

## **VIDEO DOCUMENTARY TRAINING IN AGRICULTURAL EXTENSION IN THE 21<sup>ST</sup> CENTURY: A QUALITATIVE ASSESSMENT OF CASSAVA FARMERS IN SOUTH-WEST NIGERIA**

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**ABSTRACT:** *Video documentaries are means of communication adopted by several sectors including agriculture to pass useful and required information to respective audiences. It has become one of the major tools utilized by extension agents as instructional materials for agricultural educational purposes in major parts of the world. In Nigeria, agricultural programmes are packaged by extension agents in collaboration with some media houses and broadcast at certain times which may not be convenient to watch, understand, and later referred to. This study therefore assessed the effectiveness of video documentary as training tool for farmers in south-west Nigeria. Methodologically, the qualitative approach was adopted as farmers were trained with the aid of a video documentary as instructional material and were assessed before and after the trainings provided with structured interview guides to gather the data required. The findings showed that video documentaries are effective training tools that aid understanding and retention of information shared even after several weeks of the training. Conventional extension practice is enjoined to embrace video documentaries as instructional training tools to facilitate and enhance farmer's agricultural learning.*

**KEYWORDS:** Video documentary, Agricultural Extension, Effectiveness, South-western States, Nigeria

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### **INTRODUCTION**

Agricultural extension is an educational platform for bringing about desirable changes among people through learning, training and disseminating information which requires some tools or methods commonly known as extension teaching aids (Meera, *et al.*, 2004). For thousands of years, farmers in developing countries have had extremely limited access to information sources, which has consistently reduced agricultural productivity. There have been various approaches to extension adopted to address this including the training and visit system. The training and visit system has greatly impacted on the farmers and stakeholders as well as other beneficiaries using a couple of aided training methods some of which include video documentary, print, postal display, field demonstration, and charts. Video documentaries are means of communication that have been adopted by several sectors to pass useful information to respective audiences. The agricultural sector is not left out as it has become one of the major tools used by the village extension agents for instructional and educational purposes.

In Nigeria, the communication and information department of various government owned extension service providers produce video documentaries with various subject matter of interest, these are then taken to various radio and television stations for proper dissemination to the end-users. The impact of video documentaries with respect to extension agent's work would include: cost reduction, effective feedback and effective use of manpower, proper visual

demonstration and time management. The farmers on the other hand would receive information almost at the same time in the different localities and have ample time to gather their thoughts for clarity and questioning and would also be able to make a decision on adoption of information or practices as contained in the video (Ogun State Agricultural Development Programme (OGADEP), 2014). This would further boost their agricultural practices and productivity.

In comparison to other media, video documentaries are affordable and they are audio-visual tools with a comparative advantage as pictures stick better in the mind and they are available for a wide range of people (Khadar and Ndiaye, n.d). The true test of the influence of video documentaries on adoption of innovation for the best farm practices could be ascertained when used to train farmers in agricultural practices. One of such practice is improved cassava planting technique. Cassava (*Manihot Esculenta*) as one of the most important food crops in Africa has high resilience and adaptability to a wide range of ecological conditions which has sustained its production through many generations since its introduction in the 16<sup>th</sup> century (Adebayo, *et.al.*, 2009).

Recently, it was discovered however that most farmers believe that cassava can grow on any soil type and can be cultivated without any specified instructions from the vast experience in extension service spanning over many years (Ogun State Agricultural Development Programme OGADEP and Oyo State Agricultural Development Programme OYSADEP, 2014). Despite its ecological advantage, cassava still needs to be planted with high precision in order to obtain the crop's optimum response to other agronomic practices as it develops to maturity. In view of this, the following objectives were addressed in this study:

- i. to ascertain the socio-economic characteristics of the cassava farmers in Southwest Nigeria;
- ii. determine if video documentaries are effective training tools in disseminating agricultural information;
- iii. examine the available video playing gadgets amongst the cassava farmer.

### **Agricultural Extension Service System**

Agricultural extension, being a specialized form of adult education in agriculture is an educational process that can be described mainly as a communication process between extension agents and rural dwellers especially the farmers. It is very useful for involving rural dwellers in the agricultural development process, to teach them better farming practices with the aim of increasing their productivity and enhance their standard of living (Agumagu, Ofuoku, (2008). Agricultural extension work has a venerable, albeit largely unrecorded, history. It is a significant social innovation, an important force in agricultural change, which has been created and recreated, adapted and developed over the centuries. Its evolution extends over nearly four thousand years, although its modern forms are largely a product of the past two centuries. Ladele (2008) noted the history of Agricultural Extension in Nigeria is linked with both the political and modern agricultural history in Nigeria. It is classified under two different periods as colonial and post-colonial periods.

In the era of British colonialism, modern agriculture started in 1893 with the establishment of the Department of Botanical Research at Olokemeji in Ogun State of Nigeria. The venture however, failed and was abandoned. In 1905, a British Cotton Growing Association came to

being at the location now known as Moor Plantation in Ibadan, Oyo State with the intent of growing cotton for the British textile industry. Ladele (2008) further stated that the history of extension at the post-colonial period also followed the trend of political history in Nigeria. When the Western, Eastern and Northern Regions were created, each region had their corresponding ministry of agriculture in which department of extension division was domiciled. Same pattern ensued when an additional Midwestern Region was created, it continued as states were created out of the regions. Various agricultural development programmes that were implemented at regional/state levels applied rudiments of extension, which by and large enabled the farmers to meet the needs of production of cash crops for export.

### Agricultural Extension Agents

Abdusalam-Sagir, Ashimolowo, and Lawal-Adebawale (n.d) describes agricultural extension agents as government officials employed chiefly to advice farmers on farming and marketing techniques. They can also be described as advisors employed by the government to assist rural dwellers with methods of farming and home economics. Also, in order to achieve development, "modem" research results from agricultural research institutions had to be transferred to the "traditional" farmer, and extension seemed to be the appropriate means to do so. In Nigeria the profession is not practiced differently from those in other countries. The extension agents work mostly with the ministry based government owned ADP's (Agricultural Development Programme). There are three basic extension teaching methods utilized by extension agents, each of which depends on the number of people to be with at a time with the same message utilizing teaching aids (Abdusalam-Sagir, Ashimolowo, and Lawal-Adebawale (n.d). These are:

**Individual method** which refers to education of just a single client by an extension agent at a particular point in time. **Group method** refers to bringing together two or more people at a particular spot for the purpose of educating them on a subject matter of interest to them all at the same time and **Mass method** which refers to reaching out to a large number of people who could not be reasonably brought together at a spot, through the electronic media with certain extension message at a particular time.

The extension teaching aids are instruction devices that support educational training of extension clients, examples include board and marker, posters, video and television, audio devices etc. The extension teaching aids are basically grouped into three based on the sound and audio dependence. These are, **Audio teaching aid:** This refers to any educational device that mainly appeals to sense of hearing and support audio instructional education of the extension clients. Examples include microphone and loudspeaker, megaphone, radio broadcast, audio recording etc. **Visual teaching aid** refers to educational devices that mainly appeal to sense of sight and support instructional education by visible entities or physical items. Examples are pictures, images, posters, life objects, models etc. and **Audio-visual teaching aids** which refers to educational devices that appeal to both sense of hearing and sight and support teaching by making use of sound and images. Examples are television broadcast, video documentaries, multimedia projector, and so on. For the purpose of this study, a video documentary on improved cassava planting techniques was adopted for the training and assessment of cassava farmers in both Ogun and Oyo in south-west Nigeria.

## Video Documentaries

Video documentaries are non-fictional motion pictures intended to document some aspect of reality primarily for the purposes of instruction or maintaining a historical record; they are fact-based films designed to be educational, informational, and instructional with the use of audio-visual inputs (Bill, 2001). Video documentaries has the advantage of sound and sight that can catch, retain and sustain attention for a long period of time especially when well produced (Mphahlele (2007)). It is easy to move video documentaries from one place to the other, while the films can be stored and are readily available for use at any given time and area. They can also be used repeatedly over a long period of time without affecting the production quality or else they can be reproduced. They can also be used in discussions when facilitating or emphasizing a point. Video documentaries are being used in other parts of the world presently for extension services, examples are: **Digital Green** in India, **Video Viewing Clubs** in Ghana, **Agro-Insight** in Belgium, **Insightshare**, in the United Kingdom, **OMPT (Online Mobile Projector per Trainer)**, in the United States of America, **FAO (Food and Agriculture Organization)** which created on-line repositories of agricultural information materials, including video. **The Water Channel**; this site contains a wide range of different format videos dealing with soil and water conservation, and the **Technical Centre for Agricultural and Rural Co-operation (CTA)** which works towards improving the dissemination of information for the benefit of farmers through improved adoption of new technologies in ACP (African, Caribbean and Pacific) countries. Their website hosts 357 videos, most of which are documentaries and interviews.

## METHODOLOGY

This study was carried out in Ogun and Oyo States. These are two of the six states in the south western part of Nigeria and are predominantly cassava producing states within the region (FAO, 2004). The population consists of farmers in the study area. Multistage sampling was used to select a total of 240 respondents. **Stage 1:** From the two states, three zones were randomly selected, they are Ijebu-Ode, Ikenne, and Abeokuta in Ogun State; Ibadan, Oyo, and Ogbomosho in Oyo State. Three blocks were randomly selected from these zones to make a total of six, these are Ala, Isara, and Ilugun blocks in Ogun-State; Ibadan-East, Afijio, and Ogbomosho-South in Oyo-State. Four communities/cells were randomly selected (representing the treatment groups) from each of the blocks to make up twelve cells/communities per state. **Stage 2:** Thirty (30) cassava farmers were purposively for the treatment groups to participate in the training and test from the four communities/cells selected in each state. These numbers equal one hundred and twenty (120) participants/respondents per state; a sum total of two hundred and forty (240) respondents in the two states. Data for this study were collected using structured interview guides and analyzed through the use of Statistical Package for the Social Sciences (SPSS) computer programme using both descriptive and inferential statistical tools.

## Research Design

This is an experimental study with three treatment groups and one control group. The first group consists of cassava farmers trained by the extension agent with the aid of the video documentary on cassava planting technique; this was represented as (VET) and also referred to as the video assisted group, the second consist of cassava farmers verbally taught the cassava planting technique by the village extension agents without the use of the video documentary;

this was represented as (EAT), the third, consist of cassava farmers who watched the video documentary on cassava planting technique without being verbally taught; this was represented as (VO) only while the last group consist of cassava farmers who were not verbally taught and also did not watch the video documentary; this was represented as (CO) the control group. For the basic assessment, at week one, farmers were trained on improved cassava planting techniques using the video documentary; afterwards, the first post-training knowledge and cognitive test were administered. A window of two to three weeks left before the second assessment. The second post-training knowledge and cognitive tests were administered at the fourth week.

## RESULT AND DISCUSSION

**Table 1: Socio-Economic Characteristics of Respondents (n=240)**

Variables	Frequency	Percentage	Mean/Mode
<b>Age (yrs)</b>			
21-30	21	8.8	
31-40	53	22.1	
41-50	64	26.7	3.33
51-60	45	18.8	
61-70	39	16.2	
71-80	18	7.5	
<b>Sex</b>			
Female	78	32.5	
Male	162	67.5	-
<b>Education Level</b>			
No Education	62	25.8	
Primary	68	28.3	
Secondary	81	33.8	1.32
Tertiary	29	12.1	
<b>Farm Size</b>			
1-5	141	58.8	1.58
6-10	74	30.8	
11-15	15	6.2	
16-20	5	2.1	
21-30	4	1.7	
31-40	1	.4	

Source: Field Work 2016

In the two states as seen in Table 1, the age distribution of the cassava farmers indicates that 26.7 percent of them were between forty-one to fifty years, while 22.1 percent were less than forty years while 8.8 percent were within twenty-one to thirty years considered the active and younger years. This shows that most of the farmers within the greatest proportion between forty-one to fifty years are still in their active years of life, and remain in the rural communities with cassava farming as their major occupation (Isiaka, 2006). More than half of the respondents in the two states were male (67.5%) while the female was 32. 5 percent; this implies that there are more male cassava farmers than female. This corroborates the findings of an earlier study that men are mainly involved in pre-planting and planting stages of crop production and not post-planting activities carried out mostly by women (Adebayo *et al.*, 2007). As regards the level of education of the respondents, 33.8 percent of the cassava farmers

had secondary education in the two states, while 28.3 percent had primary education. 25.8 percent had no formal education at all while a percentage of 12.1 had tertiary education. This shows that a greater percentage of the cassava farmers have some form of basic education. In terms of farm size in the two states, 58.8 percent of the respondents had less than five hectares of land, while 30.8 percent had between six to ten hectares; 6.2 percent had between sixteen to twenty hectares. This shows that majority of the farmers cultivate small farms which they operate at subsistence level (Adebayo *et al.*, 2007).

### **Video documentaries effectiveness as training tool**

Video can be a useful tool in raising awareness of and reinforcing good practices with agricultural workers (Chapman *et.al.*, 2012). Findings from the study as seen in Tables 2 and 3 show similarities in the percentile scores of participants in the experimental groups in the first and the second post-training knowledge and cognitive assessment despite the difference in the length of time between the first and the second assessments in both Ogun and Oyo state. In both states, participants in the Video only (V) and Video-assisted (VET) groups had high cumulative scores across the items tested. The participants had scores ranging from 90 to 100 percent in the first and second tests while the EAT group (extension agent taught only) had between 23.3 to 96.7 percent. The control group which were neither exposed to the video documentary nor taught by an extension agent had 0 percent scores across majority of the items tested in both states. The rise in scores of the video only (V) and video assisted (VET) groups as regards their correct responses provided for the test administered compared to the other non-video experimental groups several weeks after being first exposed to the message indicates that despite the fact that cassava cultivation has been a long time practice with great potential, there was a knowledge gap with the respondents which was addressed adequately by the message contained in the video documentary and this would stick for a long time to their memory as a form of reinforcement.

This further strengthens the fact that innovations disseminated through audio-visual means stick better and re-plays itself when needed through the memory leading to a high up-take of knowledge persuasively through good decisions to implement knowledge gained in the diffusion of innovation process (Mele *et.al.*, 2010). This is true in this study as there were not so much disparities in the results of the groups exposed to the video documentary only and those in the video assisted groups in both Ogun and Oyo state.

**Table 2: Knowledge and Cognitive test scores of cassava farmers in Ogun State**

S/N	KNOWLEDGE STATEMENT	CPT1 %	CPT2 %	VPT1 %	VPT2 %	EATPT1 %	EATPT2 %	VETPT1 %	VETPT2 %
<b>LAND PREPARATION</b>									
1	Getting land history is necessary before cassava planting	0	0	93.3	100	26.7	0	96.7	96.7
2	During land preparation application of fertilizer and ploughing	0	0	93.3	100	23.3	0	86.7	96.7
3	Land free from erosion and drainage path should be selected for cassava cultivation	0	0	100	100	90	96.7	93.3	100
<b>SOIL TYPE</b>									
4	Cassava can grow well on any type of soil	0	0	96.7	100	20	0	93.3	100
5	Loamy soil is the best type of soil to plant cassava	100	100	96.7	100	96.7	96.7	96.7	96.7
6	After applying slight pressure, soil required for cassava planting must scatter	0	0	100	100	63.3	0	90	96.7
7	The presence of Siam weed (ewe akintola) on a land shows that the land is good	100	100	100	100	100	100	96.7	96.7
<b>STEM CUTTING SPECIFICATIONS</b>									
8	Disease and pest infested stem should be avoided for cassava	100	100	100	100	96.7	96.7	100	100
9	The greenish top soft part of the cassava stem can be used as stem	0	0	90	100	16.7	0	70	96.7
10	Stem cutting with close nodes should be avoided during planting	0	0	96.7	100	16.7	0	80	100
11	A measurement of nine nodes per stem is required for planting	0	0	96.7	100	23.3	0	96.7	96.7
12	You get information for the best variety to plant from the ADP's	100	100	100	100	96.7	96.7	96.7	100
<b>PREPARATION OF STEM CUTTING</b>									
13	A standard measurement of 5 litres of water + 10 mills (1 tablespoon) of chemical, e.g. (Benlate or Perfeckthion) is required	0	0	100	100	100	93.3	96.7	100
14	The stem should be soaked for 10-15 minutes before being planted	0	0	100	100	66.7	0	96.7	100
15	The chemical protects the planted stem from termites	100	100	100	100	100	100	100	100
<b>PLANTING SPECIFICATIONS</b>									
16	The stem should not be forced roughly into the soil during planting	100	80	100	100	96.7	93.3	96.7	100

<b>17</b>	To plant, you use the cutlass to cut the soil, place the cassava stem and cover with soil	0	0	96.7	100	23.3	96.7	96.7	96.7
<b>18</b>	The upper tip of the cassava can slightly show when planted	0	0	96.7	100	20	83.3	93.3	100
<b>Others</b>									
<b>19</b>	Protective gear should be worn during stem treatment	100	0	100	100	93.3	86.7	96.7	100
<b>20</b>	The tablespoon for chemical measurement can later be used	100	96.7	100	100	96.7	100	100	100

Source: Field Work 2016 Note: PR-Pre-training; PT2-Post-training 2. C-Control, V-Video only, EAT-Extension agent taught, VET-Video-assisted

**Table 3: Knowledge and Cognitive test scores of cassava farmers in Oyo State**

S/N	KNOWLEDGE STATEMENT	CPT1	CPT2	VPT1	VPT2	EATPT1	EATPT2	VETPT1	VETPT2
		%	%	%	%	%	%	%	%
<b>LAND PREPARATION</b>									
<b>1</b>	Getting land history is necessary before cassava planting	0	0	100	100	0	0	100	100
<b>2</b>	During land preparation application of fertilizer and ploughing	0	0	100	100	0	0	100	100
<b>3</b>	Land free from erosion and drainage path should be selected for cassava cultivation	0	0	100	100	100	100	100	100
<b>SOIL TYPE</b>									
<b>4</b>	Cassava can grow well on any type of soil	0	0	100	100	0	0	100	100
<b>5</b>	Loamy soil is the best type of soil to plant cassava	96.7	96.7	100	100	100	100	100	100
<b>6</b>	After applying slight pressure, soil required for cassava planting must scatter	0	0	100	100	50	30	100	100
<b>7</b>	The presence of Siam weed (ewe akintola) on a land shows that the	96.7	96.7	100	100	100	100	100	100

**STEM CUTTING  
SPECIFICATIONS**

<b>8</b>	Disease and pest infested stem should be avoided for cassava	96.7	96.7	100	100	100	100	100	100
<b>9</b>	The greenish top soft part of the cassava stem can be used as stem	0	0	100	100	0	0	100	100
<b>10</b>	Stem cutting with close nodes should be avoided during planting	0	0	100	100	0	0	73.3	100
<b>11</b>	A measurement of nine nodes per stem is required for planting	0	0	100	100	0	0	100	100
<b>12</b>	You get information for the best variety to plant from the ADP's	96.7	96.7	100	100	100	96.7	100	100

**PREPARATION OF STEM CUTTING**

<b>13</b>	A standard measurement of 5 litres of water + 10 mills (1 tablespoon) of chemical, e.g. (Benlate or Perfeckthion) is required for stem	0	0	100	100	100	93.3	100	100
<b>14</b>	The stem should be soaked for 10-15 minutes before being planted	0	0	100	100	50	30	100	100
<b>15</b>	The chemical protects the planted stem from termites and other pest	96.7	96.7	100	100	100	93.3	100	100

**PLANTING SPECIFICATIONS**

<b>16</b>	The stem should not be forced roughly into the soil during planting	96.7	83.3	100	100	100	96.7	100	100
<b>17</b>	To plant, you use the cutlass to cut the soil, place the cassava stem	0	0	100	96.7	40	50	100	100
<b>18</b>	The upper tip of the cassava can slightly show when planted	0	0	100	100	30	50	100	100

<b>Others</b>									
<b>19</b>	Protective gear should be worn during stem treatment	96.7	96.7	100	100	100	100	100	100
<b>20</b>	The tablespoon for chemical measurement can later be used for other purposes	93.3	100	100	100	96.7	100	100	100

Source: Field Work 2016 Note: PR-Pre-training; PT2-Post-training2. C-Control, V-Video only, EAT-Extension agent taught, VET- Video-assisted

**Table 4: Availability of Video Playing Gadgets**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
Television set, VCD player and Mobile Phones	223	92.9
Mobile Phone only	10	4.2
Laptop	5	2.1
None	2	8

Source: Field work 2016

#### **Availability of video documentary playing gadgets**

Table 4 show that a higher percentage (92.9%) of the respondents in both states have video playing gadgets (Television and Video Compact Disc (VCD and mobile phones) while (4.2%) had mobile phones only. This means that they have the needed equipment to watch instructions contained in video documentaries discs even as individuals after training. They can also store the information on microchips or memory cards on their phones for later use.

## **CONCLUSION**

This study shows that video documentaries are viable tools for agricultural training as long as the contents are well packaged and the recipients and clients can relate with it. Results from this study is a strong indicator that video documentaries can be used to reinforce learning in place of the repeated contacts and follow up with the same information to help secure knowledge uptake since the farmers can also get this through repeated viewing or reviewing of the video documentaries. This should not be perceived as a threat to traditional extension services, but should be seen as a form of reinforcement.

## **RECOMMENDATIONS**

Video documentaries can play the role of a mirror, helping not only to look back at experiences, but also to anticipate future situations and thus create greater preparedness among viewers. Therefore, in order to further boost the utilization of video documentary as training aid in agricultural service delivery in Nigeria, the following recommendations are proposed from findings in this study:

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- ❖ Video documentaries are effective training tools with audio-visual advantage suitable for disseminating agricultural information across geographical locations.
- ❖ They enhance the ease of training information retrieval after several exposures which make information stick to the memory of the users and therefore should be utilised to package educational instructions on agricultural innovations for trainings.
- ❖ Video documentaries allow farmers to learn at their own pace especially since they can watch them over and over again at their convenience.
- ❖ Extension practitioners in the communication and support units of the various state Agricultural Development Programmes (ADP's) should produce or translate video documentaries into the familiar or local languages of the farmers to make learning and understanding easier regardless of their educational attainment
- ❖ Video documentaries are viable to alleviate the problems of low extension agent-farmers' ratio.
- ❖ Agricultural extension service should package instructional materials in short video documentaries that can be uploaded online for farmers use or transferred through the Bluetooth to the clients' mobile devices for personal use to reinforce trainings.
- ❖ In the past, video documentary viewing for extension training was done through the use of a television set, video disc player, electricity supply or through power generating sets, which were bulky and difficult to carry around, now there are portable ICT devices such as laptops, android phones, tablets, portable audio boosters and speakers, projecting devices such as portable mobile projectors, simple white cloth, or building walls and others, that the extension agents can move around with conveniently for ease of training. In the absence of all these, the farmers could be trained in batches to facilitate learning.
- ❖ The videos also can be sent to the farmers before the extension agent's visit for training so as to facilitate more interaction with the clientele. This would provide avenues for the best training practices for crowd control and people management.

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