

## CPED POLICY BRIEF SERIES 2020 NO. 3

### SUSCEPTIBILITY OF WOMEN AND CHILDREN TO INDUCED INFECTIOUS DISEASE INCIDENCE DUE TO CLIMATE CHANGE IN THE NIGER DELTA COMMUNITIES

By

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#### PROJECT PROFILE

**Project Title:** “Empowering women as key leaders in promoting community-based climate change adaptation and disaster risks reduction initiatives in Niger Delta region”

**Funding:** International Development Research Centre (IDRC)

**Implementing Partners:** Centre for Population and Environmental Development (CPED), Intervention Council for Women in Africa (ICWA) & Delta State Ministry of Environment (DMoE)



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## PREFACE

This policy brief is the fifth in the series of communication to policy and decision makers on the on-going research project of the *Centre for Population and Environmental Development (CPED)* titled “empowering women as key leaders in promoting community-based climate change adaptation and disaster risks reduction initiatives in Niger delta region” funded by the *International Development Research Centre (IDRC)* under its climate change program.

CPED’s policy brief series is designed to draw attention to key findings and their policy implications as projects are being executed. This edition which explores how susceptible women and children are to infectious diseases due to climate change with a view to reducing or eliminating such vulnerabilities is based on the analysis of the research reports and intervention activities in ten target Local Government Areas where the climate change research project is being implemented in Delta state.

We are very grateful to IDRC for the support to implement this project. We are particularly grateful to the Programme Officer in charge of our project, Dr. Melanie Robertson, for her support to CPED which has enabled the Centre to continue implementation of the research project and the publication of this policy brief. We also appreciate the cooperation of leaders of various groups and community-based organisations in the target communities for their collaboration with CPED in the on-going implementation of the project.

## INTRODUCTION

Climate change has become a major global challenge. Human health is profoundly affected by climate change and its associated impacts. Altered patterns of rainfall and increased frequency of extreme weather events have been known to influence the incidence of water-borne gastrointestinal and respiratory diseases.

Climate change alters the relations between microbes, insect vectors, animal reservoirs of infectious diseases and humans and will alter the burden and distribution of infectious diseases of public health importance. Nigeria is a major exporter of oil with most of the exploration activities taking place in the Niger Delta, releasing green - house gases into the environment. At the same time, the low-lying Niger delta is particularly vulnerable to the potential effects of sea level rise and in effect on infectious disease incidence.

Climate change induced infectious disease vulnerability is not gender or social class neutral as the degree and effect varies with location, gender and social economic class. For women and children living in the rural areas of Niger Delta, their location, gender as well as social economic class jointly predisposes them to climate change-induced infectious diseases, making them to be more susceptible than their male counterparts within their communities, women and men in other locations as well as people of different economic class.

## Climate Change, Infectious Diseases and Human Health in the Niger Delta Communities

Infectious diseases induced by climate change can be vector-borne diseases, water-borne diseases and food-borne diseases. It has been estimated that 580 rivers of the Niger Delta region are prone to flooding, and thus, affect 2, 148 towns and cities. Delta state has the highest communities at risk when water overflow their bank to about 500m.

**Table 1. Percentage Distribution of Respondents according to Knowledge/experiences about increase in the magnitude of flooding**

Ecological Zones	Yes (%)	No (%)
Mangrove Swamp	89.8	10.2
Freshwater Swamp	75.3	24.7
Lowland Rainforest	64.5	35.5

*Source: CPED Climate Change Project Research Report, 2019*

**Table 2. Percentage Distribution of Respondents according to Knowledge/experiences about increase in duration of flooding**

Ecological Zones	Yes	No
Mangrove Swamp	87.8	12.2
Freshwater Swamp	55.7	44.3
Lowland Rainforest	60.5	39.5

*Source: CPED Climate Change Project Research Report, 2019*

Tables 1 and 2 above show the results of household survey in Delta state confirming increase in the magnitude of flooding over the years in rural communities of Delta state. Respondents in the three ecological zones pointed out that they observed increases in the magnitude of flooding and in the duration of flooding.

result in an inevitable increase in malaria transmission.

**Increased Importation of Vectors or Animal Reservoirs to New Regions:** In the advent of extreme weather event such as flooding, disease vectors could migrate to areas where they were not originally present. This could in turn lead to importation of diseases to regions originally free of such diseases.

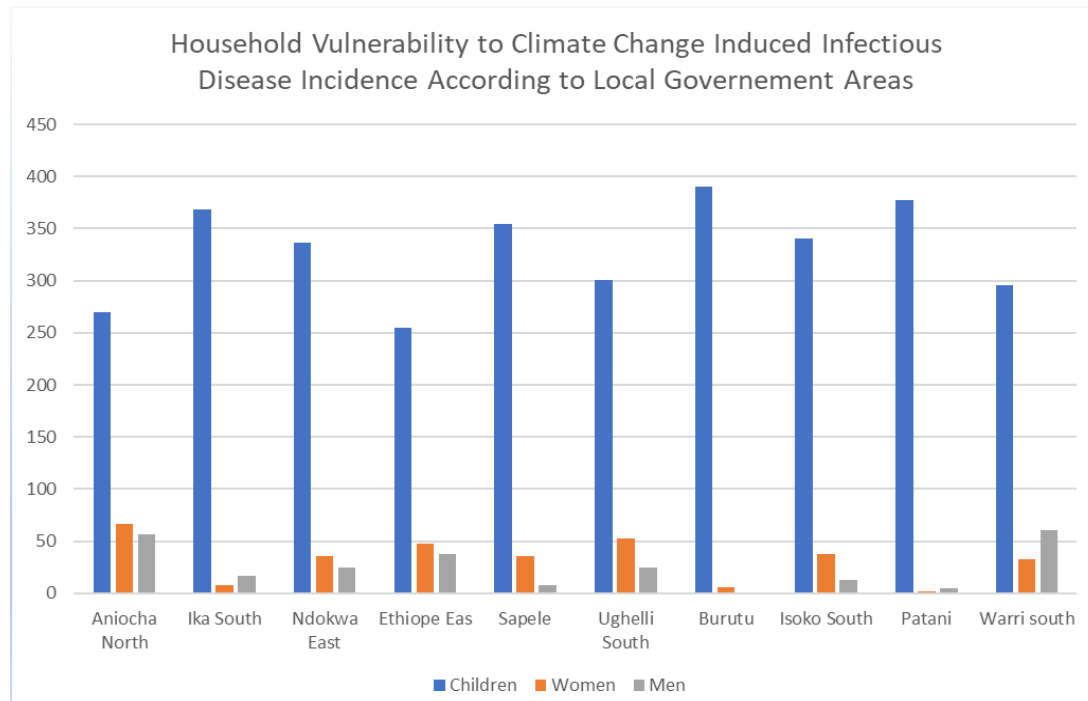


Figure 1: Household respondent to climate change Induced Disease Incident in Delta State LGAs  
Source: CPED Climate Change Project Research Report, 2019

How has this contributed to the increase in infectious diseases in the region over the years?

**Abundance of Animal Reservoirs or Insect Vector:** Flooding provides a large body of stagnant water that serves as breeding sites for vectors and reservoir hosts, increasing their abundance which could lead to more frequent outbreaks of diseases. An increase in available breeding sites for vectors will

Figure1 above shows that children and women are most at risk to contacting infectious disease incidence in Delta state due to climate change. Communities in Burutu, Patani, and Ndokwa East LGAs, among others, are worst hit by the devastating effects of flooding, and therefore, are prone to infectious diseases. Changes in climatic conditions also permit the establishment of novel imported infectious diseases in regions that were previously unable to support endemic transmission. Due to excessive flooding

residents are forced to migrate from their region to a safer place. Forced migration of environmental refugees could enhance transmission of diseases due to intermingling of populations with introduction of novel diseases into non-immune populations. Climate change may also influence the migration patterns of disease host.

## **Factors Predisposing Women and Children in Niger Delta to Infectious Diseases**

### *House Quality:*

Most of the houses in the surveyed region were of low quality or partially damaged due to flood or lack of maintenance attributable to poverty. Stilt houses are also common in the surveyed region, particularly in the mangrove swamps. These houses are situated at the river banks and have perforations in between them that could serve as a gateway for disease vector. This in turn makes such houses easily accessible to disease vectors. The women in these rural communities are usually stressed, working round the clock to provide for their households. This stress in turn leads to low immunity and ultimately susceptibility to infections. Children at the same time do not have well developed immune system and therefore bear the brunt of the diseases.

### *Access to Clean Drinking Water:*

Climatic conditions affect water availability and quality. Extreme weather events can damage or exceed the capacity of water

infrastructure, increasing the risk that people will be exposed to contaminants. Runoffs and flooding resulting from increases in extreme precipitation will contaminate water bodies that serves as drinking water for the people. When this occurs, women and children are disproportionately affected. This is because children generally have low immunity to infections and also are not able to discern water that is unsafe for drinking. When the children fall sick, the women are also more affected than the male folks as they serve as caregivers, unable to carry out income generating activities.

### *High Exposure to Insect Vectors:*

Most activities carried out by women as well as children in rural communities usually take place in the outdoor. For women, these activities include cooking, washing, fetching of fire wood and bathing of children and processing of farm products. For children, the outdoor environment serves as playground for them. While women and children engage in these activities, the men could be indoors relaxing as the women prepare the meal or go about visiting friends. This therefore makes women and children to be more prone to getting infected by the disease-causing organisms.

### *Proximity to Flood-Prone Area:*

The Niger-Delta is a low-lying area surrounded by bodies of water. This makes the area susceptible to flooding. When flooding occurs, stagnant water serves as breeding grounds. This predisposes women and children to infections as they carry out

activities such as washing, cooking outdoor, close to such stagnant water.

### *Poverty:*

Poverty is not gender-neutral. Women even in rural areas are poorer compared to the male folks. Due to poverty, these women and children could be exposed to infectious disease vectors as they may not be able to afford protective measures such as the use of insect repellants, nets even when they have it in mind to do so.

### *Lack of Appropriate Waste Disposal System:*

In rural communities, Sewage and solid waste are not properly disposed as they are mostly disposed in water bodies that also serves as drinking water. This predisposes the rural dwellers to water-borne infectious diseases with women and children being more at risk of the disease burden.

## Actionable Recommendations

### *Strengthening Existing Health Infrastructure:*

The best defense against increases in infectious disease burden related to climate change lies in strengthening existing health infrastructure. There is also the need for enhancement of public health infrastructure particularly related to disease surveillance and outbreak forecasting. The Delta State, and indeed all the states in the Niger Delta

region should as a matter of urgency establish or improve its disease surveillance systems as more rains and heavy flooding have been predicted to affect the region in the coming years.

### *Promotion of Vector Control:*

There is need for government and other well-meaning individuals to provide vector repellants, protective nets and sanitizers to rural dwellers from time to time.

### *Improved Research:*

Interdisciplinary research between health professionals, environmental scientist, ecologists, and geographers seeking to understand climate change and its impact on infectious disease rise will go a long way in protecting the people against such diseases.

### *Create Awareness on Climate Change:*

Government should raise awareness of the people on the adverse effect of climate change and how it relates to health. Early warning system on infectious diseases based on water levels in rivers or dams or other meteorological parameters should be made available or be established at the community level. Support for the use of hydrological monitoring of water bodies should be reviewed from time to time.