
Malawi Assessment

The impact of HIV/AIDS on household economy in two villages in Salima district, Malawi

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Executive Summary

This is the third in a series of studies undertaken in southern Africa to improve understanding of the relationship between HIV/AIDS, poverty and food security. These studies have all explored the use of the Individual Household Model (IHM) as a practical tool for poverty assessments and programme interventions.

The aim of the Malawi study was (i) to pilot the methodology in an environment that was significantly poorer than earlier studies¹ and (ii) to demonstrate practical applications of the IHM in the design, monitoring and evaluation of social protection interventions, including their impact on households affected by HIV/AIDS.

The study was conducted in two rural communities in Salima district, Malawi, where maize production is the main source of income. Study sites were selected in Save the Children US programme areas.

Household economy methods were used to describe and quantify the components of household income and expenditure, including food production and employment.

Detailed demographic information was collected for all household members, in both villages (Salima I and Salima II). The presence of orphans² in a household was used as a proxy for HIV/AIDS³. Orphans made up 8.9% and 10.7% of the total population of Salima I and Salima II respectively. Orphans were resident in 23% of households in Salima I and in 29% of households in Salima II.

A 50% random sample was used for the economic survey in Salima I, and a whole village economic survey was carried out in Salima II, due to its smaller size.

Comparisons were made between the income and standard of living of households across the study population. These were based on comparisons of disposable income i.e. income remaining after the household had met its food requirements. A minimum standard of living was established, including basic needs and primary

¹ These studies were conducted in a highveld Swaziland community and a rural trading centre in Mozambique. See main report, Introduction, for references.

² Orphans are defined locally (and in this study) as children who have lost one or both parents.

³ The cause of death was not known definitively; however, adult HIV prevalence in this area is estimated at 21% so it is reasonable to assume that a large number of 'prime age' adult deaths resulting in orphans can be attributed to HIV/AIDS.

school costs; the standard was designed to be consistent with international Millennium Development Goals (MDGs). In Salima I just under 34% of households fell below the minimum standard of living threshold. In Salima II, nearly 39% of all households fell below the threshold.

An estimate was made of the cost of supporting orphans, to meet minimum standard of living criteria (see Table 7). The total cost of supporting all orphans, including food, school costs and other non-food costs was estimated at around \$US 1,900 per year.

The impact of possible social protection interventions on household poverty was simulated, using the IHM method. This included market interventions (e.g. commodity price subsidies) and programme interventions (food aid, school feeding and cash transfers).

The IHM simulations indicated that improving returns on maize production would have the greatest impact on poverty reduction in the study areas. Assuming households used the same amount of land as they did in the reference year and returns rose to 580kg/acre (equivalent to the highest maize return recorded by an individual household) average disposable income in Salima I would rise by nearly 25%. The proportion of households below the standard of living threshold would fall from around 34% to 20%.

The poverty impact of an unconditional cash transfer of \$2 per month to all households would be similar to an annual food aid distribution of Kg 200/household/year. However, food aid, including transport, would be far more expensive than a cash transfer, which would cost \$3,400/year in Salima I.

Analysis of household economy, demography and living standards using IHM methods provides new insights into the distribution of poverty and the characteristics of poor households in communities affected by HIV/AIDS. The IHM also provides a practical method for modelling the poverty impact of different social protection mechanisms and can be used to evaluate the effectiveness of programme interventions against poverty objectives (illustrated by the analysis of targeted food aid, Figure 7).

HIV/AIDS and Household Economy in Two Villages in Salima district, Malawi

A Study conducted in September 2004

1. Introduction

This is the third in a series of studies undertaken in southern Africa, with the aim of improving understanding of the relationship between HIV/AIDS, poverty and food security⁴. The earlier studies were carried out in Swaziland and Mozambique in 2003. In one of these studies, Swaziland, an attempt was made to estimate the impact of HIV/AIDS on individual household economies. It was found that although the impact was negative, and for some households catastrophic, the average size of the impact was comparatively small relative to the effect of other economic fluctuations, chiefly because many of the people affected were under employed or unemployed. It was also found that many of the commonly used indicators of HIV/AIDS vulnerability (for example, the presence of orphans in the household, chronic illness, the proportion of available land cultivated etc) provided a poor guide to a more objective estimate of need. However, both the Swaziland and Mozambique studies were located in countries and communities that were, by the standards of rural southern Africa, comparatively affluent. The Malawi study was carried out in Salima district, which has a recent history of famine⁵, high levels of poverty and a lack of off farm employment options, as well as a high prevalence of HIV/AIDS.⁶

The aim of this study was to inform the wider debate around effective programming for orphans and vulnerable children (OVCs) by

- exploring whether there were differences in the relationship between orphans, poverty and food security in a poorer setting than the two earlier studies.

⁴ HIV/AIDS and household economy in a Highveld Swaziland community (Seaman J, Petty C with Narangui H. SC UK March 2004) A rural trading community in Manica province, Mozambique: the impact of HIV/AIDS on household economy (Petty C, Sylvester K, Seaman J. SC UK March 2004).

⁵ Distress migration from rural areas to Salima town occurred in 2002; there were cholera deaths among the displaced and malnutrition rates of 19% were recorded.

⁶ HIV prevalence rates in Salima range from 13%-25% (Salima Socio-economic profile Republic of Malawi 2002). HIV prevalence in the Swaziland site was 38% and the Mozambique site was around 21%.

- demonstrating a practical methodology for field research and data analysis that provides reliable, quantitative descriptions of household economy and demography in extremely poor, HIV affected communities.
- modelling a range of interventions and their impact on poor households (including households with and without orphans).

This report presents a summary of the main findings of the study. A number of issues, including the choice of interventions to more effectively reduce levels of poverty and vulnerability and the implications of different targeting methods, will be treated in greater depth, and comparisons made with the findings of the other two studies, in a future paper.

2. Background and context: Salima district⁷

Salima district is located in the central region of Malawi bordering the western side of Lake Malawi. The district extends from the Rift Valley lakeshore plain (altitude 200m-500 m) adjacent to Lake Malawi, to the central upland area in the west (altitude 500m-1000 m).

Salima has one main rainy season (November to April) and average temperatures of around 22 C. Lowland soils are made up of clay loam and alluvial deposits and include extensive dambos⁸. The upland areas have shallow stony soils.

Salima has one of the highest rates of soil erosion in the country, with a registered soil loss of 41-50 ha/year. There has been extensive deforestation and the estimated current rate of deforestation across the district is just under 4%.⁹

Customary land comprises 76% of the district and can be allocated by Traditional Authorities (local chiefs). 20% of land is held privately and is mostly used by estate farmers for commercial farming. The District has 486 private estates, occupying 56146 ha (average around 115 ha). 4% of land is used for schools, hospitals, forest reserves and markets.

⁷ See also Salima socio-economic profile, (Republic of Malawi, 2002).

⁸ Defined as 'seasonally waterlogged, predominantly grass covered depressions bordering headwater drainage lines'.

⁹ See Salima Socio-economic profile, (Republic of Malawi, 2002).

Demography, population characteristics and availability of services

Population

The 1998 Population and Housing Census recorded a district population of 248,214 people. Salima district had an annual population growth rate of 2.5% between 1987/1998. At that time, children aged less than 9 years made up around 33% of the population.

Education

Primary education is available free of charge. However, around 30% of primary school children have an average travel time to school of over an hour. Pupils are expected to provide books, school materials and to pay an annual 'community contribution'. Staff: pupil ratios are above the national average and there is a shortage of staff housing. Literacy rates in Salima are low (around 38%).

Health and health services

Infant mortality is estimated at 132 per 1000¹⁰. There is one referral hospital in the district. 42% of the population lives within 2 hours' walk of a health post and 29% of the population within 1 hours' walk. Malaria, anaemia and pneumonia are the main causes of under 5-year hospitalisation. Estimates of the prevalence of HIV/AIDS ranges from 25-13%.

Water

Only 43% of the population has access safe drinking water. Charges are made for access to boreholes and other improved water sources.

Electricity

2% of the population has access to electricity and 80% use paraffin for lighting.

Roads and Transport

Two well-maintained main tarmac roads pass through Salima. Most of the remaining road infrastructure (around 77%), including feeder roads connecting villages and rural trading centres, become impassable in the rainy season.¹¹

¹⁰ National infant mortality is 121 per 1000.

¹¹ Salima socio-economic profile 2002.

Main sources of income

Crops

More than 75% of land in Salima used for crop production, including maize, pulses, groundnuts, cotton, tobacco, cassava, sorghum, sweet potatoes, mangoes and bananas. Rain fed maize is the main crop, occupying 40% of arable land. Cotton and tobacco are the main cash crops. Tobacco production has fallen in the past 3 years (from 1,013,656 MT in 1999-2000 T to 997,386 MT in 2001-02). Cotton production increased in the same period from 5,521 MT to 7,529 MT. It has been suggested that this is due to lower input costs.

Livestock

Despite good conditions for cattle production, livestock are mainly limited to goats, pigs and chickens. Lack of cattle is explained by problems of disease, raiding and widespread poverty, preventing farmers from building up herds or restocking to replace losses.

Sources of employment

Agricultural labour, mainly on private estates, is the main source of income for an estimated 85% of the district's population. In lakeshore areas fishing also provides employment. Other employment opportunities, including government service, NGOs and private business, are extremely limited

Around 80% of households are engaged in farming.

Food aid and Community Based Organisations (CBO)

From 2003 to June 2004, a special food aid distribution ('food aid plus') was made available to 'orphans and vulnerable households'. SC UK carried out the distribution in the study area. Food was made available to local community based organisations (CBOs) which were responsible for targeting assistance, with the co-operation of community leaders.¹² The monthly ration was made up of 50 kg maize, 25 kg Soya, 4 litres cooking oil and 50 kg beans. There are 9 registered orphan care support programmes in Salima. In addition to their role in food aid distribution these groups are also involved in implementing a range of HIV/AIDS and OVC programmes.

¹² The source of food was WFP stocks from the previous year's emergency programme.

3. Field work

Study sites

Two study sites (Salima I and Salima II) were selected in consultation with Save the Children US.¹³

Salima I is located in Kalonga Traditional Authority (TA), about 45 minutes' walk from the tarmac road and 14 km from Salima town. Salima II is in Khombedza TA, about 5 minutes walk from the main road and 40 km from Salima town. Criteria for the selection of the study communities included:

- the presence of a local CBO working in the field of HIV/AIDS that had been supported by Save the Children, could facilitate access to the community and might benefit from information arising from the assessment.
- a rural location that was reasonably typical of the district i.e. at least an hour's walk from a main town and not part of a rural trading centre.

The fieldwork was conducted in two stages over a period of 14 days. The first stage was to obtain as complete an overview of the economy as possible, from the secondary literature and key informants including farmers (men and women from different economic groups); village heads; CBO leaders; the local agricultural extension worker and others. This overview was then used to inform the more detailed information collection from individual households.

Stage 1

The information collected included:

(a) A comprehensive list of all crops (including minor crops, fruit trees, vegetables etc.) and all livestock and their uses (traction, milk, meat, live sale and sale of products).

(b) For each agricultural activity information was recorded on:

¹³ SC US supports CBOs implementing programmes for orphans and vulnerable children in the study sites

- (i) Seasonal agricultural labour requirements (crops and livestock) i.e. a labour calendar, identifying the labour inputs for a defined area of land, for each task (e.g. land preparation), and who (men/women/children) typically does this work.
- (ii) The costs of all crop and livestock inputs (land, labour, fertilisers and pesticides, veterinary services etc); the yields expected at different input levels and for upland and dambo cultivation; and details of seasonal prices.
- (iii) All types of employment. For each type of paid employment (including salaried and self-employment) information was obtained on the amount of labour typically available for each type of employment (days per month), seasonal variation in this, typical wage rates, and any requirements for employment (e.g. age, gender, skill or qualifications).
- (iv) Market information, including the names and locations of local markets for goods and services. Information was collected on the operation of markets, e.g. price setting for major traded commodities and on local barter arrangements (e.g. maize for fish).
- (v) Information on credit, loans and local farm input support schemes.
- (vi) Information on the social and economic context e.g. land tenure and inheritance, who in the extended family is normally considered responsible for supporting orphans, the availability of external NGO and government support etc.
- (vii) A map of the community. Each homestead and the name of the household head was drawn on a sketch map, to assist in the location of households and to ensure that all households were visited.

Stage 2

The second part of the fieldwork involved individual household interviews.

Two questionnaires were designed and administered separately. 1. A census questionnaire. 2. An economic questionnaire. The economic questionnaire was

designed on the basis of information obtained in the first stage of the enquiry, to ensure that all potential income sources were included. The census questionnaire sought information on all people normally resident in the household (i.e. people usually sleeping and eating there) and included details of household members absent at the time of the census, orphan status, the relationship of each household member to the head of household, and school attendance of each child. Additional information on orphans included the year in which their parent or parents died and the last occupation of the deceased parent. In the case of female-headed households, women were identified as never married, widowed or divorced.

The economic questionnaire included:

- (i) All sources and amounts of household income in the defined reference year, whether obtained from household production (food and cash crops, livestock production, wild foods and gifts¹⁴) or in cash or food from paid employment and self-employment. This chiefly includes agricultural labour ('Ganyu') and trade (i.e. the sale of cash and food crops, livestock and livestock products, wild foods, cash gifts, handicrafts etc).
- (ii) Household assets (livestock, hoes and other agricultural implements, bicycles etc). Information on cash savings was not sought, as it was not thought that accurate information would be obtained.
- (iii) The use of agricultural inputs in the reference year.

For this assessment, the reference year, was defined as the year preceding the survey (Oct 2003-September 2004).

In Salima I, all households were included in the census. Because of the large number of households, a 50% sample was taken for the economic interviews. To avoid selection bias every second household was selected from the map. In Salima II, a smaller village, all households were included in both the census and economic survey.

The assessment team

The team included 5 field assistants (recent graduates in agricultural science); a translator/facilitator; a team leader with experience of the individual household

¹⁴ 'Gifts' include all transfers between households and to households on 'non-market' terms. This would include charitable gifts, gifts between kin, reciprocal arrangements between households and food aid.

method (IHM) and two experts with responsibility for overall design, implementation, analysis and documentation.

The field assistants were given an initial, half-day induction. Further training was carried out on a daily basis in relation to specific tasks (e.g. village mapping, household economy information etc) and data was reviewed regularly.

4. Description of methodology

In order to make meaningful comparisons between the income and standard of living of different households, household income must be reduced to common terms. There are three difficulties in making these comparisons:

- (i) Households obtain income both as food (from cultivation, gifts, wild foods and payment in food) and money (from the sale of food and non-food production, employment, gifts, remittance) in different amounts and from a different pattern of sources.
- (ii) Some food items are not traded (in this case, chiefly wild foods) and therefore have no price.
- (iii) The chief interest of the study is not in gross income but in disposable income i.e. the amount of money available to the household to procure goods and services after unavoidable costs (such as food and taxes) have been met.

These difficulties have been resolved by:

- (i) Calculating the *disposable income* of each household i.e. the money remaining to the household after their minimum food needs have been met. As most households produce less food income than their requirement, any household food need not met by production is met by the purchase of maize at the price prevailing in the study period.¹⁵

¹⁵ At the time of the survey the price of maize was Kw16/kg. However, maize prices vary during the year (approximately Kw11/kg post 2004 harvest) and according to where and how much is purchased. A price of Kw13.5 has been taken as a reasonable average of the price which would have been paid by most households during the reference year.

The cost of any maize purchase is subtracted from the household's money income.^{16 17}

- (ii) Standardising disposable income by the number of 'adult equivalents' in the household. The number of adult equivalents in a household = the total annual household food energy requirement / average (male and female) annual adult (aged 25-26 years) energy requirement. Household food energy requirement is calculated as the sum of the food energy requirement of each household member, using WHO (1995) requirements by age and sex for a population of a developing country.

Note that in deriving a disposable income it is not assumed that the calculated diet is the actual diet eaten by these households. Although the quality of the calculated diet does closely approximate that of poorer households, it is assumed that better off households would purchase a larger quantity of food and a wider range of food items from their disposable income.

The standard of living.

A minimum standard of living has been defined as the ability of a household to obtain sufficient food to meet its needs and:

- basic household expenses i.e. kerosene, matches and utensils.
- personal expenses i.e. clothing and soap.
- primary school costs i.e. school dues, uniforms and books.

¹⁶ For example, a household with a requirement of 1000kg maize/ year to meet its consumption needs, which cultivated 400kg maize/ year for consumption, and had a cash income of Kw 20, 000/ year from employment would be calculated to have a disposable income of: (Kw 20,000 - (cost of 600kg maize, i.e. Kw 600 * 13.5)) = Kw 11,900/year. If there were 3.2 adult equivalents in the household the calculated disposable income would be standardised to Kw3719/ adult equivalent/ year

¹⁷ Household food income was in excess of household requirement in 10 households out of 59 included in the analysis in Salima I, and 8 households out of 31 households in Salima II. The main reason for the excess was the distribution of food aid. In these cases the money value of the excess food (calculated at the maize price) was added to disposable income.

The cost of farm inputs has not been included. Much of the fertiliser used was obtained free from a DFID funded 'starter pack' programme and it is unclear how much people would spend on fertiliser if they were paying for this at the full commercial rate (see Section 5). Detailed information on the costs and use of health services could not be collected within the time available but levels of expenditure varied considerably. Similarly, enquiries on access to vet services were limited by practical constraints.

As demographic composition varies between households, the cost of meeting a minimum standard of living has been calculated for each household separately as: household costs + (personal expenses * number of people in household) + (number of primary school age children * cost per child). Primary school age has been taken as 6 years to 16 years of age.

The standard of living threshold set represents a bare minimum.¹⁸ An allowance for medical costs (Kw1200/year/household) has been made, although this is somewhat arbitrary as real costs will vary from household to household and in different periods. It would add substantially to non-food expenses for many households.¹⁹

This methodology has been designed to allow comparisons between households to be made in reasonably common terms. The only specific omission is the difference in the food quality (i.e. nutrient composition) of food grown by each household for its own consumption. As maize accounted for almost all food energy production for domestic consumption in the reference year, and the contribution of livestock production, fruit, and wild foods to the diet is very low, this distortion is small.

¹⁸ Annual household costs = matches (Kw21), salt (Kw60), utensils (Kw250), paraffin (Kw1080), borehole maintenance (Salima I this is an annual levy, in Salima II charged only when required) Kw360, health costs Kw1200. Annual personal costs = laundry soap (Kw160) and salt (Kw60) (all people in household), clothes, females > 16 years Kw160, males > 16 years Kw400. Annual school costs (children 6-16 years) (Kw350). For many very poor households diesel rather than paraffin is used for lighting fuel, soap is a seasonal luxury and school uniforms might be provided for some children, but not all. Children who did not have uniforms were said to be reluctant to attend.

¹⁹ Child health services are free. However, transport costs are high K160 from Salima I to Salima town and women are encouraged to take their children for growth monitoring every 3 months.

Modelling the impact of changes affecting a household

A cross sectional survey can only give a snapshot of recent economic conditions. In fact, the absolute and relative level of household income will vary over time, as changes occur, both within the household (e.g. births, illness and deaths, the adoption of orphans) and in the external context to which all households relate (e.g. changes in crop production and crop and input prices, availability of food aid etc). However, the data set we collected can be used to simulate the impact of some external changes on current household disposable income and standard of living: in other words, it can be used to model the vulnerability of households to specified changes. This is done by recalculating disposable income under the stated changed conditions (for example, with and without food aid). A simple example is given in Annexe 2.²⁰ In practice this involves a large amount of calculation, and software was written for the analysis.

5. Findings and analysis

Population

Orphans have been defined as children under the age of 17 years who have lost one or both parents.²¹

Grandparent headed households included one or two grandparents.

The population of Salima I is 683 (complete census) and Salima II 168 people. Figure 1a shows the recorded population of each village grouped by one-year divisions from birth to 79 years of age, and all ages above 79 years, distinguishing male and female orphans. Note that younger ages are probably accurately recorded to the nearest year, but some older people did not always confidently know their ages and there is an element of estimate for older age groups. The data is summarised in Figure 1b and Table 1.

²⁰ The approach could also be used in a longitudinal study to monitor and quantify change over time, including responses to external shocks and changes in household demography.

²¹ A cut-off of 17 years was used, rather than the 18 years recommended by WHO, to maintain consistency with earlier studies. The use of a higher threshold makes little difference to the results. Older people have not been included as dependants as age did not seem to be a bar to full economic activity.

