

## **IMPACT OF HIV/AIDS ON CROP FARMING IN BENUE STATE**

<sup>1</sup>Abua, T., <sup>2</sup>Ekele, G.E. and <sup>2</sup>Agbulu, O.N.

<sup>1</sup>Department of Agricultural Education, College of Education Katsina-Ala

<sup>2</sup>Department of Agricultural Education, University of Agriculture, Makurdi

Email: [nyorbem@gmail.com](mailto:nyorbem@gmail.com)

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### **ABSTRACT**

This study investigated the impact of HIV/AIDS on food production of farmers in Benue state of Nigeria. A questionnaire survey design was adopted. The sample of the study of 400 participants was drawn from 48 comprehensive treatment sites in Benue state. The instrument used was the impact of HIV/AIDS on Food Production of Farmers Inventory (IHFPFI). The instrument was validated by the three experts in Research Methods and Agricultural education. The reliability of the instrument was established using Cronbach alpha which was 0.89. Five research questions and four research hypotheses were formulated to give direction to the study. The data collected were analysed using Mean and Standard Deviation to answer the research questions. T-test statistics was used to test hypotheses 1 -3. The results of the study include: HIV/AIDS had significantly impacted on pre-planting, post-planting and harvesting processes of crop farming. It was therefore suggested that Government at all levels should intensify their effort to reduce the number of new infected persons. This should include increased education and information campaign especially in the ill-informed rural areas to end the silence, stigma and indifference to HIV/AIDS. To achieve this, religious leaders, village heads, transport union etc. should be included in the campaign.

**Keywords:** Crop, Farming, Impact, HIV, AIDS

### **BACKGROUND OF THE STUDY**

The human immunodeficiency virus (HIV) causing the Acquired Immunodeficiency Syndrome (AIDS) remains a big challenge in Sub-Saharan Africa and understanding the socio-economic impact of the pandemic becomes an important policy issue. In 2007, at least 23 million of the 34 million people suffering from the disease were residents of the sub-region (Joint United Nations Programme on AIDS-UNAIDS, 2008). Opoh and Opara (2005) defined

AIDS as an abnormal condition in which the human immune or defense system cannot fight against invading pathogens, they furthered that, pathogens are disease causing micro-organisms. Foods and Agricultural Organization-FAO, (1997) defined acquired deficiency syndrome-AIDS as the name given to the fatal clinical condition that results from the infection of the Human Immunodeficiency Virus-HIV which progressively damages the body's ability to protect itself from disease organisms. Scientists have different theories about the origin of HIV, but none have been proven, the earliest known case of HIV was from giving blood sample collected in 1959 from a man in Kinshasa, Democratic Republic of Congo. Genetic analysis of this blood sample suggests that HIV-1 may have stemmed from a single virus in the late 1940's or early 1950's (Lawal, 2008). According to Daniel (2009), the first case of HIV/AIDS in Nigeria was diagnosed in 1986; since then, the prevalence rate has risen from 0-1.8% by 1991, 3.8% in 1993, 4.5% in 1996 and 5.4% 1998. By 2001, the prevalence has risen to 5.8. According to the sentinel survey, the national prevalence has declined from 5.8% in 2001 to 5.05 in 2003 and 4.4% in 2005 and recently lowering from 12.7% in 2010 to 5.6 in 2012 (Benue State AIDS Control Agency-BENSACA, 2014). Approximately, 170,000 people died from AIDS in 2007 alone (Federal Ministry of Health-FMOH, 2010). Annimarie, (2012) observed that Nigeria is reported to have the third highest prevalence rate of any country in the world with a five percentage population prevalence rate of over 3.3 million people living with the virus.

It is estimated that Agriculture currently accounts for 24% of world output, and uses 40% of land area. In Nigeria, Benue state is one of the states that is endowed with a lot of fertile land and able bodied young population, this explains why the state is usually referred to as the "food basket of the nation" with over 70% of the population indicating agriculture as their main source of income. Benue state is among the states with the highest level of infection in Nigeria (Hilhorst, Marti, Ode, and de Korrie, 2004).The high rate of HIV/AIDS in the state is said to have adversely affected individual farmers, households communities as well as the over development in the state. The Benue state economy is predominantly agrarian in nature and it depends on labor intensive mode of production for its survival and growth. But it is obvious that youths between the ages of 19- 24 years who represent the productive and economically viable segments of the society are mostly affected with the disease (Hilhorst, Marti, Ode and Korrie (2004). In the views of Dawn, Kathryn, & Maction, (2009), HIV/AIDS pandemic is one of the most pressing challenges facing farming communities in Sub-Saharan Africa. Approximately 63% of

people globally living with the virus reside in the region and the most affected households are heavily dependent on agriculture. As a result, the long-term pandemic has eroded the ability of rural African households to produce food and other agricultural products, to generate income, and to care for and feed family members. While prevalence rates have declined over time in some regions, and while availability of anti-retroviral drugs (ARVs) has reduced the effects of infection in communities where ARVs are widely available, recent studies have shown that the pandemic continues to exert significant negative economic and social effects in affected areas. HIV/AIDS affects not only the health of infected individuals, but the socioeconomic status of the individuals, their families, and their broader community. In addition to the direct costs of paying for medical care, HIV-affected households experience a loss of labor productivity both from household members who are ill and from their caregivers. In rural areas where farming is the primary source of income and food, decreases in household labor supply can lead directly to reductions in the nutritional status of all household members. AIDS-related illness have drastically affected household economies, reducing human capital, agricultural productivity, and labor supply and in turn reversing progress towards meeting other developmental challenges (Fauci, 2007). Continuous sickness and deaths in families due to HIV/AIDS reduces the ability of infected and affected households to participate in community and national development including farming, leading households, farmers and communities to reverse development progress intending acquisition of farm inputs, labour and time being unavoidable assets of rural farmers.

In the views of Adeoti and Adeoti (2008), the disease has detrimental impact on farmer's productive capacity. With specific regard to farming households, it has two direct impacts. Firstly, in farm production, labour quality and quantity are reduced. Labour quality, measured in terms of productivity, is reduced when the HIV-infected person is ill. The supply of such household labour falls when the person dies. Moreover, considerable productive time is devoted by other family members to the care of the sick; all these affect the availability of family labour. Secondly, the availability of cash to the family is affected as household financial reserves would be used for the medical treatment of the sick and for meeting funeral costs in case of death. This reduction in the farm-household's financial resources may lead to a reduction in farm investments, an increase in household food insecurity, deteriorating standards of living and poverty.

## **STATEMENT OF THE PROBLEM**

Comparatively, research work has been done on the impact of HIV/AIDS on agriculture; most of this research work is centered on the commercial farming sector (NACA, 2003; Laver, 1999; Lowenson and Whiteside, 1998). As a result little research has been done on how agriculture in communal and agrarian areas of Nigeria is being affected by or how farmers are coping with the impact of the HIV/AIDS pandemic. Against the above background, this study examines impact of HIV/AIDS on Food production with particular emphasis on crop farming and assesses how affected households are coping with the pandemic. Yet it is within rural areas that the majority of the Nigerian people live, under conditions of poverty that are conducive to the spread of HIV/AIDS. This lack of adequate information on the impact of HIV/AIDS on communal agriculture has thus weakened the ability of policy makers especially in the agricultural sector to formulate sound intervention strategies for the affected households, hence this study.

## **OBJECTIVE OF THE STUDY**

The major purpose of this study was to examine the impact of HIV/AIDS on crop farming activities in Benue state. Specifically, the study determines:

- 1 The demographic characteristics of infected farmers in Benue state.
- 2 The impact of HIV/AIDS on pre-planting operations on the farms of infected farmers in Benue state.
- 3 The impact of HIV/AIDS on post-planting operations on the farms of infected farmers in Benue state.
- 4 The impact of HIV/AIDS on the harvesting process of infected farmers in Benue state.

## **RESEARCH HYPOTHESIS**

- HO<sub>1</sub> There is no significant difference in the mean rating of the responses of male and female infected farmers on the impact of HIV/AIDS on their pre-planting operations and food production in Benue state
- HO<sub>2</sub> There is no significant difference in the mean rating of the responses of male and female infected farmers on the impact of HIV/AIDS on their post-planting operations and food production in Benue state
- HO<sub>3</sub> There is no significant difference in the mean rating of the responses of male and female infected farmers on the impact of HIV/AIDS on crop harvesting and food production in Benue state

### **SIGNIFICANCE OF THE STUDY**

The study will be of importance to HIV/AIDS infected/affected farmers, Extension officers, Agricultural Educators, medical personnel and Non-Governmental Organizations. The long incubation period followed by lengthy period of HIV/AIDS illness affects labour during farming operations by infected farmers. This makes the study relevant to agricultural educators and extension officers by revealing the extent and degree of devastation the pandemic had caused on major farming operations thereby involving educative strategies/ techniques that would minimize labour during farm operations. Medical personnel and Non-Governmental organizations (NGOs), Faith based organizations e t c. would access the outcome of this study and find it useful in HIV/AIDS prevention information and training programs, this would avail them of the opportunity to develop modules for initiating sex and family life education for their member. The findings of this research would help the government to initiate policies and programmes that would assist the infected and affected persons in alleviating their sufferings through provision of farm infrastructures, credit facilities and support for the training of infected and affected children.

### **THE SCOPE OF THE STUDY**

This study intends to address the impact of HIV/AIDS pandemic on Agricultural productivity with particular emphasis on crop production and lives of infected farmers in Benue state. The study specifically addresses the origin, prevalence of HIV/AIDS and how it affects both pre and post planting operations and wellbeing of infected farmers in Benue state. Benue state is located in the North Central geo-political region of Nigeria. The state lies between longitude  $7^{\circ} 40^1$  and  $10^{\circ} 00$  E and latitude  $6^{\circ} 30^1$  and  $8^{\circ}24^1$  N. It is bounded by five states, namely Nasarawa to the north, Taraba to the north east, Cross-River to the south, Enugu and Kogi to the west. There is also a short international boundary between the state and the Republic of Cameroon along the south-west border.

### **LITERATURE REVIEW**

The review of literature was done under the following sub-headings: Theoretical framework, Conceptual framework, Related empirical studies and Summary of literature review.

### **THEORETICAL FRAMEWORK**

**Rational Decision Theory (Herbert A. Simon, 1947)**

The Theoretical framework for this study is based on The Rational decision theory which concerns itself with the identification of problems and choosing of alternatives that are based on the values, preferences and experiences of the decision-maker (Harris, 1998). The theory suggests that when people (decision makers) are faced with a problem or crisis, they follow a specific process where problems are identified, goals are decided upon, alternatives are developed in accordance with such goals, and then the most efficient alternative is implemented to solve the problem or crisis (Baker, Brigdes, Hunter, Johnson, Krupa and Sorenson, 2002; Rainey, 2003). In the context of agriculture, the HIV/AIDS pandemic represents a problem or a crisis. The decision-makers (communal farmers) identify the problems that household agriculture is facing because of HIV/AIDS. Decisions are then made on how to react to the problems posed by the pandemic and various alternatives are formulated. In the end, the most efficient and cost-effective strategies are implemented so that the household is able to sustain itself through the crisis. According to Keeney and Raiffa, (1996) rational decisions on alternatives are made on the basis of maximum utility. This means therefore, that in choosing alternatives to maintain and sustain the household through the crisis period, communal farmers choose those alternatives (coping strategies) where they minimize their cost and maximize their benefits.

## **METHODOLOGY**

### **RESEARCH DESIGN**

This study made use of a cross-sectional survey design to gather data from the respondents. Collects information from a predetermined population (HIV/AIDS infected farmers) and the information collected are just at one point (Anti-retroviral sites). Therefore, cross-sectional survey design was used in the study.

### **AREA OF STUDY**

Benue state is located in the North Central geo-political region of Nigeria. The state has 23 local government areas, and its Headquarters is Makurdi. The state has abundant land estimated to be 5.09 million hectares. This represents 5.4 percent of the population of the national land mass with an arable land estimated to be 3.8 million hectares (BENKAD, 1998).The state is predominantly rural with an estimated 75% of the population engaged in rain-fed subsistence agriculture (Asogwa and Umeh, 2012). The state lies between longitude  $7^{\circ} 40^1$  and  $10^{\circ} 00$  E and latitude  $6^{\circ} 30^1$  and  $8^{\circ}24^1$  N. It is bounded by

five states, namely Nasarawa to the north, Taraba to the north east, Cross-River to the south, Enugu and Kogi to the west. There is also a short international boundary between the state and the Republic of Cameroon along the south-west border.

### **POPULATION OF THE STUDY**

The total population of study is 460,000 HIV/AIDS infected persons in Benue state. This data were collected from 48 comprehensive treatment sites in Benue state (BENSACA, 2014).

### **SAMPLE AND SAMPLING TECHNIQUE**

The Simple size for the study is 400 infected farmers in the study area. Simple random sampling technique was used to select the sample from the entire population since a comprehensive of the population with their respective treatment centers and phone numbers were available. Balloting was used for the study.

### **INSTRUMENT FOR DATA COLLECTION**

The researcher used structured questionnaire. The questionnaire consisted of two parts (A and B). Part A. Is an introductory part, the demographic characteristics, providing information on the bio data of the respondents? The instruction informed the respondents of what was expected of them in completing the questionnaire. Part B- Consists of four sections partitioned as sections 2-4. The sections cover: impact of HIV/AIDS on pre-planting, post-planting, harvesting of crops. The instruction had a scale ranging from Strongly Agree, Agree, Disagree and Strongly Disagree.

### **VALIDATION OF THE INSTRUMENT**

The items of the research instrument were validated by three experts, two from department of Agricultural Education and one in Measurement and Evaluation from the College of Agricultural and Science Education, University of Agriculture Makurdi for face and content validation. They were requested to check for appropriateness of the items, constructions and structure of the questions, clarity of the questions and options as well as scope of the questions in regards to the stated behavioral objectives, after which corrections were made. Some of the questions with poor options were deleted, and some options that were poorly framed were either deleted or modified. Also items that were not well structured were restructured.

### **RELIABILITY OF INSTRUMENT**

In other to establish the reliability of the instrument, a trial testing was administered on 30 infected farmers from Wukari local government area of Taraba state. Cronbach-alpha reliability coefficient was used to determine the reliability of the instrument. The reliability coefficient of the instrument yielded 0.89. The reliability coefficient was high enough to show that the instrument was reliable.

### **METHODS OF DATA COLLECTION**

Data collection involved a participatory methodology which utilizes hospital or health care based samples using structured questionnaire, for primary data collection, a total of 400 copies of questionnaire will be administered to infected farmers through medical personnel responsible for counseling for/administration of anti- retroviral drugs. To ensure ethical considerations and confidentiality, all data was left anonymous for infected farmers and the objective of the study were explained as sample elements and their approval and cooperation solicited in carrying out the study.

### **METHODS OF DATA ANALYSIS**

Descriptive statistics involving simple percentages, mean and standard deviations was used to answer research questions while inferential statistics (t-test) was used to test hypothesis 1-3. The hypothesis was tested at 0.05 level of probability.

### **RESULTS AND DISCUSSION**

Demographic characteristics of HIV/AIDS infected farmers in Benue state?



**Table 1: Demographic Characteristics of the Respondents**

Variable	Frequency N=392	Percentage (%)
<b>Sex</b>	Male	226
	Female	166
<b>Marital status</b>	Single	64
	Married	136
	Divorced	23
	Widowed	94
	Widower	75
<b>Age bracket</b>	18-25 years	68
	26-35 years	155
	36-45 years	113
	45 years >	56
<b>Annual income</b>	100000-250000	201
	251000-350000	118
	351000-450000	53
	451000 >	20
<b>Highest educational qualification</b>	no formal education	87
	Fslc	142
	Ssce	96
	ND/NCE	47
	bachelors degree >	20

The respondents were classified into two categories based on gender, with the male sex respondents; 266(55.3%) while females 166(40.6%). The male infected farmers formed the highest number among the sampled population. On marital status of the respondents, married couples formed the highest number 136(33.3%) followed by widows, 94(23.0%) while the number of divorced respondents was smallest, 23(5.3%). The respondents with age bracket of 26-35 years formed 155(37.9%) followed by the 36-45 years age bracket which were 113(27.6%) while those with age bracket of 45 years and above were 56(13.7%). In terms of income bracket, respondents with an annual income of ₦ 100000-250000 (49.1%) were the highest while those with an annual income of ₦ 451000 and above were least 20(4.9%). On the basis of highest educational qualifications of the respondents, those with First school leaving certificate-FSLC142 (34.7%) were the highest followed by those with senior secondary school certificate-SSCE 96(23.5%) while respondents with bachelors degree were the least with 20(4.9)

### **HYPOTHESIS 1**

There is no significant difference in the mean rating of the responses of male and female infected farmers on the impact of HIV/AIDS on their pre-planting operations and food production in Benue state

**Table 2: T-Test Analysis on the Significance of the Responses of Male and Female Infected Farmers on the Impact of HIV/AIDS on Pre-Planting Operations**

		F	Sig.	t	df	Sig. (2-tailed)
HIV/AIDS impact on pre-planting operations	Equal variances assumed	850.08	.000	-187.691	390	.000
	Equal variances not assumed			-174.903	2036.034	.000

P=.000,  $P < 0.05$  is significant and indicates that there is significant difference in the means of male and female infected farmers on the impact of HIV/AIDS on pre-planting operations. Hence the null hypothesis stated is rejected and the alternative hypothesis accepted. That is, HIV/AIDS significantly affects pre-planting operations.

## HYPOTHESIS 2

There is no significant difference in the mean rating of the responses of male and female infected farmers on the impact of HIV/AIDS on their post-planting operations and food production in Benue state

**Table 3: T-Test Analysis on the Significance of the Responses of Male and Female Infected Farmers on the Impact of HIV/AIDS on Post-Planting Operations**

		F	Sig.	t	df	Sig. (2-tailed)
HIV/AIDS impact on post-planting operations	Equal variances assumed	1011.36	.000	-123.579	390	.000
	Equal variances not assumed			-117.996	1318.193	.000

From table 7, P=.000,  $P < 0.05$  is significant and indicates that there is significant difference in the means of male and female infected farmers on the impact of HIV/AIDS on post-planting operations. Hence the null hypothesis stated is rejected and the alternative hypothesis accepted. That is, HIV/AIDS significantly affects post-planting operations.

### **HYPOTHESIS 3**

There is no significant difference in the mean rating of the responses of male and female infected farmers on the impact of HIV/AIDS on crop harvesting and food production in Benue state

**Table 4: T-Test Analysis on the Significance of the Responses of Male and Female Infected Farmers on the Impact of HIV/AIDS on Harvesting of Crops**

		F	Sig.	t	df	Sig. (2-tailed)
HIV/AIDS impact on crop harvesting	Equal variances assumed	786.20	.000	-171.471	390	.000
	Equal variances not assumed			-157.993	1669.379	.000

From table 8,  $P=.000$ ,  $P < 0.05$  is significant and indicates that there is significant difference in the means of male and female infected farmers on the impact of HIV/AIDS on harvesting of crops . Hence the null hypothesis stated is rejected and the alternative hypothesis accepted. That is, HIV/AIDS significantly affects harvesting of crops.

### **DISCUSSION OF FINDINGS**

The study sought to determine if there is a significant relationship in the population means of male/ female infected farmers on the impact of HIV/AIDS on pre-planting operations. The significance of this result was tested using t-test at 0.05 level of significance as in Table 2. The result showed that  $P=.000$ ,  $P < 0.05$  which indicates that HIV/AIDS has significantly impacted on the pre-planting operations of infected farmers in Benue state. These findings agree with those of Bie (2008) and Sabo (2007), and Chuks (2008) who found out similar challenges being faced by infected farmers such as land clearing, pre-emergency operations, scheduling and availability of planting stock. This similarity could be due to the fact that HIV/AIDS has assumed a global dimension and farmers from diverse geographical regions undertakes similar pre-planting operations. Furthermore, the study also sought to determine if there is a significant relationship in the population means of male/ female infected farmers on the impact of HIV/AIDS on post-planting operations.

Table 3 showed that HIV/AIDS has significant impact on post-planting operations of infected farmers. The significance of this result was tested using t-test at 0.05 level of significance as in Table 7. The result showed that  $P=0.000$ ,  $P<0.05$  which indicates that HIV/AIDS has significantly impacted on the post-planting operations of infected farmers in Benue state. This finding agrees with earlier findings of Barnett (2004), Adenegan and Adewusi (2007), Thliza and Sabo (2007), and Tawodzera (2005), who also found out that much of the finances and time are diverted to Hospital bills and care giving. Since the disease causes low immunity, the ability to withstand that stress involved in carrying post planting operations such as disease prevention, fertilizer application, weeding and transplanting becomes less and in most cases, the finances to engage hired labour may not be feasible.

The study also was to determine if there is any significant relationship between HIV/AIDS and crop harvesting of both male and female infected farmers in Benue state. It was observed as in table 4 that HIV/AIDS had significantly impacted on crop harvesting among infected male and female. The significance of this result was tested using t-test as presented in table 8, which reveals that value of  $p=0.000$ ,  $p<0.05$  which indicates that HIV/AIDS had significantly impacted on crop harvesting among infected male and female farmers in Benue state. This agrees with the findings of earlier studies carried out by Morton, Rutagwenda, Musinguzi and Tunawinjuwke (2006) who also found that members of the infected families who also could be of help still devote much of the time for care giving and traditional mourning customs arising from death of the infected members. This therefore devalues the crops, crops dry-ups, after-ripening and field scattering of the crops.

## **CONCLUSION**

The following conclusions based on the findings, are presented:

- (1) Infected farmers due to lowered immunity as a result of the pandemic are not energetic enough to effectively undertake the pre-planting processes. This is because in most cases, other diseases associated with infection of HIV/AIDS makes the farmer weak.
- (2) As time goes on, the infected farmer's finances will dwindle and will be unable to engage hired labour, secure seeds and other inputs needed to effectively and efficiently undertake the process of crop farming.
- (3) That crop are most times not harvested on time, this lowers their quality and viability for marketing and planting in the next season.

Sometimes the crops may after-ripened or scattered due to delayed harvesting leading to severe losses.

- (4) Farming being a combination of processes beginning from pre-planting, post-planting and harvesting, an infected farmer who fails to properly execute these processes properly and as at when due will certainly experience low yield, leading him/her to a sorry state of abject poverty. Furthermore, the pandemic had compelled most infected farmers to resort to subsistence agriculture.

### **RECOMMENDATIONS**

From the research findings it was established that, the pandemic had significantly impacted on the farm operations of infected farmers. This if not properly tackled can lead to food insecurity causing hunger/malnutrition, poverty and affecting the quality of life. This therefore becomes a threat to the attainment of the millennium development goals. It was therefore recommended that:

- (1) Government at all levels should intensify their effort to reduce the number of new infected persons. This should include increased education and information campaign especially in the ill-informed rural areas to end the silence, stigma and indifference to HIV/AIDS. To achieve this, religious leaders, village heads, transport union etc. should be included in the campaign.
- (2) Whereas polygamy is extensively practiced in Nigeria, religion is highly respected. Therefore, government and donor agencies such as WHO, USAID, UNAIDS etc. should use religious leaders to preach the campaign of voluntary HIV test and counseling before marriage.
- (3) Poverty is one of the major factors responsible for deteriorating conditions of the infected persons. Government should comprehensively design and judiciously implement programs to reduce poverty at individual, family as well as community levels. Such programs should include home base care for people with HIV/AIDS, foster care for AIDS orphans, food programs for the children and support for educational expenses.
- (4) Government and NGOs/CBOs/FBOs should give all the necessary support to the various health research institutes in developing HIV vaccine. In addition, governments and other donor agencies should expand their anti-retroviral drugs distribution program to incorporate all identified HIV infected persons. Therefore, more sites should be established in rural areas to facilitate the distribution of the ARD.

- (5) Establishment of formal social insurance schemes for widows, orphans and aged people in the communities. Old people who remain to take care of the orphans are usually unable to work and therefore their ability to sustain the orphans' development is limited. Improvement of the current safety nets for the poor and affected households and development of new ones at kindred, district /ward and community levels is vital.

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