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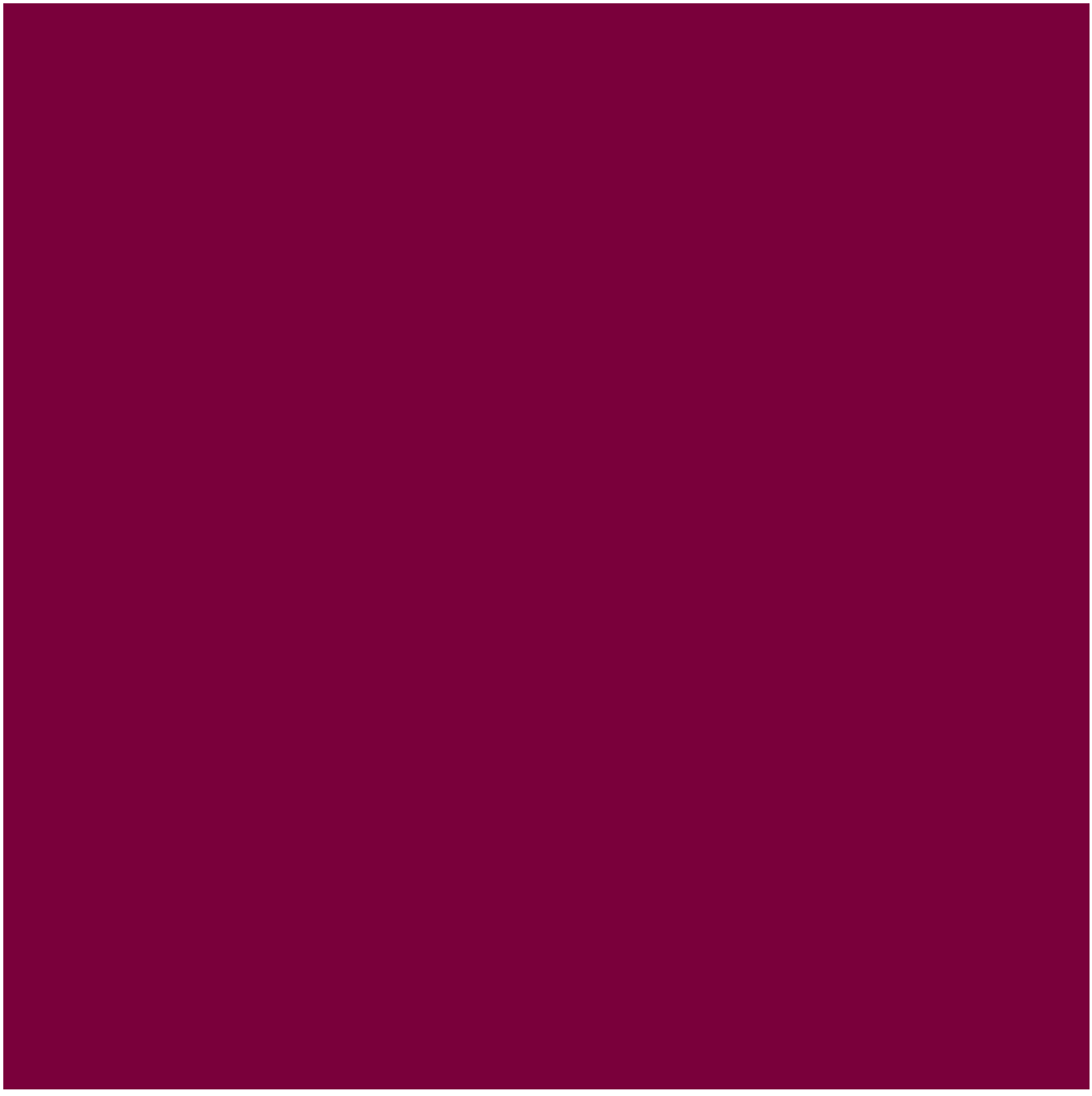
The Environment, Natural Resources and HIV/AIDS



Foreword

HIV/AIDS is also related to issues that concern the environment.

Sida has produced a number of publications which have presented the close relationship between matters relating to the environment and natural resources on the one hand and other important development issues on the other. Life is complex and must be handled accordingly.

HIV/AIDS has rapidly become one of the major problems, particularly in poor countries. We therefore asked Mikael Hammarskjöld to write a summary of current thinking on the relationships between HIV/AIDS and issues concerning the environment. His analysis shows that it is primarily increasing difficulties in making sustainable use of natural resources when time, energy and money must be used to relieve the effects of ill health and when labour is tragically lost.

At the same time various forms of environmental degradation affect the general health status of people and increase their vulnerability. When HIV/AIDS is added to the list, there is a danger that people cannot make a living any more. The small margins shrink and disappear. The result is a reduction – or total elimination – of food security.

We must understand these relationships between the environment, natural resources and HIV/AIDS, see the additional risks that arise on account of HIV/AIDS, and design rural development projects and other contributions so that the growing population can support itself in a sustainable manner. Hopefully, this publication can be of some assistance.

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Content

1. Introduction

Background

The AIDS epidemic has lasted for more than 20 years. In all probability, the world will have to live with the epidemic for a further 40 to 50 years. Hitherto, over 65 million have been infected and some 28 million people have died. At the end of 2002, it was estimated that 42 million were infected with HIV or had developed AIDS. A further 45 million are expected to be affected by 2010, unless there is a dramatic increase in programmes of preventive measures.

The large majority – over 90 per cent – of all carriers of HIV/AIDS are to be found in the poor parts of the world. Sub-Saharan Africa is the area that is most seriously affected, with over 70 per cent of all the people who have been infected or have developed AIDS.

Today, most people agree that the AIDS epidemic constitutes an extremely serious threat to development in the most severely affected countries. The AIDS epidemic obliterates the progress that has been made hitherto in respect of public health and poverty reduction. It undermines the achievements and future possibilities of development in other sectors, including the environment and natural resources sector. The effects on the economy are reinforced by the loss of experienced and competent personnel in the public sector and this, coupled to the increasing demand for social services, further undermines the capacity of the countries concerned to deal with the epidemic themselves.

HIV/AIDS, economical use of natural resources and environmental issues

HIV/AIDS was regarded for far too long as exclusively a health problem. It is only in recent years that international organisations, donors and national governments have started to give attention to the epidemic as a general development issue. Today, an increasing number also make the assessment that HIV/AIDS undermines long-term sustainable use of the environment and natural resources. Accordingly, the epidemic was taken up at the UN's summit conference on the environment in Johannesburg in September 2002.

However, concrete knowledge of the ways in which HIV/AIDS affects the environment and the use of natural resources outside the agricultural sector is still small. Systematic research in this field only

began in the last few years, and then only on a small scale[1]. What has been published hitherto on the subject is therefore based on fragmentary and anecdotal information, or is a bi-product of studies on ways in which agriculture and natural resource use are affected by the epidemic. Research findings in respect of the latter were published as early as in the beginning of the 1990s and have provided a good picture of the ways in which HIV/AIDS affects households and production in rural areas in East Africa.

There is nothing to indicate that the environment and natural resource sector outside agriculture is immune to the effects of a reduction in human and financial resources. Nor is it protected from changes in priorities in the environmental field, including an increase in the vulnerability of poor people whose views on the local use of natural resources are influenced by the pressure exerted by the epidemic. Therefore, in the most seriously affected countries, the AIDS epidemic has probably started to have negative effects on the use of the environment and natural resources at all levels, and these effects will grow as the health status of the people deteriorates further and more people die of AIDS.

[1] One of the few examples of ongoing research is a cooperation project between Susan Erskine and her colleagues at HEARD (Health Economics and HIV/AIDS Research Division) at the University of Natal in South Africa and the regional South African environment protection agency (Ezemvelo KZN Wildlife) on how the AIDS epidemic affects the environment in KwaZulu-Natal. The project (then still unfunded9 was presented with the aid of a poster at the international AIDS conference in Barcelona in July 2002.

2. HIV/AIDS in Africa – a rural problem

In 1983 it became clear that HIV/AIDS was developing into a serious epidemic in sub-Saharan Africa. At the outset, HIV/AIDS appeared to be mainly an urban problem. However, it soon became obvious that in several countries HIV/AIDS was also being spread rapidly in rural areas. The epidemic was first noted in areas that had regular and close contacts with large towns, as well as in areas with extensive labour migration. Initially the effects were seen in the rural areas on the main transport routes on land and around the great lakes.

As early as in the mid 1980s, there was an indication that the epidemic could have negative effects on living conditions and production in rural areas. A rural household could suffer from the effects of HIV/AIDS long before anyone in the household or in local community had fallen ill. One effect was the decline in the transfers of money from relatives in the towns after these people had fallen sick or had died from AIDS. Furthermore, an increasing number of rural households started to take care of members of the households and other relatives with AIDS who had returned from the towns to receive care. The same applied to children of parents who had fallen sick or died from AIDS and needed to be taken care of by relatives. These additional problems were only a precursor of what was going to happen when members of the household itself started to develop AIDS.

Today, a few years into the 21st century, the AIDS epidemic has established firm roots in large parts of the rural areas in Africa, above all in East Africa and southern Africa. It is still less visible in the rural areas than in the towns. This will remain the case as long as most of those infected with HIV have not developed AIDS.

One major problem is that the collection of data on persons infected with HIV and on AIDS cases has a strong urban bias, despite the fact that over two-thirds of the persons infected with HIV and the AIDS cases live in rural areas in the most severely affected countries. The effects of the epidemic on many people in rural areas have been made very clear by the current food crisis in large parts of southern and eastern Africa. The magnitude of this crisis can partly be referred to effects of the AIDS epidemic.

Many reasons for ill health

For people living in rural areas in Africa, health problems are everyday problems. Tropical diseases and other, more or less serious illnesses are common, and the symptoms are often exacerbated by nutritional deficiency and the lack of medical services. However, in the first place these diseases affect the weakest groups – children and the elderly. This can be distressing enough for the families affected, but it usually has a limited effect on the supply of labour and other resources in the households. Healthy adults who fall victim to the most common diseases have, despite the lack of medical care, a good chance of recovery in most cases.

On the other hand, in principle HIV/AIDS always leads always to death and its victims are almost exclusively young adults, an age group that normally has a very low mortality rate. At the same time it is also the most active group socially and economically, and constitutes the motor of current and future economic and social development. For households, HIV/AIDS means a loss of labour, lower levels of production, lower incomes and more expenditure (for medical care, medicines and funerals), usually for the poor. In areas where the epidemic is extensive, it also leads to the weakening of social structures with considerable repercussions on all sectors.

This thus undermines the local community's ability to deal with the epidemic and to alleviate its effects, which include taking care of an increasing number of orphans. Other health problems also tend to be exacerbated as the households' living conditions are undermined as a result of the AIDS epidemic.

Crises such as drought can, at least in some cases, be predicted, and the households can make appropriate preparations, for example by increasing the area in which drought-resistant crops are cultivated. There is also a certain amount of experience of dealing with crises of this type, for example through support from social networks and by making use of different types of alternative resources and strategies. The households that use these methods and succeed in retaining their labour force and other resources have a reasonably good chance of recovery. On the other hand, the HIV infection is first noticed when the disease breaks out, and then there are no antidotes (apart from antiretrovirals). The stigma that is often attached to a person infected with HIV also undermines his or her possibilities of using the social safety net.

The effects of AIDS depend on the starting point and other crises

A very large proportion of the households in rural areas in Africa are poor or very poor. This means that they have small margins to deal with setbacks. Life for them is a permanent struggle to scrape together the bare necessities of life. Usually not many setbacks are needed before they are drawn into a spiral in which their living conditions gradually deteriorate. Loss of labour as a result of AIDS has a severe effect on the possibilities available to households to both produce and buy food. The most seriously affected households are those who have few resources, but even reserves of the more well-to-do households are affected.

Now that the epidemic has coincided with a long period of drought in large parts of southern and eastern Africa, the effects can clearly be seen in the form of an acute food crisis. Probably this crisis will, in turn, further exacerbate the AIDS epidemic, since the deterioration in living standards will weaken the immune defence and thus increases the risk that the infection will be spread further and accelerates the development of AIDS. HIV/AIDS thus constitutes a serious threat to the agricultural situation in the countries affected.

Studies made in the mid 1990s maintained at that early stage that HIV/AIDS programmes that focused on prevention and care must be combined with emergency food aid and other forms of support to alleviate the effects of the epidemic on the ability of households and local communities to provide for themselves. Without this type of support, the capacity of the households affected to survive would be further weakened. In a situation of this type it can be difficult to discuss preventive measures that would reduce the risks of infection in the future. Acute survival problems can also be expected to exacerbate the epidemic through the use of survival strategies that increase the risk of infection (labour migration or the exchange of food for sexual services).[2]

Vulnerability to infection varies geographically and socially

All the households affected by HIV/AIDS are not equally vulnerable to the effects of the epidemic. Studies show that the effects of HIV/AIDS vary considerably, both among individual households and among areas situated close to each other. This is dependent, among other things, on the type of agricultural system and on the resources of the households. The households that are most vulnerable to loss of labour are young households with few working adults and limited resources in the form of land and other assets. This is particularly the case in areas with a small number of crops, distinct peak workloads, a clear division of agricultural work between the sexes, and few alternative methods of making a living. In other words, HIV/AIDS affects those households and areas that have the smallest degree of flexibility in respect of agriculture and other possibilities of making a living.

In the initial stages of the epidemic, relatively well-off urban groups with extensive geographical and social mobility were affected by the HIV infection. If they have not changes their ways of life have not changed, the risk of infection is high for these relatively small groups, with serious consequences for society. As the epidemic has spread further, the poor majority have primarily been affected. Poor people have less information on how the infection is transmitted and how they can protect themselves against it. Poverty also means that people have fewer possibilities to make choices and thus fewer possibilities to protect themselves and to change patterns of behaviour that lead to a high risk of infection. As we have pointed out above, poverty can make labour migration necessary, which increases the risk of exposure to infection. Poverty can also put pressure on women to offer sexual services in exchange for food and other resources.

[2] Taking Zimbabwe as an example, it is easy to imagine that widespread distrust of politicians and government agencies, or political and social unrest, coupled with tendencies to disintegration in society, facilitate the spread of the disease, undermine the struggle against HIV/AIDS, and reinforce the negative effects of the epidemic.

3. HIV/AIDS, rural households and use of natural resources

Allowing for difficulties in identifying the effects of the AIDS epidemic, the present situation with regard to knowledge of the problems can be summarised in the following way.

Despite the fact that the estimated loss of labour in the agricultural and rural area sector is probably lower in most places than in other sectors (see Table 1 below), there is a great deal which indicates that the sector is affected more seriously than other sectors by the AIDS epidemic. This is due to the fact that the farmers have greater difficulties in tackling the labour losses caused by the epidemic.

Table 1. Projection of labour losses in southern Africa as a result of HIV/AIDS: total and in agriculture.

Country	Total workforce		Work-force within agriculture	
	Percentage losses by the year 2005 compared to what labour force size would have been without HIV/AIDS Loss in %	Percentage losses by the year 2020 compared to what labour force size would have been without HIV/AIDS Loss in %	1985–2000 change in %	1985–2020 change in %
Botswana	-17.2	-30.8	-6.6	-23.2
Malawi	-10.7	-16.0	-5.8	-13.8
Mozambique	-9.0	-24.9	-2.3	-20.0
Namibia	-12.8	-35.1	-3.0	-26.0
South Africa	-10.8	-24.9	-3.9	-19.9
Tanzania	-9.1	-14.6	-5.8	-12.7
Zimbabwe	-19.7	-29.4	-9.6	-22.7

Source: Alex de Waal & Joseph Tumushabe, *HIV/AIDS and Food Security in Africa*, a report for DFID, February 2003.

Diminishing availability of labour and falling incomes

For households that are affected by AIDS, incomes fall while the needs of medicines, care, and money for funeral expenses increase.

The acute need of resources can make the sale of agricultural implements, livestock or other assets necessary, and therefore make farming difficult.[3]

When a member of the household who is infected with HIV develops AIDS, he/she can still live for several years. Due to the necessity of providing care, the amount of time that other members of the family can spend on farming and other activities decreases. To compensate for this, the workload of the healthy members of the family increases, particularly that of women and girls. Child labour increases when children (primarily girls) are taken out of school to nurse the sick, help with the farming and do the household work.

The most devastating effect of the AIDS epidemic is when it is the male head of the family who falls sick and dies. In addition to the loss of his labour and specialist farming knowledge, it also often means that his knowledge of distributing and selling products is lost and that there are fewer contacts with agricultural extension workers and other organisations.

Effects in several links in the chain

Studies made in Kenya show that, in households affected by AIDS, daughters are married off since the dowry received can offer an important means of relieving an acute shortage of resources. When this course of action is taken, an important labour source of labour is lost to the households affected, and makes it more difficult for them to maintain levels of production and incomes.

The fact that HIV is transmitted through sexual contacts has the effect that more members of the family than those who die can be infected. Gradually more adult members of the household are lost. In extreme cases the process can lead to the dissolution – disappearance – of the household.

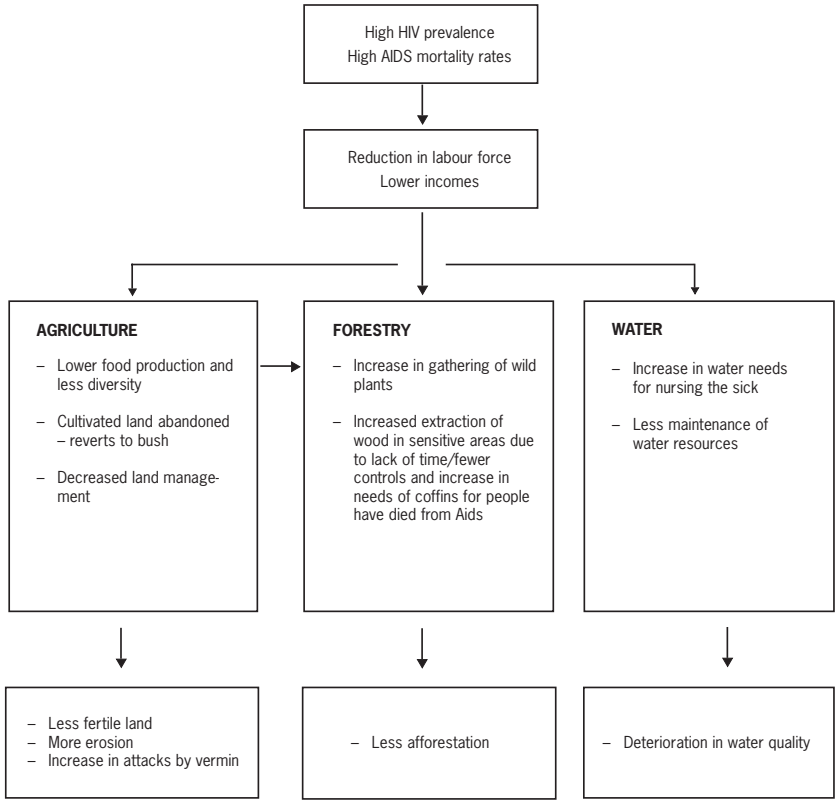
The deterioration in services, increase in poverty, increase in the number of orphans and other effects of HIV/AIDS have negative consequences for far more households than the one directly affected by the epidemic. An increase in poverty makes economic activity difficult, and has negative consequences on local sales of agricultural products and on the distribution of capital goods to the agricultural sector.

In many farming communities, women are not entitled to land in the same way as men. A well-documented effect of the AIDS epidemic is that the living conditions of surviving widows and their children are drastically impaired. Even in cases where the household is not deprived of its land, in order to avoid a lack of resources the last resort can be to sell the land, or parts of it, owned by the household. Then there is a clear risk that well-off households appropriate control over an increasing part

[3] The problems that deaths from AIDS give to farmers are also encountered by other small producers, whose production is strongly dependent on the labour provided by the household. For the situation in artisan fishing, see for example Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), The impact of HIV/AIDS on agricultural production and mainstreaming aids messages into agricultural extension in Uganda, May 2003.

of the land. Increased poverty, coupled with increased inequalities in the local community, is a poor starting point for long-term sustainable use of the environment and natural resources, as well as for success in the struggle to stop the epidemic from spreading.

AIDS, natural resources and the environment



How can the transfer of know-how be maintained?

When households lose adult members, they also lose the knowledge and experience of local conditions for farming and natural resources possessed by those who died. When the transfer of knowledge from parents to children breaks down, the latter will eventually find it very difficult to farm rationally and sustainably. This can lead to serious, long-term effects on agricultural production, that will be particularly acute in areas with a large and rapidly growing number of orphans. There are examples of local communities, with the aid of external support, that are trying to counteract a situation of this type through programmes of agricultural education that have a special focus on orphans and young people.

The AIDS epidemic does not merely affect the farmers themselves, it also affects those working with agricultural extension services and other forms of public service in rural areas. The loss of experienced personnel strikes in two ways: it weakens the ordinary advisory activities (extension work) and it makes it even more difficult to actively seek new solutions to the problems faced by households affected by AIDS in respect of farming and using natural resources in other ways.

4. Difficulties in distinguishing the effects of HIV/AIDS

It is difficult to distinguish the effects of the AIDS epidemic on rural households and local communities from the effects of other crises and problems. Therefore, it is also difficult to clearly identify the effects of the epidemic on local use of the environment and natural resources.

Food production by small farmers in Africa is constantly subjected to sudden changes and to changes that have a slow effect. The AIDS epidemic is a change of this type and superposes "normal" factors of change such as national agricultural policies, rules and laws for access to land, climate, prices of products and capital goods, or diseases that affect people, animals and crops.

Therefore, it can often be difficult to know whether reported changes are chiefly due to HIV/AIDS, whether the epidemic is a main contributory cause, or whether the causes of the change are entirely different. However, it is always wise to give consideration to the importance of HIV/AIDS in areas with an extensive epidemic.

The figure below shows how farmers in four districts in Uganda experienced a decline in agricultural production and incomes during the last ten-year period. There is absolutely no doubt that HIV/AIDS played a major role in the decline, but it is difficult to ascertain whether the changes are due entirely to the epidemic.

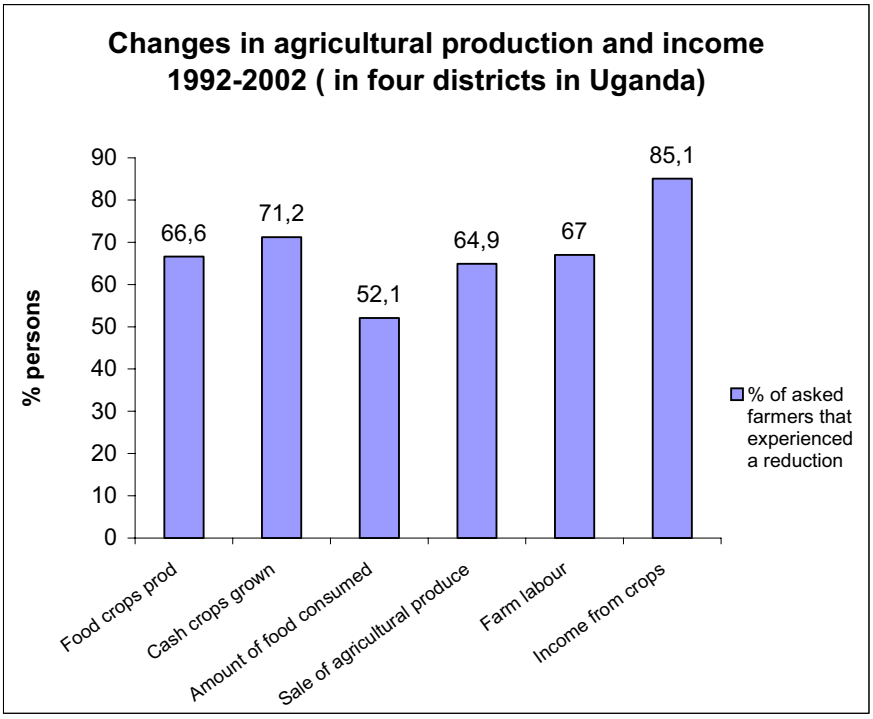
HIV/AIDS effect on agriculture

Other crops

A reduction in the availability of labour due to AIDS leads to a reduction in the area under cultivation, a reduction in the number of crops for sale and a process of transition to crops that require less labour and storage facilities, for example cassava. For example, in Malawi cassava production increased by almost 2000 per cent between 1990 and 2000. It is a widely held opinion that the aids epidemic has influenced this course of events.

HIV/AIDS leads to difficulties in looking after different types of perennial crops produced for sale, for example coffee, and can have the consequence that production diminishes or comes to a complete standstill. In the Uganda study mentioned above, over 60 per cent of the households stated for example that parts of the land they usually cultivated had now been abandoned and the bush had taken over this land.

Figure 1.



Source: See footnote 3.

Erosion

Lack of labour also leads to a situation in which people spend less time on the types of soil conservation work that contribute to increasing production and to reducing negative effects, for example erosion. In particular, soil conservation of the type that it intended to have a long-term effect is negatively affected by a lack of labour.

Increase in attacks by vermin

Two examples illustrate how the AIDS epidemic can affect local activities.

Example 1: Vermin

The people living in the Rakai District in Uganda complained that, since the area had been affected by HIV/AIDS, the severe problems caused by insects had increased, as well as the damage to crops by wild animals. It is impossible to know for sure whether the reported changes were really caused by HIV/AIDS. The link to HIV/AIDS appears logical – an increase in the number of cases of sickness and deaths, more funerals, fewer working adults and less time spent on farming: all this means that less land is cleared, the bush is slowly getting closer to the village, and conditions are created that are favourable to both insects and wild animals (Barnett & Whiteside 2002:234).

Example 2: Long-term repercussions on the cultivation system

There is a virus disease that is called Black Sigatoka, which attacks cooking bananas. It started to spread in East and Central Africa about twenty years ago, approximately at the same time as the AIDS epidemic

started to spread in the area. One still unproved hypothesis is that there is a connection between these two events. Logically it is possible that HIV/AIDS has the effect that households and local communities are unable to look after their banana plants properly. The consequence of this is that they are attacked by noxious insects and weakened, and thereby easily become victims of Black Sigatoka. If this is the case, the AIDS epidemic has affected an entire cultivation system - with long-term repercussions on the population's nutritional standards. For many of the people living in the region, cooking bananas are an important component in their diet (Barnett & Whiteside 2002).

In both examples, as with other effects on agriculture and rural and households, it is case of slow processes that are difficult to distinguish from other slow-acting effects. One process of this type is the structural adjustment programmes (SAP) that were introduced in a number of countries in the 1980s and 1990s. They are often considered to have contributed to increasing poverty in both urban and rural areas, and can therefore have also exacerbated the AIDS epidemic and increased the vulnerability to the effects of poor health and death. The cutbacks made in the public sector, an important element in the SAP recipe, may also have contributed in various ways to increase vulnerability to the effects of the epidemic.

In parallel with the spread of the AIDS epidemic, there are growing signs of a cyclical or long-term climate change in sub-Saharan Africa. This is perhaps most visible in southern Africa. The change can be characterised by both less rainfall and more irregular rainfall. The sensitivity of the region to climate change can be seen from the fact that agriculture often constitutes 40 per cent or more of GNP, at the same time as less than 10 per cent of farming land is irrigated.

In certain areas, the change can be a case of an increase in average temperature and humidity. This stimulates the spread of diseases such as malaria and sleeping sickness, as well as various diseases that affect animals and plants. In combination with HIV/AIDS, the climate change thus constitutes a serious threat to the agricultural base throughout the entire region.

The effects of HIV/AIDS on livestock production

It is common that households affected by AIDS are forced to sell livestock in order to pay for medical care and funeral expenses. There is also a decline in livestock production since less time is spent on tending animals and often less qualified labour is used for the purpose (including identifying and treating injuries and diseases) and for feeding the livestock. There are several signs of a process of transition to smaller animals, such as goats and poultry whose care requires less time and knowledge. In addition to a reduction in income (for example from sales of milk), a reduction in livestock production leads to a reduction in the availability of manure, or to none at all. The loss of draught animals for ploughing reduces the area that can be cultivated and even the possibility of doing the farming work at the right point in time. The reduction in livestock production has the consequence that the nutritional standards of the household deteriorate.

HIV/AIDS and the forestry sector

When rural households lose adult members, they are also forced to make adjustments to their use of forest products. In situations of this, type little regard may be paid to traditional control systems for natural resources that are managed for the benefit of everyone. For example, people are forced to fetch their firewood where it is most easily available, even if there is a risk for serious long-term effects for both the land and the water sources. Risks of this type increase if knowledge of soil conservation and controls is not shared by the spouses and the partner who possesses the knowledge passes away.

Another effect of the reduction in the ability of the household to farm is that they are forced into using unsustainable methods for collecting wild plants and other forest products for sale and food. Anecdotal information is available on this from a large number of countries.

Commercial forestry is also affected negatively by HIV/AIDS, since forest workers and technicians are affected by higher rates of ill-health and mortality. When people working in professions of this type spend long periods of time away from their families or partners, they can be tempted to have temporary sexual contacts - with the risk of being infected. The same applies to civil servants and workers in forestry authorities.

The mobility of these professional categories has the effect that they also contribute to spreading the disease further: to their home districts and other regions. The risks also increase for people living in the vicinity of, for example, logging camps.

When a government agency in the forestry sector loses experienced and well-educated personnel in this way, capacity problems are created, which can contribute to administrative bottlenecks and deficiencies in the coordination of activities between national and local levels. The agency's "institutional memory" is weakened, while the possibilities available to personnel to monitor the observance of rules for land use, felling and other forms of exploitation are reduced. Extension activities and cooperation with the local population are also at risk of being negatively affected.

As is the case with other agencies, a forestry agency's budget must accept growing costs for medical care, funerals and survivors' pensions, at the same time as there is a growing need for recruiting new personnel and for training. Organising activities related to HIV/AIDS also requires funds. Therefore, it is often the case that a number of posts remain vacant or are held by unqualified personnel.

In severely affected countries an AIDS epidemic can have a serious effect on activities in local forestry projects such as planting, since both employees and the local population are affected. The projects' time schedules, objectives and long-term sustainability may need to be reconsidered. Budgets need to be adapted to the increasing need for recruiting new employees, for training and for medical care. At worst, problems of this type can affect the survival of a project.

Among innumerable examples of this, mention can be made of a reforestation project in the catchment area of Lake Victoria (Lake Tanganyika Catchments Reforestation and Education Projects, TACARE). As the spread of HIV/AIDS to the area increased, participa-

tion in meetings and education programmes decreased. Eventually ill-health and deaths among both employees and the target group had the effect that it was impossible to keep to the project's time schedule.[4]

The AIDS epidemic also affects the demand for timber. When an increasing number of adults and children die, more timber is required to make coffins. It has been said that the considerable increase in the consumption of timber for coffins in Kisumu in Kenya has led to an increase in felling in a forest reserve in Kakamega. For the same reason, the availability of timber and firewood is said to have decreased considerably in the border areas between South Africa and Mozambique.[5]

HIV and water

In cases where drinking and household water is not available in the immediate vicinity of houses, HIV/AIDS has the effect that there are greater problems where water supplies are concerned. In cases where women are responsible for fetching water, there is less time available for this purpose when, in addition to their usual working duties, they must also look after the sick and do the duties that the sick person no longer has the strength to do. Moreover, the care of people with AIDS requires more water, for example for hygiene. This can lead to a situation in which water of inferior quality must be accepted. When the availability of clean and safe water diminishes, a health hazard arises for the healthy members of the household as well as a threat to their working capacity.

As was the case with the forest agencies, the authorities and organisations responsible for water supplies are also affected by an increase in ill-health and deaths among their personnel. Therefore, there is a clear risk for lower standards in the maintenance of water sources, wells, pumps, mains systems etc. If maintenance has already been neglected, the situation is further exacerbated, and the population can be forced to make use of water sources of inferior quality that are difficult to reach. Where the authorities are concerned, coordination and implementation of water projects are made difficult, which affects long-term efforts to improve water supplies.

If the personnel shortages have the effect that the major installations managed by regional or central authorities are neglected, the capacity of the systems can deteriorate, and conditions for cultivation in the areas concerned can also deteriorate. A study of the irrigation system Fai Tacupma in northern Thailand shows clear changes as a result of HIV/AIDS during the period 1990 to 2002. The number of water users decreased dramatically when households that had lost adult members were forced to reduce their wet rice plots, or to make a complete change and cultivate crops that were more drought resistant and less labour-intensive, such as fruit trees, soya and onions. There were not enough people left to maintain the system. In addition their expenses increased when they were forced to hire machines for some maintenance purposes. After a time the maintenance was neglected and the system's capacity decreased.[6]

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[4] Proceedings from a Workshop on Impacts of the HIV/AIDS Pandemic on the Management and Conservation of Natural Resources in East and Southern Africa, September 26-27, 2002, Nairobi

[5] See note 1.

[6] Sopon Thangphef, The Impact of HIV/AIDS on Community-based Resource management: A Case Study of an Indigenous Irrigation System in Northern Thailand, UEA, August 2001.

5. HIV/AIDS – a challenge to society as a whole

The text above has undoubtedly made it clear that the AIDS epidemic is a challenge of the first rank to development cooperation. The challenge also includes the situation that the epidemic is extremely difficult to check since the effects of the HIV infection are manifested so long after the time of infection, and that it undermines the potential for development in all parts of society, at the same time as its victims – those infected with AIDS, orphans and the elderly – require additional interventions from both the community and relatives. It is therefore uncertain what can actually be done in order to check the epidemic and its effects in the absence of a radical improvement in the potential for development in the countries concerned.[7]

When societies are exposed to strains of this type, many priorities change. It is generally known that one prerequisite for success in the field of environmental and natural resource management is that policies and programmes are accepted and supported at all levels. Long-term sustainable use of the environment and natural resources also functions best in relatively prosperous, economically and socially stable societies. Most of the countries that have been subjected to a serious AIDS epidemic do not meet these criteria. Many of them already had development problems at the time the AIDS epidemic arrived. The expected outcome of the AIDS epidemic is that attitudes in matters concerning the environment and natural resources are affected, probably in the direction of greater tolerance for short-term exploitation at the expense of long-term economical use of natural resources and protection of the environment.

At central level it can be a question of attaching less importance to consideration of the environment when granting permits for commercial mining operations, forestry, fishing and other forms of exploitation in coastal areas. When the AIDS epidemic leads to increases in rates of mortality among the personnel at environmental protection agencies, the capacity for coordination and control diminishes. At the same time, the financial situation of these agencies is affected in the same way as that described above in respect of forestry agencies.

[7] See, for example, Kamal Malhotra, Making Global Trade Work for People, UNDP 2003.

When the local population is subjected to limitations in its traditional use of land, or when they are forced to move from national parks, nature reserves or forest reserves, it is most often difficult to create understanding among the people concerned of the importance of measures of this type. Conflicts can be expected to increase when the effects of the AIDS epidemic increase people's needs of access to easily exploited natural resources.

One factor whose significance is difficult to measure is the psychological effect of the AIDS epidemic. In many areas affected by AIDS, the poor majority were already living in a state of uncertainty in respect of the future. The ravages of the epidemic can only increase this uncertainty. Thus, the tendency to use short-term measures in the struggle for survival will probably be reinforced, and the motivation to change patterns of behaviour that can reduce the spread of the disease will diminish. The psychological effects of the epidemic primarily affect members of households affected by AIDS, but certainly leaves no one unaffected, including foreign technical assistance personnel.

6. Development cooperation issues in the HIV/AIDS era

Environmentally sustainable development is one of the central goals of Swedish international development cooperation. Support for long-term sustainable agricultural and rural development is an important component in Swedish support. Over the course of the years, the support has contributed to developing institutional capacity, knowledge and experience on environmental issues, and sustainable use of natural resources in a number of countries. One of the difficulties in development cooperation has been the other, often more insistent, problem of survival that many partner countries have struggled with.

In a large number of these countries, the AIDS epidemic has clearly magnified existing social and economic problems for households, local communities and society as a whole. The epidemic thus constitutes a direct threat to the sustainable use of natural resources and the environment. HIV/AIDS threaten results achieved in respect of the acquisition of knowledge and institution development, and thereby undermines long-term environmental development. The epidemic quite simply changes the conditions for development cooperation in this sector.

These new conditions and ways in which they shall be handled are discussed in Sida's guidelines for AIDS issues in different sectors of development cooperation and in the manual on the treatment of AIDS issues in the work on the country strategies. Many more studies need to be made in order to identify new approaches at national and local level.

Appendix 1
HIV/AIDS – some basic facts[8]

Syndrome and long virus

AIDS (Acquired Immune Deficiency Syndrome) is not really an separate disease but rather a syndrome, i.e. the diagnosis includes a number of infections and types of cancer which appear when the immune defence is weakened. AIDS is spread by a virus – the Human Immuno-deficiency Virus – commonly known as HIV. The virus has the ability to deceive the body's defence mechanisms and then attack and finally completely destroy the immune defence. HIV is, at the same time, a virus that develops very slowly. This means that infected persons live for a long time, in most cases between five and eight years, without showing any of the symptoms. During this time the presence of the infection can only be established by laboratory tests, which means that over 90 per cent of those infected do not know that they are carrying the virus. They can thus unwittingly spread the infection further for many years.

Transmission

HIV is mainly spread in four ways: through unprotected sexual intercourse, from mothers carrying the HIV infection to their children before, during and after birth, through intravenous drug abuse using infected syringes, and through deficiencies in medical safety, for example in the handling of blood and injections. Unprotected heterosexual intercourse is responsible for 90 per cent of infections in the poor part of the world. Despite this, the probability of the infection being transmitted between otherwise healthy individuals is considerably lower is the case with other types of transmission. On the other hand, the risk of infection increases considerably in cases of infections or other types of damage to tissues of the sexual organs resulting from, for example, sexually transmitted diseases or sexual violence.

Medical treatment and prevention

There is no vaccine that provides protection against HIV infection, nor is there any medicine that can cure aids. Treatment of the so-called opportunistic diseases and a good diet can postpone death by about two years after the first symptoms have appeared. Otherwise most persons with

[8] For reasons of space, this appendix has been kept as brief as possible, which means that there is a certain amount of simplification and that certain aspects of the epidemic have been excluded.

AIDS die within a year. Since the latter part of the 1990s, medicines have been available that, without eliminating HIV, hold back and control the development of the virus in the body[9]. These so-called antiretrovirals make it possible for patients to live more or less normal lives. However, they are very expensive and have hitherto only been available for a fraction of those infected in the poor part of the world. Often these people do not have access to medicines against the opportunistic diseases either. With the lack of a vaccine and generally available medicines, the struggle against HIV/AIDS has mainly been a case of prevention. Information and education, including programmes to combat discrimination and stigmatisation, constitute a major part of the preventive work, as well as the treatment of sexually transmitted diseases and distribution of condoms. In order to limit the spread of the virus, it is also important that more people allow themselves to be tested. The foremost obstacle to this is, most probably, that there is so little medical care and so few medicines available.

A long-term problem where the worst is still to come

The difficulties in diagnosing AIDS, and the long period between infection and developing the disease, have the effect that national epidemics can grow very rapidly. When AIDS cases began to be noticed in society and by the medical services, a sufficient number of people had already been affected, which guaranteed that the disease was rapidly spread further. This happened, for example, in South Africa in the 1990s when the proportion of people in the adult population who were infected with HIV increased from less than one per cent to more than 20 per cent. The time lag between infection and developing the disease has the result that the HIV/AIDS epidemic will continue for many decades to come. It also means that ill-health and deaths from AIDS will continue to increase for a number of years, even when the number of newly infected people has started to decline. Most countries with a high proportion of people carrying the HIV infection still have to face a considerable increase in deaths from AIDS in the future.

The latest projections show that in 2050 there will still be seven countries in sub-Saharan Africa in which 10 per cent the adult population will carry the HIV infection. However, there is a considerable degree of uncertainty in these estimates. They assume, for example, that a considerable increase in resources allocated to preventive measures will lead to extensive changes in patterns of behaviour. The models used for these types of estimates have been improved considerably during the last ten years, but hitherto even the worst fears have tended to be surpassed by reality. Quite simply the epidemic has not been present for a sufficiently long period of time in any country to enable a really clear picture to be drawn of long-term developments. For example, there is nothing that indicates that the proportion of people infected with HIV has reached a natural ”ceiling”, even in the most severely affected countries.

[9] This also means that the probability of passing on the infection also decreases.

Regional spread of the disease

Sub-Saharan Africa stands out as being the most severely affected region in the world, with over 70 per cent of all those infected. In the middle of 2002, more than 10 per cent of the adult population in twelve of the countries in the region were infected, and in seven of these countries the proportion was between 20 and 40 per cent. In a few large countries where the proportion of persons with the infection was low, there were still more than one million people per country with the infection[10] [11]. Over 70 per cent of those infected in the region live in a belt that extends from Ethiopia, through eastern and southern Africa to Namibia. Unless there is a radical improvement in the availability of medicines and medical care, most of the people in the region who carry the infection today will be dead within ten years – in some countries this means that over 25 per cent of the present adult population will disappear. Apart from the extensive scope of the disease, one major characteristic of the HIV/AIDS epidemic in sub-Saharan Africa is that women constitute a growing majority of those infected.

Apart from sub-Saharan Africa, it is South Asia and Southeast Asia that have the most people infected with HIV. Most are to be found in India (approximately four million), where the proportion, as in other counties in the region[12] and in China, is low or very low, but where there are both requisite conditions (poverty, extensive migration, growing drug abuse etc) and ominous signs that the disease is spreading rapidly. The same can be said of the Caribbean and Central America where some small countries (for example Haiti) already have the highest proportion of HIV infections outside Africa[13]. However, for some years the fastest growing epidemics have been in Central and Eastern Europe and in Central Asia. Outside Africa, with the exception of the Caribbean, the epidemics have hitherto been limited to so-called high-risk groups such as intravenous drug addicts, prostitutes and homosexual men. However there are alarming signs in a number of countries of rapid (heterosexual) transmission of the disease to other parts of the population.

Behavioural, bio medicinal and structural causes

There are still many questions to answer where HIV/AIDS is concerned, not least in respect of the differences in the development of the epidemic between and within countries. In some countries the infection has been

[10] In Uganda, extensive information and prevention programmes that have been strongly backed by the highest political levels and the support of all sectors have resulted in a pronounced decline in the proportion of people infected with HIV for a number of years, particularly among young women. There are also examples of as similar trend for certain age groups in Zambia and South Africa, but in these countries the proportion of people with the infection has continued to increase for other groups and areas.

[11] There is also a number of African countries that have been affected by prolonged internal conflicts such as Angola, Democratic Republic of the Congo and a few small West African countries where the HIV/AIDS epidemic can be much worse than indicated by official figures.

[12] The highest proportion of people infected with HIV is in Cambodia (2.7%) but in Cambodia the proportion of people infected has been pressed back with the aid of extensive campaigns. The same applies to an even greater extent in Thailand which previously had the most serious epidemic in the region. However, in both countries there are doubts about keeping the epidemic under control in the long term. Where Myanmar is concerned, no reliable statistics are available and some experts fear that the epidemic can be much worse in Myanmar than in Cambodia.

[13] In the rest of Latin America, the largest group of people with HIV is in Brazil, while the situation in other parts of the region, as in North Africa/Middle East and the Balkans, is uncertain due to inadequate data. It is clear that the spread of HIV among intravenous drug addicts and other risk groups is extensive in some countries and the conditions are in place for the disease to spread rapidly.

rapidly spread to large parts of society, while in other countries it has largely been limited to certain vulnerable groups and geographical areas. Initially, the spotlight focused in particular on sexual behaviour and various bio medicinal factors. Today most researchers agree that it is mainly the underlying socio-economic and socio-cultural factors that explain the difference in the ways in which the disease is spread. Here space only permits a brief discussion on the large number of mutually dependent factors that exert an influence on the spread of HIV.

Macro factors such as wealth/poverty and the distribution of incomes shape the socio-economic conditions, including the degree of labour migration and urbanisation. The latter influence sexual behaviour, for example through prolonged separation of spouses and the dissolution of traditional social controls. Other socio-cultural macro factors, such as religion and culture, influence in turn the ways in which the population engage in different types of sexual relationships. In the final analysis, infection always depends on bio medicinal factors (for example damage to the tissues of the sexual organs). These are affected in turn by the availability and quality of medical services (for example for the treatment of sexually transmitted diseases) and therefore also by the availability of resources for public medical services and the financial position of individuals.

Poverty, social injustices and inequalities

Poverty is generally regarded as the main factor behind the rapid spread of the HIV/AIDS epidemic. This is confirmed by the fact that no rich, developed country has ever been close to having a serious epidemic. Poor people are less well-informed, have fewer opportunities to make choices, and fewer possibilities to change their behaviour. The relationship between HIV/AIDS and poverty is far from simple. However, the situation in Africa is the reverse in that it is the richest countries that have the most serious epidemics. This can largely be explained by factors such as considerable social injustices and social disintegration[14]. The rapid spread of the disease in South Africa and surrounding countries can, for example, be largely blamed on the social and economic conditions (for example extensive labour migration) that were created by the Apartheid system. However, possibly the most important single factor behind the rapid spread of the disease is the weak social and financial position of women and girls, which restricts the possibilities available to them to exert control over their own sexuality. The stigmatisation and discrimination of those with the infection and those who have developed AIDS provide extra fuel for the epidemic and creates difficulties for the campaign against HIV/AIDS.

Demographic effects

The overwhelming majority of those affected by HIV/AIDS are young adults, i.e. the age groups that are most active sexually. At the same time

[14] Other factors such as lack of political legitimacy, inability/reluctance on the part of the highest political levels to become engaged in the struggle against HIV/AIDS, a weak civil society and strong public controls of the mass media and of information channels, are generally regarded as facilitating the spread of the epidemic and creating difficulties for campaigns to limit the disease and its effects.

these people are the best educated and those who support the economic and social life of society. The considerable increase in mortality as a result of AIDS therefore has devastating repercussions on all sectors in society. A further age group that is seriously affected are new-born children to mothers with the HIV infection who, in approximately 30 per cent of all cases, transmit the disease to their children. The fact that most of those who are infected with HIV and die of AIDS are relatively young also leads to a considerable increase in the number of orphans. In the long term this creates a vulnerable group and potentially extensive social problems that will be difficult to handle.

In the most severely affected countries, the progress made in the field of public health during recent decades has been brought to a standstill and has been reversed. In many cases, indicators such as life expectancy and child mortality reverted to the levels that prevailed in the 1970s. Projections show that the dramatic effects of AIDS on the age structure in the most severely affected countries will check population growth. In most cases this will remain positive due to continued high birth rates. However, in some sub-Saharan countries with particularly serious epidemics and/or lower fertility, the population is expected to stagnate or decrease for several decades[15]. Developments can prove to be even more dramatic, since the forecasts are partly based on uncertain assumptions on the development of the epidemic. Nor do they include possible indirect repercussions on the socio-economic effects of the HIV/AIDS epidemic, such as increased poverty, lower nutritional standards, etc on population growth.

[15] This applies to Lesotho, Botswana, Swaziland and South Africa which, as a result of AIDS, are expected to have smaller populations in 2050 than in 2000. Where Zimbabwe is concerned, only an insignificant increase is expected, for the same reason (WPP 2002 Revision).

Appendix 2
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