

Agrodok 45

Mitigating the effects of HIV/AIDS in small-scale farming

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Foreword

Throughout the tropics small-scale farming communities struggle to deal with the devastating impact of HIV/AIDS.

Mitigating the effects of HIV/AIDs in small-scale farming is a handbook for agricultural extension officers and those who support them in government, NGOs and international organizations. Much of what is contained in this Agrodok has been dealt with in much greater detail in the many HIV/AIDS related publications available in print and on-line. Unlike more specialized literature *Mitigating the effects of HIV/AIDS* provides a brief, straightforward account of how HIV/AIDS undermines community welfare and the productive capacity of farmers. It suggests some ways in which farming practices can be adapted to mitigate these effects.

The tools and approaches described in this Agrodok will be familiar to many readers. They have been tried and tested in small-scale farming communities throughout the world. Many of the insights and experiences referred to here come from Sub Saharan Africa. They can be used and adapted to encourage community members – irrespective of age, sex, material status or ethnic and religious identity – to work together to define their problems and find solutions using their own local resources.

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Marilyn Minderhoud Jones, 2008

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1 Introduction

HIV/AIDS is not like other chronic diseases. It carries a heavy social stigma. Sufferers – many of whom are in the prime of life – find themselves excluded from community life and families living with HIV/AIDS find it increasingly difficult to keep their farms and gardens productive. Extension workers trying to manage the effects of the disease in small-scale farming communities find their work complicated by negative attitudes to and ignorance about the pandemic.

Those living with or supporting family members afflicted by HIV/AIDS need urgent help. They need to know how to make the best use of the human and physical resources they have left. And they have to do this in an extremely difficult emotional environment. Struggling to deal with the personal dimensions of the tragedy, they find they have lost essential livelihoods resources. There is less able-bodied labour, reciprocity between neighbours and relatives has weakened or broken down completely and agricultural officers and research staff – overwhelmed by the demands being placed on their limited resources – are unable to give them the support they need.

Extension officers working with those living with HIV/AIDS are also under professional and emotional strain. Many agricultural research and extension workers see years of work going to waste as a result of the pandemic. Agricultural officers themselves become sick and are unable to carry out planned activities. Programmes and project plans break down when extension officers die and the farmers who depended on their services are left stranded. This can be clearly seen in a report published recently by the Ghanaian Ministry of Food and Agriculture and FAO on the impact of HIV/AIDS on the work of extension officers in the Brong Ahafo Region of Ghana. HIV/AIDS disrupts research and experimentation and valuable sources of knowledge are lost when contact farmers and farmers managing demonstration plots fall ill and cannot carry on. And at the financial level, HIV/AIDS

threatens group savings and credit schemes because – when members become sick – they cannot work to repay their loans.

There is no simple blue-print solution to the ravages of HIV/AIDS. Re-building the capacity of families and communities in the tropics to farm, garden and preserve their livestock is a complex and difficult task. It means taking careful account of a changing resource base and identifying how land, water and agricultural inputs can best be used to maintain health and ensure a livelihood for those living with the disease.

Full community participation is needed to adapt agricultural practices to meet the challenge of HIV/AIDS. It is in everyone's interest to try and change the attitudes, customs and legislation that hinder cooperation and make it difficult for women, the elderly and young people to establish new working relationships, take on new tasks and effectively influence decision making.

This is where this Agrodok fits in. It is designed for extension workers who have the rural networks, knowledge of local conditions and links to farmers' organizations that enable them to get the information, trust and community support needed to mitigate the effects of HIV/AIDS in small-scale farming communities.

The Agrodok begins by providing examples of participatory tools that can be used to document community members' needs and identify local resources and skills. It discusses the difficulties extension officers can expect to encounter in getting communities to cooperate and work together. It goes on to focus attention on some of the innovations, research and farmers' experimentation that can enable rural communities to react strongly and effectively to the challenge of HIV/AIDS. More detailed information on the topics raised in this Agrodok can be found in the "Further Readings".

2 First the problem

Agriculture can be adapted to the specific needs of people living with HIV/AIDS. Changes can be made to the way farms are managed and local resources used. Establishing links and working with colleagues from other sectors is an important first step for agricultural extension staff. Developing comprehensive and lasting solutions depends on the extent to which those working in the fields of health, forestry, education, agriculture and natural resource management are able to exchange experiences and learn from each other. Cooperation also reduces the risk of farmers receiving conflicting messages from different sources and makes it easier to develop integrated measures that can meet the needs of the community concerned.

Partnerships with health and community workers are particularly important because agricultural extension workers are not HIV/AIDS specialists. They have not been trained to deal with the social and psychological impacts of the disease. In addition – as the pandemic deepens – they find themselves working with women, the elderly and children, a new and largely unfamiliar client group. To do this effectively they often need help from community extension workers to enable them to assess the strengths and vulnerabilities of these groups.

Most agricultural extension officers have seen with their own eyes the far-reaching effects HIV/AIDS can have on farm households. In many HIV/AIDS affected households, for example, market-orientated agriculture often becomes impossible. This means that extension officers must identify other ways of ensuring food and nutrition security and generating cash incomes.

Table 1 provides a brief overview of how HIV/AIDS affects agricultural productivity and community welfare. These problem areas will be taken up later and discussed with reference to possible solutions.

Table 1: Effects of HIV/AIDS on the productivity and welfare of farm families

Social impact	<p>Exclusion from markets and other forms of livelihood</p> <p>Exclusion from community activities</p> <p>Depression</p> <p>Loneliness and isolation</p> <p>Vulnerability to theft</p> <p>Possibly losing partner</p> <p>Widows and children may lose land rights</p> <p>Decline in social structure of community</p>
Health	<p>Shorter life spans</p> <p>Increased risk of other diseases</p> <p>Greater difficulties in controlling common diseases</p> <p>Increased demand for medication and nutritious protein rich food</p>
Labour	<p>Inability to work hard – a special problem at peak seasons</p> <p>Inability to plan labour well because of uncertain health</p> <p>Time needed for visits to doctors</p> <p>Less time available for farm work because of care tasks</p> <p>Remote fields abandoned because there is not enough labour</p>
Cash	<p>Less cash because of extra expenses (medicine, funerals)</p> <p>Loss of off-farm income (e.g. urban wages)</p> <p>Drop in farm productivity and less income from sales</p> <p>Inability to get to market</p> <p>Drop in income because animals and land are sold to meet short-term expenditure</p>
Household	<p>Weakening of household structure</p> <p>Family members less willing or able to help HIV/AIDS patients than those suffering from other illnesses</p> <p>Emotional stress</p> <p>Children taken out of school</p> <p>Widows, grandparents or orphans become household heads</p>
Knowledge	<p>Knowledge of crops species, techniques and markets lost because people die before they can transfer their knowledge to their children</p> <p>Exclusion from innovations and new information</p> <p>Certain knowledge and practices gender restricted</p>



Figure 1: Most extension workers are not trained to respond to the pandemic

2.1 Social impacts

Households living with HIV/AIDS develop their own survival strategies. In many cases the social isolation of families living with the disease means they get little help from relatives or other farmers. As a result they are forced to find short-term solutions. Smaller areas are cultivated; fewer crops are grown and tasks like repairing farm implements, maintaining terraces, weeding and pruning are either skipped or delayed. In the long run this leads to food and nutrition insecurity and a decrease in income and productive capacity.

At the same time the physical and material costs of caring for those affected by HIV/AIDS rises steadily as the illness progresses. Extra money is needed for medical treatment and as a result farm assets – livestock, tools or seed reserves – are put up for sale.

2.2 The needs of women, children and the elderly

Women are generally heavily involved in the cultivation of food crops. When illness or the need to care for the sick prevents them from working in their fields and gardens there is less food available for their families.

A woman's right to land is frequently derived from her husband. If the household is no longer headed by a man, women risk being denied access not only to land but to credit and other resources and services as well. This means they no longer have the assets they need to provide food for themselves and their children. The absence of formal property rights can lead to relatives grabbing property further undermining the economic security of those left behind. Extension officers should be aware that women are often excluded from decision making. This means that plans are made without their needs and workloads being taken into account.

The elderly are also a vulnerable group. Many of them are raising orphaned grandchildren at a time when they no longer have the physical strength to carry out productive tasks.

The lives of children also change radically in households affected by HIV/AIDS. Heavy workloads, loss of education and the responsibility of caring for ailing parents or orphaned siblings are amongst the problems that have to be dealt with when devising projects to mitigate the effects of the disease on young people.

2.3 Health

Health determines an individual's ability to work. The health of those affected by HIV/AIDS is not constant. In the early stages of infection – which can last from six to eight years – those affected with the virus can be healthy, strong and productive especially if nutrition is good. Later, however, chronic fatigue and the regular occurrence of opportunistic diseases including tuberculosis, pneumonia and viral and fun-

gal infections set in indicating that the disease has progressed to a more serious stage. Now, household resources will be increasingly devoted to buying medicine and caring for the sick. A HIV/AIDS related death often signals the fact that a partner may also be infected. This will place a further strain on weakened household resources.



Figure 2: As HIV/AIDS progresses, those affected by the disease will need more care and become less able to work

2.4 Knowledge

Social isolation and poverty gradually cut off households living with HIV/AIDS from the information they need to help them innovate and improve their decision making capacity. In addition, when a family member dies an untimely death, his or her knowledge and experience is often lost. This is particularly common in societies where there is a

strict division of labour between men and women. In crises situations lack of knowledge and experience amongst surviving household members makes it extremely difficult for them to adapt to rapidly changing situations.



Figure 3: HIV/AIDS breaks down the community's capacity to pass knowledge on from one generation to the next

2.5 Labour

Those living with HIV/AIDS are less able to perform heavy work, to work for long periods or follow a strict work schedule. Making plans to integrate income generating activities into strategies to mitigate the impact of HIV/AIDS should take the following factors into consideration. The work involved should require minimal physical effort and periods of concentrated effort, such as those required at the beginning of the growing season, should be carefully planned. Efforts should be made to create opportunities that could lead to a steady source of income. In this there are advantages to be gained by using local resources and skills that require low or no external input.

3 Making mitigation possible

Cooperation and support between stakeholders is needed to make HIV/AIDS mitigation strategies work. Participation and trust are essential to halting the erosion of rural livelihoods. Creating conditions that establish new relationships and motivate households to work together is an important first step. Communities can become more effective in identifying and implementing strategies to counter the effects of HIV/AIDS if they work together in an enabling environment.

3.1 Creating an enabling environment

Information plays a key role in creating an enabling environment. Workshops, meetings and informal gatherings can be used by extension workers to stimulate discussion about the close relationship between ill health and food and nutrition insecurity. Through guided and open exchanges stakeholders become aware that they do not face these problems alone.

Specific participatory tools can be used to help community members identify the way in which ill health – and more specifically HIV/AIDS – impacts on productivity and rural welfare. They also enable communities to rationally assess the resources and opportunities available to halt this process.

Working through farmers' organizations

Extension officers must gain the trust and confidence of communities and households. Members of farmers' organizations and agricultural producers' associations are important partners in this process. They have a respected and trusted status in their community and their support can facilitate the process of adapting and changing agricultural practices.

Many farmers' organizations already have HIV/AIDS mitigation programmes. Extension officers can build on these initiatives and experi-

ences. Using the structure and activities of farmers’ organizations – including meetings, training sessions and field visits with farmers’ leaders – they can meet farmers, listen to their difficulties and share experiences of how other communities are dealing with the problems created by HIV/AIDS.

Agricultural extension officers can also try and link with organizations that have information about those living with HIV/AIDS. Many communities have set up small HIV/AIDS associations and these are being run by women and other community members.

Planning and budgeting activities

Extension officers can also use the outreach facilities of agricultural organizations to increase farmers’ understanding of the causes of HIV/AIDS, the way the disease develops and how good food and nutrition can strengthen the body’s immune system. When farmers return to their villages they should be helped to put new information and ideas into practice.

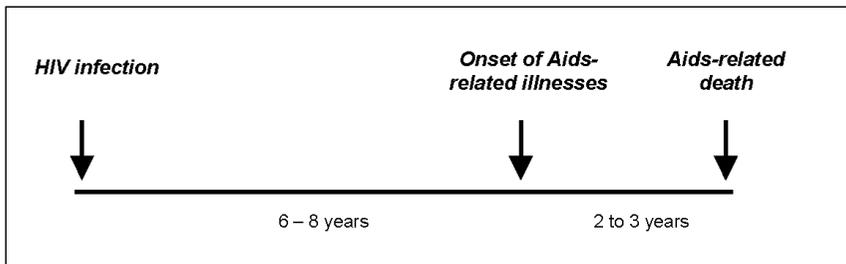


Figure 4: Being aware of how HIV/AIDS develops can help communities plan mitigation strategies

Tools and money are needed to support this process. Local and national extension services need to plan information generating activities into their budgets. It is essential that extension officers create the social conditions that enable them to access information from community members. This will enable them to build up a clear picture of the

way individual families and households have been affected by the pandemic.



Figure 5: Income generating activities are essential but farm families need information about the opportunities available.

Agricultural information and the media

This process can be strengthened if extension officers and agricultural information services work closely with the public media. Community radio is a growing and especially important source of information for rural households. Targeted agricultural programmes such as question and answer sessions combined with listener group activities can have a significant impact on the way farmers think about and organize farm activities. Regular columns in farmers' magazines, NGO publications and local and national newspapers can also be used to keep farmers and those who work with them up to date and well-informed.

When different media work together to disseminate key messages the impact can be very powerful. Many agricultural information services already run HIV/AIDS related campaigns involving print, radio, tele-

vision and – in some cases – video and cell phones as well. These media can all be used to disseminate practical information – often in local languages – to those living with the disease. Extension staff should plan ways of ensuring that farm households who cannot access newspapers or radio are also kept informed.

Straight Talk: an example of innovative outreach

The Ugandan NGO *Straight Talk Foundation* uses the media – radio and print – as well as face to face workshops to reach young people and adolescents. Its aim is to raise their awareness about HIV/AIDS and other sexual and reproductive health issues. In the late 1990's it started the teen newspaper *Straight Talk* which now reaches an estimate four million adolescents and two million parents and teachers in Uganda every month.

Straight Talk also has seven other newsletters two of which – *Farm Talk* and *Tree Talk* – address environmental issues and include information about how to start school gardens and school woodlots so young people have a source of nutritious food. The *Straight Talk Foundation* has an innovative distribution strategy. Its newsletters – printed in several languages – are inserted into Uganda's main daily newspaper and sent to schools, health units, churches and mosques.

3.2 Accessing information

Information is needed to enable households living with HIV/AIDS to adjust their agricultural or off-farm activities to meet their basic needs. These include maintaining a regular, adequate and nutritious diet and ensuring there is enough cash to meet medical and other household expenses.

The need to develop internal strengths and reduce dependence on external resources in achieving these goals is emphasized throughout this Agrodok. This means collecting information about the way farm activities and community tasks are currently being managed and using

this information to assess the agricultural resources, human capacities, skills and financial assets available for agricultural use in the future.

Sensitive and specific information

It is essential that this information is collected in an open and participatory way. Group discussions, workshops and other gatherings involving as many community members as possible can generate valuable information. Sometimes it will be necessary to access information held by a specific group or to get information on particularly sensitive issues. In such cases extension officers will have to approach their target group with care. They should show they understand the delicate balance of relationships and traditions within the community involved but they should also stress the importance of community members providing them with accurate information. Successful adaptation and mitigation strategies depend on a realistic assessment of community resources, opportunities and constraints.

HIV/AIDS victims often find it very difficult to take part in these types of participative group activity. They fear discrimination and stigmatization if their status is revealed. Extension officers must take this into account when planning information gathering activities. Their aim should be to get those living with the disease to explain how their livelihoods have been affected by their ill health so the community as a whole can get a better understanding of the magnitude of the problem. Whenever possi-



Figure 6: Fear of discrimination can lead to HIV/AIDS sufferers withdrawing from community life altogether

ble, agricultural extension officers should try to cooperate with local health workers and village-level HIV/AIDS associations who have a better understanding of the HIV/AIDS status of individual households.



Figure 7: Most of all communities affected by HIV/AIDS need information about how they can adapt their farming practices to mitigate the effect of the disease

Taking part in participatory documentation exercises can have a positive effect for those living with HIV/AIDS. It can break down the bar-

riers that isolate them within their community. They get to know where they can find helpful information and they benefit from sharing experiences, ideas and innovations. As community understanding of their problems increases and efforts to adapt agricultural practices to secure food and nutrition security progress, those living with HIV/AIDS gradually recover the self confidence they need to undertake carefully tailored activities that can help them improve their diets and – if possible earn a little cash.

This process can be difficult to initiate. The stigma of HIV/AIDS runs deep and the burden of care in HIV/AIDS affected households often makes it difficult for family members – especially women – to take part in community activities. Extension officers may also find that community members are reluctant to pass on knowledge to those who are not members of the same group or sex.

Documentation: encouraging participation

There are several participatory methods that can be used to collect and classify agricultural information in HIV/AIDS affected communities. The ones discussed in this Agrodok are *Activity Profiles*; *Access and Control Profiles*; *Livelihood Mapping* in combination with *4-Square/window analysis*; and *Seasonal Calendars*. Field work carried out with young people using the *Farmer Field School* approach is also discussed and the experience of *Junior Farmer Field and Life Schools* in Mozambique is described as an example of the way rural youth can be introduced to agricultural practices that can contribute to self-sufficiency.

Background information is essential. Extension officers must prepare themselves for participatory documentation exercises by gathering as much information as possible about the communities concerned and the prevalence of HIV/AIDS in the area. Local government agencies, NGOs and local community organizations usually have considerable knowledge about the conditions in which vulnerable groups live. This basic orientation will help extension officers identify their target group and decide on the participatory approach most suited to the local situa-

tion. It will also enable them to facilitate discussion between community members some of whom may be reluctant, hostile, fearful or too self interested to become involved in information gathering activities.

Vulnerability: a basic criterion

The fear of stigmatization and the lack of HIV/AIDS testing facilities mean that it is often difficult to identify those affected by the virus. Documentation activities and farm adaptation projects should, therefore, focus on vulnerable groups rather than on targeting those households directly affected by the virus. Those households living with the consequences of HIV/AIDS – orphan-headed families, the elderly raising grandchildren alone or households headed by widows must be included in mitigation strategies. Vulnerability should be the criteria for intervening to improve food security and reduce the poverty that threatens material, physical and emotional well being.

Once the conditions have been created to enable different stakeholders – including extension officers, government staff, teachers, local leaders, farmers and members of other community groups – to share information and experiences, alternative ways of adapting agricultural practices to mitigate the effects of HIV/AIDS can be explored.

4 Targeted participation: strengthening communities while accessing information

Successfully adapting livelihood practices to meet the needs of rural stakeholders living with HIV/AIDS requires careful planning. Community resources, activities and customs must be understood before interventions are made. A workshop is one way of gaining access to this type of information. Workshops can also help stimulate community members to work together.

The *Livelihood Mapping* workshop described below can be used by extension officers to identify the vulnerable, define the factors that threaten farm livelihoods and stimulate discussions about the types of activity that make households and communities more resilient to the effects of HIV/AIDS. In addition to the systematic gathering of information the *Livelihood Mapping Workshop* also aims to strengthen the decision making capacity of the community members involved.

4.1 Participants

The composition of the target group will depend on where the workshop is held, the livelihood systems involved and – perhaps most important of all – the customs and traditions that determine economic roles and social status in the community concerned. Agricultural officers sometimes find that it is difficult for those living with HIV/AIDS to take part in workshops and meetings. Their health may not allow them to participate fully and they may need help in travelling to and staying at the workshop location. They may also need to be compensated for the time they spend away from their farms. These are factors that have to be taken into consideration when planning and budgeting workshops of this kind.

Both men and women need to be targeted for inclusion in workshop activities. This is particularly important in communities where there is a strict division of labour because it makes it possible to highlight different abilities and constraints. A carefully structured workshop can help establish communication between community members who might otherwise not interact with each other. However, where women or other social groups such as children, the elderly and those with a particular ethnic identity find it difficult to speak in the presence of others, care must be taken to create separate groups so they feel it is safe to speak freely.

4.2 Objectives

Clear objectives are essential. The time allocated for workshop activities will depend on the objectives of the workshop and the status, needs and strength of the target group. A workshop using the *Livelihood Mapping* approach described below in combination with a *4-Square/Window analysis* can generate valuable information. Much can also be learned from the informal discussion that takes place before, during and after workshop events.

General objectives can be proposed by the extension officer. Later these can be refined by the target group to reflect the conditions prevalent in their community. The following questions, however, should be answered:

- What has been the impact of HIV/AIDS on local agriculture?
- What do farmers and households affected by HIV/AIDS need?
- Where can information about useful agricultural technologies be found?
- How can experiences about techniques to help alleviate falling output and labour constraints be shared and implemented?
- How can community support systems be strengthened and revitalized?

4.3 Workshop approaches

Livelihood mapping and 4-Square Analysis

These two methods can be used to assess the impact of HIV/AIDS on farming activities and to establish the amount of labour, internal resources and external inputs – including cash – needed to maintain key farming activities. The information generated during group activities are discussed by all workshop participants and the conclusions used to identify possible mitigating strategies.

Livelihood Mapping

Participants draw a farm and map their crops and activities. To do this they combine the characteristics of their own farms into one single farm. This prevents farmers going into too much detail. Once this has been done participants are then asked to rank the activities they have identified in order of importance. First, they rank those that were important in the pre-HIV/AIDS situation and then – using a different colour – they rank the ones that have become more important with the arrival of HIV/AIDS.

4-Square/Window analysis

Table 2 shows four boxes. Participants are asked to use the criteria of input and yield to decide in which of these boxes their crops and other activities belong. Input refers here to the amount of labour and money required to carry out the activity. Yield is the return farmers expect to get.

Table 2: 4-Square/Window analysis

High input & high yield e.g. dairy cows, construction 1	High input & low yield e.g. coffee 2
Low input & high yield e.g. macadamia nuts 3	Low input & low yield e.g. cassava, free range poultry 4

4.4 Workshop structure

The workshop *Livelihood Mapping* and *4 Square analysis* aims to gather information, stimulate discussion and encourage cooperation between participants. There are five steps in this process:

➤ *Step One*

Participants introduce themselves and the purpose and objectives of the workshop are explained.

➤ *Step Two*

Participants list all their livelihood and farming activities. The list is written on a flip chart and presented to the group as a whole. Where possible, the activities are grouped into clusters. The crop growing cluster might, for example, include growing leafy vegetables, root and tuber crops, firewood species, fodder, fruit trees and medicinal plants.

➤ *Step Three*

Participants are divided into groups of five persons and the composition of these groups should be sensitive to the fact that men, women and children of different social status will have different priorities. Therefore, it is important that those with similar priorities are put into one group. Each group will complete a *Livelihood Map* or a *4-Square Analysis/farmer window*. The principals behind these documentation techniques and how they work should be carefully explained.

➤ *Step Four*

One participant from each group presents the results of the exercise to all the other participants and the whole group discusses these findings. The facilitator guides discussion and helps participants evaluate results in a way that makes it possible to answer the questions raised at the beginning of the workshop. Participants could be asked, for example, to demonstrate how their household priorities have changed as they try to response to the impact of HIV/AIDS. This helps the group put into words the actions that farmers are already taking to mitigate the effects of the disease. The *4-Square Analyses* can help farmers gain an insight into the options available and the resources they re-

quire. Health, family situation and resources may be such that high input options are no longer possible. Shifting to other options may mean they are able to maintain an acceptable level of production – thus mitigating the effects of HIV/AIDS – while using less labour and external inputs.

➤ *Step Five*

Participants describe the support structures in their community. They work out ways that would enable the wider community to share knowledge about different mitigating strategies. This might include, for example, the exchange of local varieties of plant material and practical information about cultivation and harvesting. The facilitator's role is to guide discussion away from easy solutions. Abandoning a high input crop or going into rabbit breeding or bee keeping alone will not make much difference to the livelihoods of those living with HIV/AIDS.

Experience also shows that small-scale farmers find it difficult to adapt to sudden major change. It is important that households understand why the selected interventions will improve their access to food, labour, nutrition and medicine. The most positive effects are achieved when many small changes are introduced in a systematic way over a longer period of time. Small-scale interventions using diversity as a risk management strategy can have considerable impact. Household members have time to adjust to new tasks and routines and new activities are not introduced until earlier interventions have been satisfactorily implemented. Farmers must feel they are in control of their farming system and not be overwhelmed by having to deal with too many changes at once.

4.5 Gender analysis: accessing informants

Household composition, division of labour and the capacities and constraints of household members must be taken into consideration when planning mitigating strategies. The way tasks are distributed between men and women in families headed by married couples will be very

different to the division of labour in households where widows, single women, grandparents or older orphan children are responsible for family affairs.

Many extension officers are men and this means that they must make a conscious effort to talk to women. Often women have to be targeted explicitly to help them effectively. This is particularly the case in societies where customs restrict the economic and social role women play in the community. In societies where women are not supposed to speak in public, for example, extension officers may have to ask female leaders who are allowed to speak freely in front of others, to express the problems faced by women living with HIV/AIDS. If this is not feasible separate meetings might have to be organized for women.



Figure 8: In communities where it is not customary for women to take part in formal meetings they can be represented by older, respected women leaders

A *Gender Study Analysis* can be used in a restricted group situation such as an all-women group. It can also be very effective in workshops and gatherings that target a cross-section of community members. A *Gender Study Analysis* provides extension officers with an insight into the way tasks are divided between men, women and children.

The exercise also ensures that men and women of different age groups and marital status have the opportunity to provide detailed information about their household tasks and livelihood activities. These insights can then be used to select adaptations that enable the sharing or redistribution of workloads in households and communities affected by HIV/AIDS.

Women are not the only focus of *Gender Study Analysis*. The method can be used to help the target group understand the needs and capabilities of other social groups as well. Class, ethnicity and age, for example, play a role in determining access to resources, decision making and the allocation of tasks. Gender analysis asks why these differences exist, explores where they come from and tries to identify ways in which optimal use can be made of the human resources and individual knowledge available.

The Gender Analysis exercise sets out to gather information about the following aspects of community life:

- Activities and tasks: who does what in the community and household?
- Resources: who has what?
- Decision making: who decides what and how are decisions reached?
- Effects of decision making: who gains from the results of these decisions and who loses out?

The answers to these questions are used to classify the information generated into a more useable form. Two profiles are developed: an *Activity Profile* and an *Access and Control Profile*.

4.6 Activity Profile

Participants fill in a chart with the information generated during the *Gender Analysis*. They itemize the activities of different members of the community, when these activities take place – daily, weekly or during a particular season – and how long it takes to complete each activity. The place where the activity is performed – whether it takes place in the home or in fields that belong to the men, the women or the community – is also noted. Table 3 below provides an example of an *Activity Profile* matrix.

Table 3: Example of an Activity profile

Activities	Women		Men		Time taken	Location
	Adult women	Girls	Adult men	Boys		
Productive activities						
Agriculture						
Land clearing						
Ploughing						
Sowing						
Weeding						
Harvesting						
Cassava cultivation						
Peanut cultivation						
Banana cultivation						
Bean cultivation						
Gathering fruit and leaves						
Animal care						
Income generating						
Sale of milk, eggs						
Crafts						
Renting rooms						
Employment						
Seasonal work						
Contract labour						
Civil Service						
Reproductive activities						
Water related:						
Fetching water						
Fuel related:						
Fetching firewood						
Food preparation						
Child care						

Activities	Women		Men		Time taken	Location
	Adult women	Girls	Adult men	Boys		
<i>Health care:</i> Caring for the ill Fetching medicine <i>Cleaning & repairing:</i> Cleaning clothes Repairing the house						
Community Work						
Weddings Funerals Village meetings						

Making an *Activity Profile* involves a lot of work. However, once the activities have been written down it is relatively easy to fill in the matrix. A complete matrix gives an insight into the workload of all members of the household and helps participants come to terms with the time constraints they face. The *Activity Profile* also shows the additional workloads carried by those caring for or who have taken over the tasks of relatives or friends suffering from HIV/AIDS. The *Activity Profile* can be repeated after HIV/AIDS mitigating strategies have been running for some time to evaluate whether there has been any change in the activities carried out or the amount of time household members spend on them.

4.7 Access and Control Profile

The *Access and Control Profile* itemizes the resources people use to carry out the activities listed in the *Activity Profile*. A distinction is made between “access” and “control”. Access to a resource means that the individual or household has the right to use the resource. However, it does not mean that they control it. For example, a married woman may work in a field which means she has access to the land but it does not mean that she is in a position to decide what should be grown there or whether the land could be used to raise credit. Control over a resource means the power to decide who has access to the resource and how it should be used. Table 4 provides an example of an *Access and Control Profile*.

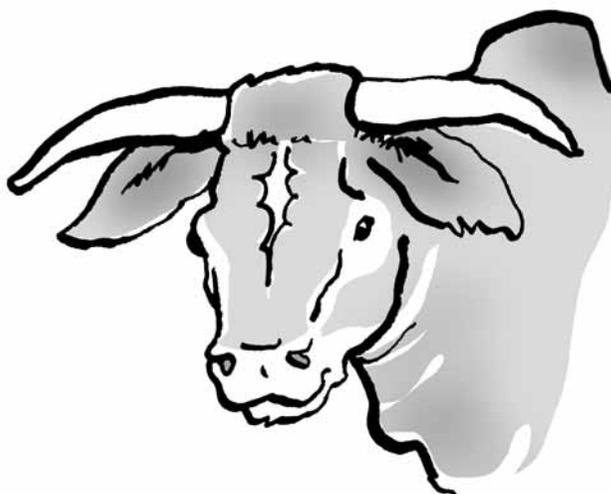


Figure 9: Women’s right of access to land and livestock is often very insecure

Table 4: Access and Control Profile

Resources			Benefits		
	Men	Women		Men	Women
Land	A/C	A	Credit facilities	A	
Cattle/Poultry	A/C	A/C	Extension programmes	A	
Cash	A/C	A	Nurseries	A	
Equipment	A/C	A/C	Project inputs	A	
Fertilizer	A/C				
Education	A	A			
Kinship group	A	A/C			
Labour	A/C	A			
Etc					

Note: A = access/ C = Control

4.8 Influencing factors

The information acquired from the *Gender Study Analysis* and the conclusions drawn from the *Activity Profile* and the *Access and Control* exercise can be used to determine the constraints faced by and

opportunities available to community members. These include the effect that social hierarchies, community values, demographic factors and institutional structures have on the livelihood choices available to community members.

These factors interact with indigenous and national laws and the political and economic environment that determines access to education, training and health facilities. Some factors will be classified as constraints because they make it difficult to mobilize human resources. Others, including the presence of self-help groups, could become the basis for interventions to help mitigate the impact of HIV/AIDS. Table 5 presents a matrix of “*Influencing factors*” that still have to be classified into opportunities or constraints.

Table 5: Factors that influence opportunities for mitigating the effects of HIV/AIDS

Influencing factors	Constraints	Opportunities
Community norms and social hierarchy		
Demographic factors		
Institutional structures		
Economic factors		
Political factors		
Laws		
Training		

Classifying influences in this way makes it possible for extension officers to demonstrate the constraints and opportunities that determine the livelihood options available to both men and women. It also makes it clear how control and decision making power within the family is reflected in the policies and decisions taken at national level.

The information gained using these participatory processes provides a basis for planning interventions that will enable communities to adapt their farming practices and off-farm activities to mitigate the impact of HIV/AIDS. For example, in patrilineal communities a woman often loses her right to land when her husband dies. This means that community law stands in the way of a woman being able to provide for her

family. Recognizing this fact can lead to the community deciding to ensure that women have the right to access and control land irrespective of their marital status. As a result land title deeds for women or communal plots for women may be introduced.

Single interventions like those mentioned above, however, are seldom sufficient. Without the time, skill and money to buy the necessary inputs, access to land will not improve household welfare. Discussing the impact of changing the customs governing land access with community members, for example, may reveal that additional measures are needed to ensure the success of efforts to strengthen livelihood opportunities.

Activity profiles can also be used to develop cropping calendars. These help identify the labour, agricultural resources and the amount of time involved in crop and vegetable production, animal husbandry and other income generating tasks. They can also be used to help determine the best way to adapt and plan agricultural activities to fit the capacities and needs of those living with HIV/AIDS.

4.9 Junior Farmer Field and Life Schools: addressing the needs of the young

Many rural households are headed by HIV/AIDS orphans. Addressing the problems faced by these and other vulnerable children requires a special approach. *Junior Farmer Field and Life Schools* based on the well-established *Farmer Field School* model can provide significant support.

First, learning fields must be established in schools or other centres where young people regularly come together. Here they will participate in a one-year programme that follows the local agricultural cycle. They experiment with agricultural methods such as conservation tillage, inter-cropping, composting, integrated pest management and poultry and goat keeping practices that are best suited to local conditions and needs. During the programme, life issues such as health, nu-

trition, HIV/AIDS, gender equality and the protection of child rights are introduced and discussed.

This learning by doing approach is a methodology inspired by the positive results achieved through *Farmer Field Schools*. The emphasis is on practical learning and the importance of enabling participants to observe, analyze and make decisions using the information and insights they acquire by taking part in the Farmer Field School.

The following example – drawn from experiences in Mozambique – shows how *Junior Farmer Field and Life Schools* can contribute to re-establishing productive agriculture in communities affected by HIV/AIDS.

These *Junior Farmer Field and Life Schools* were initially supported by the FAO and the World Food Programme and run by primary schools and community-based organizations in cooperation with the Ministries of Agriculture, Education, and Social Welfare. These agencies supplied them with seeds, agricultural implements and school materials.

In the Mozambique programme, a group of 30 children aged between 12 and 17 attended extra classes near their rural school every week. They started the week with an exercise in observing the crops that had been selected for cultivation in the learning field. They noted how the plants were growing, whether there were insects around the plants and whether these were



Figure 10: The problems of young people living in a household affected by HIV/AIDS need special attention

pests or beneficial species. The children also attended other classes in which they were stimulated to discuss life issues.

The *Junior Farmer Field and Life Schools* aimed to improve the children's chances of future self-sufficiency. They learned to save seed, propagate local food and medicinal plants, establish improved granaries and build chicken coops and kraals from local materials. They also learned how to keep livestock and process agricultural products for sale.

When the older generation dies without passing on its knowledge and experience to the young, communities lose their capacity to make productive use of their resources. *Junior Farmer Field and Life Schools* can help extension officers overcome the problem of lost agricultural knowledge by making sure that the community's youth have the information and practical experience to carry out agricultural activities.

5 Exploring resources

Health care is essential for those living with HIV/AIDS. Adequate supplies of nutritious food are important for those affected by the virus and for those who must be strong enough to care for them. Planning strategies to address the impact of HIV/AIDS on small-scale farming communities means ensuring access to nutritious food as well as medical care.

5.1 Good nutrition

Sufficient food of good nutritional quality is fundamental to remaining healthy and resisting illness. A regular and well-balanced diet is particularly important for those suffering from HIV/AIDS. When the daily diet is well balanced and nutritious, overall vulnerability decreases, physical strength increases and the quality of life of those living with HIV/AIDS will improve. Medicine alone is not enough. Balanced diets and good nutrition practices are essential.

Staple foods like maize, sweet potato, cassava, plantain, groundnut, sorghum and rice form the bulk of rural diets. These staple foods should, however, be supplemented by foods rich in vitamins, minerals and proteins. Extra vegetables, nuts, fruits, pulses and – if possible – animal products are needed to ensure a nutritious diet. Extension workers can play an important role in making sure households have access to food of sufficient quality and quantity by providing information on how to prepare locally available nutrient rich foods in an effective way.





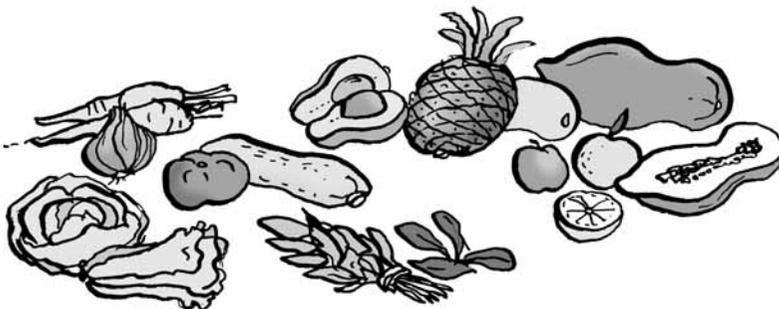


Figure 11: To remain healthy you need a balanced daily diet

5.2 Effective drug therapy depends on balanced nutrition

Access to nutritious food can strengthen the immune system but the opportunistic diseases that afflict those suffering from HIV/AIDS require medical attention and interventions in the form of appropriate drugs and therapy. Anti-retroviral drugs can enable people to work again and make a living. In the short term this means that HIV/AIDS is not lethal and that communities can maintain themselves socially and economically.

Although anti-retroviral medicines combined with a well-balanced diet can help prolong the lives of those infected by the HIV/AIDS virus, the cost of such treatment is often so high that it is beyond the reach of those who need it most.



Figure 12: There is no medicine that can cure HIV/AIDS

The drugs used in anti-retroviral therapy can cause severe reactions. To be effective they must be taken on a full stomach. Malnutrition and under-nutrition is wide spread in Sub Saharan Africa. As a result, even when anti-retroviral drugs can be obtained, the physical condition of patients is often so weak that they have little effect. This is why it is important to ensure that medical interventions are integrated into an overall HIV/AIDS mitigation strategy based on carefully planned and well-adapted farming practices.

5.3 Medicinal plants

The World Health Organization estimates that 80% of the population in developing countries use medicines derived from medicinal plants. These “local medicines” are often the only medicine available.



Figure 13: In developing countries 80% of the population depend on medicines that originate from medicinal plants

Traditional knowledge about the medicinal properties of plants is an important resource for impoverished communities struggling to mitigate the impact of HIV/AIDS. Traditional practitioners are important because the community accepts them, they are accessible, affordable and – because they live in the community – they know and understand the diseases most frequently found there.

Medicinal plants can help support the health of those living with HIV/AIDS. They can be used to:

- Treat opportunistic infections;
- Strengthen the immune system so the progress of infection slows down;
- Reduce malnutrition by means of tonics, food supplements and appetizers;
- Serve as anti-depressants and enable patients to cope better with their situation.

5.4 Access to medicinal plants

Households usually have a number of medicinal plants growing on their farms. These may have been deliberately planted for medicinal purposes or they may be a by-product of other species such as multi-purpose trees. Often medicinal plants grow uncontrolled in hedges or may even be classified as weeds.

Encouraging local experts to share their knowledge of medicinal plants with community members will enable households living with HIV/AIDS to identify the plants that can help them alleviate the symptoms of the disease and the infections that go with it. Participatory approaches such as those used during a community workshop in Meru, Kenya, can produce significant results. Table 6 shows the list of medicinal plants identified by participants at the Meru workshop.

Table 6: Some common traditional medicinal plants used in Meru, Kenya

Species	Health problem
Papaya or Artemisia	Malaria
<i>Moringa oleifera</i>	Anemia and undernourishment
<i>Rauvolfia caffra</i>	Depression and diabetes
Neem or Eucalyptus	Skin and respiratory problems
Ricinus	Diarrhoea
<i>Trichilia emetica</i>	Worms and amoeba
<i>Plumeria alba</i>	Fresh cuts
<i>Vangueria madagascariensis</i>	Stomach pain
<i>Kigelia Africana</i>	Colds

Plans to adapt farm systems to mitigate the impact of HIV/AIDS should include the establishment of medical gardens. These can be centrally located in gardens maintained by traditional practitioners or located in the vicinity of NGOs, health centres and schools engaged in HIV/AIDS mitigation. Some medicinal plants do not thrive well in gardens and these will have to be nurtured in their natural habitat. Other species may require special attention or – for spiritual reasons – rituals may have to be performed to ensure their medicinal properties.

Traditional medical practitioners can help those living with HIV/AIDS because they have the knowledge that enables them to identify species, isolate their medicinal properties and prescribe the combinations and dosages required when symptoms appear. However, they may not always be willing to share their knowledge with other community members and there may be secret traditions that prohibit them from growing particular species in their gardens. The transfer and application of traditional knowledge may also be affected by regulations that prohibit the cultivation of some plant species.

A community's knowledge of the value of medicinal plants will increase when as many household members as possible are involved in planning the location and composition of the medicinal garden. Easy access to the remedies needed to improve the health and strength of those living with HIV/AIDS means that farm households need the seed of specific species and the knowledge of how to harvest, prepare and use the plants when they are sufficiently mature.

Medicinal gardens and individual plots can only be maintained if there is enough household labour available to cultivate them and harvest and prepare the plants they produce. In some cases establishing a communal medicinal garden managed by the community as a whole may be a better option.

More than half of the plant species known to have medical properties are trees. If medicinal gardens are established they should include shrubs and trees that have medical properties. Although some species such as *Prunus Africana*, for example, which is used to purify the blood, only become productive after many years, others such as *Warburgia ugandensis* - whose leaves are used for lowering fever and treating rheumatism - mature much more quickly.

6 Utilizing resources

Small-scale farming systems depend on a diverse resource base of crops, wild plants, trees and livestock. Local knowledge about how to use and care for these resources is often site and gender specific. Rural communities depend on local agro-biodiversity and traditional or indigenous knowledge to adapt to external shocks and internal pressures.

6.1 Maintaining agro-biodiversity

Wild and cultivated species of plants as well as perennial shrubs and trees are used for food, fodder, medicine and firewood. Farmers depend on their plant and animal resources for many services. They provide animal traction, offer shade, protect the soil against erosion and provide a habitat for beneficial insect pollinators. When sold as raw materials or processed into marketable commodities these resources can also provide farm families with a cash income.

A rich, well-maintained and productive agro-biodiversity provides a strong and stable basis for farm activities. Diversity is an important risk management strategy and enables farmers to respond more effectively to the threat of plant and animal pests and diseases. Therefore, if improved crop varieties, animal breeds and chemical inputs are used in small-scale farming systems, they should be integrated in a way that gives high priority to maintaining strong levels of agro-biodiversity.

Maintaining diversity means nurturing wild food – including weeds and the parts of plants which – although they are not normally eaten – may have important nutritional qualities. Key farmers and food specialists have the knowledge and technical skill to transform these “famine foods” into important and nutritious dietary supplements. This information should be made available to farm households so they are able to create a diverse biological safety net from the edible insects, honey and other products not normally considered as farm

products. These can provide extra nutrition and they can be a valuable source of nutrition during times of crises.

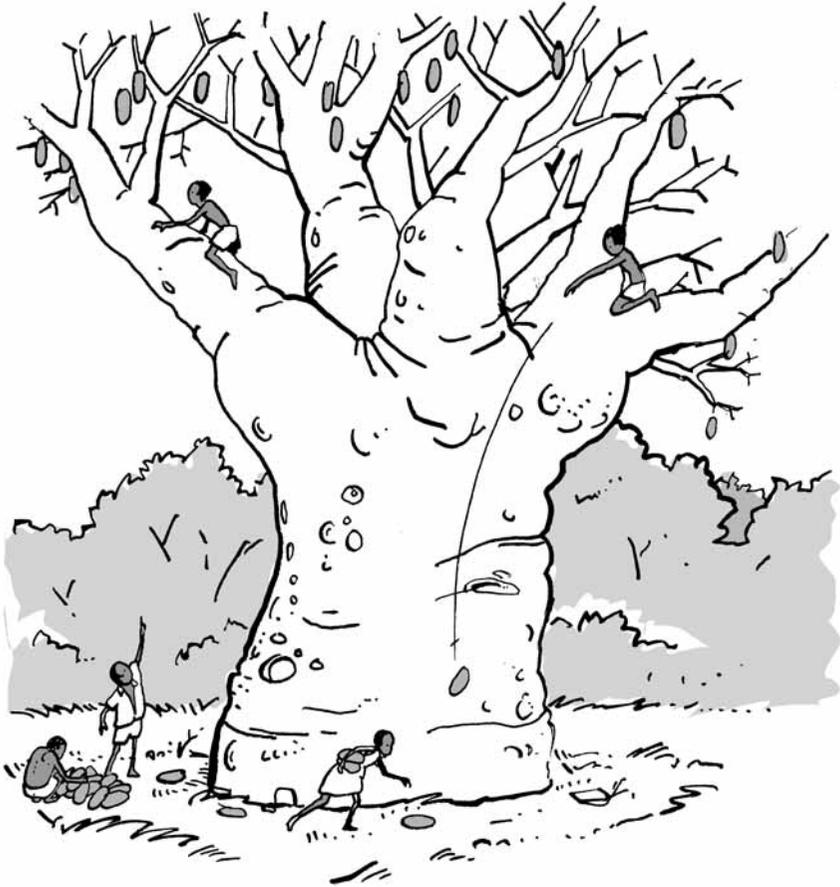


Figure 14: Gathering food

Women, children and pastoralists often have considerable knowledge about the location, seasonality and uses of wild plants and local fruit trees. They can provide extension workers with information about how these resources can be used to increase the security and nutritional quality of household diets.

Extension officers can combine local information with knowledge derived from national and international research on wild foods to provide farmers with appropriate advice on how to make the best use of local agro-biodiversity.

6.2 Choosing for trees

HIV/AIDS robs rural households of agricultural knowledge, labour and income. Households find themselves unable to buy the external inputs they need to cultivate cash crops. Local resources that are cheap and accessible can provide a basis for other types of farming. Agroforestry projects, for example, make full use of local plant genetic diversity. They can help compensate for the break down of kinship and community support systems – one of the most damaging effects of HIV/AIDS – by introducing practices that add market value to local plant resources and reduce the amount of labour required for farm activities.

There are many tree crops and shrubs that can be used to increase the security and quality of community life. In adapting farm practices to mitigate the effects of HIV/AIDS, farm families need interventions that help them meet their most urgent requirements and enable them to establish a basis for a secure future livelihood.

6.3 Advantages of agroforestry

Trees provide fodder and fuel. When they are planted close to the homestead the task of collecting fuel and fodder becomes less of a burden. Women in particular can benefit from agroforestry practices.

Agroforestry systems have the following advantages:

- Woody perennials such as trees, shrubs and lianas provide fruits, nuts and vegetables for foods;
- Tree crops can be harvested year after year whereas annual crops need annual planting;
- More than 50% of known medicinal species are tree species;

- Some species have the capacity to create favourable microclimates. Especially valuable are nitrogen-fixing trees, plants that protect the soil from erosion and trees and shrubs that provide shade as well as good composting materials;
- Shady tree-rich areas help diminish evaporation and protect water catchments;
- Products such as fruit, nuts, beverages and timber can be sold for cash;
- Trees provide a habitat for wild game, insect pollinators and honey bees;
- Some tree species can be productive in a relatively short space of time;
- Trees are multi-purpose and – with relatively little labour – they can provide farm households with a reliable source of income;
- Perennial crops – including certain tree crops – can be grown alongside annual crops to increase household security.

Tree planting is a long-term investment. Before plans can be made extension officers must be certain that farmers either own or have the right to use the land designated for agroforestry activities. Sometimes land can be claimed by planting trees but this is not always the case. The *World Agroforestry Centre (ICRAF)* has much useful information and advice in their brochures and on their website www.icraf.org

Choosing the species

Choosing the right crop or wild plant species is an important first step in ensuring sustainable agro-biodiversity. Extension officers together with members of the local community should make an inventory of species and plants that can provide the products and services they need. This will enable them to decide which species should be cultivated or maintained. Extension officers should ensure that women are well represented in the development and planning of these activities. Their knowledge – including their extensive knowledge of food producing plants – is an important input when planning agro-biodiversity based adaptation strategies.



Figure 15: The exchange of experience and indigenous knowledge can help communities find ways to add value to local natural resources

Choosing the site

The second step in agro-biodiversity based projects is to identify the most suitable sites for the plants selected. Growing conditions on a farm vary. The soil, water and microclimate must be suitable and the way the selected plants interact with other species and their capacity to resist pests and diseases must also be taken into account.

There may also be national and customary laws that restrict the planting of certain species. For example, some crop species are gender specific; tree planting is sometimes prohibited in river areas and it may be illegal to harvest rare or threatened species. Sacred medicinal species are often protected by customary laws.

Perennial species and small livestock

It is also important to think beyond annual crops. Animals, trees and perennial (semi) wild plant species have a particular value to families living with HIV/AIDS. Small livestock, for example, multiply and reproduce quickly and provide security. They are a tangible asset and unlike crops can be sold and exchanged when emergencies arise.

Inputs and risks

High yielding hybrids and species that require farmers to buy fertilizer, pesticides and other external inputs should be avoided. Species should be selected in a way that ensures a variety of products become available at different times of the year. Account should also be taken of the amount of labour available for agroforestry activities. Households living with HIV/AIDS cannot meet sudden heavy demands for labour. The cultivation of several species or varieties can reduce the risk of crop failure. Species and varieties with a high harvest security that provide products for market as well as for home consumption are especially valuable.

6.4 Working with conservation tillage

Conservation tillage yields long-term benefits. Tillage has always been important in dry-land farming. Conservation tillage is a recent adaptation of this practice and aims to make more efficient use of the water entering the farm, improve yield stability and increase soil fertility especially in drought prone regions. Conservation tillage through reduced tillage, intercropping and crop rotations minimizes soil disturbance and ensures permanent soil cover.

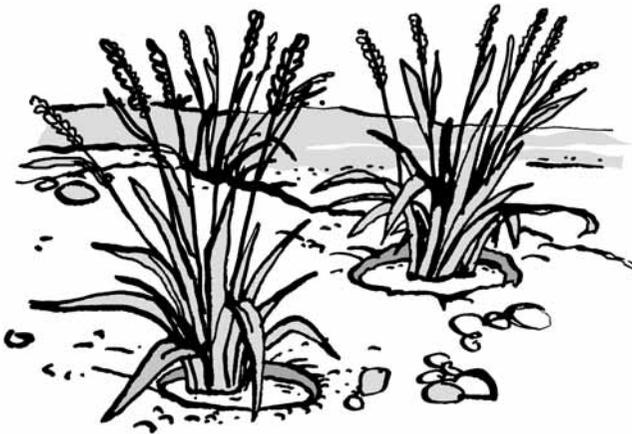


Figure 16: Reduced tillage helps prevent soil erosion

Initially, the shift towards conservation tillage requires extra amounts of labour and this can be a problem. The technique should be well understood and communities must be sufficiently well informed about and have access to suitable species. However, once established, conservation tillage means that less labour is required for land preparation and weeding, and women in particular have to spend less time in the field.

7 Building cooperation

Adapting farming practices to mitigate the impact of HIV/AIDS means making sure farmers have access to seed, labour and cash. In this section, activities that enable farmers to access these inputs are discussed and the emphasis is placed on strengthening the social capital of communities living with HIV/AIDS. Social capital refers to the relationships and reciprocities that exist between relatives and households and form the basis of community life.

In many small-scale farming communities traditional forms of cooperation have broken down under the impact of HIV/AIDS. Exchanging knowledge about these forms of cooperation and strengthening and developing them further can be particularly useful in situations where farmers have resorted to subsistence agriculture.

Seed Fairs, labour sharing, and credit and saving initiatives are also examples of community cooperation that can help farm households adapt to the impact of HIV/AIDS. Seed fairs facilitate the exchange of planting materials; labour sharing can help families who have lost working members to HIV/AIDS, and community saving and credit schemes make it possible for farm families to build up their cash reserves. Community gardens and animal sharing agreements are also effective forms of cooperation that contribute to food and nutrition security and family welfare.

7.1 Seed Fairs

Seed Fairs are an example of farmer to farmer exchange. They enable farmers to access seed as well as other germplasm such as cuttings and tree seedlings. When these are exchanged between communities, knowledge about propagation, cultivation and use is often passed on as well.



Figure 17: Seed Fairs facilitate the exchange of traditional seed varieties and knowledge between farmers

One of the first steps that extension officers take when organizing a Seed Fair is to inventarise what seeds are available and whether they are suitable for local conditions. The location chosen for the Seed Fair is important. It should be within easy reach of the target group and accessible to as many women seed sellers as possible.

The Voucher System

Experience has shown that when Seed Fairs are based on a voucher system, farmers tend to think more carefully about the exchanges they make. They work out more carefully the type of seed they want and how they intend to use it. Organizing a voucher system is not difficult. Farmers receive a number of vouchers that can be exchanged for seed. At the end of the fair seed sellers receive payment from the organizers for the vouchers they have received. A voucher system helps prevent seed sellers from manipulating farmers with less bargaining power.

If care is taken to ensure that only vouchers are used during the Seed Fair, it becomes possible to monitor how seeds have been exchanged. Extension officers can use the information derived from the vouchers to evaluate the circulation of seed and later to assess whether better

access to seed has encouraged farmers to take up lost and/or new varieties.

7.2 Community gardens

Using the information gained during participatory exercises, community members and extension staff can begin planning community gardens. Improved management of agro-biodiversity using local knowledge, inputs from extension officers, the results of research and the experience of other communities all contribute to developing gardens that can provide community members with regular supplies of nutritious food.

Maize, sweet potato, cassava, plantain, groundnuts, sorghum and rice are the most common carbohydrates eaten by rural households. These must be supplemented by crops that are suitable for garden cultivation and rich in vitamins and minerals such as fruits, vegetables, nuts and pulses. If conditions are favourable community and home gardens can be designed to include aquaculture and small livestock so farm families have a reliable supply of fish and animal protein.

Agrodok 9 – *The home garden in the tropics* - provides detailed information about how to develop a home garden. When discussing and planning a home or community garden the following must be taken into consideration:

- Type of garden: proportion of nutritional and medicinal plants;
- How much time will gardening activities take;
- Can field crops be planned in such a way that labour is released for garden work;
- Who will maintain the garden – family, community members or hired labour;
- Where will the garden be developed: community land or next to a mosque, church or school;
- Who will decide what is to be produced;

- Designing the garden: drainage, water, soil and slopes must be taken into consideration when planning where to site seed beds, vegetable plots, trees and shrubs;
- Tasks and problems including cultivation, soil fertility and pest and disease management must be dealt with;
- Water issues: how much water will be needed and where will it come from; who is responsible for safeguarding an adequate supply;
- Choice of crops and crop rotation: the *Seasonal Calendar* and *4-Square Analysis* can be used in making these decisions (see section 4.3);
- Fish, small livestock and trees might be included to ensure a year round supply of nutritious food;
- Security: fencing and other measures to keep animals out and prevent theft;
- Harvesting: how will produce and any profits be distributed amongst the different participants?

Other considerations

Care should also be taken to link plans to develop home and community gardens to other aspects of rural life. They should also be integrated into wider agricultural activities to ensure that vegetable and seed materials are exchanged, manure is available and there are shrubs and branches to provide suitable shade. The community can decide to use some of the cash raised from cultivating field crops to invest in garden activities.

Attention should also be given to how value can be added to garden produce. Community members can be introduced to different ways of preparing and drying vegetables. They can also store garden products so households can benefit later from off-season prices. Seed and rooting materials can be propagated and sold together with fresh fruit and vegetables. Community gardens provide a social service and encourage the exchange of knowledge and experience. Households may decide to use what they have learned in the community garden to begin their own gardens.

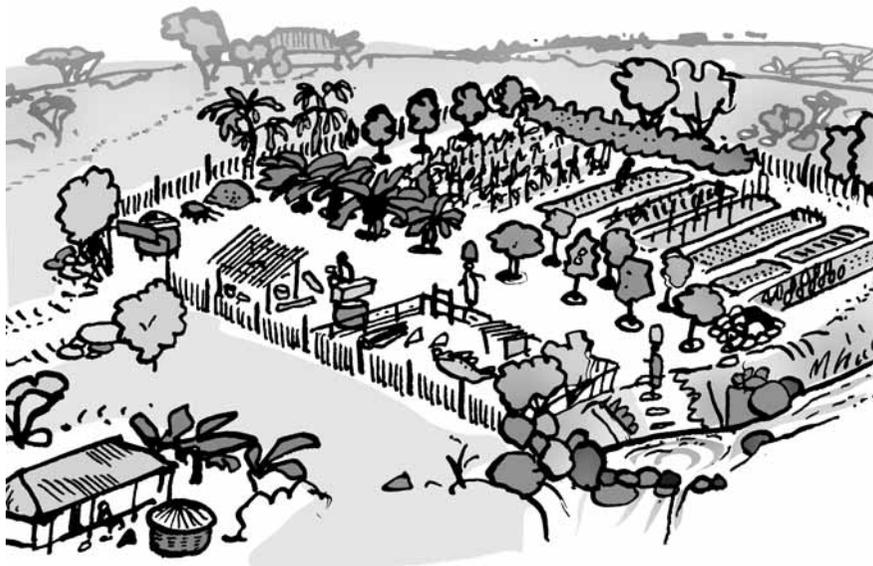


Figure 18: Community garden

7.3 Making choices: the *Seasonal Calendar*

Drawing up a *Seasonal Calendar* can help community members decide when and what to plant in their home or community garden. It can also help them plan post-harvest activities like storage and preserving and drying foods.

The *Seasonal Calendar* shows food availability. This means that those participating in the community garden project must make a list of when local food crops are planted and harvested. Wild plants used as food are also included in this exercise. Extension officers should note the workload of each family member. The *Calendars* produced by different households in the community can be discussed to see if there are ways of sharing workloads.

A *Seasonal Calendar* enables communities to identify periods when households are vulnerable to food scarcity and need help from outside. Ways of increasing food and nutrition security can then be discussed.

Table 7: Seasonal Calendar prepared by the Junior Farmer Field and Life School project, Manica, Mozambique

Crops	Rainy Season						Irrigation					
	O	N	D	J	F	M	A	M	J	Jly	A	S
Cereals												
Maize	X	X	X	X								
Sorghum			X	X								
Other crops												
Sunflower					X	X						
Soya		X	X									
Nhemba beans			X	X	X	X						
Green beans					X	X						
Cassava									X	X	X	
Groundnuts		X	X									
Sesame			X	X								
Potatoes						X	X	X	X	X		
Horticultural crops												
Tomato				X	X	X	X	X	X	X	X	
Leafy cabbage						X	X	X	X	X		
Head cabbage						X	X	X	X	X	X	
Lettuce					X	X	X	X	X	X	X	
Green pepper					X	X	X	X	X	X	X	X
Onion						X	X	X	X	X		
Garlic						X	X	X	X	X		
Aubergine						X	X	X	X	X	X	X
Hot pepper						X	X	X	X	X	X	X
The rainy season lasts from October/November to February/March. X represents the growing season. Crops grown during the dry season depend on irrigation. The calendars for horticultural crops do not correspond with the beginning and end of one period of cultivation but show the optimal period during which these crops can be grown.												

7.4 Monitoring results

After a home or community garden has been running for some time, it is important to monitor the effect it has had on diets and the welfare of community members. Adjustments can then be made if necessary. The following information is needed to assess whether a community garden has been successful.

- Has there been a change in the quantity and quality of household nutrition?

- Has there been a change in the level of health of household members?
- How many new or different species are being cultivated in the garden?
- Has there been a change in household income as a result of the garden?
- Does the household feel its food supply is now more secure?
- Has there been an increase in the number of contacts and sharing activities between households?

7.5 Labour sharing

Cooperating in sharing and exchanging labour is particularly important in households living with HIV/AIDS. Labour sharing can enable communities to adopt new practices without over-burdening the available workforce.



Figure 19: Ploughing is heavy work

Labour sharing involves sharing workloads between several people and also spreading workloads over a longer period of time. Besides allowing for greater stability in carrying out tasks, labour sharing is a good way for community members to acquire self confidence, knowledge and experience. Labour sharing can range from assisting a neighbour, to deciding to share work in more efficient ways within a household.

Community gardens provide a good example of labour sharing. Members help each other with weeding and watering. When someone be-

comes ill, has to attend a funeral or fulfill other social obligations there are group members available to take over the work. This type of labour exchange can be extended to a wide variety of agricultural activities. Organization is required, however, to ensure that obligations are fulfilled and arrangements are flexible enough to deal with the problems and emergencies that may make it impossible for a participant to reciprocate the help he or she has received immediately.

Labour exchange and sharing are an option in many different types of adaptation plans. Extension officers can help communities assess and timetable their labour needs and help facilitate the flexible organizations of such arrangements. The following example – provided by Gaynor Paradza of the Africa Women Leaders Agriculture and Environment programme at Wageningen University and Research Centre and taken from a small community in Zimbabwe – shows how labour sharing works.

The village consisted of 19 homesteads and most inhabitants were related to each other. This resulted in strong social cohesion. Families had access to arable fields and individual gardens situated about 3-5 kilometers from the homestead. The distance from the homestead and reduced labour availability due to HIV/AIDS made it difficult for people to adequately guard their plots from theft, wild animals and free roaming livestock. Forest resources had been depleted so it was hard to find materials for fencing.

In the 1980s, the community established a community garden on one acre of land situated near the village. Women in the village had collectively negotiated for the land. Their attempts were successful and the village head granted them the land they needed. All the women in the village were free to join. A well wisher sank two boreholes. A NGO lent the women some money which they used to purchase fencing material.

Initially the women worked together in a cooperative and grew vegetables for market. With the proceeds they paid off the fencing loan and

realized a modest income. The cooperative also benefited from the advice of other NGOs working in the area. In turn these NGOs were happy to have an efficient way of disseminating information and innovative techniques.

After some time the members decided to subdivide the communal garden into individual plots. These consisted of six “beds” measuring 1x4 meters each. All members were able to collect water from the boreholes for their individual beds. They continued to be jointly responsible for maintaining the garden fence.



Figure 20: Labour sharing is sharing workloads with others

During the dry season the women take turns in watering their beds to ensure there is enough water for everyone. Members also help each other with weeding and watering. This is important as HIV/AIDS places a heavy and increasing demand on women who live in affected households. Membership in the garden is relatively secure. Members who have to step out at some point because of illness or mobility problems can return later and claim a plot. During their absence, other women, like those recently married into the village, divorcees or widows, can use the fallow land.

The tenure arrangement does not discriminate against women on the basis of their marital status. This increases women's security of tenure in customary land tenure areas. The proximity of the community garden to the homesteads, continued access to inputs, information and advice, the assistance provided by others and the possibility of – temporarily – leaving the garden without losing future access rights, addresses some of the challenges that women – and also men – face when confronted by HIV/AIDS. Equally important, the community garden has given women the opportunity to pool their resources, exchange information and get advice that would have been difficult to access on an individual – or household – basis.

7.6 Savings and credit

Most farm adaptation strategies require an initial investment in the form of time, money or labour. The lack of cash to buy farm equipment, seeds and hire labour is often a serious problem. Money dries up when key male household members become ill and are unable to work on the farm or engage in paid employment. A combination of traditional and modern financial mechanisms can enable households to access the cash they need to purchase agricultural inputs and deal with medical and social emergencies.

Rural Microfinance

Strategies based on traditional approaches to saving are already familiar to many rural families. Interventions such as the *Internal Savings and Lending (IS&L)* activity described below can be tailored to meet the capacities of communities and households affected by HIV/AIDS. The advantages of *IS&L* are as follows:

- Provides rural communities with a means of raising capital quickly. It has minimal overhead costs and these can be recovered with interest;
- Encourages cooperation at community level by strengthening community support networks: it is operated in and managed by the community;
- Assists members in meeting their consumption and social needs;

- Reduces the dependence of households on external assistance;
- Gives members an alternative to risky behaviour.

Setting up Internal Savings and Lending Schemes

Communities or groups of households affected by HIV/AIDS are mobilized and trained by extension officers in a number of skills including group fund development and record keeping. After they have been trained communities organize *IS&L* groups. These have a minimum of five members. At their monthly meetings, members save an agreed amount of money. This can be lent out to selected individuals in the group. Members must repay the loan – together with an agreed amount of interest – at the next meeting. If repayments are delayed or they miss meetings specified fines for non-payments are imposed.

This savings and lending cycle is practiced until the group has reached a targeted amount. This amount is then shared amongst members and the group is ready to embark on a new cycle.

Alfred Hamadziripi of the *Southern Africa Poverty Network* has been running a successful *IS&L* scheme to support the income needs of HIV/AIDS affected households in *Kupfuma Ishungu*, Zimbabwe. Groups established when the project began in 2000 are still in operation and they are now working to set up new groups in their area. Other countries with experience of *IS&L* include Kenya and South Africa.

8 Livestock

Livestock is an important long-term resource for rural farmers. Adapting livestock practices to mitigate the effects of HIV/AIDS is as important as improving and securing access to plant-based foods. Livestock – including sheep, cattle, goats, donkeys, camels as well as pigs and poultry – are a capital asset and safety net for farm households. Their products have a cash value and the animals themselves can be sold in times of hardship and family crisis.

Livestock provide quality foods such as meat, dairy products and eggs. They are a source of draught power and transport and their manure is used as fuel, fertilizer and to build and plaster houses. Many traditional customs and social relationships depend on the exchange of animals.

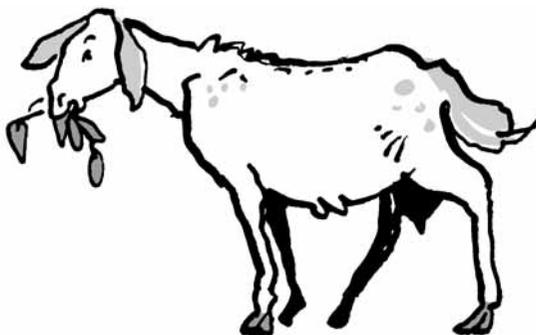


Figure 21: Smaller livestock that require little labour and can forage for themselves can contribute to household food security and income

In households living with HIV/AIDS livestock resources diminish quickly. Families slaughter or sell their animals to raise funds to buy medicine and meet other household expenses. As a result they lose a major financial asset as well as food and non-food services. When those responsible for managing livestock fall ill or die, management

skills and specific knowledge about herds and flocks are lost. There is not enough time or labour to care for them properly and orphans and widows have difficulty in accessing extension services. Women and children may also lose their rights to animals in societies where inheritance favours men.

8.1 Livestock in HIV/AIDS mitigating strategies

How livestock can be used to mitigate the impact of HIV/Aids will depend on local circumstances. Extension officers working with communities to adapt animal husbandry practices to local skills and capacities should:

- Select species and breeds that mature early, are adapted to local climate and environmental conditions, are disease resistant and do not require many inputs;
- Select animals that can be kept close to home so as those living with HIV/AIDS can care for them;
- When necessary advise households to raise smaller livestock that require little labour, can forage for themselves, require little food and can provide food security and a cash income;
- Encourage community members to share larger draught animals used for ploughing and transport;
- When households are unable to cultivate crops, provide them with the information they need to keep the type of livestock most appropriate to their situation;
- Together with the community consider labour saving interventions to minimize the work involved in animal husbandry. For example, establishing water points close to homesteads and planting fodder trees to reduce the time and effort involved in collecting fodder;
- Provide information on how to preserve and store animal products;
- Help identify niche markets for animal products and services as part of adaptation and mitigation planning;
- Ensure customary and legal support to widows and orphans to avoid the grabbing of livestock.

8.2 Dealing with poultry

Poultry – chickens, ducks, guinea fowl and turkeys – also play an important role in strategies to increase the food security and cash income of farm families. They also have an important socio-cultural role. They can be reared by poor families as they are easy to keep and require few inputs. Free or semi-free range poultry are particularly successful in crop-livestock systems.

However, traditional poultry keeping methods often need to be supported by external interventions especially in areas where problems like Newcastle disease threatens flock health. Vaccination programmes can increase the survival rate of chickens as projects initiated by the Australian-based *International Rural Poultry Centre* have shown. In Mozambique and Zimbabwe, for example, selected rural farmers have been taught how to vaccinate their chickens and now they earn cash by vaccinating chickens in the villages themselves.



Figure 22: Poultry mean food security and income generation

9 On-farm and off-farm activities for cash

Farm families need cash to meet domestic obligations and pay for a wide range of services. Adding value to farm products and community resources increases the amount of cash households have available to invest in other productive activities. The amount of time and energy individual family members have available to engage in income generating activities, however, will vary from household to household.

An *Activity Profile* can be used to gather information from community members about the amount of time they spend on regular farm and household tasks. This can be used to assess whether potential income earning activities will overburden family members and create difficulties. Adapting farming practices in ways that lighten the workloads of community members makes it easier to launch money earning activities.

Those living with HIV/AIDS are less able to perform heavy work, to work for long periods or follow strict work schedules. Making plans to integrate income generation activities into strategies to mitigate the impact of HIV/AIDS should take the following factors into consideration:

- Labour: minimal labour demand with no concentration of effort such as that required at the beginning of the growing season;
- Income should be stable throughout the year;
- Income should be based on the use of local resource and skills with low or no external input needed;
- Market potential of income earning options should be carefully calculated;
- Activities should not have to be carried out at fixed times.

The type of farm, the resources available within the community, and market demand will determine the money earning opportunities available. The extent to which communities can take advantage of these

opportunities will depend on the skills and time available. To maintain an adequate production level a shift to varieties and species that demand less labour input and physical strength may be necessary.

The introduction of tools that need less physical strength such as lighter ploughs, seeders and pumps as well as more efficient utensils such as fuel efficient stoves can also help farm families redistribute work and reduce the amount of time spent on regular tasks like cooking and gathering fuel wood. The time and labour saved by these types of interventions can be invested in developing income earning opportunities.

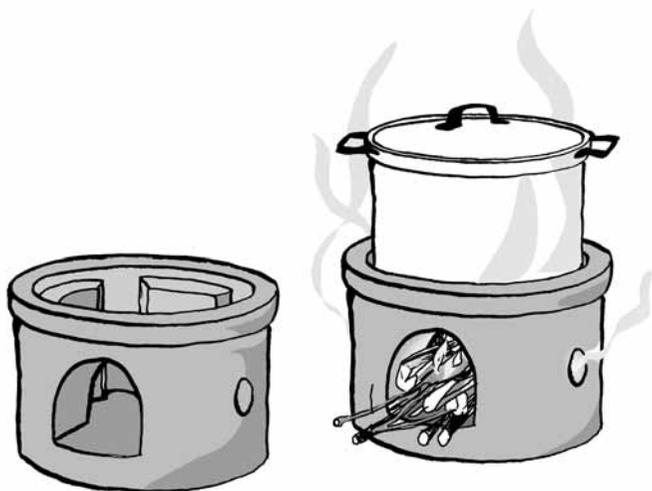


Figure 23: Fuel efficient stoves make work lighter and save labour and wood as well

In communities where agricultural production has been adapted to include agroforestry activities products like timber, fruits and fodder gradually become available for sale. Agroforestry interventions often reduce women's workload making it possible for them to engage in food processing, drying and selling vegetables and making handicrafts – all products that have a higher market value than the raw materials themselves.

Local agro-biodiversity can in some cases also be commercialized. Many wild trees and plant and animal products can be transformed into commercially viable products. Timber, poles, spices, fruit, honey, fat, meat, thatching materials, tannins, gums and insecticide all have a market value. Households can also use local resources to produce furniture, beehives, mortars, tools and tool handles, plant supports, fermented beverages, animal traps and crafts as well as drinks, sauces and other foods.

Other income generating activities that do not make heavy demands on time and labour are root and tuber cultivation, free range poultry or honey production and the propagation of fruit and nut trees. Rabbit keeping is also relatively simple and children can help with the daily work of feeding and keeping them clean.

On-farm income generating activities must be tailored to the capacity of the target household and community if they are to be sustainable and successful. In some cases this may mean that activities will yield relatively low incomes. The aim, however, is to secure a stable income.



Figure 24: Children like to keep rabbits

As community members become engaged in business activities they may find it valuable to establish a Self Help Group. Should one member of the group become ill or leave because of a family emergency, the other members of the group will be able to maintain the supply of community products and markets and cash earnings will not be lost.



Figure 25: The participation of women in income generating activities can lead to wider benefits

Off-farm activities

Non-agricultural livelihood activities including off-farm jobs, the provision of services and various forms of trading can also be important to farm households. If circumstances allow, women should be encouraged to engage in off-farm activities. Experience has shown that women's earnings increase the overall economic well-being of a household as well as strengthening women's decision making power within the family. Opportunities for off-farm employment vary greatly.

Extension officers can play a valuable role in encouraging community members to assess the impact that off-farm activities have on household food security and community welfare. This can be done using the same methods as those used to assess the impact of adapting agricultural practices discussed earlier.

9.1 Conclusion

In their efforts to mitigate the way HIV/AIDS affects small-scale farming communities, extension officers often find themselves dealing with new target groups. These groups are extremely vulnerable, not necessarily homogeneous and often stigmatized and difficult to reach. They are those with HIV/AIDS and the women, the elderly and children who live in households and community affected by the disease. Agriculture can play an important role in mitigating the impact of HIV/AIDS but this requires a multi-sectoral approach. All those involved with supporting the rural livelihoods and the welfare of those living with HIV/AIDS need to ensure that the activities they initiate are as complementary as possible. They also need to look beyond agriculture to other possible interventions. Effective mitigation means ensuring that planned activities are compatible with the local livelihood strategies of the target group.

This Agrodok set out to show the importance of assessing the way in which HIV/AIDS impacts on the social and economic life of rural communities. From this perspective, it stressed the importance of collaboration. Exchanging experiences and learning from colleagues working in other sectors including health, forestry, education and natural resource management is an essential part of developing comprehensive and lasting solutions.

Small-scale farming systems depend on a diverse resource base of crops, wild plants, trees and livestock. Knowledge about local agrobiodiversity and how to use and care for these resources is often site and gender specific. Rural communities have to adapt to changes in their environment and they use their traditional or indigenous knowl-

edge to deal with external shocks and internal pressures. HIV/AIDS mitigation strategies can build on these survival strategies.

The HIV/AIDS mitigation strategies discussed here give priority to those that enable extension officers to support local communities in their effort to secure adequate supplies of nutritious food. Sufficient quantities of good quality food will not only help prolong and improve the quality of life of those living with HIV/AIDS, it also gives those who care for them the mental and physical strength to carry out their difficult task.

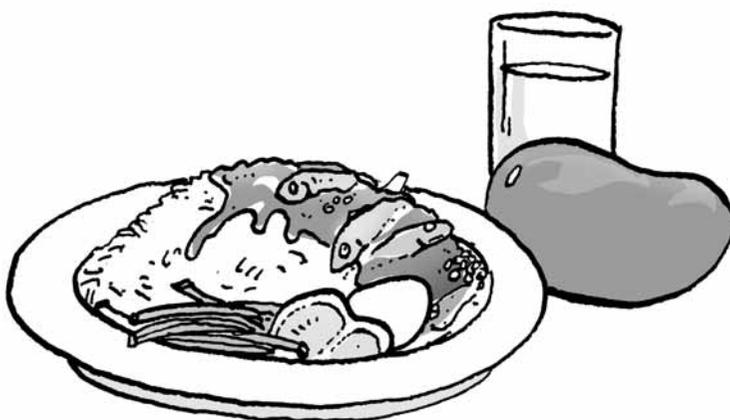


Figure 26: The importance of a balanced and nutritious diet cannot be over-emphasized

Further reading

Addressing HIV/AIDS through Agriculture and Natural Resource Sectors: A guide for extension workers. Bishop-Sambrook, Clare. 2004. Rome: FAO, 85 pp. Download via www.fao.org

Agriculture and HIV/AIDS. The effects of HIV/AIDS on farming systems in eastern Africa, FAO 1995 173pp ISBN 92 5 10361 1 X

All about Conservation Tillage Agriculture. African Conservation Tillage Network – ACT: www.act.org.zw

Conservation agriculture as a labour saving practice for vulnerable households. IFAD, FAO 2004.

Family Nutrition Guide. Burgess, Ann and Glasauer, Peter, 2004, Rome: FAO, 52 pp.

HIV/Aids Extension Fact Sheets. FAO. Feb 2005. Download via www.fao.org/sd/hivaids (about 4 pp each) The FAO HIV/AIDS Programme has produced a series of fact sheets for extension workers and fieldworkers to support families in HIV/AIDS affected areas. These fact sheets provide some ideas about mitigation strategies in areas such as nutrition, small livestock production, fisheries and labour-saving technologies.

HIV/AIDS resource guide for extension workers. NAADS 2004. Rome: NAADS. Download via: www.fao.org

HIV/AIDS and agriculture in Sub Saharan Africa. Tanja R. Müller 2004, 104 pages, Paperback, AWLAE Series - Volume 1, Wageningen Academic Publishers, ISBN: 978-90-76998-46-6. An overview and annotated bibliography

HIV/AIDS gender and rural livelihoods in Sub Saharan Africa. Tanja R. Müller, 2005, 117 pages, Paperback, AWLAE Series - Volume 2, Wageningen Academic Publishers, ISBN: 978-90-76998-49-7. An overview and annotated bibliography.

HIV/AIDS and human development in Sub Saharan Africa. Tanja R. Müller, 2005, 132 pages, Paperback, AWLAE Series - Volume 3, Wageningen Academic Publishers, ISBN: 978-90-76998-50-3. An overview and annotated bibliography on mitigating the impact of HIV/AIDS through agricultural interventions

Linkages between HIV/AIDS and the Livestock sector in East and Southern Africa. Technical Workshop Addis Ababa, Ethiopia, 8-9 March 2005 provides a comprehensive overview of the situation of pastoralist communities with respect to HIV/AIDS and the cultural factors that make some pastoralist groups susceptible to the rapid spread of infection. Download via: www.fao.org

Living well with HIV/Aids: A manual on nutritional care and support for people living with HIV/Aids. FAO and WHO. 2002. 97 pp.

Seed vouchers and fairs; a manual for seed based agricultural recovery after disaster in Africa. CRS, ICRISAT and ODI 2002. Nairobi, Kenya 72pp.

Techniques and practices for local responses to HIV/AIDS – UN-AIDS KIT 2004. Toolkit. Local responses to HIV/AIDS means the involvement of people where they live - in their homes, their neighbourhoods and their work places. For HIV/AIDS prevention and impact mitigation, each individual, family, community and organisation needs to deal effectively with HIV/AIDS. Learning and sharing experiences with others is an important step towards doing so. KIT Publishers, Amsterdam, The Netherlands. ISBN: 90-6832-639-2
Download via: www.kit.nl

Useful addresses

Bioversity International

Provides information on wild foods and agricultural species. Formerly know as IPGRI.

Bioversity International - Headquarters:

Via dei Tre Denari, 472a 00057 Maccarese (Rome) Italy

T: (39) 066118.1 - F: (39) 0661979661

E: bioversity@cgiar.org , W: www.bioversityinternational.org

AMICAALL

The Alliance of Mayors and Municipal Leaders on Hiv/Aids in Africa
Provides Toolkits, a Newsletter, an E-bulletin and other publications

Alliance of Mayors Secretariat

P.O. 60401 Katutura, Windhoek Namibia

T. +264 61 224 730/22 6377

E: exec.secretary@amicaall.org.na W: www.amicaall.org

FHI

Family Health International has fact sheets in English, French Spanish and Arabic on HIV/AIDS and FHI programmes.

www.fhi.org/en/hivaids

Family Health International 2101 Wilson Boulevard, Suite 700
Arlington, VA 22201 USA T: 1.703.516.9779

IFAD

The International Fund for Agricultural Development

Publications relevant to HIV/AIDS mitigating strategies include those from IFAD's gender strengthening programme in East and Southern Africa.

Via del Serafico, 107

00142 Rome, Italy

T: 39-0654591, F: +39-065043463

E: ifad@ifad.org , W: www.ifad.org

UNIFEM

United Nations Development Fund for Women, provides access to a wide variety of materials on the gender dimension of the HIV/AIDS epidemic through its Web Portal: www.genderandaids.org

IFAP

International Federation of Agricultural Producers

Provides information to stimulate cooperation between agricultural producers organisations.

60, rue Saint-Lazare

75009 Paris, France

T: 33 1 45 26 05 53 - F: 33 1 48 74 72 12

E: ifap@ifap.org, W: www.ifap.org

FANTA

The Food and Nutrition Technical Assistance Project

Provides technical assistance and publications related to nutrition and HIV/Aids.

Academy for Educational Development

1825 Connecticut Avenue., NW

Washington, DC 20009-5721

T: (202) 884-8000, F: (202) 884-8432

E: fanta@aed.org, W: www.fantaproject.org

ILEIA

Centre for Information on Low External Input and Sustainable Agriculture. Promotes exchange of information for small scale farmers in the South through identifying promising technologies. Information about these technologies is exchanged mainly through the LEISA Magazine. All articles accessible on-line.

Contact: ILEIA, Zuidsingel 16, 3811 HA Amersfoort, The Netherlands

T: +31(0)33-4673870, F: +31(0)33-4632410

E: ileia@ileia.nl, W: www.leisa.info

Abbreviations

AWLAE	African Women Leaders Agriculture and Environment programme
CRS	Catholic Relief Services
FAO	Food and Agriculture Organisation
FANTA	Food and Nutrition Technical Assistance
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
PLWHA	Persons living with HIV/AIDS
SEAGA	Socio-Economic and Gender Analysis
ICRAF	World Agroforestry Centre
ICRISAT	International Crop Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
IFAP	International Federation of Agricultural Producers
IRPC	International Rural Poultry Centre
KIT	Royal Tropical Institute, Amsterdam
NAADS	National Agricultural Advisory Service
NGO	Non Governmental Organisation
ODI	Overseas Development Institute
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UN-ECA	United Nations Economic Commission for Africa
UNIFEM	United Nations Development Fund for Women
WHO	World Health Organisation
WUR	Wageningen University and Research Centre

Glossary

Access and Control Profile	Methodology for itemizing the resources communities use and identifying the community members who have access to and decision making power over these resources.
Activity Profile	Can be used to gain a deeper insight into activities of community members.
Anti-retroviral drugs	Drugs used in the treatment of HIV/AIDS that slow down the development of the virus within the human body.
Community Garden	Gardens owned and managed by the community or groups within the community such as women.
Conservation Tillage	Crops are grown with minimal cultivation of the soil. Stubble or plant residues remain on top of the soil rather than being ploughed in. An effective and proven labour saving agricultural technique.
4 – Square Analysis	A method for collecting and analyzing data in a participative way.
Gender Analysis	Method for documenting the status, role and activities of women in a community
IS&L	Internal Savings & Lending Scheme. One of the several ways in which communities can build up their financial resources.

JFFLS	Junior Farmer Field and Life Schools. Practical, hands on activities to transfer agricultural skills and information on issues such as HIV/AIDS to young people.
Opportunist infections	HIV/AIDS weakens the immune system and makes those affected by the disease very vulnerable to other types of infection.
Seasonal Calendar	Method for documenting agricultural and rural household activities.
Seed Fairs	Rural fairs where seed and other types of germ plasma are exchanged in a controlled way.