

Effects of HIV/AIDS on the livelihood of banana-farming households in Central Kenya

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Abstract

This paper explores the effects of HIV/AIDS on the livelihoods of banana-farming households in Maragua district, Central Kenya. It is based on the results of a field study carried out during 2004–2005. The study applied the sustainable livelihood approach, using both quantitative and qualitative methods of data collection. A survey was conducted among 254 farming households: 75 HIV/AIDS-affected households and 179 non-affected households. It was found that the people attribute the spread of HIV/AIDS in the area to rural-urban migration and hopelessness and despair due to lack of employment, especially among the youth. HIV/AIDS-affected households are mostly female-headed, have a significantly higher dependency ratio and experience labour shortage despite their larger size. A significant number of affected households have stopped growing labour-intensive cash crops and shifted to producing food crops. Management in banana farming has declined among these households. Affected households do not sell land to cater for household needs such as medical expenses and school fees, but use their savings or sell livestock instead. Additionally, leasing land and migration are important livelihood strategies of HIV/AIDS-affected households. Altogether the picture of HIV/AIDS effects on the livelihoods of banana-farming households is one of mixed evidence.

Additional keyword: livelihood strategies

Introduction

In Kenya, the number of people with HIV/AIDS includes about 60,000 aged over 50, 1.1 million adults between 15 and 49 years old, and approximately 100,000 children. HIV prevalence is higher among women than among men and higher in urban areas (10%) than in rural areas (5%). Information from sentinel surveillance indicates that adult prevalence peaked at a level of 10% in the late 1990s. However, the large number of infections in the 1990s made the annual number of AIDS deaths over the past six years to double to about 150,000 per year. The annual number of new infections is now declining,

reaching 200,000 in the 1990s and around 80,000 in 2005 (Anon., 2005).

Micro-level household studies on the impact of adult-age HIV/AIDS-related mortality in Sub-Saharan Africa have reported effects like a reduction in area under cultivation, a shift toward less labour-intensive crops, reduced weeding, decreased cash inputs in agricultural production, and declining agricultural production and losses in off-farm income (e.g., Müller, 2004). Although there is little empirical evidence to date that can confirm whether this scenario applies in Kenya, existing evidence does indicate that AIDS is having a measurably adverse impact on agricultural production. In commercial agriculture in Kenya, HIV/AIDS has been shown to lead to significant increases in medical and funeral expenses and loss of skilled employees (Rugalema, 1998). In a study assessing the efficiency of tea estate workers who had died or were medically retired because of HIV-related causes between 1997 and 2002, Fox *et al.* (2004) found a productivity decline associated with HIV/AIDS-related morbidity. Workers who eventually died of AIDS were absent from work 31 days more than those dying from non-AIDS-related causes, spent yearly 22 days more on light duty, and harvested on average 7.1 kg less tea leaves per day. At the household level Yamano & Jayne (2004) found that the death of an adult female caused a decline in the cereal area cultivated. The relatively high prevalence rate among women in a situation where women provide 70–75% of the agricultural labour (Spring, 2000) is highly problematic. This situation is compounded by women's limited access to productive resources such as land and credit, and their time constraints because of caring for orphans and the sick (Müller, 2005).

This paper presents part of the results of a study about the effects of HIV/AIDS on banana farming. It was carried out during 2004–2005 in Maragua district, Central Kenya (Nguthi, 2007). The paper investigates HIV/AIDS effects on farming households' livelihoods. It is organized as follows. In the next chapter the methods of data collection are presented. Then the local context is sketched. This is followed by a comparison of household asset endowment between HIV/AIDS-affected and non-affected households, after which livelihood activities and strategies of these types of households are discussed. The paper concludes with a discussion.

Methodology

A survey was conducted among 254 households: 75 HIV/AIDS-affected and 179 non-affected. For appropriate framing of the survey questions and to gain emic insights into a sensitive topic like HIV/AIDS, qualitative methods of data collection were used, including key informant and in-depth interviews as well as focus group discussions. The study used an adapted version of the sustainable livelihood approach, which emphasizes people's assets endowment for understanding their options, the strategies they adopt and the outcomes they aspire to (Ellis, 2000). Asset endowment was assessed by investigating household access to human, natural, physical, financial and social capital (Anon., 2001).

For farming households to be classified as HIV/AIDS-affected the following variables were used: illness of a household member due to the opportunistic infections that are commonly associated with AIDS (tuberculosis, pneumonia, meningitis, and typhoid), prolonged (longer than six months) or recurrent illness of a household member, death

caused by any of the above diseases of a household member during a period of 5 years prior to the time of the survey, and self-reported positive HIV/AIDS-status. Due to the secrecy and stigmatization surrounding HIV/AIDS only six households acknowledged HIV/AIDS as the cause of illness of (a) household member(s).

Results

The local HIV/AIDS context

HIV-related stigmatization and discrimination appeared to be widespread in the area, although the local centre for voluntary counselling and testing (VCT) tries to reduce stigmatization by creating awareness and by encouraging people to come for testing and counselling. Stigmatization was particularly prevalent in households that had recently lost a member or had a sick member at the time of survey. In contrast, people freely discussed HIV/AIDS in focus groups, in which HIV/AIDS was ranked as the first killer disease in the area, malaria coming second. One woman said: *“We are all affected; there is no household that can say they are not experiencing the effects of the disease.”*

In the early 1980s when the main road passed through the town, Maragua used to be a stopover for trucks travelling to (North) Eastern Kenya. As a result, several slum areas cropped up in the town that were known for prostitution and where the first cases of AIDS in the area were reported from. Subsequently, several social trends were associated with an increasing spread of HIV/AIDS in the area. Focus group participants identified rural urban migration as a crucial factor in the spread of HIV/AIDS in the area, because of its disruptive effects on marital and family ties. Male migrants to urban areas still maintain ties and sexual relationships in the rural area and often support their rural home by remittances. When infected they return to their rural homes, with all risks of spreading the disease that entails. Other factors mentioned are increased pressure on the land and lack of employment, creating hopelessness and despair. Division of land and continuous cultivation with little soil fertility replenishment over the generations has resulted in uneconomical land units. A young man without land or property to inherit from the family and no gainful employment may become desperate and engage in drinking brew and using drugs, which usually leads to casual, hence risky, sex. When married, such men also fail in their role as husbands and may force their wives to engage in paid sex to fend for their families.

Decline in moral values was another factor associated with the spread of HIV/AIDS in the area. Among the young generation, peer pressure to embrace a Western lifestyle allegedly leads girls to prostitution since there are no jobs they would consider appropriate and would provide them with a source of income. As an elderly widow said:

“People have adopted the Western culture, which has reduced morals. The present generation is lazy and does not want to work on the farm but still they want to live a good life. Even here in the rural areas young people have been exposed to the Western culture and because they do not have money to adopt this lifestyle they go out and involve themselves in sexual activities.”

Degeneration of moral values is also observed among married couples. When an

HIV/AIDS-infected husband comes from Nairobi and dies at home, the wife who is left behind may continue to have sexual relations with local men, thereby spreading the disease. Another factor is the increasing reluctance of young men to pay dowry and their inability to sustain a family. It leads to postponement of marriage but not to abstaining from sexual relationships, whether with married or unmarried women.

Men are averse to using condoms, which raises problems for women. In a focus group discussion married women reported that if they ever suggested to their husbands to use a condom they would be categorized as prostitutes. Some women fear that by asking their partner to use a condom they may lose a relationship that confers status and emotional and, perhaps, financial support. Married women with dependent children are especially vulnerable. This shows the limited bargaining power of women in matters relating to avoiding risk in sexual relations.

Livelihood indicators of affected and non-affected households

The literature indicates that human, natural, financial, physical and social capital of farming households are affected by HIV/AIDS. An analysis of variance (ANOVA) was performed to investigate the differences in asset endowment between HIV/AIDS-affected and non-affected farming households. Table 1 presents the results

Human capital

The most immediate impact of HIV/AIDS is on the household's availability of labour, for which household size is an indicator. Impacts differ according to demographic characteristics such as age, level of education, and gender of the household head.

Household size. HIV/AIDS-affected households were significantly larger (6.6) than non-affected ones (5.3) (Table 1). Empirical evidence suggests that upon death due to AIDS, households either dissolve or become bigger. Yamano & Jayne (2004) found an increase in size for households that had lost a male adult as a result of the entry or return of (new) members, presumably to compensate for the loss in adult labour (e.g., Haddad & Gillespie, 2001). In our study the relatively large size of affected households could be attributed to more households with new members (11.8%) than households with members having died (5.3%). However, their higher dependency ratio indicates that there were many children among the new members.

Age. The age of the household head was significantly higher in HIV/AIDS-affected households than in non-affected ones (Table 1), with the proportion of households with heads aged 60 or above in the first category being twice that in the second (58.7% and 24.9%, respectively) (Nguthi, 2007). Interviews revealed that many households were headed by elderly persons who are fostering orphans left behind by their daughters or sons who died from AIDS. The result is a higher dependency ratio in affected households. Menon *et al.* (1998) point to the longer-term effects of the death of productive adults and the elderly being left to take care of young people. For agriculture a consequence may be that upon prime-age adult death the transfer of farming knowledge to the younger generations is obstructed. Technology adoption may also be affected, as studies have shown that

Table 1. Means of household characteristics and assets of HIV/AIDS affected and non-affected households in Maragua, Kenya, 2004

Household characteristics and assets	Affected		Non-affected		P ¹
	(n = 75)		(n = 179)		
	Mean	SD ²	Mean	SD	
<i>Human capital</i>					
Age of household head (years)	61.9	14.8	49.1	13.7	***
Household size	6.6	2.76	5.3	2.2	**
Sex of household head (1=male)	0.77	0.42	0.90	0.29	**
Education level ³	2.3	0.81	2.6	0.73	*
Dependency ratio	94.2	127.5	65.9	6.1	*
<i>Natural capital</i>					
Farm size (ha)	3.41	5.00	1.87	1.77	***
Land/labour ratio	0.62	0.59	0.49	0.47	ns
Land ownership ⁴	1.27	0.50	1.54	0.45	***
<i>Financial capital</i>					
Access to credit (1=yes)	0.27	0.45	0.15	0.35	*
Savings (1=yes)	0.57	0.50	0.41	0.49	*
<i>Physical capital</i>					
Livestock value	57.3	50.9	59.1	50.6	ns
Farm equipment value	53.7	111.6	37.2	0.75	ns
Personal household items value	31.3	131.1	18.2	72.0	ns
<i>Social capital</i>					
Group membership (1=yes)	0.81	0.39	0.87	0.34	ns

¹ Levels of statistical difference between means in the same row: * = different at $P < 0.10$; ** = different at $P < 0.05$; *** = different at $P < 0.01$. ns = not statistically different.

² SD = standard deviation.

³ 1 = no formal education; 2 = primary; 3 = secondary; 4 = tertiary.

⁴ 1 = with title deed; 2 = without title deed.

younger farmers tend to be more informed about new practices and more willing to bear risk (Cassaday, 1993).

Education. The level of education of the heads of HIV/AIDS-affected households was lower than that of non-affected household heads (Table 1). In the early days of the epidemic, higher-educated men were more vulnerable to HIV/AIDS because they were more likely

to travel and have more sexual partners (Anon., 1999), but this is no longer the case because of increased awareness about prevention and behavioural change (Blanc, 2000; Yamano & Jayne, 2004). In Maragua the majority of heads of HIV/AIDS-affected households were elderly persons whose level of education was low.

Gender. HIV/AIDS-affected households had more female household heads (Table 1). Affected households therefore also have to deal with drawbacks associated with female headship, such as limited access to land, credit and extension services. As reported earlier (Nguthi, 2007), most of the female household heads in the study were widows (63.6%) and the proportion of widowed women in affected households was higher than in non-affected ones.

Land/labour ratio. The land/labour ratio, measured as the ratio between area under cultivation and number of household members engaged in farming on a full-time basis, indicates the availability of household labour. No statistically significant difference in this ratio was observed between affected and non-affected households, despite the fact that affected households had a higher number of ill adult members and had experienced multiple deaths of adult members (Nguthi, 2007). The explanation is that affected households take in relatives previously living elsewhere (Gillespie *et al.*, 2001; Yamano & Jayne, 2004).

Natural capital

Land size and ownership. Affected households in the sample population had more land than non-affected households but lacked title deeds. It has been suggested that title registration of land has positive effects on investment in land productivity, access to credit, and reduces land conflicts (Miceli *et al.*, 2001; Smucker, 2002). This is particularly important in the context of HIV/AIDS where widows and orphans are reported to lose land after the death of the husband or parents (Anon., 2003), especially when the woman is suspected of having infected her deceased husband. Focus group participants said that although there are conflicts about land, widows are seldom sent away. However, interviews revealed the struggle of some widows to be able to continue using the land once their spouses had died. In Nguthi (2007) the results of a cluster analysis are presented that yielded three different types of farming households according to asset endowment. Type 1 households, the largest category (111 households), were least endowed with assets and had the highest proportion of female-headed households. With regard to land, Type 1 farming households had small inherited farms and more frequently lacked title deeds to their land in comparison with the two other categories.

Land transactions. Although there is evidence that households experiencing labour loss due to HIV/AIDS dispose of their land (e.g., Du Guerny, 2002), land sale proved to be rare among the sampled households. People said that in the early days of the epidemic, when people thought that the disease was curable, land was sold to raise money for treatment. At that time, families moved from one hospital to another looking for a cure and, in the process, incurring high costs. But people now know that AIDS is a fatal disease. A focus group participant expressed the general feeling prevailing in the community by say-

ing: “Why sell land because of a person who is going to die anyway?” The Kikuyu (dominant ethnic group in the area) are also strongly attached to their ancestral land and see it as a source of security. To sell it one must be on the verge of destitution. This is also reported by Aliber & Walker (2006) for the districts of Thika, Embu and Bondo. The requirement by the Land Control Board of consensus between family members before any land transactions are made in a situation where farming households do not have transferable rights (title deeds) to the land they are farming – as is the case in the study area – also impedes land sales.

Financial capital

The literature suggests that HIV/AIDS-affected households have financial problems due to medical bills and funeral expenses (Topouzis, 2000; Haddad & Gillespie, 2001). In this study, affected households had more savings and access to credit than non-affected households (Table 1). All households said to first use savings to finance medical and funeral costs. Relatives and remittances from migrated family members are a second source of finance. One fifth of the affected households that had borrowed money used it for medical expenses, compared with 3.8% of the non-affected households, but the average amount borrowed by HIV/AIDS-affected households (KSh 2314 = US\$ 33) than that borrowed by non-affected households (KSh 3387 = US\$ 48) (Nguthi, 2007). From the cluster analysis (Nguthi, 2007) it appeared that Types 2 and 3 farming households had higher incomes than Type 1 farming households because of income from remittances and/or off-farm activities.

Physical capital

Although several studies showed HIV/AIDS-affected households to have few physical assets mainly because they had sold these to raise cash to pay for health care and basic household needs (e.g., Topouzis, 2000; Anon., 2003; Ekaas, 2003), we found no difference in this respect between affected and non-affected households (Table 1).

Social capital

Membership in community organizations did not differ significantly between HIV/AIDS-affected and non-affected households (Table 1); virtually all households in the sample belonged to a community organization. The social capital of households operating through kinship networks and community organizations is critical for coping with the effects of illness or death of a household member due to HIV/AIDS (Mutangadura *et al.*, 1999). Households with little social capital to draw from are highly vulnerable (Nombo, 2007). Social capital may become severely strained over the long term because of the clustering of HIV/AIDS within families and communities (Barnett & Whiteside, 2002). Households in the sample were asked to specify whether there had been a change in the number of groups they participated in during the past five years. It appeared that higher proportions of affected households had either reduced or increased the number of groups they participate(d) in, giving lack of money for membership fee as a reason for the first and the need to access cash for basic household needs for the second (Nguthi, 2007). We also found that there were more community activities for affected than for non-affected households in which it was not possible to participate, notably credit-and-saving groups,

neighbourhood and village committees, and the local electricity project.

The interviews learned that extended family members remained the most important source of support for affected families, as is exemplified by the many affected households that are fostering orphans. However, the willingness and ability to support orphans seemed to be declining. This has prompted community initiatives such as founding community-based and 'People Living with HIV/AIDS' organizations. These groups are involved in spreading HIV/AIDS awareness, counselling, providing food, clothing and school fees to orphaned children and supporting elderly women fostering orphans. This corroborates the observation of Gillespie *et al.* (2001) that social capital at the community level can be strengthened by the threat of a large-scale HIV/AIDS epidemic. However, in her study of a poor village in Tanzania, Nombo (2007) found social capital to be deteriorating in the wake of HIV/AIDS.

Livelihood activities: farming and non-farming

Affected households appeared to have abandoned part of their land significantly more often than non-affected households, because of labour shortage and lack of cash to hire labour, and lack of time due to HIV/AIDS-related illness of a household member. A higher proportion of the affected households had also leased land to avoid bush encroachment or raise income to meet cash needs. A significantly higher proportion of affected than non-affected households reported having stopped growing labour-intensive cash crops, such as French beans, tomatoes, kale, and cabbage over the last five years, opting to utilize the available labour on production of food crops such as maize and beans (Nguthi, 2007). Empirical evidence is mixed as to how HIV/AIDS affects cropping patterns. Yamano & Jayne (2004) found that in Kenyan households that incurred an adult female death there was a decrease in food crops whereas a male death resulted in a reduction in cash crops (tea, coffee and sugarcane), but Beegle (2003) did not observe such a shift in Kagera, Tanzania.

The effects of HIV/AIDS-induced labour loss were investigated for their influence on banana farming management practices. It appeared that with regard to fertilizer use, manure use, de-suckering, pruning and weeding, a significantly higher proportion of HIV/AIDS-affected households than non-affected ones had reduced the amount of inputs and the level of management in their plots (Nguthi, 2007). Besides lack of labour, time and cash, affected households also mentioned lack of skills and knowledge with regard to de-suckering and pruning as a reason.

Diversification of livelihood activities has been identified as a key strategy for coping with hardships, such as those inflicted by HIV/AIDS (e.g., Anon., 1998; Niehof, 2004). Regarding engagement in non-farm activities, in the sample only with regard to leasing land and labour migration the proportion of affected households engaging in these activities was significantly higher in affected households (Nguthi, 2007). To understand the factors that determine HIV/AIDS-affected households' engagement in these activities a logistic regression analysis was carried out. The independent variables used were: age, sex and education level of the household head, dependency ratio, land size and land/labour ratio, savings, access to credit, the personal household item value, farm equipment

value and livestock value, the economic dependency ratio, and the household's membership in community groups. Leasing land and labour migration were used as the dependent dummy variables. The analysis was done only on HIV/AIDS-affected households and yielded statistically significant effects of the factors age and gender of the household head and economic dependency ratio. The other factors did not score. The effects of gender and age of the household head on migration were statistically significant at the 5% level, the other effects only so at the 10% level (Nguthi, 2007).

The effects of age of the household head on leasing land were positive, those of gender negative. This means that leasing land is more likely to be undertaken by older and female heads of HIV/AIDS-affected households, probably because they have more land than they can use/manage due to lack of labour and time. Although affected households were significantly larger than non-affected households (see Table 1), they counted relatively many orphaned children who could not contribute labour.

Additionally, affected households may be inclined to lease land to pay for medical and funeral costs. The statistically significant positive relation with the economic dependency ratio indicates that for affected households with relatively many dependants leasing land is an important source of income.

Similarly to the effects on leasing land, the effects on migration were also positive for age and negative for gender of the household head. Households headed by elderly females are most likely to have members who have migrated. The majority of the migrants in HIV/AIDS-affected households are sons, daughters or grandchildren who have moved to various urban centres in the country to seek employment. Migration is a long-standing strategy in the study area, with remittances from migrants contributing substantially to household incomes. However, this time-honoured activity may now have become a risk to households as it creates the channel for the flow of both cash and HIV/AIDS. A typical scenario is that of the migrant worker who falls ill while away, using his savings for medical treatment and then returning to the rural home to be cared for and die. The effect on migration of the economic dependency ratio is negative, implying that households with many dependants (children) are less likely to have migrated members.

Discussion

It is evident from the results of the study that HIV/AIDS is changing the size and composition of households in the study area and that the people are aware of this. HIV/AIDS-affected households are often female-headed, have a significantly higher dependency ratio and experience a greater shortage of labour despite their larger household size. Selling land due to HIV/AIDS-related labour loss and increased household costs is rare in the study area, although land sales might increase when more people obtain title deeds for their land. Rather than selling land, affected households have changed land use patterns by stopping to grow labour-intensive cash crops and/or by reducing the level of farming management.

Although membership of community organizations is crucial for households to access informal credit, this vital social resource is becoming increasingly unavailable to HIV/AIDS-affected households who can no longer afford the mandatory membership fee

and monthly payments. Consequently, a tendency of reduced participation in community organizations could be observed. On the other hand, the fact that households are willing to foster orphans is an indication that the social capital embedded in kinship relations is still acknowledged and still forms a critical source of support.

Probably because affected households tend to have more land but less labour than non-affected ones, they are unable to use all the land and more often opt for leasing land. In this, gender and age are differentiating factors; elderly female-headed households are most likely to lease land. Labour migration is another important livelihood strategy for affected households. Ironically, this strategy renders them more vulnerable to HIV/AIDS, as spouses separated for extended periods of time are more likely to put themselves at the risk of HIV infection by having extra-marital partners. In addition, young people who migrate from the rural to urban areas are also vulnerable. From the focus group discussions it became apparent that the people blame the spread of HIV/AIDS amongst other things on migration.

Whereas at first glance affected households in some respects (farm size, savings, and access to credit) seem to be better off than non-affected ones, these relative advantages were offset by disadvantages (less title deeds and more female, older and low-educated household heads). The picture of HIV/AIDS effects on the livelihoods of the banana-farming households is one of mixed evidence. When the classification according to farming household type was linked to household HIV/AIDS-status no statistically significant effect was found (Nguthi, 2007). Likewise, in looking at factors influencing the adoption of the tissue-cultured banana technology, the effects of the HIV/AIDS vulnerability context were not immediately visible. They only can be inferred from the significant negative effect of HIV/AIDS-induced adult mortality (Nguthi & Niehof, 2008). It has to be concluded that HIV/AIDS does not just hit the poorest households. In the literature, cases can be found of a positive relationship between socio-economic status and HIV-infection (e.g., Ainsworth & Semali, 1998). In the case presented here, for example, migration enhanced socio-economic status by yielding remittances and – at the same time – increased exposure to HIV/AIDS. But once households were hit, the effect of HIV/AIDS was impoverishment, because it led to higher adult mortality, more female household heads and increasing dependency ratios. To bring out these sequential effects more longitudinal studies on HIV/AIDS impacts on rural livelihoods have to be conducted.

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