

Training Manual: The Basics of Financing Agriculture

Module 2.4 | Financial Ratios

Acknowledgement

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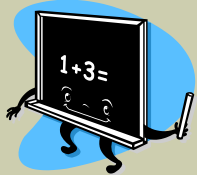
Session Overview

LEARNING OBJECTIVE	Financial analysts in business lending use financial ratios to evaluate the performance of new and existing clients. An understanding of tracking indicators in financial statements is useful to assess liquidity, profitability, operational capacity, and repayment schedules of agriculture clients seeking investments.
SCOPE	<p>By the end of this session, the trainee will have an understanding of the following subjects:</p> <ul style="list-style-type: none">• A basic understanding of analyzing and drawing inferences from financial statements• An understanding of the debt and liquidity capacity of a client• An understanding of the profitability and operational capacity of a client• A knowledge of scheduling disbursements based of repayment capacity
TARGET	Agriculture loan officers, trainers, agriculture experts with limited financial analysis training, and other professionals interested in agriculture financing
DURATION	2hours

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1. Financial Ratios: Overview



What are financial ratios?

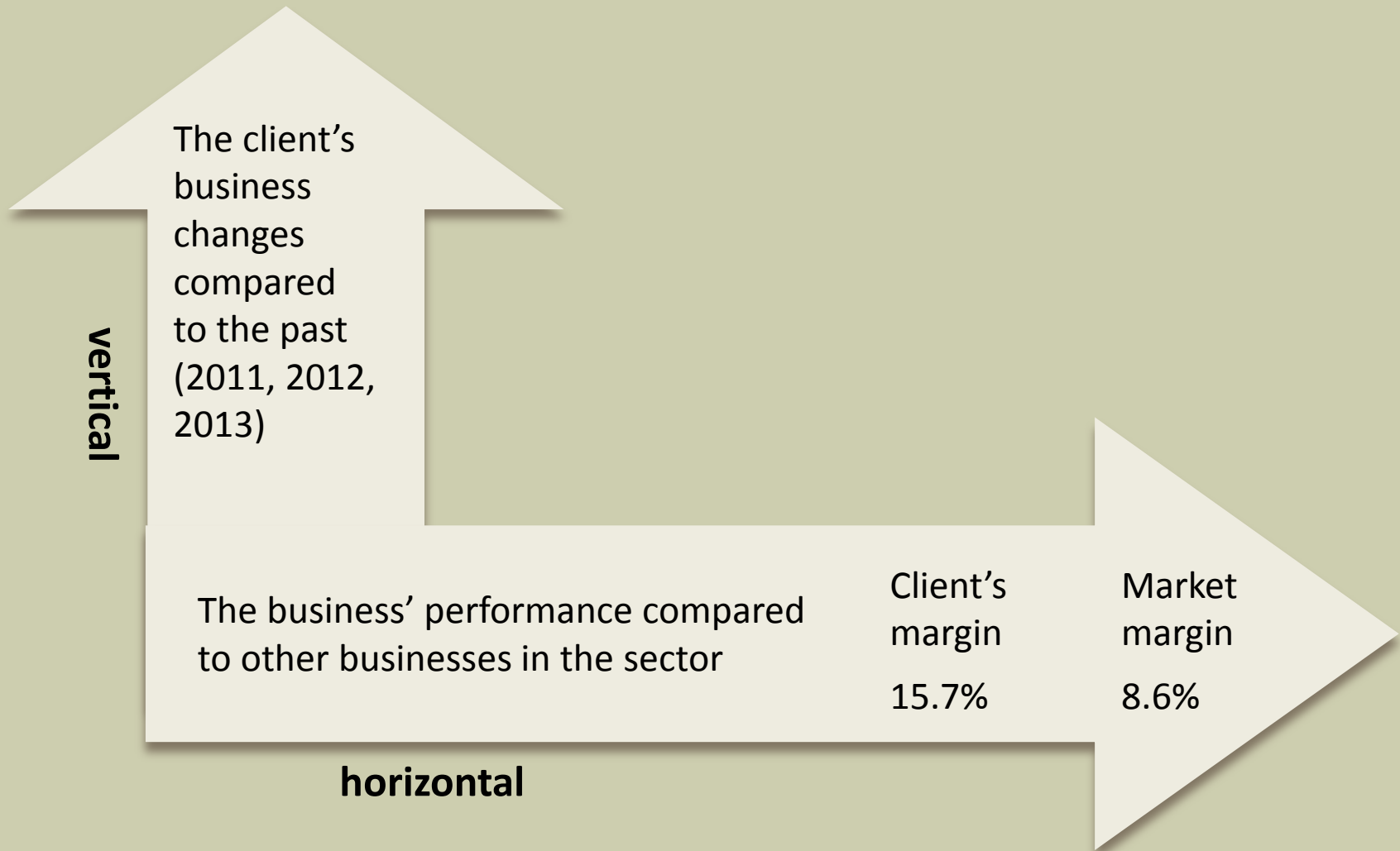
Financial ratios are a set of ratios calculated from comparing figures in financial reports that helps to understand:

- the current structure of the client's business
- certain performance indicators for the current business (comparison between businesses)

However:

- Ratios are tools only
- In order to allow for conclusions you should look at more than one ratio
- Ratios alone are not meaningful; they need to be seen in the context of the given market, type of enterprise, specifics of the respective enterprise

1a. Financial Ratios: vertical and horizontal



1b. Financial Ratios: List of Ratios

Debt and liquidity ratios

- Current ratio
- Quick ratio
- Debt ratio

Horizontal and vertical comparison in the balance sheet (BS)

Profitability ratios

- Gross profit margin, net profit margin
- Weighted average profit margin
- Return on assets

Horizontal and vertical comparison in the profit and loss statement (P&L)

1b. Financial Ratios: List of Ratios II

Operational capacity ratios

- Accounts receivable turnover
- Inventory turnover

Horizontal and vertical comparison in both BS and P&L statement

Other

- Monthly repayment proportion

2. Balance Sheet: Current Ratio

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Short-term liabilities}}$$

- Tells you if the “liquid part” (current assets) of a company can cover the debts coming due in the short term
- As a rule, a sound current ratio is 2, which means that there are FCFA 2 of current assets for every FCFA 1 of current liabilities
- Usually, a company with a current ratio of 2 has no problem to repay current liabilities
- A current ratio of 1 or below warrants closer checking as the enterprise may have problems repaying its short-term liabilities (check actual composition of accounts receivable and payable, actual cash flow)

2a. Balance Sheet: Current Ratio - Example

Balance Sheet		Date: 06.02.2013 Time: 10:00 AM	
Cash	436	Payment received in advance	0
Account receivables (15 th of each month)	10,000	Account payable (15 th of each month)	10,000
Inventory in store	44,770	Money borrowed from brother-in-law (pay back until 08.12.31)	20,000
Current assets	55,206	Total short-term liabilities	30,000

$$1.84 = \frac{55,206}{30,000}$$



The current assets cover short term liabilities; the short-term repayment capacity seems OK

2b. Balance Sheet: Quick Ratio

$$\text{Quick Ratio} = \frac{\text{Quick assets (Cash and accounts receivables)}}{\text{Short-term liabilities}}$$

- “Quick assets” is obtained by subtracting inventories from current assets, because inventory takes time to liquidate
- Tells you if cash and expected cash can cover short-term liabilities
- Depending on the business sector, the recommended range for the quick ratio varies; a service business with a ratio of 1.5 to 2 should have no problems to repay current liabilities
- Trade and production businesses very often concentrate their assets in inventories; a quick ratio of 1 or below is no rarity. However, you should check how the client could repay his current liabilities in the case of damaged inventories.

2c. Balance Sheet: Quick ratio – Example

Balance Sheet		Date: 06.02.2013 Time: 10:00 AM	
Cash	436	Payment received in advance	0
Account receivables (15 th of each month)	10,000	Account payable (15 th of each month)	10,000
Inventory in store	44,770	Money borrowed from brother-in-law (pay back until 08.12.31)	20,000
Quick assets	10,436	Total short-term liabilities	30,000

$$0.35 = \frac{10,436}{30,000}$$

The client has little cash. If inventories are damaged or do not sell then the repayment capacity will be heavily affected.

2d. Balance Sheet: Debt ratio

$$\text{Debt ratio (\%)} = \frac{\text{Total liabilities}}{\text{Total assets}} \times 100$$

- Debt ratio is a key indicator that tells you how much the enterprise relies on debts to finance assets (without including our loan).
- A certain amount of debt can reflect the enterprise's ability to attract external financing.
- Depending on the type of business and business sector a debt ratio of 50% and above demands special notice.
- Loans with a debt ratio of **70% and above** are classified as **high risk loans**.
- This ratio **does not** provide information on the type and **“life expectancy” of the liabilities!**

2e. Balance Sheet: Debt ratio – Example

Balance Sheet		Date: 06.02.2013 10:00 AM	
Current assets	55,206	Total short-term liabilities	30,000
Fixed assets	0	Long-term loan	0
Other operating assets	17,800	Total long-term liabilities	0
	17,100	Total liabilities	30,000
	700	Equity	43,006
Total assets	73,006	Liabilities equity	73,006

$$41.09 \% = \frac{30,000}{73,006}$$



Approx. 40% of the business is financed with “borrowed” assets; Liabilities seem within reasonable limits

2f. Balance Sheet: Summary

Balance Sheet		Date: 01.12.2008 Time: 10:00 AM	
Cash	436	Payment received in advance	0
Account receivables (15 th of each month)	10,000	Account payable (15 th of each month)	10,000
Inventory in store	44,770	Money borrowed from brother-in-law (pay back until 08.12.31)	20,000
Current assets	55,206	Total short-term liabilities	30,000
Fixed assets	0	Long-term loan	0
Other operating assets	17,800	Total long-term liabilities	0
	17,100	Total liabilities	30,000
	700	Equity	43,006
Total assets	73,006	Liabilities equity	73,006
Current ratio%	184.02 %	Liability/asset ratio%	41.09 %
Quick ratio %	35 %		

3. Profitability Ratios

Profit and Loss Statement 02.2012-11.2012				
Items	Good season	Normal season	Bad season	Average
	Oct-Feb		Mar-Jul	08.02-08.11
Total income	30,000		20,000	25,000
Total variable cost (75%)	22,500		15,000	18,750
Gross profit (3)=(1)-(2)	7,500	0	5,000	6,250
Salary	500		500	500
Rent	955		955	955
Transport	100		100	100
Utilities	100		100	100
Other taxes	300		300	300
Communication	0		0	0
Other expenses	100		100	100
Total (4)	2,055	0	2,055	2,055
Profit before tax (5)=(3)-(4)	5,445	0	2,945	4,195
Tax	0		0	0
Net profit	5,445	0	2,945	4,195
Household expenses	2,000		2,000	2,000
	3,445	0	945	2,195

3a. Profitability Ratios – Financial ratios in P&L

Gross profit margin =	(Sale price - Purchase price)
	Sale price

Reflects the profitability of goods/products

Net profit margin =	Net profit
	Sales income

Reflects profitability of business operations

4. Weighted Average Profit Margin

Weighted average profit margin = Σ (Profit of a single product * Sales proportion of this product)

- The weighted average takes into account the share of the different types of items.
- Small businessmen usually have a variety of products.
- Sales of different types of products will not always be equal.

4a. Weighted Average Profit Margin - Excursus

There are three people in a car, aged 10, 20 and 30 respectively.

What is their average age?

$$\frac{(10+20+30)}{3} = 20$$

There are four people aged 15, six people aged 20, and ten people aged 30.

What is their average age?

$$\frac{(4 \times 15) + (6 \times 20) + (10 \times 30)}{(4+6+10)} = 24$$

4b. Weighted Average Profit Margin - Example

Analysis of the monthly average gross profit of the main business

	Product Category	Purchase Price	Sales price	Profit	Sales Proportion (%)	Gross Profit Margin %
1	Quilt Cover	41	50	9	40	18.00%
2	7-piece Bedding Set	200	350	150	20	42.86%
3	Pillow Cover	14	18	4	40	22.22%

$$(18\% * 40\%) + (42.86\% * 20\%) + (22.22\% * 40\%) = 24.66\%$$

5. Return on assets

$$\text{ROA: Return on assets} = \frac{\text{Profits}}{\text{Total Assets}} \times 100$$

- ROA shows how profitable a company's assets are in generating profit
- ROA is a useful indicator to compare companies in the same industry
- The result varies across different industries; companies that require large initial investments will generally have lower return on assets

5a. Return on assets – Example

Client A generated a net profit of FCFA20,000. The total assets of his company are FCFA130,000. What is the ROA?

	Enterprise A 2011	Enterprise A 2012	Industry average 2011
Profits	20,000	10,000	
Total assets	130,000	100,000	
ROA	15.38%	10%	13%

Is this ratio reasonable? We have to see the performance of the enterprise in previous years and the performance of its peers during the same period to be able to judge:

6. Operational Capacity Ratios

Profit and loss statement	
Items	Average
	08.02-08.11
Total income	25,000
Total variable Cost (75%)	18,750
Gross profit (3)=(1)-(2)	6,250
Salary	500
Rent	955
Transport	100
Utilities	100
Other taxes	300
Communication	0
Other expenses	100
Total (4)	2,055
Profit before tax (5)=(3)-(4)	4,195
Tax	0
Net profit	4,195
Household expenses	2,000
	2,195

Balance sheet			
Date: 01.12.2012 Time: 10:00 AM			
Cash	436	Payment received in advance	0
Account receivables	10,000	Account payable	10,000
Inventories	44,770	Money borrowed	20,000
Current assets	55,206	Total short-term liabilities	30,000
Fixed assets	0	Long-term loan	0
Other operating assets	17,800	Total long-term liabilities	0
	17,100	Total liabilities	30,000
	700	Equity	43,006
Total assets	73,006	Liabilities equity	73,006

7. Turnover of accounts receivable

$$\text{Turnover of accounts receivable} = \frac{\text{Accounts receivable}}{\text{Sales income}} \times 30$$

- As a rule, the turnover of accounts receivable is only useful if both, turnover and accounts receivable are comparatively constant
- A high turnover of accounts receivable also indicates higher “quality” of the receivables (i.e. they are paid on time)
- A low turnover of accounts receivable indicates:
 - Overdue and/or „bad“ accounts receivable
 - Risk of liquidity shortages (incl. our loan repayment!!)
 - Risk to the core business if too many uncollectable receivables

7a. Turnover of accounts receivable – Example

Let's suppose that there are two clients. One has receivables of FCFA 50,000 and monthly turnover of FCFA150,000 while the other has receivables of FCFA 50,000 and monthly turnover of FCFA 20,000. Which business is more risky for us? Why?

Answer: Client B

- **Accounts receivable/monthly sales Client A 33% Client B 250%**
- **It appears that client B has great problems to collect his receivables; bad management skills are supposable**

8. Inventory turnover

$$\text{Inventory turnover} = \frac{\text{Inventory}}{\text{Costs of goods sold}} \times 30$$

- Inventory turnover (days) shows how many days a company needs to sell their inventories. A high value compared with its peers in the sector could indicate sales difficulties or bad management (i.e. keeping too much inventory or inventory not in demand).

8a. Inventory turnover – Example

Two clients in the same type of business ask for two loans to purchase goods. From the analysis we learn that client A has inventories of FCFA 120,000 and monthly turnover of FCFA 10,000 while client B has inventories of FCFA 50,000 and monthly turnover of FCFA 150,000. Whose business looks better?

Answer: Client B

- Client A already has enough inventories for one year; a slow inventory turnover increases the possibility that the inventories lose value or become out of fashion
- Client B however has a very fast inventory turnover and has to make purchases very frequently; higher inventories could possibly even increase his turnover or reduce his purchase price

8b. Inventory turnover - Example

Inventory turnover is related to the production and operational cycle of an enterprise. For businesses with short production cycles there is usually no need to/no possibility of storing large amounts of inventories, and thus inventory turnover will be relatively fast.

Compare an enterprise processing yoghurt with one that makes furniture

Consider: a clothing retailer, jewelry and jade business and a restaurant. Which one is likely to have the highest inventory turnover?

9. Debtors turnover

Debtors turnover = (ST receivables / Monthly sales) * 30

- Debtors turnover expresses the average time which elapses between the sale of goods and services and the time the company receives the proceeds

Example:

- Monthly sales: 50,000; Receivables: 75,000; Sales policy payment terms: 30 days
- Debtors turnover = $75,000 / 50,000 * 30 = 45$ days

10. Creditors turnover

Creditors turnover = (ST Liabilities(debts to suppliers) / Monthly cost of sales)*30

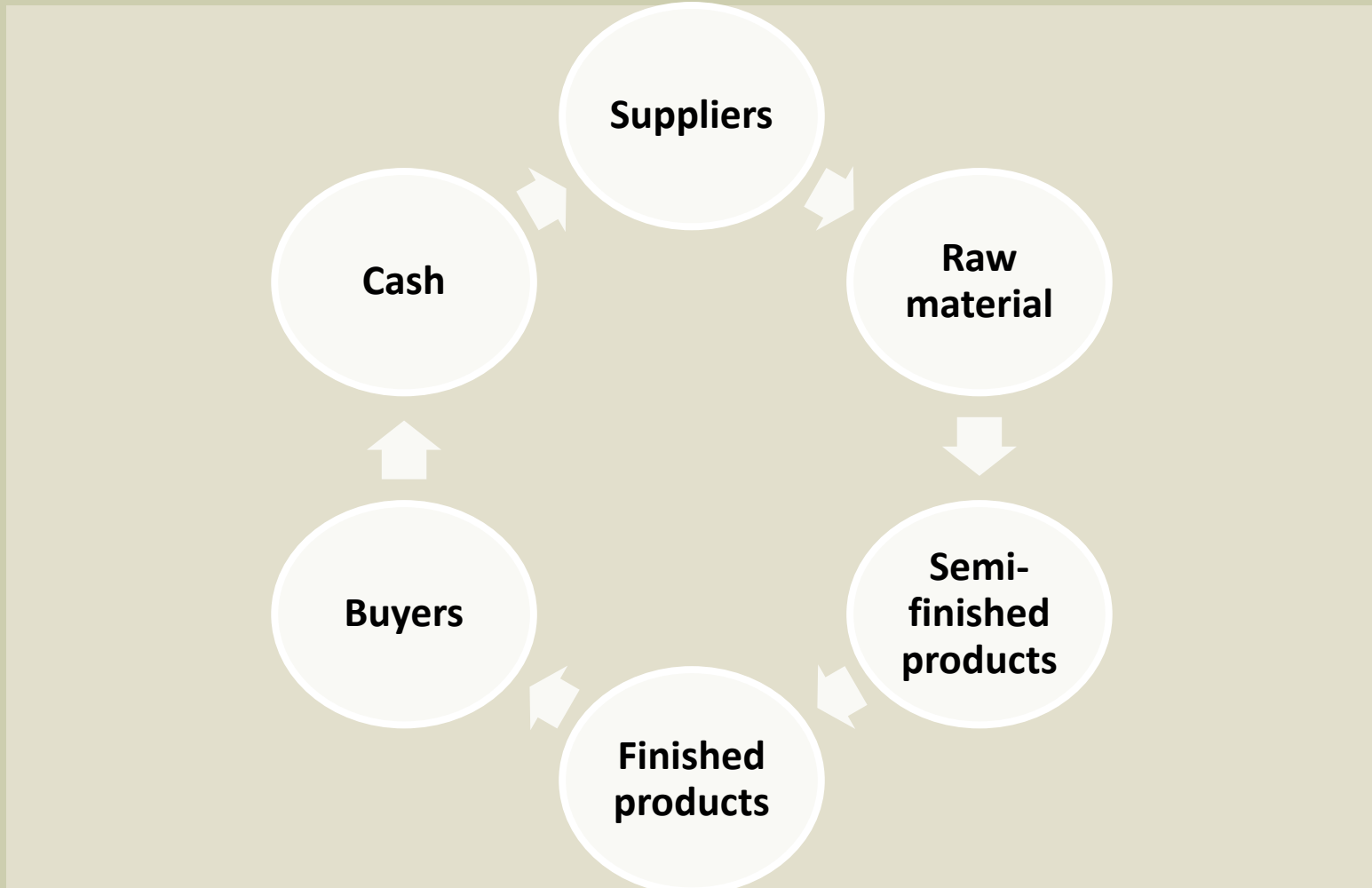
- Creditors turnover is the average period between the purchase of goods/services and their payment (expressed in number of days).
- Creditors turnover is compared directly with the debtors turnover.
- Debtors turnover should be shorter than creditors turnover, which would indicate a better liquidity position.

11. Cash conversion cycle

Cash conversion cycle = debtors turnover + inventory turnover - creditors turnover

- The cash conversion cycle nets out over three periods and shows the length of time between the business's time of cash expenditures for materials/goods and the time of the cash receipts of the sales revenues

11a. Cash conversion cycle



11b. Cash conversion cycle – Example

Example:

- debtors + inventories = 92 days
- creditors = 60 days
- cash conversion cycle = 32 days
- (liquidity gap)
- The most important function of the cash conversion cycle is to show how much resources a company needs to finance its current assets (turnover).
- The calculation of resources needed combines cash conversion cycle, costs of sales and net working capital, telling us that the remaining need for resources which cannot be financed with net working capital will need to be financed from external sources.

11c. Cash conversion cycle

It is important to remember that this calculation is not precise, but it helps in constructing a realistic framework for financial planning. There are also factors that could impact on changing needs for external resources, such as:

- Seasonality of revenues
- Increasing or decreasing revenues
- Changes in payment terms with buyers or suppliers (prepayments, deferred payments)
- Inventories that prove hard to sell
- Changes in gross margin, etc.

11c. Cash conversion cycle

	A	B	C
Cash conversion cycle (1)	25	25	50
Daily COS (2)	2,500	2,500	2,500
Resources needed (1*2)	62,500	62,500	125,000
Net working capital	80,000	50,000	50,000
External resources	-17,500	12,500	75,000

Company A's level of business and performance creates a need for 62,500 of financing for turnover. As company A has 80,000 of net working capital, it obviously does not need additional resources to finance its turnover.

12. Monthly repayment ratio

For micro loans, monthly repayments should normally not exceed approximately 70% of the client's payment capacity before the loan (CPCBL)

In view of the small absolute amounts of CPCBL this leaves some reserves for unexpected expenses in case of illness, etc.

Other important factors that need to be taken into consideration are:

- Seasonality (maturity)
- Proportion of receivables in monthly sales income
- Paid or unpaid expenses

Another useful ratio to check an appropriate monthly repayment is the **ratio of turnover (in cash) to monthly repayment**. Generally we assume that a client should be able to produce enough income in **three to five days** to repay our loan.

12. Monthly repayment ratio: Example

Our client wants to take a loan of FCFA 18,000 for one year. According to the interest rate of the bank the monthly instalment is FCFA1,654.

- Monthly repayment/average CPCBL =

$$75.35\% = \frac{1,654}{2,195} \times 100$$

13. Summary and Reminders

Ratios are tools only

- One ratio alone is usually not helpful
- Ratios alone provide only limited information
- Ratios need to be analyzed in conjunction with other information to be meaningful:
 - Market information
 - Type of enterprise
 - Specifics of the enterprise, etc.

For more resources please visit AgriFin's website

www.AgriFin.org

We welcome your feedback to help us further refine these training materials. Please contact us at agrifin@worldbank.org.