

## COMBATING CLIMATE CHANGE THROUGH DEVELOPMENT COMMUNICATION: THE AGRICOLA MULTIPURPOSE EXPERIENCE

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### **Abstract**

The need to educate farmers through the use of development communication (DC) techniques in ensuring food security necessitated this study. Climate change affects farmers who depend on natural rain-fed farming and agriculture. During such change, crops, seedlings, stored food, farming implements as well as storage facilities/infrastructures are damaged, leading to food insecurity. The work is hinged on the Technology Determinism Theory (TDT) attributed to the American sociologist, Thorstein Veblen, which insists that technology, technological development, communications technology and media are pivotal to any social change in society. This is because, changes in society is propelled by the advent of new technology, development of innovation leading to a new order. The primary data for the study was obtained through the use of Development Communication technique of disseminating vital information to Agricola Multipurpose Farmers' Cooperative Society through the social media. Focused Group Discussion of social media messages was used for the data analysis. The study concludes that proper information dissemination to farmers will in no small measure assist in the management of climate change leading to food security. The study recommends the use of the new media for the dissemination of information to not only farmers but to the general public for the sustenance of agriculture and food security.

**Keywords:** Climate change, DC, Farmers, Food security, Social media

### **Introduction**

Communication plays a very important role in development. It is a tool for the empowerment of the populace through sharing of relevant information. Odoom, "beyond its role as an empowerment tool, communication" is used to promote people's participation in development activities. Particularly, citizens rely on knowledge and information in order to successfully respond to the opportunities and challenges of social, economic, cultural, political and technological changes. Communication media are used to support development through the dissemination of messages that encourage or support development. When encoded message (information) is decoded (received and understood), communication has taken place. The implementation of the received message results in improved living as well as help to avert impending danger. Mukherjee agrees that "communication is a crucial part of development process". He further claims that "through communication, individuals can share information and thereby increase their knowledge and develop a sense of community" (116).

Development communication is "the practice of systematically applying the processes, strategies, and principles of communication to bring about positive social

change” (np www.caluniv.ac). According to Ongkiho and Alexander who copiously quoted Quebral, development communication is “the art and science of human communication applied to the speedy transformation of a country and the mass of its people from poverty to a dynamic state of economic growth that makes possible greater social equality and the larger fulfilment of the human potential” (130). What the above means is that development communication (DC) uses the creativity in the arts, scientific methods in the social sciences through theories and principles, interpersonal channels of communications experienced in mass media, “individual, group, organizational, international, national, provincial, sectoral, program, or at the grassroots” (131), as a catalyst for social change to eradicate poverty for the good of the people. It is “characterized by conceptual flexibility and diversity of communication techniques used to address the problem” (www.caluniv.ac). Some of these techniques used in DC include “information dissemination and education, behavior change, social marketing, social mobilization, media advocacy, communication for social change, and participatory development communication” (www.caluniv.ac.).

Mensah conceptualises DC as the “systematic and planned use of communication for social change using interpersonal channels, ICTs, audio-visuals, and mass media. Indeed, if development programmes are to be long-term, they must begin with systems that enable broad participation from everyone interested in the desired change” (25). She further claims that the organizers must take into cognizance and understand the indigenous realities and peculiarities, making adaptations to suit the people and their cultures and not imposing alien method on them. To succeed, familiarization visits is critical where some of the methods are explained to them before application. Human development cannot be possible without education as it helps in achieving sustainable human development. Without it, all other tools employed in this regard, are weak and feeble. Education enhances individual and collective capabilities, and brings the society to a higher level of awareness in respect of its opportunities as well as possibilities. The *Microsoft Encarta Dictionary* defines education as “the system of educating people in a community”. It expatiates that education is “the imparting and acquiring of knowledge through teaching and learning, especially at a school or similar institution” or the knowledge or abilities gained through education.

From the above, it is evident that education is a two-way process involving the messenger and the message. The message contains information which must be sent through a medium. That is a communication medium. Inherent in the message is the information that will change the receiver’s attitude when he acts on it. That change is education. Making him to understand, decode the information results to change of behaviour. Social media is interactive media. It belongs to the generally classified new media. One of the limitations of the old media is lack of interaction among users and the propinquity of getting feedback. However, this has been partly overcome with the new media which has made some of the old media like radio and television programmes to be interactive. Now, most programmes on radio have phone in programs, talk shows and live programmes which has integrated the new media. Radio programmes are viewed live through Facebook and listeners can contribute and interact

with programme presenters live, through WhatsApp and Instagram. Manning observes that feedback to media outlets was often indirect, delayed, and impersonal... With the rise of digital and mobile technologies, interaction on a large scale became easier for individuals than ever before; and as such, a new media age was born where interactivity was placed at the centre of new media functions. One individual could now speak to many, and instant feedback was a possibility (1158).

Farming and farmers are another important component of the society. Farmers help in providing food through their occupation which is farming. "Farming is the business of cultivating land, raising stocks" (*Oxford Advanced Dictionary*). Information needed to actualize this important objective need to be made accessible to them. This is where communication is expected to play a very crucial role. Encarta Dictionary simply describes communication as "exchange of information: the exchange of information between people, e.g. by means of speaking, writing, or using a common system of signs or behavior". Information is power. It carries messages that may make or mar a situation, particularly to the rural farmer during climate change. The ability to understand and implement the message will lead to high yield and invariably, improved economic status. On the other hand, "development is about change. It is about changing for the better. It could be about social or economic change for improvement or progress. When we refer to development communication, it is about such communication that can be used for development" (4). According to [www.sathyabama.ac.in](http://www.sathyabama.ac.in) "It is about using communication to change or improve something. Here we use different types of messages to change the socio-economic condition of people. These messages are designed to transform the behaviour of people or for improving their quality of life" (4). However, factors like climate change may not only negatively affect farm yield but also impoverish the farmers if adequate information is not made available to them.

Naturally, there are always variations in climate change. Just as our day turn to night and night into morning, climatic condition varies from cold to hot, dry and wet. However, it is when this variation turns to the extreme and persists for a longer period that we get disturbed. Again, most of the causes of the extreme climatic change are caused by man's activities. Anthony J. McMichael, Diarmid Campbell-Lendrum, Sari Kovats, Sally Edwards et al agree that the global climate "is now changing as a result of human activities—most importantly, those which cause the release of greenhouse gases from fossil fuels" (1543). They copiously quoted to the United Nations' Intergovernmental Panel on Climate Change (IPCC) where they asserted that there "is new and stronger evidence that most of the warming observed over the last 50 years is likely to be attributable to human activities" For instance, the depletion of the ozone layer has adversely affected climatic conditions. According to the Royal Society report on climate change, "human activities have significantly disturbed the natural carbon cycle by extracting long-buried fossil fuels and burning them for energy, thus releasing CO<sub>2</sub> to the atmosphere" (6). The above is supported by Chris Riedy who opined that "since the Industrial Revolution, human emissions of greenhouse gases from fossil fuel combustion, deforestation and agricultural practices have led to global warming and climate change" ([criedy@uts.edu.au](mailto:criedy@uts.edu.au)).

### **Theoretical Foundation**

This study is hinged on Technological Determinism Theory (TDT). The emergence of this theory is usually attributed to the American sociologist Thorstein Veblen, who formulated the causal link between technology and the society. According to the supporters of technological determinism, social changes are controlled by the technology, technological development, communications technology and media. The modern information society arises as a result of the development of innovations, new technologies and their social and political implications. Since the establishment of this direction in the early 20th century, two different branches separated: radical and moderate (hard, soft) technological determinism.

According to the radical version, the technologies represent a prerequisite for changing the society, the second branch regards the technology only as a key factor that may or may not mean change. Today, we can quite confidently say that the Internet and the nature of new media is fundamentally changing the structure of the society. The expansion of computers, networks and the Internet has radically changed many aspects of not only human communication, but also the entire society's life. The rising popularity of new media has changed the nature and the way our society and the individuals act – the way we do the shopping, recruit staff, pay taxes, use the library, gain academic degrees and educate ourselves. Through a philosophical analysis, the text examines the nature of contemporary technological determinism, the features of new media and the method they use to affect the creation and distribution of information and knowledge in the education process.

### **Historical Overview of Development Communication**

Mass media played a very pioneering role in the advancement of development communication. Mefalopulos asserts that “the initial stages of development communication were characterized by the use of mass media that considered people as audiences ready to be influenced by the messages they received...If done properly, the dissemination of information was viewed as capable of achieving the intended behavior change” (xviii). Development communication started in India through “rural radio broadcasts in the 1940s in different languages”. ([www.openknowledge.worldbank.org](http://www.openknowledge.worldbank.org)). The broadcasts were in indigenous languages such as Hindi, Marathi, Gujarati and Kannada. The experiments started with Community Development projects initiated by the government. Guided by the socialistic ideals of India's constitution, the first generation of politicians, initiated massive developmental programmes throughout the country. To succeed, they used the radio to get to local farmers in the rural areas. They also made use of person-to-person communication. This is because, at that time, literacy rate in India was very low. These efforts were later complimented by their universities and other educational institutions.

In the Philippines, the use of communication to support development emanated from Erskine Childers, the Director of the United Nations Development Programmes (UNDP) Support Service in Bangkok in the 1960's. He effectively adopted communication appraisal, planning, production and evaluation for selected development projects supported by the UNDP and UNICEF. This was followed in the

1970's by Nora C. Quebral, head of the Department of Agricultural Communications, University of the Philippines College of Agriculture. Nora C. Quebral, recognized as the "Mother" of Development Communication because of her pioneering and cerebral work in development communication. She first coined the word "Development Communication" in a seminal paper, "Development Communication in the Agricultural Context" was presented in the symposium titled, "In Search of Breakthroughs in Agricultural Development." University of the Philippines Los Baños' 1971 became the first to offer degree programs at the Doctorate, Masteral's and Undergraduate degree levels. The school has since diversified in other areas of communication such as Development Broadcasting and Telecommunications Development Journalism, Educational Communication, Science Communication, Strategic Communication, and Health Communication ([www.caluniv.ac](http://www.caluniv.ac)).

In Africa, the history of development commission in Africa started in the Anglophone countries in the 1960s and early 1970s, through the use of radio and theatre for community education, adult literacy, health and agricultural education. Communication for Development was pioneered in Southern Africa through participatory communication approaches with support from the Food and Agricultural Organization (FAO). In 1994 the FAO project "Communication for Development in Southern Africa" was a pioneer in supporting and enhancing development projects and programs through the use of participatory communication approaches. The FAO project, placed under SADC, developed an innovative methodology known as PRCA-Participatory Rural Communication Appraisal, which combined participatory tools and techniques with a strong communication focus needed to design strategies enhancing projects' results and sustainability. FAO and SADC published a handbook on PRCA and this methodology is still widely used today in various projects around the world ([www.caluniv.ac](http://www.caluniv.ac)).

Hambly Odame emphasizes the work of non-governmental organization, Farm Radio International and its members across sub-Saharan Africa for establishing linkages for the exchange knowledge between development partners such as agricultural scientists and farmers mediated through rural radio. ([www.caluniv.ac](http://www.caluniv.ac)). One of the first examples of DC was Farm Radio Forums in Canada. From 1941 to 1965, farmers met in groups each week to listen to special radio programs. There were also printed materials and prepared questions to encourage group discussion. At first, this was a response to the Great Depression and the need for increased food production in World War II. But the Forums also dealt with social and economic issues. This model of adult education or distance education was later adopted in India and Ghana.

### **History of Agricola Multi-Purpose Cooperative Society, Ifite-Ogwari**

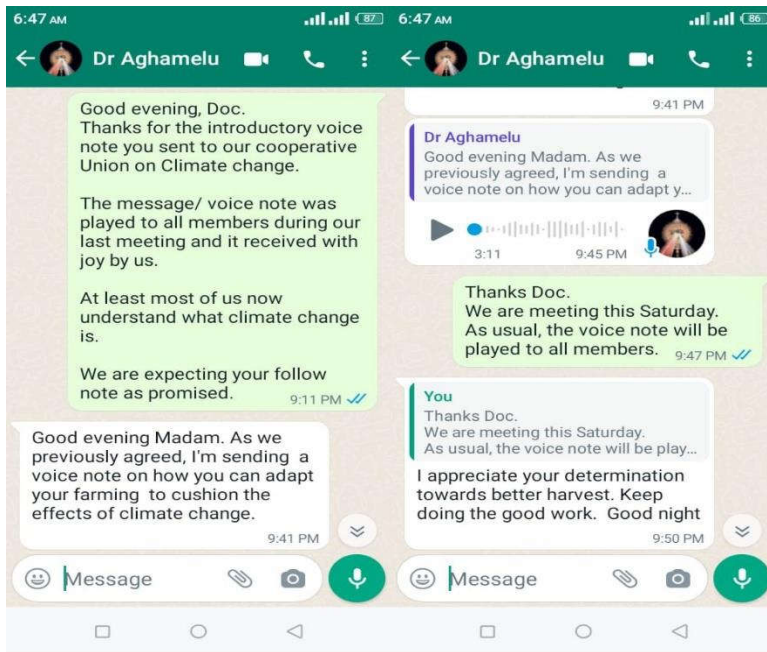
Agricola (Ifite-Ogwari) Multipurpose Co-operative Society is a registered Multipurpose Farmers' Cooperative Society domiciled in Ifite-Ogwari, Ayamelum L.G.A, Anambra State, Nigeria. The members are primarily farmers of varied agricultural products such as yam, rice, potatoes, and poultry. It was inaugurated in 2009 with a numerical strength of fifteen (15) members. Its objectives include but not limited to helping members with information for sourcing of funds, produce marketing,

better farming strategies, among others. Currently, the numerical strength of Co-operative is seventy-five members, made up thirty-two females and forty-three males within the age range of 18-66 years.

### **Data Collection and the Experiment**

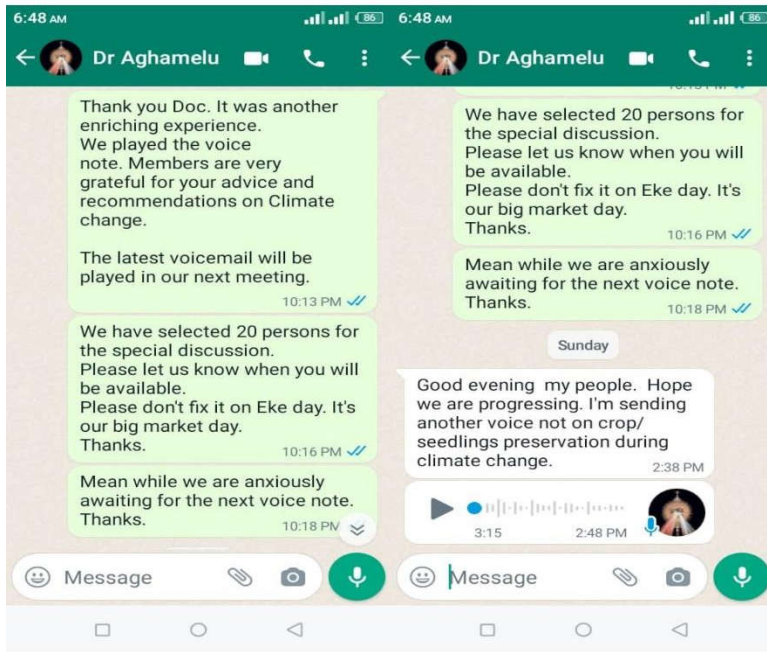
The data was collected from members of the Agricola (Ifite-Ogwari) Multipurpose Farmers' Co-operative Society in Ifite-Ogwari through purposive sampling. Focused Group Discussion of social media messages was used for the data analysis. The researchers adopted the WhatsApp medium of the social media as a means of communication to the farmer's cooperative society. This is partly based on the conviction of the researchers that WhatsApp is attractive, coupled with the advice that "People interested in development communication should understand their audience i.e., readers, listeners or viewers. They should also know the needs of their audience so that whatever medium is used, the messages are relevant. The messages then have to be passed on in the most attractive manner" (npopenknowledge.worldbank.ng). During the preliminary visit to the farmers, the researchers inquired and were assured that eighty percent of them own an android phone but the group does not have a WhatsApp group. The researchers opted to open a WhatsApp platform for the group, which they accepted and graciously permitted us to include our names in the platform. This move was to create a seamless communication channel between the researchers and the farmers in total adherence to the advice of Mefalopulos where he admonished that to succeed in development communication: it is always valuable, and often essential, to establish dialog among relevant stakeholders. Dialog is the necessary ingredient in building trust, sharing knowledge and ensuring mutual understanding. Even a project that apparently enjoys a wide consensus, such as the construction of a bridge, can have hidden obstacles and opposition that the development communication specialist can help uncover, address, and mitigate (8).

This experiment is modelled after the Canada experiment where development communication approach was first adopted from 1945-1965 through the Farm Radio Forums. During this period, farmers gathered in groups "each week to listen to special radio programs". The Agricola (Ifite-Ogwari) Multipurpose Farmers' Co-operative Society experiment lasted for four weeks. The researchers visited the group twice, during our preliminary session where we agreed on the medium for sending the messages and the last meeting where we discussed with some selected members who served as our focused group. Three messages were sent to the group, namely: a. Adaptation of farming to climate change, b. Effects of climate change on farming environment, c. Preservation of crops/seedlings during climate change. During their weekly meetings, the messages are played through a loud speaker for all to hear. After each meeting, challenges, questions raised by members from the voice notes are sent to us through the WhatsApp platform. Our inputs and clarifications are made and forwarded back to them.



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***Figs 1-4 Different WhatsApp messages exchanged between the group and the researchers***

### **Focused Group Discussions**

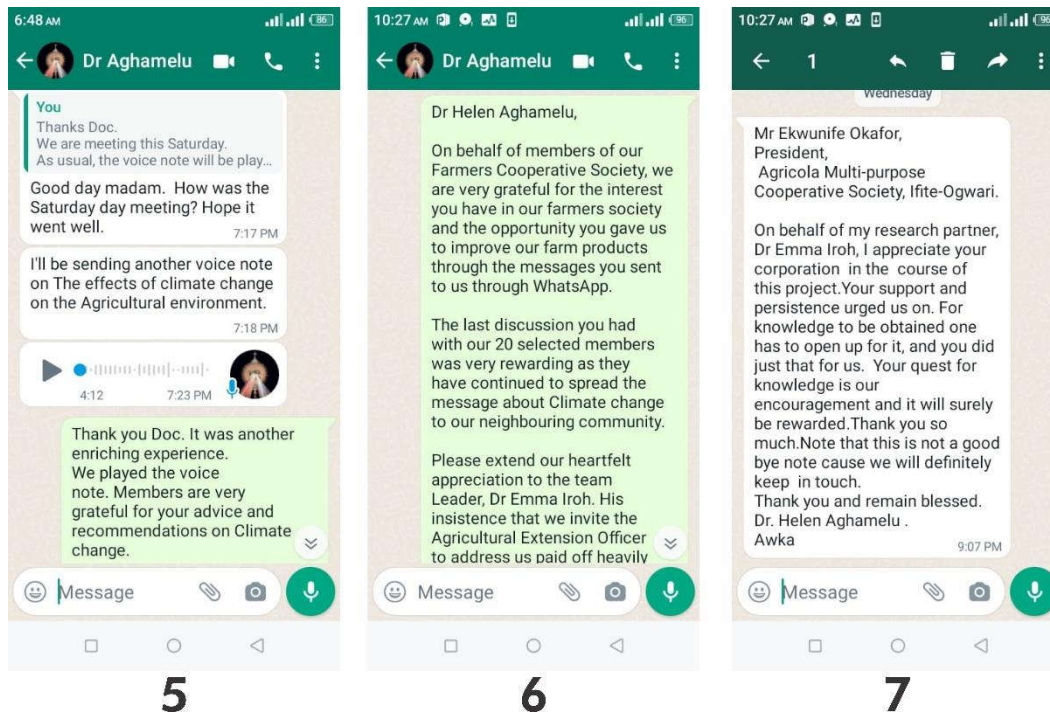
The discussions started with a replay of the voice notes to serve as entry behavior as well as to refresh their memories. After that, some clarifications were made based on the issues they raised. The researchers framed questions from the voice notes sent to the group through WhatsApp to guide the discussions. The questions are: a. What is climate change? b. Does Climate change affect Adaptation of farming? c. What are the effects of climate change on farming environment? d. To what extent does Development Communication enhance information on climate change? The discussions were cordial. The first two questions were combined to read: What is climate change and does Climate change affect Adaptation of farming? In answering, Amaka, a member of the cooperative and a yam farmer, explained that “climate change is a period of unpredictable weather condition characterized by excess rain, late rain or excess draught”. She regretted that over time they have lost their farm products due to not taking adequate measure to safe guard their products.

She specifically pointed that last year flood destroyed her farm products because her family did not take adequate precautionary measure and thanked the researchers for the insight. According to her: I now understand fully what climate change is. I have been hearing it in passing but has not put my mind to find the meaning. I even understand now that our activities may even help in escalating climate change. Some of the participants confessed that they did not know that the daily weather forecast has anything to do with farming and farmers as most of them never bothered to listen to it or ask questions about it. They also promised to adhere to the instructions of the agriculture extension officer. Chika, who spoke on their behalf said: we never bothered ourselves with what they say about weather condition on radio or television and we don’t bother to ask. Now that you people have emphasized their importance, we are going to set a committee for the monitoring of the daily weather report to be sent to our WhatsApp forum every day and to be working closely with the Agric Extension Officer to prevent some of the effects and losses as well as improve our production. Corroborating Mrs Anyika, another participant admitted that they never took the agriculture extension officers seriously and promised that henceforth: we should listen to information on weather report and our extension officers who are sent to guide us. The agriculture extension officers are specially trained to guide us in our farming. We must adhere to their instructions especially on modern farming methods, use of pesticides and planting of particular crop at a particular time. On the extreme effects of climate change our environment, Mama Stella; a 65-year-old farmer observed that “climate changes results to water and air pollutions which turn the farms acidic, swampy, and unproductive. She further stated that it can cause wild fires.

This is because “when the environment becomes too dry, any little fire accident can escalate to an uncontrollable rate that our crops, lives and livestock are affected”. Also, Ifeanyi Okagbue explained that climate change results to extreme temperature variations. According to him, it makes the temperature to be either too hot or too cold that it affects our crops. Crops don’t do well during extreme weather change. The livestock and crops will be exposed to a lot of danger, even us the farmers will not be left out because it will affect our health. Everything about farming has to be moderate.



Once the environment is not conducive, it affects our lives, crops and livestock. On how we preserve crop/seedlings during climate change, Edith, another participant, observed that: when there is too much rain, the entire environment is flooded; hence there is too much water in the soil. The plant will not be receiving nutrients because the soil will be too water logged for them to move down their roots to collect enough mineral. There will be less air in the soil making the root to soggy and damp that seed roots will not be able to move. So, the solution is to find areas where the soil is more porous.



***Figs 5, 6 and 7. Conclusion of WhatsApp messages between the researchers and the group.***

Okechi further enthused that we should not “work on clay soil or soil that retain a lot of water during flooding, rather we should look for areas where the soil is more arable. Again, when there is more heat or drought, we should work for areas that retain water”. On the usefulness of Development Communication strategy to enlighten the farmers on climate change, the discussions showed that Development Communication enhances information on the effects of climate change on farming environment. This is because Development Communication goes directly to the target audience and gives room for interactions for clarifications. One of the participants, Chief Okechukwu Omali was very thankful for the insight and knowledge gained from participating especially through the channel of information dissemination which he shared with his family. He informed us that he has introduced “meeting after meeting” in his compound where they gather to listen to the voice notes, our clarifications of the issues

they raise. Chijioke thanked the researchers for opening their eyes on the use of the social media. According to him: We have been using this phone without fully realizing the full potentials. So, from now, we can check our daily weather forecast, share and receive messages in our farmers WhatsApp group and most importantly, now that we have agreed to join the Agric extension officer to our WhatsApp group, most of challenges will easily be overcome without much difficulties.

### **Findings**

It is evident that the Focus Group Discussants gave a clear indication that the medium of information affects farmer's adaptability to climate change especially among rural farmers. Majority of the discussant observed that because the information was directly given to them, they were able to personalize its contents and applied them accordingly. Madam Uka, a member of the cooperative stated thus "we have been hearing this from other media of information but I always see it as government propaganda. This one is more personal and direct to us and we are now more ready to preserve our products against any climate change". Again, Chief Okechukwu Omali informed us that he now shares the messages to his farmer friends who are not members of their cooperative society, educating them on how to prevent adverse climate change. According to him, "I have started sharing the messages to my farmer friends to understand the effects of climate change and how to preserve their products and they are very thankful for the information. Again, the message on the use of pesticide has been very useful to me and I have also shared it with some of my colleagues and friends".

### **Conclusion**

The study concludes that proper information dissemination to farmers will in no small measure assist in the management of climate change leading to food security and development. This is in line with Steve Oga Abah who said that, "development must be seen as activities undertaken with acceptance as well as the participation of the communities to achieve the improved lives of the people" (30). Since the group has been exposed to the information about climate change, they will take over and control it to ensure better agricultural yield, leading to development. Furthermore, the detailed and personalized nature of development communication (DC) gives room for on-the-spot practical of preservation methods of crops and seedlings for food security. This is because one of the participants, Mr. Obiora Nwibe testified that "after the weekly discussion meetings of the cooperative, he began to fully understand the preservation methods and the best way to practice them during climate change." The choice of the theory "technological determinism", which stresses that social changes are controlled by the development of innovations, new technologies and modern information and communications technology techniques of the new media like WhatsApp in particular, greatly facilitated the efforts of the researchers to achieve the aim of the study, which is to inform farmers on the need to combat climate change to forestall loss of farm products.

## Recommendations

The study recommends the use of the new media for the dissemination of information, not only to farmers but to the general public for the sustenance of agriculture and maintaining food security as well as to avert loss of farm products and implements. It will also help to avert food insecurity. Farmers should listen to weather forecast and follow the instructions. The study further recommends that government should disseminate information to rural farmers through the social media. Also, government should establish community viewing centres where information and films with agricultural practices and themes are shown to them for educative and entertainment purposes.

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