

BUILDING CAPACITY FOR THE AGRICULTURE SECTOR'S RESPONSE TO AIDS

A TRAINING MANUAL FOR AGRICULTURE SECTOR WORKERS

1

MODULE

AIDS and Agriculture: Conceptual Overview



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AIMS

The aims of this module are the following:

1. To gain a general understanding of the interrelations between AIDS and agriculture.
2. To understand the agriculture and health sector approaches to the AIDS epidemic.

OBJECTIVES

Upon completing the module, the learner should:

1. Have a general understanding of how HIV and AIDS impact the agriculture sector.
2. Be able to identify possible areas in which the agriculture sector can prevent vulnerability and mitigate the impacts of HIV and AIDS.
3. Be able to describe the different levels of vulnerability to HIV that people face.

QUESTIONS FOR REFLECTION

- What are some of the linkages between HIV and the agriculture sector?
- How can the agriculture sector play a role in reducing vulnerability to HIV?
- How can the agriculture sector play a role in moderating the impacts of the epidemic?
- How is the agriculture sector in your country responding to the AIDS epidemic?
- How can the health sector and agriculture sector work together to respond to AIDS?
- In the country where you work, is there collaboration between the agriculture and health sectors?

INTRODUCTORY REMARKS

This first module presents the learner with an overview of the inter-relations between AIDS and Agriculture. This general overview provides a conceptual framework through which one can view the linkages between AIDS and agriculture. It highlights how HIV and AIDS impact the agriculture sector, as well as the role of the sector in responding to the epidemic. It also addresses the approaches of the both the agriculture and health sectors in response to AIDS and how these approaches diverge or complement one another. The references listed provide additional information about the conceptual linkages between AIDS and agriculture.

READINGS: AN OVERVIEW OF THE CONCEPTUAL LINKAGES BETWEEN AIDS AND AGRICULTURE

1. Linking AIDS and Agriculture

“AIDS and Agriculture” refers to the *inter-relations* between HIV infection and AIDS on one hand and the agriculture sector on the other. The agriculture sector is defined broadly as including small-holder farmers, commercial farming, fisheries, forestry, livestock, etc. The agriculture plays an instrumental role in many low and middle income countries at both micro and macro levels. Subsistence activities, such as crop production and livestock raising, are activities of prime importance in supporting the largely rural livelihoods in these countries, while the agricultural sector further contributes significantly to national GDPs, feeds the majority of the population and tends to be the greatest source of employment.

AIDS and agriculture are interdependent and interact on various levels. Agriculture is highly dependent on human labour and thus HIV and AIDS can pose challenges to agricultural production. On the other hand, agriculture plays an important role in human health as a source of food, nutrition and income. Agricultural systems, however, can also create an environment conducive to ill-health and can create vulnerability to HIV. The links between agriculture and HIV are bi-directional, and thus a high disease burden and negative agricultural production perpetuate a negative reinforcing cycle.

The agriculture sector has an important role to play in response to the epidemic, both in terms of reducing vulnerabilities to HIV and in mitigating impacts of HIV and AIDS. An agricultural response generally refers to a response that builds on the comparative advantages of the agriculture sector (e.g. crop and livestock production, forestry, fisheries, etc.) and is delivered through those who derive their living from agriculture, namely farmers and food processors, agriculture extension workers, Ministry of Agriculture staff at various levels of administration, etc.

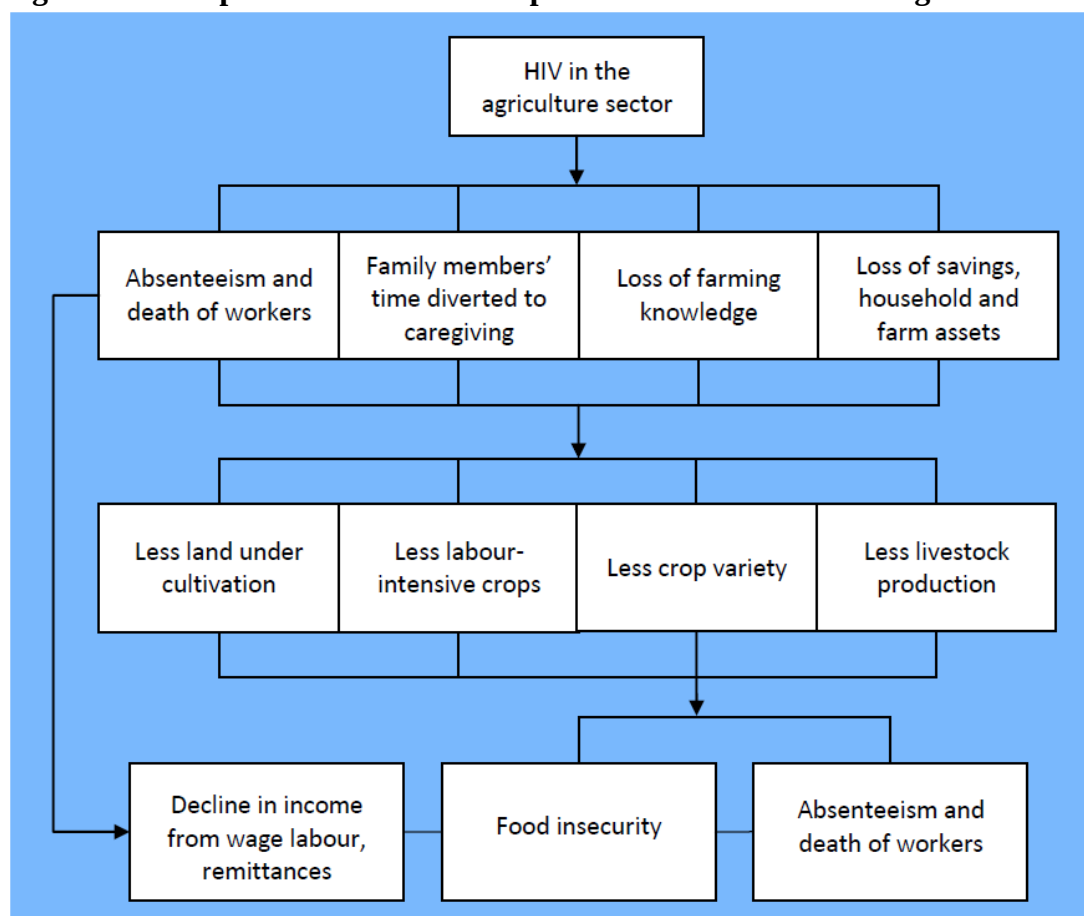
2. How do HIV and AIDS impact the agriculture sector?

Understood in a broad sense, the impacts of HIV and AIDS on the agriculture sector involves: (a) impacts on agricultural production (e.g. reduction in yields); (b) impacts on food security (e.g. malnutrition, reduced availability or access to food); and (c) impacts on rural livelihoods (e.g. reduced income from sale of assets, loss of household human capital).

Naturally, HIV and AIDS do not impact directly on the agriculture sector, they affect it through the humans who work, live and depend on the sector. When people have HIV and fall sick or die due to AIDS-related illnesses, the agriculture sector can be affected in multiple ways. Some impacts may include cash crops being abandoned, livestock being sold and thus jeopardizing herds and livelihoods of owners, among others.

The diagram in figure 1 presents a conceptual framework showing how HIV and AIDS impact the agriculture sector. The diagram illustrates inter-relations and knock-on-effects of a set of impacts on agriculture and rural livelihoods.

Figure 1. Conceptual framework of impacts of HIV and AIDS on agriculture



HIV and AIDS related illness and death of a household member can disrupt production and reproduction processes, which can negatively affect the household economy and sustainability. In turn, this has knock-on-effects on the rest of the household through, for example, children being pulled out of school because the household cannot meet such expenses and/or because agricultural production might need the additional labour¹; a reduction in the quantity and quality of food for household consumption due to decreased availability and variety and lack of fuel, coupled with increased nutritional needs of the sick. The aggregate impacts on households can then affect the community through redistribution of assets (e.g. HIV affected households selling assets to non-HIV affected households) and reduction in yields due, for example, to the spread of plant pests from neglected fields of households affected by HIV.

Understanding the impacts of HIV and AIDS on agriculture is complex as it requires an understanding of the general context and the roles of the people infected and affected. Rural populations live in a variety of socio-cultural and economic settings and may work in different farming systems according to gender and age distributions of roles and labour (e.g. the gender division of agriculture labour tends to see men responsible for cash crops and women for home gardens, cooking, etc). Therefore, depending on who and how many people in the household, community, Ministry of agriculture or rural institutions fall sick and/or die

¹ FAO promotes an approach to safeguarding these children centred on livelihoods-based social protection., which focuses on the provision, protection and promotion of livelihoods (FAO, 2009)

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due to HIV-related illnesses, will affect the importance of the epidemic and the type of impacts it has on agriculture sector.

From this perspective, agriculture is not just a technical issue focusing on crop production or market prices, but requires a focus on the people behind all the steps of production and the sector as a whole. When something happens to these actors, the area they are involved in is affected. It is therefore necessary to identify the paths through which HIV and AIDS impact on agriculture in order to take appropriate measures to respond effectively to the challenges in each situation. This means that in different countries and contexts, the agriculture sector may have to develop different responses tailored to the specific situation. For example, the impacts of the epidemic on the fisheries sub-sector differ from those on commercial farming and thus responses have to be adapted accordingly.

3. HIV and AIDS and natural resources

Natural resources are crucial to rural livelihoods both in terms of productivity and as direct sources of food and income. If farm-households are clearly related to natural resources through linkages between farming systems and agro-ecological zones, households engaged in agriculture sub-sectors– such as fishery, forestry and livestock– are even more closely linked to natural resources and heavily reliant on their use to support their livelihoods.

As illustrated in the Conceptual framework in Figure 1 in Section 2, HIV often results in changes in household economics, human behaviour and households strategies to cope with the challenges of the epidemic. These changes are also reflected in the use and management of natural resources.

The linkages between HIV morbidity and mortality and natural resources have received little attention, but they are of utter importance for rural households because their exploitation undermines the very basis of their livelihoods. While natural resources may become scarce due to a number of factors, the role of HIV in this regard is significant. The main impacts can be identified in increased demand for natural resources, overexploitation and reduced efficiency in their use, diminished labour supply and loss of traditional knowledge and skills. This consequently leads to increased risks of unsustainable practices, livelihood disruptions and food insecurity. The channels through which HIV can influence natural resource use and management– and as a consequence rural livelihoods– are numerous and interrelated.

To illustrate the possible impacts of HIV and AIDS on natural resource management, Hunter and Twine² identified four categories of strategies adopted by households to cope with crisis: (1) selection, (2) use, (3) collection and (4) level of consumption:

1. **Selection strategies**: refer to changes in the household decision on what natural resources to use for a specific purpose. For instance, following a death, rural households can replace deliverable products (e.g. purchased items) with those most readily available (e.g. resorting to using bamboo rather than preferred fuel wood).

² Hunter, L.M. and Twine, W. 2006. *HIV/AIDS mortality and household use of natural resources: critical linkages and remaining questions*. Panel Contribution to the Population Environment Research Network's Cyber seminar on Household Micro-Demographics, Livelihoods and the Environment.
(http://www.populationenvironmentresearch.org/papers/Hunter-Twine_statement.pdf)

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2. Use strategies: concern households' decisions as to the purposes of natural resources (e.g. the household may decide to sell some natural resources to generate income).
3. Collection strategies: include changes as regards where resources are collected and who collects them (e.g. children can be involved in the collection process, with higher opportunity costs for education).
4. Consumption strategies: the reduction of quantity of natural resources consumed, directly affect household food security and nutrition outcomes, which in turn are key in contributing towards preventing HIV infection and delaying its progress.

According to Ternström³, HIV can also affect governance of local natural resources through the disruption of institutions (not just organizations, but also customs, etc.), which are necessary to ensure their efficient use.

It is clear that HIV and AIDS can have both direct and indirect impacts on natural resource management, use and governance and that these vary according to different context and sub-sectors. On the other hand, however, the agriculture sector and sub-sectors can indeed contribute to addressing HIV and AIDS, through reducing vulnerability to infection and moderating impacts, as will be discussed in greater detail in the following modules.

4. The role of the agriculture sector in responding to the epidemic?

Throughout history and across continents, cultures, societies, communities and households affected by a disaster, a natural reaction is to develop responses to reduce impact. Responses have always existed in order to ensure the survival of the society, tribe, clan or family. The AIDS epidemic is no exception. One of the real progresses of modern societies is the possibility to increasingly mitigate the impacts of disasters through organized responses. Here, one is interested in the organized responses by the agriculture sector. The emphasis is on the word 'organized' because the agriculture sector has considerable potential⁴ to develop and implement policies and activities that would result in *mitigating* the impacts of HIV and AIDS on production, food security and rural livelihoods, as well as (though generally less well perceived and understood) in *preventing* HIV. In fact, in view of the numerical importance of rural populations, close rural-urban linkages, and the importance of the agriculture sector for the lives of millions, committed and effective responses from the agriculture sector are essential in the response to the AIDS.

4.1 Mitigation

Mitigation corresponds to meeting an immediate challenge created by the impacts of HIV and AIDS. In this regard, efforts of the agriculture sector should aim to decrease intensity and reduce impacts of the epidemic. General areas of focus for the agriculture sector's response, and possible entry points, include:

³ Ternström, I. 2005. HIV/AIDS – the true tragedy of the commons? Exploring the effects of HIV/AIDS on management and use of local natural resources. Beijer Discussion Paper No 200. (http://www.beijer.kva.se/PDF/95770268_Disc200.pdf)

⁴ The word 'potential' is used because this area has been neglected and still remains largely under-developed and needs considerable research, experimentation, evaluation, etc.

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- Agricultural production: for example, strengthening the farming system through the replacement of labour intensive crops by crops requiring less labour or less inputs; improving access to fuel and water which divert considerable time and energy from production and care; identification and promotion of labour saving technologies and practices that ease labour requirements.
- Food security: for example, improving access to and availability of nutritious food⁵ through the promotion of home gardens; fuel saving methods of cooking; promotion of poultry.
- Rural livelihoods: for example, introducing income generating activities; facilitating access to micro-credit and to markets; introducing processing activities to add value to crops being sold by farmers; promoting farmer associations to better negotiate sale prices.
- Rural institutions: for example, ensuring access to antiretroviral treatments (ARTs) and health services for staff of institutions in order to maximize capacity and availability of services to farmers.

4.2 Prevention

Prevention efforts on the other hand focus on averting the further spread of HIV. At first sight, the role of agriculture in preventing the spread of HIV might seem far fetched – after all it is a virus infecting humans. The agriculture sector though has a great role to play in this regard and long-term and probably essential contributions can be developed.

Basic concepts:

To understand the role of agriculture in the *prevention of HIV infection* one needs to introduce several concepts: *vulnerability, resilience and capacity*. ‘Vulnerability’ can be defined as ‘capable of being physically wounded; open to attack or damage’⁶. This means that a person can find him or herself in a situation where they are not able to avoid HIV infection because they do not have enough control over their body. The health sector tries to increase this control through information, education and communication (IEC) or behaviour change communication (BCC) – for example by reducing the number of partners or by making condoms available. In the case of agriculture, this means taking generic measures such as ensuring that farming systems are less vulnerable to drought or price fluctuations; that women and widows can own land and do not find themselves in a situation in which they have to become sex workers or get involved in transaction sex to feed their families; that men can earn enough income from their crops so that they do not have to search for further income in cities; that orphans learn agricultural skills to enable them to survive without being vulnerable to exploitation.

In order to reduce the vulnerability of rural people to exposure to HIV infection, the agriculture sector can intervene to boost the *resilience* of farming systems, rural institutions,

⁵ The Health sector is also concerned with nutrition: its role is to inform the need for extra calories and the types and quantities of various nutrients for people living with HIV and for those under ARTs. The role of the agriculture sector is to support communities and households grow and access these foods. The complementarities and need for partnership between the two sectors is clear.

⁶ Merriam-Webster online dictionary.

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communities and households. Resilience is the opposite of vulnerability and therefore agricultural measures can aim at reducing vulnerability or at increasing resilience. Furthermore, the AIDS epidemic is a long-term issue – even if a vaccine were available today, the effects of the epidemics will be felt for decades. This means that the agriculture sector needs to also explore how long-term phenomena such as climate change increases agricultural and rural vulnerabilities which could lead to new infections. The search for agricultural policies and programmes which also focus on *capacity* for responding to future, as well as present, vulnerabilities is needed. Capacity is more than the knowledge of what needs to be done, it also requires the means to do so. Agriculture interventions should not focus just on reducing vulnerability or boosting resilience because once such interventions stop households and communities might fall back into their previous vulnerable situation. To have a lasting effect, the capacity of households and communities to face the causes of vulnerability to HIV and to reduce vulnerabilities is necessary.

Three levels of prevention by the agriculture sector:

In public health one talks about primary and secondary prevention. This is not directly applicable in the case of agriculture where prevention interventions can focus on direct causes of vulnerability, indirect causes and underlying causes of vulnerability. The vocabulary adopted by work on disaster prevention is adopted here based on the 'pressure and release model'⁷, also referred to as the 'crunch model'. Three levels of vulnerability are identified starting with 'Root causes', progressing through 'Dynamic pressures' and resulting in 'Unsafe conditions' which, in the case of HIV, refers to the 'immediate causes'. The resulting vulnerability of people through this progression creates the conditions for their possible HIV infection if the virus is encountered, generally through sex.

- *Level 1: Root causes*

Root causes correspond to background factors which are not directly linked to vulnerability, but which create the conditions under which people may find themselves vulnerable. Such root causes can be physical – for example climate change can increase droughts and if pastoralists or farmers cannot adjust to these conditions, they may try to cope by selling assets, migrating, reducing inputs, etc., which can increase their vulnerability.

Root causes can also be found in culture and institutions. For example, land tenure or water rights which exclude women represent forms of gender discrimination. This could lead to women engaging in transaction or commercial sex in order to support their livelihoods. Gender discrimination, as a root cause of vulnerability, cuts across a range of issues and therefore addressing gender issues is an important preventive action that the agriculture sector should undertake. It should be noted that such actions are important, not only based on HIV considerations but also based on human rights and production considerations.

Root causes can also be found in socio-economic issues such as poverty. Many studies have attempted to demonstrate direct links between poverty and AIDS. Although it is difficult to show direct links, they reveal that poverty does play a role and that populations living in poverty tend to have higher HIV prevalence.

⁷ Davis, I. 2004. Progress in analysis of social vulnerability and capacity. In G. Bankoff, G. Frerks & D. Hilhorst. *Mapping vulnerability – disasters, development and people*, p. 134. London, Earthscan. 236pp.

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- *Level 2: Dynamic pressures*

Two types of dynamic pressures interact with the root causes to increase vulnerabilities: Insufficient capital and macro forces.

Insufficient capital refers to rural populations with a lack of appropriate skills in agriculture, processing of products and their marketing. It should be clear that such populations have skills and these have been appropriate, but in a rapidly changing world they may no longer be adapted to the present situation. This is why one key preventive role of agriculture is to build the capacity to adapt. Measures to improve markets which often favour buyers rather than producers are also important in order to escape poverty. In relation to this, rural institutions can play a determining role.

Macro-forces includes changes such as deforestation, over-fishing and soil degradation. For example, with over-fishing the division of labour in which men fish and women buy the fish from the men to process and market it leads to competition between women to access the limited availability of fish. If the women cannot offer higher prices, they might have to make up the difference through transaction sex.

- *Level 3: Immediate causes*

The previously described root causes, interacting with the dynamic pressures, lead to immediate causes of vulnerability to HIV infection. Especially relevant as immediate causes are a fragile local economy, a vulnerable society and a lack of infrastructure and outreach of services.

In relation to a fragile local economy one can highlight the roles of food insecurity and subsistence farming, as well as vulnerability to price fluctuations. Food insecurity can lead to divestment of assets, migration, commercial and transaction sex. Subsistence farming implies very little margin of security and if the farming system can weather a drought, it can generally do so only up to a certain point, after which coping strategies of households and communities are triggered into action. Price fluctuations are also important since cash crops require inputs such as fertilizers and prices can increase unexpectedly for the farmer, due to for example increases in oil prices. Also, policies can promote over-reliance on a cash crop such as coffee, which, however, is vulnerable to over-production and to plant diseases.

With regard to a vulnerable society, one can highlight the role of increasing inequalities. These inequalities can be driven by the AIDS epidemic itself, which has a compounding effect on the other causes. One has to consider inequalities within and between communities, as well as between rural areas and towns. Rural areas also contain groups that may suffer from stigma and discrimination, such as widows and orphans.

Lack of infrastructure and outreach of services refers to issues ranging from lack of roads and transport to insufficient coverage from extension workers, or their lack of training to help farmers adapt the farming system to make them less vulnerable. Of course, it is not the role of the agriculture sector to build roads, but it can advocate the need for better transport and access to towns and markets with the transport sector. Roads are an interesting illustration of the needs for partnerships because roads and road construction have been found to facilitate the spread of HIV (e.g. truck drivers). Therefore if roads and markets are necessary for improving farmers incomes, which requires working with the transport and trade ministries,

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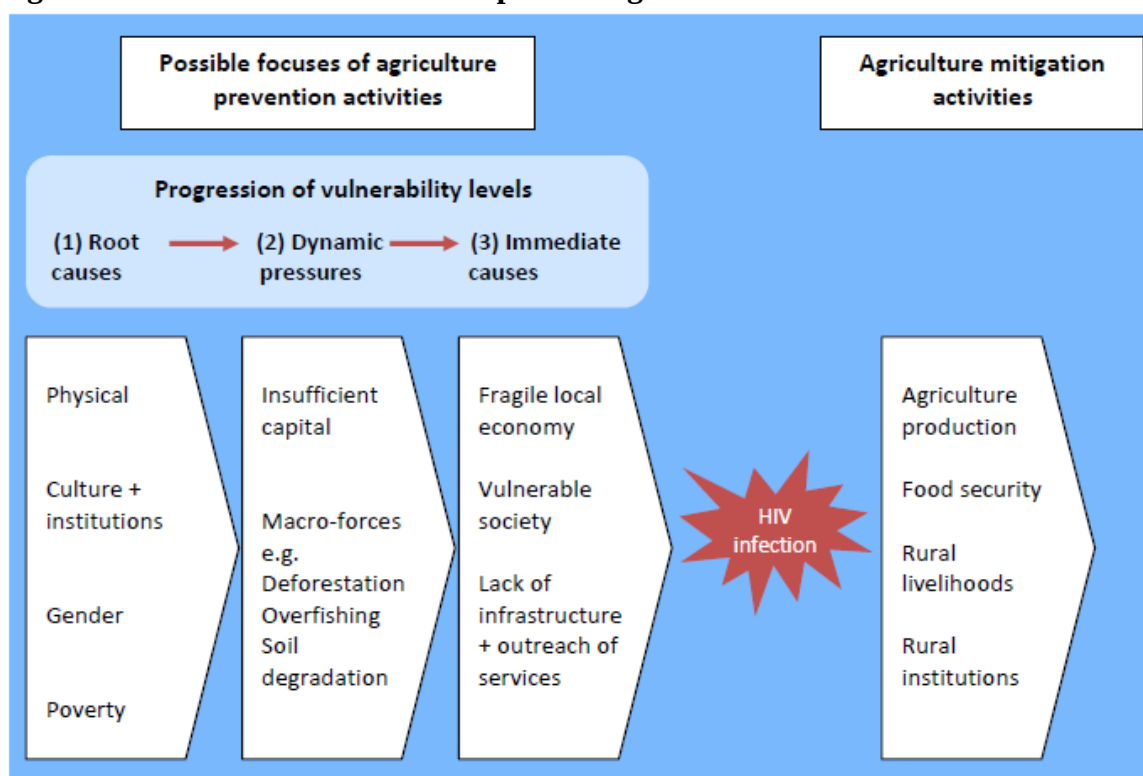
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they also need to be accompanied by programmes to reduce vulnerability of communities involved to HIV risks. Similarly, the insufficient outreach of health services in rural areas often makes it difficult for rural populations to access information on HIV. Again, it does not mean that extension workers should take on the role of health workers and distribute condoms, but they need to put pressure on the health sector to find solutions to their outreach problems. One can also highlight weaker education provision in rural areas and the role this plays in increasing vulnerabilities. Generally, the lack of public services compound existing agricultural vulnerabilities and therefore requires responses through partnerships of different sectors in order to build capacity and resilience.

There is a need for agricultural interventions to address the three levels in the progression of vulnerability, in order to achieve effective prevention. As well stated by the author of the 'pressure and release' ('crunch') model: "The premise of this (model) is that if actions are confined to addressing cosmetics of unsafe conditions, without tackling fundamental pressures or addressing the root causes that generate patterns of vulnerability, then patterns of vulnerability will keep returning".

In summary, the scope and content of vulnerabilities to HIV, as well as impacts of AIDS, within the agriculture sector is represented in Figure 2 (inspired by the 'pressure and release' model).

Figure 2. HIV vulnerabilities and impacts in agriculture



NB. The contents are given as examples and need to be adapted to each situation.

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5. Agriculture and health sector approaches: divergences and convergences

The health sector has taken global leadership in developing responses to the AIDS epidemic. Phrased in simple terms, the health sector has a two-pronged approach, focusing on:

1. Preventing infection through information, communication and education for behaviour change, targeting specific groups as well as the general population. Voluntary testing and counselling are part of prevention work and are also linked, *inter alia*, to the prevention of HIV transmission from pregnant women to their infants.
2. Mitigating the impact of the virus on people living with HIV through ART and measures to control secondary infections and improve nutritional status.

Table 1 highlights the different perspectives and roles of the health and agriculture sectors in HIV prevention, care and impact mitigation. For a long time the health sector held a view that the agriculture sector had no (or only a very marginal) role in prevention and mitigation of HIV. It is only recently that in some countries the Ministry of Agriculture is represented on the National AIDS Commission. It is there important for the agriculture sector to sensitize and educate the health sector, as well as other development sectors such as education, transport or mining, on the role of the agriculture sector in responding to AIDS – largely through efforts focused on improving nutrition and ensuring household food and livelihood security. This task is all the more important because the agriculture sector needs to, in many cases, work in partnership with the health and other sectors in order to achieve the best results and thus the efforts of the sectors should be mutually reinforcing.

Table 1. Health and agriculture perspectives of HIV prevention, care and impact mitigation

	Agriculture perspective	Health perspective
Prevention	• Reducing vulnerability – ensuring livelihood security and food security • Information and education	• Prevention of mother-to-child transmission (PMTCT) • Behaviour change communication (BCC), information and education
Care/treatment	• Nutrition • Food security (quantity and quality)	• Medical care and treatment (e.g. ARV, treatment of HIV-related illnesses, etc.) • Psycho-social care
Impact mitigation	• Strengthening livelihood and income sources • Enhancing skills and capacity	• Rehabilitation

SUMMARY REMARKS

The module showed that HIV and AIDS and agriculture are inter-related and interact on various levels:

- HIV and AIDS affect the agriculture sector through impacts on agricultural production, food security and rural livelihoods. Understanding these impacts requires understanding the general context and the roles of people infected and affected. From this perspective, agriculture is not just a technical issue focusing on crop production or market prices, but requires a focus on the people behind all the steps of production and the sector as a whole.
- On the other hand, the agriculture sector has potential to develop and implement policies and activities that would result in reducing vulnerability and mitigating the impacts of HIV and AIDS on production, food security and rural livelihoods as well as in preventing HIV.
- Agriculture sector efforts in *mitigation* should aim to decrease intensity and reduce impacts of the epidemic. General areas of focus and possible entry points include:
 - agricultural production
 - food security
 - rural livelihoods
 - rural institutions
- As regards *prevention*, the agriculture sector can focus on direct causes of vulnerabilities, indirect causes and underlying causes.
- The agriculture sector needs to work in partnership with other sectors, such as the health sector. For a long time the health sector held a view that the agriculture sector had a very marginal role in preventing and mitigating HIV. One of the first tasks of the agriculture sector is therefore to sensitize and educate the health sector, as well as other development sectors, to work in partnership.

ACRONYMS AND ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral treatment
ARV	Antiretroviral (drugs)
BCC	Behaviour change communication
FAO	Food and Agriculture Organization of the United Nations
HIV	Human immunodeficiency virus
IEC	Information, education and communication
MoA	Ministry of Agriculture
NGO	Non-governmental organization
PLHIV	People living with HIV
PMTCT	Prevention of mother-to-child transmission
VCT	Voluntary counseling and testing

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