

POINT OF VIEW

Agriculture and HIV/AIDS

Jacques du Guerny



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Agriculture and HIV/AIDS

By Jacques du Guerny¹

Background

When one searches the literature, one finds titles in which HIV/AIDS comes before agriculture. This can be explained by the fact that the objective was to demonstrate to a reluctant agriculture sector that HIV/AIDS was having an impact on agriculture production, food security and rural development². It is now time to go beyond this kind of demonstration and explore possible ways in which the agricultural sector can contribute to preventing and mitigating the HIV/AIDS epidemics. If the agriculture sector has been reluctant it is due to the fact that the National AIDS Commissions in their effort to bring together a multi-sector response to HIV/AIDS do not always include the Ministry of Agriculture, as they do not understand what its role could be. On the other hand, the Ministries of Agriculture generally continue to consider HIV/AIDS as a health issue and do not perceive that the spread of the epidemics in rural populations is linked to their vulnerability resulting in part from a failure in development. It is only recently that some MOAs have considered their role in relation to HIV/AIDS and they still see their involvement as implying additional tasks without additional resources. Perhaps, more importantly, they do not want to become second-rate health agents to compensate for the insufficient outreach to rural populations of the health system, especially at a time when they are under stress due to the impact of HIV/AIDS.

Consequently, this paper will place the discussion within a development framework and attempt to discuss issues in which agriculture has a comparative advantage in contributing to HIV/AIDS prevention and mitigation. One has to understand that this is largely uncharted territory because the work has hardly started. Only a handful of people have worked in the area of HIV and Development and few projects have been funded or carried out. On the other hand, hundreds of millions of dollars have been poured into attempts at changing high risk behaviour, at providing information, education and communication (IEC) to youth, to commercial sex workers, to drug addicts, etc. Thousands of people have worked and are working in health prevention, treatment and care. Despite these efforts over the years and a few “success” stories, the epidemics have continued to spread. It is therefore high time to step back and examine what can be contributed by different sectors in their respective areas of expertise.

One word of caution, activities in agriculture, even when rethought, redesigned, reprioritised, will not provide a miracle cure, will not, by themselves, constitute a panacea. As has been mentioned, HIV/AIDS requires a *multi-sector* approach and there is only so much, which can be expected from the agriculture sector. However, as over two thirds of the population is rural in most Sub-Saharan countries, agriculture has clearly a very special potential role. Also, if agriculture and other sectors each contribute what they can in their field of competence, all these contributions, taken together, could have a significant impact on the future course of the epidemics³.

¹ Former Chief of the FAO Population Programme Service and FAO Focal Point on HIV/AIDS.

² See Annex 1 for some selected references.

³ The plural is used for epidemics because there are many different HIV/AIDS epidemics, each with its own dynamics: some (e.g. epidemics in prisons or of men who have sex with men) are clearly outside of the field of

Some reminders:

The most recent Fact sheet prepared by FAO for World AIDS Day in December 2000 is entitled: “AIDS – a threat to rural Africa”. You will note that the emphasis is still on AIDS rather than on agriculture or rural populations.

Here is an extract:

“AIDS is mostly a rural issue

- More than two thirds of the population of the 25 most-affected African countries live in rural areas.
- Information and health services are less available in rural areas than in the cities. Rural people are therefore less likely to know how to protect themselves from HIV and, if they fall ill, less likely to get care.
- Costs of HIV/AIDS are largely borne by rural communities as HIV-infected urban dwellers of rural origin often return to their communities when they fall ill.
- HIV/AIDS disproportionately affects the economic sectors such as agriculture, transportation and mining that have large numbers of mobile or migratory workers.”

Despite the overwhelming weight of rural populations in most of the African countries, AIDS strategies and programmes, whether international or national have tended to be blind to this simple population spatial distribution issue and to its implications, in particular that focusing mostly on urban populations cannot resolve the problem. That in year 2000, FAO still needs to highlight what should be self evident issues raises troubling questions. One explanation could be that when one is locked into a health framework, the socio-economic and demographic factors, which also fuel the epidemics, tend to become secondary. The example provided here at the international level is also true of many national institutions. Already in November 1989, one of the consensus opinions emerging from leading epidemiologists and modellers was that rural populations would not be much affected. How could such an opinion emerge? Perhaps due to the fact that the little data available showed that prevalence rates in rural areas were generally low (they did not host the usual high risk groups: CSWs or drug addicts) and as the focus was on risk behaviour change or reduction, issues such as rural-urban links, mobility and migration which did not fit easily into health approaches were simply not considered. For example, it was not until the 1997 meeting of the Inter Agency Advisory Group to UNAIDS (IAAG) that the issue of migration could be placed on the agenda. Furthermore, institutions respond at their pace the world over while HIV speeds along. The problem is not limited to convincing the agricultural sector to become active, but ensuring that it does not get bogged down so that it moves swiftly and effectively.

The first attempts to consider HIV/AIDS and Development as a macro-economic question led to disappointing results⁴. Impacts appeared only when one considered specific sectors such as agriculture, but again, the studies were mostly limited to showing the wide variety of impacts

agriculture. Others are fuelled by rural-urban links or related to issues such as land tenure and should be of concern to the agriculture sector.

⁴ The World Bank has pointed out that evidence suggested that it was particularly difficult to assess the macro-economic impact of HIV/AIDS since many other factors affect economic performance. Moreover, economies tend to react more dramatically to economic restructuring than to long, slow corrosions as those wrought by AIDS. (Adapted from UNAIDS epidemic update: December 2000).

Ironically, tradeoffs occur which led a Ministry of Agriculture to note that the impact of HIV/AIDS on its work was mitigated because it coincided with its efforts to downsize. From: Addressing the Impact of HIV/AIDS on Ministries of Agriculture and their Work. FAO/UNAIDS, forthcoming.

and their intensity (cropping patterns, yields, nutrition, or on specific populations such as herdsmen, fisher folk, etc.), not touching on questions such as the effects of changes in prices of commodities (tea, cocoa, bananas...), land tenure and rights of women and children⁵. One entirely new issue for agriculture is to consider the implications of the projected dwindling size of the agricultural labour force in some developing countries, when the concern until now was for agriculture to keep up with population growth. Although FAO studies were quite widely distributed, the author knows of no Ministry of Agriculture, National AIDS Programme or even UN AIDS Theme Group, which has incorporated the results.... One has to recognise and meet the challenge: even if agriculture and HIV/AIDS is not the most popular topic in HIV/AIDS, it could make a strategic contribution. Furthermore, it would be unrealistic to think that the present HIV/AIDS policies and programmes can cover the needs of rural populations; the agriculture sector has therefore a potentially important role to play and responsibility to assume in its field of competence. In order for this to happen, a careful analysis of some of the processes at play is necessary.

A simple model of points of intervention in HIV/AIDS

Figure 1. The sequence of points of intervention has been represented in a simple manner.

1. Factors or Events	2. Impact on	3. Impacts on Vulnerabilities of Systems	4. Impact on Vulnerabilities of Individuals	5. Impacts on Risk Behaviour	6. Responses	7. Level of Response
Agricultural Policies and Programmes, Natural events (drought, flood) Socio-economic, Political, etc	Farming System	+++ ++ 0	Increases Risk Or	Infection	Care Mitigation	Individual Family Community
	Farm-Household System	-- ---	Decreases Risk	(no infection)		

Adapted from: *New Challenges and Opportunities? Communication for HIV and Development*. Jacques du Guerny, Lee-Nah Hsu, UNDP South-East Asia and HIV and Development Project, February 2001.

This sequence corresponds to two different, but complementary frameworks: i) the health framework which is the one under which all present HIV/AIDS strategies and programmes are built and is covered under panels 4 to 7. When officials or experts discuss HIV/AIDS they nearly always discuss within this framework. This is why, we will start out by discussing these panels in order to make the distinction clear with ii) the development framework, in this case focusing on agriculture and this corresponds to panels 1 to 3. These panels have been placed before the health ones because they focus on the *root causes* of the vulnerabilities, the consequences of which the health framework then picks up in panel 4. It should be noted that often, when multi-sector efforts are recommended, it is taken for granted that the contribution should fit within the health framework (panels 4 to 7), but this, in the author's view, would be a strategic mistake as the comparative advantage of agriculture in the area of HIV/AIDS is precisely in promoting agriculture and rural development in such a way that it also has a primary prevention impact.

⁵ These are issues which deserve in depth treatment which is beyond the scope of this paper. Just to give an idea, trade barriers to the export of commodities from developing countries can depress incomes of farmers; fluctuations in the prices of commodities sold by farmers can create crisis situations in the farm-households: both increase vulnerabilities of the farm-household and its members. Land tenure and the rights of orphans and widows are touched upon towards the end of the paper.

Therefore, after briefly presenting the health framework (panels 4 to 7), the rest of the paper is devoted to discussing the development framework (panels 1 to 3).

Let's focus first on the panels ranging from 4 to 7. These four panels correspond to the present scope of HIV/AIDS strategies and programmes and fall largely under the field of health. Panel 4 is the target of prevention efforts. Information campaigns using modern media or traditional ones explain what HIV/AIDS is, the modes of transmission, the modes of prevention, the need to respect human rights, etc. Major efforts have centred on obtaining the support of authorities of various types: political, religious, workers unions. As the epidemic in Africa is considered largely of heterosexual origin, efforts have concentrated on condom promotion: information on condoms, making the word acceptable and a topic of discussion without shame or embarrassment. All these efforts aim at reducing high-risk behaviour through decreasing individual vulnerabilities. The well-known Thai programme of 100% condom can illustrate this: the individual sex worker, even when fully aware of the need to insist on condom use, is vulnerable because of the superior negotiating power of the client who might not want to use one; the CSW is also fearful of losing her job if the clients complain of her insistence. By bringing together the brothel owners, the police and all concerned to insist on and facilitate the 100% condom use, the sex worker is no more vulnerable to the previous pressures by the clients. Panel 5 is the direct consequence of what happens in Panel 4. If the vulnerabilities have been decreased, one can hope there will be no infection because the risky behaviour will have been eliminated or significantly reduced. However, if the vulnerabilities have not been decreased then the individuals practice high-risk behaviour with the corresponding risk of infection. This is the typical case of the schoolgirl with a "sugar daddy": the girl is dependent economically, has no alternative source of income and therefore she is not able to propose, even less insist on safer sex.

The important point to stress here is that panels 4 and 5 focus on the *immediate* causes of vulnerability and risk behaviour. The objectives of efforts of strategies and programmes are to modify these, for example, to empower the CSW so that she can insist with the client that a condom be used. Such strategies are concerned with the sex worker, once she is doing her job, but not with the reasons why the woman has become a sex worker in the first place. Why do all these farm girls leave the land and end as CSWs? It has been observed that girls leave the land in droves due to drought, bad crops, drops in prices of the products of their parents' farms, etc. Does this have anything to do with less immediate forms of vulnerability which we could call perhaps "causal or root vulnerabilities"? Can agricultural policies, programmes and activities influence these types of vulnerabilities? But before discussing this further lets rapidly finish the brief review of the "health" related panels.

One important issue needs to be identified. It is often argued that the role of other sectors is to contribute to vulnerability and risk reduction by joining forces with the health efforts. For agriculture, this means concretely that extension workers are to be trained in HIV/AIDS information, education and communication (IEC) or condom promotion, in order to assist in rural areas where the health system has no or only insufficient outreach. The idea is not new and has been tried out for many years in family planning: IEC messages were even adapted for both rural audiences and extension workers, for example, spacing children is like spacing rice plants so they grow better. The results were not up to expectations. The plus and minus factors of such a strategy need to be identified and weighed carefully. Of course, if the health system cannot reach out, the choice is between nothing and extension workers helping at least inform rural populations and referring them to the health services. But what are some of the minus factors? Extension workers generally carry out such superimposed functions reluctantly and with little impact; more importantly extension workers are themselves decimated by

HIV/AIDS, their coverage of rural areas tends to shrink and they have to take over tasks from sick or dead colleagues, all this precisely at a time when they have to learn to deal with changing situations (changes and declines in production, in farm-household income and food security) and new clienteles (elderly or orphans managing the farm-household). The tradeoffs need to be considered before rushing headlong with what appears as a generous idea. Millions of dollars have been considered for allocation of resources for the new roles of extension workers, but is this the best way to spend them? Perhaps, they would be better employed in helping agricultural extension workers adapt to the changes in agriculture, which are required by the HIV/AIDS impact, as well as assisting the farm-households in their new situations.

Panels 6 and 7 focus on the response to a HIV infection and its evolution to AIDS and to the level of response: the infected or sick individual, but also the support from and to the family and community. Besides the immediate prevention efforts of panel 4, enormous efforts are invested into these aspects. These efforts, carried out by public services, NGOs, private sector tend to be located in urban or easily accessible rural areas. Villages off main roads or a bit remote are generally left to their own resources. It is true that traditional solidarities function in such cases, but even they have breaking points. One word in Panel 5 has not been commented upon yet and that is “mitigation”. Mitigation of the impact of HIV or AIDS is clear when one talks of health related activities: the organisation of psychological, social or religious support groups, looking after orphans, etc. all contribute to mitigating the impact. However, can other sectors contribute to mitigating the impact of HIV/AIDS? What could be the possible role of agriculture? To the knowledge of the author, this has never been really looked into and certainly deserves to be explored.

To sum up, Panels 4 to 7 represent the scope of the current health based HIV/AIDS strategies and programmes. Development sectors can only play a minor role in this framework by helping health take on some of its functions, but then with a cost to the field of agriculture itself. When a development sector such as agriculture takes on such a role, it is often considered that it is playing a development role, but, as discussed, this is not the case, on the contrary, it is the development sector which abdicates its role to take on a health one. We are now going to discuss the first three panels of Figure 1. It is within these three panels, which correspond to a development approach to HIV/AIDS, that the agriculture sector can identify its various possibilities for intervention.

Panel 1. presents some of the development factors (e.g. agricultural policies) or events (e.g. natural disasters, political events, conflicts or wars) which can have direct impacts on the situation and performance of the two key systems agriculture is concerned about as far as HIV/AIDS is concerned: the farming system and the farm-household system of Panel 2. These factors or events can work independently on the two systems. For example, a drought might not seriously impact on a particular farm system, but weaken seriously the poorer farm-households, some of whose members will leave the farm and search for work in towns. Agriculture activities designed to mitigate the immediate impact of the drought (e.g. providing water for the animals so that they survive or do not have to be sold under duress at a low price) can boost the resilience of the poorer farm-households. On a longer-term basis, agriculture experts can explore ways to modify the farm system itself so that it becomes more resilient to drought.

As these examples show, depending on the impact on the systems in Panel 2, the vulnerability of these systems will increase, decrease or not be affected as shown in Panel 3. If the systems cannot absorb the stress, the vulnerability of these systems will increase. The individuals in

Panel 4 will find themselves with few options and therefore susceptible to high-risk behaviour. The first three panels contribute to determining the degree of vulnerability of the individuals as they enter the classic health based model we have seen starting with Panel 4. The focus of the agriculture sector should be, through its development efforts, to increasing the resilience of the systems by working on background factors and causal vulnerabilities in order for individuals to have choices which can enable them to perhaps avoid entering the Panel 4 scenario entirely, or, if that is not possible, to enter it under better conditions than they otherwise would have if there had not been the agricultural interventions.

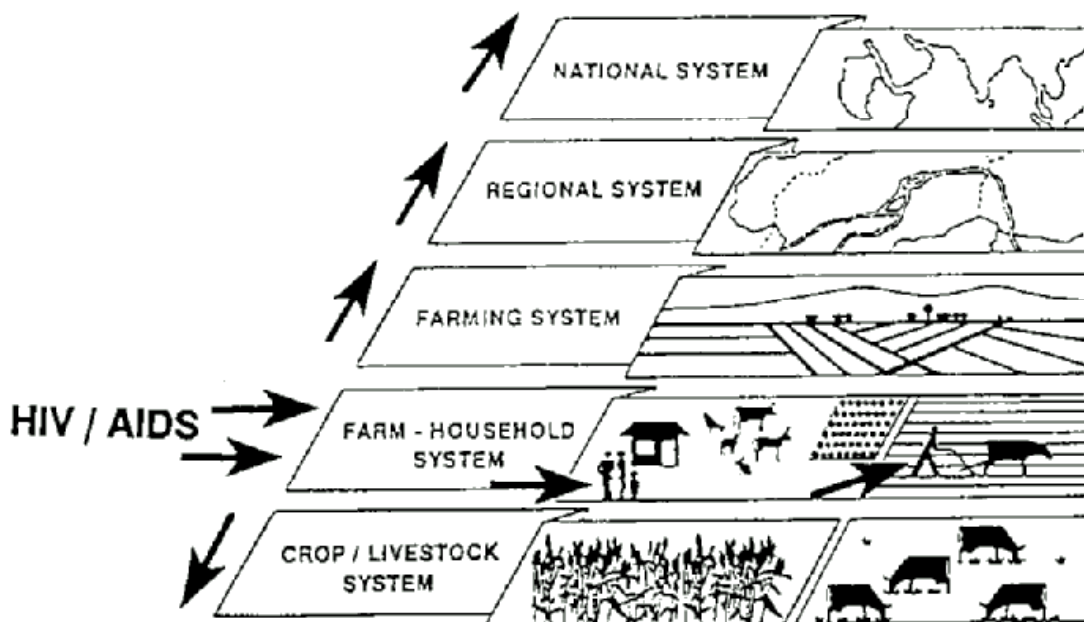
To illustrate with a well-known story, one can recall the parable of the fish. If you find a hungry group, you can help by giving them fish. You can also help further by giving fishing nets so the people can fish and feed themselves. However, if you want to contribute to the group's longer-term food security, you teach them to make and repair the fishing nets and the appropriate fishing techniques. This last approach is the development one and is easy to place in Panel 1.

The crucial role of the Farm and the Farm-household systems

Looking at agriculture from a systems perspective has the main advantage that one can identify the dynamics, the possible points for intervention and the impacts of such interventions throughout the system. The point is not to elaborate highly complex systems, but to dispose of operational tools.

FAO, in its 1995 publication on AIDS⁶ attempted to place it in a systems' approach and distinguished between several levels embedded in one another like Russian dolls as shown in Figure 2.

Figure 2. AIDS in the systems' hierarchy



⁶ The Effects of HIV/AIDS on Farming Systems in Eastern Africa. T. Barnett, M. Haslwimmer, FAO, Rome, 1995.

As mentioned before, the national and regional levels are for generic measures such as developing rural infrastructure, rural credit or changes in land tenure. We would like to focus here on the more operational levels where concrete action can be taken at the village level: i) the Farm system; ii) the Farm-household system.

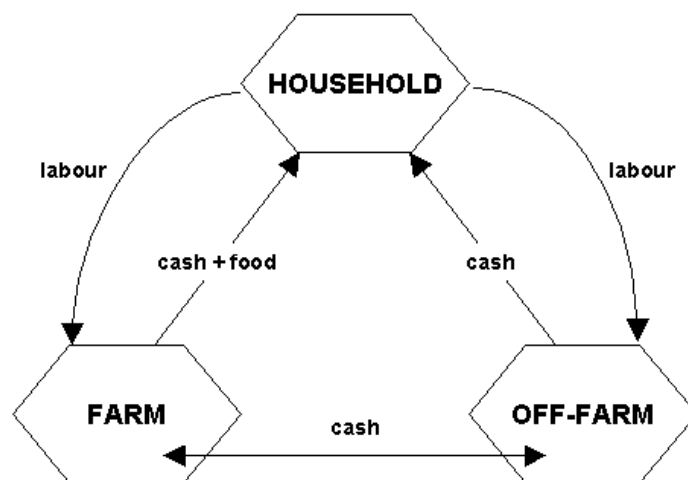
The Farm System Level

Farm systems can be identified through a number of variables, e.g. location, climate, types of crop/livestock, labour. Some systems are intrinsically more resilient than others. A system with ample rain, well distributed through the year, with a fertile soil and a wide range of crops is much less sensitive to the loss of labour than a system with insufficient rain, poor soils and few crops. There exist many kinds of farm systems, e.g. maize/legumes/pulses; livestock/small holder paddy production/estate production; horticulture/cassava or finger millet/cassava (shifting cultivation). It is easy for local experts to characterise the local farm system. As shown by impact studies of HIV/AIDS, cash crops such as coffee, Irish potatoes or bananas are generally labour intensive and therefore cash crops are the first victims of HIV/AIDS labour shortages as the labour available is saved for subsistence crops. By losing its main income generating sources, the farm system regresses with potentially serious consequences, such as loss of income required to pay for school fees or to supplement a diet based on cassava or sweet potatoes. HIV/AIDS thus forces the farm system to change in order to cope with the impacts. This farm system level could be a major level for operational and very concrete interventions to boost its resilience when threatened by HIV/AIDS. Such interventions require detailed knowledge and the cooperation of local field experts and farmers. It is only with their help and involvement that one can identify precisely the factors to intervene on and tailor appropriate interventions, which can effectively boost the local farm system. The lesson learnt is that strategies need to be tailored to each individual farm system in a country and, if interventions are not possible in all of them, priorities are needed.

The Farm-household System Level

Figure 3. provides a simple presentation of the farm-household system. It is adapted from the previously referred to FAO 1995 publication.

Figure 3. A farm-household system



Source: *The effects of HIV/AIDS on farming systems in Eastern Africa*, FAO. 1995.

In a pure subsistence model, one would find only the farm and household as components. What is interesting to note is that this model is disappearing and is being replaced by a model with three components: the off-farm component is now integrated. This means that the farm-household is more and more dependent on off-farm sources of income whether it is cash to buy inputs into the farm (seed, fertilizers, pesticides or equipment), improve the nutrition of the household, pay for school fees or medical costs. What does off-farm sources of income entail: sending labour to the city, for example for construction, to mines, to work on plantations or to join fishing crews. This labour searches for jobs with very few marketable skills and finds itself at the bottom of the totem pole. Both males and females are therefore very vulnerable to exploitation and...to HIV infection. The structural link between the farm-household and the outside world established through the movement of household members creates the channel for the flow of both cash and HIV: it is the source of survival of the household through the needed cash and of the household destruction if HIV enters it.

Most of the studies carried out on the impact of HIV/AIDS have focused on the farm-household level. The list of impacts is impressive, ranging from abandoning the cultivation of remote fields or cash crops, to the sale of assets to cover medical and funeral expenses. A typical mechanism through which the HIV impact occurs is that of the migrant worker who falls ill while away, uses up the savings in medical treatment and then returns to the farm-household to be cared for and to die. By attacking the able-bodied and active youngsters and adults, HIV/AIDS undermines the farm-household through the direct loss of labour on the farm and of time available for both farm and household tasks: in order to cope, the farm-household has to reallocate both available labour and the time of the household members. Another way in which HIV/AIDS undermines the farm-household is through having to support the unexpected costs of care for the sick person (and loss of remittances) which can lead to the sale of assets such as draught animals or even land, in conditions in which it is not possible to fetch a good price. In this connection, there is the interesting observation that all farm-households are not equal in the face of HIV/AIDS: the poorer ones, especially those with small land holdings are much less able to cope with the effects of HIV/AIDS than wealthier households who can hire casual labour and are better able to absorb shocks. An interesting but unexplored question is that of who are the people who gain from the sales of assets by farm-households attempting to cope with the long drawn out effects of HIV/AIDS? In view of the number of occurrences, one can imagine that this could eventually lead to significant changes in the socio-economic structures of villages, redistribution of wealth (with increasing inequalities) and of land? Finally, HIV/AIDS insidiously destroys the base of development through: i) compelling the parents in the household to pull out of school their children, thus mortgaging their future and making them more vulnerable to HIV; ii) breaking the transmission of knowledge between the members of the household. This last point is important: the farm-household represents a complex series of tasks requiring specific knowledge: ploughing, selecting the right seeds, tasks which are distributed according to the cultural division of labour. The sickness and death of a household member leads to the disappearance of this member's knowledge before it could be passed on to another member. This results in less effective agricultural practices by the remaining members of the household.

An example of a project operating at both the farm system and farm-household levels

An on-going project, funded by UNDP South East Asia HIV and Development Project and executed by FAO in Cambodia, aims at mobilising and empowering rural communities to reduce HIV vulnerability.

In a rice farming system, farmers learn experimentally in their fields to maintain a proper ecological balance so that they do not need pesticides or fertilisers while improving their yields and income⁷. This learning process of a strategy of rice production lasts one growing season, i.e. 16 weeks and takes place in the Farmers' Field School, i.e. the rice field itself. The farmers whose strong point is their intimate knowledge of their fields learn to see their field as an ecosystem in which one has to conserve and encourage the natural biological diversity. They conduct an Agro-Ecosystem Analysis (AESA) of the field and then conduct field experiments, work together to solve problems on the basis of their observations. The farmers' expertise and experience form the basis for further human resource development.

The original contribution of the project was to go a step further than the traditional IPM approach by introducing a similar methodology but applied to the farmer's household and living conditions. In this case, the farmers go through a Farmer Life School (FLS) where their previous understanding of the web of life in their crop is transposed to their own community. This leads them to observe and analyse the inter-related elements of their lives through a Human Ecosystem Analysis (HESA) directly inspired from the AESA. This enables them to identify threats to their lives and search for root causes of their vulnerabilities. For example, they will identify that incautious borrowing can lead to a debt burden at such a level that the farmer is faced with the choice of selling land (which is a last resort) or sending a daughter to work in a karaoke or beer bar with a high risk of HIV infection. Through this kind of analysis, the farmers are able to work out causal chains, options in decision-making and their long-term consequences when implemented. In such an approach, HIV/AIDS comes in quite naturally as one threat among a number of others. The objective of the farmers, after such an analysis, is to think through the long-term implications of their options, to select the best one and also find out ways to reduce their vulnerabilities, including to HIV/AIDS. One will note that this approach leads to the empowerment of the farmers: they analyse their situation, make their own decisions, implement them and face the consequences (good or bad).

Some might be sceptical at the capacity of farmers at mastering the analytical tools and understanding complex systems. The author has observed a number of these HESA in which the farmers discussed case studies in their villages (with the participation of the case study in person) and it is really amazing to witness how they unravel the elements and dynamics of household situations, identifying danger areas, weaknesses as well as the strong points on which the household can build a strategy.

As shown in Figure 4, by working on both the farm and farm-household systems levels, one can promote agriculture and rural development while at the same time increasing resilience against HIV/AIDS as the systems move from higher to lower states of vulnerability. In view of the links between the systems, it should also be possible to create positive synergies.

Figure 4. Assessing vulnerability to HIV/AIDS

		Farming system vulnerability		
		Low	Medium	High
Farm	Low			
Household	Medium			
System	High			
Vulnerability				

⁷ For a presentation of the FAO Integrated Pest Management Programme (IPM), one can consult: www.communityipm.org

Flagging the difficult and sensitive cases of AIDS orphans and widows

Can or should agriculture play a role on these sensitive issues, which have generally been dealt with from a human rights perspective? When one observes in these specific cases the limited success of the human rights approach, one wonders if the problems have been properly identified and analysed. The remarks presented here are very tentative and have as objective to point out that the problem, which perhaps needs to be tackled, is not the question of human rights or of women's rights, but the problems created by customary land tenure. Land tenure is an extremely complex and sensitive issue and one cannot generalise from specific cases, but still it seems to be an area, which could be usefully looked into. For example, in parts of West Africa, the ownership of land lies with the dead ancestors who put it at the disposal of a man to meet his needs and those of his family. When the man dies, the land reverts back to the ancestors which can result in the widow(s) and orphans being suddenly dispossessed. What is often overlooked is the fact that as the husband did not own the land, it cannot be inherited. In such a case, can ways be found for the customary land tenure to accommodate the interests of the widows and orphans? As much vulnerability is associated with the loss of land or of rights to land, the agriculture sector needs to address these issues.

Another crucial issue is that HIV/AIDS challenges the present formal education given in schools for rural children who need to learn agricultural survival and managerial skills in case their parents die, i.e. producing their own food. All children should be provided with such skills as it is not known in advance which ones will become AIDS orphans. As to the children who are already AIDS orphans, in many cases they will have dropped out of school: in order to remain on the land, they need support and protection from extension workers and local institutions.

In order for this kind of change to be introduced in schools, agriculture and education authorities need to get together to work out joint strategies.

Conclusions and recommendations

In view of the spread of HIV/AIDS to rural populations, the dominant numerical importance of the latter in the total population and their linkages to urban populations, the future of national HIV/AIDS epidemics will be to a large extent determined by the success or failure of rural development and prevention and mitigation policies of HIV/AIDS.

In view of the development dimensions of the HIV/AIDS epidemics, the agriculture sector, as the basis for the livelihood of over two thirds of the total population can be expected to play a major role in determining the future course of the HIV/AIDS epidemics. In such a context, agricultural policies and programmes have a crucial responsibility in reducing the conditions, which create vulnerabilities in rural populations leading to higher risks of HIV infection. *Agriculture can be developed in such a way to increase the resilience of rural populations and contribute significantly to prevention.* It should be recognised that in rural based countries, it is unlikely the HIV/AIDS epidemics can be controlled without the effective support of agriculture.

The area of Agriculture and HIV/AIDS is an area still at its initial stage of development: an organised effort could pioneer new and effective strategies. However, it should also be

recognised that while the involvement of agriculture is essential, the issues are complex and require tailored interventions, suited to agro-ecological zones, rural institutions and the HIV epidemic.

The agriculture sector can play a role in both high and low prevalence countries and strategies need to be adapted accordingly. In the light of these considerations it is recommended to the agriculture sector and inter-sectoral assistance to recognize the fundamental importance of HIV/AIDS to agriculture, food security, the survival of rural populations and the future national levels and impacts of the HIV/AIDS epidemics; and to recognize that besides the current health based strategies in combating HIV/AIDS, development based ones and in particular agriculture ones can play an innovative and essential role in controlling the epidemics.

Recommendations for actions :

Actions should be taken at two levels: Ministry of agriculture (MOA) including rural institutions and at the field level.

Action at MOA and rural institutions level:

- In regard of the present and projected impacts of HIV/AIDS on agriculture and rural populations MOA and other rural institutions need to fully take the measures of these impacts. Advocacy is necessary for the MOA and rural institutions to ensure their commitment for action.
- The present agriculture policies and programmes should examine if they need to be revised in order to take into account the impacts.
- Revised strategies and priorities should prepare to maintain and increase agriculture production and the food security of rural populations. The focus can be on agricultural issues, such as changes in cropping patterns, introduction of new crops, increasing the knowledge base, improving rural infrastructure and services (e.g. through partnerships with other sectors, including health) as well as on youth and their organizations, also in cooperation with other sectors such as education.
- Yearly assessments should be undertaken of the present and projected impacts on MOA and rural institutions capacities to deliver programmes and services, their human, financial and other resources.
- Strategies to mitigate impacts on their capacities and resources should be prepared and implemented to build their future capacities. A first activity should focus on examining the changes in age and sex structure of the staff with a view to take necessary action at the level of recruitment and agriculture colleges and universities. Partnerships between public and private institutions for prevention activities for all categories of staff, including extension workers should be promoted.

Action at field level:

- Priority farm systems should be selected for interventions tailored to their characteristics and vulnerabilities with the objective to increase their general level of resilience through development, higher and more stable incomes of farm-households. The systems should be based on the distribution of population, the prevalence levels and the agricultural priorities.
- All activities should take into consideration present gender and age divisions of labour and consider opportunities to promote changes in line with human rights.
- Survival strategies for rural children, orphans and widows should be prepared in partnership with relevant sectors (e.g. education) in which they are taught appropriate agricultural and farm management skills. They will also need to be informed on their

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rights and ways in which to ensure their protection. Field staff will need to be sensitised and trained accordingly. Where possible, traditional institutions such as the council of elders will need to be mobilized to support these activities.

Annex 1. Selected References

The selection presented focuses mostly on publications available in electronic form on Internet and in English language.

A first section provides a few titles or names of authors who have discussed HIV/AIDS and Development;

A second section provides a few titles or names of authors who have worked on HIV/AIDS and Agriculture;

A third section provides a selection of FAO papers on the subject.

As mentioned, rather than providing lists of papers, names of authors can be looked up on the Internet to access directly a number of their papers.

HIV/AIDS and Development

A variety of views have been elaborated on and discussed. They can be found in:

Alan Whiteside and Tony Barnett: <http://www.und.ac.za/und/heard>

Desmond Cohen in UNDP, for example, *Poverty and HIV/AIDS in Sub-Saharan Africa*, Issues Paper 27; <http://www.undp.org/hiv/publications/index.htm>

The UNDP SEA HIV and Development Project has a number of thought provoking papers on linkages between mobility/migration and HIV/AIDS and Development: <http://www.hiv-development.org>;

The World Bank has a number of papers. One important publication (can be downloaded chapter by chapter from the International AIDS and Economics Network web site: <http://www.iaen.org>):

Confronting AIDS: public priorities in a global epidemic. By Martha Ainsworth and Mead Over. A World Bank Policy Research Report, 1997.

UNAIDS has a number of publications and CD-ROMs with information on HIV and development: <http://www.unaids.org/publications/documents/index.html>. Especially the “review of household and community responses to the HIV/AIDS epidemic in the rural areas of sub-Saharan Africa” might be of interest.

HIV/AIDS and Agriculture

In 1998, SAFAIDS organised in Harare a conference on AIDS and agriculture for Eastern and Southern Africa. *AIDS and African Smallholder Agriculture* by Gladys Mutangadura, Helen Jackson & Duduzile Mukurazita (Eds).

Smallholder agriculture is a vital sector for rural households and national economies in the region. This publication, based on a regional conference, discusses the threat posed to rural development by the rapid spread of HIV/AIDS and how this makes it crucial for government, NGOs, local communities and other development partners to respond in a timely and effective manner.

A similar conference was organised in 1999 for West Africa.

FAO papers on the subject

The list provided below has been extracted from: *HIV/AIDS and agriculture: an FAO perspective*. The list can be found on www.fao.org and has been updated for this list.

Selected FAO documents on HIV/AIDS, published since 1994

What has AIDS to do with agriculture? FAO, Rome, 1994.
The effects of HIV/AIDS on farming systems in Eastern Africa, FAO, Rome, 1995.
Report of a Workshop on the Relevance of HIV/AIDS to the Work of FAO, by Günter Hemrich, Rome, July 1995.
AIDS: the future of the pandemic, statement by Jonathan M. Mann, on the occasion of World AIDS Day, FAO, Rome, December 1995.
The impact of HIV/AIDS on rural households/communities and the need for multisectoral prevention and mitigation strategies to combat the epidemic in rural areas (with special emphasis on Africa), by Erich Baier, January 1997 (in English and French).
Impact du VIH/SIDA sur les systèmes d'exploitations agricoles en Afrique de l'Ouest, FAO, Rome, November 1997.*
Les populations rurales d'Afrique face au SIDA: un défi au développement (Synthèse des travaux de la FAO sur le SIDA), FAO, Rome, December 1997.
The rural people of Africa confronted with AIDS: a challenge to development (Summary of FAO studies on AIDS) FAO, Rome, December 1997.
The implications of HIV/AIDS for rural development policy and programming: focus on sub-Saharan Africa, by D. Topouzis, Consultant, FAO, Rome, June 1998 (with same title also published as Study Paper No. 6 by the HIV and Development Programme, UNDP, New York, 1998).
Rural children living in farm systems affected by HIV/AIDS: some issues for the rights of the child on the basis of FAO HIV/AIDS studies in Africa, by Jacques du Guerny. Paper presented at the UNHCHR Committee on the Rights of the Child: day of discussion on "Children living in a world with AIDS", Geneva, 5 October 1998* (also under publication by Harvard).
HIV/AIDS and the commercial agricultural sector of Kenya - impact, vulnerability, susceptibility and coping strategies, by Gabriel Rugalema with Silke Weigang and James Mbwika, FAO/UNDP, 1999.*
AIDS and agriculture: can agricultural policy make a difference?, by Jacques du Guerny, in *Food, Nutrition and Agriculture*, No. 25, 1999, FAO, Rome.
HIV/AIDS and nutrition: helping families and communities to cope, by Florence Egal and Arine Valstar, in *Food, Nutrition and Agriculture*, No. 25, 1999, FAO, Rome.
HIV/AIDS in Namibia: the impact on the livestock sector, by Ida-Eline Engh, Libor Stloukal and Jacques du Guerny, FAO, Rome, February 2000.*
Sustainable agricultural/rural development and vulnerability to HIV/AIDS, by Daphne Topouzis and Jacques du Guerny, FAO/UNAIDS joint publication, December 1999.
AIDS – a threat to rural Africa, FAO Fact Sheet, December 2000.
Addressing the Impact of HIV/AIDS on Ministries of Agriculture and their Work: Key Issues and Responses, by Daphne Topouzis and Jacques du Guerny, FAO/UNAIDS Joint Publication, forthcoming.

*Available on the Internet at the following address: <http://www.undp.org/popin/fao/faohome.htm>
A limited number of print publications are also available

NB: Some remarks

The 1995 *The effects of HIV/AIDS on farming systems in Eastern Africa* is a synthesis of the previous work done by FAO to show the various kinds of impacts on agriculture. It also introduces a systems approach and a first attempt at discussing vulnerabilities.

FAO then showed that HIV/AIDS had impacts: i) not just on smallholder farmers, but also on herders, commercial agriculture, children; ii) similar effects in both East and West Africa. After documenting these impacts (including on nutrition), FAO then began to shift its emphasis towards institutional responses and possibilities of intervention by the agricultural sector.