SECTION FOUR:

Mapping out strategies to mitigate impacts of HIV/AIDS on agriculture

La participation villageoise dans la lutte contre le VIH SIDA : cas de l'APNV/SIDA dans le cadre des actions d'appui à l'élaboration des plans d'action villageois

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Resumé

Le secteur agricole au Togo comme dans celui des pays au sud du Sahara demeure le secteur vital de l'économie essentiellement dominé par de petits exploitants. Mais aujourd'hui, ce secteur est confronté à la pandémie du VIH SIDA décimant la partie de la population rurale la plus active et productive. En dépit des nombreuses campagnes de sensibilisation entreprises par les ONG avec le soutien des gouvernements, le taux de prévalence est en hausse progressive. Plusieurs milliers de victimes sont enregistrés laissant derrière eux des milliers d'orphelins sans supports et sans aucun avenir certain. Des actions de lutte sont proposées et menées mais généralement plus au profit des milieux urbains que des ruraux. Les expériences menées par l'ICAT et l'ITRA dans ce cadre ont porté sur des actions d'appui à dix (10) communautés villageoises à l'élaboration et à la mise en œuvre des plans d'action villageois (PAV) avec intégration de la dimension lutte contre le VIH-SIDA. Les activités menées en accompagnement à ces PAV ont concerné particulièrement la sensibilisation et l'éducation des communautés concernées en matière de lutte contre les MST-SIDA à travers la mise en œuvre d'outils (entre autres de diagnostic participatif, carte villageoise, profil historique, figurines, tableau de planification…) pour des changements de comportements responsables et la gestion des sites et évènements sociaux à risques.

Mots-clefs : *VIH SIDA, taux de prevalence, plans d'action villageois, ICAT*

Introduction

Le secteur agricole au Togo comme dans les autres pays de l'Afrique Sub-Saharienne demeure le secteur vital de l'économie et est essentiellement dominé par de petits exploitants qui cultivent des superficies ne dépassant pas 0.5 ha en moyenne et qui assurent la quasi-totalité de la production agricole. Mais aujourd'hui, ce secteur est confronté à la pandémie du VIH-SIDA décimant la partie de la population rurale la plus active et productive.

Ainsi sur le plan du développement social, la pandémie du VIH-SIDA n'est plus considérée comme un problème de santé mais plutôt comme un problème de développement car n'épargnant aucun secteur de l'homme. Les données statistiques

publiées par le Programme National de Lutte contre le SIDA font état de plus de 200 000, le nombre de personnes infectées avec plus de 11.825 cas déclarés en 1999.

Les causes de la maladie sont multiples et les risques de contamination sont plus grands de nos jours au niveau du monde rural. Des actions de lutte sont proposées et menées mais généralement plus au profit des milieux urbains que des ruraux. Ainsi les stratégies mises en œuvre dans le cadre des actions de lutte contre le SIDA en matière de santé (décentralisation, déconcentration des services de lutte, surveillance épidémiologique…) restent encore insuffisantes pour arrêter la pandémie du SIDA (taux de prévalence en hausse progressive, plusieurs milliers de victimes enregistrés laissant derrière eux des milliers d'orphelins sans supports et sans aucun avenir certain.

L'Information, l'Education et la Communication (IEC) ont très peu d'impact dans les pays en voie de développement et particulièrement en milieu rural, le fléau continue de gagner du terrain. Il est donc opportun d'associer à l'IEC, une stratégie nouvelle pour insérer cette problématique dans le processus de développement communautaire car les populations rurales continuent d'adopter des comportements qui augmentent les risques de contamination.

A cet effet, l'approche du secteur rural avec la restructuration des services agricoles au Togo à travers le PNASA dans toutes ses composantes est essentiellement participative et vise la responsabilisation des populations à la base dans toutes les étapes du processus d'appui au développement local. L'option pour l'Approche Participative Niveau Village a été encouragée et a permis la formation des cadres nationaux relevant aussi bien de l'agriculture que des autres secteurs (santé, équipement rural, affaires sociales…) à cette approche de développement communautaire qui aborde à l'aide de ses outils la question liée à la lutte contre le VIH-SIDA**.**

Dans cet exposé, nous allons d'abord présenter brièvement l'Approche Participative au Niveau Village (APNV) et ensuite nous allons partager avec vous les résultats obtenus en utilisant cette approche et ses outils dans la lutte contre le VIH-SIDA.

L'approche participative au niveau village (APNV)

L'APNV est une approche communautaire permettant aux populations des villages d'identifier leurs problèmes, d'exprimer leurs demandes de services, de trouver des solutions, d'élaborer, d'exécuter et de suivre un plan d'action pour le développement de leur localité. L'approche combine et met en œuvre plusieurs outils (tels que, la cartographie villageoise, le transect, l'arbre à problème, le diagramme de Venn, l'arbre à objectif, le tableau de planification, etc.) permettant de réaliser un diagnostic participatif,

une analyse des problèmes, une recherche de solutions adaptées et durables, une planification et une mise en œuvre du plan d'action villageois.

Abordant la question du VIH-SIDA, il s'agira avec l'APNV d'entraîner les villageois dans un dialogue sur le sujet et d'amener ceux-ci à retenir des actions locales et adaptées de lutte contre cette pandémie.

Les outils utilisés dans le cadre de l'élaboration d'un plan d'action de lutte contre le VIH-SIDA et résultats obtenus

Les outils de l'APNV utilisés sont la collecte des données de base, la cartographie des sites à risques, le profil historique, la planification.

La collecte des données

Les données à collecter sont entre autres, la démographie; le taux de mortalité; le taux de prévalence ; le nombre de séropositifs par région ; l'évolution des cas sur une période donnée...

Pour ces données, il faut requérir l'appui de plusieurs partenaires dont les agents de santé, le personnel des services de développement, les organisations villageoises, les structures spécialisées et les ONGs…

Le profil historique

Il retrace les événements importants qui ont marqué la vie d'un individu, d'une communauté dans le temps. Il s'agit ici d'identifier et de reconnaître dans le temps les changements, les événements ou les pratiques qui amènent la population à travers les différentes classes d'âges à courir les risques de contamination du SIDA.

Le profil historique est représenté par une courbe matérialisée par des symboles expressifs indiquant les causes ou les risques de contamination par le virus du SIDA. Une courbe de croissance normale est tracée en terme de repère pour faciliter l'interprétation.

On retiendra que dans la construction du profil historique il faut :

- partir de l'expérience ou du vécu d'un membre du groupe socioprofessionnel pour recenser les événements et pratiques l'exposant aux risques du SIDA, les analyser ensuite en suscitant des échanges et des compléments pour obtenir un consensus ;

- débattre et retenir en groupe les symboles et les couleurs pour matérialiser les événements ;

- élargir les tranches d'âge dans la pratique sur le terrain pour que le profil soit présentable, compréhensif et exploitable par les villageois ;

- définir les tranches avec la population si possible en se référant aux événements socio-culturels du milieu.

- présenter les causes et risques de contamination du SIDA par regroupements liés aux voies de contamination.

La cartographie à risques et la visite des sites à risques

La cartographie à risques est une carte sur laquelle sont localisés les sites ou zones où les populations sont exposées à la contamination du SIDA. Cet outil est exploité par les participants dans des sous-groupes homogènes d'âge et de sexe.

Une fois les sites à risques identifiés une visite de quelques-uns en compagnie des différents groupes socioprofessionnels est réalisée.

- c'est la population elle-même qui doit indiquer sur la carte les lieux à risques, ces sites peuvent présenter un risque réel de contamination ou favorable à la contamination du SIDA. Pour ce faire il faut prendre en compte les réalités du milieu;

- Sur chaque proposition de site par les villageois il faut procéder à une analyse participative pour déterminer et expliquer en quoi le site représente un risque afin d'éviter de créer la confusion au sein de la communauté ;

- Dans les discussions, le recours au personnel de la santé est vivement souhaité et obligatoire pour éclairer certains points et sensibiliser et informer la population de la problématique du SIDA ;

La planification des activités de lutte contre le SIDA

Elle est la combinaison des résultats des deux outils (profil historique et cartographie des risques) en vue de dégager les actions à entreprendre et les planifier.

Il s'agit de recenser et d'analyser les causes et les risques de contamination par le SIDA, de proposer des mesures de lutte et de déterminer les périodes et responsables afférents pour conduire les actions de lutte retenues. Pour ce faire, il convient de travailler avec des groupes socioprofessionnels homogènes d'âge et de sexe (les vieux, les jeunes gens, les jeunes fille, les femmes …).

Au titre des points d'attention à observer au niveau de cet outil, il faut :

- veiller à reprendre les symboles utilisés dans le profil historique et sur la carte à risques dans la colonne des causes et risques
- souligner la structure ou l'agent responsable de l'exécution de l'action ou mesure planifiée,
- tenir compte de la durée d'exécution du plan d'action villageois retenu dans la planification des actions de lutte contre le SIDA,

Il faut souligner que dans le développement de ces outils, l'animateur doit utiliser autant que faire se peut les autres outils de l'APNV pour obtenir le maximum d'information, susciter au mieux la participation des communautés dans l'analyse des causes et conséquences des problèmes relevés et rechercher les solutions possibles et durables.

Chaque groupe a eu à présenter les résultats obtenus à l'assemblée villageoise pour validation.

On retiendra que :

- La question du SIDA n'est pas un sujet inconnu de la population. Celle-ci a participé activement à toutes les séquences ;

- Le niveau d'alphabétisation a été un atout pour l'utilisation des symboles expressifs du village ;

- L'on doit amener les services et ONG intervenants dans le milieu à travers une réunion de sensibilisation, d'information à dégager un point focal pour la participation au programme d'activités liées à l'APNV-VIH /SIDA ;

- Concentrer les risques dans l'élaboration du profil historique au lieu de les étaler pour une meilleure interprétation de la courbe à risques. La courbe peut descendre plus si les risques sont nombreux ;

- Toujours prendre en compte toutes les sensibilités du milieu et organiser les

villageois en groupes socio professionnels pour le déroulement des outils permettant de rassembler assez d'informations et de disposition validées par ceux-ci

- Impliquer davantage les responsables religieux dans les actions de sensibilisation
- Connaître les moments et les périodes de disponibilité des villageois dans toute programmation afin de susciter leur participation effective.
- Les activités programmées avec les villageois doivent s'insérer dans un plan d'action qui dégage et précise les intervenants et les responsabilités. A cet effet, l'APNV recommande pour l'exécution des plans d'action, la mise en place ou la consolidation d'une structure villageoise devant coordonner et prendre en charge la gestion et le suivi-évaluation des actions planifiées.

A cet effet, cette structure villageoise de coordination doit :

- représenter chaque groupe socioprofessionnel présent dans le village,
- organiser le déroulement des actions planifiées par les villageois,
- mobiliser les ressources existantes pour l'exécution des plans d'action villageois,
- servir de lien de communication entre les villageois et les services extérieurs,
- prendre en charge le suivi et l'évaluation des activités planifiées.

Quelques actions entreprises en matière de vulgarisation agricole :

Sur le plan agricole, les expériences menées par l'ICAT et l'ITRA dans ce cadre ont porté sur des actions d'appui à dix (10) communautés villageoises à l'élaboration et à la mise en œuvre des plans d'action villageois (PAV) avec intégration de la dimension lutte contre le VIH-SIDA. Les activités menées en accompagnement à ces PAV ont concerné particulièrement la sensibilisation et l'éducation des communautés concernées en matière de lutte contre les MST-SIDA à travers la mise en œuvre d'outils (entre autres de diagnostic participatif, carte villageoise, profil historique, figurines, tableau de planification…) pour des changements de comportements responsables et la gestion des sites et évènements sociaux à risques.

En vue d'aider les familles victimes du VIH SIDA vivant en milieu rural à mieux gérer sur le plan alimentaire la PVVIH, l'ICAT s'est proposé d'élaborer et de mettre en œuvre un projet permettant d'aider celles-ci à accroître leurs revenus grâce à l'augmentation de la productivité de leurs activités économiques et partant d'assurer la prise en charge des PVVIH et de leurs enfants, des orphelins et des veuves.

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En plus il sera poursuivit l'appui accompagnement des communautés villageoises à l'élaboration et à la mise en œuvre des PAV autour de la question du VIH SIDA étant entendu que les outils de sensibilisation et de formation seront intégrés au système de vulgarisation et d'appui conseil.

Difficultés rencontrées

Elles sont d'ordre financier. Les suspensions régulières de décaissement n'ont pas permis d'étendre les actions à d'autres villages.

Perspectives

- En l'absence d'un financement pour appuyer les communautés de base à l'élaboration des PAV, il est retenu dans les plans d'appui a - ccompagnement des producteurs seuls ou en groupes pour ce qui concerne le transfert de technologies, d'envisager des thèmes sociaux tels que le VIH SIDA et ses implications en milieu rural.
- Former le personnel opérationnel à la maîtrise de la démarche APNV/SIDA
- Elaborer et exécuter un projet d'appui à l'insertion socioéconomique des familles victimes du VIH SIDA en milieu rural au Togo.

Strategies to reduce the impact of HIV/AIDS on household food security and nutrition in Borno State, Nigeria

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Abstract

Most health experts believe that the real rate of HIV prevalence in Nigeria is much higher than the acknowledged 5.4%. Because of concerns about the spread of HIV/AIDS and its consequent effects on the rural populace of Borno State, where HIV prevalence in 2003 has been reported at 3.2%, the State government launched public awareness campaigns to sensitize the populace about the dangers of HIV/AIDS. Studies in Borno State show that HIV/AIDS is most prevalent among adolescents and young adults. Food insecurity is a risk if this group, which contains the majority of the agricultural workforce, is decimated by the HIV/AIDS pandemic. The detrimental impact of the pandemic on nutrition and household food security in affected areas requires attention, and strategies to address these problems should be incorporated in program planning. Through various donor-funded projects, the following activities have been carried out in Borno State to reduce the impact of HIV/AIDS on household food security and nutrition while others are still ongoing.

1. *Nutrition education to give the people the opportunity to develop healthy eating habits and to take action to improve food security in the home.*
2. *Training of women in rural areas on soya bean utilization to improve the nutritional status of vulnerable groups*
3. *Promotion of the rearing of small ruminants and poultry to increase protein-intake by the household*
4. *Promotion of vegetable production among women groups in order to increase intake of vitamins by farm families*
5. *Promotion of the diversification of crop production to increase nutritional status and improve income of farm households.*

Key words: *HIV prevalence, food insecurity, crop diversification, nutrition*

Introduction

Nigeria is one of the first countries with a large population to cross the 5% HIV prevalence rate. Most health experts believe that the real percentage is much higher than the acknowledged 5.4%. (Society for Family Health, 2003). In Borno State, the HIV prevalence in 2003 has been reported to be 3.2%, which ranked the State 28th out of 36 States in Nigeria. (Sheriff, 2005). This figure may not be the true picture on the

ground since many HIV/AIDs patients do not always want to go to the hospital for screening. Because of concern about the spread of HIV/AIDs and its consequent effects on the rural populace of Borno State, the State government has launched public awareness campaigns to sensitize the populace about the dangers of HIV/AIDs. Studies in the State have shown that HIV/AIDs is more prevalent among adolescents and young adults who, incidentally, provide more than eighty percent (80%) of the agricultural workforce. (Sheriff, 2005). If this group is decimated by the HIV/AIDS pandemic, the agricultural sector will suffer, leading to food insecurity. Although human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) is recognized predominantly as a health problem, the epidemic has multiple social and economic dimensions and implications since it affects adults in their most productive years of life. A health approach alone is not sufficient to prevent the spread of the disease or to mitigate its impact on both individuals and society (FAO, 2003).

HIV/AIDS food security and nutrition

The detrimental impact of the HIV/AIDS epidemic on nutrition and household food security in affected areas requires attention, The interaction between HIV/AIDS and nutrition can basically be seen from two perspectives: the biological perspective, which is the association between nutritional status and risk of infection, as well as the relationship of nutritional status and the evolution of the disease; the socio-economic perspective, which considers the consequences of the disease for the food and nutrition situation of affected households and communities through lack of food, insufficient care and lack of time to ensure hygiene. AIDS has a direct impact on people's ability to acquire enough nutritious food to lead active healthy lives. It turns millions of children into orphans; disrupts social bonds and the transmission of agricultural knowledge from one generation to the next. (International Food Policy Research Institute, 2003). It undermines people's ability to engage in collective action, reducing available farm labor and can force people to devote less time to farming and more time to patient care and this threatens food security (Esther 2000). Micronutrient deficiency often called hidden hunger has a devastating impact on health and productivity.

Methodology

In Borno State, efforts have been made in eleven (11) local government areas, covering thirty eight (38) communities involving one thousand four hundred and eighty nine (1489) beneficiaries, breaking down into six hundred and forty (640) men and eight hundred and forty nine women (849), to reduce the impact of HIV/AIDS on household food security and nutrition.

The activities are:

Nutrition education: The communities were sensitized on the spread and dangers of HIV/Aids through, respectively, Nutrition Education under both national programme for food security, Community Level Nutrition Information System and Advocacy (UNICEF) and promoting sustainable agricultural in Borno State. The communities were informed of the fact that nutrition cannot prevent HIV/AIDS, but will help to assist the person living with the disease to live long.

Training on soya bean utilization: The communities were and are being trained in soya bean utilization to improve nutritional status of the vulnerable groups (women and children); the utilization ranges from baby feed to fortification of food and snacks.

Promotion of the rearing of small ruminants and poultry to increase protein intake by households: Each household sensitized was encouraged to rear small ruminants and poultry so that the required protein intake by the household could be made readily available with less cost, and also help to improve the household income where the excess can be sold and the money used for the upkeep of the family. Under this activity, 14 families were given a buck and four does (rabbits) each, and another 14 families were each given a cock and four hens. Subsequently, the parents stocks were exchanged so that all the selected households received both stocks.

Promotion of vegetable production among women's groups to increase intake of vitamins by farm families: Under this activity seeds/seedlings of various vegetables/ fruit trees were provided to each of the selected households to be planted on the home gardens they established. These seeds/seedlings included spinach, okra, carrots, tomatoes, pumpkins, eggplant, mango, guava, orange and lemon. This was to provide the families with the required micronutrients and vitamins, which are often lacking in their diet but are very essential to the body.

Promotion of the diversification of crop production to increase nutritional status and improve income of farm households: The production of various food crops was encouraged among the farm families. Every household was informed of the importance of planting various types of crops ranging through cereals, legumes, vegetables and root crops.

Discussion

Implementing activities under strategies in 38 communities in the 11 local government areas of the State, 40 people (20 men and 20 women) benefited in each of Bama, Konduga and Kwaya Kusar. Groups of 120 people, each of sixty (60) men and sixty (60) women, benefited in Kukawa, Monguno, Nganzai and Maiduguri Metropolitan, respectively. One hundred and fifty (150) people in groups, each of seventy five (75) men and seventy five (75) women, benefited in Jere and Shani, respectively. One hundred and fifty nine (159) people (40 men and 119 women) benefited in Biu, while 440 people (200 men and 240 women) benefited in Hawul.

Findings from the activities showed that equal numbers of men and women benefited in eight of the 11 local government areas showing 85% of the activities being gender-mainstreamed. This could be because more of the men are concerned with the effect of HIV/AIDS in these communities, despite the fact that women are the most affected in terms of care and management of patients, or are more aware of the importance of nutrition to health and food production.

Despite the efforts of agencies in reducing the impact of HIV/AIDS through nutrition strategies, more awareness campaigns are recommended on the spread, the danger and the importance of nutrition in reducing the impact of the disease.

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HIV/AIDS and other sexually transmitted infections: awareness raising and sensitization among extension staff and farmers in Sierra Leone

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A*bstract*

HIV/AIDS is a pandemic that cannot be disassociated from poverty as they both have a very strong correlation. The relationship is complex, and the impact of HIV/AIDS is felt by individuals, families, businesses, communities and countries. HIV makes families and communities disinvest in productive activities as resources are shifted to the care and treatment of people living with HIV/AIDS. When a member of a household (especially the breadwinner) becomes ill with HIV/AIDS, one or more family members who are not sick may leave their jobs to provide care for him/her in the family. Caring for a sick family member disrupts the work schedule of others, which further limits income. Family savings may dwindle and assets be sold off to meet living and medical expenses and eventually funeral expenses. Over the past 10 years, there has been a huge amount of commitment, time and energy devoted by many people from all works of life to HIV/AIDS prevention, education, care and support work. The cost and devastation to families, communities and nations are so grave that the issue of sensitization on prevention should be a continuous process until such a time when there is a cure.

Key words: *HIV/AIDS, Sierra Leone, sero-prevalency, vulnerable women*

Introduction

Sierra Leone is a small country in the West Coast of Africa with a population of about 4.92 million people (2004 census) and occupies a bottom position according to the 2002 UNDP human development index report. Maternal and infant mortality rates are very high and life expectancy is 39 years for men and 42 years for women. Illiteracy rate is almost 85%; poverty, poor medical facilities, poor socio-economic conditions and ten years of war are the chief causes of this downward trend in the country's strides towards national development and these have triggered the further spread of HIV/AIDS and other STIs.

Since the first HIV/AIDS case was detected in 1987, about 2,399 individuals have tested positive for HIV/AIDS, of which 794 of these have developed the AIDS disease, and 438 are reported to have died. In April 2002, a national sero–prevalence survey

conducted jointly by Sierra Leone Statistics Office (SSL) and the US Centers for Disease Prevention and Control (CDC) showed a national HIV prevalence of 0.9% in Freetown and 0.7% outside Freetown. When this report was taken to America, the 0.9% metamorphosed to 5%. People are therefore left confused as to whether the national infection rate is 0.9 or 5%. But the fact remains that the disease is with us and something has to be done to contain it as the primary mode of transmission (sex) is part of human existence and is a daily occurrence.

Table 40. Global summary of HIV/AIDS statistic and features, end of 2002 and 2004

Number of people living with HIV in 2004	Total Adults Women Children under 15 yr.	39.4 million(35.9-44.3 million) 37.2 million (33.8-41.7 million) 17.6 million (16.3-19.5 million) 2.2 million (2.0-2.6 million)
People newly infected with HIV in 2004	Total Adults Children under 15 yr.	4.9 million (4.3-6.4 million) 4.3 million (3.7-5.7 million) 640,000 (570,000-750,000)
AIDS deaths in 2004	Total Adults Children under 15 yr.	3.1 million (2.8-3.5 million) 2.6 million (2.3-2.9 million) 510,000 (460,000-600,000)

Table 41. HIV/AIDS statistics for sub-Saharan Africa

Ref. Year	Adults & children living with HIV	No. of women living with HIV	Adults and children newly infected with HIV	Adult prevalence %	Adult and children deaths due to AIDS
2002	24.4 million (22.5-27.3million)	12.8 million (11.9-14.3million)	1.9million (2.6-3.6million)	7.5 million (7.0-8.4million)	2.1 million (1.9-2.3 million)
2004	25.4 million (23.4-28.4million)	13.3 million (12.4-14.9million)	3.1 million (2.7-3.8million)	7.4million (6.9-8.3million)	2.3 million (2.1-2.6 million)

- The AIDS pandemic coursing through this region is highly variable. There is no single "African epidemic"
- Sub-Saharan Africa has just over 10% of the world's population, but it is home to more than 60% of all people living with HIV/AIDS-some 25.4 million
- In 2004, an estimated 3.1 million people in the region became newly infected, while 2.3 million died of AIDS
- Among young people aged 15-24 years, an estimated 6.9% of women and 2.2% of men were living with the HIV at the end of 2004.

If it is accepted that 0.9%, approximately 1%, is the national sero-prevalence rate, it should still be a cause for concern. That means that between 45,000-50,000 people are infected.

The actual national sero-prevalence rate is unknown. Currently, The National AIDS Control Programme Secretariat has contracted the NIMBA Research Company in Ghana to conduct national research on the current trends in the HIV/AIDS prevalence in Sierra Leone using a sample size of 8,450 people. These will be selected from all districts and chiefdoms starting June 15, 2005 with the selection and testing of blood samples to address the problem of data availability. This will be accompanied by a questionnaire survey to be able to categorize the statistical unit. The National HIV/AIDS Secretariat says the report of this survey will be ready by October 2005.

The national response to HIV/AIDS in Sierra Leone is faced with serious challenges. These include the following:

Low level of literacy – with a very low literacy rate, most messages about HIV/AIDS are not understood by a great majority of the population. Trainers need to be knowledgeable of the local languages in their areas.

Low capacity level of community-based organizations and non-government organizations for implementing HIV/AIDS programs – HIV/AIDS is a relatively new issue and its control requires multi-sectoral and multidisciplinary approaches. However, most community-based organizations and non-governmental organizations do not have sufficient capacity and experience in implementing HIV/AIDS programs.

Non-availability of reliable data – there is only limited biological data (see above paragraph)

Low acceptance, poor utilization and assess to condoms – there is limited knowledge of condoms and their use, thus the need exists for continuous sensitization and provision of preventive and positive materials and information

Limited funding to the multi-country AIDS projects – people testing positive for HIV require follow-up for psychosocial, medical and in some cases economic support. Presently, only a handful of People living with HIV/AIDS (PLWHAs) are receiving care and support. The issue of anti-retroviral drugs (ARVs) is an impossibility and there are now more orphans and street children needing care.

Gender responsiveness – this issue is very critical. The role of women and female-headed households that are victims of armed conflict should form part of this focus.

There are socio-cultural and economic constraints of women, sexual violence, commercial sex, etc. Therefore, the women need to be empowered to fend for themselves and this will only be successful if men are brought on board because it is men who create and maintain these socio-cultural and economic structures which create male superiority and female subordination.

Human and legal rights – the national HIV/AIDS Policy condemns the deliberate and willful infection of others with HIV, and advocates punitive measures for such offenses and any discrimination against others because of their HIV status. There are still incidences of discrimination against PLWHAs and also willful infection of others.

The fight against HIV/AIDS is not a health problem alone; the disease has social, psychological, demographic and economic impact on both individuals and societies. This will deprive families and communities of their young and productive age group. The government fully recognizes the urgency of the threat posed by the current HIV/AIDS pandemic and, therefore, a coordinated national multi-sectoral program should be put in place to combat this pandemic.

It is against this backdrop, that the Rice Research Station deemed it fit to include HIV/AIDS in its research activities as part of the overall social development strategies of the Station. This project was undertaken to combat the spread of HIV/AIDS, as a healthy farmer is crucial for agricultural productivity and the nation's food security drive with the under mentioned objectives in mind.

The general objective was to spread information about the existence of the HIV/AIDS pandemic, and specifically to educate staff and farmers on the basic facts of the pandemic; to identify cultural practices that are possible fertilizers to the pandemic; and to assess its consequences on agriculture and consequently food security.

Methodology

Information was collected from both secondary and primary sources.
Operational Districts: Kambia in the north, Bo in the south and Kenema in the east.
Operational Towns: Rokupr, Bo and Kenema
Sample size: 55 per location – 20 male farmers, 20 female farmers, 10 male technicians/field staff and 5 female technicians/field staff.
Sample Procedure: simple random sampling using the quota sampling method was used in selecting the sample size (a coin was tossed when a prospective statistical unit was approached to enable acceptance / rejection of him/her.)

Training procedure

- Provision of video tapes during training sessions
- Pictorial explanation on how the pandemic affects the immune system of humans
- Discussions of the relationship between some of our cultural practices and the pandemic
- Information was collected on the following; those aware that there is a disease called HIV/AIDS; those convinced about the existence of the HIV/AIDS pandemic; knowledge about the existence and use of condoms; reasons for not using condoms; and listing of cultural practices that are fertilizers to the spread of the pandemic
- Administration of semi-structured questionnaires and focused group discussions to assess the socio-economic consequences on farm families and agriculture generally and effects on the food security drive, which will be done in the second phase of the implementation of the Programme.

Results and discussion

Findings from the first phase of activity undertaken in the operational areas of the Rice Research Station are shown in figures and tables below.

The results presented in Figure 18 shows that a very small percentage of the farmers are even aware of the existence of this disease (i.e. 20% in Kenema, which is the highest).

Figure 18. Number of participants aware that there is a disease called HIV/AIDS (%)

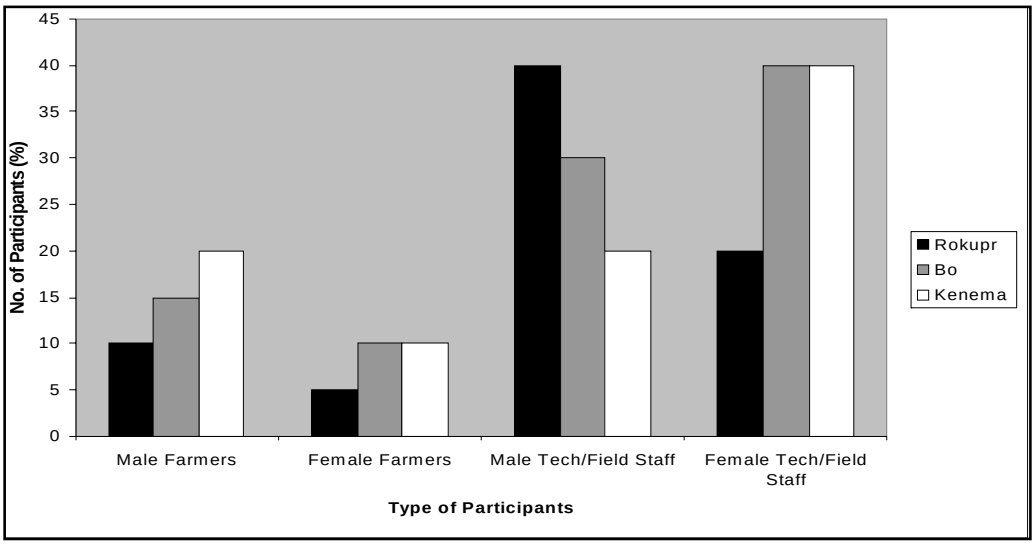

Figure 19. Number of participants convinced about the existence of the pandemic

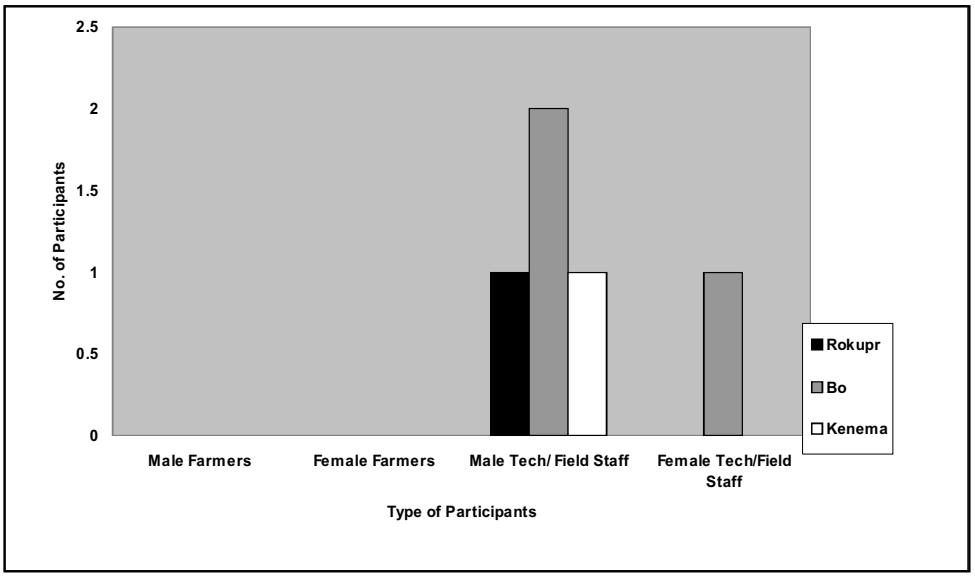

Table 42. Number of participants having knowledge about the existence and use of condoms

RRS Operational Town	Male Farmers		Female Farmers		Male Tech/ Field Staff		Female Tech/ Field Staff	
	Existence	Use	Existence	Use	Existence	Use	Existence	Use
Rokupr	2	-	3	-	4	1	2	-
Bo	3	-	4	-	3	2	2	1
Kenema	6	-	5	-	2	1	1	-

In focused group discussions about cultural practices, which acted as fertilizers and barriers to the spread and prevention of HIV/AIDS, respectively, they had to be placed in sex-segregated groups in order to get their candid opinions. These were the issues that came up: polygamy, wife inheritance, female genital mutilation, tribal marks and tattoos, early marriage, taboo on discussions on sex and sexuality with spouses and children, male superiority and female subordination, cultural beliefs and attitudes, low literacy level and high level of poverty.

Areas for further research when funds become available include:

- Continuous training and sensitization of farmers on HIV/AIDS, prevention and control and the provision of preventive materials and cultivation of crops needed for positive living
- Provision of skills training and micro-credit to families of PLWHAs
- Administration of semi-structured questionnaires to assess the socio-economic consequences on the farm families, communities and the nation's food security drive.

Conclusion

The HIV/AIDS pandemic is a modern-day plague that has not only resulted in a tragic loss of lives from a wide spectrum of society but has reshaped our viewpoints regarding health care, the treatment of infectious diseases and social issues with regard to sexual behavior.

They say in Africa that poverty has a 'woman's face', and knowing the role these women play in agriculture although not recognized, is tremendous. In the fields, women farmers sow, weed, apply fertilizers and pesticides, harvest and thresh the crops and after harvest rural women are responsible for storing, handling, stocking and processing and marketing of the crops. Food production is dependent on the seeds collected and stored by local women in their 'seed banks'. Therefore it is necessary to empower women in particular to be able to determine their fate.

It is an open secret also that statistics at regional and global levels have shown that due to biological, socio-cultural and socio-economic factors, women are more vulnerable to this disease than men. Therefore, if the majority of these are HIV/AIDS-infected, this will lead to a very great reduction in agricultural production – due to reduced manual labor, reduced earning of farmers due to either reduction in yield or if the labor provided by these women has to be paid for. This will affect the family's budget and, worse still, diversion of the families' meager income to care and support, especially for medical bills, of family members living with the disease.

There is an African proverb which says, 'Without women we will all go hungry' as they are responsible for more than 50% of food production worldwide. Women produce 60-80% of the food in sub-Saharan Africa. The importance of women as food providers is increasing as fewer and fewer men are farmers. Men are leaving rural areas in developing countries to live in towns and cities, where they can increase their incomes. Rural male populations are also declining because of conflict.

So women are the key to better nutrition, more efficient production and distribution of food, and improved lives and economies in rural communities. They are often the only breadwinners. The death of a mother will have a huge effect on the rest of the family; her family will become poorer, increasing the burden on the community at large and undermining its development. Women hold their families together, providing food and water, and care for the young and old.

The agriculture sector is very essential in alleviating poverty as it employs between 70-80% of the citizenry; therefore, this sector needs donor funding to spread information and provide preventive materials to the farmers. Because of the degree/increase in death rate due to HIV/AIDS, the need thus exists for training of scientists, extension/field staff, who in turn educate the farm families at formal and informal meetings on the prevalence of this disease and how it can be prevented. If not, both quantity and quality of technocrats and farmers/producers will drop, and that of yields will drop drastically.

The role of food and nutrition in the prevention, care and management of HIV/AIDS in the rural communities: research challenges.

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Abstract

HIV infection, compounded by inadequate dietary intake, rapidly leads to malnutrition. Persons living with HIV have higher than normal nutritional requirements: up to 50 per cent more protein and up to 15 per cent more calories. Yet they are likely to suffer loss of appetite and anorexia, thus reducing dietary intake at the very time when nutritional requirements are greatest. Such interactions have grave consequences for the rural poor. Malnutrition is reported as one of the major problems in the management of HIV/AIDS in rural communities in Africa. Malnutrition also contributes to more than half of the HIV/AIDS deaths in the same communities. However, health care for people with HIV/AIDS has concentrated more on treatment of the disease than on providing nutrition care. Management of nutritional problems during HIV/AIDS improves the quality of life for many individuals. Food cannot cure HIV/AIDS, nor does it treat the virus, but it can improve fitness and help the body fight the virus. Eating enough and a diverse and balanced diet help to maintain body weight and mass. Adequate food supply helps to maintain and improve the performance of the human immune system. Food can also be used as a remedy for treating some symptoms of HIV/AIDS. This paper reviews literature on studies done globally and local experiences in Tanzania and Zimbabwe in the use of food for management of HIV/AIDS. It addresses important questions such as 'Does food have any role in the prevention of HIV/AIDS?' or 'Which foods can be used in the care and management of HIV/AIDS particularly in the rural communities?' The paper also challenges scientists to research more so as to differentiate the facts from the myths about the role of some food, crop plants and animal products in alleviating some symptoms of HIV/AIDS. It is concluded that food and nutrition plays a central role in the care and management of HIV/AIDS. Effective nutrition intervention with women of childbearing age in high-risk areas may also reduce mother to child transmission.

Key words: *HIV/AIDS, nutrition, immune system, remedies, infection management*

Introduction

Malnutrition is reported as one of the major problems in the management of HIV/AIDS, particularly in sub-Saharan Africa where more than half of the population live in poverty. It is among the first consequence of poverty, making an individual susceptible to infections and parasites (Giraldo, 2003). However health care for people with HIV/AIDS has concentrated more on treating infections than on providing nutrition care. Malnutrition contributes to more than half of the AIDS deaths in rural communities. In developing

countries where medical treatment options are limited, nutrition support becomes fundamental in the care of people with HIV/AIDS (University of Zimbabwe, 1999).

To date research has provided substantial information demonstrating the benefits of nutritional intervention in slowing down HIV progression IFPRI (2005). Clinical observation and evidence also strongly suggest that management of nutritional problems during HIV/AIDS infection improves the quality of life for many persons (FAO 2002, NAP+, 1995).

Food alone is not a remedy to AIDS, nor does it influence the virus, but it can certainly improve fitness and help the body fight the virus. Eating enough in diverse and balanced diet helps to maintain body weight and mass. Food helps to maintain and improve the performance of the immune system. Furthermore, food can be used as a natural remedy for some symptoms of AIDS (FAO, 2002). Many people have wondered why some people with AIDS look healthy and live long lives while others become malnourished and do not live long. There are many factors, but among these is food (NAP+ 1995).

Wasting or weight loss is a manifestation of HIV/AIDS infection and often related to nutritional dysfunctions. It has become one of the main symptoms of HIV/AIDS, as people with the disease often suffer from malnutrition. It represents one of the most serious complications of HIV/AIDS and can lead to a state of extreme nutritional wasting. As HIV/AIDS infection progresses, the individual's nutrition demands increase and so does the potential for new or different contributors to malnutrition

Factors contributing to wasting in HIV/AIDS

Wasting has an important psychological effect since it can be a source of anxiety resulting in yet more weight loss. Malnutrition is a multifaceted problem and more than one mechanism usually contributes to the development and progression of the poor nutritional state reflected by wasting in HIV/AIDS. There are several factors contributing to wasting in HIV/AIDS infection. FAO (2002) and the Australian Commonwealth Department of Housing and Local Government and Community Services (CDHLCS, 1993) list them as:

- *Inadequate food intake* due to poor appetite, pain, e.g. pain due to mouth wounds or other factors such as poor function of the nervous system resulting in depression and cognitive dysfunction, therefore affecting day-to-day activities of providing and eating a nutritious diet.
- *Malabsorption of food nutrients,* which occurs due to infection such as diarrhea and non-infection factors such as malignancy of the gastro-intestinal tract, antibiotic use and poor function of the pancreas.

- *Altered metabolism* because of infection and drugs. Increased energy requirement due to increased basal metabolic rate (BMR) is common in fever and malignancy. Increased BMR has been reported at all stages of HIV infection.

- *Reduced micronutrient level* has been documented in HIV infection. Micronutrients involved include: zinc, selenium, vitamin C, Vitamin A, Vitamin B12, calcium and magnesium.

All these factors contribute to complications in the treatment of HIV/AIDS as, with time, individual nutritional status deteriorates. In the rural setting, where resources to support a balanced diet are limited and the knowledge on basic nutrition is low, the management of HIV/AIDS becomes even more complicated. Evidence shows that 80% of the rural poor are unable to meet their minimum dietary requirements even before having HIV/AIDS infection (FAO, 1999). The dietary energy supply (DES) of most West African countries ranges from 2040 calories in Liberia to 2700 calories in Nigeria. Countries having above 2500 DES are Cote d'Ivoire, Ghana and Mauritania. Malnutrition is high, however, even in the countries with high DES. In Nigeria, for example, 39% of children under the age of five years were underweight and stunted in 1999, and Mauritania had 44% of children stunted. Nigeria is also reported to have more than 70% of people living below the poverty line (FAO, 2003). Some countries like Senegal have adequate food but have pockets of severe food insecurity (FAO 1999).

Food and nutrition and prevention of HIV/AIDS

Since the beginning of the epidemic, researchers have provided scientific evidence that supports the possibility that AIDS can be effectively prevented, treated and overcome by guaranteeing an optimal nutritional status to an individual (Jain and Chandra, 1984). Giraldo (2003) also argues that, there is a strong similarity between immune deficiency, multiple infection and severe weight loss seen in AIDS patients and the association of protein calorie malnutrition (PCM) with reduced resistance to infection observed in malnourished children.

HIV/AIDS is either transmitted through vertical transmission, i.e. from mother-to-child in the fetus, during delivery or during breast-feeding, or by 'horizontal transmission' from person-to-person.

Mother-to-child transmission (MTCT)

Gillespie and Haddad (2002) in the IFPRI food and nutrition essay indicated that 63% of children of HIV-positive mothers will be infected by HIV, 37% during pregnancy, 15% during delivery and 15% during breast feeding in the first two years of breast feeding. Interventions that improve immune function may, therefore, significantly reduce transmission risks. Micronutrients may improve epithelia integrity and reduce risk of transmission. In Tanzania, antioxidants, especially Vitamin E, taken during pregnancy and early lactation may be important in reducing the risk of sub-clinical mastitis (Filteau *et al.,* 1999). Mastitis exposes the child to the risk of transmission through breast-feeding. In Zimbabwe, multivitamin supplements given to HIV/AIDS individuals, but not Vitamin A, significantly increased CD4 and CD8 cell count in women (Fawzi *et al*., 1998). CD4 cell count is the main determinant of a life-threatening condition in HIV infection. The CD4 /CD8 ratio also determine the level of immunity (Giraldo, 2003).

The timing of supplementation with micronutrients has a bearing on the benefits achieved. Supplementation during early pregnancy has shown little benefit in reducing MTCT (IFPRI, 2005). On the other hand, supplementation of Vitamin B, C and E during lactation has shown a significant reduction of MTCT. A study in Tanzania revealed that supplementation of these Vitamins to mothers of compromised immunological and nutritional status lowered MTCT (Fawzi *et al.*, 2002).

Breast milk and mother to child transmission

The finding that HIV is transmitted through breast milk has complicated recommendations on infant feeding, particularly in the rural areas of sub-Saharan Africa where there are few safe and reliable options to replace breast-feeding. Mother's milk plays a big role in the child's ability to fight infections, including HIV/AIDS. Babies that are exclusively breast-fed for six months have greater chances of survival than non-exclusively breast-fed babies.

The Global Burden of Disease study (Caulfield *et al.*, 2004) showed that 60% of child mortality is associated with infant feeding (including non-exclusive breast-feeding for 6 months). The risks associated with replacement feeding are many, and in most cases outweigh the benefit achieved from preventing HIV transmission by breast-feeding. It is for this reason that exclusive breast-feeding for six months is still recommended in many developing countries. Mothers are given information on the risk of breast-feeding from HIV mothers to allow them to make informed decisions on whether to breast-feed their babies or not. However, the latest WHO breast-feeding policy indicates that babies should be exclusively breastfed for at least one month (IFPRI, 2002).

Modified animal milk is used in most developing countries. In Africa, particularly in the rural communities, breast-feeding is predominantly used. Most women in rural communities in Tanzania and Zimbabwe use modified cows' milk, the modification being necessary because its composition differs from that of human milk (MCHW 2000). Cow milk however has been reported to cause some milk-induced allergy. The symptoms occur in 3 to 7% of infants feeding on cow milk at an early stage, (Maree, 2003). Sensitivity usually becomes apparent in early infancy, mainly within a few days of the baby being given formula of cows' milk for the first time. Fresh milk causes even worse reaction (Van de Host, 1976). These are gastrointestinal disturbances, like vomiting, colic, loose stool or constipation, respiratory problems and skin conditions. Goat milk on the other hand has been reported to be tolerated by infants who developed reaction to cow milk; for this reason goat milk is believed to be closest to human milk (Maree 2003).

Table 43. Composition of goat milk in comparison to cow and human milk (values per 100ml)

Constituent	Human	Cow	Goat
Protein (g)	1.2	3.3	3.3
Casein (g)	0.4	2.8	2.5
Lactalbumin (g)	0.3	0.4	0.4
Fat (g)	3.8	3.7	4.1
Lactose (g)	7.0	4.8	4.7
Calorie value (kl)	71	69	76
Calcium (mg)	0.21	0.72	0.77
Phosphorus (mg)	33	125	130
Potassium(mg)	43	103	159
Iron (mg)	0.15	0.10	0.05
Copper ((mg)	0.04	0.03	0.04
Manganese (mg)	0.07	2	8
Zinc (mg)	0.53	0.38	
Vitamin A (IU)	160	158	120
Vit D (IU)	1.4	2.0	2.3
Thiamine (mcg)	0.017	0.04	0.05
Riboflavin Mcg)	0.4	0.18	0.12
Nicotinic Acid (mcg)	0.17	0.08	0.20
Vitamin B6 (mcg)	0.001	0.035	
Folic Acid (mcg)	0.2	2.0	0.2
Vitamin B12 (mcg)	0.03	0.50	0.02
Vitamin C (mcg)	4.0	2.0	2.0

Source: Maree H (2003)

Although the composition of goat milk is comparable to that of cow milk, it contains more essential fatty acids, lower curd tension and lighter fat content than cow milk (Table 43). Its acceptance is still very slow because of its taste, and for cultural reasons in Tanzania and Zimbabwe. The milk has mostly been used for medicinal purposes.

Horizontal transmission

Though few studies have investigated the role of malnutrition in increasing the efficiency of horizontal disease transmission between adults, there is suggestive evidence. Stillwagon (2002) reported falling calorie and protein consumption and increasing inequality to be strongly correlated with HIV prevalence in 44 sub-Saharan African countries. Both protein and energy as well as micronutrient deficiencies are associated with significant defects in cell immunity and lowered specific antibody production (IFPRI, 2005). Infections are therefore longer lasting and more severe in someone who is malnourished. They are also more frequent. Similarly, studies indicate that good nutrition delays both the asymptomatic period of relative health and the onset of debilitating opportunistic infection, leading eventually to death (Gillespie and Haddad, 2002). Individuals receiving good nutrition have a high chance of living longer with the HIV virus before it develops into full-blown AIDS (Gillespie and Haddad, 2002).

The role of food and nutrition in the care and management of HIV/AIDS

Good nutrition is required at all stages of HIV infection. In such a desperate situation, nutrition is something over which the infected individual has control, and time spent counseling on nutrition can help relieve much anxiety. Nutrition interventions can be achieved through awareness education and counseling and cost comparatively less compared to many other ways of HIV management. Nutrition support can prolong the asymptomatic period of relative health; forestall the onset of debilitation and life-threatening opportunistic diseases such as diarrhea and tuberculosis. Furthermore, it can ultimately prolong the life of an individual for his or her own benefit and for the benefit of their children (Piwoz and Preble, 2000).

During HIV/AIDS infection, energy requirement is raised by 10 to 30% in adults and as high as 50 to 100% among children (Gillespie and Haddad, 2002). It is essential that HIV/AIDS-infected persons have access to a sufficient, diversified and balanced diet because once malnutrition has set in, repletion may be very difficult. Early detection and control should be the aim in managing nutrition during HIV infection. Nutrition intervention should involve nutrition counseling and prescribed nutrition supplement.

Multivitamins prescribed to HIV/AIDS patients have shown good results in a number of studies. In Tanzania multivitamin supplementation of B, C and E significantly reduced

CD4 cell and CD8 cell count, and hemoglobin levels rose significantly (Fawzi *et al.,* 1998). In Canada, Vitamin C and E reduced the viral load in HIV-positive individuals.

In a study of 1079 HIV-positive pregnant women in Tanzania, Fawzi *et al.* (2004) compared the effect of daily supplement and mortality in a double blind placebo randomized trial. They reported that women who received multivitamin supplement (B, C and E) were less likely to progress to advanced stages of HIV disease. They maintained their CD4+ T cells count and had lowered viral loads, along with HIV-related morbidity and mortality lower than women who received a placebo. Conversely, high energy and high protein supplementation have only shown weight gain in fat but not body mass. These supplements, if not complemented with home family diets, do not prevent or reverse muscle wasting, which is critical in detecting survival, (Piwoz and Preble, 2000). This emphasizes the need to ensure good nutrition in high-risk areas.

Food and nutrition, and HIV/AIDS drugs

Good nutrition is of prime importance during treatment of HIV/AIDS. Antiretroviral Therapy (ART) used for treatment of HIV/AIDS is slowly beginning to expand in developing countries. Successes have been reported in prolonging the lives of many HIV-infected individuals but nutrition is directly relevant to the treatment. ART efficacy is highly influenced by the initial nutrition status of an individual. The success of the drug is also dependent on adherence to the drug regime. Some of the side effects of ART are an increase in the demand for certain nutrients. The use of ART has been associated with a form of fat redistribution called lipodystrophy, which is presented by loss of subcutaneous fat. Lipodystrophy increases with the duration of ART treatment. (Chen *et al.*, 2002). This fact explains why already malnourished individuals sometimes fail to continue with the treatment because of the increased anxiety due to the loss of weight following drug use when nutrition is not ensured.

Food affects ART drug metabolism. A high fat meal increases the bio-availability of drugs like NRTIs, while diet higher in micronutrients inhibits the bio-availability of other drugs such as protease inhibitors. For this reason, some drugs have to be taken on an empty stomach while others have to be taken 30 minutes after a meal as food reduces absorption.

Drugs such as protease inhibitors (i.e. Indivar) have been associated with reduced mineral content in men, hence raising the risk of osteoporosis. Also drug side effects such as nausea, taste changes and loss of appetite may reduce food consumption. Other effects, namely diarrhea and vomiting, may increase nutrient losses. Chen *et al.* (2003) found that one in four patients who stopped ART did so because of nausea and vomiting.

Management of these interactions is critical to maximizing the benefit of ART to people living with HIV/AIDS, particularly in the resource-poor communities. Individual nutritional status at the time of beginning treatment with ART is therefore of prime importance. The Food and Agriculture Organization (2002) states, however, that nutrition care and support are important even from the early stages of the infection to prevent nutrition deficiencies.

Food and HIV symptoms

In Tanzania and Zimbabwe, knowledge of use of certain foods and spices in relieving some symptoms of HIV/AIDS has been used to fight against the effects of HIV/AIDS. This knowledge is slowly trickling to the rural areas with the help of small NGOs and home-based care programs (Bhebe and Katuli, 2000). The symptoms relieved are: weight loss, changes in taste, loss of appetite, diarrhea, sore mouth, candida, sore throat, fatigue, nausea and vomiting.

Foods and spices such as onion and lemon have been recommended for blocked and running noses, ginger and cinnamon tea for chest colds, as well as thyme tea and cloves for dry cough (FAO 2002). For decades honey and lemon have been used as cough syrups for adults in Tanzania.

The Network of African People living with HIV/AIDS recommends the use of food in controlling body temperature during HIV/AIDS infection. The normal body temperature is 37^{o} C but people with HIV/AIDS often experience lowered body temperature due to frequent infection, drugs and incorrect diet. Home-based care givers in Zimbabwe reported that simple remedies such as the use of spices like garlic, cayenne, ginger and cinnamon for warming the body have shown good results among individuals with HIV/AIDS infection (Bhebe and Katuli 2000). The Network of African People living with HIV/AIDS also recommend the use of proteins such as meat, fish and chicken soup to increase body temperature. A simple method of monitoring body temperature at home can be used and correction for any 0.5^{o} C below 37^{o}C is considered low and temperature above 38^{o}C is considered warm (NAP+, 1996). Warm temperatures can be corrected by cooling foods such as milk, raw fruits and raw vegetables.

To control weight loss or to improve weight, local foods like *mtakura*-maize bean mixture, *nhopi*-peanut butter sauce and beans, porridge of baobab fruit, and other wild fruits (i.e. *amakhemeswana/matamba* or *amahobohobo/manzanje)* and *mahewu*, which is sour water, cowbean/cowpea paste or round nut paste, bean soup and many others are used in Zimbabwe (Bijulsma 1995). In Tanzania coconut milk, green gram, groundnuts, round nuts and Lishe (soy bean millet mixture manufactured by National Milling Corporation) have been used for weight gain. Coconut water or *madafu*,

particularly from immature coconuts, has been used for treating dehydration and improving digestion.

Spiced tea, ginger or cinnamon drinks and fermented foods can also be used to improve digestion. Bacteria that help to digest food live in human intestines. However, during HIV/AIDS treatment these can be killed due to continued use of some antibiotics, resulting in indigestion and diarrhea. Fermented foods can be used to restore good bacteria in the digestive tract. These foods include 'sour' porridge, unsweetened yoghurt and sour milk. (FAO, 2002; Bijlsma, 1995; NAP+, 1996).

Sprouts are germinating seeds commonly known as *kimea* in Tanzania or *chimera* in Zimbabwe, and are more digestible than un-sprouted grains. The sprouting process increases vitamin, mineral and protein content of the grain sprouted (NAP+, 1996). Sprouting also increases food-digesting enzymes and it is an easy and cheap way of raising fresh food intake. Sprouts have been recommended by CONSENUTH (2002) in Tanzania as part of a food regime for PLWA. Grains that are sprouted are: beans, lentils, peas, sorghum and millets, maize, sunflower and whole groundnuts.

These simple remedies have been promoted by organizations such as the Network of African people living with HIV/AIDS in Kenya and Zambia, the Women and AIDS Support Network, and the home-based care groups in Zimbabwe. It is believed that these remedies are used in many other African countries affected by the HIV/AIDS pandemic, hence their role in cushioning the impact of HIV/AIDS on financial capital should not be underestimated.

Table 44. Useful crop plants for HIV infection management

	Properties					Condition controlled													
Crop plants and spices	**AO**	**AF**	**AS**	**AB**	**IM**	**GI**	**Col**	**Cou**	**Can**	**Ind**	**Dia**	**NV**	**Rel**	**Coo**	**War**	**App**	**F F**	**WG**	**Ton**
Garlic				x	x	x			x										
Onion	x						x	x									x		
Cinnamon										x									
Cardamon												x			x	x			
Mint											x	x	x	x					
Parsley																x			
Thyme		x	x							x							x		
Coconut milk																		x	
Beetroot					x														x
Bisap plant					x														x
Ginger								x		x	x								
Coconut									x									x	

KEY

- AO: Antioxidant
- AF: Anti-fungal
- AS: Antiseptic
- AB: Antibiotic
- IM: Improve immune system
- GI: Gut infection
- Col: Cold and flu
- Cou: Cough and bronchitis
- Can: Candida/ thrush
- Ind: Indigestion.
- Dia: Diarrhea.
- NV: Nausea and vomiting
- Rel: Relaxant
- Coo: Cooling effect
- War: Warming effect
- App: Appetite
- FF: Friendly flora that aid digestion.
- WG: Weight gain
- Ton: Tonic, improves blood level, controls anemia

The role of agriculture in the management of HIV/AIDS

The importance of diversified foods in the management of HIV/AIDS cannot be overestimated. These horticultural crops can be safely grown at home in backyard gardens in the rural areas. In the urban setting they can be grown as potted plants, just enough to supply a household. Home-grown vegetables have an advantage over market-purchased vegetables. Many farmers grow their vegetables with pesticides and not all ensure a safe harvesting delay after spraying. Pesticides such as fungicides may affect or cause irritation in the intestinal mucosa leading to diarrhea. NAP+ (1996) recommends avoidance of foods that may contain chemicals such as pesticides, additives and even some preservatives as these may cause some forms of cancers in the gut.

Discussion

In rural setting where drugs for treatment of HIV infection and complications are expensive, the promotion of these simple food remedies may reduce the burden families have in purchasing drugs. In Zimbabwe, where food security has been a continuous issue due to drought, any additional burden on household resources leads to serious income depletion; rural families are forced to exhaust their resources to pay for drugs. When a head of household dies it is likely that other members will also suffer from the disease (MHCW, 1998), hence household expenditure for medical care increases substantially. Such situations may take the family from poverty to extreme poverty. Any interventions that may cushion such impacts need to be considered closely. Research is therefore necessary to determine the effectiveness of these food remedies and plants so that they can be promoted in the rural communities.

Goat milk is said to have medicinal properties and is far closer to human milk than other animal milk. Goat milk can serve as a breast-feeding replacement option after a month of exclusive breast-feeding by mothers who are HIV-positive (MHCW, 2000). However, care has to be taken to ensure proper consistency of the milk and extremely good hygiene to avoid infections and diarrhea. Studies are therefore needed to establish the milk's suitability and acceptance for use in the rural communities.

If we really want to prevent and mitigate HIV/AIDS in sub-Saharan Africa, particularly in the rural communities, it is absolute requisite to provide at least the minimum food needs to HIV-positive individuals and to AIDS patients, as well as to all people in the communities.

A diet providing adequate sources of micronutrients, vitamins, minerals and antioxidants would have lots of fruits, especially papaya, mango, pineapple, avocado, banana and

dry fruits, as well as vegetables, legumes and alga. Use only a few animal products. Prefer white fatty fish, sheep and goat meat. Prefer sea salt. Use 60-80% fresh whole raw organic foods. Incorporate garlic in cooking and use raw onion, beetroot, cabbage, broccoli, cauliflower, carrots, yeast, sprouts, legumes and cereals. Prefer cold press oils that preserve polyunsaturated fatty acids. Use olive oil and sunflower and eat whole cereals. Decrease sugar intake. Prefer raw organic vegetables and legumes, and lots of liquid from water and fruit juices, especially a blend of green vegetables and carrots. It is also convenient to use foods such as yoghurt, which is better made with sheep or goat milk. Coconut oil is a good source of louric and caprilic acids which are anti-candida (Giraldo, 2003; Fenton and Silverman, 2000).

Conclusions and recommendations

Having reviewed this information, it is evident that food plays a central role in care and management of HIV/AIDS and certainly improves the quality of life of people living with HIV/AIDS. Well-planned, effective nutrition interventions with women of childbearing age, particularly in high-risk areas with poor food resources, may reduce mother-to-child transmission. Improved knowledge of nutrition and dietary diversification increase the chances of consuming different micronutrients that are necessary for good nutrition, particularly during HIV/AIDS infection. Agriculture therefore has a role in ensuring the availability of food that is diverse, adequate and that ensures balanced diet.

To address the problem of malnutrition requires a multi-sectoral approach and so it is with HIV/AIDS. Different sectors need to work together in increasing production of food, providing good health services, monitoring nutritional status of communities and individuals, empowering households and groups of people in the community with microfinance credits for different projects, providing nutrition education and sensitizing the communities on the preventive measures and other avenues leading to good nutrition and health. No single sector can achieve this alone. The following recommendations are made:

1. An intersectoral group has to be formed to address the issue of HIV/AIDS in the communities.
2. Nutrition intervention should be started in all areas, with greatest emphasis on the high-risk areas. This can be nutrition education and counseling to all women and to the affected people.
3. Individual nutrition counseling drop-in centers can be established in conjunction with the health sectors' voluntary counseling and testing activities.

4. There is a need for promotion of locally-available foods for feeding infants and invalids. Available replacement feeding should be explored and modified for use to replace mothers' milk for HIV/AIDS-affected women.
5. More studies should be made on the suitability of some animal milks, i.e. goat milk.
6. Along with ART, education on simple natural remedies for HIV/AIDS symptoms should be explored and promoted in rural areas.
7. Studies on the production of foods of high nutritive value and those providing natural remedies should be done and the results further promoted for the rural communities. These may be for small backyard gardens, potted plants of spices, or high protein and energy foods for infants and HIV/AIDS-affected individuals.
8. Prescribed supplementation of micronutrients should be encouraged at the individual level. In high-risk areas, women of child-bearing age and young children can be given multivitamins as a blanket supplementation.

There is a need to explore further the benefits of foods with high micronutrient levels, i.e. palm oil and sunflower oil, for promotion in high-risk areas.

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Renforcement des capacités des communautés rurales dans la lutte contre le VIH/SIDA à travers les Ecoles de Bien-être (EBE)

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Summary

In sub-Saharan Africa, HIV/AIDS is depleting the region of its food producers and farmers, decimating the agricultural labor force for future generations. Effective solutions rely on the agricultural sector and its capacity to reduce people's vulnerability to acquire the disease. The agricultural sector is in a strong position to assist in both the prevention and mitigation of the consequences of HIV/AIDS. Moreover, it has a responsibility to those people who depend on agriculture for their survival. IITA through its focus unit against HIV/AIDS (UFLS/IITA) and PPLS (Programme Plurisectoriel de Lutte contre le VIH/SIDA, a World Bank-funded program) recognize the urgent need for action to respond effectively to the impacts of HIV/AIDS on food security and rural livelihoods.

The main objective of this activity is to strengthen farmers' capacity to make and manage a community action plan to overcome HIV/AIDS and other factors affecting their livelihood. The approach used to attain this objective is the Farmer Welfare School (FWS), which is derived from the farmers' life school (FLS) and the training manual "How to Live Positively" produced by CABI Biosciences. It consists of learning through discovery, to improve health and longevity amongst farming communities. The FWS were conducted in five communities of Benin, namely Gobé, Atchakpa, Doumè, Davihoué and Gbaconou. Training started with the 54 farmers-facilitators, but in all 179 farmers, including 85 women, were trained. The curriculum of the training covered 14 group exercises, six specific topics and six Human Ecosystem Analysis (HESA).

Présentation lors de l'atelier

Au Bénin, l'évolution du VIH/SIDA est préoccupante. De 0,3 % en 1990, la prévalence de cette affection a décuplé pour se retrouver à 4,1 % en 2001 avec des pics en milieu rural où le taux peut atteindre 13 % par endroit et 67 % au niveau des groupes à risque (PNUD 2003). Le nombre de séropositivité au Bénin n'est pas encore alarmant comparé à ceux des autres pays de la sous-région. Toutefois, compte tenu de la persistance de certains coutumes (scarifications dans les couvents, les incisions et la circoncision, etc.), des mouvements migratoires entre les pays et du nombre de plus en plus croissant de réfugiés politiques et de guerre, le Bénin qui se présente encore comme un îlot de paix en Afrique de l'Ouest risque de connaître une flambée de séropositifs à défaut d'une action collective.

La grande partie des opérations agricoles en Afrique, est exécutée par la main-d'œuvre humaine; or, à cause de son mode de transmission principalement sexuel, le SIDA touche surtout la tranche d'âge de 15-49 ans qui regroupe des personnes économiquement actives (UNAIDS/WHO 2000). En milieu rural, un nombre grandissant d'agriculteurs est, plus ou moins directement affecté par cette maladie. Les diminutions de main-d'œuvre et de ressources financières qui s'ensuivent entraînent des modifications du mode de production agricole et de l'alimentation. Les répercussions du SIDA fragilisent des couches de la société ou des types de personnes déjà très vulnérables (petites exploitations agricoles, femmes et enfants, par exemple). Consciente de la situation, la Banque Mondiale a décidé de mettre à la disposition d'un certain nombre de pays des structures dynamiques de lutte contre la propagation du VIH/SIDA. Il s'agit des Projets Plurisectoriel de Lutte contre le SIDA (PPLS). Ce projet au Bénin a créé des Unités focales au niveau des Ministères et des Services publiques.

Objectifs des E.B.E.

Les écoles de bien-être visent la sensibilisation et le renforcement des capacités des communautés agricoles pour une prise en charge communautaire. Il s'agit en fait de processus de renforcement des capacités et de génération de connaissance pour investiguer et analyser les problèmes de santé en général et ceux du VIH/SIDA en particulier.

Les EBE ont donc pour objectif global la réduction de la prévalence rurale du VIH/SIDA. Il s'agit d'amener les producteurs à prendre conscience de leur vulnérabilité et à développer des stratégies de lutte contre le VIH/SIDA à travers la formation, la sensibilisation et les plans d'actions communautaires. Plus spécifiquement, il s'agira de :

1. Prévenir les effets socio-économiques pervers du SIDA sur les communautés rurales,
2. Renforcer la connaissance des producteurs sur les relations entre leur comportement et leur vulnérabilité,
3. Susciter chez les communautés villageoises ciblées le dépistage volontaire afin de connaître leur état sérologique et d'avoir le comportement adéquat,
4. Former des pairs formateurs capables de relayer les facilitateurs et d'animer les plans d'action communautaires.

Approche de formation

La formation s'est déroulée à travers les écoles de bien-être (EBE). Les EBE sont inspirées des expériences du Farmer Life School (FLS) qui est une approche de formation

qui permet de renforcer la capacité des producteurs à faire des investigations des problèmes de santé dans leur communauté. Le FLS est une adaptation du Farmer Field School (FFS) qui, dans le domaine agricole, permet aux producteurs d'observer leur champ, de comprendre ce qui s'y passe afin de prendre des décisions efficace et efficiente.

L' EBE est une approche qui vise le bien-être des producteurs. En effet, les thèmes abordés vont au-delà du VIH/SIDA et prennent en compte les besoins alimentaires, la répartition des repas en famille, comment assurer une production suffisante pour une auto-suffisance alimentaire, comment améliorer le revenu du ménage etc.

La plupart des modules de formation des écoles de bien-être sont tirés du document «How to live positively». Il s'agit d'un manuel de formation développé par CABI Bioscience sur la prévention et la gestion du VIH/SIDA dans les communautés rurales.

Choix des sites

Les communautés – Gobé, Atchakpa, Doumè, Davihoué et Gbaconou – retenues pour la formation sont celles qui sont déjà impliquées dans les activités de recherche de l'IITA. Elles proviennent des communes de Savalou, de Savè, d'Aplahoué et de Azovè. Les deux séances de prise de contact permettent d'informer les communautés villageoises des objectifs ainsi que du processus de sa main-d'œuvre.

Choix des participants

Pairs facilitateurs

Le nombre de participants dépend du nombre de hameaux associés au village principal. Les critères de sélection des participants à la formation des pairs éducateurs sont les suivants :

1. Savoir lire et écrire en langue locale ou en français
2. Etre disposé à former d'autres producteurs
3. Etre disponible pour suivre la formation jusqu'à son terme

Compte tenu du fait que la vulnérabilité varie en fonction du sexe et du statut matrimonial, l'équilibre entre les jeunes célibataires et mariés d'une part et entre les femmes et hommes a été respecté dans le choix des participants.

Autres participants

Le choix des producteurs participants à la formation des pairs facilitateurs a été soumis aux mêmes règles que celui des pairs éducateurs. Seulement ici, le participant n'est pas tenu de savoir lire et écrire ni en français ni en langue locale.

Formation des pairs facilitateurs

Cette formation a duré 12 semaines et a couvert les 4 activités suivantes:

- Exercices de groupe pour identifier les vulnérabilités, les causes des vulnérabilités ainsi que les approches de solutions,
- Analyse de l'écosystème humain (AESH),
- Discussions sur des thèmes spécifiques avec des personnes ressources,
- Exercices de dynamisme pour consolider l'esprit de groupe entre les participants,
- Brises glace ou exercices de mise entrain.

Formation des producteurs par les pairs facilitateurs

Le même curriculum a été utilisé pour la formation des producteurs. L'implication des pairs facilitateurs dans la formation a permis non seulement d'atteindre un nombre plus important de producteurs et d'avoir des relais dans la communauté pour l'animation des plans d'action communautaires mais aussi d'induire un changement rapide de comportement chez les producteurs. En effet les producteurs croient beaucoup plus facilement en leur pairs.

Contenu des E.B.E.

Une fois par semaine et pendant 11 semaines, les participants et les facilitateurs se rencontrent pour accomplir un certain nombre d'activités. Chaque séance ou rencontre dure environ 4 heures au cours desquels les participants accomplissent un exercice de groupe, l'analyse de l'Ecosystème Humain (AESH), des discussions autour d'un thème spécifique et un exercice de dynamisme de groupe. L'AESH se fait en utilisant l'arbre à problème et en explorant les aspects économiques, sanitaires, éducationnels, socioculturels et environnementaux qui pouvaient expliquer la situation difficile et la vulnérabilité au VIH/SIDA des ménages. Il s'agit en fait d'une transposition de l'analyse de l'agro-écosystème (AAES) de la plante à l'homme.

En général, les activités sont exécutées en de petits groupes de 4 ou 5 personnes. Pour certains exercices relatifs à la vulnérabilité, les groupes sont constitués sur la base du statut matrimonial (marié ou célibataire) et du genre (masculin ou féminin).

Résultats

Enquête diagnostique

De l'entretien avec les producteurs des localités visitées, il ressort que 94% des paysans ont reconnu avoir entendu parler du SIDA à travers les médias. Certains, notamment

dans le Couffo, ont confirmé être informés par des ONG et des organisations étatiques comme les centres de santé; 6% ont affirmé avoir vu un malade du SIDA présentant les signes d'amaigrissement, de vomissement, et de toux. Dans tous les villages les paysans ont à l'unanimité reconnu qu'aucune méthode de lutte curative n'est disponible et que seule la mort est le résultat final et pour cela 93% d'entre eux ont demandé à être informés sur les comportements à tenir pour prévenir la contamination. 84% des interviewés ont affirmé que l'infidélité et les outillages infectés sont les voies de contaminations et 2% ont affirmé que c'est les moustiques qui sont les vrais vecteurs de la maladie du fait de leur mode d'alimentation. Moins de 1% des répondants ont estimé que les sorciers donnent le SIDA quand ils sont mécontents ; 42% des producteurs ont estimé qu'un sujet porteur du virus ne se reconnaît toujours pas tant qu'il ne développe pas la maladie ; 21% affirment que les personnes physiquement bien portantes ne possèdent pas le virus ; et le reste affirme ne pas connaître quelle réponse donner. Seuls 16% des personnes ont accepté connaître leur état sérologique par le dépistage volontaire estimant qu'ils pourront changer de comportement une fois leur état connu.

A la question de savoir quels comportements adopter vis à vis des malades ou porteurs du virus du SIDA, 77% des producteurs interviewés ont affirmé les éviter ou fuir simplement pour ne pas contracter le mal.

Formation des producteurs

La totalité des producteurs inscrits ont suivi la formation jusqu'à son terme ; soit un total de 179 producteurs dont 85 femmes. Ce résultat a été obtenu grâce à l'appui des 54 pairs facilitateurs formés. Durant la formation, 14 exercices de groupes, 6 thèmes spécifiques et 6 analyses de l'écosystème humain ont été exécutés par les participants.

Au terme de la formation et de façon spontanée, les producteurs dans toutes les communautés ont créé des postes de vente de préservatifs. Dans d'autres communautés comme Davihoué, les producteurs ont organisé eux-mêmes leurs séances de dépistage et monté un plan d'action communautaire en collaboration avec des ONGs opérant dans le milieu.

Goat milk: a case study in North Cameroon

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Workshop presentation

Milk from large ruminants is widely produced in Savannah Africa from the native zebu cow. Numerous studies have been done on milk to assess its nutritive values. Detailed composition of the constituents of cow milk and their concentrations can be summarized as 87% water, 4.9% protein, 3.9% fat, 0.7% minerals and vitamins. As such, milk is recommended for children and some sick people (Beal V.A. 1980. Nutrition in the life span) for proper growth and quick recovery. From all mammals, milk from goats is one of the closest to human milk and contains beneficial antibodies. Goat milk was used in the past in remote villages to feed orphans and sick people and is still claimed by some sages to be an important medication for curing some diseases. One of the many consequences of HIV/AIDS pandemic is the increasing number of orphans and sick cases in the population. In areas where cow milk is scarce, milk from local goats can be useful in feeding the growing number of needy people. As such, the potential importance of goat milk in the fight against malnutrition and HIV/AIDS needs to be addressed. Goat milk is not produced nor consumed at community level in many parts of Africa. Furthermore, the milk production of local goats remains unknown and unexploited by small farmers, who usually keep about 10 goats each. This is the case in most villages in Northern Cameroon. Milk production from small ruminants was considered a possible alternative to fresh cow milk in rural communities in Savannah Africa. The practice of goat milk production will bring within reach the "medication" formerly used by the indigenous population. The objectives of this work was the promotion of the production of milk from local goats and its consumption by farmers, children and some sick people in selected communities in an attempt to promote food self sufficiency. In a collaborative work, farmers milked some of their lactating goats for a period of one to two months and they, the children, and neighbours consumed the milk

Site selection

Four villages were retained, based on accessibility, presence of a flock of goats with little to no bovine milk production, availability of an extension worker and health personnel.

They were:

Benoué	Dola , Guébaké, Marouaré
Mayo Rey	Bere
Mayo Louti	Larbak, Ouro Tara, Djaoro Bouba
Faro	Lagdo

Contact farmers (CF)

They were the farmers who offered to milk their goats to serve as example to others. A total of 25 farmers agreed to participate in this trial during the month of December 2002 and January 2003. Their goats were ordinary dwarf goats of the Savannah ranging from white, black to Sokoto Red and mixed spotted colour animals. Lactating does with apparent good body conformation and less than one month into the lactation period were used.

Routine visits were organised weekly to the contact farmers. At the beginning, group discussions were held in the village, including traditional leaders and women's groups to assess the constraints to milk production from goats. The participative approach was used and the farmers brought their flock and took care of the daily management of the goats. Training sessions on the feeding and milking of goats and on pasteurisation of milk were held. At the end of each session, milk samples were served to participants for tasting.

Results

From the discussions, some constraints related to goat milk production were identified. They include the lack of knowledge on management of dairy goats, their production potential, the low quantity produced daily, and the nutritional values of goat milk. A social constraint was the shame associated with the consumption of milk from goats in a community where its production is not common. Moreover, very little was known of the therapeutic virtues of such milk. After being enlightened on the virtues of goat milk, some farmer volunteered to embark on production trials for a period of one month.

Goat management

Goat keeping is a secondary activity of all the farmers whose main activity is crop farming (cotton and cereals). Goats are free in the dry season (December to June) and are shepherded by children from the beginning of the cropping season (June) till the end of the harvesting season in November. Under these conditions, the animals have less than 4 hours daily for effective feeding because the young herdsmen only return from school at about 2 p.m. Each evening the kids are penned separately from the adult goats

to prevent them from sucking at night. Taking into account the management practices and the pastures, milking can only be carried out from December to March when crop residues capable of sustaining the animals are still in the field as recommended by Gall (Gall E. 1981. Milk production in goat production. Academic Press London). From April to June, the climatic conditions are too stressful. With improved management, the milking period could be extended from July to March.

Milk production

Regular morning milking was carried out for 30 days and the volumes of milk collected recorded. The minima and maxima observed were in the range of ¼ glass (40 ml) to 2¼ glass (565 ml) per goat. Total production ranged from 4.50 litres to 22.35 litres, respectively. Milk production potential estimated for a lactation length of 100 days stood at 17.5-75 litres for the farms concerned. Although the values obtained were quite low compared to the production of dairy goats, these results were very encouraging given the dwarf breeds used.

Only anecdotal evidence was obtained on the therapeutic virtues of the goat milk from people who felt their health had improved due to goat milk consumption during the study. The producers of Ouro Tara, under the guidance of the health personnel involved, initiated a daily delivery to patients of the District Hospital of Guider. The goat milk sold for twice the price of cow milk.

Conclusion

Although milk production of the native goat was low, milking was effectively done by some farmers for 60 consecutives days. Milk obtained was consumed with a lot of satisfaction by children, in particular. Participants at the field day recommended that the pilot program be reinforced and extended.