

Food security in HIV/AIDS response: Insights from Homa Bay, Kenya

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Abstract

This paper examines the viability and effectiveness of a pilot farming initiative in reversing impacts of HIV/AIDS on the most affected households in Homa Bay, Kenya. The paper argues that once patients are stable, they can effectively be engaged in farming with minimal financial and technical support, resulting in enhanced food security of the affected households. More importantly, it helps to reduce HIV/AIDS-related stigma and improve the individual's self-esteem. Some of the key challenges of the pilot initiative were the limited number of agricultural extension workers and absence of facilities to enable them to deliver services to the farmers, the high cost of farm inputs, the unavailability of farm inputs when they were needed, poorly developed agricultural markets, and the absence of irrigation facilities. The paper recommends the sensitive scaling-up of this approach. However, farming initiatives by HIV/AIDS service NGOs should be linked to at least three key aspects: (a) treatment, care and support to HIV/AIDS affected households; (b) micro grant schemes or subsidies to enable farmers to purchase farming tools and farm inputs; and (c) comprehensive on-farm training support. To ensure effectiveness and wider reach, government needs to view agriculture through an HIV lens and promote a multisectoral approach that recognises the relationship between HIV/AIDS and food security. A number of immediate actions are required to strengthen this relationship, such as increased public investment to augment extension services, subsidise farm inputs, and develop infrastructure including agricultural markets.

Keywords: HIV and AIDS, food security, agriculture, Kenya.

Résumé

L'article examine la viabilité et l'efficacité d'une initiative agricole pilote dans l'inversion des impacts du VIH/SIDA sur les ménages les plus affectés à Homa Bay, au Kenya. L'article avance qu'une fois que les patients sont dans un état stable, ils peuvent s'engager de manière effective dans l'agriculture avec un soutien financier et technique minime résultant sur une meilleure sécurité alimentaire des ménages affectés. Plus important, cela aide à réduire la stigmatisation liée au VIH/SIDA et à renforcer l'estime de soi. Certains des défis clés de l'initiative pilote consistaient en le nombre limité de professionnels de vulgarisation agricole et l'absence de structures leur permettant de fournir des services aux agriculteurs, le coût élevé des intrants agricoles, la non disponibilité des intrants agricoles lorsqu'ils sont nécessaires, les marchés agricoles faiblement développés et l'absence d'installations d'irrigation. L'article recommande le développement sensible de cette approche, cependant, l'initiative agricole par des ONG de services sur le VIH/SIDA doit être liée à au moins trois aspects clés: (a) le traitement, les soins et le soutien aux ménages affectés par le VIH/SIDA, (b) un plan de micro-subvention ou des subventions pour permettre aux agriculteurs d'acheter des outils et des intrants agricoles et (c) un soutien total à la formation sur place. Pour garantir l'efficacité et une couverture plus large, le gouvernement doit considérer l'agriculture par le biais du VIH et promouvoir une approche multisectorielle qui reconnaît la relation entre le VIH/SIDA et la sécurité alimentaire. Certaines actions immédiates sont requises pour renforcer cette relation, telles que des investissements publics plus importants pour augmenter l'extension des services, subventionner les intrants agricoles et développer les infrastructures, y compris les marchés agricoles.

Mots clés: VIH et SIDA, sécurité alimentaire, agriculture, Kenya.

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Introduction

In Kenya, AIDS has claimed over 1.5 million lives, and it is estimated that more than 3 million people are HIV infected (RoK/CBS, 2003). HIV prevalence among those in reproductive age 15 - 49 years has increased from 6.7% in 2003 (KDHS, 2003) to 7.8% in 2007 (KAIS, 2008). Nyanza, one of the poorest provinces, is located in western Kenya, which also has the lowest life expectancy of 46 years (compared with 64 years in the Central Province, and a national average of 48.93), as a result of having the highest HIV prevalence in Kenya which is 15.3% (CBS, 2006). Homa Bay is one of the 12 districts in Nyanza province, whose prevalence rate is estimated at 24% (Omwega, Oguta & Sehmi, 2006).

Apart from some success stories, little learning documentation exists related to the effectiveness of farming interventions in enhancing food security of HIV and AIDS-affected households in Kenya. The aim of this paper is to document and share the lessons that Concern Worldwide Kenya (hereafter referred to as Concern) and its local partner Women Fighting AIDS in Kenya (WOFAK)¹ learned from the farming intervention in Homa Bay. This paper is timely in the light of the current global food crisis and severe drought in Kenya, which has put households affected by HIV/AIDS in a precarious position. In February 2009 the government announced that 10 million Kenyans were food insecure and declared a national emergency.

A snapshot of Homa Bay

Homa Bay is located on the southern shores of Lake Victoria in Nyanza Province, with a population of more than 300 000 people and an area of 1 160 sq. km. It ranks as one of the poorest districts in Kenya, with over 70% of its population categorised as living below the poverty line (CBS, 2003). About 18% children below 5 years are underweight (UNDP, 2006). It is also one of the districts experiencing high HIV prevalence at 24%, compared with a national average of 7.8%. According to the local Ministry of Health, 22% of men and 29% of women who utilised voluntary counselling and testing services in the district between July and September 2007 were HIV positive. In addition 23% of the mothers who attended antenatal care services during the same period were HIV positive. This trend can largely be attributed to common traditional practices that encourage unsafe sex with multiple sexual partners, such as ritual cleansing, widow inheritance² and polygamy (Topouzis, 1999). The HIV/AIDS situation in the district is made worse by TB prevalence among the infected, now estimated at 80% (MSF, 2008). As a result 30% of the population is not expected to live beyond 40 years of age (UNDP, 2006). This has resulted in a large number of children being orphaned by HIV and AIDS.

About 84% of land in the district is arable. Agriculture is the lifeline of the district's economy, employing over 50% of the residents. Smallholder farming is the dominant land-use practice, accounting for 86.8% of land cultivated in the district (RoK, 2002). Generally, this subsistence farming is dependent on family labour, and food consumed by the residents is sourced from their own production. The farming practices remain largely traditional with little or no use of hybrid seeds, modern fertiliser or updated planting methods. The results are poor yields year on year, making the community food poor. In 2005, Homa Bay recorded annual cereal production of 41 520 MT compared with its cereal demand of 47 819 MT (Livelihood Zones, 2003).

Homa Bay District's physical infrastructure is rudimentary and consists of long stretches of dilapidated roads that are impassable in wet condition. This situation has not permitted evolution of an efficient marketing system for crop products, as the markets for produce are not easily accessible to farmers (Livelihood Zones, 2003).

Effects of HIV/AIDS in agriculture

In Homa Bay the effects of HIV/AIDS on agriculture are visible through lower agricultural productivity due to protracted illness, absenteeism and death. Farmers living with HIV spend less and less time on the farm, while family members' time is diverted to care for the sick and attending funerals (Topouzis, 1999). In addition, household savings and livestock have been depleted, as households struggle to meet high medical expenditure and funeral costs. Vulnerable groups such as widows and orphans are dispossessed of land by greedy relatives and therefore cannot engage in meaningful farming. Moreover, households are losing farming skills with each dying adult³. This has translated into less land under cultivation, loss of soil fertility⁴, less labour-intensive crop production, such as cassava or sweet potatoes, as households shift away from more labour-intensive (higher-value) cash crops, less crop variety and less livestock production (Jayne, Villarreal, Pingali & Hemrich, 2005). The end results are declines in food production and agricultural incomes, and increased food insecurity (Fox, *et al.*, 2004).

Consequently affected households experience difficulties in putting food on the table, in spite of increased food and nutritional requirements by the infected and the rising number of orphans (WHO, 2003). TB treatment and antiretroviral therapy require very regular food intake, therefore the food poor people living with HIV/AIDS (PLWHA) experience difficulties in adhering to treatment. Food poverty also heightens stigma against affected households, as HIV/AIDS is increasingly associated with inability to put food on the table; the community looks down upon PLWHA who receive food donations from NGOs or church-based organisations (Slater & Wiggins, 2005).

Food security and HIV/AIDS: policy and practice

More than sufficient literature exists on the effects of HIV/AIDS on agriculture in sub-Saharan Africa, such as erosion of rural livelihoods and losses in off-farm income, associated with increased adult mortality, reduction in area under crop cultivation, a shift toward less labour-intensive crops as labour becomes more scarce, etc. (Bukusuba, Kikafunda & Whitehead, 2007; Edström & Samuels, 2007; Panagides, Graciano, Atekyereza, Gerberg & Chopra, 2007). These documents also put forward a number of policy recommendations to minimise the effects of HIV/AIDS on agriculture in Africa (Jayne, *et al.*, 2005; Rollins, 2007; Slater & Wiggins, 2005), some of which are:

- redress losses of human capital and skills
- reverse the losses of capital to agriculture and the rural economy, owing to increased spending on medication and care
- devise and disseminate appropriate technology for HIV/AIDS affected households with a special focus on labour-saving technology for farming
- provide seeds and fertilisers to affected households as a means of ensuring food security and a safety net for vulnerable households
- distribute appropriate seed, for example, pest-resistant or drought-tolerant varieties, to reduce the variance around income streams
- ensure that farm extension services roll out farming techniques and messages appropriate for HIV/AIDS affected households, in particular women
- uphold rights of women and orphans to own and use land, and also have the option to rent it out.

Although vulnerability to food insecurity has been persistent in Kenya, there is no evidence of conscious efforts to put some of these policy recommendations into country policy frameworks.

Existing policy environment

The incidence and intensity of hunger and malnutrition has increased significantly, and the per capita supply of the main staples has been declining since the early 1980s in Kenya. At present, about 51% and 38% of the rural and urban populations respectively are food insecure. The insecurity has been attributed to many factors, such as droughts, high incidence of HIV/AIDS, land fragmentation, population growth, etc. About 44% of the population is under-nourished, which is associated with insufficient dietary intake because a significant number of households lack adequate resources (income) to secure basic food requirements (UNDP, 2006).

Kenya has the potential to provide for its food and nutritional needs although this has not been realised due to natural and other structural causes (Wagah, 2005). Achievement of food security is constrained by a number of factors that include climatic conditions, and high production costs as a result of high taxation for farm inputs, which make the price of cereals higher in Kenya than anywhere else in the region (Nyoro & Muiruri, 2001). While national policies espouse multisectoral responses to HIV/AIDS, implementation remains sectoral, with limited efforts to link the relationship between HIV/AIDS and food security. The current agriculture policy focuses on increased food production and lacks a strong link to nutrition and HIV/AIDS (Alila & Atieno, 2006; GoK/NACC, 2000; GoK/NACC, 2005; RoK/FPU, 1994). This has made it difficult to achieve broad-based results on issues with multiple causes such as malnutrition and HIV/AIDS.

Common responses to food insecurity

The Kenya National AIDS Strategic Plan 2005/6 - 2009/10 recognises the need to revise the National Food Security Policy to address the impact of HIV/AIDS on vulnerable groups. It also seeks to refocus agriculture and livestock extension strategies to address socio-economic impacts of HIV/AIDS on productivity (GoK/NACC, 2005). However, little has happened by way of implementation, and there is a lack of concrete evidence of movement at grassroots level, resulting in a big gulf between country policy intentions and reality at the grassroots. Thus Kenya is largely at the level where agriculture and HIV-affected households are portrayed as hapless victims of HIV/AIDS. As a result, development agencies opt for food distribution as the first option in addressing nutrition and food security needs of HIV/AIDS affected households. A case in point is the HIV and AIDS Life Initiative programme implemented in western Kenya, targeting orphans and vulnerable children as well as households affected by HIV/AIDS through distribution of food (Panagides *et al.*, 2007). The most acclaimed success of this approach is the Academic Model for Prevention and Treatment of HIV/AIDS (AMPATH) in western Kenya, initiated in 2002. The project provides fresh food, grown on AMPATH's production farms, to vulnerable patients on antiretroviral regimens (Byron, Gillespie & Nangami, 2006). While the intervention has resulted in weight gain, recovery of physical strength and ability to resume labour among beneficiaries, food distribution does not address long-term food security of HIV/AIDS-affected households in a sustainable way. It is now time for development agencies to move a step further and support food production by HIV/AIDS-affected households. To this end development agencies should create a functional linkage between farming and food security, and the response to impacts on HIV/AIDS-affected households.

Overview of Concern's initiative

Concern in partnership with WOFAK runs an HIV/AIDS programme in Homa Bay. Initially the nutritional support of the programme entailed provision of ready-made food whenever PLWHA visited the WOFAK drop-in centre, or dry rations to carry home. The clients would normally receive approximately 4 kg of beans during the monthly group therapy sessions. The very sick would receive an extra special high-protein/calorie supplement. Given that the average household size among the members is 7 - 8 persons, the ration could hardly last a month. In late 2006, Concern proposed piloting a farming intervention for the affected households to augment their food security. The main aims of the pilot were to understand the challenges of farming interventions for HIV/AIDS-affected households, and to examine the viability and effectiveness of farming (alongside appropriate treatment, care and support) in reversing impacts of HIV/AIDS on the most affected households.

The selection of farming as an option of sustainable food security was reinforced by the existence of good weather and predictable rainfall, and most importantly rich black cotton soils in Homa Bay. Moreover, selected clients owned land next to Lake Victoria, which provided an opportunity for simple irrigation. The existence of supportive government agricultural extension workers was also a big boost to the intervention.

Targeting and activities

The 20 programme beneficiaries (6 male and 14 female farmers) were purposively selected from 150 registered clients of WOFAK in Homa Bay in late 2006. The following set of three criteria was used in selecting the beneficiaries:

- clients who were on antiretroviral therapy and/or on TB treatment and to whom WOFAK was providing a monthly food basket
- clients who used to be cereal farmers and were strong enough to engage in farming activities
- clients who had access to farm land located on the shore of lake Victoria.

This pilot entailed providing agricultural inputs, one 3-day training, and extension services to the selected beneficiaries to produce their own food. All the farmers were trained in modern food production practices, and each of them supplied with 10 kg fertilisers, 6 kg of hybrid maize and 10 kg bean seeds to cultivate a minimum of 2-acre plots. They also received on-farm mentoring support at least once a week by agricultural extension workers during preparation, planting, weeding and harvesting.

Beneficiaries planted seeds during April 2007, the long rainy season. They harvested beans in July 2007 and maize in September

2007. The initial outcome of this farming intervention was very promising. So it was decided to provide another round of support to these 20 farmers and to scale up the intervention by taking 38 new female farmers on board in 2008.

The 20 beneficiaries received farm inputs in late 2007 in readiness for early planting in 2008. The 38 new female beneficiaries were also selected in late 2007, but training and distribution of farm inputs was scheduled for early 2008. However, this group had to grapple with myriad obstacles. The announcement of results of the closely contested presidential election on 30 December 2007 triggered an outbreak of violence in many parts of Kenya, including Nyanza province. The violence lasted 2 months, and WOFAK staff and volunteers were involved in relief efforts, and thus it was not until mid March that they managed to resume regular activities. As a result the process of initiating training and purchasing farm inputs was delayed significantly. Moreover, the violence disrupted supply lines, and farm inputs were not readily available at markets. Scarcity of farm inputs pushed up prices by 26% and therefore farmers could buy only 10 kg fertilisers, 4 kg of maize and 4 kg of bean seeds of local varieties, as opposed to hybrids, with an aim to cultivate at least 1 acre of land. As a result the 38 farmers planted late, and in addition unfortunately Homa Bay received a heavy but short rain storm that did not allow the crop to reach maturity, and instead some farms were flooded and crops destroyed. Moreover, the increase in the number of farmers from 20 to 58 put a strain on the only agriculture extension worker in Asego division, compromising the level of mentoring and follow-up. These challenges had a bearing on the farming output of the 38 new female farmers.

Methodology

The paper reflects the learning gained from field experiences, as well as drawing upon other associated research including WOFAK project reports.

The core beneficiaries of this initiative were 20 farmers who received support both in 2007 and 2008. An additional 38 female farmers were taken on board in 2008 to scale-up the intervention. Since its inception, the inputs and outputs of this farming initiative for all targeted beneficiaries were systematically captured in the project monitoring system. The monitoring system captured data on identity of selected farmers, size and location of the farm, farm inputs that they received, yield of major crops, and the local market value of the produce. The quantitative findings of this learning documentation come from the analysis of project monitoring data that were captured for all the beneficiaries during the pilot phase.

To complement the analysis of quantitative data, qualitative information was also collected from the beneficiaries. Out of 20 successful farmers (who received support for 2 consecutive years) nine successful farmers (three male and six female) were randomly selected for semi-structured interviews⁵. All the interviewees were PLWHA and currently on antiretroviral therapy. Individual interviews were conducted at their home. The interviewees all gave verbal informed consent for their names and images to be used in any report.

The semi-structured interviews were conducted with a fairly open framework which allowed for focused, conversational, two-way communication, i.e. to give and receive information. The technique was flexible, allowing new questions to be brought up during the interview, as a result of what the interviewee said. The interview started with discussion of general but relevant topics which were: how and when the individual got to know their HIV status, status of disclosure and impact including any discrimination, and usefulness of the treatment. The discussion was followed by exploring the relationship between HIV/AIDS and livelihood security including their involvement in the farming intervention. The final discussion sought to establish the impacts and challenges of the farming intervention and farmers' perspectives about ways to overcome the challenges in order to scale-up this initiative in future.

Finally, the remaining beneficiaries were invited to participate in a focus group discussion. To ensure maximum privacy and comfort, the focus group discussion was conducted in the WOFAK office located in Homa Bay. All participants were provided with transport to ensure their travel comfort. Informed consent was obtained from participants about using the outcome of the group discussions for learning documentation purpose.

The purposes of the focus group discussion were to ensure group interaction which usually brings out additional information, and to triangulate the information received from the other sources. With guidance from the facilitator the participants talked freely and spontaneously about the factors that affected the outcome of

the farming interventions, and the impact of the farming initiative. Participants' views were also collected on the opportunities and challenges of scaling-up the farming initiative in Homa Bay.

Findings and discussion

Outputs of farming intervention

Agricultural inputs and support provided to the 20 beneficiaries were consistent in 2007 and 2008. While production of maize and beans varied significantly across all the farmers, there was a significant decline in maize yield in 2008 compared with 2007. This is attributable to the short but severe rainy season that did not last through the crop-growing period. Year 2008 output data confirm this.

A number of other factors that influenced the yield were availability of labour at household level, farming skill, irrigation facilities, support by the agriculture extension officer, etc. In general, farmers who mobilised labour for early preparation, planting and weeding received a higher crop yield. Farmers who received lower yields attributed this to a scarcity of labour at household level. Weeding is essential for pest control and good crop health and yields; however, some farmers could not raise sufficient labour, as they had to divide their time between care roles and treatment requirements. Moreover, high maize production hampered bean production. Table 1 shows the details of inputs and outputs of the farm activity.

Table 1 is evidence of the effectiveness of agriculture in ensuring food security of HIV/AIDS-affected households in a dignified way. The findings also demonstrate that technical and financial inputs are essential for the success of an agricultural intervention, and that agriculture along with treatment and care can change destitute families into economically stable families.

However, 38 new beneficiaries failed to attain intended success in production. Several factors account for these, key being late land preparation and planting, quality of seeds, lack of training and follow-up support. These factors were by and large beyond

Table 1. Average agricultural inputs and outputs in 2007 and 2008

Farmers	Number of farmers	Agricultural inputs per farmer	Cost of agricultural inputs per farmer (Kes)		Average yield of maize		Average yield of beans		Estimated cash value* (Kes)	
			2007	2008	2007	2008	2007	2008	2007	2008
Male	6	10 kg fertiliser, 6 kg maize and 10 kg beans seeds	2 340	2 340	263 kg	115 kg	69 kg	81 kg	7 825	1 0 478
Female	14	10 kg fertiliser, 6 kg maize and 10 kg beans seeds	2 340	2 340	230kg	115 kg	135 kg	76 kg	10 176	10 097

* Cash value has been estimated by looking at the market price of maize and beans in late 2007, which was Kes18 per kg maize and Kes45 per kg beans (US\$1 = Kes65.00). In late 2008 the cost of maize and beans shot up significantly: 1 kg maize was Kes35 and 1 kg beans was Kes80 in 2008. The Kenya shilling also lost value against the US\$, and the exchange rate was US\$1=Kes73 by end 2008.

Table 2. Average inputs and outputs in 2008 for new farmers

Indicators	Number of farmers	Agricultural Inputs per farmer	Cost of agricultural inputs per farmer (Kes)	Average yields (kg)		Estimated cash value* (Kes)
				Maize	Beans	
Total number of farmers	38	10 kg fertiliser, 4 kg maize and 4 kg beans seeds for 1 acre land	2 940	22	6	1 240
Farmers whose income was more than Kes 1 000	25	10 kg fertiliser, 4 kg maize and 4 kg beans seeds for 1 acre land	2 940	29	7	1 526
Farmers whose income was less than Kes 1 000	13	10 kg fertiliser, 4 kg maize and 4 kg beans seeds for 1 acre land	2 940	11	5	690

the programme control, and therefore the low yield indicated in Table 2 should not be too disheartening. A key learning for the future is that targeted beneficiaries should receive training and appropriate farm inputs on time to achieve success.

Impact of farming intervention

It is too early to talk about the impact of this farming intervention on HIV/AIDS-affected households. However, based on the findings of the in-depth interviews and focus group discussions with 20 successful beneficiaries, we can identify the following as impacts of the programme:

Increased productivity

This initiative has transformed the lives of the clients in a remarkable way. PLWHA who hitherto had been accustomed to monthly food rations from WOFAK, not only harvested enough for their household needs but had extra to sell to meet other financial needs, a thing that was unheard of before. As a result the clients have been embracing modern farming methods such as use of fertiliser, certified seeds and improved farming practices with the help of the farm extension workers. Moreover, the support to grow culturally accepted foods in a modern way proved a great motivator to the clients improving their ways of farming. Thus clients in this programme are gradually evolving into strong models of modern agriculture in their community.

Stigma reduction

The ability to produce their own food, as opposed to relying on hand-outs, has restored their place in society as productive people, and thus reduced stigma. The clients are shifting from a state of desperation to becoming a great inspiration on positive living in their community. Alex, one of the beneficiaries, had this to say:

'When I became too ill, my neighbours shunned me. Recently when one of them saw me carrying a bag full of maize from the shamba [farm] he openly expressed his doubt over my HIV-positive status.'

The clients have also become active advocates of testing and treatment, and have influenced many to seek treatment at the district hospital.

Positive living

This project has generated considerable optimism among the clients. During the interview they expressed great plans for their future. Some plan to restock in order to diversify their means of livelihood, while those close to the lake have plans to buy water pumps to scale-up irrigation to improve horticultural production. A client who bartered maize for her son's secondary school fees, is determined more than ever before to see her son through his education. The clients have marshalled a renewed determination to better their lives.

Adherence to treatment

The farm project is an innovative way to motivate clients to comply with treatment. The clients produced maize, beans and vegetables essential for a balanced diet, and therefore had enough to eat, and thus experienced fewer challenges in taking their medicine. In addition, agricultural extension workers and adherence counsellors integrated treatment literacy into the agricultural activities. The clients are now aware that their success in agriculture is dependent on how well they take their medicine, and the medicine will work well if they have enough food to eat. As result all the persons interviewed were ambulant and able to carry out normal activities. Many confessed to have previously been too sick to even go to the toilet.

Case study: Treatment and farming for a new life

Like the majority of her village mates in Nyagitah, a remote village on the southern shore of Lake Victoria, Gaudencia Aoko Otieno, now 44, got married while a teenager. She had 12 children, 3 of whom died before 5 years of age. Her husband had actually been married twice before; both former wives abandoned him since he was too poor to provide for household needs. With no formal schooling, the couple started off very modestly, eking out a living by selling manual labour to their relatively well-to-do neighbours. The couple later graduated to small-scale vegetable farming on a small piece of land by the lakeside. With savings from vegetable sales and earnings from labour they managed to construct a mud-walled house with an iron sheet roof.

Five years ago Gaudencia's husband developed a relationship with another woman and left Gaudencia to provide for the family alone, and in a bid to assert his authority, he resorted to physical abuse. In early 2004 Gaudencia started ailing, and her condition deteriorated so rapidly that her in-laws blamed it on *chiraa* a curse visited on a person who breaks a taboo among the Luo people of western Kenya. The elders compelled her to consult a traditional medicine man, but there was no improvement. Towards the end of 2004, Gaudencia became pregnant, her twelfth pregnancy, and the most difficult. At the antenatal clinic a routine HIV test was done, and the positive results did not come as a surprise to her, given her husband's conduct and the symptoms she manifested. She religiously followed the prevention of mother-to-child transmission procedures, and to her delight the child was confirmed HIV-free at 18 months.

In mid 2005 Gaudencia was put on life-saving antiretroviral drugs, she regained energy, but was psychologically disturbed and at one point she contemplated suicide. Luckily, a woman living positively with HIV in her neighbourhood introduced her to a support group at WOFAK, and that remains her pillar of strength and inspiration. Gaudencia revealed her HIV+ status to her children, family members and friends. The children were very supportive, but the family and her husband turned against her, and blamed her for the infection. Ironically, her husband refused to go for the test and continued living with his new partner.

Against all odds, Gaudencia provided for her family by doing what she knew best, tilling the land. Like other villagers she used local low-yielding seeds. She could not afford fertiliser or access to agriculture extension services. With failing health she could only manage to till a small portion, since she could not afford to hire labour. Her hard labour yielded a very meagre harvest each year, consigning her to perpetual cycles of food insecurity.

Her life took a turn for the better when she joined WOFAK's farming initiative for PLWHA. She underwent farm training

by the agriculture extension officer, and planted certified maize and beans donated by WOFAK with support from Concern. The returns in 2007 were beyond her expectations: out of an investment of Kes2 340 (in 2007, US\$1 = Kes65) and her labour she harvested 192 kg maize worth Kes3 445, and realised 256 kg of beans worth Kes11 505. In addition, her vegetable farm earns her a monthly income of about Kes2 990, which comfortably meets her minimum household needs. In 2008 she harvested 120 kg maize worth Kes4 200, and 64 kg of beans worth Kes5 120 (in 2008, US\$1 = Kes73). Poor rains contributed to a reduction in production, but her income was much higher due to the sharp increase in food prices. For 2 years running Gaudencia has had enough food for the family, and delivered some maize to a local secondary school to cover her son's school fees. *'I will strive to excel in my new life, and am now a modern farmer. Come next year I will save and buy a small pump to increase the farm yields'*, she quips with confidence.

Challenges of farming intervention

Agriculture extension workers have a significant role to play in training and mentoring farmers and introducing better farming techniques. Across Kenya there are extension workers, but they are very limited in number and there are no facilities to enable them to deliver services to the farmer (Oyaro, 2008). There is only one extension officer in Homa Bay, and it was not possible for him to provide proper support to all farmers in the scale-up phase of the initiative in 2008. Without a motorcycle, for example, the extension worker could not reach farmers living in the remotest areas of the Homa Bay district. The number of extension workers, as well as the facilities to enable them to improve their mobility, needs to be increased significantly.

The high cost of farm tools and inputs discouraged many able-bodied clients from scaling-up their farming and vegetable gardening initiatives. The taxation levels for farm tools and inputs need to be reduced, to create an enabling environment for HIV/AIDS-affected households.

In the absence of proper irrigation facilities, the farmers depend solely on rains, and the production varies significantly in different years based on rainfall. Significant public investment is required in improving access to water (e.g. borehole sinking, developing irrigation systems), and hence to reduce total dependency on rain-fed agriculture and time spent on labour-intensive tasks (Gillespie, 1989). These may have a high benefit-cost ratio in terms of health effects, and simultaneously increase the amount of labour that could be freed up for productive income-earning activities. Benefits would be especially high for women, who do most of the water fetching.

Farm inputs are not always readily available in the local markets, and thus delay the plantation process. Moreover, poor road networks and the high cost of transportation discourage farmers from taking surplus produce to the market. So they sell their surplus in the farm field, with little profit. Developing agricultural markets for inputs and commodities are central to the process of strengthening the rural economy, and increased public investment is required in transportation and communication sectors (Mellor, 1976; Johnston & Mellor, 1961, cited in Jayne *et al.*, 2005).

Farmers next to the lake had to contend with the vicious marauding hippos that destroyed some of their crops and constantly threatened their lives. After harvest, farmers also reported losses attributable to poor storage and high moisture content in the grain.

Farmers had to balance responsibility to their health and responsibility to their farming, both of which are interlinked and integral to their survival. They needed time to go to clinic, attend support group meetings, make time for their community outreach work and attend to their farm as well.

Lessons learned

Households that practise subsistence farming are heavily dependent on household labour, and thus are particularly affected by HIV/AIDS, as it diminishes the quantity and quality of their labour, which in turn increases the incidence and depth of household food insecurity (Brown *et al.*, 1994). Despite the serious devastation HIV/AIDS has visited on agriculture, it still remains the main source of food for a majority of poor households in Homa Bay. From the small-scale farming initiative in Homa Bay it can be said confidently that access to food plays a large part in determining affected peoples' current and future ability to take treatment and further develop their livelihood security to a level that helps to mitigate the impacts of AIDS and reduce new HIV infections.

To enhance the effectiveness of farming initiatives, targeted beneficiaries should receive training and appropriate farm inputs on time. This should be complemented by appropriate extension services. Extension contents also need to incorporate labour-saving technologies and practices that address the specific labour shortages arising as a consequence of HIV/AIDS. Extension services need to cater to the knowledge needs of women, the elderly and the very young (FAO, 2002). In addition, research into labour-saving but culturally appropriate farming practices and crops should be intensified. Care should however be taken to ensure that innovations are appropriate to the local climate and that the food meets the nutrition needs of PLWHA (UNIDO, 2006).

In order to take this intervention to scale, farming initiative by HIV/AIDS service NGOs should be linked to at least three key aspects: (a) treatment, care and support to HIV/AIDS-affected households; (b) micro-grant schemes or subsidies to enable farmers to purchase farming tools and farm inputs; and (c) comprehensive on-farm training support. Donors should commit resources to the sensitive scaling-up of this approach as a way of reducing vulnerability to HIV infection and increasing resilience to AIDS. Insights from existing NGO projects must be documented and systematically disseminated (NRI, 2002).

The role of government in this kind of initiative cannot be overemphasised if we are to ensure effectiveness and wider reach. It has already been mentioned that increased public investment is required to augment extension services, subsidise farm inputs, and develop infrastructure and agricultural markets in order to strengthen the rural economy. Moreover, sufficient documentation exists that provides policy recommendations to governments across Africa. It is important for the government to review these recommendations in the context of Kenya, with the aim of promoting a country specific multi-sectoral approach that would strengthen the link between HIV/AIDS and food security. It is also important to recognise that mitigating the spread and consequences of HIV/AIDS requires a coordinated approach involving ministries responsible for agriculture, health, trade and commerce, as well as finance (UNAIDS, 2008).

Finally, food security determines the wellbeing of an affected household; its current and future ability to develop livelihood options; its ability to mitigate the impacts of HIV/AIDS; and prevent new HIV infections. Of the 1.4 million Kenyans infected with HIV, 1 million live in rural areas. Since food security in rural areas revolves around farming, agriculture cannot be 'business as usual', especially in areas experiencing high HIV prevalence and severe impacts of HIV/AIDS. In these areas we are called upon to adapt existing agricultural practices to the reality of HIV/AIDS; thus all agriculture policies and strategies should be viewed and analysed through an HIV/AIDS lens (Haddad & Gillespie, 2001). This way we stand a chance of retaining agriculture as a sustainable pillar of food security, as opposed to the helpless victim of the scourge of AIDS it is deemed to be today.

Note: The views expressed in this paper are those of the author, and do not necessarily represent those of Concern Worldwide, or any of its country programmes and their partners.

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End Notes

1. WOFAK is an AIDS Service Organisation founded in 1993 by a group of women to fight stigma and discrimination. Many of the founding members were people living with HIV/AIDS. The organisation has a country-wide network and supports a number of HIV/AIDS-related activities such as treatment and care, school-based AIDS clubs to prevent new infections, support to orphans, nutritional support, etc.
2. Ritual cleansing (the spouse of a deceased person has sexual intercourse with a family member of the deceased to be 'cleansed' and to free the dead person's spirit) and the inheritance of a widow by the late husband's brother or close male relative significantly contribute in the spread of HIV infection in the extended family (co-wives and some of the children they may bear). Widow inheritance was traditionally a social safety net for women. In the face of HIV/AIDS, however, it has become a conduit for the spread of HIV infection.
3. The death of one or both parents of AIDS often means that younger members of the family may not have the necessary knowledge, experience and management skills (with regard to farming, livestock production, etc.) to run the farm household. Surviving women and children in particular may lack the requisite skills and experience to undertake certain farming tasks. The loss of a partner's skills in propagating certain crops may thus lead to a decline in household food production. Policy analysts usually recommend that schools could be supported to start or strengthen agriculture clubs to inculcate life skills in children. However, care should be taken to ensure that children are not used as free labour for the production of vegetables in the schools, so that the children do not end up detesting farming activities (Morton, 2005).
4. Some families have abandoned traditional practices, such as mulching, which replenish the soil, or else have sold domestic animals which used to provide manure, thus reducing soil fertility in their fields.
5. The major benefits of the semi-structured interview technique are: (a) Less intrusive to those being interviewed, as the semi-structured interview encourages two-way communication. Those being interviewed can ask questions of the interviewer. In this way it can also function as an extension tool. (b) Confirms what is already known but also provides the opportunity for learning. Often the information obtained from semi-structured interviews will provide not just answers, but the reasons for the answers. (c) When individuals are interviewed they may more easily discuss sensitive issues.