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PRODUCT COSTING AND PRICING MANUAL FOR SACCOs

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Rural SPEED

Rural Savings Promotion & Enhancement of Enterprise Development

PRODUCT COSTING AND PRICING MANUAL FOR SACCOS

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BACKGROUND

1.1 Introduction

Definition

Product costing refers to the process of assigning shared direct and indirect costs to individual products, customers, branches or other cost items. Improved management information on products helps managers and the board members take key decisions about product design, delivery mechanisms, and especially pricing.

1.1.1 Why Is Product Costing Important?

Product costing is important because it:

- Allows managers to understand how each product contributes (or not) to the profitability of the Bank or MFI
- Assists in budgeting and in interpreting (understanding) of the variances between the actual amounts spend and the budgeted (expected) amounts;
- Is used to examine the viability of a new product.

Product costing helps identify sources of profitability or losses. It allows a financial institution to focus on promoting its most productive (winning) products and redesigning those that are found to be less profitable. Once a Savings and Credit Cooperative (SACCO) has determined the market share it aims to achieve with its selected products and services, in a given geographical area and time frame, it can then translate this into a fixed number of branch offices and field staff, thereby determining its cost structure. Combining the product pricing, the cost structure and the financing plan allows the SACCO to prepare a business plan.

1.1.2 Why We Need Cost Accounting

Cost accounting, as contrasted with financial accounting, is needed to satisfy management's desire for information. It focuses on identifying the businesses' sources of revenues and costs, and then uses this information to analyze the different segments of the SACCO's operations. Cost accounting is tool used managers to improve the SACCO's profitability.

Cost accounting can also be used to analyze and measure the performance of its operations, its individual products and of its managers. It provides analysis in the business decision-making process for expected profitability of new transactions. An example of this is the profitability of the different loan products.

It is possible to implement a cost accounting system based on a manual accounting system; however, it is far easier and more valuable when the cost accounting system is computer based. IN this case the cost accounting software used must be able to interface with the SACCO's financial accounting system. Having a computer-based cost accounting and budgeting system allows the SACCO's managers to quickly analyze different management options and use this information to make better decisions.

Managers should use cost accounting information to help them make better decisions regarding the successful operation of their businesses. An application of the use of cost accounting information is the determination of minimum interest rates to be charged to borrowers on different loan products and on determining what interest rates it can afford to pay its savers, by savings product.

A cost accounting system allows the SACCO to differentiate between costs that are variable and those that are fixed. Variable costs increase or decrease with the SACCO's volume of loans and savings accounts, fixed costs remain the same irrespective of the volume of accounts handled. An example of a fixed cost is rent, under a long-term lease agreement, on an office. An example of a variable cost is the interest paid on a particular type of savings account.

Cost accounting systems are helpful to a SACCO's senior management and board members in the budgeting process, as it provides an analysis of the cost components. Separating costs into their fixed and variable components allows management to consider whether variations from the budget are due to volume change, or due to elements that management can control.

It is necessary for the cost accounting system to establish investment and capital asset accounts that will be allocated to current expenditures, over an extended period of time. An example of this would be a motorcycle purchased for use in the SACCO's operations, and which would be expected to be used over a period of three or more years. The depreciation of the motorcycle should be allocated to the lending process, the SACCO's general operating expenses and possibly a small portion for savings operations, depending upon the motorcycle's actual usage.

1.1.3 Advantages of a Product Costing System

There are a number of advantages in having a product costing system. These are that it:

- Determines the full-costs of delivering products;
- Determines the profitability/contribution of the products (including over time);
- Assists in making informed decisions about selection of products (including cost/benefit analysis);
- Promotes a high quality management information system (MIS);
- Facilitates development of cost and profit centers;
- Reveals hidden-costs (especially at the departmental level);
- Instills cost-consciousness amongst product/services and thus enhances productivity;
- Facilitates the pricing of current and future products;
- Provides basis for business planning and investment decisions (e.g. which product to market, etc.); and
- Can be used as a basis for variance analysis (comparison of budgeted verses actual figures).

1.2 Approaches To Costing

There are two related approaches to costing products. These are:

Cost Allocation method: This is a method where each line of the income (profit and loss) statement is allocated to each product (savings or credit) based on logical criteria; i.e., number of staff, number transactions, etc.

Activity Based Costing (ABC): This method traces costs through significant activities to the products or other cost items.

1.2.1Cost Allocation vis-à-vis ABC

Table 1 Comparison between the Cost Accounting and ABC Methods

Cost Allocation	Activity Based Costing
a. Fewer steps, b. Simpler, less expensive c. Consistent with P&L accounts d. Uses less data e. Starting point for additional investigation f. Incorporates features of Activity Based Costing at branch level.	a. More expensive and detailed b. Traces costs in cause and effect relationship c. Allows management to focus on where to reduce costs d. More precise and accurate

1.2.2 Information Used In Costing

The following information is used in costing:

- Trial Balance
- Chart of accounts
- Organisation chart
- List of departments and description of each department's function
- Summary listing of staff
- Timesheets
- Documentation / Flowcharts of key products / processes

1.2.3 Concepts In Cost Accounting

There are four key concepts in cost accounting. They are:

1.2.3.1 Contribution Margin:

The contribution margin is defined as revenue less variable costs, per item or per product. To be profitable, all fixed and variable costs must be covered by revenues earned. To determine how much revenue is required per product (price or interest rate to be charged) to cover all costs, the SACCO must calculate its contribution margin.

The contribution approach is used when an institution is considering a new transaction type (new product) to add to its existing operations. As an example of this it to suppose that a SACCO was offered the opportunity to borrow additional funds to be able to immediately on-lend these funds to its members. It therefore wants to consider whether the transactions would increase or decrease its profitability. The SACCO would look at the expected net increase in revenues that the new funds should produce and compare that amount to the net increase in expenses it expects to incur. It would not, in this case, be relevant to worry about allocating fixed costs to the cost of the new funds, as the fixed costs should not change.

The Contribution Margin is also used by financial institutions (SACCOs) when considering business strategies for over a fairly short time period. Obviously, if all of the decisions were based solely upon the Contribution Margin, the institution could lose money even if the revenues were as expected, as the institution must also cover its fixed costs in order to be profitable.

The Contribution Margin is an important concept to understand when considering new transactions that will be added to the SACCO's existing operations. For example, if the SACCO has the opportunity to take in a new fixed deposit account at a 10% annual interest rate (per annum) and then lend the funds to members at an effective interest rate of 25%, one question that the SACCO's management should ask is, “What impact will this have on our profitability?” The answer is that revenues will increase by the 25% yield, minus any losses due to default on those new loans and any increase in loan management expenses, minus the interest expense on the new funds, and minus any increase in the savings operating costs. Thus:

The Contribution Margin = Revenue – Variable cost

In the above example, it formula is:

[(Revenue – loan losses - loan fees) - Loan interest on new funds - operating costs]

It must be emphasized that the calculation of the Contribution Margin is not the only consideration. Additional issues to be taken into consideration include the whether the SACCO has an adequate backlog of good candidates to take loans and whether the new funds and the new loans will not affect the SACCO's other loans and savings accounts.

In consideration of the successful placement of the funds into “good” new loans, the SACCO should consider placing at least part of the new funds into a link-bank account until it can be put into those good new loans, rather than racing to give out the money as quickly as possible. Rushing to grant a lot of new loans increases the likelihood of making mistakes, which will become delinquent loans. This should be avoided.

1.2.3.2 Revenue Centers

In the case of a SACCO, the typical revenue (profit) centers are its lending operations and its other investments, which could include treasury bonds, other securities and real estate (properties). Lending operations, in turn, are usually further sub-divided among the different loan product lines, such as consumer loans, business loans and real estate loans.

To establish the revenues attributable to the different profit centers, SACCO management should analyze all of its revenues and then divide them into logical functional groups or "product lines". Examples of product lines are commercial loans, agricultural loans, school fees loans, etc. For loans the typical revenues attributable to each product would include interest and all fees the SACCO charges its clients on these loans. Loan fees would include commitment fees, application fees, late payment or penalty fees, and any other fees.

For large financial institutions, with multiple managers, these profit centers may be further broken down into "departments" or units, so that the performance of those units can be measured and evaluated. Individual managers may be responsible for more than one profit center in large institutions that have multiple layers to manage. It can also be true of small businesses, where one manager may have responsibility for multiple products or for all products within a given geographic territory. An example of this would be a loan officer who is responsible for all loans sourced from a particular branch. The loan officer should therefore be assigned multiple revenue centers because the SACCO would want to be able to analyze not only the results generated by that particular branch, but also the overall results should be allocated by loan product.

Usually, the design of a cost accounting system includes the assignment of account numbers that allow for the sorting of individual transactions by both the type of product and by the manager or officer who is responsible for that revenue. It is important to be able to separate costs between those that are fixed and those that are variable because the SACCO needs to analyze differences between the actual performances versus its budget forecasts.

For a SACCO to properly assign the revenues of an individual department or staff member, it is necessary for management to review the individual's work responsibilities to properly assign the individual's revenues to the appropriate revenue centers.

1.2.3.3 Cost Centers

After all of the SACCO's revenues have been allocated to profit centers, it should consider its costs. Like the revenue types, costs should be allocated not only by the type but also by the staff member who is responsible for the management of those costs. Once again, this can be done based upon assigned account numbers that include both the product and the identity of the responsible staff member. When examining the performance of more senior staff, it is likely that the staff member will have responsibility for multiple cost centers and perhaps for one or more profit centers, as well.

Product costs and cost centers are generally divided into those that are controlled directly by a staff member or manager (who are responsible for profit centers), those that are not

controlled under profit centers, and those that, while not directly assignable to particular sources of revenue, are necessary for the successful operation of the business.

In the case of loans, an example of costs that are directly identified with the revenue stream would include the salaries of the loan officers who are responsible for the generation of the revenues. An example of a cost that would be directly allocated to the profit center would be the interest expense on the funds used by the SACCO to make the loans. An example of a cost that is not directly assignable to a profit center would be the SACCO's administrative costs.

Some expense variances are simply the result of differences in revenue volumes. For example, if the SACCO's actual loan volume is significantly higher than the budgeted (expected) amount, then it should be expected that their savings account interest expense and possibly the salary's expenses, will also be higher than the amounts budgeted due to an increase in interest income.

Other costs that can be purely discretionary, and not dependent on revenue volumes. An example of this is product marketing costs. Normally, the annual budget establishes the marketing costs for the year. These costs should not vary with revenue volumes, unless the SACCO's management makes a decision to modify its budget, increasing or decreasing the expenditures for marketing expenses. Other expenses, such as office rent, are normally determined in advance by a rental agreement, although there is still some possibility of variance. For example, if the SACCO decided to open a new office that was not projected in the budget, or if something occurred to make the existing office unusable, and which would require them to move a new one. This could have a dramatic effect on the office rent expense.

1.2.3.4 Budget Variance Analysis

An example of a budget variation due to volume changes would be a situation whereby the SACCO's growth is greater than expected in its budget. The SACCO would likely incur increased expenses and personnel costs than initially budgeted.

2 DEVELOPING A COST ACCOUNTING SYSTEM

Developing a cost accounting system begins with the SACCO's existing financial accounting system. First, revenue accounts should be identified and then allocated to logical product types. In the case of a typical SACCO, these product types would include the various types of loans that it provides to members.

The SACCO's loan portfolio must be capable of being identified by loan type. The loan portfolio should further be organized such that management can easily analyze it for any purpose. For example, the SACCO may wish to analyze its portfolio's performance by the branch. Hence, loans should have an account number assignment system that allow for multiple ways of sorting. The account numbering system should be designed with the capability of adding a number series for a new type of loan product and for new branches that may be created in the future.

As demonstrated in Table 2, ABC SACCO Ltd. has two branches; A and B and a Head Office. The SACCO offers three loan products (as indicated below). Each loan product has an account number of 300. This is the general code for loans. The different products are then differentiated by the numbers; -1, -2, and -3 for boda-boda (Motor cycle), school fees and commercial loans, respectively. The identification code for each branch is 001, 002 and 003, respectively for the head office, branch A and branch B, If the Manager wants to analyze how any of these products is performing, he would sort by the respective product code number. If; however, analysis is to be done for the head office or one of the branches, then the various codes are used; for example, 300-1-001B for Boda-boda loans at the Head Office, or 300-2-003SB for school fees loans at Branch B, etc.

Table 2. **ABC SACCO LTD.**

	Loan type	**Loan A/C #**	**Loan Amt.**
H/Office	Boda-boda	300-1-001B-015	50,000,000
	School fees	300-2-001S- 010	3,000,000
	Commercial/Business	300-3-001C-100	80,000,000
Sub-total			***133,000,000***
Branch A	Boda-boda	300-1-002BA-020	35,000,000
	School fees	300-2-002SA-015	5,000,000
	Commercial/Business	300-3-002CA-080	55,000,000
Sub-total			***95,000,000***
Branch B	Boda-boda	300-1-003BB-008	20,000,000
	School fees	300-2-003SB-012	2,500,000
	Commercial/Business	300-3-003CB-045	40,000,000
Sub-total			***62,500,000***
Grand Total			**290,500,000**

All revenues attributable to each product type must be identifiable. In other words, in addition to interest charges, loan commitment fees, delinquent loan charges, loan application fees, and any other sources of revenue related to loans must be identified and attributed to that loan and loan type.

All SACCO revenue sources should be similarly identified and assigned a series of account numbers. Once again, the cost accounting numbering system should be established with unused (additional) account number series, in order to allow for expansion into new types of investments.

Examples of other revenue-producing assets include deposits at the link-banks or other financial institutions and equity investments in the form of purchased shares in businesses or financial institutions. Some SACCOs may acquire assets with the intention of providing them to their members under a term (time-payment) basis; i.e., motorcycles and solar systems. These assets are purchased not for the SACCO's use, but to be sold to members. They are basically "inventory." Costs related to their acquisition, storage and management should be identified and charged against their values. These costs should be deducted against the "profits" calculated when the assets are eventually sold to members.

In addition to revenue-producing assets, the cost accounting system allows for other investment types, such as an office building that the SACCO purchased as an investment and not for use as an office. More commonly, a SACCO a building to be used partly for office space and partly to be rented out to other tenants as a source of income.

2.2 Costs and Other Expenditures

The cost accounting system must have the flexibility to be able to assign account numbers to all expenditures, including those that will be treated as "immediate" expenses. This is because all expenditures must be charged to a cost center. Ultimately, all cost center expenses will be charged against the institution's revenue sources. This will occur either directly, as in the case of expenditures directly identifiable with specific revenue sources, or as allocated expenses when they pertain to the SACCO's ability to operate its business. Cost accounts should be set up such that expenditures can be sorted by the type of expenditure, but also so that the expenditure can be attributed to a specific cost center.

As noted above, the accounts need to include capital asset; i.e., those expenditures for assets that will be used in the company's operations over a period of more that one year. These assets are properly amortized or depreciated over the period of their useful lives. Depreciation, while not a cash expenditure, must be properly charged to the operations during each accounting (monthly) period. An example of this is a motorcycle purchased for the SACCO's with an expected useful life of three years. A portion of the motorcycle's purchase price, in addition to the costs of maintaining (including fuel), should be allocated to those cost centers that its supports.

2.3 Costs Related to Funding Efforts

Costs that are related to funding operations should also be identified. For most SACCOs, the principal funding operation is savings. Development (mobilization) of savings accounts, the ongoing servicing of those accounts and the facilities and staff necessary to service those accounts must be identified. It is important to the SACCO decision making process that it identifies the full cost (expenses) for offering and managing savings accounts. The total cost is significantly more than the interest rate that it is paid on those savings accounts.

Each activity that pertains to savings or other sources of funds should be allocated to that expense center. If an expenditure pertains to the acquisition of funds but not to any specific activity, it should go into a general expense allocation account to be allocated on a logical (percentage or pro-rata) basis, such as the number of accounts or the cumulative values.

All costs that are shared between savings and lending operations should be allocated on an appropriate basis. For personnel, that basis would be the percentage of their time that is devoted to the different tasks. Office expenses can be allocated based upon the percentage of the space in the office devoted to various tasks (cashier space, loan officer space, etc.). It should be noted that there will be other administrative expenses that do not pertain directly to either the sources of funds or the application of those funds. Those functions should be identified and any direct expenses allocated to them. These expenses should also include allocated expenses to the extent that certain parts of the SACCO's offices are used for them. This is true even though they will be ultimately allocated to savings and lending expenses. It is necessary to segment in order to properly prepare the budget and eventually, to compare actual results versus the budgeted results.

The SACCO's management should be aware that, in addition to savings, there are other sources of funding, such as fixed or term deposits, and borrowings from link banks or other financial institutions or international donors. In addition, a major source of funding to most SACCOs is the sale of new shares or memberships. Manager’s time and expense, and administrative expenses should be allocated to those funding sources also.

2.4 Allocation of Shared Administrative Expenses

Once the institution has identified all of its revenue and expense accounts, and made decisions as to how to allocate the shared expenses, it is necessary to input these formulas into their computerized accounting system.

Examples of shared administrative expenses would include the costs for the SACCO's Board of Directors. To the extent that the Board's costs can be identified as relating to savings or lending activities, they should be assigned to those activities, to be allocated based upon an agreed-upon basis. For example, it is reasonable to allocate them among the different lending products based upon portfolio size.

To summarize the allocation of expenses: any expense that is directly related to a revenue producing activity should be charged against the revenue that the activity produces. An expense that pertains exclusively to revenue producing assets, but that cannot be charged directly to one product line, should be put into a cost center that will be allocated to the different product lines, on some basis such as the number of loans in each line, or perhaps on the portfolio value.

Expenses that are supportive of the organization itself should be gathered, and then deducted from net income margin (see below).

A "Flow" Chart of Cost Accounting

Item	Disposition
Revenues:	
Loan Interest	Loan revenue, by product line
Loan Commitment Fees	Loan revenue, by product line
Loan Application Fees	Loan revenue, by product line
Interest from Accounts w/ other banks	Interest Income
Sales of assets purchased for customers	Loan revenue, by product line
Share purchase revenues	To Member shares (Capital Account), Fee Income
Expenses	
Savings Interest	Savings account expense
Interest on other borrowings	Interest paid on loans
Personnel Expenses	Allocate between savings account Expense, loan expense, and general expense, dependent upon employees' responsibilities
Office Expenses	Allocate between savings, loan, and general expenditures based upon space allocated to each activity
Board of Directors	Portions directly assignable to loans, share sales, savings should be so charged. Otherwise to general expenses
Marketing Expenses	To savings, share sales, loans, as Appropriate
Purchase of Fixed Assets	To Fixed Asset accounts
Depreciation of Fixed Assets	Allocate to loan expense, funds acquisition, expense accounts, general expense as appropriate
Loan Losses	Use actual numbers (not loan loss reserves) by Product line

The total income statement should look like:

[Revenue, by product line -Variable Costs directly related to Revenue Production (including Loan Losses) -Variable Portion of Total Cost of Funds (allocated by product line)] = [Contribution Margin -Fixed Portion of Total Cost of Funds (allocated by product line) = Net Interest Income -General Expenses (allocated by product line) =Net Income

3 IMPLEMENTATION OF A COST ACCOUNTING SYSTEM

3.1 Introduction

Once the cost accounting system is fully developed, it is strongly recommended that the SACCO test it by inputting data from the previous year. This can be done on a month-by month basis. In that way, management will be able to verify that the numbers generated are reasonable. Anything unreasonable results should be looked at in detail to identify the problem. It is possible that the SACCO spends far more in a certain area of operations than it realizes. The problem may be due to a formula was put into the system incorrectly. In any case, oddities are a reason to take a closer look. The number one test, of course, is to make sure that the institution's total revenues, expenditures, and profits, as calculated by the cost accounting system, can be reconciled with the institution's previously calculated numbers.

3.2 Importance and Strategic Role Of Cost Accounting Systems in Management Decision Making

3.2.1Total Cost of savings accounts to the SACCO

The “cost” of the SACCO’s savings accounts is not just the interest rate paid on the accounts. It also includes the cost of the people who handle the customers’ deposits and withdrawals (salaries), the guards who protect the SACCO’s cash, the managers’ time spent dealing with issues related to savings accounts, the accountants’ time, the office space dedicated to the savings operations, and other costs.

It is likely that an analysis of existing members’ accounts will show that accounts with small average balances take much more of the staff’s time than do the accounts with larger balances. This may encourage the SACCO to change the interest paid on the members’ savings accounts. Instead of using a flat interest rate regardless of average balance, they decide to pay a tiered (different interest rates) depending on the minimum balance in the member’s account for each month. The change in interest rates must be explained to members.

Not all of the members will start to keep higher savings balances, because some do not have the resources to do so; however, some members will increase their account balances to earn higher interest rates. The net result is that although the average interest rate paid on savings accounts goes up slightly, the average total cost of each shilling of savings goes down,

3.2.2 Net Effective Yield on a SACCO’s Loan Products

A SACCO must analyze its different loan products to discover the effective yield on each type. In doing this analysis the SACCO will discover that even though it charges the same interest rate and fees on all loans, the effective yields of the different loans vary greatly.

The primary reason for this high default rates on certain products. It is possible, for example, that loans given to members to buy motorcycles have a high delinquency and default rate. By understanding this, the SACCO can require those customers to put up a larger down payment when purchasing the motorcycles or save a fixed percentage of the loan value before it can be granted.

As a result of this type change, the SACCO makes less motorcycle loans to its members; however, those loans that it does make also have fewer problems with defaults than in the past. As a result, the SACCO's overall performance improves.

3.2.3 Opening up a branch

If a SACCO is considering whether or not to create a new branch office in a nearby village a number of assumptions must be made to calculate the viability of the new branch. For this example, the managers estimate that the branch will pay an average of 3% annual interest rate on the savings accounts that will be opened there. Ultimately the branch will reach 200,000,000 UGX in savings, and 30,000,000 UGX members' shares.

The branch must find a suitable building for its office. The new office is estimated to cost 11,000,000 UGX per year for rent and utilities. It is then estimates that staff will cost an additional 7,000,000 per year (for the first year). Based on these assumptions, the SACCO can calculate the cost of funds for the new branch, as shown below:

Interest on savings accounts:	200 million x 3%	=	6,000,000 UGX
Office cost		=	11,000,000 UGX
Salaries for new employees		=	7,000,000 UGX
Total Cost		=	24,000,000 UGX

Effective Interest Rate on New Funds (24,000,000/ 230,000,000) = 10.4%

In making its decision on whether or not to open the new branch, the SACCO board and management must further consider the cost of new equipment and the fact that the new branch will not achieve the 200,000,000 UGX in saving immediately. It will take the new branch time and effort to achieve that level of savings.

Thus the SACCO's management may decide to compare this total cost of funds to the cost of borrowing from a link bank and decide that the link bank would actually be cheaper. They may decide that the opportunity to gain more members and to make profitable loans to those members is more important than the estimated cost of the funds.

3.2.4 External borrowing

External borrowing is likely to be an alternative for a SACCO, as well. Thus if a SACCO is offered the opportunity to borrow money through a government agency at 10% per annum, with a interest ceiling of 15% annual interest, should the SACCO accept the money?

The SACCO must analyze its costs. In doing this, it realizes that it must expect a loan loss rate of 7% on loans of this type to its members. The effective yield under this program would only 13.95% (15% x 0.93).

The SACCO's management must further estimate the increased cost of underwriting, approving, and managing the new loans under this program. This might reduce the effective yield on the loans by another 3%. While there would still be a small increase in the SACCO's income it might not be sufficient to justify the interest cap from the governments funds., but only if the managers are confident that their loan losses will not exceed 7% on these new loans. The SACCO may decide not to accept the government funds, if it feels that the risk of loss is too high and the margin will have to be cross-subsidized through it current product incomes.

4 DETERMINATION OF PROFITABILITY BY PRODUCT LINE

In order for a SACCO to determine whether its individual product lines are profitable, it must be able to identify the revenues that are generated from each product and identify all costs that are related each product line.

Revenues on loan products are easy to identify if the SACCO can identify the type of loan through its accounting system. Generally, the sources of revenues are going to be interest accrued, loan commitment fees, loan application fees and stationery fees, late payment fees, and possibility some profit or commission received by the SACCO if, for example, the seller of a product that the SACCO is financing for its member paid a commission to the SACCO. This could happen if the SACCO was financing the purchase of multiple motorcycles for several members and was able to obtain a discounted price from the supplier.

The SACCO' managers should be careful to deduct loan losses from revenues, by product line. It is therefore necessary for the SACCO to be able to identify all of its actual loan losses by product line and to deduct those losses from revenues.

The SACCO should track any expenses directly identified with the loan origination and the loan management process. These expenses include loan assessment, legal or documentation fees that are incurred by the SACCO and loan management expenses. Once again, to the extent possible, the SACCO should seek to identify the product line that created these costs rather than by simply allocating them on an arbitrary basis. The reason for this is that a large amount of the loan officers' time might actually be taken up by one type of loans and not the others. This fact needs to be considered in determining the profitability of that product line.

After the SACCO has calculated its Net Revenues by product line, it needs to consider its cost of funds. Interest expenses are only one part of the SACCO's cost of funds. Interest expense should include interest paid to holders of savings accounts and the cost of external borrowings, if it exists, such as loans from a link bank or a government sponsored or private program.

The SACCO's interest expense should be allocated to its revenue sources, based upon the total percentage of loans outstanding in each product type and in comparison to the total amount of loans and other investments outstanding. Remember, one must account for the cost of the funds used to buy "Call Deposits" from banks or other financial institutions. It doesn't make sense to allocate any cost of funds to cash, as it doesn't generate any income. The reason to calculate the interest expense number separately is to facilitate the calculation of the SACCO's contribution margin.

The total cost of funds will include interest expenses and direct costs related to the sources of those funds. These include the interest expenses incurred and the costs of obtaining and maintaining those funds. The latter costs include savings staff and cashiers' salary, the portion of office expenses that relate the cost of mobilizing savings accounts and the costs of mobilizing and maintaining member share accounts. Member share accounts are a very large portion of the SACCOs' sources of funds. While there is no interest paid on member share accounts, dividends are paid annually. It is therefore necessary to include the costs related to having these funds to lend. Subtracting the other direct costs of funds from the Contribution Margin will result in the SACCO's Net Interest Margin.

The SACCO's other costs of funds expense is logically allocated in the same way as the direct costs; i.e., based upon the total amount of each individual product type, as compared to total loans and other investments.

It is important to note that there is the possibility that a SACCO could have a special situation in which they obtained special funding from some outside source, with the requirement that it be used for a specific type of loan or given to a specific type of borrower. An example of this would be a program to finance the purchase of solar panels for residential usage.

In this case, it is recommended that those funds be removed form the SACCO's other Cost of Funds and be allocated to that special loan product. All other costs, including loan management costs and allocated fixed costs, should be treated in the same way as they are for the SACCO's other loan products for determining the profitability of the loan product.

Lastly, it is necessary to allocate the SACCO's costs that relate to the SACCO's overall operations, but are not directly applicable to any of its lending or savings activities. An example of this might be the SACCO's Board of Directors Expenses and any governmental registration fees or legal fees it might have to pay. These can be called General Expenses. The process of Cost Accounting seeks to allocate as many of the SACCO's expenses to portions of the operations as possible. However, certain costs such as these cannot be allocated directly. It is better to simply allocate them against the revenue sources, once again on a basis of the total outstanding portfolio. Deducting the allocated General Expenses from the Net Interest Income results in the Pre-Tax Profit, by product line, as shown below.

Cost Item	Allocation basis	Rationale for selection
BOD allowances	Portfolio basis	Their responsibilities are mainly concerned with general SACCO operations (although not exclusively)
Security	Portfolio basis	Reflects requirements for security, based on the volume of cash movements
Rent	Number of accounts	The number of accounts reflects the use of space by the management and administrative staff
Utilities	Number of accounts	Utilities Linked to rent above

Most Cost Accounting systems do not calculate the after-tax profitability of their different product lines. It is certainly possible to allocate the firm's income tax expense between the different product lines, based upon the percentage of their total pre-tax income (or loss) to the SACCO's total profit. This would result in a tax charge or tax credit for each product type.

4.1 The Product Profitability analysis by product line formula would look like this:

[Revenue (by product line) -Variable costs directly related to revenue production (including actual loan losses) = *Net Revenue by product line* -Variable Portion of Total Cost of Funds (allocated by product line) = *The Contribution Margin* -Fixed Portion of Total Cost of Funds (allocated by product line) = *Net Interest Income* - General Expenses (allocated by product line) = *Net Income*

Some costs that can be directly charged to a cost or revenue center would be those costs directly related to a loan transaction or to the institution's savings accounts. An example of a cost that would directly relate to the institution's savings operations would be its armed guards, While they may give all of the company's customers a sense of security when they visit its offices, it is logical to assume that virtually all of the need for guards relates to the company's cash handling operations, including the storing, receiving, and the paying of cash.

SACCOs should use actual loan losses by product line, rather than loan loss provision expenses to calculate loan profitability, by product line. Otherwise, the results will be distorted by the loan loss allocations. Any net difference between the actual loan losses and loan loss provisions can be picked up in the general expenses group, so that total net income can be tied to the financial accounting results.

Other costs that may be readily divisible are personnel costs. Some employees will have responsibilities that are related to more than one profit or cost center. An example of this will be the branch manager. While the branch manager's responsibilities may be largely tied to the SACCO's savings operations, he is also responsible for loan operations. Typically such personnel costs are allocated to both profit and cost centers, based upon the time devoted to each activity. The breakdown is based upon an analysis of the employee's time usage, as measured over a period of time or by the employee's own estimate.

It is important to allocate costs to savings and other funds gathering activities so that the SACCO knows what the full costs of those funds are. Without this information it is not possible for the SACCO's management to make informed decisions about which funding source may be the most attractive one to pursue at any point in time.

AN EXAMPLE OF LOAN PRODUCT PROFITABILITY

Table 3. ABC SACCO Income Statement 2006 (Million Shillings)

Revenues	
Loan Interest	121.0
Link Bank Interest	2.0
Loan Fees	5.0
Increase in Loss Reserve	(16.0)
Total Revenues	*112.0*
Expenses	
Savings Account Interest	6.6
Interest on Borrowings	4.0
Total Interest Paid	10.6
Contribution Margin (Also sometimes called Gross Interest Margin)	*101.4*
Other Expenses	
Salaries & BOD	20.0
BOD	8.0
Offices	7.8
Operating Expense	16.0
Loan Management Expenses	5.0
Depreciation	8.3
Taxes	7.0
Total Other Expenses	*72.1*
Income	***29.3***
Dividends	16.3

Table 4. Breakdown of Expenses between Savings and Loans

	Savings	**Loans**	**Other Investments**
Salaries	25	70	5
Operating Expenses	35	60	5
Offices Expense	50	50	0
Depreciation	60	40	0
Loan Management	0	100	0

Table 5. Loan Portfolio: Average Total Balance 2006: 373.5 million

Portfolio Breakdown	**Amount**	**Loan loss experience**
Commercial	200.0	1.2
Agricultural	50.0	5.0
School Fees	50.0	0.6
Salaries	73.5	0.2

We shall assume that ABC SACCO charges the same interest rates and other fees on all of its loan products. This need not be the case. With a properly set up cost accounting system, actual revenues by product type could be tracked. The SACCO should begin with allocating the revenues to their product types as demonstrated in Table 6:

4.2 Allocation of Revenues by Loan Product

Table 6

Total Gross Revenue	Commercial Loan	Agricultural Loan	School Fee Loan	Salary Loan
121	64.8	16.2	16.2	23.8
Less actual loan losses	1.2	5.0	0.6	0.2
Net loan revenues	63.6	11.2	15.6	23.6
Loan origination & Mgmt expenses	2.0	1.6	0.5	0.9
Gross loan income	61.6	9.6	15.1	22.7
Yield by product line	30.8 (61.6/200)	19.2 (9.6/50)	30.2 (15.1/50)	30.9 (22.7/73.5)

In this purely hypothetical example, one sees that the yield on the SACCO's agricultural loans is much lower than the yields on its other loans. This is primarily due to the large loan losses the SACCO experienced with its agricultural loans in this example.

Appendix

Glossary of Costing Terms

Allocated Costs: Also called Capacity Costs. These are those expenses that pertain to the organization's overall operations but are not directly identified with a particular phase of the business. In the case of SACCOs, the Allocated Costs would be those that do not pertain directly to either its savings (sources of funds), or lending (revenue production) operations. See "Shared Costs"

Asset: Anything that a company owns that is of value to its operations, either presently, or in the future. Normally, assets are carried on the company's balance sheet if they have an identifiable cost.

Cost: An expense (payout of funds) associated with the normal operations of a business. An example of an expenditure of funds that would not be treated as a cost would be an asset that will be used over a long period of time, such as an automobile for business use. That cost would be treated as the purchase of an asset, to be depreciated over more than one year.

Cost Center: Is a group or department within the company's operations that incurs expenses necessary for the company's operations, but does not generate revenues. The SACCO's Board of Directors' Expense would be an example of a cost center.

Cost of Funds: The weighted average interest rate paid on all debt financing used by a business. This can include only an actual interest paid on the funds, or it can be fully costed, to include the expenses of maintaining those funds, such as the cost of managing its savings operations.

Direct Costs: Those costs that are directly related to the creation of revenue-producing assets. They can be fixed or variable. Examples include the cost of manufacturing labor, but also the building in which the production is performed.

Equity: That portion of the company's financing sources that is provided by the company's owners. Equity accounts typically include the purchase price of shares, any retained earnings (or accrued losses) from previous years, and any income or loss for the current year to date.

Fixed Costs: Are types of a business's costs that do not change, depending on the product volume. An example would be a bank branch, or a company's executive offices. It should be noted that "fixed" costs are normally considered to be fixed over a given range of business volume, and over a comparatively short time period. Ultimately, all costs are variable. Fixed Costs do not vary with the institution's volume of revenues. Examples would be the rent that the SACCO pays for its offices, and perhaps the fees that it pays its Board of Directors.

Fixed Costs need to be allocated to the SACCO's Profit Centers (Loan Product Lines) and to their Cost of Funds within the cost accounting process, as it is necessary that revenues be high enough to cover all of its expenses

Full Costing: Includes not only the direct costs of a given service, but also the allocated costs. It is necessary that, over the long run, the SACCO's goal should be for all of its product lines to be profitable on a Full Costing basis,

Indirect Costs: Those of a business's costs at are necessary to that company's existence, but are not directly related to the production of income. Examples could include a company's Human Resources department.

Liability: Funds owed by the company to any person or any other company. The SACCO's Savings Accounts are liabilities, as they are funds the SACCO owes to its members.

Loan Yield: The effective interest rate on a loan. Calculation of the loan yield takes into consideration not only the stated interest rate, but also the Commitment Fee, any other fees that are in excess of the lender's actual costs, and any required deposits or offsets.

Profit: A business's gain for a given time period: the amount by which its' revenues exceed its costs.

Profit Center: A Profit Center differs from a Revenue Center only in that it considers not only its revenues, but also the expenses incurred in generating those revenues. A Revenue Center can also incur expenses that are applicable to the generation of its revenues. For example, a SACCO's loan officers will generate costs such as salaries and loan assessment expenses when they are looking at the making of new loans.

Revenue: Receipts to a company, usually defined to mean those inflows that are the result of the company's normal operating activities, but not inflows from, for example, the sale of some other asset or investment.

Revenue Center: A Revenue Center can be all revenues from a product line, such as one type of loan (Commercial, School Fees, et cetera), or it may also be revenues from a given branch. A third possibility may be all revenues generated by a certain group of employees, such as a department.

Shared Cost: Shared Costs are often fixed by their nature, but still can be related directly to different Revenue Centers and/or Cost Centers. An example would be an office used to provide both savings and lending operations. Perhaps sixty percent of the space in the office is identified as used mainly by the SACCO's savings operations, and the remaining 40% of the space is used by its lending operations. It would be logical to allocate the total cost of that building, including rent, insurance, and utilities, to both portions of the business, based upon the percentage of the total area used.

Variable Costs: Are those costs that will go up or down with a change in the volume of output. For a manufacturing company, variable costs would include the cost of their raw materials used to make their products. For financial enterprises, an example would be the cost of the funds used to make a loan. Variable Costs are those costs that will increase or decrease, depending upon the SACCO's level of business activities. By their nature, it is normally easy to determine which Revenue Center or Cost Center to allocate them to. For example, if the SACCO increases its lending activities, it is reasonable to expect that its loan management expenses would increase, as would its cost of funds.

Controllable Costs: Often as part of its budgeting process, senior management will want to measure the performance of its department managers. For that reason, they will want to be able to identify those costs (and revenues) for which the manager is directly responsible for, as opposed to those costs which he does not control, but are allocated to him. For example, if the rent on the SACCO's office building is suddenly increased, a portion of that rent increase will be transferred to that manager's department. That expense is however, an Uncontrollable Cost to the manager.