

Integrating Climate Change Adaptation and Mitigation in Development Planning: National Policy Dialogue in Nigeria

POST DIALOGUE REPORT



**Organized by West African Research and Innovation Management Association (WARIMA) and
START International Secretariat**

**The Postgraduate School, University of Ibadan, Nigeria
February 23 – 25, 2010**

February 2010

Project Partners: Bangladesh Centre for Advanced Studies (BCAS), World Meteorological Organization (WMO); Intergovernmental Panel on Climate Change (IPCC); United Nations Environment Program (UNEP); Global Change SysTem for Analysis Research and Training (START); Institute of Resource Assessment (IRA), University of Dar es Salaam, University of Ghana

Summary of the event

The Nigeria science-policy dialogue covered a wide span of topics, from issues around agriculture and dryland ecosystems to ones of urban flooding and energy use. Nigeria's science community was well represented at this event, while representation by the policy community was rather tepid. Those in attendance from the policy community included representatives of the Health and Environment ministries, and the Livestock Department within the Agriculture and Water Resources Ministry. Representatives of cocoa production and forest management interests made up the private sector presence at the meeting, and there were PhD students from different Nigerian universities. Politicians were notably absent. Refer to Annex 2 for a list of participants. There was good use of the media at this meeting. For instance, an article about the event appeared in a national daily newspaper on the second day and a press conference, with four national daily newspapers and Radio Nigeria, was held at the end of the dialogue at which a communiqué to politicians was relayed (see Annex 1).

A key discussion at the dialogue concerned data systems and their management. Baseline data and information on environmental and socio-economic issues in Nigeria are inadequate and, where in existence, data cannot be accessed by researchers and other end users. It was recommended that a national depository for climate and allied data be created that would allow ready access by researchers and development agencies, and that a National Universities Commission be formed to oversee this process. The need for capacity was another issue that cut across the various discussions. There are insufficient personnel and facilities for modelling to forecast climate change and its consequences on Nigeria and the rest of Africa. It was recommended that the Federal Government of Nigeria work to ensure increased capacity in the areas of information technology and modelling in all the segments of the economy so as to effectively address vulnerability at local, state, and national levels.

Introduction

Nigeria faces many significant challenges associated with climate change. Although Nigeria has a strong and diverse economy relative to other countries in SubSaharan Africa, significant portions of its population and economy are tied to activities that are climate sensitive, such as rainfed agriculture, livestock rearing, fisheries, and forest products extraction. The northern Sahel zone and the heavily populated coastal areas are particularly vulnerable to climate change. Low levels of awareness of climate change amongst policy makers and the public at large, and poor understanding of its risks have hindered effective decision making. As the need for sound science to inform climate change policy development and implementation processes increases, it is essential that better communication occur at the science-policy interface so that policies and measures can be identified that bring greater awareness of how to integrate climate change adaptation and mitigation planning with sustainable development and poverty reduction goals.

A science-policy dialogue on climate change in Nigeria was convened to address the need for better communication to inform decision making on climate change. The Nigeria dialogue was one of nine national-level science-policy dialogues being organized under the project

Understanding the Findings of the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report, Climate Change 2007- Integrating Climate Change Adaptation and Mitigation in Development Planning, a joint effort of the World Meteorological Organization, the Intergovernmental Panel on Climate Change, the UN Environment Programme, START, WARIMA, the University of Ghana, and other partners. The dialogue in Nigeria is the fourth in the series of dialogues, the first of which was held in Accra, Ghana (October 2009), Tanzania (January 201) and Bangladesh (February 2010).

The two and a half day programme, *Integrating Climate Change Adaptation and Mitigation in Development Planning*, was held at the Postgraduate School at the University of Ibadan. The program consisted of an opening session of introductions, ten technical sessions and a roundtable discussion. The dialogue brought together about **sixty (60) registered** participants (see Annex 1) from seven countries. The participants from Nigeria consisted of:

- Natural Resource Management professionals,
- Senior Management and officials from various Ministries, Departments and Agencies (MDAs),
- Media,
- Members of the University and Academic Community, and
- Non-Governmental Organizations (NGOs)
- Students and START Fellow

There were about twenty (20) others including staff of the University and graduate students who though were not sponsored, attended the dialogue.

This post-dialogue report is intended to provide an overview of the issues covered and to convey how the event helped to meet the objectives of the national science-policy dialogue, i.e., increasing awareness and understanding of climate change risks, and options for mitigation and adaptation; sharing perspectives on policy responses and linkages of climate change adaptation and mitigation to national development goals; and helping to build and promote determination for action.

Nigeria National Policy Dialogue

The official opening ceremony began with the introduction of the national dialogue by Prof. Labode Popoola, Dean of the Postgraduate School, University of Ibadan and the Focal Person for the dialogue. He explained that the purpose of the dialogue was to assemble important stakeholders to deliberate on key aspects of Climate Change that need to be addressed and presented to the government for application. The Vice-Chancellor of the University of Ibadan, Prof. Olufemi Bamiro gave the welcome address. He briefly described how anthropogenic activities have caused the current Climate Change concerns. He was optimistic that the collection of personalities at the meeting would be able to contribute to practical solutions for Nigeria and Africa as a whole. He informed the participants about the new Centre for Sustainable Development at the University of Ibadan, which would address socio-economic, environmental as well as Climate Change issues. He ended by stressing the importance, in addition to research by scientists, of the private sector and governments in addressing climate change and sustainability challenges.

Dr. Jon Padgham, of the International START Secretariat, gave a brief history of START and described its activities in Africa, which include postgraduate funding, small grants for fellowships and research. He explained that the Nigeria National Dialogue was the fourth in the series of nine dialogues, and introduced the various partners (EU, UNEP, WMO, IPCC), the three regional centers and local organizers such as WARIMA. He also emphasized the importance of having a dialogue rather than just a series of Powerpoint presentations.

The representative of the Honorable Minister of Petroleum Resources, Mr. Ladipo O. David, officially opened the workshop and passionately expressed his concerns about gas flaring in Nigeria. He suggested that strategies needed to become more action-oriented since many of the workshops were ‘talkshops’ that have not been successful in minimizing gas flaring or its environmental impacts.

The remainder of the two and a half-day programme consisted of ten technical sessions that addressed issues of climate change with regards to scenario modeling, coastal zones, human health, agriculture, gender, urban areas, coastal and semi-arid zone ecosystems, land use and land cover, water, energy and gender (Table 1). Each presentation by an IPCC AR4 author or a national speaker was followed by a short presentation by a local discussant who elaborated on the key issues of that particular thematic area, presented in the Nigerian context.

Table 1: Presentations at the Nigeria National Policy Dialogue

Presenter	Topic	Discussant
Babatunde Abiodun	<i>Climate Change Scenarios & Modelling</i>	None
Andrew Githeko	<i>Climate Change and Human Health</i>	Prof. Folorunso Adewole
James Adejuwon	<i>Agriculture and Climate Change</i>	<i>Prof. Tunji Akande</i>
Prof. Tunde Agbola	<i>Impacts of Climate Change on Urban Areas</i>	Dr. Ibidun Adelekan

Presenter	Topic	Discussant
Dr. Ibidun Adelekan	<i>Climate Change & Coastal Zone Ecosystems</i>	Dr. A. Asimiea
Dr. Pauline Dube	<i>Climate Change & Semi-Arid Ecosystems</i>	Prof. Augustine Isichie
Dr. Pushpam Kumar	<i>Climate Change and Land Use</i>	Prof. Emmanuel Obot
Dr. Pushpam Kumar	<i>Impacts of Climate Change on Water</i>	Prof. Temi Ologunorisa
Prof. R. O. Fagbenle	<i>Impacts of Climate Change on Energy</i>	Dr. J.F.K. Akinbami
Prof. Janice Olawoye	<i>Implications of Climate Change on Gender</i>	none

Session 1: Climate change projections and scenarios

Presenter: Dr. Babatunde Abiodun (University of Cape Town, South Africa)

The first presenter introduced the basics of the climate system and of climate change, and, with figures showing different model scenarios of past and future projections, demonstrated how anthropogenic factors contribute globally to increasing emissions, increasing temperatures and variable precipitation. He explained that there is a growing need to downscale models to account for local or regional dynamics, that would have a more practical and functional application. However, the lack of past meteorological data or difficulties in accessing these records in some countries, such as Nigeria, limits the simulations that are required for downscaling these models.

Discussion

General issues around data systems and management comprised an important part of the discussion. Participants were unanimous in their concern about the lack of and/or access to data, the quality of available data and the attitudinal approach of data sharing. They expressed the need to have a well established structure that would be responsible for coordinating the numerous data that exist in various research and ministerial offices. Participants expressed interest in seasonal forecasting for Nigeria, and recognized the difficulties based on the paucity of local information and lack of local researchers/modelers. There was a suggestion that as these models are developed, they should incorporate local drivers such as deforestation and gas flaring. The lack of trained, qualified people to work with climate models at national scales was emphasized.

Session 2: Human health

Presenter: Dr. Andrew Githeko (IPCC author – Kenya Medical Research Institute, Kenya)

The presentation described the implications of climate change on eight major elements of health, including food (under-nutrition and malnutrition), safe drinking water (quantity and quality), hazards, food-, water-, vector- and air-borne diseases, and cardiovascular diseases. Temperature changes permanently above 18 degrees Celsius, for example, have recently led to the transmission of malaria in highland regions of East Africa. According to the speaker, adaptation

requires investment and careful planning. This includes the use of food reserves/grain stores for long periods of drought, increased use of safe drinking water (simple technologies such as the Indian filter which cut out 90% cholera), prediction of extreme weather events, increased hygiene (simple measures such as soap and water and proper storage of prepared food), increased vector control (by insecticides), and vaccinations against Meningococcal meningitis (MCM).

Respondent: Prof. Folorunso Adewole (College of Medicine, University of Ibadan, Nigeria)

The respondent noted that health did not feature prominently in the main thematic issues of climate change in Nigeria, and that there is the need for a shift in perception by health physicians from the microbe to population level. The main challenges in managing health impacts from climate change were informational (generation and management of relevant information), distributional (poverty and lack of equitable access to medical resources by the vulnerable poor), technological (availability and affordability of appropriate technologies), socio-political and institutional (coordination and governance). As the way forward, he suggested improving collaboration between various institutions including international co-operations and local communities, in addition to integrating multidisciplinary issues both at personal, policy and system levels.

Discussion

The participants' questions covered a variety of climate change impacts on health, for example on skin cancer and the implications of increased dust on health. There were suggestions that adaptation strategies be established for the various ecological zones found within the country, with health recommendations made specifically for each area. Research should also be zone-specific with respect to potential impacts, including physiological responses or tolerance levels, and need to incorporate other environmental stress factors into public health policy/planning. Participants recognized that although climate change issues had the perception of being confined to future projections, there is an urgent need to strengthen key health institutions in climate change issues and prepare capacities for climate change related issues now. This could also be improved by focusing on "no regrets" adaptation measures by prioritizing investments in public health infrastructure, clean water, food storages, etc.

Session 3: Agriculture and climate change

Presenter: James Adejuwon (Obafemi Awolowo University, Nigeria)

The speaker focused on the potential effects of climate change on food crop production in Tropical Africa. He was majorly concerned about the unscientific applications of scientific models by a majority of researchers in the adaptation 'field' in that adaptation efforts are moving in front of evidence-based knowledge about impacts; low capacity for collecting data on some measurable atmospheric phenomena; poor analytical capacity which include a lack of specificity in the design of adaptation models. Prof. Adejuwon also noted that adaptation researchers have focused primarily on precipitation as a major determinant of climate change effect, to the exclusion of some other critical variables like temperature, CO₂, humidity, solar radiation and so on. He stated that based on his analysis using the EPIC crop model crop yields can be expected to decrease in the northern part of the country and increase in the southern part, a finding that could have significant implications for agricultural policy planning. He also highlighted the gains

to some food crop species of increased CO₂, solar radiation and rainfall and stressed that increased temperature was the most likely factor for future crop failures.

Respondent: Prof. Segun Bamiji (NAITA)

The respondent noted the tendency of scientific research to be top-down and thus is proceeding without due attention to those determinants that matter to Africa (or Nigeria); and that socio-economic and other parameters which underlie the ability to formulate appropriate models for our reality are rather abstracted in the models – almost reduced to “error terms” whereas they are critical to the understanding of how the problems are created and how they can be mitigated, given the currently low capacity for science and decision making for adaptation. She also highlighted the fact that policy priorities are not based on evidence (data) because of unavailability or low demand for data while stressing the need to synergize policy and research.

Discussion

Participants commented on the difficulties in educating and changing the perceptions of the local farmers about climate change, since most hold strong traditional beliefs about the changing weather patterns. Some felt that education should begin in primary schools where school children could be involved in collecting rainfall and temperature data. Some commented on the need for an efficient early warning system or forecasts for local farmers. There were questions on various aspects of the crop models such as the inclusion of the changing timing and distribution of rainfall, pest dynamics, mixed cropping farming, changes in nutrient cycling due to yield increases, water use efficiency of crops, and anthropogenic factors. There is the need for further research on the most appropriate adaptation strategies to include more resistant crops to pests, drought, flood or high temperatures. There was a suggestion that the ecological funds collected by the Nigerian government should support educational programs for the farmers, and include governors in future meetings.

Session 4: Urban areas

Presenter: Prof. Tunde Agbola (Dept. of Urban & Regional Planning, University of Ibadan, Nigeria)

Prof. Agbola provided a broad overview of urban issues including risks from climate change. According to the presenter, the percentage of population in the cities of Africa has occurred in the absence of remarkable industrial expansion. He indicated that about 75% of global energy occurs in cities with half from burning fossil fuels and the other half from energy to cool buildings and run appliances. These urban drivers of climate change are linked mainly to consumption patterns, which increase with higher levels of wealth and disposable income. He disclosed that adaptation measures for urban areas are being emphasized for Africa, since compared to mitigation it is shorter termed, less expensive and cost effective to implement, does not require intensive data which Africa lacks, and can be incorporated into policies and plans that will ensure timely adaptation.

Respondent: Dr. Ibidun Adelekan (Dept. of Geography, University of Ibadan, Nigeria)

The respondent described two case studies in Nigeria (Lagos and Ibadan) that were carried out to determine the link between development and climate change risks, and identify key impacts and

vulnerabilities of urban communities. She demonstrated how Lagos has lost a significant portion of its natural vegetation, and between 38% and 100% in wetlands areas, due to rapid population growth and lack of zoned planning. Although mean annual rainfall has declined in recent years, increased artificial structures and the loss of wetlands has led to increased floods, which have resulted in various economic and health impacts, including closed schools and polluted water sources. This loss of a natural vegetative barrier could amplify negative effects from storm surges and sea level rise. In Ibadan, an inland city, increased wind storms were shown to have affected properties in the inner core of the city where many of the houses are over 100 years old. The speaker emphasized that the adaptive capacity of the urban poor need to be addressed at different levels, especially as regards to health in urban planning and development programs and in building capacity for NGOs and CSOs to assist the urban poor.

Discussion

The discussions centered mainly on institutional failures in urban planning, such as power failures that led to increased use of generators or improper regulatory measures on old cars that were still on the roads. The influence of land use on climate and the bi-directional relationship between cities and climate change (where micro-, local and regional patterns of greenhouse gas concentrations, rainfall, etc. are affected) were issues that need to be incorporated into climate change studies. Participants suggested practical solutions to conforming to changes included the re-design of buildings and a flood vulnerability assessment map and building codes that would enable planners to identify highly vulnerable areas.

Session 5: Climate Change in Coastal Zone Ecosystems

Presenter: Dr. Ibidun Adelekan (Dept. of Geography, University of Ibadan, Nigeria)

The presenter introduced the impacts of climate related changes on ecological systems (e.g., erosion, saltwater intrusion, loss of coastal wetlands, flood and storm damage) and on human systems (i.e., freshwater resources, agriculture, human settlements, recreation and biodiversity). As the Nigerian coastline is highly susceptible to severe flooding, the speaker indicated that GDP losses will be the highest compared to other sub-Saharan countries, 100% coastal agriculture will be affected, and wetland loss will be the greatest. Urbanization, drilling of boreholes and oil exploration are human activities that increase impacts of climate change. The presenter indicated that some major issues that need to be addressed include the increased use and increased activities in the coast, low lying areas that are key hotspots of vulnerability, lack of adaptive capacity, poor governance, and settlement patterns that will present challenges for long term planning (as more commercial and residential areas developing along the coastline).

Respondent: Dr. A. Asimiea (Dept. of Crop & Soil Science, University of Port Harcourt, Nigeria)

The respondent illustrated the numerous oil fields found in the Niger Delta, which forms one of the four major sections of the Nigerian coastline. He described the various environmental impacts of activities in the oil fields, such as the destruction of mangroves and its biological functions, the toxic impacts on plants and anoxic conditions from oil spills, and the poor forest regeneration potential where channel excavations leave dredged material on the shores. He showed many pictorial examples of impacted ecosystems from oil spills and changing water

levels, both on aquatic and terrestrial systems, affecting biodiversity. Mitigation measures suggested include re-vegetation which has shown some success, policies to coordinate multiple ‘right of way’ (oil company roads) that run parallel to each other, effective oil spill cleanup, proper piping (location, depth, pipe age and material), and improved technologies of transverse drilling.

Discussion

Recognizing the complex ecology of the Niger Delta, participants discussed the need for a multidisciplinary approach to coastal zone management and to develop methodologies for sea level rise that would include local biophysical and socioeconomic processes for various points along the coast. Other salient issues were also discussed, such as current local adaptation and coping strategies with oil pollution, human security and conflicts, increasing deforestation with development, the export of specific wood species and the effective enforcement of regulations throughout the country.

Session 6: Climate Change in Semi-Arid Ecosystems

Presenter: Dr. Pauline Dube (IPCC AR4 author, University of Botswana, Botswana)

The presenter described the links between rainfall mechanisms and resulting biomes in Africa, indicating that about 46% of Africa is under pressure due to desertification, deforestation (0.4% per year), and land degradation. Under these pressures, she indicated that ecosystems face major threats such as bush fires (50% of fires worldwide are experienced in Africa) and invasive plants. She emphasized that with uncertainties in rainfall patterns, it is difficult to predict the performance of biomes although adaptation interventions would be effective for lower levels of climate change, i.e., below 2-3°C. These, however, need to be guided by understanding of regional climatic variability and ecological changes, and monitoring the mechanisms of climatic variables and ecosystems responses. One major adaptation strategy is to enhance ecosystem resilience to the climate change stressors.

Respondent: Augustine Isichie (Dept. of Botany, Obafemi Awolowo University, Ile Ife, Nigeria)

The respondent explained that based on climatically defined indices, only a small part of Nigeria is semi arid – Kano and Yobe States - in northeast Nigeria which is linked with the semi arid zones of Niger republic, Chad and Cameroon. These areas are degraded, have low annual rainfall (400-1,000 mm), high seasonal rainfall variability and periodic droughts and flooding. Pastoralism and farming are the major occupations. The respondent pointed out that the sensitivity to impacts in semi-arid areas of Nigeria are high due to underlying socio-economic stressors. Mitigation measures that have been put in place to deal with desertification include a new forest policy addressing poverty reduction, promotion of food security, environmental and biodiversity conservation and sustainable production of wood and non-wood products.

Discussion

According to the participants, semi arid areas have always been fragile but local communities have managed to adapt. The opportunities and advantages of climate change must therefore be assessed and used for local benefits. Researchers could take advantage of local knowledge towards improving indigenous water management systems or the use of local trees (e.g.

Faidherbia albida) for agroforestry in these areas. Limitations due to lack of access to available information such as soil seedload, species variation, farmer preferences, etc., and the poor enforcement of existing policies and strategies/guidelines were discussed, in addition to practical solutions such as being able to balance environmental flow of rivers against the engineering programs for development (e.g., dams, roads).

Session 7: Climate Change, Land Use and Response Policies

Presenter: Dr. Pushpam Kumar (University of Liverpool, United Kingdom)

The presenter provided a comprehensive overview of key drivers of land-use change, and biodiversity and ecosystem services loss and the impact of these drivers on human welfare. Dr. Pushpam showed evidence of biodiversity loss worldwide, and noted that infrastructural development; climate change and areas agricultural expansion are the main stressors on biodiversity. He further noted that land use, climate, pollution and changes in water consumption patterns could lead to a change in ecosystem function resulting in the loss of ecosystem services. This he said could seriously jeopardize poverty alleviation and that the GDP of the poor is the most seriously impacted by ecosystem losses.

Respondent: Emmanuel Obot (Nigerian Conservation Foundation, Lekki, Lagos, Nigeria)

The respondent provided a national context for the mega-trends described by the previous speaker. Dr. Obot pointed out that 50 cm rise in sea level will lead to the inundation of several areas in Nigeria, creating a new coastline. He explained that there has been a general reduction in rainfall from 1931, which has led to the loss of land cover and the transition of Savanna to Sahel zones, causing Fulani herdsman to migrate southwards to the Guinea Savannah. There have been 37 communal wars between 1991 and 1995 that have been directly linked to land use conflicts. These will intensify with loss of land and natural resources. He showed examples of the range of important species identified in Nigeria, including medicinal plants and spices, which need to be managed properly. He stressed the need to bridge the goals of policy makers for development and the environment, considering the importance of socio-economic needs.

Discussion

The participants raised concerns on how the issues presented could be translated to policy makers, with a focus on data management, the science-policy interface and strategic deliberations. Suggestions were raised that beyond the issuance of the communiqué, there should be an executive memo addressed to leaders and national assemblies, making specific observations arising from the conference.

Session 8: Climate Change and Water

Presenter: Dr. Pushpam Kumar (University of Liverpool, United Kingdom)

The speaker explained that climate change is a biophysical phenomenon but with economic implications not only for water but for other sectors as well. He showed that the economies of low capital income countries tend to be more agriculturally oriented whilst high capital income countries are more industrial, and since consumption patterns are major driving forces of climate change, adaptation/mitigation and development paths for poor societies are compromised. Adaptation by farmers, for example, is influenced by their perceptions of climate change, what

they know and what is available to them such as water availability, crop choice, etc. He concluded with the fact that adaptation through ecosystem restoration, for all ecosystems, is more beneficial than the costs of no restoration, with ranges from two times the benefit compared to cost for coral reefs, to 75 times for grasslands.

Respondent: Prof. Temi Ologunorisa (Centre for Climate Change, Osun State University, Nigeria)

The respondent explained that in Nigeria there is about 75% flooding during the rainy season, especially in the coastal areas. With such high incidences of flooding with climate change, there is the need for flood forecasting and the integration of flooding assessments into development agendas. Various sectors of the country are at risk with precipitation variability, especially with hydroenergy as a major source of electricity, and irrigation in the north where most food is grown. He indicated that Lake Chad, which serves about four countries, has withdrawn from Nigeria and there are current investigations into effective transfer of water from the Congo basin to recharge the lake. He indicated the need for water policies to address the projections of water variability by 2020, such as underground water storage during the rainy season, change of farming systems (introduce new crops or shift cropping patterns), proper management of water consumption (pricing and metering), and emergency plans for drought/floods.

Discussion

Participants discussed the fact that although several water projects and multi-agencies on water resources management exist in Nigeria, coordination is not effective and service delivery is weak. There is also a national water and sanitation policy but it is only at the federal level and not available at the state and local government levels. Suggestions were made that adaptive capacities should be encouraged at household and individual capacities. Since water is expensive and most communities rely on packaged water or household boreholes, there is the need to manage this better, for example, by more efficient sanitary ware. The discussions also centered around the inter basin transfer of water that is being considered from the Congo Basin into Lake Chad. Concerns were expressed about the possible environmental and socio-economic impacts to the Congo Republic and suggestions were made about exploring other sources such as desalinated water from the Atlantic Ocean or de-damming of rivers that are feeder streams to Lake Chad.

Session 9: Climate Change and Energy

Presenter: Dr. J.F.K. Akinbami (Centre for Energy Research & Development, Obafemi Awolowo University, Ile-Ife, Nigeria)

The presenter noted the increasing trend in energy consumption in Nigeria, explaining that although energy consumption is fundamental to economic development; it is also a precursor of environmental emissions. He further explained that Nigeria's energy supply system is presently characterized by technical inefficiency and gas flaring, which he said leads to increased greenhouse gas emissions which will increase the total buildup of greenhouse gas in the atmosphere. He presented opportunities for mitigation technologies in Nigeria which includes energy efficiencies, fuel switching and elimination of flaring which he explained will lead to annual GHG emission reduction of about 24.7 million tons of CO₂ equivalent.

Respondent: Dr. J.F.K. Akinbami (Centre for Energy Research & Development, Obafemi Awolowo University, Ile-Ife, Nigeria)

The respondent explained that energy is very crucial to all aspects of development and gave examples of direct and indirect impacts of climate change on electricity systems. He also explained that due to climate change, energy demands will be at an increase in developing countries and so also the associated GHG emissions. He stated that technology alone cannot bring the solution to these problems but lifestyles have to change to compliment the efforts of technology.

Discussion

[none]

Session 10: Climate Change and Gender

Presenter: Prof. Janice Olawoye (Department of Agric Extension and Rural Development, University of Ibadan, Nigeria)

The presenter raised concern on the lack of attention to gender issues in the climate change process, noting that it is partly a reflection of the lack of attention paid to social issues. She also called attention to the fact that women are disproportionately few in the decision making process concerning the environment and climate change, stating that women are willing and able to play key roles in the development and implementation of adaptation and mitigation strategies and therefore should have effective participation.

Respondent: There was no respondent

Discussion

Participants noted the low percentage of women at the national, state and local government level. They discussed the fact that in most cases it was not the men that discriminated against the women but that most women in Africa have accepted the position that their culture have placed them, preferring men rather than women to be in position of decision making. They also highlighted the facts that since women and children were the most vulnerable to the impacts of climate change; they should participate effectively in climate processes.

Roundtable discussion

Participants were asked to deliberate on a major concern raised during the presentations, i.e., key issues and solutions to data management, availability and sharing, as well as strengthening the communication between scientists and policy makers. The following section summarizes these discussions.

Data management, availability and sharing

In order to identify data gaps and improve access, co-ordination, management, there is the urgent need to initially locate and categorize the types and sources of data; define the data structure and format that will serve as a standard for coordinating data; and select an institution that will be responsible for housing the data. Specific recommendations include:

- Improve on the available system by identifying problems of the Federal Bureau of Statistics (FBS), how information is collected (improve on outdated databases), and distributed.
- More involvement of Universities, and international agencies such as World Bank, where baseline studies have been done in agriculture and water resources. Universities can have a national databank where data is identified, domiciled and coordinated.
- Need to improve data storage by digitising.
- Need to educate the media for appropriate publications.
- Obtain data from the Diaspora.
- Need to properly understand the structure of the country in order to establish appropriate channels of data communication. A National Universities Commission could be formed, for example, where data from the ministries could be sent to.
- Improve the role of non-governmental organisations (NGOs) where there is government failure in projects. Need to consider other alternatives besides the government.
- Need for a pilot organisation, for example, WARIMA is better placed to pilot this project. A template should be created for (1) type of data (outline type of data needed), (2) possible sources of data, and (3) period covered. The template and results from the dialogue could be used to approach corporations, NGOs, and other international bodies for assistance.
- Civil servants who are members of trade unions should be excluded from data collection jobs since strikes will affect the uniformity of data
- Support can be provided by the Step B project (a World Bank project) and retired professors
- Compared to the meteorological agencies, data is not readily available from the energy sector and the veracity is questionable. There is the need to improve this sector since by law information on energy use should be updated annually.
- Need to address the fact that some departments which give out information are not mandated to do this, the data presented are not credible, as it contradicts with data from other agencies

Improving science-policy communication

There is the need to package relevant information on climate change and linkages with development to reach policy makers in an effective way. Specific recommendations include;

- Understand the structure of Nigeria decision makers, as yearly activities of the government are influenced by election years. There was a suggestion to package the results of the dialogue into a documentary for decision makers.
- Promote climate change issues through ‘champions’ of Nigeria, i.e., senior citizens, serious minded politicians, or well known personalities such as footballers.
- Share policy briefs on airlines
- Involve the Ministries of Information and Communication in disseminating information, including radio packages and jingles. Need to send the Minister of Environment a package of information from this meeting.

- Make use of well established communication and extension units to farmers by agricultural development projects, as 75% of the population are farmers.

The contribution of Nigeria's science-policy dialogue to planning on climate change

The Science Policy dialogue availed scholars, policy makers, students, the media and other stakeholders the opportunity to have in-depth understanding of the IPCC AR4. It also afforded them the opportunity to harness their thoughts and actions in the efforts at adapting to impacts from climate change. Since climate change has become a topical issue, many stakeholders in Nigeria have been working in different directions, trying to achieve a common goal. The National Science Policy Dialogue therefore, presented a platform not only for scientists and policy makers to interact, but it also contributed to filling gaps by providing a multi-layered analysis of the science-policy interface in developing countries and making available much needed information on climate change. It also afforded them the opportunity to share experiences with their international counterparts

The Dialogue revealed a yawning gap between the scientific and policy communities in Nigeria and therefore resolved that efforts need be intensified to enhance interaction between the scientific and the policymaking communities in a more consistent and mutually reinforcing manner to ensure effective integration of climate change mitigation and adaptation knowledge into Nigeria's development strategies, as the country strives towards achieving her *Vision 20:20:20*. The need to also actively engage the media was also brought to the fore. The dialogue would therefore not be treated as a typical *talk-shop* but one in which there will be follow-up actions that will further create awareness in climate issues. In this regards follow up action would include replicating this dialogue in other parts of the country, and to make communications and syntheses from the dialogues easily accessible to all stakeholders.

Participants were unanimous on the need to engage and harness key stakeholders at multiple levels in order to develop and implement appropriate adaptation and mitigation measures. Success in achieving this goal is predicated on the ability to disseminate key messages, such as those from the dialogue, packaged in a form that is not only easily understood by all stakeholders but that is also action-oriented. The following outlets were identified as veritable means of reaching out to a wider audience:

- Electronic and Print Media- radio (private, community, public), Television, Newspapers
- Policy briefs, fact sheets, posters
- seminars, conferences
- Press releases and press conferences
- Internet (such as through a blog)

Other issues are succinctly captured in the communiqué issued at the end of the dialogue

In conclusion, participants assessed the Science Policy Dialogue as being timely, informative and rewarding. They resolved to continue to network to ensure that climate governance becomes deepened in all sectors of the economy and to ensure that the gap between the scientific and policy communities is bridged.

Annex 1: Communiqué

Communiqué arising from the Nigeria National Science-policy Dialogue on Climate Change organized by START, WARIMA & the University of Ibadan in collaboration with the University of Ghana, 23-25 February, 2010 at the University of Ibadan

Preamble

1. Climate Change has continued to feature as the most important environmental problem facing the globe today. It is affecting patterns of life and general living conditions of people all around the world. Climate Change is posing a great threat to development in virtually every country and subjecting a large proportion of world population to extreme shortages of food, water and shelter, and in some cases perpetual poverty as a result of global warming. Due to the importance the United Nations place on climate change, huge resources have been expended on the understanding of this phenomenon. The Intergovernmental Panel on Climate Change (IPCC) over the last two decades has succeeded in presenting scientific evidences through their Climate Change Assessment Reports to all, particularly world leaders on the urgency for immediate action to adapt and mitigate the impacts of climate change.
2. In consideration of the need to understand the findings of the IPCC Fourth Assessment Report, the West African Research Management and Innovative Association (WARIMA) and the Global Change System for Analysis Research and Training (START) hosted a Science-Policy Dialogue from 23-25 February, 2010 at University of Ibadan on the theme: “Integrating Climate Change Adaptation and Mitigation in Development Planning”.
3. The Dialogue featured presentations by IPCC Fourth Assessment Report authors and national experts on Climate Change who highlighted its impacts on different sectors of the economy and the options for Adaptation and Mitigation. There were exhaustive discussions on regional and national approaches of Adaptation and Mitigation to Climate Change.
4. The workshop was attended by over fifty participants including Federal and State Government Officials, Scientists from Nigeria and the International Community as well as the Private Sector.
5. **Observations:**
The workshop commends the efforts of the Federal Government in her commitment to international obligations to Climate Change. For instance the recent representation of Nigeria at the Copenhagen 2009 Summit was a clear demonstration of the government’s interest to protect the environment. The workshop noted the low attendance and participation of Policy Makers at the workshop.

Climate Change is a global phenomenon and Nigeria is noted as one of the most vulnerable countries in Africa. The workshop observed the following:

- i. There was good use of the media at this meeting. An article about the event appeared in a national daily newspaper on the second day and a press conference, with four national daily newspapers and Radio Nigeria, was held at the end of the dialogue at which a communiqué to politicians was relayed (see Appendix A). Baseline data and information on environmental and socio-economic issues in Nigeria are inadequate and where in existence the data could not be accessed by researchers and other end users.
- ii. There are insufficient personnel and facilities for modelling to forecast climate change and its consequences on Nigeria and the rest of Africa.
- iii. Baseline data and information on environmental and socio-economic issues in Nigeria are inadequate and where in existence the data could not be accessed by researchers and other end users.
- iv. There are insufficient personnel and facilities for modelling to forecast climate change and its consequences on Nigeria and the rest of Africa.
- v. Adverse health outcomes are likely to be greatest in low-income countries like Nigeria especially among poor people living in urban areas, elderly people, women and children, traditional societies, subsistence farmers, and coastal populations with resultant high morbidity and mortality.
- vi. It has been predicted that there will be an increased precipitation in the southern part of Nigeria and decreased precipitation in the north, however, temperature is likely to increase across the country.
- vii. Worldwide, more people are now living in the urban centres than in rural areas, overstressing facilities for decent living with increasing demand for social amenities some of which increase greenhouse gas (GHG) emission.
- viii. Natural combined with anthropogenic factors such as gas flaring, oil spills are creating environmental hazards which exacerbate the impacts of climate change along the coastal areas in Nigeria, affecting water quality, biodiversity, agriculture, energy and socio-economic activities.
- ix. Climate Change impact is also felt in the semi-arid regions of Nigeria exacerbating environmental degradation. The direct and indirect drivers of environmental degradation and ensuing desertification include: increasing population pressure, intensive agricultural land use, overgrazing, bush burning, extraction of fuel wood and other biotic resources.
- x. Globally, forested lands are cleared for agriculture, urban development and other purposes, decreasing the carbon sink in tropical rainforests. This has also resulted in the loss of the ecosystem services, which would seriously jeopardize attainment of the Millennium Development Goals (MDGs).

- xi. Negative impacts of climate change on freshwater are expected to outweigh the benefits, for instance, changes in water quantity and quality would impact food availability. This will require appropriate adaptation strategies.
- xii. Energy demand would increase globally especially in the developing countries. In Nigeria, the energy system is characterized by low energy technologies, high distribution and transmission losses and gas flaring, which ultimately result in increased GHG emissions. These provide a lot of mitigation options to reduce GHG emissions in the national energy system.
- xiii. Women and children as well as the poor in the society are particularly vulnerable to impacts of Climate Change.

6. Recommendations:

It is pertinent to note that very salient and robust issues were discussed which were of National attention. Based on proceedings from the workshop, the following recommendations are made:

- i. There should be a national depository for climate and allied data which can be easily accessed by researchers and development agencies.
- ii. The FGN should ensure increased capacity in the areas of information technology and modelling in all the segments of the economy to keep vulnerability at a minimum and build resilience in Local, State, and National levels.
- iii. There should be improved surveillance for emerging and re-emerging epidemic prone diseases, strengthening of primary health care system in line with MDG on health.
- iv. Suitable adaption and mitigation measures should be site specific; to respond to anticipated changes in rainfall and temperature in Nigeria. For instance, Nigeria should take advantage of predicted increase in precipitation in the South to increase food production in the country. Similarly, efficient water management systems are advocated for the Northern drier parts of Nigeria.
- v. Nigeria should pursue the international programme of housing for all as well as adequate provision of basic social amenities, so as to reduce the spread of communicable diseases and improve standard of living.
- vi. There should be establishment of Coastal zone management commission by FGN to address problems within the coastal zone.
- vii. Federal Ministry of Petroleum Resources should ensure that pipelines be made of alloys of higher tensile strength and hardness, and ensure strict adherence by the Oil companies
- viii. There should be implementation of existing forestry policy and laws to take care of deforestation.
- ix. Appropriate adaptation strategies to conserve freshwater bodies across the country should be put in place.
- x. The federal government should abide by her commitment to stop gas flaring by the end of year 2010. The government should also put in place an enabling environment for the private sector to be involved in implementing mitigation of GHGs from the energy sector.

- xi. Women should be empowered and be involved in decision making with respect to climate change issues.
- xii. Concerted effort should be made by government, NGOs, CBOs, FBOs and the private sector to bring proper awareness and education on environmental management to the general public.
- xiii. There needs to be proper integration of research findings with policy formulation and implementation.

Conclusion:

In conclusion, we hereby call on FGN and International Partners to adapt these recommendations in order to reduce the impacts of climate change and enhance sustainable socio-economic development in Nigeria.

Signed by:

Annex 2: List of participants and institutional affiliations

NIGERIA NATIONAL SCIENCE-POLICY DIALOGUE ON CLIMATE CHANGE

23-25 February 2010

University of Ibadan, Nigeria

In support of the project *‘Understanding the Findings of the IPCC Fourth Assessment Report, Climate Change 2007 – Integrating Climate Change Adoption and Mitigation in Development Planning’*

Sponsored by START, WARIMA, UNIVERSITY OF IBADAN and UNIVERSITY OF GHANA in partnership with the WMO, IPCC, UNEP and the European Commission

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