



# THE COST OF ADAPTATION TO CLIMATE CHANGE AND ITS RELATIONSHIP WITH ANNUAL YIELD IN IDDO LOCAL GOVERNMENT AREA OF OYO STATE

Ibrahim, K.A., Balogun, T. Olabanji., Ajayi, O. Esther., & Olajide., O. Adeola.

Department of Agricultural Economics, University of Ibadan, Nigeria

## INTRODUCTION

Climate change is viewed as an environmental, social and economic challenge on a global scale (Scholze et al., 2006; Mendelsohn et al., 2006).

Africa is perceived to be the continent that is the most vulnerable to climate change, specifically, West Africa is one of the most vulnerable to the impacts of climate change.

Climate change is already having an impact in Nigeria. Weather-related disasters have become more frequent in the past four decades and the trend continues.

Temperature is a climatic factor which has a ripple effect on other climatic factors if any change occurs. Rainfall is the climatic factor that has been affected to a very large extent by changes in temperature

Cultivation and yield of cassava is dependent on climatic variables like rainfall, temperature and length of sunshine. Even though cassava to an extent is resistant to weather variations, it can be severely affected with increased severity of the effects of climate change.

Adaptation measures always seek to reduce the risks and impacts of climate change, to moderate the negative effects, and to exploit beneficial opportunity. Adaptation is a proactive process because it envisages possible future changes in the climate.



## MATERIALS AND METHODOLOGY

The study made use of primary data obtained through the distribution of structured questionnaires to 110 cassava farmers in the study area.

Descriptive statistics were used to analyze socioeconomic characteristics of respondents with the aid of mean, maximum and minimum values and tables.

Descriptive statistics were used for adaptation and mitigation practices adopted by respondents, and their level of knowledge on climate change.

Multiple Regression analyses were used to check for the relationship between the cost of climate change adaptation on overall farm productivity.

## RESULTS

The average age of the respondents was 49 years while 32.7% of the farmers were females and 67.3% were males.

The results revealed that farmers are observant of the changes that occur on their farms due to climate change.

The cost of adapting to climate change has a significant negative effect on annual production and does not have any significant effect on the annual income of farmers.

### CONCLUSION

- The study was based on a micro-level analysis of adaptation and its effects on the yield and income of cassava farmers in the study area.
- Farmers do not perceive formal education as very important due to the fact that over 50% of them lacked formal education. This is perceived to have had effect on their general perception and level of knowledge about climate change.
- The study also revealed that the farmers adopt adaptation strategies mainly because they want to increase their yield and income.
- The average cost incurred by cassava farmers on adaptation strategies which is also referred to as the 'Cost of adapting to Climate Change' was calculated to be fifty-two thousand, one hundred and fifty-five naira.

Regression model of the factors affecting the annual production					
Variables (Constant)	Linear	Semi-log	Double log	Exponential	
1. Cost of Migration to better land	164621.029 (0.00)	156110.527 (0.00)	11.947 (0.000)	12.011 (0.00)	
2. Cost of Planting resistant cassava stems	-0.605 (0.165)	-1267.578 (0.269)	-0.008 (0.226)	-3.737 (0.116)***	
3. Cost of Mixed cropping	-1.417 (0.009)*	-4073.381 (0.015)**	-0.025 (0.006)*	-9.166 (0.002)*	
4. Cost of increased fertilizer use	0.245 (0.291)	-162.105 (0.921)	0.00 (0.919)	5.011 (0.256)	
5. Cost of Increased Herbicide use	0.245 (0.559)	772.612 (0.578)	0.003 (0.636)	1.118 (0.625)	
6. Cost of Change of planting date	0.529 (0.400)	3081.894 (0.232)	0.018 (0.207)	2.695 (0.431)	
7. Cost of increased Pesticide use	-0.602 (0.660)	134.959 (0.900)	0.001 (0.909)	3.207 (0.667)	
	-5.835 (0.061)***	--	--	-3.798 (0.026)**	
*=Sig at 1%		R <sup>2</sup> = 0.145	R <sup>2</sup> = 0.109	R <sup>2</sup> = 0.129	R <sup>2</sup> = 0.183
**=Sig at 5%		Adj R <sup>2</sup> = 0.087	Adj R <sup>2</sup> = 0.056	Adj R <sup>2</sup> = 0.078	Adj R <sup>2</sup> = 0.127
***= sig at 10%					
b 0.050 0.013 0.000 0.000					
Regression model of the factors affecting the annual income					

Variables	Linear	Semi-log	Double log	Exponential
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Regression model of the factors affecting the annual income				