

*Full Length Research Paper*

# Climate change compliant microfinance delivery in Nigeria

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Accepted 13 August, 2010

Climate change refers to any long-term significant change in the average weather that a given region experiences. It upsets seasonal cycles, destroys ecosystems and water supply, causes sea levels to rise and affects agriculture and food production. The changes are already visible in Nigeria. Combating climate change can come by way of mitigation and adaptation measures. Researchers are intensifying effort at developing new strains of crops that would withstand impacts of extreme weather condition. Other adaptation measures include shifts in planting time. The adaptation measures proffered involve cost on the part of the farmers. The resources required for the acquisition and adaptation of the measures are beyond the reach of the farmers. Policy thrust, objectives and strategies of three policy documents were investigated to determine their provisions for farmers' financing of the coping strategies for climate change. The policy documents are the microfinance policy regulatory and supervisory framework, the National Economic Empowerment and Development Strategy (NEEDS) and the Nigeria's First National Communication. It was found that Nigeria climate change adaptation and mitigation measures are not equally matched with climate change compliant microfinance delivery mechanism. It is recommended that climate change tax be introduced as a resource envelop in aid of cost of coping with extreme weather events.

**Key words:** Climate change, adaptation, mitigation, micro finance delivery, climate change tax.

## INTRODUCTION

Climate change refers to any long-term significant change in the average weather experienced in a given region ([www.climatechange.wikipedia](http://www.climatechange.wikipedia)). Average weather includes average temperature, precipitation and wind patterns. It has to do with changes in the variability or average state of the atmosphere over periods ranging from decades to millions of years. In the context of environmental policy, climate change refers to changes in modern climate. The United Nations Framework Convention on Climate Change (UNFCCC) uses "climate change" for human-caused change and "climate variability" for other changes ([www.globalwarming.wikipedia](http://www.globalwarming.wikipedia)).

Global warming, a related term, is the increase in the average measured temperature of the earth's near-surface air and oceans since the mid-20th century and its

projected continuation ([www.globalwarming.wikipedia](http://www.globalwarming.wikipedia)). The intergovernmental panel on climate change (IPCC) stated that most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in man made greenhouse gas concentrations through an enhanced greenhouse effect ([www.globalwarming.wikipedia](http://www.globalwarming.wikipedia)).

According to United Nations Environment Programme (UNEP) economic sectors likely to face difficulties related to climate change include banks, agriculture, transport and others ([www.globalwarming.wikipedia](http://www.globalwarming.wikipedia)). Developing countries dependent on agriculture are particularly harmed by global warming.

Plant growth and productivity are most significantly determined by climate (Buchdahl, 2002). Increases in mean temperatures have some effect on climate. This effect alters factors limiting to plant growth such as temperature, precipitation, and nutrients supply. Changes in climate also engender increase in climatic extremes and reduced soil and water availability.

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In Nigeria, crop production is dependent on rainfall. Even where irrigation facilities exist, irrigation water supply is directly related to even rainfall distribution pattern. Other ways climate change affects agriculture include extreme weather events such as thunderstorms, heavy winds and floods. Furthermore, pests and crop diseases migrate in response to climate variations. For example, the tsetse fly has extended its range northward and poses a threat to livestock in the drier Northern areas ([www.spingerlink.com](http://www.spingerlink.com)).

Broad agreement among climate scientists that global temperatures will continue to increase has led some nations, states, corporations and individuals to implement actions to try to curtail global warming and or adjust to it ([www.globalwarming.wikipedia](http://www.globalwarming.wikipedia)). In order to maintain agricultural output, farmers will have to adjust as and when necessary to the changes imposed by climate change.

Following increasing global concern over the possibility of extreme weather events as a result of global warming researchers are developing new strains of crops that are hoped to withstand harsh weather condition. For instance, the consultative group on international agricultural research (CGIAR) has announced a renewed effort to intensify and streamline research to reduce developing countries vulnerability to climate change caused by global warming (Onyekakeyah, 2007). As a result, CGIAR in consultation with the global environmental change science community is refining a comprehensive climate change agenda that generates climate resilient innovations including crops bred to withstand heat, salt, submergence or water logging and drought.

The use of these climate resilient innovations will involve costs. These costs are in addition to the existing cost of production borne by the predominantly small-scale farmers whose livelihoods depend on agriculture. Financing the acquisition of these techniques comes under the purview of microfinance. Microfinance is the provision of loans, savings and other financial services to low income and poor people for use in small businesses (Okoye, 2005). According to Oji (2005), microfinance includes such services as micro credit provision, micro savings and other deposit investments, micro insurance, micro leasing and payment services. Oji (2005), went further to state that microfinance adopts the credit plus approach. It focuses not only on the provision of credit to the poor, it also includes integrating credit with other developmental activities such as community organizing and financial management.

## PROBLEM STATEMENT

Climate change can seriously affect agricultural production. Climate change brings about changes in

weather patterns which in turn give rise to imbalances in seasonal cycles, harm to ecosystems and water supply affecting agriculture and food production, causing sea levels to rise. Extreme weather events such as floods, landslides, drought and famine are caused by climate change. Climate change including global warming and increased climate variability result in a variety of impacts on agriculture ([www.climate.org/tropics/agricul/index.shtml](http://www.climate.org/tropics/agricul/index.shtml)). These impacts include:

1. A shift in climate and agricultural zones;
2. Changes in production patterns due to higher temperatures;
3. Changing precipitation patterns; and
4. Increased vulnerability of the landless and the poor.

These impacts in turn alter the finance plan of agro-based enterprises. For instance, shifts in climate and agricultural zones will necessitate farmers whose hitherto agriculturally productive land has been denuded and degraded on account of climate change to negotiate and enter into new contractual agreements for land. This obviously involves cost implications for the farmer who is confronted with an altered agro-ecology on account of climate change. The same argument also goes for any existing financial arrangement between lenders and borrowers of capital for a project whose life span is negatively impacted by climate change.

Decreasing the amount of carbon dioxide together with other greenhouse gases into the atmosphere is one of the ways to prevent the effects of global warming. Even if all carbon dioxide emissions stop now, the volume already emitted into the atmosphere will result in an enhanced greenhouse effect 50 years from now. Hence mitigation and adaptation to the effects are called for.

Adaptation defined as any action that seeks to reduce the negative effects or to capitalize on the positive effects of climate change ([www.climate.org/tropics/agricul/index.shtml](http://www.climate.org/tropics/agricul/index.shtml)), may be either anticipatory or reactive in nature. Development of heat-and drought-tolerant crop varieties is an example of anticipatory adaptation. Levels of adaptation can be grouped into two: Level 1 adaptations include:

1. Shifts in planting date (+ 1 month) that do not imply major changes in crop calendar;
2. Additional application of irrigation water to crops already under irrigation;
3. Changes in crop variety to currently available varieties more adapted to the altered climate.

Level 2 adaptations imply more substantial change to agricultural systems. This has the possibility of requiring resources beyond the farmers' resources. Level 2 adaptations include:

1. Investment in regional and national agricultural

infrastructure;

2. Policy changes at the regional and national levels.

Although, it has been pointed out that level 2 adaptations will require resources beyond the farmers' means, level 1 adaptations are not without costs. Shifts in planting date ultimately mean shifts in harvesting date and eventually shifts in food security. Additional irrigation water involves water charges. Nigeria will have to change its agricultural systems by way of adaptation to climate change. If the funds are not there, the adverse effects of climate change will be an unmitigated disaster. The cost implications of small-scale farmers' adaptation to climate change have not been addressed in Nigeria. This paper is aimed at highlighting the challenges of micro financing under the condition of climate change. It is expected to inform and influence policy relevant to microfinance as it relates to resource mobilization to the small-scale farmers to make them better able to adapt to the adverse effects of climate change.

## OBJECTIVES OF THE STUDY

The broad objective of the study is to highlight the climate change challenges confronting microfinance delivery in Nigeria. The specific objectives are to:

- (i) Investigate such relevant policy documents as the microfinance policy regulatory and supervisory framework for Nigeria; the Nigeria Economic Empowerment and Development Strategy (NEEDS); and the Nigeria's First National Communication under the United Nations Framework Convention on Climate Change and identify policy measures for financing small-scale farmers' mitigation and adaptation measures to climate change; and
- (ii) Make policy recommendations.

## RELEVANCE TO EXISTING ANALYSIS

The House of Lords Select Committee Affairs 2nd Report of Session 2005 - 2006 had published a report titled "The Economics of Climate Change" ([www.parliament.uk/parliamentary\\_committees/lords\\_economic\\_affairs.cfm](http://www.parliament.uk/parliamentary_committees/lords_economic_affairs.cfm)). The committee considered various aspects of the economics of climate change and called on the government to give HM Treasury a more extensive role, both in examining the costs and benefits of climate change and presenting them to the United Kingdom public. The committee restricted the scope of its investigation to certain aspects of the economics of climate. This it did recognizing the fact that the subject is potentially wide-ranging. The committee focused on:

- (a) The way in which scenarios of the future changes in

the world economy affect the projections of warming;

(b) Issues relating to the costs and benefits of tackling climate change; and

(c) The profile of economics in the governmental and inter-governmental processes relating to climate change.

The method of analysis was based on investigation and inquiry. The wide-ranging nature of the subject necessitated the use of different tools of analysis such as cost-effectiveness analysis, cost-benefit analysis, integrated assessment models and others. This paper is also based on investigation and enquiry into climate change challenges to microfinance delivery in Nigeria. The committee relied on written and oral evidence. This study dwells mainly on secondary data.

## RESEARCH METHODOLOGY

This paper focuses on relevant secondary data on Nigeria microfinance delivery in the face of financing the cost of climate change. Sources of relevant data include the Central Bank of Nigeria publications and reports, African Institute for Applied Economics publications and reports and the internet. Relevant literatures from these sources were critically reviewed. The extent to which these documents do or do not address the challenges of climate change to micro credit delivery were elaborated with a view to informing and influencing relevant policies.

## RESEARCH RESULTS

### The microfinance policy framework

The microfinance policy framework is designed to facilitate the provision of diversified microfinance services on a long term sustainable basis for the resource – poor and low income groups. Some of the objectives of the policy include the following:

1. Make financial services accessible to a large segment of the potentially productive Nigerian population which otherwise would have little or no access to financial services; and
2. Contribute to full transformation.

Some of the policy strategies are:

1. License and regulate the establishment of microfinance banks;
2. Promote the participation of government in the microfinance industry by encouraging states and local governments to devote at least one percent of their annual budgets to micro credit initiatives administered through microfinance banks;
3. Mobilize domestic savings and promote the banking culture among low-income groups; and

4. Broaden the scope of activities of microfinance institutions.

The policy objectives and strategies make no case for climate change concerns. This is in spite of the need to enable poor farmers cope with financing their enterprises which are inherently dependent on the vagaries of the weather. It is obvious that in addition to existing technology, climate change complaint technologies require funds for acquisition. The farmers are left on their own to cope with a situation which requires resources that the farmers simply do not have. Specified percentage of national, state and local government budgets should be devoted to agriculture on account of the realities of climate change. Disbursement should be supervised and monitored by relevant agencies to ensure effectiveness. Policy makers should appreciate the fact that climate change is an issue for finance and economics as much as for energy and environment.

### **The National Economic Empowerment and Development Strategy**

The NEEDS, Nigeria's poverty reduction strategy, elucidated the close linkage between environmental management and other major sectors of the economy including agricultural productivity. For instance agricultural productivity cannot be guaranteed in a degraded environment (NPC, 2005). In terms of policy formulation and agenda setting, NPC (2005) recognized extreme climatic events such as droughts, floods and climate change as among the critical issue under environmental management. The specifics of the agenda are enunciated in the environmental renewal and development initiative of which are "to take full inventory of Nigeria's natural resources, assess the level of environmental damage as well as design and implement restoration and rejuvenation measures aimed at halting further degradation of our environment". One of the key strategies is to evolve proactive management of extreme climatic conditions.

NEEDS expressed concern for climate change as spelt out in the foregoing policy thrust and sectoral strategy. However, the gap still remains: what financing plans are there for aiding the farmers in evolving proactive management of climate change? The finance functions of an enterprise involve raising funds, generating returns from the capital raised and also making returns to the suppliers of the funds. The finance functions take place within stipulated time and space. Realizing that agricultural enterprises are susceptible to adverse weather events the need therefore arises for strong and reliable financial plans in aid of adaptation and mitigation measures of climate change.

### **Nigeria's First National Communication**

The Nigeria's First National Communication under the United Nations Framework Convention on Climate Change highlights Nigeria's circumstance as with inventorization of greenhouse gases in the country. Additionally, the present and future vulnerabilities based on climate change scenarios are documented. Some adaptation measures to the impacts of climate change are also presented. In addition to highlighting constraints towards adaptation measures the document also includes brief project proposals of ensuring greater and deeper understanding of the subject matter of climate change, its impact and possible future adaptations.

According to the federal ministry of environment (FMENV) (FMENG, 2003) Nigeria agriculture, a main source of food, major source of industrial raw materials and foreign exchange and employs about 60% of the population, is predominantly rain-fed. As a result, agriculture is particularly vulnerable to climate change. Adaptation measures and coping strategies required in the livestock and crop production sectors include:

1. Alteration of planting calendar and crop choices;
2. Increased irrigation and number of watering points;
3. Use of terraces, ridges and minimum tillage;
4. Careful use of agrichemicals and supplementary feeding;
5. Preference of poly culture over mono culture;
6. Reduction of stocking rates or livestock density;
7. Restoration and expansion of grazing areas; and
8. Provision of effective extension services.

It should be pointed out that climate change also alters the finance plan of agricultural enterprises. For instance, alteration of planting calendar and crop choices in turn alters commitments to and calculations on repayment of loans on the part of the farmers. The suppliers of capital on their own part view farmers as credit risks and eventually embark on credit rationing that will effectively crowd out the framers. Consideration must therefore be taken of the clear and present climate change realities in drawing up finance plans for the agricultural projects. The Nigeria's first national communication contains national strategies to address environmental problems. These are as classified below:

1. Legal and institutional framework
2. Capacity building and institutional strengthening
3. Private initiatives
4. Collaboration with international organizations and
5. Financial support.

According to FMENV (2003), the federal government has been making efforts to provide funding to back up the

country's participation in the work of the various relevant organizations. Part of the efforts includes the ecology fund through which ecological disasters are addressed. Like the two other policy documents, the Nigeria's first national communication has no specific financial coping strategy in aid of farmers against climate change. Even the stipulated financial support strategy tends to be channeled to funding participation in the relevant organizations. The ecological fund is essentially for post mortem purposes as it addresses ecological disasters. Because agriculture is vulnerable to climate change, and in line with the adaptation measures and coping strategies enunciated, financing plans for the sector should to all intents and purposes include variable periods of moratorium and pay back. This thinking is more in support of the climate coping strategy of alteration of planting calendar and crop choices.

### Conclusion

Measures have been proffered. In both measures something has to give; cost must be borne, climate change challenges to microfinance in Nigeria have no mitigation nor adaptation measures put in place by policy makers. In addition to the business and financial risks inherently associated with agricultural production, prescribed adaptation and mitigation measures have necessitated more concerns to the investment and finance decisions in agriculture. Policy makers should reassess the microfinance delivery mechanism with a view to making them adaptable to the realities of climate change.

### POLICY IMPLICATIONS

Climate change is of concern for finance and economics as well as for energy and environment. This paper is expected to influence policy in the following ways.

(1) Climate change tax should be introduced as a resource envelope in aiding the poor farmers whose livelihoods are ravaged by climate change.

(2) The creation of climate change fund is also proposed. This fund will be administered specifically to enable farmers acquire adaptation and mitigation technologies. It will also be used to fund extension services targeted towards the dissemination of the climate change adaptation and mitigation measures.

(3) Farmers should be made more aware of the climate change challenges to microfinance delivery. This can be done through the complementary services approach of microfinance delivery mechanism.

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