

Assessment of Agricultural and Fishery Extension Service Delivery Field Agents' Mass Media Dependency Status on Climate Change Information Sourcing in Akwa Ibom State.

ABSTRACT

This study evaluated the field agents' dependency status on mass media for information sourcing on environmental and climatic-proof agricultural and fishery extension service delivery of the Agricultural Development Programme in Akwa Ibom State, Nigeria. Specifically, the estimated how mass media dependent are the spatially distributed agents when sourcing for information on climate change and agriculture, also the extent of agro-fishery meteorological information sourcing among field personnel AKADEP and the climate friendliness of Agricultural Development Programme in Akwa Ibom State. All the field agents served as population and sample for the study. The data were obtained through a validated questionnaire and were subjected to descriptive statistics. The results revealed that 58.4 percent of the respondents rarely sourced for climate change information in textbooks while about 30.9% frequently do. About 55.1% rarely sourced for it in libraries outside their department/office while 19.7% do that frequently. About 51.1% of the respondents frequently sourced for climate change information on conference proceedings, 38.8% rarely do so and 10.15% never do that at all. Furthermore, about 62.0%, 57.9%, 52.2% and 58.4% frequently sourced for climate change information on journals, newsletters, newspapers, magazines and radio/television respectively while about 28.7%, 35.4%, 41.0% and 38.5% respectively do that rarely and 9.0%, 6.7%, 6.7%, and 2.8% respectively never do that at all. This could be suggesting that there is more dependency on print than audio/audio-visual media within the peri-urban and rural regions. Extension agents with low usage of some of the tools could be those without interest in using these tools or perhaps they have scanty knowledge of how to use these sources.

Keywords: Media, Information Seeking, Agriculture, Extension, Development, climate change.

INTRODUCTION

One of the best approaches to capacity building on environmental and climate change resiliency is effective environmental friendly agricultural education extension through the mass and social media technique, [1], [2], [3], [4] and [5]. Thus, Information sourcing forms the core requirement for this capacity building process if development of an efficient field extension agents in Agricultural Development Programme and other development communication agencies is strongly desired [5]. According to [6], [7] and [8] the field agents are primarily saddled with the responsible for the review and communication of

38 agricultural development policies and knowledge dealing with crops, fisheries, forestry, and
 39 livestock etc,. Their major objective is to facilitate improved productivity and, in turn,
 40 enhance local and national food security and alleviate rural poverty. They are to provide
 41 technical support services as well as supplies of input to promote adoption of productivity
 42 enhancing techniques. They are the teachers to the farmers [6]. Opinions of scientists in
 43 literatures suggest huge uncertainties as changes in climatic conditions unfold [9], [4], [10],
 44 [3] and [11]. Though positive and negative scenarios are being speculated, many concerns are
 45 paid towards more risk to the farmer with respect to production. Farmers in Akwa Ibom State
 46 may not understand the drivers of climate change [9], but it is certain that the direction of
 47 climate change will definitely alter the cropping and soil management system and cause
 48 many diversification strategies in areas in order to mitigate and adapt to unfolding condition
 49 [12], definitely, income and other livelihood activities are at risk as majority are already
 50 living below the world bank poverty line of two (2) dollars per day, [13].

51 The social and mass media thus offer the main way that large numbers of people can receive
 52 information and entertainment; through internet, television, radio and the newspapers etc., the
 53 media is one of the veritable tools needed for the delivery of key messages on climate issues
 54 [13] especially in the regions and localities that are already vulnerable at the social and
 55 economic level. It has relatively taken too long for the world to face the fact that the earth is
 56 getting warmer and human beings are mainly to be blame [4]. Not all the world's inhabitants
 57 are ready to accept that everyone can take action to mitigate the damage, [14] and [15],
 58 climate change is now a global phenomenon and the consequences in different regions is
 59 becoming more significant [16]. Though, at the primordial stages, many reasons were
 60 attached to socio-cultural and religious beliefs, recently, research reports have shown that the
 61 effect of climate and environmental changes and uncertainties before and during planting
 62 seasons has led to an unusual sequence of poor harvest and food shortages, [3], [17] and [9].

63 In this study area, Akwa Ibom State, climate related stressors are already influencing the
 64 agricultural process and outputs, causing poor yield of crops and fisheries output [17] and [9].
 65 Nothing can stop the marching of climate change, but there is still time to mitigate its effect
 66 except, there is a strategized extension education communication by man, consequently,
 67 technical support is needed for creation of awareness on the impact of climate change on
 68 livelihoods from fishery and agriculture in the dry tropical regions especially in the sub-
 69 Saharan Africa [12] and [3]; that is already fragile due to population pressure, that will bear
 70 the brunt of the climate variations. Unlike in the temperate zones, the production seasons
 71 becomes shorter when the temperature rises. Rice yield, for example start declining at over

34°Celsius. Even more worrying are changes in the rainy season and rainfall intensity, since these factors have direct impact on crops and fisheries sectors [11]. Falling outputs in areas where communities rely almost exclusively on agriculture have noted to have devastating effect, [16], [12] and [10]. Having realized that one of the best approaches to a capacity building on environmental and climatic change resiliency is effective environmental friendly agricultural and fishery education, it became expedient to assess the human resource capacity of the Akwa Ibom Agricultural Development Programme on the environmental and climatic friendliness and how dependent are their field agents in acquiring knowledge on subject matter that was directly their focus of knowledge service delivery but have direct impact on the service delivery efficiencies.

Nigeria and indeed Akwa Ibom State risks the worst ravages of global climate if most of its development extension communication agencies seem to be ignorance of the basic issues and the grave challenges they pose [1]. It is essential that the field agents or agricultural development communicators be more proactive in acquiring and disseminating climate change information through the mass media technique to the areas that awareness is low. The messages that need to be communicated clearly are: climate change is real and the effect are long term; it is possible to adapt to the impacts climate change will bring and mitigate the causes and, there are risks to the do-nothing option. This could be aimed at significantly raising the level of awareness of the community to the opportunities and threats brought about by climate change and to accept their responsibilities to adapt to and mitigate against its impacts. People who are severely impacted by climate change will be better able to adapt if they are well informed about the issue. Farmers will change the varieties of seeds they plant, the crops they grow, the times they sow and reap and adaptive techniques to promote aquaculture and managed artisanal fisheries. Water and other resources will be husbanded far more carefully. Floods and drought will be anticipated and planned for, livelihoods and businesses will change and adapt [11].

METHODOLOGY

The study was carried out across the six (6) agricultural development project zones of the thirty-one (31) local government areas of Akwa Ibom State. The state is located at latitude $4^{\circ}33'$ and $5^{\circ}33'$ North and longitude $7^{\circ}25'$ and $8^{\circ}25'$ East and occupies a total land area of 7,246 square kilometers, with an estimated population of about 3.9million [18]. The study area is in the rain forest zone and has two distinct seasons viz; the rainy and the dry season. Most of the inhabitants of the area are crop farmers and substantial fish farmers and fishermen. In addition, some micro-livestock are usually raised at background of most

homesteads. The study population is made up of all field personnel or agricultural development communicators of Akwa Ibom State Agricultural development programme(AKADEP). The population served as the sample size, out of the 206 respondents earmarked to administer the questionnaire, a total of 178 on the extension agents willingly participated in the exercise. Descriptive statistics such as frequency count and simple percentages were used to analyse data collected on socio-economic characteristics, knowledge level of AKADEP agents, information seeking behavior and information sourcing of AKADEP agents on climate change. Index analytic procedure was used to derive the proportional or probabilistic estimate of the measurable attributes of the knowledge (climate-change friendliness) level and information seeking behaviour status on climate change. Multiple analysis was used to analyze the relationship between the climate –change friendliness status (knowledge index) of AKADEP agents and its determinants (demographic and behavioural characteristics)

RESULTS AND DISCUSSION

A. Demographic Characteristics of the Field Extension Agents or Agricultural Development Communicators

This sub-section analyses the profile of the field extension agent who are spatially located to carry out agricultural development communication in order assists the farmers acquire skills and capacities to survive the economic and social demands of the environment. The workforce is mixed and in gender and generation. Table 1, Item 1 showed that majority (62.2%) of the respondents were married whereas 33.7% were single. This suggests that there are strong affiliations to the family institutions value system in the study area. Item 3 revealed that 23.0% of the respondents have OND, 42.1% have HND, 33.7% have bachelor's degree while 1.1% have other higher educational qualifications. This result revealed that all the respondents should be capable of seeking for information or study with minimum supervision. As majority of the respondents are graduates, it is fundamental that they should be better informed and know how to better inform others about topical issues of their environment. Item 4 showed that 66.3% of the respondents were between the age ranges of 30- 39 years. Other distribution (27.0% were in the range of 40-49 years,6.7% in the range of 50-59 years) showed that as age increased, the percentage decreased accordingly. The pattern portrays AKADEP agents as being relatively young. This category of people ought to be active, inquisitive and willing to learn to add to their knowledge.

Table 1: Distribution of Field Extension Agents of Agricultural Development Communicators Based on Demographic Characteristics

Item	Variables	Frequency	percentages
1	Sex		
	Male	109	61.20
	Female	69	38.80
2	Marital status		
	Single	60	33.70
	Married	110	61.80
	Divorced/separated	5	2.80
	Widowed	3	1.70
3	Level of Education		
	OND	41	23.00
	HND	75	42.10
	BSC	60	33.70
	PG certificates	2	1.10
4	Age		
	30-39	118	66.30
	40-49	48	27.00
	50-59	12	6.70
5	Family size		
	0-5	82	46.10
	6-10	95	53.40
	11-15	1	0.60

B. Climate-change Information Seeking behavior of Field Extension Agents

This sub-section examined the aptitude of field extension agents towards searching for climate change information amidst diverse information sources especially the mass media. Agricultural and fishery extension agents need to better understand the big picture and be able to relate to specific action. Research institutions through the subject matter specialist should organize regular symposiums, discussions, seminars and conferences on climate change issues with AKADEP in order to update the field agricultural and fishery extension agents with topical issues of the environment and mainstream intense use of social media platforms to share and generate lessons for climate-smart agricultural service delivery. The results on Table 2, item 1 revealed that 75.3% of the respondents disagreed that they find it hard to go about searching climate change literatures in libraries, while a few of 24.7% agreed; suggesting that the agents do willingly seek climate change information in libraries and other sources. Item 2 further depicts that climate change is gaining more interest as the literates are seeking more explanation of the unchanging state of the environment unlike some years the awareness was quite low and changes were linked to the superstitious beliefs, about 14.6% of the respondents agreed that they don't usually border themselves to

personally look for information on climate change while 85.4% of the respondents disagreed on that. Based on the distribution of the respondents on all the items, most the response depicts favorable attitudinal disposition to seeking information on climate [5] even though the information archival environment is quite unfriendly.

Table 2: Distribution of Extension Agents Based on Climate Change Information Seeking Behaviour

S/N	INFORMATION SEEKING BEHAVIOUR	D	A
1	I find it hard to go about searching climate-change literatures or information in libraries	75.3	24.7
2	I don't always like to waste my energy to search for climate change information.	85.4	14.6
3	When I consider the time, I will use to search, I normally feel discouraged	80.9	19.1
4	I do feel discouraged because library services are poorly organized.	36.5	63.5
5	It is discouraging to search because my expectations are hardly available.	65.4	32.6
6	I don't to find information when I don't have something as reward.	84.8	15.1
7	I cannot regard search for information as part of my hobby.	69.1	30.9
8	I like to avoid situation that will require me searching for information.	83.7	16.3
9	I don't interest to search for information about climate change.	75.8	24.2
10	I don't usually border myself to personally look for information since I will get from my friend.	80.4	19.6

C. Extent of Climate Change Information Seeking Behaviour of Extension Agents

Primarily, assessing the climate change information seeking behaviour demanded ascertaining the index of climate change information seeking behavioural aptitude of each respondent considered for this study. This gave credence to the relative comparison across the study population based on the composite index derivation. The distribution pattern of climate change information seeking behavioural index was analyzed using the broadly categorized three ranges of low, average and high. The respondents were distributed across the three categories alongside their respective climate change information seeking behavioural mean index. Quite a negligible percentage of the study population (1.10%) were in the low climate change information seeking behaviour category and had about 33% climate change information seeking behavioural status, while 18.00% were in the average category with a climate change information seeking behavioural status ranging between 34 to 66%. About 80.00% of the population expressed a sufficient climate change information seeking behavioural status that stood at above 80.9%. In line with the study of [5] this result asserts

that communication agents are strongly disposed to always voluntarily seek for climate change information and offer much hope for effective climate-smart agriculture and fisheries extension service delivery.

Table 3: Distribution of Agents Based on Extent of Climate change information seeking Behaviour

CCISB Index interval	CCISB Index interval interpretation	Frequency	Percentages
0.0-0.33	Low	2	1.10
0.34-0.66	Average	32	18.00
0.67-1.00	High	144	80.90

D. Utilization of Climate Change Information Sources among Field Extension Agents

Information sourcing infrastructure and environment do influence the pattern of information resource utilization especially on a subject matter that is quite technical and evolving. From the list of information source in the Table 4, it could be observed that majority of the field agent are still hardware dependent relatively less than the electronic and social media. This could be because high cost and limited access to internet infrastructures and associated accessory for timely accessibility to the resource repository. Thus, hardcopies of the related materials become predominantly utilized. Table 4, item 1a revealed 58.4% of the respondents rarely sourced for climate change information in textbooks, 30.9% did that frequently while 10.7% never did it at all. Table 4, item 1d revealed that about 68.0% rarely sourced for climate change information on dissertations and thesis and only 15.2% did that frequently. With reference to Item 1f, about 55.1% rarely sourced for it in libraries outside their department/office, 19.7% did that frequently and 25.3% never sourced it there at all. Table 4, item 1c about 51.1% of the respondents frequently sourced for climate change information on conference proceedings 38.8% rarely did that and 10.1% never did that at all. Item 1e, (62.40%), Item 1h (57.9%), Item 1i (52.2%), and Item 4b (58.4%) frequently sourced for climate change information on journals, newsletters, newspapers/magazines and radio/television respectively. This could be suggesting that the field agents' information sourcing approach depended more on print than audio/audio-visual media. Thus, promoting social media like the web 2 tools and subscription to virtual networking groups on community of practice would a major boost to their high aptitude on information seeking behavior [5]. Again, with proliferations of android technologies, the information time lag and geospatial divide in information communication will be firmly mitigated among agents within urban, peri-urban and rural regions. High proportion of extension agents who do not or

rarely use the ICT tools are those who do not have interest in using these tools or perhaps they have scanty knowledge of how to use these tools for climate change information sourcing. It could also mean that these tools are not available for them. Extension agents should see the need to communicate climate change in different ways. For instance, they should engage people especially farmers in the community in climate change debate in order to breakdown some barriers that exist and connect people to the role that their attitude and lifestyle play in causing the problem and working towards solutions. This could be achieved through effective usage of the mass media.

Table 4: Distribution of Field Extension Agents Based on Extent of Utilization of Climate Change Information Sources

Item	Information sources	Extent of utilization		
		frequently	Rarely	Never
1	Libraries			
a)	Textbooks	30.90	58.40	10.70
b)	Catalogues	21.90	56.70	21.30
c)	Conference proceedings	51.10	38.80	10.10
d)	Dissertations and thesis	15.20	68.00	16.30
e)	Journals	62.40	28.70	9.00
f)	Libraries outside your office and department	19.70	55.10	25.30
g)	Monograph	42.10	38.80	19.10
h)	Newsletters	57.90	35.40	6.70
i)	Newspaper/magazines	52.20	41.00	6.70
2	Seminars	43.30	47.20	9.60
3	Discussions with colleagues and others	45.50	40.40	14.00
4	ICT TOOLS			
a)	CD. Rom literature search	16.90	61.20	21.90
b)	Radio/television	58.40	38.80	2.80
c)	Internet/electronic mails	43.30	37.66	19.10

E. Extent of Utilization of Climate Change Information Sources among Field Extension Agents

Assessing the climate change information sources utilization implies seeking composite understanding of the magnitude and direction of the extent or index of use of climate change information sources among the field agricultural and fishery extension agents. Their frequency of use of the array climate change information sources give insights to the relative comparison across the study population based on the composite index derivation. The distribution pattern of respondents on climate change information sources utilization index was analyzed using the broadly categorized two ranges of low and high utilization. The respondents were distributed across the two categories alongside their respective climate

change information sources utilization mean index. The divide was quite revealing that 12.90% of the study population were in the low climate change information sources utilization category and had less than 66% climate change information sources utilization status, while 87.10% were in the high category with a climate change information sources utilization status 66%. This showed that agricultural and fisheries extension service delivery agents is good.

Table 5: Distribution Based on Extent of Utilization of climate change Information Sources(CCISU)

CCISU Index Interval	CCISU Index Interval Interpretation	Frequency	Percent
0.0-0.66	Low	23	12.90
0.67-1.00	High	155	87.10

F. Level of Climate Change Friendliness Among AKADEP Agents

This sub-section examined the level of climate change friendliness in terms of the knowledge of the facts of climate change drivers, exposures to climate change threats and mitigation techniques among AKADEP agents given their high disposition to voluntarily seek for climate change information and their relatively average extent of actually sourcing for climate change information. The study revealed that only 25.3% of the respondents fell into the high knowledge level category while 72.5% of the respondents only had average knowledge about climate-change. This depicts that only few number of these development communicators or agents are quite friendly with climate change issues. Even when these agents claim to have high information seeking and sourcing behavior, the above result has shown that they don't sincerely do so or perhaps they have not been getting climate change information when they search or they don't know how to use the mass media sources to get climate change information. Irrespective of the danger signals posed by climate change, the study has revealed that the media and the community development agencies in Akwa Ibom State seems to be lagging behind, leaving the awareness of climate change to nobody, thus exposing the state to the risk of getting badly bruised from the after effect of climate change. Much efforts needs to be inserted by the research institutions and government agencies in encouraging and updating the agents with climate change information so as to raise their level of knowledge for mitigation and adaptation.

Table 6: Distribution of Agents of AKADEP Based on Climate Change Friendliness (CCF)Index

CCF Index Interval	Interpretation of CCF Index interval	Frequency	Percent
0.0-0.33	Low	4	2.20
0.34-0.66	Average	129	72.50
0.67-1.00	High	45	25.30

CONCLUSION

This research was centered on mass media dependency status of community development communicators on climate change for agricultural education. The study revealed that a good number of the communicators or agents had the urge to voluntarily search for climate change information from the mass media, both print and electronic. The study also revealed that the few development communicators who actually did source for climate change information depended more on the print than the audio/audio-visual media. The study also revealed that the level of friendliness of Akwa Ibom Agricultural Development programme on climate change depended on or is influenced by the climate change information seeking behavior of the field agents and the extent to which they use the mass media to source for climate change information. The study showed AKADEP agent as being relatively young and educated; and should be able to competently seek and use the media sources for climate change information.

On the whole, the study revealed that only 25.3% of AKADEP field agents or communicators were highly friendly or had high level of knowledge about climate change. It is therefore on this bases that the study concluded that mass media dependency status of AKADEP field agent when sourcing for climate change information is generally very low. Also despite the high proportion with high climate change information sources utilization index, it is empirically obvious based on Table 4, that AKADEP should endeavour to improve its climate change friendliness status by providing motivational facilities to its field agents to keep them satisfied on the core requirement of their knowledge development and management job. By so doing, the agents will be motivated to continually seek and source for more climate change information. Thus, adaptation and mitigation strategies will be improved followed by improvement in productivity. AKADEP agents should be trained on how to use different facilities of information sources for them to increase the degree of information sourcing and use the sources effectively.

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