Behavioural Practices and Climate Change Awareness in Ado Odo/Ota, Ogun State, Nigeria: Implications for Communication and Development Agenda

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Abstract- The Earth's climate pattern has faced its greatest alteration in recent times. The burning of fossils fuels and clearing of land has resulted in the highest levels of greenhouse pollution in our atmosphere, global warming which has led to destruction of lives and property world over. This challenge call for drastic reduction in the amount of pollution we create. It is against this background that this study investigates the practices surrounding climate change and its awareness in Ota local government of Ogun State. Through survey, interview and observation, 970 residents of the local government were be interrogated, as well as key opinion leaders The findings show the current behaviour surrounding climate change in Ota includes burning of waste and bush, indiscriminate disposal of waste, and the use of kerosene, fire wood and coal for domestic purposes, among others. The study recommends urgent communication intervention and the use of television for climate change awareness effective campaign for behaviour modification.

Key words: Climate change, Behaviour, Communication, Development.

I. Introduction

Concerns about the environment have gained attention in recent times more than ever. This is due to the realisation that the environment is closely tied to human sustainability. A leading environmental issue is climate change and its effects on society. Defined as a change in global or regional climate patterns attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels, climate change affects every part of the world, either urban or rural, and it is thus the responsibility of every one to put it under control. While the blame of climate change has been put largely on the most industrialised societies of the world, the so called 'less industrialised' are also contributory to the factors causing climate change. This compels the need to understand the practices that are contributory to climate change in order to design appropriate communication content and strategies to changing such behaviours. Accordingly, this paper investigates such practices in Ado-Odo/Ota Local Government of Ogun State, Nigeria with the aim of designing necessary interventions to bring about desirable behavioural change.

Therefore, the following objectives will guide the investigation of this study:

- To determine the practices contributing to climate change among Ota residents?
- To find out the level of climate change awareness and its effects among Ota residents?
- To ascertain the channels of communication that will enhance climate change awareness among Ota residents?
- To establish communication strategies may be employed in effective climate change communication in Ota?

II. Literature And Theoretical Framework

A. Theory of Reasoned Action

The theory of reasoned action is focused on behavioural actions; the basic assumption underlying the theory of reasoned action is that behaviour is a function of intent; that is, there is an expectancy value formulation where there is a corresponding behavioural intent for every behavioural action exhibited [1]. This behavioural intent, however, is influenced by either of two major factors—an "attitudinal" factor or a "normative factor". The attitudinal factor is used to describe a person's attitude towards a specific behaviour. This attitude is usually informed by an evaluation of perceived consequences of such actions or behaviour as well as the strength of belief an individual has in these perceived consequences. When actions are influenced by normative factors, the individual is largely influenced by social norms on behavioural actions as well as the motivation to comply with these norms. When attitudes and subjective norms are positive, there is an increased perceived behavioural control, that is, people perceive that they are able to perform a given behaviour. The theory of reasoned action predicts behavioural intention, that is,

both attitude, as well as behaviour using already identified variables—attitudinal and normative factors. In sum, intent is a predictor of behaviour; it is a cognitive process, which precedes behaviour.

III. Awareness Of Climate Change In Nigeria

The problem of climate change has long been in the system and stands as the most serious threat worldwide. [2] affirm that climate change is perhaps the most serious environmental threat to the fight against hunger, malnutrition, disease and poverty in Africa. Climate change manifests in variations of different climate parameter including cloud cover, precipitation, temperature range, sea levels and vapour pressure. It further results in loss of biodiversity, agriculture and results in flooding [3]. It affects parameters such as economy, agriculture, health, water resources, energy etc. [4] also affirm that the result is fiercer weather lasting for longer styles; extreme scorching heat, precipitation of rainfall, increased intensity of storm, hurricane, floods, droughts, outbreak of fire, induces earthquake, acid rain, and indirectly connected to malnutrition and poverty".

The problem of climate change is widen due to little or no awareness about its implications. According to [5], rural farmers' level of awareness seems to be on the increase regarding their experiences in change and length of seasons, incidence of environmental hazards. [6] however note that "climate change is a phenomenon that is currently in dire need of a wide range of publicity and other measures". They stress further that "a solution to the climate change problem will require climate change awareness and proper understanding of the phenomenon. In order to fast-track the awareness towards climate change, it is necessary to know people's level of awareness. This remains an issue that requires long-term policy and planning [6]. However, there are evidences by scientists that climate change is growing. Harris [7] notes that "awareness and education about its effects, especially among vulnerable communities, is lacking, due to language and cultural barriers." Hence, the need for government to take sole responsibilities in ensuring a safe environment from the effects and long time implications of climate change.

IV. Media And Climate Change

Communication has become an integral part of the climate change discourse as scientists, governments and civil society organisations recognise the crucial role of effective communication in raising awareness about the consequences of climate change on all species [7]. Information dissemination through the use of media technology is important to understanding the threat, impact and adaptation options that climate change poses regarding the livelihood of farmers in Nigeria specifically and the entire world generally [8].

However, [3] points out that discourse of climate change has not been effective in Africa because the creation of the scientists in the developed countries whose main agenda is gate-keeping of knowledge have continued to use ambiguities of scientific language. This places Africa audience in complex situations as they are forced to tackle scientific concepts which are mainly foreign to them using vernacular interpretations. With respect to the language, the media is seen as a major tool for the purpose of influencing change on the climate in Nigeria. Besides, media content have not given attention to disseminating information on the causes of climate change, and are generally not providing opinions based on reliable and fully identified scientific source [10], [11]. This needs to change because the media cannot be left out as they occupy an important and powerful position that can be used for societal benefit for the purpose of education and creating awareness about climate change in the world

V. Climate Change And Development Issues

Climate change is not only an environmental problem. It is also a development problem since its adverse effects will disproportionately affect poorer countries with economies predominantly based on natural resources and related economic sectors (agriculture, forestry and fisheries). Yet even countries with more diversified economies are vulnerable to climate change. It is therefore in the general interest to promote, in the partner countries as well, sustainable trends in greenhouse gas emissions (GHG), the greatest culprits of climate change.

UNDP [12] notes that climate change poses a serious challenge to the attainment of the Millennium Development Goals. Changing rainfall and climate patterns and rising sea levels will exacerbate existing economic, political and humanitarian stresses and affect human development in all parts of the world. This is especially true for countries that rely heavily on climate-vulnerable sectors such as agriculture, water resources, forests and biodiversity to maintain and improve the living conditions of their populations.

It is therefore important to manage climate change risks as part of Nigeria development approach. Integrating climate change as a cross-cutting issue in development plans will protect hard-won advances made to date--and to be made in the future--in reducing poverty worldwide. Such an integrated approach will make development more resilient by reducing climate impacts and identifying development opportunities that may otherwise be overlooked [12].

According to [13], climate change poses multiple challenges to development. It affects lives and livelihoods, infrastructure and institutions, as well as beliefs, cultures and identities. There is a growing recognition that the social dimensions of vulnerability and adaptation now need to move to the forefront of development policies and practices. Development policies and practices can play a key role in addressing climate change, but it is critical to question to what extent such actions and interventions reproduce, rather than address, the social and political structures and development pathways driving vulnerability.

VI. Behavioural Practices On Environment And Climate Change

Many researchers concur that human activity is the main cause of climate change [14]. A modification of this kind of behaviour necessitates insight into what people know, believe and do. A KAP study is for this reason useful because it evaluates and measures the knowledge, attitude and practice of people and in so doing helps to identify the most effective ways to teach the public about what has been learned (about climate change) through scientific research and data [15]. The KAP study also helps in establishing baseline indicators. When KAP data are collected before an intervention, which is designed to change knowledge, attitudes and behaviours, they can then be compared later with other data to assess the impact of that intervention; in this way, KAP studies form a very important part of evaluation research. Studies that measure people's attitudes and behaviour are not new to climate change.

Often the first area of focus in relation to behaviour change is people's attitudes. Positive environmental attitudes and a strong awareness of climate change can help achieve support for policy measures. However, a singular emphasis on attitudes has been critiqued as being part of the dominant 'ABC' model prevalent in climate change, also known as the 'information deficit' model. In this, social change is thought to depend on values and attitudes (A), which are believed to drive the kinds of behaviour (B) that individuals choose to adopt (C), [16]. The 'ABC' Model can be effective in changing attitudes and, to a lesser extent, behaviour, but it is limited because it fails to take into account individual, social and institutional constraints [17], or habits and social norms [18].

VII. Research Method

Survey research method was used for the study and complemented with non-participant observation and unstructured in-depth interview. The population for this study comprised of residents of Ado-Odo/Ota Local Government Area of Ogun State, Nigeria. The sample size for the survey is 1000 respondents but the analysis was based on 970 questionnaire duly filled and returned. Selected members of the community were also interviewed to generate data to complement those obtained through questionnaire. The observation focused on practices of residents that relate to climate change. Ado-Odo/Ota Local Government Area is the focus area of the study and a multistage sampling technique was applied. From the four zonal districts in the local government, ten communities were randomly selected from Ota and Sango zones, where 100 questionaire copies were administered in each of the ten zones. The data were analysed with percentages and presented in tables.

VIII. Results

Table 1 below shows that most Ota residents (41.4%) burn their refuse. Only 27.7 % give them to refuse collectors. 11.8% throw them into bush and 12.9% take them to dump site. Others pack them by road side and throw them into gutter.

TABLE I. How respondents dispose refuse

Responses	Frequency	Percent
Burn them	402	41.4
Throw them into bush	114	11.8
Pack them beside the road	39	4.0
Throw them into gutter	22	2.3
Take them to dump site	125	12.9
Give them to refuse collectors	268	27.6
Total	970	100

TABLE II. What respondents use to cook

Responses	Frequency	Percent
Kerosene	440	45.4
Fire wood	62	6.4
Coal	32	3.3
Gas	313	32.3
Electric stove	111	11.4
Others, Specify	12	1.2
Total	970	100.0

Table 2 reveals that 45.4% respondents use kerosene to cook their food, 32.2% use gas and the remaining people use electric stove, fire wood and coal.

TABLE III. Have Respondents heard the term 'climate change'?

Responses	Frequency	Percent
Yes	863	89
No	107	11
Total	970	100

Table 3 above clearly indicates that a very high percentage (89%) of respondents have heard of climate change.

As could be seen in Table 4 below, only 11% of the respondents have a very deep knowledge of the risk associated with climate change and as high as 33% of the respondents are not even sure of these risks. This implies that the fact that many of the respondents have heard of the term climate change they have little knowledge of the community risk associated with it.

TABLE IV. Knowledge of respondents on community risk associated with climate change

Responses	Frequency	Percent
Don't know/Not sure	321	33

Hardly anything	102	11
Not much	281	29
A fair amount	156	16
A great deal	110	11
Total	970	100

In an attempt to find out if respondents noticed any change in the weather for the past 5-10 years, as high as 69% respondents confirm that that they noticed changes in weather condition. This is an indication that many of the respondents are aware of the changes in weather condition of the country in the past 5-10 years.

TABLE V. SOME CAUSES AND EFFECTS OF CLIMATE CHANGE

Item	Caused carbon monoxide from industrial and vehicles	leads to over flooding and destruction of lives and properties
Responses	Percent	Percent
Strongly Agree	32	33
Agree	42	38
Disagree	17	18
Strong Disagree	4	8
Undecided	5	3
Total	100 n=970	100 n=970

Table 5 shows that as high as 74% of the respondents strongly agree and agree with the statement that climate change is due to carbon monoxide from industries and vehicles. This implies that many respondents are aware of the fact that climate change could be caused by carbon monoxide. In order to find out if respondents know if climate change leads to over flooding and lives of property, 61% of the respondents strongly and agree with the statement. This indicates that a higher percentage of respondents are aware that climate change leads to over flooding and lives of property.

We also found out about the channels that people receive information from. Television emerged as the most patronised medium with 659 responses, followed by radio with 425 responses. The internet gains more recognition than it used to with 315 responses. Others include newspapers (219), Video (143), Pamphlets (65), Posters (107), Schools(199), Family/Friends (156), Church/Mosque (111), Government (82), Mail (47), Cell Phones (112) and Town Criers (49).

TABLE VI. SOURCES OF OBTAINING MOST INFORMATION

Items	Frequency	Percent
Radio	319	32.9
Television	402	41.4
Newspapers	96	9.9
Internet	143	14.7
Others, specify	10	1.0
Total	970	100.0

Table 6 shows the means by which most respondents get their information, and it is consistent with the previous data, show television as the most popular

TABLE VII. FREQUENCY OF LISTENING OR WATCHING STORIES ON CLIMATE CHANGE

Items	Frequency	Percent
Frequently	212	21.9
Occasionally	440	45.4
Infrequently	185	19.1
Never	86	8.9
Don't Know/ Not Sure	47	4.8
Total	970	100

The above shows that the respondents (45.4%) receive information occasionally on climate change. We see that 8.9% has never heard at all while 4.9 % are not sure. This is an indication of inadequate publicity about climate change.

TABLE VIII. POSSIBILITY OF EXTENDING COVENANT UNIVERSITY WASTE TO WEALTH PROJECT TO OTA COMMUNITIES

Item	Yes	No
Are you aware that your wastes can be converted to useful products?	82.4	17.6
Do you know that your wastes should be separated for proper disposal?	83.2	16.8
Will you be ready to separate your wastes so that they can be made useful?	84.4	15.6

Table 8 above shows that 82.4% of the respondents are aware that wastes can be recycled to useful products. They also know that it is their responsibility to do the separation and express the readiness (84.4%) to separate their wastes.

IX. DISCUSSION

The two leading practices by Ota residents that contribute to climate change are burning of bush and the use of kerosene for cooking. Burning of refuse or incineration contributes to the climate change and poses health risks to the populace. [19],[20]. Similarly, is the use of coal, firewood and kerosene for cooking. [21] Lam et al (2012) report that kerosene-fuelled wick lamps used

in millions of developing country households are sources of black carbon (BC) emissions. They noted that black carbon from kerosene use is twenty times higher than is currently assumed. Black carbon contributes significantly to global warming and glacier melting [22].

The residents also engage in indiscriminate disposal of waste. Wastes are dumped at major roads, inside the gutters and in erosions when it rains. These practices not only damage the environment but could cause epidemic in the communities. Our findings show that there is no concrete policy in place about waste disposal in the local government, so people have to find a means of disposing their wastes.

While most respondents have heard the word climate change, not many of them really understand what it entails. Only 11% of the people surveyed had a great knowledge of risk associated with it while 33% of the respondents don't know. This generally means that the populace knowledge of climate change is low and this calls for a greater campaign in this regard.

Television has wide spread reach among Ota residence contrary to the belief that radio is the medium for developing countries. This may be as a result of the semi-urban communities in Ota and its closeness to the city of Lagos. This then is an opener when communicating about climate change to give television a priority in such campaigns. Unfortunately, people do not get to hear about climate change often in the media. From the interviews, we gather that most television viewers seek out entertainment rather than serious information. This poses a challenge to media producers and the environmentalists to raise the tempo of campaign about the environment and climate change.

However, 82.4% of respondents are aware that waste can be recycled to useful products and most of them (83.2%) also know it is normal for them to separate their waste to different types and as a matter of fact ready (84.4%) to separate their waste for proper disposal. However, we gather from the interview that while people express personal readiness to separate their wastes for proper disposal, they doubt that others will practice: '*Why not? If government says we should separate out wastes and they will come and collect them, I will do it. But our people,... I don't think they can do it o. They will say it's too much wahala for them*'. While Covenant University's waste to wealth project of recycling waste materials to useful projects could key in on those residents ready to separate their wastes, others would need some motivation and persuasion to adopt the behaviour.

From the foregoing, communicating about climate change and environmental sustainability remains a critical project in the local government. To effectively do this, there is need for multi-dimensional approaches involving both the mass media and the interpersonal channels. The mass media content on climate change is currently low; there is therefore the need for media responsibility in giving systematic attention to climate change considering its development nature. Since most people in the local government watch television, priority should be given to the use of television to communicate climate change. However, there is need to blend information on climate change with entertainment programmes such as music and movies since many seek out information. Of importance is the language of communication, hence, people's indigenous languages should be used to communicate about climate change [23].

Interpersonal channels could play a significant role in creating awareness about climate change. Religious fora, Community Development Association meetings, youth clubs meetings, public seminars in market places, schools, packs, etc could be used to educate people about climate change and environmental sustainability. Indigenous means of communication such as town-cries and festivals are still being practised in the local government and can be adopted to communicate climate change. Government agencies in charge of this task to encourage school clubs where on the environment; this will not only serve the purpose of the present but also of the future in awareness creation and behavioural change. When the two approaches of mass media and interpersonal channels are adopted, communication will thus work to change people's attitudes towards environmental practices and motivate them to develop intentions to perform desirable behaviours that will enhance environmental sustainability.

X. Conclusion and Recommendations

The campaign about the environment and climate change is currently at low ebb in the local government and there is need for government agencies and non-governmental organisations in charge of environment to see that something more impactful is done in this direction.

Covenant University should extend its waste to wealth project to Ota community, this will form part of her community service project to her host community. Since some residents are ready to sort their wastes, it will then be easy for desirable collaboration between the University and the community.

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