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ABSTRACT:
Hunger and malnutrition have reached crisis proportions in much of Africa where about 200 million people are undernourished. Africa is the only region in the world to have experienced such substantial increase in the number of undernourished in the past 30 years, reasons for which HIV/AIDS has been noted as a major factor. HIV/AIDS depletes both human resources and capital, leading to a reduction in land area cultivated, changes in crop patterns, declines in food yields and human nutritional status. While there are many dimensions to the HIV/AIDS pandemic, little attention has been focussed on the impact of the disease on agricultural production, nutrition security, household food security and ultimately the health of the African populace.

This paper draws implications from various nutritional and epidemiological studies conducted in Africa. It also presents a framework for analysing the problems and highlights key effects of the disease on food and nutrition security, farm households and larger production units as well as the health of people in different parts of Africa.

Agricultural policies attempt to influence yields and commercial crop outputs, and whether such policies can affect the spread of the HIV/AIDS pandemic or migrate its impact need a critical assessment. Food and Agriculture Organizations need to become aware of the impact of the pandemic on food production and food security. They also need to recognize that there already exist a number of policies and programme tools that could be effective in reducing the vulnerability of rural populations to HIV/AIDS, if workable policies are well formulated and implemented. At this stage, the most effective policy and programme instruments need to be explored systematically.

Efforts to mobilize agricultural institutions worldwide, both public and private, are worthwhile in the face of the present or potential damage of the pandemic. Without these initiatives, it will be impossible to achieve the Millennium Development Goal of cutting hunger by half in Africa by the 2015 and Africans may now have the tide turn around to achieve food and nutrition security.

Keywords: Africa, HIV/AIDS, agriculture, policy formulation and implementation, women’s role
Introduction

Human immunodeficiency virus/acquired immuno-deficiency syndrome (HIV/AIDS) is frequently perceived as an individual health problem or as an epidemic with effects on morbidity or mortality, health care and costs. From such a perspective, the "AIDS epidemic" emerges as a series of more or less clearly defined epidemics, each with characteristics of the subsystem in which it occurs and, together, forming a pandemic. Traditionally such epidemics have tended to be identified with particular population groups, and have been distinguished as heterosexual, intravenous drug use (IDU), homosexual or based on blood transfusion. These aspects are very important, but they are not the only possible dimensions of the epidemic (Semba and Tang, 1999).

Sub-Saharan Africa accounts for more than 70% of all HIV/AIDS cases globally. It is the only region where women living with HIV/AIDS out-number men. Nearly 25 million Africans are living with HIV/AIDS, the vast majority of them adults in the prime of their working and parenting lives. Some 15 million people in Africa have already died of AIDS, with devastating social and economic impact (UNAIDS, 1999). In the 30 Sub-Saharan African countries with the highest HIV/AIDS prevalence levels, the average life expectancy has already started to decline, standing at about 47 years, roughly seven years lower than what would have been the case in the absence of the pandemic. The lifetime risk of dying from AIDS has been rising in most African countries, standing at over 60% in Zambia, Zimbabwe, Botswana and Malawi (Piwoz and Preble, 2000). The epidemic is costing the region close to one percent of economic growth each year, while imposing an unsustainable and mounting epidemic more difficult, they too are in part the result of the epidemic. If new resources are not found, the decline in available public resources for HIV/AIDS prevention in Africa may severely undermine national capacities to mount timely and effective responses.

Agriculture is the main livelihood of most rural populations in Sub-Saharan Africa. However, its development is being adversely affected by HIV/AIDS and related illnesses as agriculture-based communities are depleted of able-bodied workers. Of particular concern is that the agriculture sector employs a large percentage of the labour force especially women. The resulting possible infections by sickness and death from AIDS have an impact on agricultural production and food security. Regarding assets, HIV/AIDS strips individuals, households, networks, and communities of different forms of capital being human, financial, social, physical and natural. But perhaps the most profound challenge to the agriculture sector in African countries threatened by HIV/AIDS is the need to develop agricultural policies that mitigate the HIV/AIDS pandemic with the involvement of women in the policy formulation and implementation. In the absence of policies that will help address the problems in sub-Saharan Africa, farmers are switching to feasible low input, low output farming that is preferable to infeasible labour-intensive, higher input farming. Yet, in so doing, they run the risk of adopting an ultimately destructive "coping strategy." This paper highlights some of the effects of the HIV/AIDS pandemic on agriculture and discusses the way forward as well as some policy issues from the perspective of formulation and implementation with the involvement of women. The focus is on sub-Saharan Africa, where the epidemic has spread rapidly over the past 15 years.
Impact on agriculture

Agriculture has been adversely affected by HIV/AIDS and related illnesses as agriculture-based communities are depleted of able-bodied workers of which the majority are women. Of particular concern is that the agriculture sector employs a large percentage of the labour force and accounts for a major portion of the gross domestic product and export earnings in many African countries. The effects of HIV/AIDS on this sector are, therefore, likely to reverberate throughout the African economies. Nevertheless, the loss of a productive labour force will have one or more of the following consequences:

i. Reduction of land use under cultivation, as people are physically unable to work in the field;
ii. Reduction in crop yields, due to delays in carrying out certain agricultural interventions such as changes in cropping pattern;
iii. Changes in cropping patterns as some families have been known to switch to less labour-intensive crops;
iv. Decline in the range of crops per household as AIDS-affected families reduce the number of crops under cultivation to one staple crop;
v. Reduction in the ability to control pests such as through weeding and other inter-cultivation measures due to shortage of labour;
vi. Loss of agricultural knowledge and farm management skills, due to the loss of one or both parents to AIDS, and
vii. Decline in livestock production as the urgent need for cash may force some families to sell their animals.

The farm household is a complex system dependent on human capital and remittances. The household interacts with the production unit. However, nowadays there are also interactions with off-farm units, especially in urban areas, and these are included in the system. HIV/AIDS depletes both the human capital base, through reducing the availability of labour skills and time, and the capital available through remittances or savings, which may disappear or be diverted to cover costs related to sickness and death. The resulting impacts of these effects have been found in the FAO studies to take a number of forms (FAO, 1995).

The presence of the disease leads generally to reduction in area of land under cultivation. Community authorities often allocate land to families on the basis of their size. The sickness and death of an adult can result in the inability of the household to cultivate all the land at its disposal. Tending for the sick can take a considerable amount of time, which is no longer available for agriculture. Thus, more remote fields tend to be left fallow and the total output of the agricultural unit consequently declines.

Cash crops are often abandoned owing to the inability to maintain enough labour for both cash and subsistence crops. Switching from labour-intensive crops, to less labour-intensive ones, is observed. This could have an impact on the nutritional quality of the diet.

Livestock serves multiple functions, and also frequently represents a form of savings. The medical costs incurred by those affected by HIV/AIDS often require the sale, gift or sacrifice of livestock as payment for traditional forms of medicine.
In many areas, the usual way for children to learn the required agricultural skills is by working with their parents. Given the AIDS pandemic, this is often no longer possible and, owing to the gender division of labour and knowledge, the surviving parent is not always able to transfer the skills of the deceased one.

**Impact on food security**

As is clear from the preceding points, a decline in the quality and quantity of food can often be expected. The incidence of stunting increases among orphans, and the food consumption of all surviving household members often declines when an adult dies. As well as these effects, which are owing to the loss of labour, household food security can also be reduced through an increase in the number of mouths to feed arising from the fostering of children or the hosting and caring for sick relatives (Barnett and Rugalema, 2001).

**Other impacts**

HIV/AIDS, as is known, undermines households over time through diverting labour and resources to care, and in Africa the majority of these resources are derived from women. Households end up with their resources depleted and disinvestments in the production unit. The process is often compounded by the clustering of infected people within certain households owing to interspouse infection and/or mother-to-child transmission (Friis, 1998). The household's coping mechanisms also involve trade-offs between resolving immediate problems and the longer-term future. It is in such a context that the future education of children can be mortgaged and sacrificed to immediate concerns. When such a phenomenon occurs on a large scale, it can have negative human and socio-economic consequences for national development.

**The gender dimension**

Women are biologically, socio-economically and socio-culturally more at risk of HIV infection than men (Gupta, 2000; Topouzis, 2000). Biologically, the risk of becoming infected with HIV during unprotected vaginal intercourse is between two and four times higher for women than for men (Topouzis, 2000). Women are also more susceptible to other sexually transmitted diseases (STDs) and less likely to seek treatment. If untreated, STDs may multiply the risk of HIV transmission by 300-400%. This biological susceptibility further threatens reproductive health status. Pregnancy and child bearing now involve considerably greater risks not only for women but also for their future offspring, while STDs can be potentially life threatening. Pregnancy and child bearing now involve considerably greater risks not only for women but also for their future offspring, while STDs can be potentially life threatening. HIV/AIDS also exacerbates social, economic, and cultural inequalities that define women's status in society. Women are often more susceptible to HIV infection and more vulnerable to AIDS impacts than men for the following reasons. The predominant culture of silence and passivity regarding sex stigmatizes women who try to access STD treatment services. The norm of virginity restricts adolescent girls' access to information about sex and increases risk of sexual coercion. Economic vulnerability increases the chance of exchange of sex for food and money. Male power is often manifested in sexual violence. Susceptibility to HIV infection is increased through sexual practices, including genital cutting, dry sex and ritual cleansing. Finally, women are discriminated against with regard to inheritance rights (World Bank, 1997). Other important changes in gender asymmetries relate to less personal but nonetheless crucial assets. Premature adult male death may deprive the female of the necessary time to build up a set of extra-family levers (such as access to
community land, to community groups, and to micro-finance groups) that can be used to
exert power within the family. If property and user rights for a whole range of assets are
not clearly and equitably defined or are not enforced, women are likely to become less
able to shape their own destiny. This lessening of women's relative power will tend to be
reinforced via the subsequent diminished ability to control decisions relating to their own
needs and those of their children in terms of health care, food intake and work time
(Barnett and Rugalema, 2001; Topouzis, 2000).

**The need for interventions and the way forward**
Firstly, at the broad crosscutting level, the first step should be the identification of the
real constraints to economic and social progress that currently seem to explain, to a large
extent, the adversity experienced in Africa today. They include the prolonged economic
decline and successive droughts resulting in food insecurity in many communities, the
costs and implications of debt and debt servicing, the very real limitations imposed by a
limited and over-stretched government capacity, and the difficulties of introducing
institutional reform. Programmes should address not only the immediate needs of the
poor that are made worse by poverty, malnutrition and the HIV/AIDS epidemic. They
should also address the underlying causes of these problems through effective broad-
based strategies with the active involvement of women.

Secondly, the HIV/AIDS fight must be parity building agenda. To the extent that AIDS
depletes human capacity in many African countries, the epidemic must be confronted
head-on. Specifically, capacity building in the health sector service delivery system is
imperative. There is need for health sector restructuring programmes to be responsive to
the HIV/AIDS challenge. This calls for modes of health services delivery through, *inter
alia*, strengthened capacity for hospital-based care for patients with HIV/AIDS.
Similarly, there is an urgent need for capacity strengthening at the level of
implementation through the development of integrated reproductive health frameworks
that take into consideration a sufficient supply of drugs targeting the control and
treatment of sexually transmitted diseases, the harmonisation of HIV/AIDS interven-
tions by various sectors and training of both public and private sector health and allied
workers. Both prevention and mitigation strategies can be found in several sectors
beyond the health sector. Ministries of education, defence, information, youth, and
women's affairs, in African countries must harmonize their interventions through denned
frameworks of cooperation and coordination. More importantly, the planning process that
takes into account all these considerations should be decentralised and involve women
policy makers and decision-makers at the regional and district levels in a manner that is
participatory and inclusive.

Thirdly, there is need to develop robust, timely, and dependable monitoring and
evaluation capacity as it relates to the HIV/AIDS epidemic. Unless countries have
reliable data on HIV/AIDS prevalence and geographical patterns as well as information
on those affected by the spread of epidemic (orphans in particular), it will be difficult
to establish priority targets. In this regard, national sentinel surveillance data should be
developed and monitoring and evaluation frameworks should be decentralized to regional
and district levels. Lastly, innovation in home-based care systems is needed with the
active participation of women, and the support that they need made available. The aim
should be to ensure better quality home-based care at the household and community levels.

**Policy considerations**
The options for policy formulations and effective implementation in agriculture with the involvement of women can be grouped around the main losses and weaknesses in the major agricultural institutions. Discussion of HIV/AIDS issues and their related impact on agriculture should as far as possible be done with the active participation of women who form the backbone of agriculture in Africa. These policies should be included in all agricultural services provision in sub-Saharan African countries. In addition, it may be beneficial to target the education of scarce extension resources such as seasonal agriculture workers, estate workers and fishermen as an effective tool in mitigating the HIV/AIDS pandemic, with women as frontliners.

Research on national agricultural systems should be encouraged with the participation of women, into the substitutability of labour and capital in local farming systems in anticipation of severe labour shortages. But perhaps the most profound challenge to the agriculture sector in countries threatened by HIV/AIDS will be the need to develop agricultural and natural resource management systems that are more labour-intensive and use less purchased inputs but support sustainable livelihoods. In the absence of new technology and techniques, farmers are switching to feasible low input, low output farming that is preferable to infeasible labour-intensive, higher input farming. Yet, in so doing, they run the risk of adopting an ultimately destructive "coping strategy" which will ultimately lead to low agricultural productivity and hence food insecurity in sub-Saharan Africa.

The sickness and death of members of a farm household system, whatever the cause from malaria or cholera, for example represent shocks to the system. Their impact depends on the resilience of the system and its coping strategies (Maetz, 1998). Epidemics and disease generally disproportionately affect the weakest in society (infants, women and the elderly, or the poorest in the community) and coping strategies such as replacement of dead children, levirate and countless forms of kin and community solidarity need to be established with the active participation of women, to reduce the societal impact. What makes the HIV/AIDS pandemic unique is, *inter alia*, the scale of resource depletion it produces when the prevalence levels are high. In the case of HIV/AIDS, the sick and dead are generally found in the most active age groups, and many traditional coping mechanisms, which made good sense within the context in which they were originally developed, are less effective than normally observed or are even counterproductive, for example, the practice of "widow cleansing". In view of the facts that demographic behaviour can be influenced by what happens to the farm household within the farming system and that both of these units can suffer from the impact of the HIV/AIDS pandemic, the issue of the vulnerability of this two-tiered system could be important.

**CONCLUSIONS**
The agriculture and health sectors in sub-Saharan Africa need to become aware not only of the pandemic's impact on production, food security and institutions, but also of the existing policy and programme tools that could be effective with the active involvement
of women, in reducing the vulnerability of rural populations to HIV/AIDS. However, this is still an uncharted territory that needs to be systematically explored in order to identify the most effective policy and programme instruments available to the agriculture sector in this area. Policy-makers have to decide that, in the face of the present and potential damage of the pandemic, it is worth making the effort of mobilizing women as key players in the agricultural policy formulation and implementation, both public and private in an effective manner.

REFERENCES


