

1. INTRODUCTION



Woman husking fonio
near to River Niger (Mali).

The scale of food insecurity and HIV/AIDS impact in Africa

In Sub-Saharan Africa, food insecurity and HIV/AIDS impact represent priority issues for agricultural and rural development. They are interrelated and mutually aggravating phenomena that heavily affect the rural poor. Poverty, social exclusion and wrong development policies and programmes are primary causes of both food insecurity and the scale of HIV/AIDS crisis.

In Sub-Saharan Africa, food insecurity has become chronic and widespread. It is the region with the world's greatest depth of hunger and malnutrition. Food insecurity and malnutrition affect about 200 million people, and over 40% of the population in Central, East and Southern Africa (FAO, 2002). In late 2001, 15 countries in this region were facing "exceptional food emergencies" (FAO/GIEWS, 2001). In more than half of African countries, hunger is even increasing (FAO, 2002). Rural people, which represents about 70% of the total population in most African countries, are typically the most severely affected because of the extent of poverty, vulnerability and exclusion they suffer. Leading causes of food insecurity and malnutrition in Africa comprise poverty, war, global socio-economic inequalities, environmental constraints, faulty national and international policies, persistent exclusion and, most recently, the HIV/AIDS epidemic.

Since the late 20th century, the HIV/AIDS epidemic has virulently expanded and impacted throughout Sub-Saharan Africa, further aggravating poverty and food insecurity. Data currently available illustrates the scale of the epidemic and suggests a severe development impact: Sub-Saharan Africa has over 28 million people living with HIV/AIDS (about 70% of world's HIV-infected population), 80% of affected children world-wide, about 2.5 million dead people annually, an average adult prevalence rate of 9% (exceeding 15% in about 8 countries), and over 12 million orphans left (UNAIDS, 2000; UNAIDS, 2001). Among the poor, the scale of the epidemic causes a severe development crisis because it depletes their labour capacities and economic resources in a cumulative pace. Therefore HIV/AIDS is not just a public health issue, but also a serious development concern.

In rural areas, this epidemic is rapidly disrupting agricultural dynamics, aggravating food insecurity, impoverishing people, and dislocating entire communities (Barnett and Whiteside, 2002; FAO, 1995; FAO, 1997b; FAO, 2001b; Mutangadura *et al.*, 1998). It poses a serious development impact on the rural poor, not only on infected people (those living with, and suffering the disease), but also on a wide range of affected people (such as households with infected people, female-headed households owing to AIDS, AIDS orphans, households fostering AIDS orphans, and to some extent entire communities with high prevalence rates). The expansion and impact of HIV/AIDS intermingle with poverty, food insecurity and uneven development, revealing that the HIV/AIDS crisis is significantly a result of the tremendous inequalities of the globalisation process (Barnett and Whiteside, 2002). In addition, HIV/AIDS is already merging with natural and social crises, such as drought and civil strife, and creating complex humanitarian emergencies (Garí, 2001b).

The HIV/AIDS epidemic arrests the development prospects of the African rural poor and washes away development efforts for the last decades. It thus represents a new wave of poverty, destitution and human despair. Overall, food insecurity and the HIV/AIDS crisis represent a formidable socio-economic, development and emotional burden. They are mutually related problems that are reshaping the borders between poverty and destitution, between life and death, and between hope and despair.

The agricultural sector's response

The depth of food insecurity and the scale of HIV/AIDS crisis demand an urgent redefinition of priorities and strategic actions in the agricultural and rural development agenda in Africa, placing special emphasis on the conditions of poor rural people. The agricultural sector has a major role to play, especially as food insecurity and HIV/AIDS concur and mutually aggravate. A number of studies and research projects conducted during the 1990s have illustrated the severe impact of HIV/AIDS on agriculture and food security in rural Africa (e.g. FAO, 1995; FAO, 1997b; Matanyaire, 1999; Mutangadura *et al.*, 1998; White and Robinson, 2000). Accordingly, development agencies and the international community have become increasingly sentient to these evolving scenarios in the rural world (FAO, 2001b; IFAD, 2001; IFPRI, 2002). In particular, FAO is increasingly addressing HIV/AIDS in relation to food security and rural development.

After more than a decade producing studies and diagnostic analysis on the impact of HIV/AIDS on food security and rural development, FAO is currently developing an agricultural sector strategy to HIV/AIDS (Villarreal, 2002). The three main agencies of the United Nations dealing with food and agriculture are joining efforts to explore and deploy adequate responses in the interface between food security and HIV/AIDS (e.g. FAO, IFAD and WFP hold a specific international technical meeting in Rome in December 2001 on this topic). Guidelines for nutrition among people living with HIV/AIDS and for integrating HIV/AIDS concerns in agricultural emergency interventions have been also produced (FAO/WHO, 2002; Garí, 2001b).

The present paper proposes to contribute to the agricultural sector strategy to HIV/AIDS, specifically exploring grassroots responses that address food insecurity and the HIV/AIDS crisis among the rural poor in an integrated manner (Garí, 2002; Garí and Villarreal, 2002). It focuses on agrobiodiversity and indigenous knowledge because these are grassroots assets with potential to empower the rural poor in their struggle for eradicating food insecurity, improving nutrition, mitigating the HIV/AIDS crisis, and launching sustainable rural livelihoods.

The formulation and deployment of adequate responses to address food insecurity and the HIV/AIDS crisis require the identification of priorities. Accordingly, this strategy paper starts with an analysis on food insecurity and the scale of HIV/AIDS impact that serves to define priority issues for the agricultural sector (chapter 2). This analysis places emphasis on the grassroots scenario, aiming at identifying responses that: (i) are meaningful, appropriate and effective at the community and household levels; and (ii) incorporate the rural poor are both subjects and beneficiaries of the development process. In harmony with this grassroots approach, the paper will accordingly focus on the optimal use of the resources, knowledge and capacities of rural people themselves. In this sense, agrobiodiversity and the associated indigenous knowledge emerge as strategic resources that rural people can draw on to cope with food insecurity and HIV/AIDS impact.

Agrobiodiversity comprises the whole biological resources that sustain agriculture and food production, such as particularly crops, crop varieties, useful plants, and farm animals. Among farmers, pastoral communities and forest dwellers in the developing world, agrobiodiversity is largely associated to extensive indigenous knowledge, which covers aspects related to these resources such as farming practices, agroecological features, uses, management, and genetic resource conservation.

Agrobiodiversity and indigenous knowledge represent unique grassroots resources with relevance in the food security, nutrition, healthcare, livelihood, and overall welfare of millions rural people in the developing world. They are, however, notably neglected in the theory and practice of development, whilst undergoing incessant erosion (which is further aggravated by HIV/AIDS impact itself). This neglect and erosion constrains the very capacity of rural people to cope with their evolving circumstances and pressing needs, washing away options and means for grassroots development. As local resources and knowledge decline, the rural poor become increasingly dependent on external assistance and relief for survival. In fact, the continuous neglect and erosion of traditional knowledge, practices and customary systems are at the roots of poverty and underdevelopment in Africa (Mammo, 1999).

This paper explores the following strategic components: traditional, neglected and under-utilised crops (chapter 3); agricultural diversification (chapter 4); home gardens (chapter 5); wild food plants (chapter 6); medicinal plants (chapter 7); community seed systems (chapter 8); and livestock and agropastoral systems (chapter 9). The analysis of these strategic components is based upon field research (box 1), which serves to ground case-studies, examples, and practical considerations. In particular, the analysis and field information provided in this paper serve the following purposes:

- (i) to reveal the wealth of agrobiodiversity resources and the extent of associated indigenous knowledge that rural people hold and could further develop, if adequate policy and programme support was available;
- (ii) to ground an overall analysis on the values, benefits and potential of agrobiodiversity resources and the associated indigenous knowledge, especially in combating the most urgent needs related to food insecurity and HIV/AIDS impact among the rural poor; and
- (iii) to assist agricultural policy and programme stakeholders, including field practitioners, in the mobilisation of agrobiodiversity and the implementation of the suggested strategic components.

Therefore, this strategy paper blends both analysis and practical information to guide rural grassroots responses to food insecurity and HIV/AIDS impact. It thus provides substance for tailored policy and project formulation. In general, this paper aims at illustrating, from a very rural grassroots perspective, *why* and *how* agrobiodiversity and indigenous knowledge can effectively serve to empowering rural people to combat the complex concurrence of food insecurity and HIV/AIDS impact.

Box 1. Overview of field research

The elaboration of this paper is based on field research that the author carried out under FAO framework during the second half of year 2001 in different rural areas of Africa. Participatory field research in rural areas throughout Uganda and Tanzania represents the primary information and research source. Supplementary field research in Ethiopia and Mali enrich the analysis and practical approaches.

Uganda and Tanzania represent two extremes of the degree of national and local responses to HIV/AIDS, since Uganda is renown for its wide-ranging public commitment to confront HIV/AIDS since the 1990s. In addition, the selected research areas in Uganda and Tanzania represent a wide range of agroecological, cultural, and rural development conditions. Accordingly, field research in these countries allowed the consideration of diverse scenarios, including as follows: (a) rural communities under prolonged exposure to the HIV/AIDS epidemic, such as those around Lake Victoria in both Uganda and Tanzania; (b) dryland traditional farmers suffering extreme poverty and vulnerability to food insecurity, such as those inhabiting Dodoma region in central Tanzania; and (c) communities facing a complex set of environmental and social constraints, such as those in Soroti area in Uganda.

Field research in Ethiopia provided perspectives on both highland ecosystems and emergency situations. A shorter visit to Mali supplied with an insight on the arid Sahelian area and on the West African context.

Field research comprised a wide range of activities, investigation methods and participatory approaches at the rural community level, including as follows:

- (a) fieldwork in about 30 villages that represent different agroecological zones, farming practices, livelihood systems, poverty conditions, vulnerability to food insecurity, and degree of HIV/AIDS impact;
- (b) participatory discussion and interviews in about a dozen farmer field schools in Uganda and Tanzania, in association with FAO/IFAD's Farmer Field Schools Programme;
- (c) interviews to numerous farmers, community representatives, women leaders, traditional healers, people suffering from HIV/AIDS, AIDS affected households, female-headed households, orphan-headed households, and orphan-fostering households, among other rural people;
- (d) participatory elaboration of local agrobiodiversity surveys under multicriteria approaches;
- (e) field visits to the activities and projects of different non-governmental and community-based organisations that address HIV/AIDS issues in rural areas, such as THETA and UWESO in Uganda, and Partage in Tanzania;
- (f) a specific farmer workshop organised in Iringa-Mvumi village (Dodoma, Tanzania), with about 40 farmer participants from different villages, in collaboration with TAWLAE-Dodoma and FAO's LINKs Project; and
- (g) visits to areas under humanitarian emergency situations and to refugee camps, in association with FAO emergency unit (TCOR), to explore the interface between food security, HIV/AIDS and agricultural emergency assistance.

In addition, field research comprised supplementary activities, such as meetings with officers from United Nations organisations, governmental agencies, and non-governmental organisations in the agricultural and health sectors of the countries visited. Open discussion seminars with a wide range of relevant rural development stakeholders were held in main cities visited, such as in Kampala and Busia in Uganda, and in Dar es Salaam, Dodoma, and Bukoba in Tanzania.

During year 2002, the following activities were conducted towards the drafting of the paper: analysis of results from fieldwork, complementary research, and diffusion of preliminary ideas in public presentations to receive feedback.

Justification

Sceptic readers, researchers and agricultural development practitioners may question the approach of this strategy paper in the following terms:

- (i) Why do food insecurity and the HIV/AIDS crisis require a reformulation of mainstream agricultural and rural development approaches?
 - (ii) Why should agrobiodiversity and indigenous knowledge be considered as strategic components for reducing food insecurity and mitigating the HIV/AIDS crisis?
- (i) *Reviewing agricultural and rural development in the light of chronic food insecurity and the evolving HIV/AIDS crisis*

Food insecurity is a severe, chronic and even expanding problem across vast rural areas in Sub-Saharan Africa, affecting about 200 million people in the region. Malnutrition is rampant and food crises are expanding. In general, most agricultural and rural development recipes have failed in addressing the priority needs of the poor and destitute people in the rural world. There is no overall success to date in safeguarding the basic food production and nutrition needs of the poorest and most vulnerable rural people in Africa. Modern agricultural and rural development models, extracted from experiences in the developed world, are at odds with the environmental, socio-economic and cultural conditions of smallholder farmers and other rural dwellers in Africa. Agricultural development policies and programmes devote scarce attention to the subsistence agricultural systems that sustain the life and livelihood of millions of rural poor, rather concentrating on commercial and export agriculture. Macroeconomic approaches, though certainly needed, have however dominated over microeconomic approaches, discriminating efforts needed to bring small but tangible improvements to the subsistence agricultural systems of the rural poor. At the same time, the prospects of agricultural commercialisation among smallholder farmers in Africa are even deteriorating, partly due to uneven economic globalisation and to the persistent socio-economic exclusion of countless villages.

In addition, the HIV/AIDS crisis is further deteriorating the local capacities for agricultural production and development. HIV/AIDS aggravates food insecurity, expands poverty and erodes the coping capacities of affected households (Barnett and Whiteside, 2002; FAO, 1995; FAO, 1997b; Mutangadura *et al.*, 1998). Consequently, HIV/AIDS is a serious development crisis that deserves priority attention in the agricultural and rural development agenda. For instance, it demands a priority attention to nutrition, which is a key force to control the progression of HIV infection and combat AIDS-related diseases and health problems. However, the nutrition effect of modern agricultural interventions continues rather erratic. Furthermore, the impact of HIV/AIDS on the labour and economic foundations of poor rural households also requires alternative approaches in agricultural and rural development. Mainstream agricultural development models tend to rely on significant doses of labour and capital inputs, but the HIV/AIDS crisis is urgently demanding approaches that are particularly responsive to labour and economic stresses. Chapter 2 will further explore the problems, evolving circumstances, and priority needs that require a renovated agricultural development agenda to benefit the rural poor.

(ii) The role and potential of agrobiodiversity and indigenous knowledge

In the renewed approach required to combat food insecurity and the HIV/AIDS crisis, this paper advocates and illustrates that agrobiodiversity and indigenous knowledge are indispensable forces for empowering the rural poor in their struggles against those problems. This is part of the required set of integrated, cross-sectoral and multi-scale responses. Although some academic work and fewer development efforts are addressing agrobiodiversity and indigenous knowledge, this component of the agricultural dynamic in Africa is largely neglected, yet in continuous erosion. The following considerations are, however, illustrative:

- Agrobiodiversity and indigenous knowledge are insufficiently addressed, and largely overdue, in community development strategies for food security, nutrition and sustainable agriculture.
- Agrobiodiversity strategies have a significant potential in delivering timely and affordable responses to labour and economic constraints, which are dramatically expanding among the rural poor due to HIV/AIDS.
- The promotion and improvement of agrobiodiversity and local knowledge systems is a key way for empowering smallholder farmers towards agricultural modes that are more responsive to their specific needs and evolving situations. In particular, developing the local resource base, both material and cultural, will provide rural people with broader options to plan agricultural activities according to their conditions and priorities.
- Agrobiodiversity and indigenous knowledge are important grassroots assets relevant to: (i) attain sustainable rural livelihoods, (ii) manage the risks inherent to commercial agriculture, and (iii) safeguard the prospects of agricultural and rural reconstruction in view of complex crisis over rural Africa, such as HIV/AIDS, civil conflicts and the effects of economic globalisation.

In essence, the emphasis on agrobiodiversity and indigenous knowledge does not constitute a plain approach to the resolution of food insecurity, but a dedicated effort to raise recognition and support for a largely neglected dimension of African agriculture. Agrobiodiversity and indigenous knowledge continue sustaining the agricultural systems, food security and livelihood of millions of small-scale farmers and rural dwellers throughout Sub-Saharan Africa. They are insufficient for coping with the scale of development crisis and needs, but are certainly indispensable forces to launch grassroots responses for nutrition, health and sustainable livelihoods. This grassroots dynamic needs adequate recognition and support from agricultural policies and programmes.

Although agrobiodiversity may seem to have little to do with HIV/AIDS, there are relevant connections. The impact of HIV/AIDS on the household labour and demographic structure further erodes the maintenance of agrobiodiversity and the transmission of indigenous knowledge, which are fundamental assets for rural subsistence and development. The scale of sickness and mortality among adults undermines community efforts for conserving agrobiodiversity resources and disrupts customary ways for the transmission of agricultural knowledge and skills through generations. In this sense, children could also become

agricultural orphans, lacking the resources, knowledge and practices required to advance rural development, not to mention in case they need to launch rural reconstruction in the aftermath of AIDS and other ongoing crisis. Extraordinary efforts are thus required, just at a time when less capacity remains. In addition, agrobiodiversity represents an important asset to cope with labour and economic constraints, which are an historical problem among the rural poor (Iliffe, 1987), further aggravated in AIDS affected households.

Although insufficiently studied, the African rural poor have routinely relied upon agrobiodiversity and indigenous knowledge to meet their basic needs and to address their evolving problems, including natural, health and social emergencies. In this sense, HIV/AIDS represents a new development challenge for which the rural poor will attempt to utilize as optimally as they can their agricultural and knowledge resource base, which is often the only assets they have available. However, these resources are under growing erosion and significant discrimination, as well as further threatened by HIV/AIDS impact itself as farming systems and the transmission of indigenous knowledge result constrained. This paradox adds complexity to the rural scenario in Africa. Overall, supporting agrobiodiversity and indigenous knowledge represents a strategic effort to empower the rural poor to address more effectively their most pressing agricultural, nutrition, health and livelihood needs.

Additional considerations

The adequate assessment and implementation of the proposed agrobiodiversity strategies requires a few conceptual and practical considerations.

To begin with, the AIDS crisis requires a committed, yet judicious response. HIV/AIDS has become a major force of impoverishment, food insecurity and social exclusion. Therefore, priority attention and responses are required and justified. However, there are other parallel causes of rural poverty and food insecurity that equally require priority attention, such as civil conflict, gender inequalities, and other health problems. They often overlap with the HIV/AIDS crisis. They are at risk of being discriminated by the growing profile of "HIV/AIDS issues". Accordingly, this strategy study focuses on food insecurity as the overall concern among poor rural people. It places special emphasis on HIV/AIDS impact because that is a very recent, poorly addressed and highly troubling factor of poverty and destitution in rural Africa. In this sense, HIV/AIDS represents a renewed opportunity to devote priority attention to the conditions and needs of African rural poor people, hopefully capable of stimulating an overdue revision of agricultural and rural development.

Secondly, the emphasis on agrobiodiversity reveals a new paradigm of agricultural development. The implications of an "agrobiodiversity and indigenous knowledge" approach require deep consideration. Agrobiodiversity strategies do not just involve to look at more resources, or to identify a "miracle" crop or crop variety. It is rather a new vision of agriculture, where the goal is for farmers to maintain, develop and exchange a broad crop genetic diversity to better meet their fundamental agroecological, food, nutrition and livelihood needs. In this sense, the awareness on crop diversity is futile if it simply leads to changes in selected crops, whether it is reintroducing a traditional crop, or introducing a new crop. That would simply perpetuate the narrow approach to agriculture where a limited group of crops and pedigree

varieties dominates fields, farmer decision-making, agricultural policies, extension services, and rural development programmes. Thus, substituting a major crop with a traditional crop, or creating vicious tensions between traditional and modern agriculture would result useless for the suggested strategies. The challenge ahead is to introduce an agrobiodiversity paradigm, where both traditional and introduced crops, both farmer and modern varieties, both indigenous and new agroecological practices are equally engaged in a comprehensive and dialectical effort for new modes of agricultural and rural development.

Finally, the strategies proposed in this paper aim at fostering timely and affordable responses that can bring tangible benefits to the agriculture, food, nutrition and livelihood needs of the rural poor. The strategy paper adopts a moderately ambitious task: to optimise the use of agricultural resource diversity and indigenous knowledge at local level. That may seem at odds with the formidable challenges that the rural poor in Sub-Saharan Africa face. In fact, agricultural development actors are often more inclined to explore ambitious and colossal projects to counteract enormous challenges ahead. However, ultra-modern and highly sophisticated initiatives will probably create more confusion and uncertainty at the grassroots level. The proposed strategic line emerges from the conviction, deeply rooted in field experience, that rural people need, first and foremost, that their habitual agricultural systems and resources work better. In this sense, simple nutrition and agricultural initiatives that enhanced the well-being and prolonged the life of people living with HIV/AIDS could significantly ease the ongoing tragedy and could benefit the prospects of surviving family and community members, such as particularly children and young people. In view of the scale of food, health and livelihood crisis that affect the rural poor in Africa, every effort likely to empower rural people is urgently to be undertaken, never disregarded. The emphasis on agrobiodiversity and indigenous knowledge aims at crafting moderately ambitious, yet tangible and timely responses to the primary needs of poor rural households.