

Original Article

Effect of HIV/AIDS Prevalence on Farm Income of People Living With HIV/AIDS (PLWHA) in Kogi State, Nigeria

Shaibu M.U.*, Onuche U. and Ibitoye S.J.

Department of Agricultural Economics and Extension, Kogi State University Anyigba

*Corresponding Author

Shaibu M.U

Department of Agricultural Economics and Extension, Kogi State University Anyigba
E-mail: brave.monday@yahoo.com

Keywords:

HIV/AIDS,
PLWHA,
Labour,
Farm Income

Abstract

The study was on effect of HIV/AIDS prevalence on farm income of People Living with HIV/AIDS (PLWHA) in Kogi State, Nigeria. The study described the socio-economic characteristics of PLWHA who are small scale farmers, determined the factors affecting the farm income of PLWHA, and identified the major problems encountered by PLWHA in the study area. A simple random sampling method was used. Three health care facilities and one community based organization were selected. Thirty (30) PLWHA-small scale farmers were randomly selected from each of the facilities making a total of 120 respondents. Data were gathered through questionnaire administration. Descriptive statistics, multiple regression, and mean score were used for data analysis. The results showed that 45.8% of the respondents were widow with non-formal education and a household size of 6-10. 60% of the respondents were full time farmers with farming experience of 11-15 years. Age, technology adoption and labour lost as a result of HIV/AIDS were significant variables affecting the farm income of PLWHA. Labour lost had a negative coefficient while age and technology adoption were positively related to farm income. The major problems encountered by PLWHA who are small scale farmers include low earnings, stigmatization, discrimination, inadequate capital, and lack of credit facilities. The study recommends that government should take necessary measures to control the spread of the disease. Also, soft loan should be made available and accessible to PLWHA who are small scale farmers.

1. Introduction

Agriculture is the single most important sector in Africa, providing livelihood for at least 53% of the economically active population [1]. Since its discovery over two decades ago, the Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) has become a pandemic on a global scale. The pandemic has assumed an ominous place as the primary infectious cause of mortality in the developing world [2]. According to UNAIDS (2008)[3], an estimated 3.1% adults between ages 15-49 years are People Living With HIV/AIDS (PLWHA) in Nigeria. Although, the HIV prevalence rate is much lower in Nigeria than other African countries, infection rate should be considered in the context of the size of Nigeria's population of about 140 million people of which an estimated 2.6 million people are infected with HIV [3]. With AIDS claiming so many lives, Nigeria's life expectancy has declined significantly to 46 years for women and 47 years for men [3].

Nigeria's 2009 HIV/AIDS statistics put the national average of HIV prevalence at 4.6%. Regional variations also exist in the prevalence rate which can be attributed to marked social and ethno-cultural differences at this level. For instance, the prevalence rate ranges from a low of 1.0% in the Southwest to a high of 10.6% in the North Central parts. Kogi State, located in the North Central Nigeria has a prevalence rate of 5.8%.

In Nigeria, majority of the population most affected by HIV/AIDS lives in rural areas while farming and other rural occupations provide a source of livelihood for more than 70 per cent of the population [1]. In 2003 it was estimated that in southern Africa, where the highest rates of HIV prevalence can be found, as many as 1.2 million people died out of more than 14 million persons infected with the virus [4].

HIV/AIDS affects agriculture both directly and indirectly at the rural level, changing supplies of labour, assets, patterns of farming and other activities; as well as affecting communities as whole and the wider economy; and some of these changes come back

to affect farming households. The epidemic undermines household economies, often pushing those directly affected into poverty, and reducing the incomes of all so that not only those living with HIV/AIDS, but also many of the individuals and households not directly affected, may see their incomes fall. With less labour and working capital, and in some cases having sold off tools and livestock, affected households often have to modify their farming. Less land may be tilled, leaving parts of the farm in fallow. Cropping patterns may switch towards food crops to assure survival, and towards crops for which there are lower peak demands for labour – for example, from maize to cassava and sweet potato. Cash crops are particularly likely to be abandoned when adult males fall sick, since they typically attend to such crops and have the contacts to market the produce. Households may sell off large livestock, such as cattle, and use smaller stock units, such as goats or chickens, that can be reared closer to the homestead, and that can be sold off in small quantities to release cash for purchases of medicines for the sick or for basic needs where regular sources of income are lost.

Agricultural systems may also become simplified because, when people die from AIDS, agricultural knowledge and skills that are crucial for production are not passed down to the next generation [5]. The impact of the disease on affected households is cumulative, cutting incomes, depriving them of assets, undermining cropping mechanisms and leaving them ever more vulnerable. Poverty, if not outright destitution, and food insecurity seem the fate of many affected households [6].

In Kogi State, where majority of the rural dwellers lives in poverty, the consequences of economic setbacks can be severe. Early outbreaks of the disease occurred predominantly in urban areas, but subsequently, increasing prevalence rates in rural areas and a tendency for those showing symptoms of AIDS to return to their villages, mean that the majority of people living with HIV/AIDS are now in rural areas. The focus of policy is therefore shifting, both spatially, from urban to rural; and sectorally – while initial early

responses focused heavily on health and education, it is now clear that the economic effects will be large, including on agriculture and related activities. The severity of the HIV/AIDS pandemic presents urgent questions about its effect on the level of farm income of PLWHA.

The study had a broad objective to determine the effect of HIV/AIDS on the farm income of PLWHA. The specific objectives are to:

1. describe the socio-economic characteristics of farmers infected/affected with HIV/AIDS in the study area
2. determine factors affecting the farm income of PLWHA
3. identify the problems faced by small scale farmers who are among People Living With HIV/AIDS (PLWHA) in the study area

1.1 Conceptual Framework and Literature Review

In many African countries, farming and other rural occupations provide a means of livelihood for most population. By implication, the HIV/AIDS epidemic will cause serious damage to the agriculture sector in those countries, especially in countries that rely on manpower for production which Nigeria is not an exemption. A study conducted by FAO (1997)[7] in Burkina Faso revealed a shift in work patterns and an overall reduction in food production as a result of the HIV/AIDS epidemic. The study further showed that net revenues from agricultural production in the country decreased by 25 to 50 per cent.

In Kenya, Rugalema [8] found that the commercial agricultural sector was facing a severe social and economic crisis caused by HIV/AIDS. The loss of skilled and experienced labour to the epidemic is a serious concern. Mutangadura [9] conducted a study in the United Republic of Tanzania and reported that a woman whose husband was sick was likely to spend 45 per cent less time on agriculture than if the husband was healthy. According to Mutangadura and Mukurazita [10], worker-deficient households cultivate less land and have fewer cattle and less non-farm-related cash income in Namibia.

A study in Ethiopia and revealed a reduction in agricultural labour time as a result of HIV/AIDS: the number of hours per week in agriculture fell from 33.6 hours in households not affected with HIV/AIDS to between 12 and 16 hours in affected households [11].

According to FAO [12], in the 27 most affected countries in Africa, 7 million agricultural workers died from AIDS between 1985 and 2000, and 16 million more deaths were likely to occur in the following two decades. A study in Zambia found that heads of HIV-affected households reduced their cultivated land area by 53%, resulting in reduced crop production[13].

In Nigeria, HIV and AIDS infection has direct impact on farm production, labour quality and quantity. 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. Considerable productive time is devoted by the affected household members to the care of the sick; all these affect the availability of family labour [14].

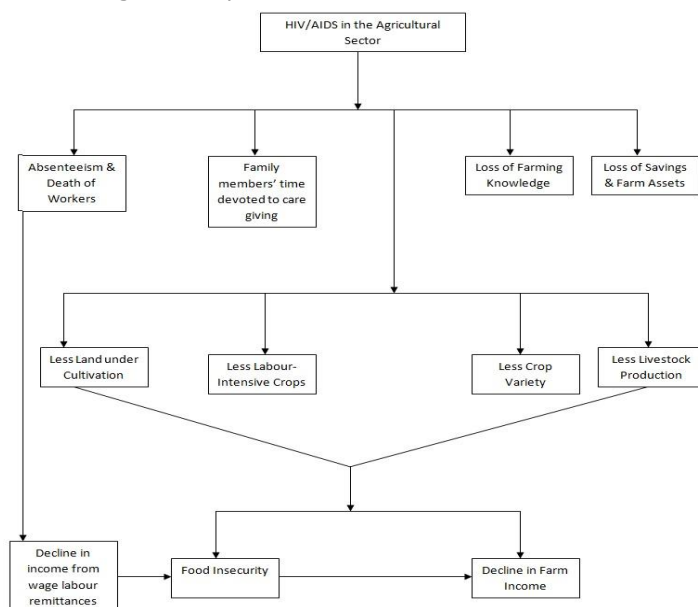
Onuche, Opaluwa and Edoke [15] carried out an empirical study on ill health and agricultural production in Nigeria. The study revealed an inverse relationship between number of days lost to illness and agricultural output. Farm output decreases with the number of days in which farmers were not available for farming due to ill health.

1.2 Conceptual Framework

Absenteeism caused by HIV-related ill-nesses and the loss of labour from AIDS-related deaths may lead to reduction of the area of land under cultivation and to declining yields resulting in reduced food production and food in-security. The loss of labour may also lead to declines in crop variety and to changes in cropping systems, particularly a change from more labour-intensive systems to less intensive systems. Livestock production may become less intensive while weeding and pruning may be curtailed. A shift away from labour-intensive crops may result in a less varied and less nutritious diet. The reduction in labour supply through the loss of workers to HIV/AIDS at crucial periods of planting and harvesting could significantly reduce the size of the harvest, affecting food production. Loss of knowledge about traditional farming methods and loss of assets will occur as members of rural households are struck by the disease and are not able to pass on their know-how to subsequent generations, see Figure 1.

Consequently, the important impacts of the HIV/AIDS epidemic on agriculture are food insecurity caused by reduction in production, and loss of income from household members employed in the sector. The HIV/AIDS epidemic may also affect the traditional coping mechanisms that are often found in rural areas. Traditionally, local residents have joined together to offer assistance to those in need during periods of shock or crisis. Indeed, community-based initiatives have become one of the outstanding features of the epidemic and a key coping mechanism for mitigating the impact of HIV/AIDS [4]. However, as the number of HIV/AIDS cases increases, the need for assistance may overwhelm the support system, and traditional coping mechanisms may begin to break down.

Figure 1: HIV/AIDS and Small Scale Farmers' Income



Source: United Nations Department of Economics and Social Affairs, Population

2. Methodology

2.1 The study area

The study area is Kogi State of Nigeria. Kogi State was created out of Kwara and Benue States on the 27th August, 1991. The State currently has 21 Local Government Areas (LGAs) with Lokoja town as the headquarter. Kogi State is located in the middle-belt of Nigeria. It extends from latitude 6°33'N to 8°44'N and longitude 5°40'E to 7°49' E. The state has a current population of about 3,278,487 people with an average of 172,000 farming families. Kogi State is made up of various ethnic groups, the major ones are; Igala, Ebir, Yoruba and Nupe. Kogi State has a tropical climate. The climate is divisible into two major seasons-dry and wet seasons. The wet season begins towards the end of March and ends towards the end of October. In very dry year, rainfall may not start until the month of April. Dry season begins in the month of November and lasts until late February. The harmattan wind is experienced during the dry season for about two months (December and January). The average annual rainfall ranges from 850mm to 2000mm. During the rainy season the daily mean temperature is about 28°C while in the hot season, the average temperature is about 35°C. High humidity is also common [16]. The vegetation consists of rainforest in the southern part of the state and the woody derived savannah and Guinea savannah in the northern extreme. Generally the land mass is flat or gently undulating and lies at 50m to 700m above sea level. The two largest rivers in Nigeria (Rivers Niger and Benue) flow through the state. River Niger forms a confluence with the Benue at Lokoja the state Headquarter.

2.2 Data Collection and Analysis

The study was carried out with a sample of 120 People Living With HIV/AIDS (PLWHA) who are small scale farmers from health care facilities and Community Based Organisation: Holley Memorial Hospital Ochadamu, Kogi State University Teaching Hospital Anyigba, St. John Catholic Hospital Kabba, and Initiative for

Health and Social Development (IHSD) Lokoja. Thirty (30) PLWHA small scale farmers were randomly selected from the list gathered from each facility. A total of 120 respondents were used for the study.

Data collected were analysed using descriptive statistics, multiple regression analysis and mean score. Respondents' socio-economic characteristics was analysed with the use of descriptive statistics, factors affecting the farm income of PLWHA was achieved with the use of multiple regression analysis, while major constraints encountered by PLWHA who were small scale farmers was achieved using mean score. The multiple regression analysis is specified thus:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, e_i)$$

$$Y = \beta + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + e_i$$

Where: Y = Farm Income (₦)

X₁ = sex (male = 1, female = 0)

X₂ = age (years)

X₃ = technology adoption (yes = 1, and zero if otherwise)

X₄ = farm size (hectares)

X₅ = labour (man-days of labour lost as a result of HIV/AIDS)

X₆ = crop/farming system (food crops = 1, and zero, otherwise)

e_i = error term

The mean score was calculated after respondents' responses were obtained with a four point Likert type of scale.

$$\bar{X} = \frac{\sum FX}{N}$$

Where: X = means response, \sum = summation, F = number of respondents choosing a particular scale point, X = numerical value of the scale point and N = total number of respondents to the item.

3. Results and Discussion

The socio-economic characteristics of small scale farmers who are among PLWHA in the study area are presented in Table 1.

Table 1: Distribution of respondents according to socio-economic characteristics

Variables	Frequency	Percentage	
Sex	Male	44	36.7
	Female	76	63.3
	Total	120	100
Age	15-24	09	07.5
	25-49	65	54.2
	50 and above	46	38.2
	Total	120	100
Marital status	Single	12	10.0
	Married	41	34.2
	Divorced	03	2.5
	Widowed	55	45.8
	Widower	09	07.5
	Total	120	100
Educational level	No formal education	64	53.3
	Primary education	19	15.8
	Secondary education	27	22.5
	Tertiary education	10	08.4
	Total	120	100
Household size	1-5	43	35.8
	6-10	66	55.0
	11-15	09	7.5
	Above 15	02	1.7
	Total	120	100
Farming Experience	1-5	12	10.0
	6-10	14	11.6
	11-15	65	54.2
	Above 15	29	24.2
	Total	120	100
Major Occupation	Farming	72	60.0
	Artisan	13	10.8
	Civil service	12	10.0
	Petty trading	23	19.2
	Total	120	100

Source: Field Survey, 2014.

Table 1 show that females constitute majority of the respondents, having 63.3 percent while males were 36.7 percent. This can be attributed to the fact that women are more vulnerable and as well had more understanding and orientation on the existence of the virus. Hence, they resort to going for the ART treatment. Rural households (particularly women) provide most of the care for AIDS patients. In addition, food, medical care costs and funeral expenses are primarily borne by rural families[17].

Majority of the respondents (61.7 percent) falls within the age range of 15 - 49 years which is considered as the most productive age group in agriculture. This finding is in line with Topouzis [5] who confirmed that what distinguishes HIV/AIDS from other fatal diseases is that: it primarily affects the most productive age group of men and women between 15 and 49 years—the main breadwinners and heads of households raising families and supporting the elderly and their children.

The marital status of the respondents shows that majority (45.8 percent) of PLWHA who are small scale farmers were widowed. 34.2 percent of the sampled respondents were married, while 10.0 percent, 7.5 percent and 2.5 percent of the respondents were single, widowers and divorced respectively. FAO [17] confirmed that the burden of the socio-economic impact of HIV/AIDS disproportionately affects rural women. Widows tend to become poorer as they lose access to land, property, inputs, credit and support services. HIV/AIDS stigmatization compounds their situation further, as assistance from the extended family and the community—their only safety net—is often severed. Widowers tend to remarry soon after losing their wives, thus cushioning their families from AIDS impacts.

Table 1 also shows that 53.3 percent of the respondents had no formal education while 46.7 percent of the respondents in the study area can read and write with various level of educational attainment. Table 1 has also indicated that majority (90.8 percent) of the respondents had a household size of 10 members and below. It is

expected that members of the household will serve as source of labour in farming activities. Majority (54.2 percent) of the respondents had spent between 11 - 15 years in farming. 24.2 percent of the respondents had spent over 15 years, 11.6 percent had stayed between 6 - 10 years, whereas 10.0 percent had spent 1- 5 years in farming enterprise. This implies that majority of the small scale farmers living with HIV/AIDS in the study area had a relatively low level of farming experience. This can be attributed to the fact that most farmers who are infected/affected with HIV/AIDS migrated from urban to rural areas. Also, farming activities seems to be a profitable enterprise in the study area, since there is a traditional believes that nobody will spend several years in an unprofitable venture.

Finally, Table 1 showed that majority (60 percent) of the respondents were full-time farmers while 10.8 percent, 10.0 percent, and 19.2 percent combine farming with artisan, civil service and petty trading respectively. This implies that the agricultural sector serves as source of employment opportunities to the rural areas. This finding is consistent with Daramola [18] that the agricultural sector of Nigeria economy contributes significantly to rural employment, food security, provision of industrial and raw materials.

3.1 Factors Affecting the Farm Income of PLWHA

3.1.1 HIV/AIDS and Agricultural Production Inputs

Table 2 shows agricultural production inputs with respect to small scale farmers living with HIV/AIDS. The table shows that majority (52.5%) of the respondents had a farm size of 1-3 hectares, 37.5% had a farm size of less than 1 hectare, while only 10% of the respondents had above 3 hectares of land for farming. The average hectarage was 1.6. This is close to the national average of 1.5. In a report from Rwanda, Gillespie and Kadiyala [19] reported 60-80 percent of reduced farm land due to illness and death of infected households. With the death of a male, households cultivated less land.

Table 2: HIV/AIDS and Agricultural Production Inputs

	Production inputs	Frequency	Percentage	Mean
Farm size (hectares)	<1	45	37.5	1.6ha
	Above 3	63	52.5	
	1-3	12	10	
	Total	120	100	
Technology Adoption	Yes	46	38.3	-
	No	74	61.7	
	Total	120	100	
Labour lost to HIV/AIDS in a Farming Season (man-days)	21-50	42	35.0	59 man-days
	51-80	65	54.2	
	Above 80	13	10.8	
	Total	120	100	
Crop/farming system	Cash crops	10	8.3	-
	Food crops	105	87.5	
	Both cash and food crops	05	4.2	
	Total	120	100	

Source: Field Survey, 2014

Result on the adoption of agricultural technologies indicates that majority (61.7%) of the respondents did not adopt any technology in carrying out their farming operations. HIV/AIDS-infected farmers face possible isolation and lack of interaction with non-infected farmers. Stigmatization may be very traumatic for AIDS sufferers, especially in rural areas where most of the population are still ignorant of the AIDS disease. This agrees with Annmarie [20], who reported that, in circumstances where a population is still very much fatalistic and ignorant of the HIV/AIDS disease, HIV/AIDS-infected farmers may not make themselves available for training or exchange of extension information.

Table 2 also shows that majority (54.2%) of the small scale farmers living with HIV/AIDS had lost about 51-80 man-days of labour to HIV/AIDS infection. 35% of the respondents had lost about 21-50 man-days, while 10.8% of the respondents had lost above 80 man-days of labour to HIV/AIDS infection. Average man-days of

labour lost as a result of HIV/AIDS in the study area were about 60 per farming season. HIV/AIDS affects the most active and productive segment of the rural society, thereby threatening agricultural productivity and food security. Many children and elderly people now head rural households. In addition, family members spend time, which could otherwise be invested in agriculture to care for the sick and to attend funerals and mourn the dead. A study conducted by the Zimbabwe Farmers Union (ZFU) showed that the death of a breadwinner due to AIDS cut the marketed output of maize in the small scale farming and communal areas by approximately 60 percent [21]. Also, a study in Ethiopia demonstrated that labour losses reduced the time spent on agriculture from 34 hours per week for non-AIDS affected households to between 12 and 16 hours for those affected by AIDS [11].

Table 2 further shows that most 105(87.5%) of the small scale farmers living with HIV/AIDS in the study area were food crop

farmers. This agrees with the FAO research findings in East Africa which indicated that farm families affected by HIV/AIDS substituted cash crops for crops which require less labour and for which little fertilizer or herbicides are required. Households in Gwanda and Nakyerira regions of Uganda were observed to have abandoned coffee in favour of cultivated cassava and banana, which require less attention and care. Widows of AIDS victims also stopped cultivating

rice and millet in favour of maize and cassava [5]. AIDS-affected families in Zimbabwe replaced cotton and groundnut with maize [22].

3.1.2 Regression analysis on factors affecting the farm income of PLWHA

The multiple regression analysis on factors affecting the farm income of PLWHA is presented in Table 3.

Table 3: Regression analysis on factors affecting the farm income of PLWHA

Variables	Linear	Semi-log	Double-log
Constant	-300519.56 (-0.143)	-4.061E7 (-3.118)**	2.355 (3.006)**
Sex	179916.37 (0.222)	-724704.03 (-0.172)	0.351 (0.180)
Age (yrs)	2.133E6 (3.825)**	1.121E7 (3.473)**	0.915 (4.713)**
Tech. adoption	3.590 (3.858)**	7.496E6 (3.233)**	0.623 (4.466)**
Farm size (ha)	563799.4 (1.018)	1.252E6 (0.707)	0.052 (0.261)
Labour lost (mad-days)	-2246.322 (-2.049)	415355.761 (0.458)	-0.136 (-2.491)*
Crop/farming system	-2.299E6 (-2.552)	-7.776E6 (-1.730)	-0.330 (-1.222)
R ²	0.933	0.836	0.912
Adjusted R ²	0.914	0.791	0.889
F-ratio	50.863**	18.665**	38.193**

Source: Computed from Field Survey, 2014

** = significant at 1%; * = significant at 5%. The values in parenthesis are t-values.

The double-log functional form was selected as the lead equation.

The regression result indicated that 91.2 percent of the variability in the model was explained while the remaining 8.8 percent could be attributed to error terms. The F-ratio was 38.193 at 1 percent significance which means that the independent variables jointly explained the dependent variable.

Age, technology adoption and labour lost as a result of HIV/AIDS were significant variables in influencing the farm income of PLWHA.

Age of the respondents was significant at 1 percent with positive coefficient. This implies that the older the farmer, the higher the farming experience and the higher the level of farm income. Also, technology adoption was significant at 1 percent with positive coefficient. This implies that, the higher the level of use of new technologies by farmers, the higher the level of farm income.

The result also indicated that the man-days of labour lost as a result of HIV/AIDS infection had a significant relationship with the level of farm income at 5 percent with a negative coefficient. This implies that an increase in man-days of labour lost due to HIV/AIDS infection leads to reduced farm income. Due to non availability of family labour as a result of care giving, small scale farmers living with HIV/AIDS make do with hired labour. Despite the inherent cost incurred in hiring labour, individual farmer infected with HIV/AIDS may not be able to carry out other operational activities after cultivation. This corroborates with the findings of Guerny [23], who

confirmed that cultivated areas of land of farmers living with HIV/AIDS may receive less timely attention either for tillage, planting, weeding or harvesting. The study also agree with Onuche, Opaluwa and Edoka [15], who reported that output decreases with the number of days in which farmers were not available for farming on account of ill health. Both the quantity and quality of farm household labour are reduced through incapacitation or death. The care time devoted to the AIDS patient by the seemingly healthy household members robs agriculture of family labour.

The result also showed that sex and farm size had positive relationship with farmers' income. However, the relationship was not statistically significant. HIV/AIDS frequently has severe consequences for rural widows of AIDS victims. Women contribute to more than half of the food production and are usually involved in the most labour-intensive farming activities. However, in areas where women are not permitted to inherit property, they may lose access to land and other assets when their husband dies. In some cases, the cultural division of labour makes it impossible for women to assume the farming tasks previously performed by their husbands, and they are forced to abandon farming.

3.2.2 Problems encountered by PLWHA who are small scale farmers

Major problems faced by small scale farmers who are PLWHA in the study area are presented in Table 4.

Table 4: Distribution of respondents according to problems affecting PLWHA

Problems	SA	A	D	SD	Total	Mean Score
1. Inadequate capital	51	62	07	-	120	3.36
2. Stigmatization	79	28	10	03	120	3.53
3. Low quantity produced	05	24	22	69	120	1.71
4. Lack of credit facilities	34	77	04	05	120	3.17
5. Lack of input facilities	37	65	12	06	120	2.57
6. Discrimination	68	42	06	04	120	3.45
7. Low earnings	72	41	07	-	120	3.54

Source: Field Survey Data, 2014

Table 3 shows the problems faced by PLWHA in the study area. The major constraints identified by the respondents include: low earnings, stigmatization, discrimination, inadequate capital, and lack of credit facilities with a mean score of 3.54, 3.53, 3.45, 3.36 and 3.17 respectively. Fatiregun *et al*[24] in a study conducted to assess the quality of life of PLWHA in Kogi State Nigeria, reported that PLWHA had lower quality of life in the social relationships and

environment domains which they attributed to discrimination. Kwaramba [22], having identified issues he considered most important in terms of improving quality of life and income status of PLWHA, rated stigma and discrimination on the high amongst others. A study by Menon *et al*[25] shows that the households affected by an HIV-related death lost their savings and were forced to sell their properties to pay for health care and funeral expenditures to a

greater extent than households affected by other types of death. As for earnings, Sentongo [26] confirmed that majority of market women trade in perishable goods (vegetables, fish, fruit, and cooked food), that require short turnaround time: business collapses when women attend to the sick for long periods. Moreover, many have had to forfeit their stalls in the market and are unable to resume trading after their personal savings have been depleted.

4. Conclusion and Recommendations

HIV/AIDS is a challenge to Kogi State, where the disease tends to reduce small scale farmers' income. HIV/AIDS leads to non availability of family labour for agricultural activities and the reduction in time devoted to farming operations by small scale farmers living with HIV/AIDS leads to decreased output and its multiplier effect on low farm income. The study recommends the following:

1. HIV/AIDS reduces family labour and resources available for farm work and therefore reduces output leading to reduction in growth and development. It is therefore imperative that government take necessary measures to control the spread of the disease. Any negligence on the part of government will be costly to growth and development.
2. Government, Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs), Faith Based Organizations (FBOs) and other bodies concerned, should take proactive measures in sensitizing the public through awareness campaigns on HIV/AIDS so as to reduce the level of stigmatization and discrimination. This will help in increasing the level of adoption of agricultural improved technologies by small scale farmers living with HIV/AIDS.
3. Soft loans should be made available and accessible to PLWHA who are small scale farmers.

References

- [1] FAO (2000). HIV/AIDS and food security. An FAO Perspective-Rome.
- [2] Semba, R.D. & Bloem, M.W. (Eds.). Africa, UNAIDS Best Practice paper, 1999. Nutrition and health in developing countries. Totowa, NJ: Humana Press. 2001: P. 25
- [3] UNAIDS. (2008). 2008 report on the global HIV/AIDS epidemic: 4th global report (UNAIDS/04.16E). Geneva: UNAIDS. UNAIDS Africa Fact Sheet.
- [4] UNAIDS (2004). Table of country-specific HIV and AIDS estimates and data, end 2003 (UNAIDS, July 2004), available at: www.unaids.org/html/pub/Global-Reports/Barcelona/TableEstimatesEnd2001_en_xls.xls.
- [5] Topouzis, D. (2003) 'Implications of HIV/AIDS for rural development policy and programming; focus on sub-Saharan Africa, Study paper No.6.UNDP
- [6] De Waal, A. 'New Variant Famine': hypothesis, evidence and implications' *Humanitarian Exchange* 2003; 23, March: 20-22.
- [7] Food and Agricultural Organization (FAO). 1997. HIV/AIDS and Agriculture: Case Studies from Namibia, Uganda and Zambia, Rome. Impact of HIV/AIDS on the agricultural sector and FAO's response. FAO contribution to HIV/AIDS and work: global estimates, impact and response. Rome: FAO, Population and Development Service (SDWP) (March).
- [8] Rugalema G (1998). It is not only the loss of labour: HIV/AIDS, loss of household assets and household livelihoods in Bukoba District, Tanzania. Paper presented at the East and Southern Africa Regional Conference on responding to HIV/AIDS, June 8-12,
- [9] Mutangadura, G. (2000). *AIDS and African Smallholder Agriculture*, SafAIDS, Harare
- [10] Mutangadura, G., D. Mukurazita and H. Jackson, (1999). A review of household and community responses to the HIV/AIDS epidemic in the rural areas of sub-Saharan Africa. UNAIDS report 99.39E, Geneva.
- [11] Lowenson, R., and Whiteside, A. (2001). HIV/AIDS: Implications for Poverty Reduction. New York: United Nations Development Programme for the UN Genral Assembly Special Session on HIV/AIDS, 25-27 June, 2001. P. 10
- [12] Food and Agriculture Organization (FAO, 2001): "The impact of AIDS on food security", paper presented at the twenty-seventh session of the Committee on World Food Security, Rome, 28 May - 1 June 2001.
- [13] ILO (2004). HIV/AIDS and work: Global estimates, impact and response Geneva: International Labor Organization.
- [14] Adeoti, A.I. and Adeoti, J. O. (2008). HIV/AIDS and Farms' Production Efficiency in Benue State, Nigeria. *African Journal of Biomedical Research*, 2008; 11: 145 - 153
- [15] Onuche, U., Oplauwa, H.I. and Edoke, M.H. Ill health and Agricultural Production: Evidence from Kogi State of Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*. 2014; 14(1): 8488-8503.
- [16] KADP (2011). Kogi State ADP Annual Report. Lokoja, Planning Monitoring and Evaluation Department. Pp. 15
- [17] FAO. (2002). Living well with HIV/AIDS. A manual on nutritional care and support for people living with HIV/AIDS. Food and Agricultural Organization, Rome, Italy.
- [18] Daramola, A.G. (2004). Competitiveness of Nigeria Agriculture in Global Economy: Any Dividends of Democracy? Inaugural Lecture Series 36, Federal University of Technology, Akure, pp. 36.
- [19] Gillespie, S. and Kadiyala, S. (2005). HIV/AIDS and food and nutrition security: From evidence to action, international food policy research institute food policy review 7 Washington, DC: International Food Policy Research Institute.
- [20] Annmarie J. K. Impact of HIV/AIDS on African Agriculture and the role of the Consultative Group on Agricultural Research. Africa Rice Center (WARDA), B.P.2031 Cotonou, Benin. Paper presented at the BA Festival of Africa Rainbow. 2006: Pp. 1-13
- [21] Stover, J. and Bollingir, L. (1999). The economic impact of AIDS. Washington, DC: The Future Group, 1999. P. 5
- [22] Kwaramba, P. H. (1998). The socio-economic impact of AIDS on communal agricultural production systems in Zimbabwe. Harare: Zimbabwe Farmer's Union and Friedrich Ebert Stiftung. Harare. Pp. 1-11
- [23] Guerny, J. (2000). AIDS and Agriculture in Africa: Can agricultural policy make a difference? <http://www.fao.org/sd/wpdirect/Wpan0048.htm>
- [24] Fatiregun, A. A., Mofolorunsho, C. K., and Osagbemi, K. G. Quality of life of people living with HIV/AIDS in Kogi State, Nigeria. *Benin Journal of Postgraduate Medicine* 2009; 11:21-27.
- [25] Menon, R. The economic impact of adult mortality on households in Rakai District, Uganda. In *Confronting AIDS: Evidence from the Developing World*, ed. M. Ainsworth et al. Brussels: The European Communities. 1997; Pp. 32-41.
- [26] Sentongo, C. *The Impact of HIV/AIDS on the Productive Labour Force in Uganda*. 1995; Geneva: ILO/JASPA.