

Ethiopian Business Development Services Network (EBDSN)

Accounting and Cost Calculation Manual

Addis Ababa 2/2004

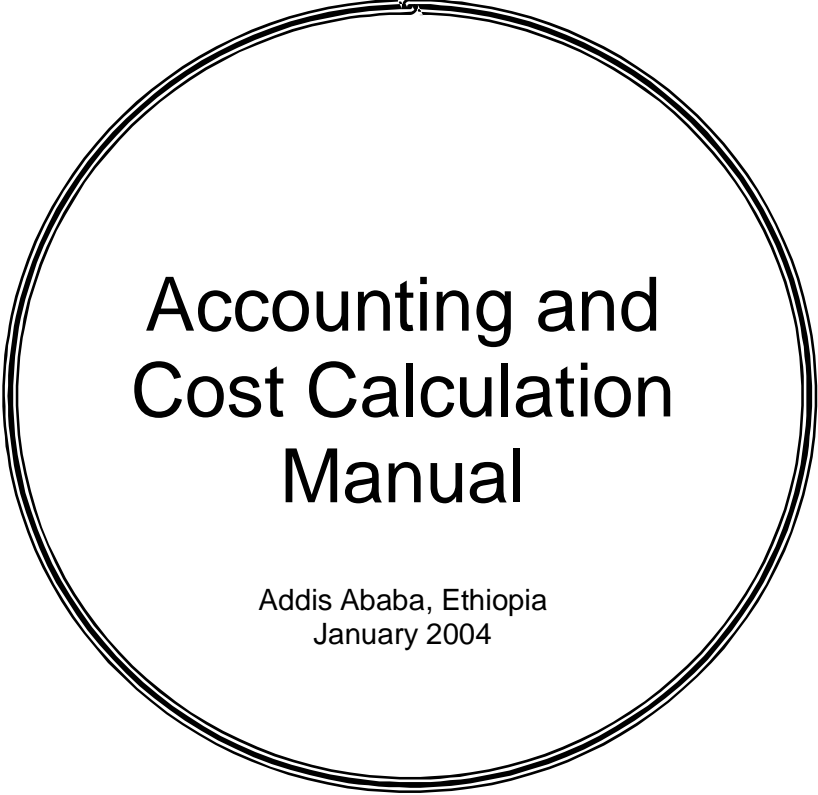


EBDSN

www.bda-ethiopia.net



German Technical Cooperation



Accounting and Cost Calculation Manual

Addis Ababa, Ethiopia
January 2004

Published by:

Ethiopian Business Development Services Network (EBDSN)
P.O.Box 11133 Addis Ababa, Ethiopia

In collaboration with:

Ethio-German TVET Programme,
Ethio-German Micro and Small Enterprises Development Project (GTZ)

On behalf of:

German Technical Cooperation (GTZ)

Project implementation:

GFA Management GmbH, Germany

Editors:

Fantahun Melles, Dieter Gagel, Bettina Reichl, Christine Peter

Table of contents

1. Accounting Procedures for Micro and Small Enterprises	1
• Introduction	1
• Manual cashbook format	1
• Electronic cashbook format on Excel basis	2
• Electronic cashbook format with accounts (Excel).....	2
• Records for maintenance services.....	3
• Cash sales ticket.....	3
• Sales on credit	4
• Raw material inventory.....	4
2. Cash Flow Statement	5
• Introduction.....	5
• Definitions of terms used in cash management	6
• Cash flow statement format.....	7
3. Professional Accounting Applications for Small and Medium Enterprises	8
• Accounting software and software providers.....	8
• Training courses in accounting	8
4. Cost Calculation Manual	9
4.1 Identify cost components	9
4.2 Systematise costs.....	10
4.3 Calculate variable costs for each product/service.....	12
4.4 Calculate fixed costs for each product/service.....	12
4.5 Calculate total costs per unit.....	13
4.6 How cost calculation improves business	13
• Price setting	13
• Calculation of the breakeven point.....	13
• Pricing strategies.....	14
• Ways to reduce costs	15
5. Profit an Loss Statement	16
• Profit and Loss Statement format	16
• Instruction to the Profit and Loss Statement.....	16

For more details refer to the publication on “Business planning”

1. Accounting Procedures for Micro and Small Enterprises

Introduction

Advice in accounting and bookkeeping for medium and large enterprises should be done by professionals. Most micro and small enterprise operators do not need a complex accounting system but a rather simple introduction to a cash book and introduction to how to produce and keep records in the form of receipts. Micro and Small Enterprises (MSEs) often face problems with regard to recording their daily transactions. This is due to the fact that most of the operators do not know how to make such records in a simple and easy manner. As a result, many operators find it very difficult to give information on their income and expenses and eventually do not know whether they have lost or profited from their business activities. The absence of recording has also caused some problems in handling customer needs, particularly in maintenance services and also in cases of sales on credit services. The lack of recording also makes it very difficult for the tax offices to levy reasonable taxes that are commensurate with the business activities. As a result, business operators complain on the taxes that are levied on them on the basis of estimation, which they say are too heavy to bear.

Cashbook Format

The cashbook is very important to show the situation of the business at any time, as it provides both the charges and credits for any given period. The balance column is the difference between the charges and credits columns.

Cashbook								
No.	Date	Description	Cash in		Cash out		Balance	
			Birr	Ct	Birr	Ct	Birr	Ct
1	2.2.04	Initial cash in	2 345	00			2 345	00
2	3.2.	Electricity			126	50	2 218	50
3	3.2.	Shop rent			930	40	1 288	10
4	4.2.	Sales of products	455	70			1 743	80
5	5.2.	Taxes			780	90	962	90
6	5.2.	Sales of products	1 675	80			2 638	70
7	5.2.	Raw materials			1 675	80	962	90
8	7.2.	Sales of products	780	45			1 743	35
...						

Electronic Cashbooks

For small and medium enterprises with electronic facilities, an effective but simple system is an Excel sheet. The following cashbook for download has the same structure as the manual cashbook above but calculates balance and sum/balance automatically (see cashbook-1.xls on the above mentioned web page).

Another possibility is to organize an electronic cashbook with accounts (see third column). The numbering of the accounts permits you get a monthly or yearly overview by accounts. Just add up all entries with the same account number. With Excel the overview of each of the accounts can be shown automatically if you insert the Autofilter function of Excel (see under "data" of the Excel menu).

Electronic cashbook with accounts						
No.	Date	Acc	Description	Cash in	Cash out	Balance
1	2.2.04	10	Initial cash in	2 345.00		2 345.00
2	3.2.	51	Electricity		126.50	2 218.50
3	3.2.	52	Shop rent		930.40	1 288.10
4	4.2.	10	Sales of products	455.70		1 743.80
5	5.2.	53	Taxes		780.90	962.90
6	5.2.	10	Sales of products	1 675.80		2 638.70
7	5.2.	61	Raw materials		1 675.80	962.90
8	7.2.	10	Sales of products	780.45		1 743.35
9	8.2.	61	Raw materials		345.70	1 397.65
10	9.2.	51	Water		125.60	1 272.05
Sum / Balance				5 256.95	3 984.90	1 272.05

E.g. all entries with the account number 61 may automatically be filtered and added (see cashbook-2.xls on the web page).

Autofilter for account No. 61						
No.	Date	Acc	Description	Cash in	Cash out	Balance
7	5.2.	61	Raw materials		1 675.80	962.90
9	8.2.	61	Raw materials		345.70	1 397.65
Sum of account no. 61					2 021.50	

Sales on Credit

The format is useful for recording all credit sales so that the operator is reminded of the remaining cash to be collected from customers who took credit services. The format provides information for the business operator to identify the customer, the date on which sales on credit took place, the amount of remaining cash to be paid and the date on which it has to be paid back; it therefore helps the operator to clearly account for his/her income. This format also helps to identify those who defaulted and those who paid back on time thereby urging the business owner to take corrective measures in extending credit sales in the future.

Sales on credit								
No.	Date	Client	Product/Service	Unit value	Advance paid	Cash to be paid	Final payment	Signature

Format for Raw Material Inventory

This format helps to record the inventory of raw materials. The operator deducts the quantity of raw material used from the column of raw material purchased and maintains the inventory both in terms of quantity and value. This helps the operator identify the amount of raw materials used during a given period of time, and the amount of inventory he has. As a result a proper calculation for expenses incurred is possible.

Raw material inventory									
No.	Date	Raw material purchased			Raw material used			Inventory	
		Type	Qty	Total value	Type	Qty	Total value	Qty	Total value

2. Cash Flow Statement

Introduction

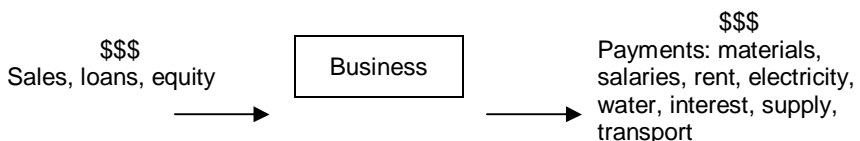
Cash in business can be compared to water that flows in a river. Cash flows in from sales, loans, and equity. In the process of producing goods and services, cash flows out to pay for materials, salaries (including the entrepreneur's), rent, electricity, water, interest, supply, transport.

If there is more water coming out than coming in to the river, then it will soon dry out. Similarly, businesses having more cash outflows than cash inflows will soon get into trouble. They will not be able to pay for their expenses as they fall due - a difficult situation that every prospective entrepreneur should avoid. Hence, cash flow planning is an important issue to be considered by the operator. However, many entrepreneurs fail to realise this. They constantly run the risk of being unable to settle most of their bills. Poor cash planning practice is a major cause of many small business failures.

Cash Flow is important to help predict cash needed, how much money will be needed and when it will be needed, or to predict cash surplus and plan investments.

The cash planning process begins with figuring out how much cash is generated from sales receipts as well as other sources like loans, etc. for a certain time period. This figure represents cash inflows. Obviously, credit sales are excluded since they are not cash until they are fully paid for. Then, figure out how much cash is needed to pay all expenses for materials, rent, salaries, and others. This figure represents cash outflows. Credit purchases are excluded since they are not cash transactions until they are fully paid for.

The difference between cash inflows and cash outflows represents the ending cash balance. This cash balance within a period, say for a month, will automatically become the beginning balance for the next month.



Preparing cash flow projection consists of cash inflows (or cash receipts) and cash outflows (or cash payments). Likewise, it will have spaces for beginning and ending cash balance. The aim is to ensure that the available cash will be sufficient to meet the needs and obligations of the proposed business. If there are more cash outflows than inflows in the cash flow projection, then measures such as selling more products, converting personal assets to cash or borrowing some money must be considered to avoid this situation.

Definitions of Terms used in Cash Management

Cash inflows:

all cash receipts realised within a given period.

Cash sales:

cash revenues realised from sales of finished goods/services.

Credit sales:

sales made without receiving cash.

Depreciation:

a cost charged against fixed assets for their replacement.

Cash outflows:

total of all cash payments.

Example for Cash Flow Statement							
Item	0	I		II		III	
	Real	Forecast	Real	Forecast	Real	Forecast	Real
1. Initial Cash							
2. Inflows:							
2.1 Sales							
2.1 Others							
2. Total Inflows							
3. Outflows:							
3.1 Dividends							
3.2 Labour Costs							
3.2 Promotion Material							
3.3 Rent							
3.4 Energy							
3.5 Telephone							
3.6 Publicity / Promotion							
3.7 Renovation							
3.8 Registration fee							
3.9 Others:							
Insurance etc.							
3. Total Outflows							
4. Net Flow Return (2-3)							
5. Final Cash Flow (1+4)							

3. Professional Accounting Applications for Small and Medium Enterprises

For small and medium enterprises professional accounting is needed in order to comply with accounting standards acceptable by the tax authority. Thus, the list of adapted softwares, providers and training institutions are provided below for your reference.

3.1 Accounting Software and Software Providers

CyberSys Technology

Befekadu building, Bole road, opposite to Saay pastry

Software:

- Peachtree accounting, Original 300 Birr
- Quick Book accounting, ask for price
- DAC accounting, ask for price

PRO - TECH

P.O.Box 1612 Addis Ababa, Tel. 620425, 620729, Fax 620840

Software: - Peachtree Accounting

3.2 Accounting Training Courses

CyberSys

Befekadu building, Bole road, opposite to Saay Pastry

P.O.Box 19674 Addis Ababa

Courses provided:

- Peachtree accounting, 40 Hrs, 700 Birr
- Quick Book accounting, 28 Hrs, 700 Birr
- DAC accounting, 28 Hrs, 700 Birr
- Web page design, 20 Hrs, 600 Birr

African Lakes

Near the National Stadium, P.O.Box 3533 Addis Ababa, Tel. 518444

Courses provided:

- Peachtree accounting 2002, 50 Hrs, 690 Birr
- Other as Word, Excel, Access, Windows

City Business Computers

Bole Road, in front of Bole Printing Enterprise, P.O.Box 6052 Addis Ababa
Tel. 517197, 513365, 533730, Fax 251-1-522756

Courses provided:

- Peachtree accounting

4. Cost Calculation Manual

Many people are unaware of costs and waste scarce resources. Be cost conscious and think about systematic but simple cost calculation! Cost calculation is the way to calculate the total costs of making and selling a product or providing a service. How can it improve the business? Costing helps to:

- set prices;
- control and reduce costs;
- plan for the future;
- make better decisions;
- write a business plan to obtain a credit.

Steps

1. identify cost components;
2. systematise costs;
3. calculate variable costs;
4. calculate fixed costs;
5. calculate total costs per unit;
6. set prices, deduct the breakeven point.

4.1 Identify Cost Components

- **What cost components are involved in this enterprise?**

Production

- manpower;
- raw materials;
- electricity, transport, rent, water;
- machinery, equipment and tools.

Management

- manpower, entrepreneur's salary;
- stationery, telephone, rent, electricity, insurance;
- Equipment.

Selling

- publicity, promotion, commissions.

Finance

- interest.

- List all costs in simple tables, such as:

Material, electricity etc.

Items	Quantity	Costs	Remarks
Flour	10 kg	2 Birr per kg	(variable)
Sugar	10 kg	5 Birr per kg	(variable)
....			(v or f)

Machinery, equipment, tools

Items	Costs	Estimated use	Remarks
....			(v or f)
Dough mixer	6000 Birr	5 years	(fix)
....			

- Calculate the labour costs per hour for each employee:

Manpower

Name	Job description	Costs per month	Costs per hour
....	Administration: ...		(fix)
....	Production: ...		(v or f)
....		

- Calculate the working hours and the direct labour costs needed to finish the product/service:

Production process

Step	Time	Executed by	Costs
....			
....			
....			

The cost of a step in the production process is calculated by multiplying the manpower cost per hour of the employee executing this step and the required time.

4.2 Systematise Costs

Each operator has to differentiate between costs like rent and flour (e.g. in a bakery) to deduce the concept of fixed and variable costs.

- Fixed costs are the sum of all costs required to produce any product. They do not change when the volume of production/service is changed. Fixed costs can include facilities costs, certain general and administrative costs, interest and depreciation expenses.

- Variable costs are costs associated with producing additional units. They do change with the volume of production/service. They can include direct material and labour costs, transportation and sales commission expenses.
- Variable unit cost: Cost associated with producing one additional unit.
- Total costs: Sum of fixed costs and variable costs.

This concept implies that (due to contracts, commitments etc.) fixed cost components can be reduced only after a certain period of time. In principle, the classification of costs depends on the type of production. Furthermore, some components can be both fixed and variable in the same enterprise: Electricity consumed by a production unit is variable, while electricity for the office building is fixed cost. However, there are some rules of thumb:

Examples of fixed and variable costs

Items	Fixed costs	Variable costs			
		Bakery	Carpentry	Retailer	Services
	Administration expenses (tel, fax), stationery, rent, electricity, water, transport public services maintenance advertisement depreciation	Flour sugar eggs salt butter milk ... electricity water	Wood hinges paint screws glue... electricity water	Goods' cost	Materials, spare parts' used in the service.... electricity
Man-power	Entrepreneur's salary, wages and salaries (not piece wage!)	Salary per produced piece, per kg	Salary per produced piece	Sales commissions	Fee per delivered service

- raw materials normally entail variable costs;
- productive work being directly related to the product or service results in direct labour costs, which are variable;
- administration costs are mostly fixed costs.

The operator should classify one by one all his costs as variable or fixed. Does he understand the difference between fixed and variable costs? Only when he is able to classify his costs, can he calculate the fixed costs and the variable cost *per unit* of each of his products - the basis for pricing.

4.3 Calculate variable Costs for each Product/Service

Item	Cost (purchasing price)	Used quantity per unit (product, service)	Cost per unit (price / used quantity)
Raw materials			
- flour	2 Birr per kg	10 kg per 100 cakes	20 Birr per 100 cakes
- sugar...	5 Birr per kg	1kg per 100 cakes	5 Birr per 100 cakes
Labour costs..			
Transportation..			
(1) Variable Costs per unit			25 Birr per 100 cakes 0,25 Birr per cake

If a unit produced is very small (e.g. cake) and during the relevant period thousands of units are produced, it is not necessary to quote exactly the quantity of raw material used per unit. Rather, one can take quantities used per 100 or 1000 units. However, at the end variable costs have to be adjusted to one unit. (see example)

4.4 Calculate fixed Costs for each Product/Service

Item	Fixed cost/month
Rent	
Salaries (administration)	
Depreciation of building, machines....	
...	
(2) Total fixed costs	
(3) Monthly production (in units)	
(4) Fixed cost per unit (2/3)	

Depreciation is the theoretical price to the use of an asset. One of the various methods of calculating depreciation, and the simplest one, is to divide the purchasing price of the asset by its period of usage.

Example: A machine costs 6,000 Birr and is supposed to work for 5 years
 Depreciation per year: $6,000 \text{ Birr} / 5 \text{ years} = 1,200 \text{ Birr per year}$.
 Depreciation per month: $1,200 \text{ Birr} / 12 \text{ months} = 100 \text{ Birr per month}$.

If the business produces more than one product, the fixed costs have first to be split between products as exactly as possible. The relation of total variable costs for each single product can be used as an estimator for the split up of fixed costs.

4.5 Calculate total Costs per Unit

- Add up variable and fixed costs per unit

(1) Variable costs per unit	
(4) Fixed cost per unit	
(5) Total cost per costing unit (1 + 4)	

4.6 How Cost Calculation improves Business

Price setting

To set prices the operator needs the following information

- his costs;
- competitors' prices;
- how much the customers are willing to pay.

In general the price must be

- low enough to attract customers to buy;
- high enough to give the business a profit.

To make a profit, the price must be higher than the total costs of the product! Hence, knowing the total costs of a product is essential in determining the price.

There are two methods:

- the business operator takes his total costs per unit and adds a percentage margin to get his selling price;
- the operator takes the prices of his competitors and makes sure that his prices are competitive with theirs. But he has to make sure that his prices cover his total costs!

However, only if the product is better than that of competitors and the operator is able to transfer the additional benefit to the customers, he can charge more than his competitors.

Calculation of the breakeven point

The breakeven point is an estimate of the level of sales necessary to operate a business profitably, i.e. how many units of a product must be sold at a given price to make a profit.

The following steps are involved in calculating the breakeven point:

- identify the total fixed and variable costs of the business based on actual results during a relevant time period.

Calculate the contribution margin as follows:

$$\text{contribution margin per unit} = \text{selling price per unit} - \text{variable costs per unit}$$

- this amount is available to offset fixed expenses and (hopefully) produce an operating profit for the business.

Calculate the breakeven point as follows:

$$\text{breakeven unit volume} = \text{total fixed costs} / \text{contribution margin per unit}$$

If sales exceed the breakeven unit volume, the business makes profit; if not, the business makes a loss.

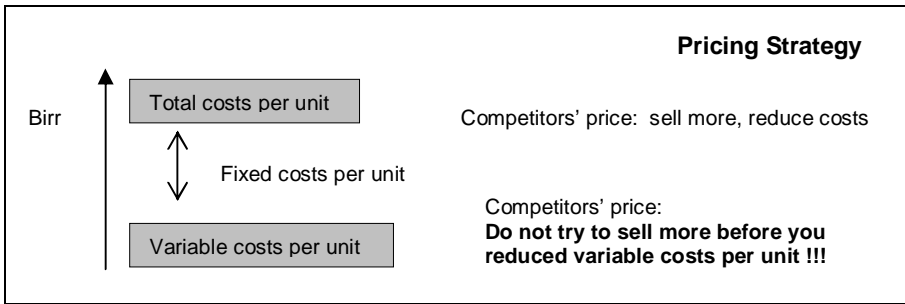
By performing a breakeven analysis and then varying the assumptions regarding sales levels and variable and fixed costs, the real factors behind the profit potential (or lack thereof) of a business become more clear. This process will highlight the most significant factors and assumptions (particularly assumptions about the ability to set prices) in the buyer's business plan.

Pricing strategies

Generally, the sales price for a product or service should cover more than the variable costs of producing that product, but the margin from sales must be enough to cover fixed costs as well.

If the sales price does not cover total costs, it can, however, still cover the variable costs. Then an appropriate strategy would be to implement measures to increase sales. If the market share can't be modified, this may require reduction of fixed costs - to make fixed costs become variable.

But if the sales price is below variable costs, it does not make sense to sell more. With every additional unit sold, the operator increases his losses. Then measures to increase sales would not be an appropriate strategy, the operator rather has to reduce his variable costs. Reducing fixed costs – though always recommendable – would not be sufficient!



Ways to reduce costs

Many people are unaware of costs and therefore waste scarce resources. Making an operator cost conscious is always a good point, particularly when he has the potential to reduce costs without neglecting quality:

- turn off a tap which is running;
- handle your tools and equipment with care; clean your tools;
- switch off any unnecessary light and machines which are not used;
- work faster, but still be precise.

Reduce variable costs:

- find cheaper suppliers, but at the same or better quality;
- find others and co-operate to order larger quantities;
- share expenses with others;
- the higher the stock, the higher the interest expense; but: the lower the minimum stock the higher the risk of running out of stock;
- improve the workplace layout: good workshop layout means that the product travels and is handled as little as possible between processes from the beginning to the end of its manufacture.

Make fixed costs become variable:

- if average utilisation of equipment or human resources is low, it can make sense to outsource these services/production. Then the operator has to rent/buy the product/service only when necessary.

5. Profit and Loss Statement

The Profit and Loss Statement is the final accounting procedure to be presented to the taxation authorities, in order to be taxed on the real activity and not on estimation basis.

Company	
Profit and Loss Statement	
Period: from..... to.....	
Gross Sales	
Less: Returns and allowances	-
= Net Sales	=
Less: - Costs of goods sold	-
- Direct material	-
- Direct labour	-
- Factory overhead	-
= Gross Profit	=
Less: - Administrative and selling expenses	-
- Salaries	-
- Telephone	-
- Water	-
- Electricity	-
- Rentals	-
- Others	-
= Operating Profit	=
Less: - Interest expense	-
= Net Profit before Tax	=
Less: - estimated Income Tax	-
= Net Profit after Tax	=
Date	
Signature	

Instruction to the Profit and Lost Statement

The Profit and Loss (P+L) Statement is one of the financial analysis tools employed by business enterprises to track the performance of their enterprises. The P+L Statement is the difference between sales and expenses of an enterprise over a given period of time, often one year. If this difference is positive, it is termed profit, while if it is negative, it is then termed loss.

The P+L Statement is important for business operators/managers in checking the efficiency of their business strategies and taking proper actions. The Statement is also important for bankers to check business profitability, in order to comply or not with their investment requests before extending credit. The Statement can only be drawn up based on certain source documents such as the cashbook: otherwise it would be very difficult to apply, especially for micro enterprises. For the Statement to be applied in a given enterprise a certain level of accounting system is needed to be in place. The P+L Statement is made up of the following components:

- **Gross sales:** total value of sales which is obtained by multiplying the price of each product with the total units of output sold.
- **Returns and allowances:** stands for the value of damaged goods that are returned by customers to the business enterprise for which the business replaces the damaged goods with new. It also considers payments that are made as sales commissions, discounts, etc., which again are deducted from Gross Sales to result in Net Sales.
- **Costs of goods sold:** stands for the costs involved with regard to direct labour, direct material and factory overhead costs which are deducted from Net Sales to arrive at Gross Profit.
- **Direct material:** stands for those material costs directly accrued in the production process, such as raw material.
- **Direct labour:** refers to costs of all labour inputs directly used in the production of goods/services of a given enterprise. The direct labour costs are measured on unit rates and costs of daily labour.
- **Factory overhead costs:** stands for those costs incurred, but which are not directly related to the production process. E.g. depreciation of machinery or equipment, factory shade rent.
- **Administrative and selling expenses:** includes costs incurred for certain administrative purposes and for the distribution of products. These are deducted from Gross Profit to arrive at Operating Profit. These expenses are, for example, salaries of management and support staff, expenses related to telephone, water and electricity bills as well as office rents and other similar expenses.
- **Interest expense:** this is the amount of interest to be paid on the amount of loan obtained, based on the current interest rate.
- **Estimated income tax:** the amount of tax that has to be paid as per the income tax proclamation.

Ethiopian Business Development Services Network (EBDSN)

List of Publications for Business Development

Start and Improve your Business (this volume will be published in 6/2004)

Identification of viable business ideas, market and supply analysis, write a business plan, organise business management, evaluate sales, improve and diversify products.

Marketing Strategies for Micro, Small and Medium Enterprises

Marketing problems faced by Ethiopian businesses, marketing strategies, managing prices, product development and promotion.

Trade Fair Participation and Export Guide

Trade Fair participation, export procedures, export business registration and licensing, Ethiopian trade statistics, quality export products information.

Business Planning

Business planning for micro, small and medium enterprises: personal data, equipment owned and to be purchased, work premises at the disposal of the operator, production/service plan, raw material requirement, yearly sales plan, operating expenses, profit and loss statement.

Accounting and Cost Calculation Manual

Manual and electronic cash book formats, records on maintenance services, receipt, sales on credit, raw material inventory, cash flow statement, accounting software and software providers in Ethiopia, cost calculation, identify cost components, calculate variable and fixed costs, calculate total cost per unit, how cost calculating improves your business.

Loan Conditions of Commercial Banks and Micro-Finance Institutions

Loan conditions in Ethiopia: loan types, loan term, lending rate, re-payment schedule, type of collateral, loan criteria, eligibility.

Improve your Business Association

Needs assessment of your members, situation analysis, action planning, services, fundraising, membership fees and accounting.

Standards and Quality in Ethiopia

How are Ethiopian standards developed, conformity assessment, testing, product certification, metrology.

Investment Guide

Business environment, investment opportunities and conditions, taxation and incentives, investment protection.

On sale by Mega Book Store and Chambers of Commerce