

# THE NIGERIAN ECONOMY AND CLIMATE CHANGE

By

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# INTRODUCTION

- ▣ Nigeria is likely to be one of the most negatively impacted countries in the world by climate change
- ▣ All regions will be impacted, but particularly the Southern coastal regions and the far North
- ▣ All the main sectors of Nigeria's economy will be impacted by CC, but in particular agriculture
- ▣ A preliminary Integrated Assessment Model *which assumes minimum adaptation for Nigeria* predicts that CC could result in a loss in GDP of between 6% and 30% by 2050 (worth an estimated N15 trillion and N69 trillion at current exchange rate)

# INTRODUCTION Contd 1

- ▣ By 2020, if no adaptation is implemented, between 2% and 11% of Nigeria's GDP could be lost
- ▣ The model predicts losses of 8-30% for the north, 5-25% for SE & SS, and 7-34% for the SW
- ▣ By undertaking appropriate adaptation actions and strategies, much of these predicted impacts can potentially be mitigated
- ▣ Such adaptation actions & strategies include strengthening the robustness and resilience to agric-related impacts, conducting a national coast defence strategy, protecting key infrastructures, and facilitating water collection at hh level
- ▣ Some aspects of the economy may gain, namely: production & sale of renewable energy, flood protection, medicine, bldg cooling equipment, etc

# INTRODUCTION Contd2

- ▣ Attaining the MDGs will also suffer as a result of CC. In particular, Goal 1 on hunger & poverty, and Goal 7 on environmental sustainability will be adversely affected in a major way
- ▣ In terms of spatial distribution of impacts, those in the far North and those adjacent to the coastline are far more at risk
- ▣ Most critically, Nigeria does not yet have a national climate change policy although a national policy framework on CC in Nigeria is being developed

# INTRODUCTION Contd3

- ▣ Extensive CC data gaps exist, namely: climatic data and trends, baseline natural resource and socio-economic conditions, location and importance of assets, data on extreme events such as drought, flooding & coastal flooding, socio-economic data at local and regional levels
- ▣ There is a lack of a centralized institution that can champion and coordinate CC activities in the country
- ▣ Consequently, implementation of CC solutions and projects has been piecemeal and ineffective

# SECTORS MOST AFFECTED BY CLIMATE CHANGE IN NIGERIA

- ▣ Agriculture, fisheries, and forestry
- ▣ Mining and quarrying
- ▣ Wholesale and retail trade
- ▣ Manufacturing
- ▣ Utilities (Water & Electricity)
- ▣ Transportation
- ▣ Telecommunications
- ▣ Hotels/ Ecotourism
- ▣ Financial services
- ▣ Real estate and business services
- ▣ General environment

# SUMMARY OF KEY IMPACTS OF CLIMATE CHANGE IN NIGERIA

- ▣ *Sahelization* caused by increased unpredictable summer rains resulting in: decreased agric productivity in northern Nigeria; reduced food security; reduced water availability for irrigation; desertification of 50% of the Guinea Savannah; increased social tension/conflicts between farmers & pastoralists
- ▣ *Loss of coastal zone infrastructure, settlements and agricultural lands* due to higher temps & higher humidity, increased flooding, and reduced freshwater availability all of which cause increase in malaria & other diseases that lead to a decrease in GDP

# SUMMARY OF KEY IMPACTS OF CLIMATE CHANGE IN NIGERIA

## Contd 1

- ▣ *Reduced hydrocarbon extraction activities (Niger Delta) & increased risk of oil spills* due to changes in the forest cover (following severe dry spells) which result in land loss, food insecurity, increased social tensions, and deteriorating fishing industry due to oil spills
- ▣ *Reduced food security and fuel wood supply* related to changes in the forest cover (following severe dry spells) which result in poor supply of food to rural population and hampered energy supply for most rural Nigerians who depend on fuel wood for energy

# SUMMARY OF KEY IMPACTS OF CLIMATE CHANGE IN NIGERIA

## Contd2

- ▣ *Negative effects on human health* caused by higher temperatures, higher humidity, increased flooding, and reduced fresh water availability which result in increased number of pests and breeding sites, increased exposure to vector-borne (malaria) and water-borne (cholera) diseases, increased heat stress mortality, reduction in annual GDP growth rate by 1.3% due to labor morbidity caused by malaria, and increased risk of malnutrition due to food insecurity, shortages or famine

# SUMMARY OF KEY IMPACTS OF CLIMATE CHANGE IN NIGERIA

## Contd3

- ▣ Damaged transport routes (buckling of rail tracks and melting of road surfaces) caused by extreme weather events (floods, heat waves, etc) and resulting in negative impacts on trade and communications
- ▣ Negative effects on electricity supply and distribution caused by reduced rainfall and other extreme weather events which result in reduced production of hydroelectricity, damaged energy distribution network, increased frequency of blackouts, and reduced economic activity across Nigeria

# SPECIFIC SECTOR IMPLICATIONS

- ▣ Table 4.2 summarizes how seven key CC impacts may affect the three largest economic sectors, together with the remaining other sectors (where the shading intensity indicates the relative significance of the impacts, both direct & indirect)
- ▣ The key direct and indirect impacts of CC in three regions of Nigeria are summarized in Table 5.2

# ECONOMIC IMPACT MODEL RESULTS

- ▣ Instead of a Computable General Equilibrium (CGE) model, this study used a modified Integrated Assessment MS Excel-based CC impact model developed by the Environmental Resources Management of UK and combining scientific and socio-cultural aspects to assess the overall impacts of CC on the Nigerian economy
- ▣ The model is based on Nigeria's economic data and forecasts along with most recent peer-reviewed scientific studies (including IPCC's 2007 4<sup>th</sup> assessment report)

# ECONOMIC IMPACT MODEL RESULTS Contd 1

- ▣ The model split the country into three regions based on the six geopolitical/ agro-ecological zones, namely: (i) the North comprising NW, NE, & NC; (ii) the South-West States; and (iii) the South-East and South-South States
- ▣ Three different impact timeframes were considered: 2005-2010, 2005-2020, and 2005-2050
- ▣ Four sectors were explored in the model, namely: *agriculture* (42%), *mining & quarrying including oil & gas* (25%), *wholesale & retail trade* (14%), and the *other remaining nine main sectors* (19%)

# ECONOMIC IMPACT MODEL RESULTS Contd2: FINDINGS

- ▣ %age loss of GDP from CC (medium GDP growth) in different years:

CC scenario	2010	2020	2050
Low	0.7%	2.2%	6.4%
High	3.9%	11.1%	29.5%

- ▣ %age loss of sectoral GDP from CC (medium GDP growth) in 2050

Sector	Low cc scenario	High cc scenario
Agriculture	8%	36%
Mining & Quar	4%	21%
Whole & Ret trade	5%	27%
Other 9 sectors	5%	27%
<b>Overall</b>	<b>6.4%</b>	<b>29.5%</b>

# ECONOMIC IMPACT MODEL

## RESULTS: FINDINGS2

- Range of %age loss of GDP through CC by 2050 (assuming medium GDP growth)

Region	%age reduction in sectoral GDP				
	Agric	Mining	Retail	Other	All
North	8-33	1-6	7-27	5-23	8-30
SE&SS	8-38	5-22	2-10	5-26	5-25
SW	8-42	5-25	7-34	5-29	7-34

- Table 5.4 summarizes the effects of climate change on MDGs in Nigeria. The Tables shows that all MDGs in Nigeria will be potentially affected by CC



# ECONOMIC IMPACT MODEL RESULTS3

- ▣ CC is anticipated to have high direct negative effects on the MDGs of 'eradication of extreme poverty & hunger' and 'ensuring environmental sustainability' respectively because of its negative effect on agriculture (caused by weather extremes of flood and drought), and its direct effect on water scarcity and loss of land due to sea-level rise
- ▣ Because of severe inequalities in wealth within Nigeria, however, some regions will more easily meet the MDGs than others

# RECOMMENDATIONS

- ▣ It is extremely important that the Comte on CC of the National Assembly should facilitate raising the profile of CC in Nigeria to the public via the media, and amongst key interested parties through wkshps
- ▣ The CC Committee should promote & support the quick establishment of a national climate change commission
- ▣ There is an urgent need to support an initiative to build capacity in CC skills within the Ministry of Environment & other fed ministries
- ▣ In order to end the paucity of CC data, funds for systematic research and data collection on CC

**FINISH**

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