

Promoting climate resilient agriculture and sustainable livelihoods for small-scale farmers in Niger Delta Communities: Example of Delta State

About CPED Policy Brief

Centre for Population and Environmental Development (CPED) policy brief series is designed to draw attention of stakeholders to key findings and their implication as a research is conducted. The general objective is to contribute to a body of evidence that can influence the development, modification and implementation of policies across various sectors in Nigeria. The primary focus, therefore, is to outline actionable recommendations for policy influence and result utilization by government institutions and other key stakeholders in Nigeria.

This publication is supported by Think Tank Initiative (TTI) arm of International Development Research Centre (IDRC) and Management of Centre for Population and Environmental Development (CPED), Benin City, Nigeria.

Introduction

Nigeria's Niger Delta region is the third largest mangrove and freshwater swamp-forest area in the world. It delivers a wide range of ecosystem services that contributes to the well-being of millions of people. Oil exploration in Nigeria's Niger Delta has been on for over 50 years without any corresponding effort to renew the environment. The region has become one of the most degraded and endangered in the world. The United Nations Environmental Programme (UNEP) report on environmental degradation in the region exposes not only the highest levels of neglect but conscious abuse of the very resources and the environment that ultimately decides the fate of all human beings within its remote or immediate influence. Over 80% of people in Niger Delta are directly dependent on natural resources and are engaged in biodiversity related jobs and occupation, such as farming, fishing, hunting, logging, livestock rearing and wood processing. The agricultural practices of the farmers have brought destruction to the Niger Delta's biodiversity. Slash-and-burn provides a basis for subsistence agriculture, responsible for the burning of forests and woodlands and the depletion of nutrients and organic matter in the soil. Local communities, especially the small scale farmers among them that depend on natural resources for their livelihoods, are particularly at risk. These communities and the small scale farmers need immediate support to strengthen resilience and increase their ability to manage climate change risks. While there are some community-based actions in response to climate variability in isolated parts of Nigeria, the Niger Delta region has limited initiatives underway that address human-induced climate change.

The preferred solution is to support communities to better manage and adapt to climate change pressures in the context of food

Background

This policy brief is based on the findings of CPED on-going implementation research on "*The Impact of Climate Change on agricultural production in Nigeria*". The project is one of the small scale implementation research programmes with support from the *Think Tank Initiative* funded by Canada's *International Development Research Centre (IDRC)*, Ottawa and other donors. The overall objective of the action is to contribute to the eradication of extreme poverty and hunger among small-scale farmer families in rural communities of Nigeria through sustainable management of natural resources leading to improved food security and enhanced livelihood options to enhance resilience against climate change and other disasters. This policy brief articulates proposals that will enable policy makers to strengthen the ability of small scale farmers and their communities in the Niger Delta region to make informed decisions and manage likely climate change driven pressures on food production.

security through community-based adaptation. It is essential to put small-scale community farmers at the centre of the discussion/actions on climate and agriculture, and empower them to work on climate resilient agriculture and thus improve their livelihoods. In addition, decision making for adaptation implementation needs to be systematic and transparent, and grounded on robust socio-cultural, ecological and economic assessments of vulnerability and coping capacity. An institutional and policy setting must also be developed and/or strengthened to support communities with risk management in the context of climate change uncertainties. It is in this context that this policy brief articulates proposals that will enable policy makers to strengthen the ability of small scale farmers and their communities in the Niger Delta region to make informed decisions and manage likely climate change driven pressures on food production.

Perspectives on the findings of response of smallholder farmers to climate change in Delta State

The findings of the survey by CPED in Delta State communities show that a reasonable proportion of the respondents in the various communities have some rudimentary knowledge of climate change, its causes, and impacts. Climatic data analysis of rainfall amount, rainy days and mean air temperature confirm strong signals of evidence of climate change in Delta State. Respondents perceived climate change as unpredictable rainfall patterns, heat stress, late onset of rains and high intensity rainstorms among others. One important finding of the study is that a large percentage of Delta State population lack science-based knowledge of climate change, although they could finger its impacts. Therefore, rigorous awareness creation using science-based information is needed as the starting point for policy aimed at effective adaptation by all stakeholders to climate variability. Due to the religious nature of the people, it is suggested that religious institutions be employed, alongside other outlets, to disseminate climate change information as is done with HIV/AIDS, Polio, Immunization and Roll Back Malaria Programmes.

The second policy-related finding of this study is that available weather information gathering institutions do not make weather/climate information available to the public. Climate information from the media is not addressed to the particular needs of the farmers and fisher folks. Therefore, policy is required to ensure that relevant climate-based information is available on time to the different end-users. It is recommended that the mandates of existing weather stations be modified to include dissemination of climate information to the farmers. Community-based weather/climate information stations should be established. School-based geographical gardens should be established with a qualified official, preferably a school teacher with background in Geography or a similar subject area.

Climate change hazards/impacts identified in the study area include accelerated gully erosion, landslide, flooding, heat stress, changes in the onset and cessation of rainfall, and windstorm damage among others. Vulnerability of households to the impacts of climate change in the study area is determined by age of household head, access to credit, income of household, dependency ratio, value of farm output, land ownership status and medical expenses. Men and women are equally vulnerable to the impacts of climate change. The cost of impacts of climate change hazards such as flooding, erosion and heat was higher for women than for men. Also the cost of adaptation to climate change impact was higher for women than for men.

Measures taken by communities to adapt to climate change include economic diversification, dry season farming, late crops planting, agricultural diversification, mixed cropping, planting on ridges and mounds and netting of fish ponds, and construction of gutters and flood reception pits among others. The study reveals that indigenous knowledge of climate is not preserved or widely appreciated in the communities. This knowledge may be facing the danger of extinction. The use of indigenous knowledge should be promoted through patronizing the services of custodians of this knowledge. This should be followed by a comprehensive study on the existence of this knowledge which should lead to integration of this knowledge into climate change information systems.

Another finding of the study is that local people have limited capacity to adapt to the impacts of climate change. This poses immediate challenges to policy makers as well as development agencies. Policies to enhance the capacity of communities are required. It is recommended that a climate change component be introduced into the various adaptation measures identified by the respondents. As a part of this campaign, the planting of shade trees around homes as well as avenues are normally carried out. Campaigns should include management of the shade trees so that they do not become a source of disaster in the communities from windfall. A Community Climate Change and Environmental Workers Programme should be established. Technical workers in this scheme are to work with the communities to establish and manage avenues and parks.

The results of the study indicate that the upland and wetlands farming households are vulnerable to flooding, windstorms, drying up of streams, erosion and other impacts. The wetland and fishing communities are, in addition to these climate hazards, also exposed to sea level rise. Several factors are rated as “very important” in exposing the farmers and fisher folks to the impacts of climate hazards. These are low agricultural output, non-availability of irrigation facilities, insufficient farm labour, and lack of agricultural commodities/food storage facilities, low income and inadequate means of transportation, particularly in the fishing communities. Besides the current climate-related hazards, farmers and fisher folks said that mudslides and landslides can occur in their communities.

Recommendations on enhancing small holder farmers capacity to respond to climate change in Niger Delta

We recommended four potential areas for policymakers to pursue that could help to increase agricultural productivity and improve livelihoods of small scale farmers in the short term. First, there is an urgent need to improve farmer extension services to provide technical information and training on the best management practices for planting, harvesting and crop storage, to facilitate the adoption of new management practices and to encourage farmer-to-farmer learning. Strengthening extension services has been shown to be particularly effective at convincing farmers to change farming practices in response to climate change. Our results show that less than 10% of farmers currently have access to technical support on agriculture and that the adoption of management practices aimed at reducing vulnerability to climate risks is low, despite the prevalence of these risks. These results indicate that there is significant scope for relatively low-cost farmer extension services to improve the uptake of such practices and provide ongoing technical support. For example, changes in crop planting schedules, management practices and varieties used, as well as the diversification of crops planted, are all low-cost options for reducing agricultural risk, which could be widely promoted through extension services and communication campaigns. Careful screening of these strategies and participatory action-oriented research with farmers will be needed to jointly identify and implement adaptation options that are feasible and effective and to ensure that these strategies do not have any negative or unexpected impacts on farmer livelihoods.

The second low-cost opportunity for policymakers is to invest in small-scale infrastructure, such as improved irrigation systems or crop storage facilities, which can help farmers to increase production and better protect their harvests. Smallholder farmers are very keen to build local infrastructure but rarely have the necessary capital to finance these activities. Governments and organizations working in remote areas should seek to further promote such small-scale infrastructure through the development of small-scale grants and credit to farmers or local farmer associations.

The third option for improving farmer livelihoods is to increase access to credit and safety nets during lean periods and following catastrophic events, such as extreme weather events or disease and pest outbreaks. In these extreme situations, many farmers currently depend on informal support from families and friends, as formal safety nets are lacking. There is a critical need to establish formal safety nets and also strengthen informal safety networks to ensure that farmers can access support when they need it. In addition, more

innovative solutions are needed to facilitate access of farmers to financial services in terms of need. New services, such as mobile telephone payment systems that are now available even in remote areas, provide an important new, cheap and secure way for family and friends to exchange money even when they are not physically close to each other. Governments should work with the private sector mobile telephone companies to improve mobile coverage and low cost access to such services. Community savings and loans groups in which members pool resources and lend to members in need are also a low-cost solution that could help to reduce the worst impacts of the lean season or extreme weather events, while creating local funds that farmers can tap into for other development activities.

The final priority for policymakers is to safeguard the natural ecosystems that smallholder farmers use as safety nets. Forests, wetlands, rivers and other natural areas provide critical ecosystem services to the people of the Niger Delta region, including the provision of firewood and charcoal, water, wild yams and materials for house construction, among others. These services are important year-round, but particularly following catastrophic events when farmers turn to the forests for food and materials to rebuild their damaged homes. Efforts that conserve, restore or sustainably manage these natural ecosystems are therefore crucial for sustaining farmer livelihoods.

Conclusion

Farmers and fisher folks in the communities of Delta State are already feeling the effects of climate change. Exposure to floods and rainfall variability are only predicted to get worse as the impacts of climate change intensify. The consequences of these hazards on the well-being of the primary producers are severe, inducing intense episodes of food insecurity, which will force them to engage in erosive and unsustainable coping and adaptive strategies. Substantial improvements in the resilience of rural farmers and fisher folks are needed to address the current and increasing vulnerabilities of subsistence farmers and fisher folks in the communities of the region. The most effective way of reducing the vulnerability of farmers and fisher folks is through general adaptation strategies that focus on improving their overall well-being.

Acknowledgment

The report used in this policy brief was edited by CPED Executive Director Professor Emeritus Andrew Godwin Onokerhoraye and CPED communications team.

ABOUT CPED

The Centre for Population and Environmental Development (CPED) is an independent Think Tank organization dedicated to promoting sustainable development and reducing poverty and inequality through policy oriented research and active engagement on development issues. CPED is located in Benin City, Edo State, Nigeria. The Organisation was formally registered in Nigeria by the Corporate Affairs Commission (CAC) in 1999. CPED is a member of different Think Tank Networks including the “West Africa Think Tanks Network (WATTNet)”, and also a beneficiary of the Think Tank Initiative (TTI), a multi-donor program of the *International Development Research Centre (IDRC)*, Canada. The Centre’s Executive Director is **Professor Emeritus Andrew Godwin Onokerhoraye**, vice chancellor University of Benin (1992-1998).

CPED core programme areas can be broadly categorized into: Action Research; Policy Engagement, Communications and Advocacy; Intervention Programme and Capacity Building for Policy makers, CSOs and Mentees from allied institutions. CPED research agenda covers (1) Climate change with particular reference to the wetland and coaster regions (2) Gender and development (3) Health Systems and Health Care Service Delivery (4) Research on Governance and Development (5) Peace Building and Development in Niger Delta Region (6) Growth, Development and Equity.

CPED has three major organs designed to achieve its mission as follows: Board of Trustees; Committee of fellows and Management. The Board of Trustees comprised of people who have distinguished themselves in public and private service and are mainly interested in contributing to development in Nigeria through policy research and intervention activities. The Board of Trustees has the responsibility of assisting the organization in raising funds for its activities and in monitoring all its programs and expenditure. The Board meets every quarter to review the activities of the Centre. CPED committee of fellows comprise of Nigerian-based researchers and those based abroad. The fellows are involved in the various research, advocacy and intervention projects of CPED both at the proposal development stage and during execution. Most members of the Board of Trustees are also fellows of the Centre since they are involved in some of the action research and intervention project activities that are in their area of specialization. The executive Director of the Centre is the head of the management of CPED and he supervises the overall activities in each of the Divisions.