economic growth and lock many African countries in poverty traps.[10]

To achieve sustainable growth, fight poverty, and attain other development goals, African countries will have to expand their energy, transport, and urban systems and agricultural and industrial production, and this is a tall order as how can all this happen without accelerating climate change? Adapting, therefore, requires robust decision making and long-term planning, with consideration given to a broad range of climate and socioeconomic scenarios and adopting climate-smart policies that enhance development, reduce vulnerability, and finance the transition to low-carbon growth paths.[11]

Lastly, regional institutions should also play a leadership role in helping Africa meet the challenges of climate change. This role must include coordination and capacity building for adequate representation of the continent in climate change negotiations and global governance mechanism.

But while climate change is already having a significant impact on the lives of Africans, there is still limited documented knowledge on the real state of climate change and poverty in the continent to inform policymakers in different countries. This is why the United Nations Centre for Regional Development (UNCRD) decided to invite researchers/writers from different parts of the continent to document the experiences of their countries in this issue of *Regional Development Dialogue* (*RDD*) so that they can share their experiences.

All in all, seven articles document the experiences in six selected countries in three corners of Africa — Eastern, Southern, and Western Africa. The first article, which sets the tone, is a concept note that provides an overview of climate change and poverty in the whole of the African continent. This is followed by four countrywide experience articles (Ghana, Nigeria, Tanzania, and Zimbabwe) and the last two are centred on the impact of climate change on squatter settlements in urban areas in Kenya. Each of the articles outlines the main climate and poverty issues in the respective countries; impacts of climate change on poverty levels; actions being taken by the authorities to ameliorate the impacts; and, finally, possible future ways and means of dealing with this catastrophe.

The first article titled "Climate Change and Poverty in Africa: An Overview" by A. C. Mosha is an overview of the experience of climate change and poverty in the whole African continent and is meant to set the scene for the subsequent more detailed articles in this issue. The article starts off by highlighting that Africa is most vulnerable to climate change, although it makes the least contribution to factors that result in global and regional climatic changes. High levels of vulnerability and low adaptive capacity across the continent have been linked to, among other things, poverty. The article then continues to paint a general picture of the past, present, and possible future status of climate change in the continent. From this base, the article moves on to investigate the relationship between climate change and poverty patterns in the continent, analyses the resultant impacts, and finally discusses potential adaptation policies for moderating the conse-

quences of climatic changes on poverty in the continent.

A clear message from the analysis of the various key issues discussed in the article is that, firstly, climate change is happening in Africa; secondly, poverty is rife in the continent; thirdly, climate change has impacted and will increasingly affect the poor; and, lastly, both mitigation and adaptation measures have to be embarked on immediately. It is paramount that governments integrate responses to climate change and adaptation measures into strategies for poverty reduction to ensure sustainable development in the continent before the situation deteriorates even further. The lives and livelihoods of hundreds of millions will be affected by what is done (or not done) in both rural and urban areas with regard to adapting to climate change over the next decade.

The second article, "Climate Change and Poverty in Ghana: Issues and Implications for Policy" by Daniel K. B. Inkoom commences by highlighting that climate change is a significant issue to Ghana as a large majority of the population is affected by it. Projections by the Environmental Protection Agency (EPA) of Ghana indicate that, by the year 2080, rainfall in the country will reduce from 20 per cent to 40 per cent, while the temperature will rise by 4.5^{o}C. Critical examination of climate data over the last past ten years indicates high temperatures, erratic rainfall patterns, and increased vulnerability of the coastline, with severe consequences for people and their livelihoods. Ghana ranks 135 out of 177 countries on the United Nations Human Development Index (HDI). At the same time, the country is averse to the impacts of poverty.

The author then moves on to shed some light on poverty. Approximately 32.3 per cent of the population is considered to be poor. Poverty levels are highest in the north of the country, where drought and desertification are prevalent. In this region, up to 88 per cent of the people are considered poor, according to the Ghana Statistical Service. Ghana's GDP per capita is US$2700. The GDP is made up of agriculture (37 per cent), services (38 per cent), and industry (25 percent). While the two major Ghana poverty reduction strategies in the past have attempted to address environment and poverty linkages, they hardly tackle the potential impacts of climate change and climate variability. The article emphasizes the need to integrate climate change issues into national development planning as a matter of urgency. It also calls for effective management of natural resources in order to reduce vulnerabilities of especially the poor.

The third article is a study carried out by Babatunde Agbola on "Climate Change and Poverty in Nigeria" . The article starts off by highlighting the climate change and poverty nexus in Nigeria. The relationship is anchored using the concepts of poverty, vulnerability, common resources, and climate change. The study argued that environment as a common resource has been undermined by climate change. The poor are the most vulnerable and the reasons for this are not far-fetched. Vulnerablility to climate change is a function of socioeconomic and ecological conditions that include: lack of access to basic social services, loss of employment opportunities, lack of empowerment to participate in political processes, violence and insecurity as well as environmental degradation and loss of access to important natural resources.

The range of other challenges that people face influences the ways in which they can manage and adapt to climate-related problems. Using meteorological and historical data, the study indicated that climate change has profound effects on the country's livelihood, agriculture and food security, access to water, health, inter-communal relationship, population migration, and vulnerability to disasters. While many people are vulnerable to environmental degradation, climate change-induced droughts and/or floods

have been forcing individuals, families, and communities into destitution.

The author contends that the capacity to cope with climate change and its variability is highly dependent on the level of economic development and social and political inclusiveness. However, sustainable adaptation measures can only be achieved by reducing both poverty and vulnerability to climate variability and change at the same time. Beyond these, adaptation and mitigation strategies should be hinged on reducing the direct risks of climate change; the ways vulnerable people cope with climate stresses in the short term, and adapt their livelihood systems in the long term should be understood and facilitated, and the opportunities broadened. Finally, the specific social and environmental factors and changes leading to the inability to cope or adapt should be understood and addressed.

The fourth article is by Stephen M. Kapunda, titled, "The Impact of Climate Change on Tanzania's Economy: Poverty Implications". The author examines the impact of climate change on Tanzania's economy and its sectors, especially the dominant agricultural sector. Poverty implications are also spelt out. It is argued that, since Tanzania's average temperatures will rise by 2°C to 4°C and rainfall will decrease by 10 per cent by 2100, the agricultural sector will be affected seriously mainly through droughts, unreliable rainfall, floods, and unfavourable season duration patterns, thereby affecting production. The poor, who are mostly in rural areas, will also be negatively affected. Sectors linked to agriculture and others, and subsequently the whole economy will be adversely affected in terms of GDP, and poverty will be exacerbated unless meaningful mitigation and adaptation measures are instituted. The article concludes by suggesting the way forward to ameliorate the impacts of climate change in Tanzania.

The fifth article, titled "Climate Change and Poverty in Zimbabwe," is by Sampson I. Umenne. The article starts off by stating that climate change and poverty have been declared the major global challenges of our times. They feature prominently in the list of the eight MDGs, part of a global action plan signed at the 2000 UN Millennium Summit by 189 Heads of State and government. Whereas the former is an acknowledged environmental debacle, the latter is as old as, and endemic to, human existentialism. Both are credible developmental concerns of the modern world, and in particular, the developing. Indeed, the impacts of climate change are most acute in the non-industrialized countries, where the effects stifle efforts at poverty alleviation by stifling the effects of agricultural productivity. This scenario is typical of countries such as Zimbabwe, where the controversial, politically driven third *Chimurenga* (liberation struggle) fast-track land redistribution programme of the 2000s, has exacerbated the agricultural adversity of the vulnerable, poor communities.

The article explores the closely knit relationship between climate change, agriculture, and poverty in Zimbabwe during the period 2000 to date. It argues that the current socioeconomic predicaments of Zimbabwe are as climate related as they are governance ignited. The article posits that an effective attack on poverty and the arrest of the impacts of climate change on agriculture in Zimbabwe requires synergetic action by both industrialized and non-industrialized economies. It further suggests the mainstreaming of climate change adaptation and mitigation strategies into food security and poverty alleviation policies, in sync with the overall national development agendas.

The sixth article by Cecilia Kinuthia-Njenga, "Challenges with Climate Change Adaptation in Informal Settlements in Nairobi, Kenya," sets out to examine in depth the impact of climate change and poverty in the teeming informal settlements of the city of

Nairobi. Kinuthia-Njenga posits that like many developing countries, Kenya has been experiencing the demographic phenomenon of urbanization, which is one of the driving forces for the mushrooming of informal settlements on the fringes of urban centres. Recent surveys show that about 70 per cent of the urban population in Kenya lives in informal settlements, in already marginalized environments prone to increased inland flooding, drought, water scarcity, temperature extremes or sea-level rise. The reason for the mushrooming of these informal settlements is mainly because Nairobi does not have a spatial framework to guide, coordinate, and control land-use development in the city and its peri-urban areas. There are no specific plans to manage development on flood plains, or other fragile locations.

The aim of her article is to understand the challenges with adaptation to climate change in these informal settlements. It highlights the key issues related to hazards, vulnerability, and the adaptation strategies undertaken by residents of informal settlements to cope with climate change. Adaptive capacity can be expressed at the individual, community, and government levels. The article also takes note of the increase in environmental migrants in Nairobi's slums, and highlights some key lessons for efficient adaptation to climate change in these settlements. It concludes by putting forward certain key proposals to ameliorate the impacts of climate change on the poor of Nairobi

The last article titled, "Improving Urban Planning for Poverty Reduction and Climate Change: Lessons from Mombasa, Kenya" is by Grace Lubaale. The article, using research undertaken in Mombasa on "pro-poor adaptation to climate change" tests a novel conceptual framework on asset adaptation, and explores how urban planning for poverty reduction and climate change has improved. The article notes that current literature indicates a growing threat to huge urban populations in poor countries occasioned by poverty and climate change. Yet, there is no information on how best urban planning should respond in these contexts. This article argues that in the cities of Sub-Saharan Africa, urban planning should be relevant in reducing poverty and strengthening adaptation, if institutional frameworks are pro-poor and planning responsive to the needs and priorities of the poor.

The article starts by outlining the conceptual framework and research methodology, and then contextualizes institutional frameworks for poverty reduction and climate change in Kenya. It then presents the findings of climate change adaptation in Tudor, a suburb of the city of Mombasa. It analyses institutional factors and presents evidence on how the poor respond, and adjust to shocks; and shows that the current institutional framework is not pro-poor and therefore not so relevant for poverty reduction and adaptation to climate change. The article concludes that to improve urban planning for poverty reduction and climate change, interventions should be aimed at strengthening long-term resilience and the policy and institutional context.

What has emerged from all the articles is that there is a consensus that climate change is a critical issue for Africa and indeed, its greatest challenge in the twenty-first century, along with poverty. This challenge has to be tackled at all levels from the international bodies, to national governments, and the people themselves. A sustainable solution to climate change and poverty alleviation can only come from a holistic approach to this problem. There must be full participation by all stakeholders for success to be achieved.

NOTES

1 Pan African Climate Justice Alliance (PACJA), "The Economic Cost of Climate Change in Africa" (Available at http://www.christianaid.org.uk/images/economic-cost-of-climate-change-in-africa.pdf; retrieved on 2 March 2011).

2 Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Impacts, Adaptation, and Vulnerability* (Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change) (Cambridge, UK and New York: Published for IPCC by Cambridge University Press, 2007).

3 IPCC, *Climate Change 2007: Mitigation of Climate Change* (Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change) (Cambridge, UK and New York: Published for IPCC by Cambridge University Press, 2007).

4 PACJA, "The Economic Cost of Climate Change."

5 IPCC, *Climate Change 2001: Impacts, Adaptation, and Vulnerability* (Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change) (Cambridge, UK and New York: Published for IPCC by Cambridge University Press, 2001).

6 PACJA, "The Economic Cost of Climate Change."

7 African Union (AU), African Development Bank (AfDB), and United Nations Economic Commission for Africa (ECA), "Climate Change, Economic Growth, and Poverty Reduction in Africa. Acting on Climate Change for Sustainable Development in Africa" (Seventh African Development Forum Issues Paper; no. 12) (Addis Ababa: Africa Climate Policy Centre, ECA, 2010).

8 UC-Berkeley press release (23 November 2009) quoting a study on the topic, "Climate change could boost incidence of civil war in Africa" (Research conducted by researchers from UC Berkeley, Stanford University, New York University, and Harvard University). See www.sciencedaily.com/release/2009/11/091123152224.html, retrieved on 23 February 2011; also published in the 23 November 2009 online issue of the journal, *Proceedings of the National Academy of Sciences (PNAS)*.

9 AU/AfDB/ECA, "Climate Change, Economic Growth and Poverty Reduction in Africa," p. 2.

10 *Ibid*., p. 4.

11 International Bank for Reconstruction and Development (IBRD), *World Development Report 2010: Development and Climate Change* (Washington, DC: World Bank, 2010).