Assessment of Poor Resource Farmers' Level of Awareness on Climate Change and Adaptation/Mitigation Strategies in Some Selected Rural Areas in Oyo State, Southwest, Nigeria

ADETAYO, ADEWALE. O.

Institute of Agricultural Research and Training, Obafemi Awolowo University, P.M.B. 5029, Moor Plantation, Ibadan, Nigeria.

Abstract

Climate change is a phenomenon that is currently in dire need of a wide range of publicity and other measures in order to adapt and mitigate its effect on the society. This study examined the level of climate change awareness among the poor resource farmers in some selected local government areas of Oyo state. A well structured questionnaire titled "Climate Change Awareness Questionnaire (CCAQ)" was administered on a sample of 240 households. Data collected were analyzed using descriptive statistical tools such as frequency counts and percentage as well as cross table analysis. Findings indicated that the level of climate change awareness was generally low among the resource poor farmers.

Keywords: Climate change, Awareness, Adaptation strategies, Mitigation strategies.

INTRODUCTION

Human welfare is inextricably linked to the earth's climate. Similar to other forms of life, the manner in which human beings respond to climate change is critical not only to survival, but also to wellbeing (IPCC, 2007). Climate change is often used to describe any kind of change in climate that may be natural or human-induced (Pradhan, 2002). Climate-related risks are the major causes of human sufferings, poverty and reduced opportunity, which will lead to large scale human development reversal (Okunade and Ademiluyi, 2009). Frequent incidents of extreme weather events have left no continent untouched. All races, all colours, all regions, all continents have in recent times experienced, seen or heard of calamitous incidents (flooding, droughts, desertification, hurricanes, glacier melt, etc). In recent years above normal rainfall amounts have, however, been recorded in many locations. In Nigeria particularly, changes in the onset and cessation dates of the wet season have been recorded with more areas of the country experiencing rainfall instabilities. Despite all these noticeable consequences of climate change in Nigeria, only few understand the causes, only few have any idea of what to do about it, some don't even agree that it exists.

Adaptation measures are designed to assist the vulnerable to cope with and reduce the effects of the negative impacts while mitigation actions are designed to reduce the severity or/and prevent the global warming phenomenon. Adaptation and mitigation to climate change requires local knowledge, local competence and local capacity and within local governments (Ayodele, and Akintola, 1990).

Climate specialists have reportedly pointed out that a solution to climate change problem will require climate change awareness and its proper understanding. In order to fast-track the awareness towards climate change, it is necessary to know people's level of awareness, an issue that is a vital component of long-term policy and planning. The objectives of this study is to determining the level of awareness of poor resource farmers about climate change and identify the farm-level adaptation and mitigation strategies adopted by farmers and their relative effectiveness *vis-a-vis* determining the possible area of research intervention on adaptation and mitigation strategies to climate change.

MATERIALS AND METHODS

The study was carried out in four selected local government areas (Ido, Oluyole, Ona-ara, and Akinyele) within Oyo State. Oyo State is an inland state in south-western Nigeria, with its capital at Ibadan. It is bounded in the south by Ogun State and in the north by Kwara State, in the west is bounded partly by Ogun State and partly by the Republic of Benin while in the east it is bounded by Osun State (Fig 1). These locations were selected based on their classification as rural areas. Ido is local government area in Oyo state with its headquarters in Ido town. It has an area of $986km^2$ and the population of 103, 261people (NPC, 2006). Idi-Ayunre is the headquarters for Oluyole Local Government with land area of 629 km^2 and a population of 2,002,725 (NPC, 2006). Ona-Ara Local Government has its headquarters at Akanran with land area of 290 km^2 and population of 265,059(NPC, 2006), while Akinyele has its headquarters at Moniya. It occupies a land area of 464,892 km^2 with a population of 239,745 (NPC, 2006). The main economic activity of the inhabitants in all these selected areas is farming.

Respondents were selected by multi-stage sampling techniques across the selected agro-ecologies of the state. Data were collected through a field survey using well structured questionnaires titled "Climate Change Awareness Questionnaire (CCAQ)" which were administered on a sample of 240 respondents selected by probability proportional to size of household along the sampling stages.

Data were collected with the aid of interview schedule designed to elicit information on socioeconomic and

demographic characteristics of respondents, level of awareness, mitigation and adaptation strategies to Climate Change and were analyzed using descriptive statistical tools such as frequency counts and percentage as well as cross table analysis.
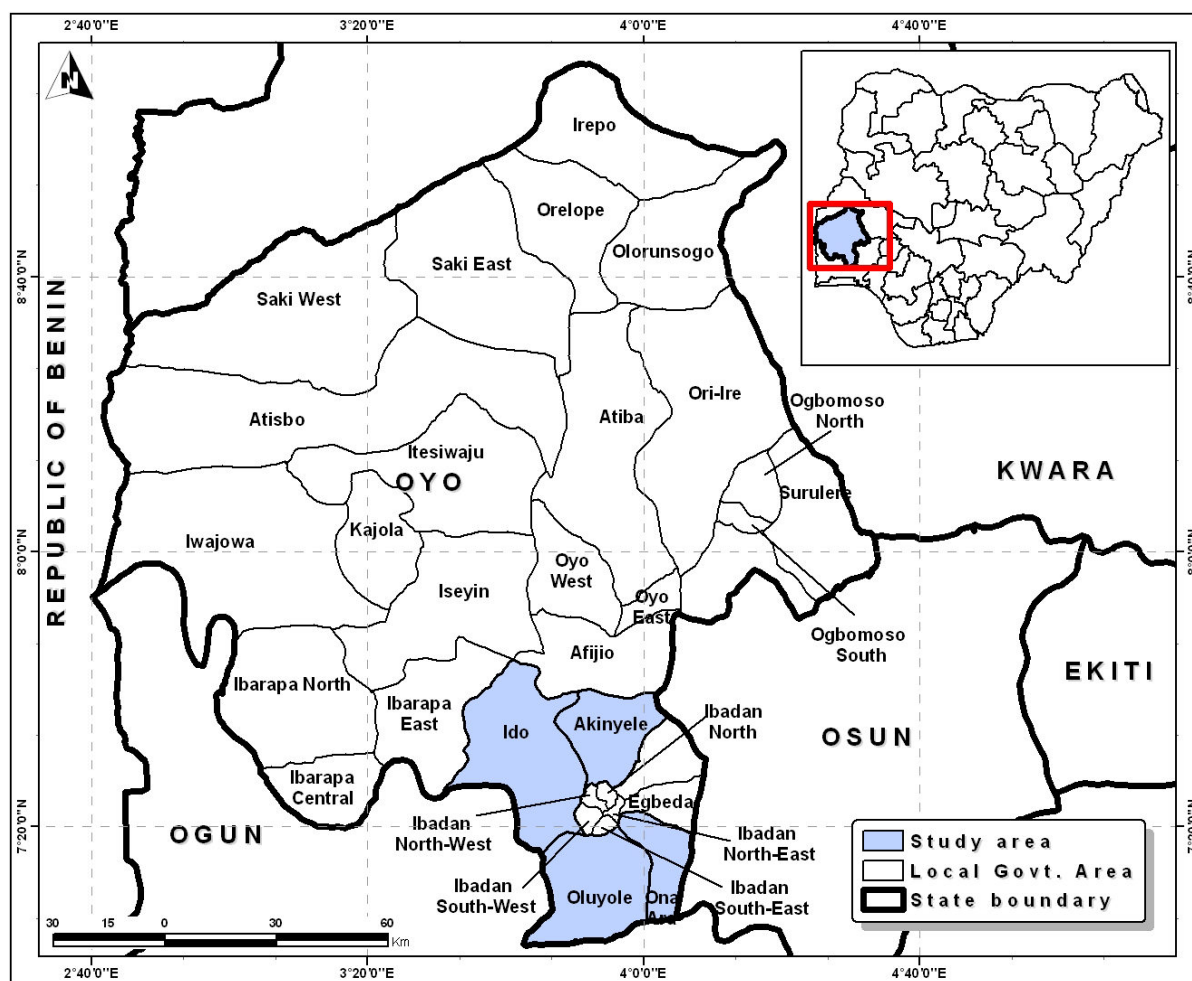

Figure 2: Map of Oyo State showing the study area

RESULTS AND DISCUSSION

Table1 shows the socio-economic characteristics of the respondents. A total of 240 (196 males and 44 females) people were interviewed. This is in conformation of the positions that the male folks primarily constituted the major farm labour in Nigeria (Nicholls, and Mimura, 1998). Also, it is in line with Nicholls (2004) that maintain that the major agricultural production activities remain labour intensive due to poor level of mechanization and women could hardly combine their other non-farm activities with farming. Majority of the respondents were between the ages of 31-40 (84%). This is because of the belief that this is an active age bracket and should be more enlightened in accordance with the assertion of McGranahan, *et al* (2007) who found out that the people in the age bracket likely to be highly innovative age group. Most of the respondents are Muslims (51.3%) and Christians (42.9%). Married people dominated the communities (90%) while their educational level is primary education. Farming is their major economic activity (43.3%) while others are engaged in trading (20%), as artisans (30%) and unemployed (6.7%).

Table 1: Social economic characteristics of the respondents

Gender	Frequency	Percentage
Male	196	81.7
female	44	18.3
Total	240	100
Age distribution		
20-30	6	2.5
31-40	84	35
41-50	73	30.4
51- 60	77	32.1
Total	240	100
Religion		
Christian	103	42.9
Muslim	123	51.3
Traditional worshiper	14	5.8
Total	240	100
Marital status distribution		
Single	22	9.2
Married	216	90
Divorced	2	0.8
Total	240	100
Educational level		
Tertiary	42	6.7
Secondary	48	20
Primary	128	17.5
Adult education	16	53.3
Arabic education	6	2.5
Total	240	100
Occupation		
Farmers	104	43.3
Artisan	72	30.0
Trader	48	20.0
Unemployed	16	6.7
Students	02	0.8
Total	240	100

The perception of the respondents about climate change is as shown in table 2. From the list of problem encountered in the communities, temperature and rainfall differences are the foremost problems. Other problems mentioned are bad roads, ill health, pollution and insecurity. In the communities, 87.5% of the respondents have heard about climate change at a time or the other. Some refer to it as change in weather condition at a particular time (40%); some, just weather condition (17.5%) and others have no response. On the question ''do you think the problem of climate change can be solved at all'', 83.3% of the respondents said yes, 12.5% said no and others, no response. Almost all (92.9%) of the respondents agreed that the problem of climate change is affecting them. How they feel the impact differs, some complained of excessive heat (20.8%), to some it is the reduction in rainfall amount received.

On mitigation strategies, many of the respondents are of the opinion that stopping air pollution (35%) is the solution, some suggested enlightenment campaign (15%), intensifying research efforts (23.3%), prayers (8.8%) and being religiously committed (3.8%). The coping strategies adopted by the respondents include, construction of drainage channels (21.7%), children staying indoors (15.8%), use of local herbs and drugs (30%), raising the level of household properties (15.8%) and 16.7% no response.

Table2: Response on climate change

Response	Frequent	Percentage
Have you ever heard about climate change?		
Yes	210	87.5
No	30	12.5
Total	240	100
What do you know about climate change?		
It is the weather condition	42	17.5
It is the change of weather at a particular time	96	40
No response	102	42.5
Total	240	100
Do you think the problem of climate change can be solved at all?		
Yes	200	83.3
No	30	12.5
No response	10	4.2
Total	240	100
Do you think the problem of climate change affects you as a person?		
Yes	223	92.9
No	17	7.1
Total	240	100
How does the problem of climate change affect you?		
Leads to hotness of the body	35	14.6
Causes ill-health	44	18.3
Leads to changing of environment	42	17.5
Excessive heating	50	20.8
It reduces the amount of rainfall	36	15
It affects human skin	12	5
It causes pollution of the environment	18	7.5
No response	03	1.3
Total	240	100
How do you think an individual can help to Overcome the problem of climate change?	21	8.8
By prayer	09	3.8
By being religiously committed	36	15
Enlightenment campaign	24	10
Be prepared to face it	56	23.3
Intensify research efforts	86	35
Stop air pollution	02	0.8
Making sacrifice to the gods	08	3.3
No response	240	100
Total		
Coping Strategies		
Construction of drainage channels	53	21.7
Children staying indoors	38	15.8
Use of local herbs and drugs	72	30.0
Raising the level of household properties	38	15.8
No response	39	16.3
Total	240	100

The perception of the respondents to differences in rainfall and temperature was shown in table 3. 53.4% of the respondents perceived that rainfall has increased steadily while 36.7% viewed rainfall to have decreased, 4.1%, no change and others are indifferent. Similar opinion about temperature variation was also noticed.

Table 3: Perception on Rainfall and Temperature differences

Rainfall differences	Frequency	Percentage
Increasing	128	53.4
Reducing	88	36.7
No change	10	4.1
Don't know	14	5.8
Temperature differences		
Increasing	130	54.2
Reducing	87	36.3
No change	12	5.0
Don't know	11	4.6

CONCLUSION AND RECOMMENDATION

Arising from the findings of this investigation, the conclusion drawn is that poor resource farmers have a low level of climate change awareness. Climate change is a new reality that will have deleterious effects on the society. For this reason awareness creation is a key measure to address the impact of climate change. Agricultural extentionist can play an important role in educating the farmers about climate change, mitigation and adaptation.

There is need for Nigeria and other African nations to include the climate change issue as a vital component of long-term policy and planning, particularly in terms of education and awareness in order that it may be fully appreciated by the general public.

REFERENCES

Ayodele, J. O. and Akintola, F.O. (1990). Public perception of flood hazard in two Nigerian cities. *Environment International* 4: 277 – 280.

Copenhagen (2009). United Nations Climate Change Conference 7th -18th December, 2oo9. http//en.cop15.dk/ retrieved 2/8/2009

Intergovernmental Panel on Climate Change (2007). Climate Change 2007: Impacts, adaption and vulnerability. Summary for policy makers (A Report of working group 11 of the intergovernmental panel on climate change) WMO, UNEP. (Available at http://www.IPCC.ch/pub/wg 2SPMfinal. Pdf.)

McGranahan, G. Balk, D., and Anderson, B. (2007). The rising tide: assessing the risks of climate change and human settlements in low elevation coastal zones. *Environment and Urbanization* 19, 17- 37.

Nicholls, R. J. (2004). Coastal flooding and wetland loss in the 21st Century: Changes under the SRES climate and socio-economic scenarios. *Global Env. Change* 14(1), 69-86.

Nicholls, R. J. And Mimura, N. (1998). Regional issues raised by sea-level rise and their policy implications. *Climate Research* 11, 5–18.

NPC (2006). National Population Commission Report of Census 2006.

Okunade, A.S and Ademiluyi, I. A. (2009) Implications of the changing pattern and land cover of the Lagos coastal area of Nigeria. America- *Envasian Journal of scientific Research* 1(1): 31 – 37.

Pradhan, G. C. (2002). Environmental awareness among secondary school teachers, a study. *Education Review* 45 (2) 25-27.