

PN-000-961

A COST BENEFIT ANALYSIS OF THE LDTC'S ASSISTANCE FUND

Lesotho Distance Teaching Centre
Maseru, Lesotho
5 July 1985

ACKNOWLEDGEMENTS

Our thanks to all from the Lesotho Distance Teaching Centre who worked hard on the collection and analysis of cost-benefit data for this study: Lipholo Makhetha, Pholonngoe Moleko, Mathato Khitsane, J.B.K. Maime, Linda Ziegahn, Malineo Sakoane, Joe Mohajane, Tsita Senoko, Faku Ntoampe, Dick Betz, Sechaba Seutloali, and Makluli Mngadi.

Thanks also to Gwen Eng from USAID/Washington for her consultancy with the LDTC. We hope that the knowledge gained during this workshop will be useful to all Centre programmes.

I. INTRODUCTION

A. Overview of the Assistance Fund

The Assistance Fund is a component of the U.S. Agency for International Development Structuring Nonformal Education Resources Project which is being implemented by the Lesotho Distance Teaching Centre (LDTC). This project began in late 1979 and is scheduled to end in April 1986.

The Assistance Fund is intended to benefit rural people by providing them with educational and financial assistance for various income generating and educational activities. The LDTC conceptually views the Assistance Fund as a resource bank whereby requesting and needy groups can apply for and receive help in such areas as:

1. Training Assistance - practical and immediately usable needs based training;
2. Materials Development Assistance - adaptable to specific situations, usable with little or no prior training;
3. Communications Assistance - development and implementation of mass media campaigns, production and broadcast of radio programmes;
4. Evaluation Assistance - baseline surveys, formative and summative evaluations, and sharing of information on development activities; and,
5. Financial Assistance - loans for income generating activities and grants for educational activities.

The project is designed to utilize the particular skills that a nonformal education institution like the Lesotho Distance Teaching Centre can bring to bear on the development process. The project is based on the recognition that an integrated approach to development is most effective. This means working in concert and not in competition with the numerous organizations providing assistance at the village level by providing a forum or network for channelling assistance to communities. To date this has been done through numerous training of trainers workshops run by the LDTC for national organizations in such areas as community needs assessment and goal setting, programme planning, identifying community resources, group dynamics, leadership skills, simple fiscal management, and business skills. In addition, this networking is being supplemented by the recently developed LDTC Training of Trainers Model (TTM) which strengthens the skills of district extension workers and other community leaders in identifying community needs as well as designing and implementing more effective training programmes. With increased income generation skills and with better dissemination skills in their particular content areas, extension workers together with the

educational and financial inputs provided by the LDTC are able to provide meaningful help to an ever increasing number of village based development activities.

The first LDTC Assistance Fund loan was awarded in July 1982. As a result of the national Training of Trainers workshops and the district training sessions for extension workers and community leaders, the LDTC is presently working with over 30 different village based income generating activities. This represents approximately M 300,000 in Assistance Fund loans. (Some of these groups have only received the approval of the LDTC Screening Committee. The concurrence of the Assistance Fund Management Subcommittee is needed before loan funds can be disbursed).

B. Rationale for Cost Benefit Analysis of the Assistance Fund

As a direct result of a conference held in April 1985 in Washington, D.C. for nonformal education planners and practitioners including those from the Lesotho Distance Teaching Centre (LDTC), it was decided to invite Ms. Gwen Eng, an educational economist working with USAID/ Washington, to conduct a two and a half week workshop in late June and early July 1985 at the LDTC on cost benefit analysis.

It is felt by the LDTC that administrators of revolving loan funds programmes like the LDTC Assistance Fund need to continually assess and, in some cases, make hard decisions regarding the long term viability of such programmes. This is especially important given the tremendous number of assumptions and scarcity of facts that surround the concepts of revolving loan funds and income generation. In times of greatly restricted governmental or private funds for new ventures, such programmes are feasible only if the benefits derived from the investment are greater than the investment itself. Stated in other words - "Is the LDTC Assistance Fund a worthwhile investment of funds?"

To answer this question an analysis of all costs (costs to the assisted groups and to the LDTC) as compared to all benefits of whatever nature to the groups, to the LDTC, and to society as a whole was undertaken.

The steps that the workshop participants used in the cost benefit analysis were as follows:

1. Define the project and specify the aims of the analysis.
2. Identify the main cost components.
3. Value and adjust project costs.
4. Summarize and analyze project costs.
5. Specify intended project outcomes such as educational, skills application, etc.
6. Value and adjust project benefits.
7. Relate project costs to benefits.
8. Interpret the results of the data.

The first step in the cost benefit analysis was to define the project and specify the aims of the analysis. In the large workshop group, a number of questions related to the Assistance Fund were posed which the cost benefit analysis was intended to answer. They were:

1. How many Assistance Fund groups can the LDTC effectively handle?
2. Who should manage the banking aspects of the Assistance Fund - the LDTC or a financial lending institution?
3. At what rate of interest should the Assistance Fund money be lent - 4% per year (which is the current rate), 10% per year, or 12% per year?
4. Which income generating activity is most productive for the groups - large chicken activity, small chicken activity, knitting activity, or sewing activity?
5. Is the LDTC Assistance Fund cost beneficial for the groups, for the LDTC, and for society as a whole?

After several days of introduction and practice with the concepts associated with cost benefit analysis, the workshop participants were divided into smaller work groups to undertake tasks related to cost benefit steps 2, 3, 4, 5, 6, and 7. Different groups looked at LDTC Assistance Fund development and operating costs, Assistance Fund group costs, or Assistance Fund group benefits. The following pages represent the summary of their work and findings.

II. DATA SOURCES AND CONSTRAINTS

LDTTC was the main source of data for this study. Development costs related to the Assistance Fund were calculated as a proportion of total USAID funds contributed under the Structuring Nonformal Education Resources Project. Appropriate proportions were determined by LDTTC management staff. Similarly, operating costs of the Assistance Fund were calculated in most cases as a proportion of LDTTC's actual annual operating expenditures. Details of these assumptions are given in the Appendix. Information on Assistance Fund (AF) group costs and benefits was drawn from primary data on individual groups collected by LDTTC's Research & Evaluation and Service Agency sections.

As is commonly the case when economic analysis of nonformal education programmes are undertaken, a number of constraints regarding available data were encountered. One of the most common problems encountered in most cost benefit analysis is the absence of a representative control group. No control data has been collected for the Assistance Fund groups. It is, therefore, impossible to demonstrate with certainty that all benefits attributed to AF participants in this analysis are a direct result of the Assistance Fund interventions. To determine this, income earnings of a group of non participants with educational and socio-economic backgrounds similar to those of the AF group members would also need to be monitored. It was therefore necessary to rely on available baseline data to determine incremental benefits from the project. While no formal baseline data on group income was collected before the project, a number of groups were interviewed by LDTTC staff shortly after assistance commenced. All responses to LDTTC questions about group earnings before the project suggested that AF groups were not previously earning as a group. It was assumed for purposes of this analysis that AF groups' pre project earnings were zero and all income earned after assistance was incremental income.

AF group costs and benefits were projected from actual cost and benefit data that was collected for 10 out of the 30 current groups. In this sample of 10, the following numbers and types of activities were examined: poultry production receiving small loans (less than M5,000), 4; poultry production receiving large loans (greater than M10,000), 3; knitting, 2; sewing, 1. Often, information regarding the unit price of materials and frequency of purchase or transportation costs related to the activity were not available. Figures on total earnings from sales and frequency of sales were also not available. In the case of one small poultry, one knitting, and one sewing group, it was possible to gather this information through informal interviews. For the most part, it was necessary to make projections about groups' annual operating costs and expected benefits. These assumptions were made on the basis of the best possible information concerning actual prices of production inputs and outputs as well as the work habits of individual groups. LDTTC is currently in the

process of collecting more complete data on group costs and benefits, so it will be possible to test the validity of the assumptions made at this early stage later in the project. This will be particularly critical for the large poultry groups which, at the time of the study, had not commenced production.

One final data constraint must be noted. To date, the LDTC has approved AF loans to some 30 groups. Of these 30 groups, 24 fall under one of these four categories of activities: large poultry, small poultry, knitting, and sewing. The remaining six are engaged in a variety of activities including piggeries, dairy operations, and tie & dye. In the effort to create a simplified model of examining the Assistance Fund, only the most typical activities were examined. For each of these four typical activities, an average of group costs and benefits was calculated. Though total group costs and benefits are based on the actual number of AF groups existing between 1982/83 and the present, the 6 atypical groups have been recategorized under one of the four typical groups. The one existing piggery group has been evaluated by LDTC and shown to be relatively unproductive. Not considering the problem of this particular group in the overall analysis of AF costs and benefits may tend to overstate the benefits. Yet, given the past experience with this piggery, it is not likely that the LDTC will encourage similar activities in the future. Dairy may prove productive and more groups may request loans to start this type of activity in the future. To date, only one loan for dairy has been approved and the group has not yet begun production. It is too early to assess if dairy operations will evolve into a "typical" AF activity. If, in the future, it does, the current analysis will need to be updated. At present, however, the four typical activities examined here seem an accurate representation of the majority of AF groups.

III. ASSISTANCE FUND COSTS AND BENEFITS

In this workshop, Assistance Fund costs and benefits were examined from the following three perspectives: society as a whole; the Lesotho Distance Teaching Centre, the implementing institution; and, the members of Assistance Fund groups. Many analyses of this type concern themselves with only the implementing institution's perspective. Though this perspective of project costs and benefits is important for a project's ultimate success, a single perspective can not address all of the strategic questions planners and practitioners are likely to encounter. For example, managers of implementing institutions will need to know if their project will look like a good use of resources to government officials who may allocate funds to the programme. Government officials, with the best interest of society as a whole in mind, will want to know which of the many projects competing for limited resources will prove the best investment from the broader perspective of society. From this perspective, all economic costs and benefits associated with a project must be considered, not only those costs and benefits perceived by the implementing agency. Similarly, project planners and implementers must consider whether or not the activities undertaken will make economic sense to the target groups they are intended to serve.

The LDTC Assistance Fund, like many other nonformal education programs, provides management and skills training that is aimed at increasing income for the target groups. In most cases, increased investment in physical inputs must accompany the training if the full benefit of new skills is to be realized through increased income. Nonformal education programmes almost always bear the cost of training, but rarely provide the needed physical inputs free of charge. Increased production costs resulting from improved techniques acquired through training almost always become the burden of participants who themselves already face severe financial constraints. If credit to purchase inputs is generally unavailable, the cost of production are prohibitively high, and the probability of real benefits tenuous, a project that looks good on paper is not likely to flourish in practice. For this reason, ample time must be spent identifying both direct and opportunity costs to AF group members as well as the likely benefits.

The following paragraphs summarize the approach used in calculating costs and benefits for society, the LDTC, and AF groups. A detailed description of the assumptions and calculations made under each perspective is given in the Appendix.

A. Costs and Benefits From A.F. Groups' Perspective

As noted in the previous chapter, the total AF group costs are a sum of the appropriate number of typical group costs in a given project year. Table 1 of the Appendix lists the sample of 10 AF groups on which average "typical" group costs and benefits are based, and Table 2 summarizes assumptions about annual growth in cumulative numbers and types of AF groups. It is assumed that the total number of AF loans will grow to 40 by the end of 1985/86. Based on current proportions, of the total of 40 groups, the following distribution among the 4 typical types of groups can be expected: 10 large poultry, 20 small poultry, 6 knitting, and 4 sewing. LDTC staff collected detailed primary data on actual and expected costs for the 10 sample groups listed in Table 1 of the Appendix. These data helped formulate assumptions about average annual cost by type of group. The main cost categories identified for all group types were: equipment, facilities, materials and supplies (including maintenance costs), opportunity costs of labour, and interest payments on loans.

Through specific assumptions are given for each group in the Appendix, groups' opportunity costs of labour require a few general comments. Opportunity cost of labour is a measure of the income that group members are giving up to participate in A.F. income generating activities. Because members of poultry activities must be involved in feeding, collecting eggs, and cleaning the chicken houses daily, it is assumed that there is an opportunity cost for these participants. Interviews with poultry group members revealed that during harvest and hoeing seasons, they were giving up time spent in the fields to work on the poultry activity and, as a result, their yields were lower. It was concluded that, for poultry groups, there were indeed opportunity costs during harvest and hoeing, or during approximately 50% of the participants' time. Opportunity costs of labour for large poultry groups are considerably higher than those for small poultry groups. In the small poultry groups, members have organized themselves into teams so, though the chickens are cared for each day, individual members work on a rotating schedule. In large poultry groups, each member is assumed to work on the activity approximately four hours each day. For both large and small poultry groups participants' time was valued at M2 per day. This assumption is based on previous monthly estimates of personal income of M60 for A.F. group members. Detailed descriptions of assumptions about poultry groups' opportunity and other costs can be found in Tables 3 and 4 of the Appendix.

No opportunity costs of labour were calculated for the knitting and sewing groups. Discussions with sample knitting and sewing groups revealed that members were leaving these activities to work in the fields during the peak agricultural seasons. Therefore, given the current levels of production and the nature of the activity (i.e., unlike poultry, the activity can be left for many days without irreversible negative consequences), it is reasonable at this time to assume these groups have no

opportunity costs. Details of assumptions about knitting and sewing groups' costs are given in Tables 5 and 6 of the Appendix.

Though from society's perspective, interest payments are considered a transfer payment from one group within the economy to another, they are considered a cost from the A.F. groups' perspective and are included as an item in total group costs.

As is the case with costs, there are some basic differences in the calculation of benefits to poultry versus knitting and sewing groups. For all groups, it is assumed that A.F. group members will continue receiving the benefits from LDTC training and financial assistance for a period of 10 years after initial contact. Compared to the assumptions of lifetime increased earnings commonly used in economic analyses of formal education programs, these benefit streams do not seem unreasonable. It is further assumed that there is a one year lag between receipt of the loan and LDTC training and the realization of incremental benefits. This accounts for the time involved in actually purchasing production materials with loan funds and getting the activity started.

One main constraint to good economic analysis of nonformal education programmes is the difficulty encountered in quantifying the many intangible benefits of such programmes. In this analysis, the tangible benefit of increased earnings was accounted for from the sale of items produced under the activity. We were able to project these benefits for all four group types. More specifically, in the case of both large and small poultry groups, income was earned from the sale of eggs and chickens. In addition to increased earnings, two less tangible benefits were quantified: increased household savings from the use of management and bookkeeping skills at home, and health benefits from increased consumption of eggs among group participants and their families. Details of these calculations accompany Tables 3 and 4 in the Appendix.

In addition to income received from the sale of lishoeshoe dresses, school uniforms and school jerseys, benefits from increased household savings were also calculated for the knitting and sewing groups. The health benefits were obviously not appropriate for knitting and sewing groups. Assumptions about these benefits are attached to Tables 5 and 6 of the Appendix.

As is often the case with nonformal education programmes, the benefits quantified in this study probably underestimate actual benefits to group members and their communities. Benefits from improved group decision making procedures, knowledge about credit and increased self confidence are likely to be great, but are not easily quantified. They are, however, likely to have a positive impact on group members and communities and must not be forgotten in the final evaluation of the programme.

Table 7 in the Appendix summarises total group costs by project year and by type of activity, and in addition, gives cost/benefit

ratios for each of the four activities.

B. Costs and Benefits from LDTC's Perspective

As noted earlier, LDTC's Assistance Fund related costs are calculated as a proportion of LDTC's total costs. Two main categories of costs were examined: development costs and operating costs. Development costs are comprised of all expenditures attributed to the design and planning of the Assistance Fund. These costs include consultants, expatriate advisors, staff training, special planning and design conferences, as well as transport, materials, and supplies and some proportion of LDTC's total equipment and facility costs. It is assumed that these costs are fixed and will end when the USAID Structuring Nonformal Education Resources project ends in April 1986. In the years to come, the costs of the A.F. programme will be equivalent to operating costs.

Operating costs are defined as those expenditures required to keep the AF running from day to day. For purposes of this study, these costs have been broken down into the following three categories: training costs, management costs and other institutional costs. Operating costs were broken down into the categories of training and management in an effort to examine the burden of the banking aspects of the Assistance Fund on LDTC. Training costs measure the proportion of LDTC fund resources allocated to training AF groups and, recently, extension agents. Managements costs represent the proportion of resources allocated to approval and monitoring of loans as well as collection of loan repayment. A summary of both LDTC's development and operating costs and assumptions made in their calculation is given in Table 8 of the Appendix.

It should be noted here that the matter of calculating costs on a single project are, in general, troublesome for nonformal education programs, and in the calculation of Assistance Fund program costs, LDTC was no exception. As is typical in nonformal education programs, LDTC resources are divided among many diverse activities. Before this analysis, there were no accounts indicating the level of funds allocated specifically to the Assistance Fund. The reader should therefore, be cautioned that LDTC development and operating costs reflect the best judgement of LDTC management about the proportion of resources used by the Assistance Fund.

Table 9 in the Appendix summarizes AF costs and benefits from LDTC's perspective. Total LDTC costs include the following: development costs and operating costs and a percentage default on loans and repayment of interest. In the final comparison of LDTC costs and benefits, two different assumptions about the default rate on loans and three different assumptions about the interest rate on AF loans were considered. For defaults on loans, an optimal scenario which assumes a 0% default is considered along with the more realistic assumption of 20%. As LDTC is concerned

about the appropriate interest rate to charge AF groups, costs and benefits to LDTC when the current simple rate of interest is raised from the current level of 4% p.a. to 10% p.a. and 12% p.a. were examined. Revenue from interest by project year for these alternative rates is also summarized in Table 9.

Benefits from LDTC's perspective are total group benefits less the production costs borne by groups. Because production costs contribute significantly to the level of benefits achieved, it is inappropriate to assume that total group benefits are the result of LDTC training and financial assistance alone. It is more realistic to equate LDTC benefits to total group benefits less group production costs. Information on benefits of the Assistance Fund is detailed in Table 9 of the Appendix.

C. Costs and Benefits From Society's Perspective

The comparison of Assistance Fund costs and benefits from society's perspective attempts to answer the broader question of whether or not the project contributes to increased economic welfare in Lesotho. This broader perspective requires examining all of the costs and benefits presented thus far. Society's costs, therefore, include LDTC's development and operating costs and the groups' total production costs, including opportunity costs of labor. Certain items that were considered costs from either the perspective of LDTC or Assistance Fund groups are not considered costs from society's perspective. The default on loans, while considered a cost for LDTC would from a broader economic perspective be considered a transfer payment from LDTC to the Assistance Fund groups. Similarly, interest payments, viewed as a cost by Assistance fund groups, would be considered a transfer payment from the groups to LDTC. In both cases, resources are not being used up or productively engaged from the economy's viewpoint but are merely changing hands within the economy.

Benefits from society's perspective are exactly the same as from the group's perspective. Table 10 of the Appendix summarizes costs and benefits from the social perspective.

Two cost/benefit ratios are calculated for the social perspective: one includes LDTC's development costs with operating costs and group costs and the other excludes development costs. Table 10 shows the cost/benefit ratio when development costs are included to be only slightly less than 1.00. When development costs are excluded the cost/benefit ratio increases to a respectable rate of 1.14. This is an interesting comparison because it illustrates the fact that the design and planning of NFE programs are a relatively costly undertakings. If this phase of the project is done well, however, and the project is replicated elsewhere or it continues to operate after the development phase and donor assistance ceases, the program becomes quite viable from an economic perspective.

IV. CONCLUSIONS

In this section the analysis of Assistance Fund costs and benefits is related to the questions raised in Section I. What follows is a brief discussion of each of these questions and the conclusions that can be drawn from the examination of project costs and benefits.

A. How many Assistance Fund Groups can the LDTC effectively handle?

Available data on LDTC operating costs were not adequate to answer this question. In this analysis, we did originally attempt to look at program costs and benefits under two alternative assumptions about growth in number of Assistance Fund loans. Upon closer examination, it became clear that assumptions about the definition of the project would have to be quite different to satisfactorily answer this question. We assumed the project life was from 1979/80 to 1985/86, the period of time corresponding to USAID funding for the Structuring NFE Resources project. The most dramatic growth in the number of AF groups has been in this current and final project year, with the number growing from 17 groups in 1984/85 to 30 groups thus far in 1985/86.

The general feeling in LDTC is that 40 groups is the upper limit of what LDTC can effectively handle, and this was the number used in calculating costs and benefits for 1985/86. It proved impossible to attach a numerical value to the burden on LDTC of expanding to 50 or 60 groups in 1985/86 and subsequent years. The impact on total LDTC costs of any level of increase in LDTC operating costs in the final project year (1985/86) would be minimal. The real burden would only become apparent over time as LDTC attempted to effectively train 50 or more groups and monitor 50 or more loans on a regular basis. While it would seem that the quality of LDTC's training and management would suffer if the total number of groups assisted at any one time increased beyond 40, we cannot support this observation with the data analyzed in this study.

B. Who should manage the banking aspects of the Assistance Fund - the LDTC or a financial lending institution?

Table 8 in the Appendix, which summarizes LDTC's development and operating costs, shows that LDTC's costs of managing the Assistance fund have, to date, not been prohibitive, and in fact have decreased steadily from 1982/83 to present. In 1982/83 loan management costs were 22.6% of total operating costs and by 1985/86 had decreased to 15.9%. Though some increased efficiencies in loan management have been achieved (e.g. in the loan approval process), the decrease in the proportion of resources allocated to this task can also be viewed as the result of LDTC's Service Agency staff needing to concentrate on training when confronted with the rapid growth in new AF groups. This

would support the observation made under the previous question that LDTC is probably now reaching the upper limit of the number of groups it can effectively handle.

Given the relatively low proportion of resources devoted to AF loan management in the past and paucity of traditional credit institutions in Lesotho that could take over the administration of the loan component of the program, it seems sensible that this function remain under LDTC. If interest rates on loans were raised, turning over the revenue earned on interest to a bank would represent a significant financial loss to LDTC.

The decrease in proportion of funds allocated to loan management cannot be viewed as an entirely positive development. In the past, management of these funds has been fragmented and somewhat disorganized. With a total loan fund of between M300,000 to 400,000 by the end of the current year, the potential for misuse of the loan fund exists. The implication may be that in the face of the increasing number and amounts of loans given, LDTC should hire someone familiar with loan programs to manage the loans on a full-time basis. It does not, however, seem feasible or desirable for LDTC to relinquish its role in managing the funds at this time.

C. At which rate of interest should the Assistance Fund money be lent?

Table 13 below summarizes the impact of increased interest on Assistance Fund loans on LDTC's cost/benefit ratios and on AF groups' cost/benefit ratios. Costs and benefits associated with the various cases examined under the three alternative rates are detailed in Tables 11 and 12 of the Appendix.

Table 1 indicates that LDTC could increase the rate of interest charged on AF loans without seriously reducing cost/benefit ratios from the groups' perspective. If development costs are included and a 20% default rate on loans is assumed, moving from a 4% to a 10% rate of interest would improve LDTC's cost/benefit ratio from less than 1 to 1.02. If development costs are excluded, the increase in benefits are even more substantial; revenue earned on interest at 10% would almost cover LDTC's annual operating expenses. LDTC should, therefore, consider increasing its interest on AF loans from 4% to 10%.

Table 13

Impact of Increased Interest on Assistance Fund Loans
Cost/Benefit Ratios* for LDTC and Groups.

	Assistance Fund Loan Interest Rate***		
	(r=4%)	(r=10%)	(r=12%)
LDTC C/B Ratios			
With Development Costs			
- 0% default	1.03	1.10	1.13
- 20% default**	0.95	1.02	1.04
Operating Costs Only			
- 0% default	10.03	26.72	60.03
- 20% default**	5.65	8.72	10.65
II. Groups' C/B Ratios	1.16	1.15	1.14

* In all cases, a discount rate of 12% has been used to calculate present value of costs and benefits.

** No information is currently available regarding the actual rate of default on Assistance Fund Loans. In similar revolving loan fund programs, 20% is considered a fairly low default rate. Though payments have sometimes been late under the Assistance Fund, all except one group are repaying the loan principal on a regular basis. The scenarios assuming a 0% default rate simply illustrate optimal scenarios.

*** Interest on AF loans is a simple interest rate, which, it is assumed, is paid over three years. Therefore, the interest rates of 4%, 10%, and 12% used here somewhat understate the real burden of interest, because interest repayments for all three years are based on the original loan amount, not on the decreasing balance due.

(D) Which Income Generating Activity is Most Productive for the AF Groups?

Table 14 below summarizes the cost/benefit ratios obtained in this analysis for the four main types of group activity.

Table 14

Cost/Benefit Ratios for AF Group Activities

Type of Group	Present Value Benefits	Present Value Costs	C/B Ratio
Large Poultry	4,524,030	4,233,270	1.07
Small Poultry	941,018	523,050	1.80
Knitting	84,798	50,678	1.67
Sewing	182,326	142,072	1.28

The discount rate for these calculations is assumed to be 12% and the interest on AF loans is 4% per annum.

From this analysis, it would appear that the small poultry activity, with a cost/benefit ratio of 1.80 is the most productive of the four types of activities. The relatively low cost/benefit ratio for large poultry groups raises questions about why the economic benefits are so much lower than for the small poultry activities.

There seem to be a number of contributing factors. First, as discussed earlier, the opportunity costs of labour were much higher for the large poultry groups because each member was required to work daily on the activity, while this was not the case for small poultry groups. It would appear there are some real cost savings from organizing group members into teams.

Second, large poultry groups are expected to build new chicken houses while small poultry groups often use existing facilities. Though large poultry groups will make use of low cost local labour and materials in constructing new chicken houses, they will need to purchase roofing which is an added cost.

Third, while small poultry groups make chicken feeders and drinkers for the chickens from available materials at virtually no cost, large poultry groups are expected to purchase these items. This, too, will increase the large poultry groups' costs.

It should be noted that at the time of this report, no large poultry groups had actually started their activities. It is possible that with actual instead of projected data on group costs, the large poultry groups will prove to be more productive than they are assumed to be here. It is quite possible that individual ownership and care of chickens will increase members' sense of responsibility which could have a positive impact on management practices and ultimately on income earned. Given the size and relatively large number of loans to large poultry groups, LDTC should monitor the productivity of these activities as they get underway. An update analysis of large poultry costs

and benefits could reveal ways to reduce groups' operating costs over time.

The sewing and knitting activities look economically beneficial but less so than the small poultry activity. It is possible that for the poultry activity it is clearer what group members' labour and resources must be put into the activity in order to achieve a certain level of benefits. With the knitting and sewing activities this link is less obvious.

It is interesting to note that the knitting groups appeared more productive than the sewing groups. Sewing groups' costs of materials and maintenance are considerably higher than they are for knitting groups. One factor contributing to relatively high material costs for sewing is the cost of cloth used in school uniforms which is imported. At the beginning of the programme, the quality of sewing groups' products suffered from inadequate technical training. This may have had a negative impact on early benefit streams. LDTC's shift from the Intensive Training Model (ITM) to a Training of Trainers' Model (TTM), which will attempt to utilize more effectively the technical expertise of extension workers, is aimed at addressing this problem.

It should be noted that cost/benefit ratios for sewing and knitting groups may overstate the actual profitability of these groups. It is assumed that with LDTC assistance, these groups will greatly increase their levels of production and sales after year four of operation. Such increased levels of production will require that members devote increased amounts of time to the activity, which may imply the need to consider opportunity costs of labour for these groups. At the time of this analysis, it was impossible to assess the level of these costs.

In general, all four of the Assistance Fund activities look productive from an economic point of view. Of the four types of activities examined, the small poultry activity looks the most productive. The reader should be cautioned that, at this point in time, it was necessary to make a number of projections about group costs and benefits in the absence of actual data. As this data becomes available, LDTC should update this analysis to test the findings of this study.

E. Is the LDTC Assistance Fund Cost Beneficial?

Table 15 below summarizes the costs and benefits of the Assistance Fund as perceived by society as a whole, LDTC and the Assistance Fund groups themselves. The cost/benefit ratios are considered under two alternative assumptions about the rate of interest charged on Assistance Fund loans. Under Scenario I, the interest rate is assumed to be 4%, the current rate charged by LDTC. Under Scenario II the interest rate is assumed to be 10%, an alternative rate LDTC might consider charging in the future.

On the whole the Assistance Fund looks as though it is indeed

contributing positively to economic development in Lesotho. In all but two cases, the cost/benefit ratios were greater than one, highlighting the Assistance Fund programme's overall economic viability.

The cost/benefit ratios from the perspective of society and LDTC are slightly lower than one when development costs are included and an interest rate of 4% is assumed. As discussed earlier, this would suggest that LDTC should seriously consider raising the rate of interest on AF loans.

Under all scenarios that include only operating costs, the cost/benefit ratios are positive. Given the positive cost/benefit ratios under these assumptions, it would appear that programs like the Assistance Fund which combine nonformal education training and credit could be replicated elsewhere with similarly positive results.

Recognizing the positive findings of this study, it seems reasonable to recommend that donors as well as local implementing institutions consider supporting activities similar to the Assistance Fund elsewhere in Africa.

Table 15
SUMMARY OF LDC ASSISTANCE FUND
COSTS AND BENEFITS

PERSPECTIVE	SCENARIO I:			SCENARIO II:		
	P.V. BENEFITS	P.V. COSTS	C/B RATIO	P.V. BENEFITS	P.V. COSTS	C/B RATIO
SOCIAL PERSPECTIVE:						
- W/ DEV. COSTS	4,080,046	4,086,858	0.998	NO CHANGE		
- OPERATING COSTS	4,068,046	3,580,647	1.14	NO CHANGE		
LDC PERSPECTIVE:						
- W/ DEV. COSTS						
0% Default	581,552	564,209	1.03	581,552	527,976	1.10
20% Default	581,552	609,105	0.95	581,552	572,972	1.02
- OPERATING COSTS						
0% Default	581,552	57,597	10.03	581,552	21,765	26.72
20% Default	581,552	102,894	5.65	581,552	66,661	8.72
AF GROUP'S PERSPECTIVE	5,732,171	4,949,069	1.16	5,732,171	4,999,973	1.15

SCENARIO I: Assumes that interest on AF Loans is 4% and the discount rate is 12%.

SCENARIO II: Assumes that interest on AF Loans is 10% and the discount rate is 12%.

APPENDIX

TABLE 1. LIST OF SAMPLE ASSISTANCE FUND GROUPS

	NO. IN GROUP	LOAN AMOUNT
LARGE POULTRY:		
Kopanang Thamae	25	M33,000
Phallang Mazenod	23	M39,068
Mejametalana	30	M42,570
SMALL POULTRY:		
Ipopeng Leribe	17	M 760
Thusanang Matsekha	20	M 800
Makoanyane	16	M 2,672
Ramokhele	28	M 2,100
KNITTING:		
Lekhalong La Baroa	20	M 1,860
Matelile	25	M 2,500
SEWING:		
Mathebe	30	M 3,000

TABLE 2.
ASSUMPTIONS ABOUT ANNUAL GROWTH IN
CUMULATIVE NUMBERS AND TYPES OF GROUPS

PROJECT YEAR	LARGE POULTRY	SMALL POULTRY	KNITTING	SEWING	TOTAL
1982/83	0	1	0	1	2
1983/84	0	4	2	1	7
1984/85	0	10	4	3	17
1985/86	10	20	6	4	40

* As of July 1985, a total of 30 loans had already been approved by the LDTC Screening Committee. At this time, approximately 10 additional proposals have been received and will be presented to the Screening Committee in the upcoming months. It is, therefore, reasonable to assume that LDTC will be administering approximately 40 A.F. loans by the end of project year 1985/86.

TABLE 3
LARGE POULTRY

	YEAR 1	YEAR 2	YEAR 3	YEAR 4+
COSTS				
Facilities	1976			
Equipment	2430			
Materials/Supplies	87255	87255	87255	87255
Transport	540	540	540	540
Labour	4745	4745	4745	4745
Subtotal	97046	92640	92640	92640
Interest Repayment	1520	1520	1520	
Total	98566	94160	94160	92640
	=====	=====	=====	=====
BENEFITS				
Sale of Eggs/Chickens	0	111750	111750	111750
Increased Savings	0	624	624	624
Health Benefits	0	116	116	116
Total	0	112490	112490	112490
	=====	=====	=====	=====

Table 3
Annual Costs and Benefits
or a Large Poultry Group

Assumptions. All annual costs and benefits reflected in Table 3 are the average of costs and benefits calculated for the three sample large poultry groups (See table 4).

I. COSTS.

Opportunity Costs of Labour

- A. Average monthly income per member is M60 and average daily income is M2.00.
- B. Each group member works on the poultry activity 365 days per year, four hours per day or the equivalent of 182.5 full working days per year.
- C. Total group opportunity costs are the sum of individual members' opportunity costs of labour which can be estimated at 182.5 days x 112 = M365 per year.
- D. There are opportunity costs to labour only during periods of harvesting and hoeing, or approximately 50% of the time.

Facilities

- A. All large poultry groups will build new chicken houses.
- B. Local labour and materials will be used at no economic cost.
- C. Corrogated iron roofing will be purchased commercially at a cost of M4.75 per sheet. Approximately 15 sheets are needed for a house holding 100 chickens.

Equipment

- A. Feeders are purchased at M15 each. One feeder is purchased for every 50 chickens.
- B. Drinkers are purchased at M15 each. One drinker is purchased for every 25 chickens.
- C. It is assumed this equipment will last for the 10 years of group costs and benefits.

Materials

- A. Chickens are purchased at M5.25 per chicken. They are purchased at the beginning of the project year and sold at the end of the year. Groups will purchase enough chickens to replace the original number each year.
- B. Groups will use nine 50 kg. bags of feed per 100 chickens per month. Feed is purchased at M25 per bag.
- C. Groups will spend M20 annually on medicines for every 300 chickens. These commercial medicines will be supplemented with traditional medicines.

Transport

- A. Groups will buy materials and sell eggs or chickens during the same trips.
- B. Groups will need to sell eggs four times per month.
- C. It will be necessary to hire a vehicle at a cost of M20 for every trip.

II. BENEFITS

Sale of Eggs

- A. 10% of the chickens will die during each project year.
- B. Of the remaining chickens, 80% will lay one egg daily.
- C. Two-thirds of the eggs will be sold at local egg circles at M0.12 per egg.

Increased Household Savings

- A. Based on past LDTC evaluations, it was found that 30% of group members used the bookkeeping/management skills used in the AF activity at home.
- B. Average household income is M120 per month.
- C. It is assumed that improved bookkeeping, management and planning practices will allow households to save 5% of monthly household income or M6 per month.
- D. Only 30% of the members will achieve this benefit or each group member will save M2 per month.

Decrease in Visits to Doctor

- A. Increased consumption of eggs by group members and their families will improve nutrition and ultimately contribute to a decrease in visits to the doctor.
- B. The average cost of a visit to the doctor is M7.
- C. The average family currently makes six visits to the doctor in one year.
- D. Improved nutrition from increased egg consumption reduces the number of trips to the doctor by two each year (i.e., $M7 \times 2 = M14$ per year).
- E. Only 50% of the members would realize this benefit.

TABLE 4
SMALL POULTRY

COSTS	YEAR 1	YEAR 2	YEAR 3	YEAR 4+
Facilities	183			
Equipment	16			
Materials/Supplies	4588	4588	4588	4588
Transport	204	204	204	204
Labour	455	455	455	455
Subtotal	5446	5247	5247	5247
Interest Repay.	63	63	63	
Total	5509	5310	5310	5247
=====				
BENEFITS				
Sale of Eggs/Chickens	0	10003	10003	10003
Increased Savings	0	526	528	528
Health Benefits	0	159	159	159
Total	0	10690	10690	10690
=====				

Table 4
Annual Costs and Benefits
for a Small Poultry Group

Assumptions. All annual costs and benefits reflected in Table 4 are the average of costs and benefits calculated for the four sample small poultry groups (see Table 1).

I. COSTS

Opportunity Costs of Labour

- A. Assumptions about each member's average monthly and daily income are the same as for large poultry.
- B. Two group members work together as a team for the equivalent of seven days at a time; each works eight hours a day or a total of seven days each during the period.
- C. How many times a team works in a given year depends on the total number of members in the group. For example, if there are 16 members in a group, there are 8 teams. Each team will work for one week 6.5 times per year (i.e. 52 weeks/8 teams = 6.5 teams) or a total of 45.5 days per member.
- D. As in the case of large poultry groups, there is only an opportunity cost during harvest and hoeing or 50% of the time.

Facilities

- A. More are built by the members themselves or an existing structure is used.
- B. 50% of small poultry producers will use existing facilities and 50% will build new facilities.
- C. When existing facilities used, no costs involved.
- D. For new facilities, local labour and materials are used.
- E. No opportunity cost for local materials.
- F. Opportunity cost of local labour is included in the opportunity cost for care of chickens.
- G. For new buildings, roofing materials must be purchased.
- H. For new buildings, roofing materials must be purchased @M4.75 per sheet; 15.4 sheets needed per 100 chickens (based on estimate for Phallang Ha Nko).

Equipment

- A. Feeders: 25 chickens per feeder, members construct from discarded tires, labour is minimal, no opportunity costs.
- B. Drinkets: 50 chickens per drinket, plastic dishes purchased @M2.50, dishes must be replaced every other year.
- C. Materials/Supplies:
 - 1) Chickens replaced annually. Per chicken prices:
 - 1983 - M3.80
 - 1984 - M4.50
 - 1985 - M5.25
 - 2) Feed: nine 50 kg. bags will feed 100 for one month.
 - 1983 - M15.00
 - 1984 - M19.00
 - 1985 - M24.00

- D. Transport: depends on group
- 1) Ipopeng - no costs for buying feed, it is delivered. Eggs are sold 3x per month, each return trip cost M1.00.
 - 2) Thusanang ka Matsekha - No costs for buying feed, it is delivered. No transport for selling - all sold in village.
 - 3) Ramokhele - Two trips per month to collect feed @M5.00 per trip; 4 trips per month to sell eggs; 2 trips are simultaneous with feed collection, hence an additional 2 trips @M5.00 each for selling eggs.
 - 4) Makoanyane - 2 trips per month to collect feed, requires hiring a vehicle at M20 each (2 selling trips can be included here.) A total of four trips per month to sell at the Egg Circle, 2 trips here @M2.40.

II. BENEFITS

Benefits for small poultry are based on exactly the same assumptions as large poultry and calculated in the same way.

TABLE 5
KNITTING

COSTS	YEAR 1	YEAR 2	YEAR 3	YEAR 4+
Facilities	0			
Equipment	1930			
Materials/Supplies	606	606	606	1760
Transport	54	54	54	54
Labour	0	0	0	0
Subtotal	2590	660	660	1814
Interest Repayment	87	87	87	0
Total	2677	747	747	1814
=====				
BENEFITS				
Sale of Items	0	972	972	3672
Increased Savings	0	600	600	600
Total	0	1572	1572	4272
=====				

Table 5
Annual Costs and Benefits
for Knitting Groups

Assumptions. All annual costs and benefits reflected in Table 5 are the average of costs and benefits calculated for the two sample knitting groups (See Table {}).

I. COSTS

Opportunity Costs of Labour

- A. No opportunity costs are assumed for knitting groups because group members have indicated that they give up the knitting activity to meet other agricultural responsibilities during harvest and hoeing.

Facilities

- A. It is assumed that since all groups will use existing facilities there will be no economic costs.

Equipment

- A. Groups purchase an average of two knitting machines at a cost of approximately M1000 each.
B. Machines will last for the life of the project with proper maintenance.

Materials

- A. Wool is purchased at approximately M5.25 per cone.
B. The following assumptions have been made (based on actual group experience) about amounts of wool needed to produce one of the following types of jerseys:
1) jerseys = 1.5 per cone
2) short-sleeved skippers = 2 per cone
3) long sleeved skippers = 1.5 per cone
C. The following assumptions are made regarding number of jerseys produced per year:
Years 1-3: 9 jerseys per month or 108 per year.
Years 4-10: 18 jerseys per month or 108 per year.
9 shortsleeved skippers per month or 108 per year.
9 long-sleeved skippers per month or 108 per year.
D. Oil for the machine is purchased at the following price and rate:
Years 1-3: Purchased 8 times per year @M3.50.
Years 4-10: Purchased 12 times per year @M3.50
E. The following assumptions were made for servicing of the machines:
Years 1-3: Twice a year per machine at a cost of M50.00 per time.
Years 4-10: Three times a year per machine at a cost of M50.00 per time.

Transport

- A. No transport costs are incurred in selling the items.
- B. Purchase of wool and other materials is done by taxi once a month at an average cost of M400 per return trip.

II. BENEFITS

Sale of Jerseys

Earnings from sale of jerseys are based on the numbers produced annually which have been described under the cost assumptions. The following prices were used in calculating income earned: jerseys = M9.00; short sleeved-skippers = M7.00; long sleeved skippers = M9.00.

Increased Household Savings

These benefits are based on exactly the same assumptions as the household savings calculated for the poultry groups.

TABLE 6
SEWING

	YEAR 1	YEAR 2	YEAR 3	YEAR 4*
COSTS				
Facilities	0			
Equipment	1463			
Materials/Supplies	4196	4196	4196	8236
Transport	48	48	48	48
Labour	0	0	0	0
	-----	-----	-----	-----
Subtotal	5707	4244	4244	8288
Interest Repayment	120	120	120	0
	-----	-----	-----	-----
Total	5827	4364	4364	8288
	=====	=====	=====	=====
BENEFITS				
Increased Savings	0	1142	1142	14850
Sale of Items	0	720	720	720
	-----	-----	-----	-----
Total	0	1862	1862	15600
	=====	=====	=====	=====

Table 6
Annual Costs and Benefits
for Sewing Groups

Assumptions. All annual costs and benefits reflected in Table 6 are based on estimated costs and benefits to the sample sewing groups (See Table 4).

I. COSTS

Opportunity Costs of Labour

We make the same assumptions about opportunity costs for sewing groups as were made for knitting groups.

Facilities

Assumptions are the same as for knitting groups.

Equipment

- A. Two type of sewing machines are purchased: zigzag machines at M400 each and regular at M300 each. In this sample group two of each are purchased.
- B. With proper maintenance, machines will last for the life of the project.

Materials

- A. Cloth used in making school uniforms is purchased at approximately M9.50 per metre.
- B. Lishoeshoe cloth is purchased at approximately M3.75 per metre.
- C. The following assumptions have been made on amounts of material required to produce school uniforms and lishoeshoe dresses: school uniforms = 1 metre; lishoeshoe dresses = 3 metres.
- D. Total costs of cloth are based on the following assumptions about annual production:
 - Years 1-3: School uniforms 8 per month or 96 per year; lishoeshoe dresses = 26 per year.
 - Years 4-10: School uniforms - 16 per month or 192/year; lishoeshoe dresses = 52 per year.
- E. Total cost of buttons and thread are as follows:
 - Years 1-3: buttons = M12, thread = M80.
 - Years 4-10: buttons = M24, thread = M120.
- F. Assumptions about oil for machines are the same as for the knitting group.
- G. The following assumptions are made regarding the service of machines:
 - Years 1-3: Twice a year for each machine at M25 per time;
 - Years 4-10: Three times a year for each machine at M25 each time.

Transport

Transport assumptions are exactly the same as for the knitting groups.

II. BENEFITS

Sale of Dresses and School Uniforms

Earnings from the sale of uniforms and dresses are based on the numbers produced annually. This information is given under materials costs. The following prices were used in calculating total income earned: school uniforms = M19; lishoeshoe dresses = M18

Increased Household Savings

These benefits are based on exactly the same assumptions as the household savings calculated for the other three groups.

Table 7
GROUP COSTS & BENEFITS BY TYPE OF ACTIVITY

PROJECT YEAR	LARGE POULTRY		SMALL POULTRY		KNITTING		SEWING	
	COSTS*	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
1987/83	0	0	5,509	0	0	0	5,827	0
1987/84	0	0	21,837	10,490	5,354	0	4,364	1,862
1984/85	0	0	54,294	42,760	6,848	3,144	14,938	1,862
1985/86	985,660	0	108,127	106,900	8,347	6,288	22,301	5,586
1986/87	941,600	1,124,900	105,948	213,800	6,816	9,432	21,378	21,186
1987/88	941,600	1,124,900	105,570	213,800	6,750	14,832	29,222	21,186
1988/89	926,400	1,124,900	104,940	213,800	10,884	20,232	33,144	48,662
1989/90	926,400	1,124,900	104,940	213,800	10,884	25,632	33,144	62,400
1990/91	926,400	1,124,900	104,940	213,800	10,884	25,632	33,144	62,400
1991/92	926,400	1,124,900	104,940	213,800	10,884	25,632	33,144	62,400
1992/93	926,400	1,124,900	99,693	213,800	10,884	25,632	24,858	62,400
1993/94	926,400	1,124,900	83,952	203,110	7,256	25,632	24,858	46,800
1994/95	926,400	1,124,900	52,470	171,040	3,828	17,088	8,286	46,800
1995/96	0	1,124,900	0	106,900	0	8,544	0	15,600
NPV @12%	4233269.88	4524029.62	523048.68	941017.82	50677.91	84798.13	142072.09	182325.55
NPV @20%	2744889.81	2729231.39	359563.68	602961.72	35238.73	51493.95	97567.35	108209.47
C/B RATIO: (@12%)	1.07		1.80		1.67		1.28	
C/B RATIO: (@20%)	0.99		1.68		1.46		1.11	

*Costs include a simple 4% rate of interest on AF loans.

Table 8
LDIC COSTS FOR ASSISTANCE FUND

	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
I. DEVELOPMENT COSTS							
A) PERSONNEL:	18,887	117,354	101,133	77,724	78,550	106,012	132,467
B) TRANSPORT:	171	5,374	2,946	0	0	0	0
C) MATERIALS & SUPPLIES:	1,350	1,778	803	0	0	0	0
D) EQUIPMENT & BUILDING:	1,061	1,514	2,689	4,018	5,385	6,484	6,811
E) CONFERENCES:	0	500	50	0	0	7,000	3,500
F) STAFF TRAIN:	0	2,782	2,909	7,754	17,063	13,407	10,943
TOTAL:	21,469	129,302	110,530	89,496	100,998	132,903	153,721
II. OPERATING COSTS							
A) TRAINING:							
- Personnel	0	0	0	10,591	16,114	24,655	30,072
- Transport	0	0	0	1,923	3,808	2,672	2,672
- Materials	0	0	0	400	483	980	980
- Non LDIC Facilities	0	0	0	0	0	0	8,520
SUBTOTAL:	0	0	0	12,914	22,405	28,307	42,244
B) MANAGEMENT:							
- Personnel	0	0	0	3,509	4,582	6,061	7,191
- Transport	0	0	0	641	1,269	891	891
- Materials	0	0	0	100	121	245	245
SUBTOTAL:	0	0	0	4,250	5,972	7,197	8,327
C) OTHER SUPPORT							
- Personnel	0	0	0	397	453	631	631
- Main./Utility	489	499	591	1,002	1,300	965	965
- Other	126	126	126	232	238	232	232
SUBTOTAL:	615	625	717	1,631	1,991	1,828	1,828
TOTAL:	615	625	717	18,795	30,368	37,332	52,399
GRAND TOTAL:	22,084	129,927	111,247	108,291	131,366	170,235	206,120

Table 9

LDC COSTS AND BENEFITS UNDER DIFFERENT ASSUMPTIONS ABOUT INTEREST ON AF LOANS

PROJECT YEAR	COST INFORMATION:						BENEFIT INFORMATION:		
	DEVELOPMENT COSTS	OPERATING COSTS	DEFAULT (2%)	INTEREST (4%)	INTEREST (10%)	INTEREST (12%)	TOTAL GROUP BENEFITS	LESS PRODUCTION COSTS	BENEFITS TO LDC
1979/80	21,469	615	0	0	0	0	0	0	0
1980/81	129,302	625	0	0	0	0	0	0	0
1981/82	110,530	717	0	0	0	0	0	0	0
1982/83	89,476	16,795	915	183	458	549	0	11,153	0
1983/84	100,998	30,368	1,915	546	1,365	1,638	12,552	31,009	0
1984/85	132,903	37,332	3,960	1,338	3,345	4,014	47,766	74,742	0
1985/86	157,721	82,399	80,620	17,279	43,198	51,837	118,774	1,127,151	0
1986/87	0	10,155	0	16,916	42,290	50,748	1,369,318	1,058,626	0
1987/88	0	10,155	0	16,124	40,310	46,372	1,374,718	1,069,018	0
1988/89	0	0	0	0	0	0	1,407,594	1,075,368	0
1989/90	0	0	0	0	0	0	1,426,732	1,075,368	0
1990/91	0	0	0	0	0	0	1,426,732	1,075,368	0
1991/92	0	0	0	0	0	0	1,426,732	1,075,368	0
1992/93	0	0	0	0	0	0	1,426,732	1,061,835	0
1993/94	0	0	0	0	0	0	1,400,442	1,042,466	0
1994/95	0	0	0	0	0	0	1,359,828	990,584	0
1995/96	0	0	0	0	0	0	1,255,944	0	0
NPV @12%	506,211	82,152	44,896	24,155	60,387	72,464	4,080,046	3,498,495	581,552

Table 10

ASSISTANCE FUND COSTS & BENEFITS: SOCIAL PERSPECTIVE

PROJECT YEAR	DEVELOP COSTS	OPERATING COSTS	GROUP COSTS	TOTAL COSTS	GROUP + OP. COSTS	TOTAL BENEFITS
1977/80	21,469	615	0	22,084	615	0
1980/81	129,302	625	0	129,927	625	0
1981/82	110,530	717	0	111,247	717	0
1982/83	89,496	18,795	11,153	119,444	29,948	0
1983/84	100,998	30,368	31,009	162,375	61,377	12,552
1984/85	132,903	37,332	74,742	244,977	112,074	47,766
1985/86	153,721	52,399	1,107,151	1,313,271	1,159,550	118,774
1986/87	0	0	1,058,626	1,058,626	1,058,626	1,369,318
1987/88	0	0	1,069,018	1,069,018	1,069,018	1,374,718
1988/89	0	0	1,075,368	1,075,368	1,075,368	1,407,594
1989/90	0	0	1,075,368	1,075,368	1,075,368	1,426,732
1990/91	0	0	1,075,368	1,075,368	1,075,368	1,426,732
1991/92	0	0	1,075,368	1,075,368	1,075,368	1,426,732
1992/93	0	0	1,061,835	1,061,835	1,061,835	1,426,732
1993/94	0	0	1,042,466	1,042,466	1,042,466	1,400,442
1994/95	0	0	990,984	990,984	990,984	1,359,828
1995/96	0	0	0	0	0	1,255,944
NPV @12%	506211.17	82152.09	3498494.54	4086857.80	3580646.63	4080046.25
C/B RATIO: ALL COSTS:		0.998				
C/B RATIO: OP.+GROUP:		1.139				

Table 11

NPV OF COSTS BASED ON AF LOAN INTEREST RATES

	(@4%)	(@10%)	(@12%)
LDTC COSTS:			
INCL. DEV. COSTS			
- @ 0% Default	564,209	527,976	515,899
- @20% Default	609,105	572,872	560,796
W/OUT DEV. COSTS			
- @ 0% Default	57,997	21,765	9,688
- @20% Default	102,894	66,661	54,584
LDTC BENEFITS:	581,552	581,552	581,552
C/B RATIOS:			
INCL. DEV. COSTS			
- @ 0% Default	1.03	1.10	1.13
- @20% Default	0.95	1.02	1.04
W/OUT DEV. COSTS			
- @ 0% Default	10.03	26.72	60.03
- @20% Default	5.65	8.72	10.65

Table 12

TOTAL COSTS AND BENEFITS FROM A.F. GROUPS' PERSPECTIVE
Under Different Assumptions about Interest on Loans

PROJECT YEAR	BENEFITS	COSTS		
		(r=4%)	(r=10%)	(r=12%)
1982/83	0	11,336	11,611	11,702
1983/84	12,552	31,555	32,374	32,647
1984/85	47,766	76,080	78,087	78,756
1985/86	118,774	1,124,430	1,150,349	1,158,988
1986/87	1,369,318	1,075,542	1,100,916	1,109,374
1987/88	1,374,718	1,085,142	1,109,328	1,117,390
1988/89	1,407,594	1,075,368	1,075,368	1,075,368
1989/90	1,426,732	1,075,368	1,075,368	1,075,368
1990/91	1,426,732	1,075,368	1,075,368	1,075,368
1991/92	1,426,732	1,075,368	1,075,368	1,075,368
1992/93	1,426,732	1,061,835	1,061,835	1,061,835
1993/94	1,400,442	1,042,466	1,042,466	1,042,466
1994/95	1,359,828	990,984	990,984	990,984
1995/96	1,255,944	0	0	0
NPV @12%:	5,732,171	4,949,069	4,999,973	5,016,940
NPV @20%:	3,491,897	3,237,660	3,276,967	3,290,066

COST/BENEFIT RATIOS FOR GROUPS BY DIFFERENT LOAN INTEREST RATES

	Interest on Loan		
	(4%)	(10%)	(12%)
C/B Ratio: (DR=12%)	1.16	1.15	1.14
C/B Ratio: (DR=20%)	1.08	1.07	1.06