February 3rd, 2014

Credit Application

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Content

Attachments:

- Valuation report
- Building plan Stable
- CV Alem Tsehai Tesfa
- Example quotation Zambia
- Foto ruïne house 2008
- Copy Milkcontrol Book

1 General

1.1 Nature of the credit application

The financing is meant for a further extension of an existing dairyfarm in Naqamte, West-Ethiopia. The dairyfarm is to be transformed into a larger modelfarm, where dairyfarmers, amongst others colleague-members of the local cooperative Robsan, can get acquinted with the state of the art, concerning dairy husbandry. In conjunction herewith and as part of the entire project a processing unit will be placed at the farm. The milk of the farm as well as the milk of the members of the cooperative will be processed in the unit. The milk will be pasteurized and sold at the local markets, within a 50 km radius from Naqamte, as pasteurized milk, as yoghurt or – eventually, in a later phase of the project as cheese. So shelf life of the products is enhanced strongly; a condition for sales of bigger volumes in a country, where 2 days a week and 2+1+1 month a year (April, May, August, December) dairy products are not allowed to be consumed, due to cultural-religious reasons. In the surroundings of Naqamte these foodrestrictions are observed by about 30 % of the population. At this moment the surplus of milk (production minus own use) is sold at the market of Naqamte, fresh in a shop, that belongs to the farm. The different investments will be specified hereafter as part of the investmentplan. The entrepreneur thinks of this expansion as necessary, in order to optimize the use of the productionfactors land, capital and labour.

1.2 History and legal form of the company

In 2008 Alem Tsehai Tesfa, (furtheron: Dr.Tesfa) has returned to Naqamte from Finland. The dairyfarm is her parental farm. Her mother has as a widow been expelled from the premises a few years after the revolution of 1975. Since the farm has been cultivated by 14 local families. In 1991 this political episode in the history of Ethiopia and therefore Naqamte ended. Dr.Tesfa had to pay to the 14 families a total of about € 15.000. Meant as compensation money, before she could regain her family's property. From the original 7 ha of land 4,7 ha, including 0,70 ha for the yard, could be regained in property, but only as a 50-year long-term lease. The key money was € 2.200. The last 2 ha can possibly in the future be added to the farm again. Another 0,30 ha on which the house is built is in full possession, just as the house itself and all the barns.

As long-term lease is concerned the lessee has no right to buy the land. The right to lease, however, can be sold. Therefore this right is accepted as collateral. Because there is no free market for land, - all land is state owned; the state does not sell land – the value of the lease right can not be determined as a percentage of the free market value.

In 2008 the parental estate was in a detrimental shape. The renovation has costed € 35.000 in total. At present there are 14 people employed, living and working on the farm:

● 3 farmhands ● 3 guards ● 1 cleaner ● 1 driver ● 1 gardener

● 1 milkregistrator ● 1 administrator ● 1 shopkeepster ● 2 kitchenmaids

1.3 The farm anno 2014

Entrance of the estate

Entrance of the living quarters

Veranda of the house

Tie up stable: type 'Hollandse Stal', 20 + 17 cowplaces

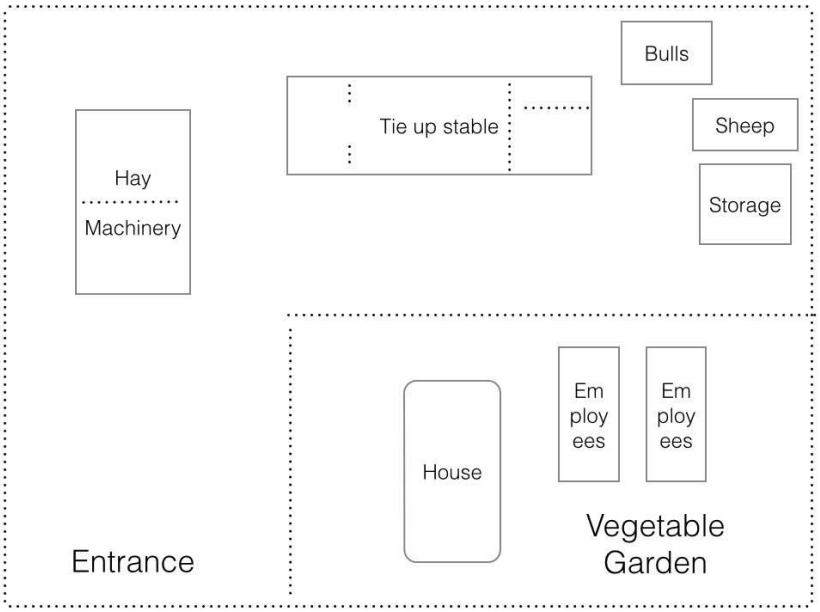
Sideview towards the tie up stable, collection of rainwater

Room for delivery

Discussing condition score

Living quarters of the employees

Land behind stable, near the forest ridge on the right runs the river Dingatto



Map of Compound

Google Earth Compound

1.4 Description of the entrepreneur

1.4.1 Qualities

Dr. Tesfa runs the farm in her own manner. She enjoys a natural kind of authority, based upon her descent, her education and her vision. At operational level the employees carry out the tasks assigned; the administrator reports the technical and financial results to Dr.Tesfa, on a daily basis. At the strategic level a clear course is maintained, namely expansion of the farm. At the tactival level the entrepreneur is guided by the principle of social responsibility, in conjunction with the socalled 'extended family' system, as in many countries in Africa, and in Ethiopia as well, an accepted concept. ⅓ of the employees is female. The expansion and upgrading of the farm to a kind of modelfarm must also be seen in this perspective. If possible qualified advisors are consulted to increase the profitibility of the farm and/or as to function as a sparringpartner.

In 2009 Dr.Tesfa has started a selfhelpgroup of women under the name Darartu Wacha, Blossoming Wacha. The charity organisation Exeter Ethiopia Link, UK, has donated € 1.000. Dr.Tesfa is president of the group. At present some 20 women enjoy membership. Gatherings take place monthly and the aim is twofold: 1) sanitary training 2) giving small loans according to the principles of micro-financing.

1.4.2 Track record

Dr. Tesfa is born on July the 12th, 1949. From 1969 – 1971 she studied veterinary science at the College of Veterinary Science in Debre Zeit, Ethiopia, Bachelor of Science degree.

On November, 22nd 1975 she went to Finland, to follow her husband who had received a scholarship. From 1976 to 1982 Dr.Tesfa studied for her Masterdegree on the Faculty of Animal Science, University of Helsinki.

In the Finnish education system one cannot go to a PhD programme directly. At first one needs to work under supervision of a professor for a number of years. The in such manner obtained Licentiate Degree followed in 1990.

On September 1, 1992 Alem Tsehai Tesfa got her PhD degree on the University of Helsinki:

rapeseed oil in ruminants diet: its effect on rumen metabolism and animal performance.

In 2008, after 33 years, she returned to Ethiopia. Her direct kin remained in Helsinki. Relatives are around in Naqamte. Eventually the management of the estate will be taken over by Dr.Elias Aberra, son of her elder brother. Dr.Aberra is a surgeon in Helsinki. In due time he will open his own private medical clinic in Naqamte. He has also been raised on the estate, together with his parents. He is 57 years of age.

1.5 Farm activities

Yearly milkproduction 2013	35.000	kg
Cattle, female*	31,00	number
Cattle, male*	15,00	number
Sheep*	28,00	number

***** average over 2013

Ownership of Land:

In possession	0,30	ha
Longterm Lease	4,70	ha
In total	5,00	ha

Use of Land:

Grassland	3,50	ha
Yard, road, ditches	0,70	ha
Land for house	0,30	ha
Vegetable garden	0,50	ha
Totaal	5,00	ha

1.5.1 Critical succesfactors

The available space in the cowshed is adequate for the number of animals.

The herd is being vaccinated against:

- Anthrax
- BRD
- Black Leg
- LSD

In the tie up stable a separate delivery room is available. A separation room for sick animals as well.

At the frontside of the stable the milkcollecting room is located: 6 * 8 * 3 meter. Shortly also to be used as a smallscale laboratory for milkanalysis. The equipment has been financed by a gift of the Dutch Hans Blankert Fund.

The cooperative Robsan has been established in September 2013 by Dr.Tesfa. At present 28 dairyfarmers enjoy membership, with an average herdsize of 6 lactating animals. The board has a president, a vice-president, a secretary and a treasurer. 5 members have taken upon them special tasks such as: buying feed (2),

storekeeper (2) , public relations (1). The entrance fee was € 12. 50 shares have been sold for € 75 each. The maximum number of shares per member is 5. Dividend will be paid according to the number of shares a member has. There are no certified or preferent shares. Meetings take place bi-monthly in Naqamte. Voting rights are exercized according to the number of shares one holds.

On the farm smoking and the use of alcohol are prohibited. The employees are housed on the farm. This enhances their working moral. Care for all is a normality.

Milkcollecting Room and future Lab, 6*8*3 meter, later on temporary expansion with milktank etc.

Handmilking, 2 x daily, 05.30 hrs./15.30 hrs.

The white gold

From cowshed to milkcollecting room

Milktransport driver

Milktransport Driver on the way

Milktransport arrives

Selling begins

Sellingpoint of the competitor, milk in plastic bags

1.6 General information Ethiopia

Ethiopia is the most populated country in Sub Saharan Africa but one. Population growth is high. In reality (2013) the population is even more then suggested here. The fast growing population leads towards a faster urbanization, resulting in an increasing demand for dairy products. Development of the dairy sector leads towards activities, that generate an income in the rural areas, a rising income for farmers and more employment in general. *(SNV, 2008)*

Ethiopian population

Population (2012)	91.73 million
GDP	$ 43.133.073.099
GDP Growth	8.4 %
Inflation	22.7 %
Per capita income	$ 410
Economic growth (2004-2005/2011-2013)	10.6 %
Ethiopians, in extreme poverty* (2011/2013)	29.6%
Ethiopians, living from self sufficient agriculture	87 %

*Source: World Bank, 2013. *means an income < $1.25 per day*

1.6.1 Population, incl. prognosis Ethiopia 2010 – 2020

year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
pop.	82,9	84,7	86,5	88,3	90,2	92,0	93,8	95,6	97,4	99,2	101,0

*Source: FAOSTAT 2011 (* 1 million)*

1.6.2 Land Use

Surface:	1.104.300 km²
Land:	1.000.000 km²
Water:	104.300 km²
Arable land	10.01 %
Permanent crops	0.65 %
Different	89.34 %
Irrigated land	2.900 km²

1.6.3 Exportproducts

Coffee, qat, gold, leather products, livestock, oilseeds

1.6.4 Importproducts

Food, livestock, gasoline (-products), machinery, motor vehicles, cereals, textiles

Source: World Bank 2013

1.7 Dairy sector in Ethiopia in figures

The cattle herd size in Ethiopia is the largest in Africa, about 50.9 million animals, from which 55% female *(CSA, 2010)*. Small farms modernize fast and adjust their way of working to new developments, i.e.: climate change, liberalisation of the market and new varieties for crops. Extensive cattlefarming takes place on socalled 'rangelands', grasslands with natural vegetation. The rangelands occupy ca. 0.7 million km² , ⅔ of the total surface, *(WUR)*. In 2010 in Ethiopia 2.940 million liter of milk was produced with 9.6 million cows *(FAO, 2011).*

Rangelands in Ethiopia

1.7.1 Number of cows in the dairy sector in Ethiopia 2006-2011

year	2006	2007	2008	2009	2010	2011
number	4,4	5,2	7,6	9,9	9,6	10,7

(* 1 million)

1.7.2 Producers costprize of fresh milk Ethiopia 2006-2011

year	2006	2007	2008	2009	2010	2011
price	0,30	0,41	0,51	0,50	0,36	0,27

($ per liter)

Source: FAOSTAT, 2013

Between 2005–2009 the export value rose from ca. 73.000 $ till 123.000 $, while in the same period the import value rose from ca. 5.6 million $ till 10.3 million $.

1.7.3 Consumption and use of milk compared

The consumption of milk and dairy products is about 19 kg per capita per year. This level is one of the lowest in Sub Saharan Afrika, as a consequence of economic and cultural factors. The WHO recommends 175 kg per capita. The last years the demand for milk increases due to urbanisation, changing habits and population growth. The increasing milkproduction keeps up with population growth .

1.7.4 Dairy husbandry, production and consumption in Ethiopia, Kenia and Sudan

	Ethiopia	Kenia	Soedan
Feedsupply in kg corn equivalent per cow	28	40	94
R&D Expenditure per year for agriculture in $/ha	7	27	8
Liters per lactation	208	498	480
Growth-% milkproduction 1970 - 1999	2,36	3.60	4.79
Interior consumption of milk * 1000 liter	893.699	2.212.323	2.753.129

Source: compiled from Staal et al, (2008)

1.7.5 Supposed demand for milk in Ethiopia 2011 – 2020

Year	Population in '000' based on current growth rate (2,27%)	Milk production, in million litres based on current growth rate, (4.1%)	Milk available for consumption (68% of the produce) in million litres	Demand for milk, in million litres based on FAO recommendation (62,5kg)	Gap between projected milk available for consumption and demand based on FAO's recommendation in million litres
2011	82 102	3 061	2 081	5 131	3 050
2012	84 335	3 186	2 166	5 271	3 105
2013	86 629	3 317	2 256	5 414	3 158
2014	88 985	3 453	2 348	5 562	3 214
2015	91 406	3 594	2 444	5 713	3 269
2016	93 892	3 742	2 545	5 868	3 323
2017	96 446	3 895	2 649	6 028	3 379
2018	99 069	4 055	2 757	6 192	3 435
2019	101 764	4 221	2 870	6 360	3 490
2020	104 532	4 394	2 988	6 533	3 545

Source: FAO 2011

A large part of the milk is processed into butter. Another source even implies that > 82 % is processed on the farm into butter *(source: Geert Westenbrink, Dairy Forum December 2010, Addis Abeba)* The FAO states that a much larger part of the production is consumed as fresh milk.

1.7.6 Dairy consumption Ethiopia, mid '90's

use	milk * million liter	percentage
fresh milk	630	44
pasteurised milk	5	< 1
butter *	595	42
cheese	185	13
yoghurt	15	1
total	1430	100

* butter is used for preparing food and also as body- and hairlotion

Source: CSA 2001

In 2010 the average milkproduction per cow was 1.69 liter with a lactation-period of 180 days, resulting in 305 liter per year.

The most recent literature gives the following causes for the lagging development of the dairy sector in Ethiopia:

- no market for sales available
- inëfficiënt insemination, poor quality sperm
- lack of crossbreeds
- lack of roughage and byproducts
- lack of water
- poor milkingtechniques and lack of processing facilities

There is a serious shortage of feed in the whole country. Roughage is of poor quality and throughout expensive. Most milkproducers lack knowledge of animal nutrition.

(*Source: FAO 2011)*

2 Investmentplan and credit requirement

2.1 Overview in figures

Investment overview		
Assets		
Buildings (small extension milkcollecting room)*	10.000	
Machinery (milking line equipment)	10.000	
Herd (10 dairy cows * 1500)	15.000	
Transportvehicle (Isuzu)*	50.000	
Generator*	20.000	
Cowcomfort mats	15.000	
Waterwell	35.000	
Ventilator	5.000	
Processing Unit*	200.000	
Working capital*	20.000	
Unforeseen	20.000	
Total investment		400.000
Financingplan (* € 1,-)		
Ethiopian loan	35.000	
Current account	20.000	
Dutch loan	345.000	
Total financing		400.000

* investment partially or entirely following from processing unit

2.2 Explanation

Per ultimo 2013 the existing loan of € 35.000 taken from the Development Bank of Ethiopia has been repaid. There is no current account facility. There are no creditors. The amount to be invested adds up to 400.000. Financing takes place through means of a loan of the Awash International Bank, Ethiopia and a Dutch donor.

Long-term loan: 380.000

The current account facility asked for is 20.000. In the overview this amount is executed as working capital. Provided for by the Awash Bank.

2.3 Specification Investmentplan

Buildings

The present milkcollecting room measures 6 * 8 * 3 (meter) high. Recently an elementary laboratory equipment – has been bought, to be placed in that same room. According to the manufacturer of the processing unit - Scherjon Dairy Equipment, Surhuisterveen – a limited extension of 3 * 3 meter will suffice. At one side of the present room this extension can easily be realised by digging out some soil at that side. Concerning logistics – movements to and from the dairy animals - this solution might be temporarily workable, but is not ideal. A corridor for hygiene can be a solution. However, the required extension then is larger, namely so much larger as the space taken by the corridor, say in total 4,50 bij 3. The cost of a totally new building has not been taken into consideration for the time being. The limited expansion is estimated at € 10.000. When it can be foreseen that more farmers will deliver their milk to the processing unit, besides the 28 members of the cooperative, a new building is preferred. Not only because of the size of the processing unit but also because a larger supply (and sales for that matter) will demand better accessibility. Apart from the fact that 2 separate buildings is a way of spreading risk. Not only to prevent any type of contamination, but also in case of disaster, i.e. fire and alike.

Machinery

For this type of stable a vacuum- and milkline is ideal. Taken into consideration the size of the herd – 30 lactating and dry animals - 2 milk devices suffice. Dutch Servicebedrijf Jan Castelein BV, Scharnegoutum, has given an indication of the price for such a system: € 8.000, excl. transport, installation costs and importtax. In the investmentplan an amount of € 10.000 is taken up.. For all export to Afrika a 0 % VAT rate applies. *(Source: Mr.D.Hiemstra, Priore Accountants & Fiscalisten)*

Herd

In 2010 the entrepreneur has bought 20 dairy cows, 75 % Holstein-Frisian crossbreeds. From this purchase 8 are left + 10 lactating animals from rearing, results in a present herd of 18 dairy cows. The replacement percentage is compliant with a normative 25 - 30 % per annum. Buying again 10 adult animals, the milkherd is directly enlarged to appr. 23. Purchase price is set at € 1.500 a piece, taking into account the transportcosts to get them to the farm: 10 * 1500 = € 15.000. (*Source: Dr.Tesfa*)

Buying crossbreeds 50% HF needs to be considered. The genetic potential is just as well more than sufficient for the milkyield aimed at, while such animals can endure the African circumstances much better.

Transport vehicles

The investment is necessary to collect the milk from the collecting stations. These stations are to be built at junctions near asfaltroads, and have to be financed by the cooperative Robsan. The equipment in these collecting stations – cooling, testing, weighing - is included in the quotation of the processing unit. At first the milk will be collected and transported in yars as shown here below. No lift on the vehicle is necessary then. The same applies to a milktank on the vehicle.

The investment is necessary just as well for the transport of roughage. Transport in Ethiopia is very costly because of the long distances to be dealt with. Price Isuzu € 25.000, after import tax € 50.000. *(Source Dr.Tesfa)*

Generator

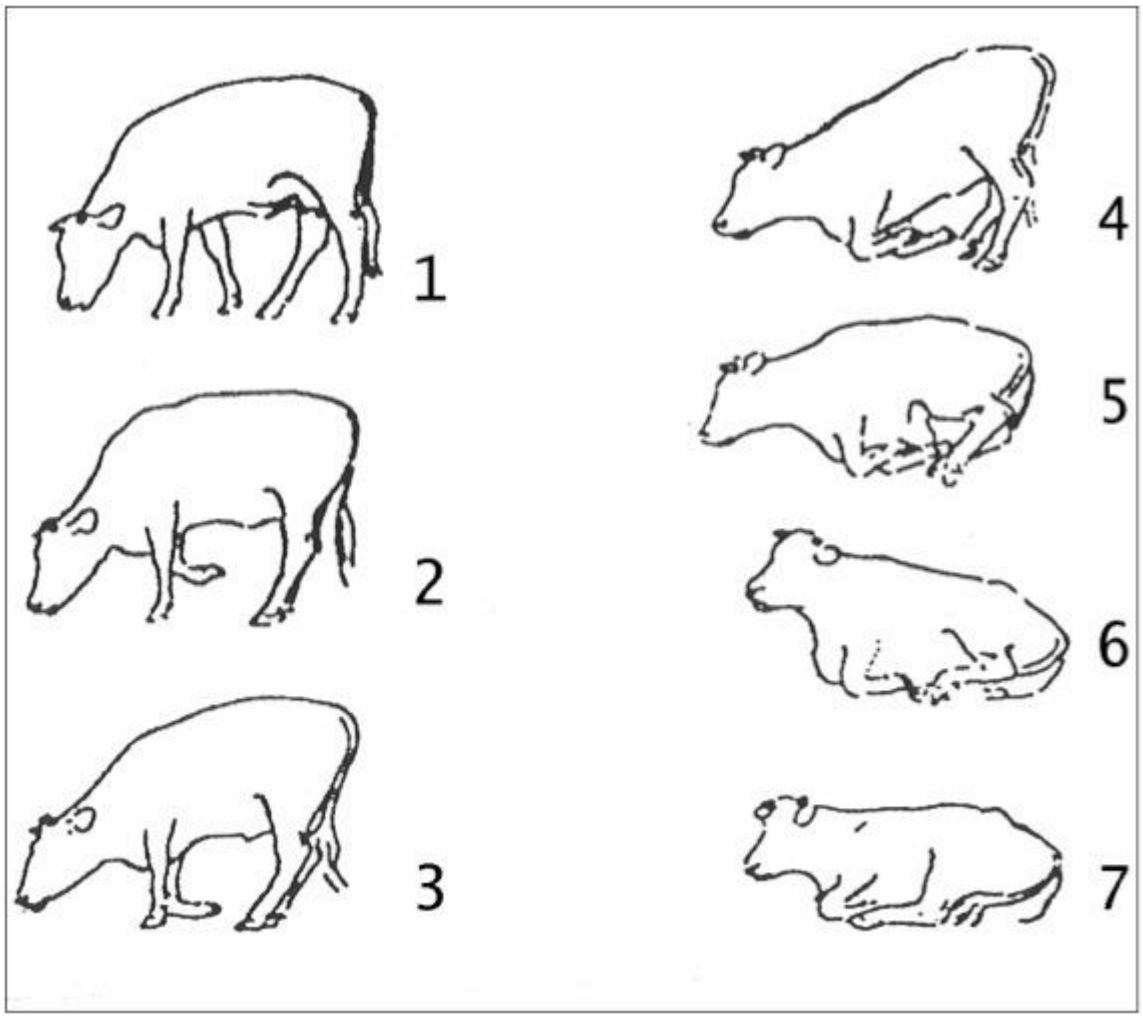
In Naqamte the electricity company is a totally irreliable partner. When scaling up a generator is an absolute necessity. Servicebedrijf Jan Castelein BV Scharnegoutum takes it a capacity of 15 KiloWatt is sufficient. It concerns a socalled stand alone unit, no other engine needed. Price is about € 1.000 per KW. Because of transport € 20.000 written down. Importtax pro memory. Actually a type of generator is preferred that automaticly complements the regular electricity supply when needed. In a further stage of the plans an exact calculation of the required capacity is necessary.

Cow mats

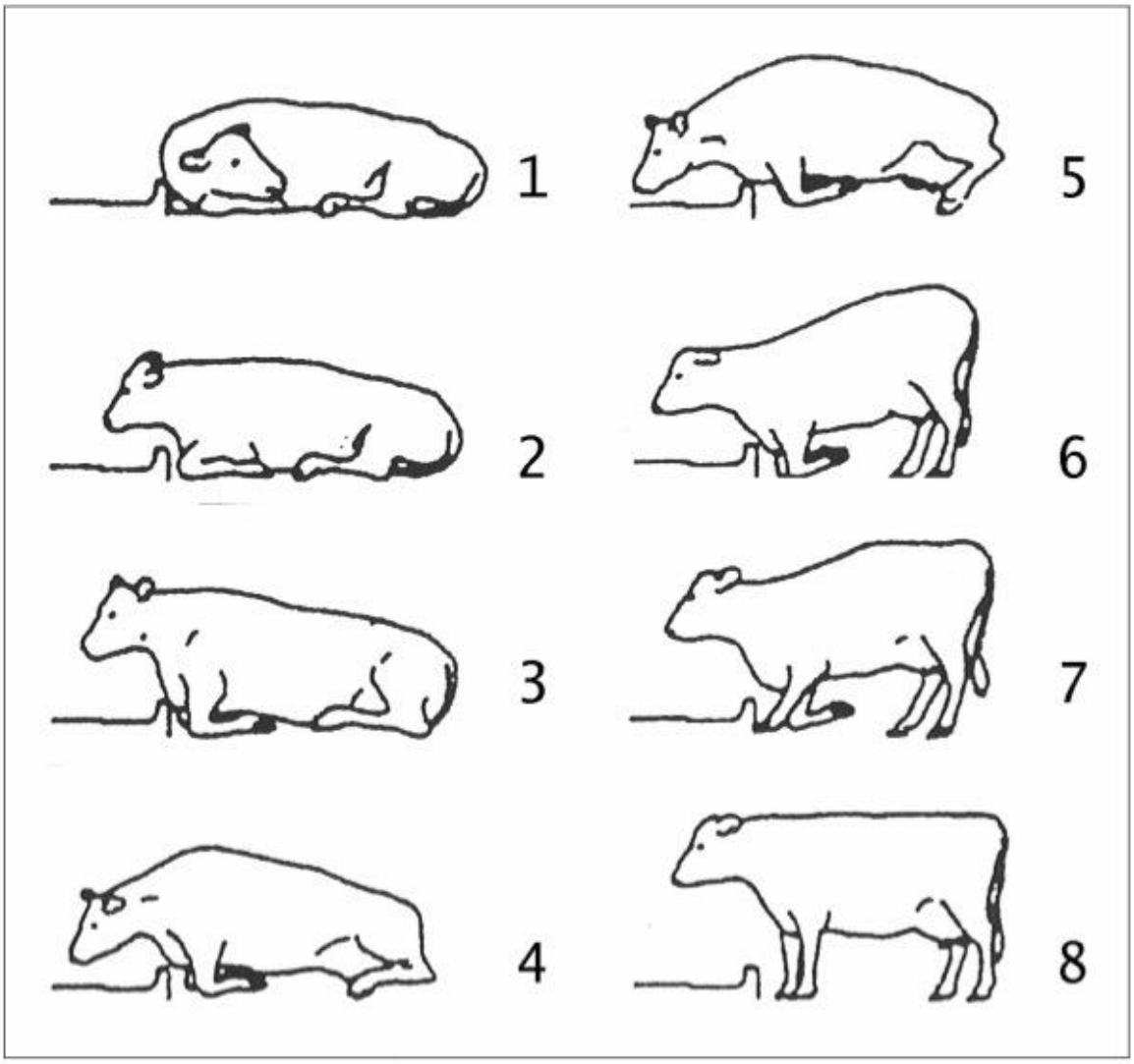
The tie up stable has a massive concrete floor. Cows stay yearround indoors. A small meadow for exercise is available, but the African antbear (ardvark), looking for termites, digs deep holes in the terrain, causing cows to tumble and break their legs. For animal welfare purposes rubbermats are strongly recommended. For front and hindlegs of the animals a bare concrete floor is causing severe problems, for sure in the longer run. Soft sand, sawdust or straw are not available or far too expensive. Normally cows lay down about 11 – 14 hours a day, mostly to ruminate. Crippled animals lay down longer. Less feedintake is a consequence; lower milkyield the next. The pricelist of Bos Rubber, Schagerbrug, gives prices around € 85 per meter length. Needed 2 * 40 meter * € 85 = € 7.000. Rubber and plastic products are subdued to a 100 % import levy (*Source Dr. Tesfa)* Here taken into account € 15.000.

Thick hindlegs

Thick knees (frontlegs)

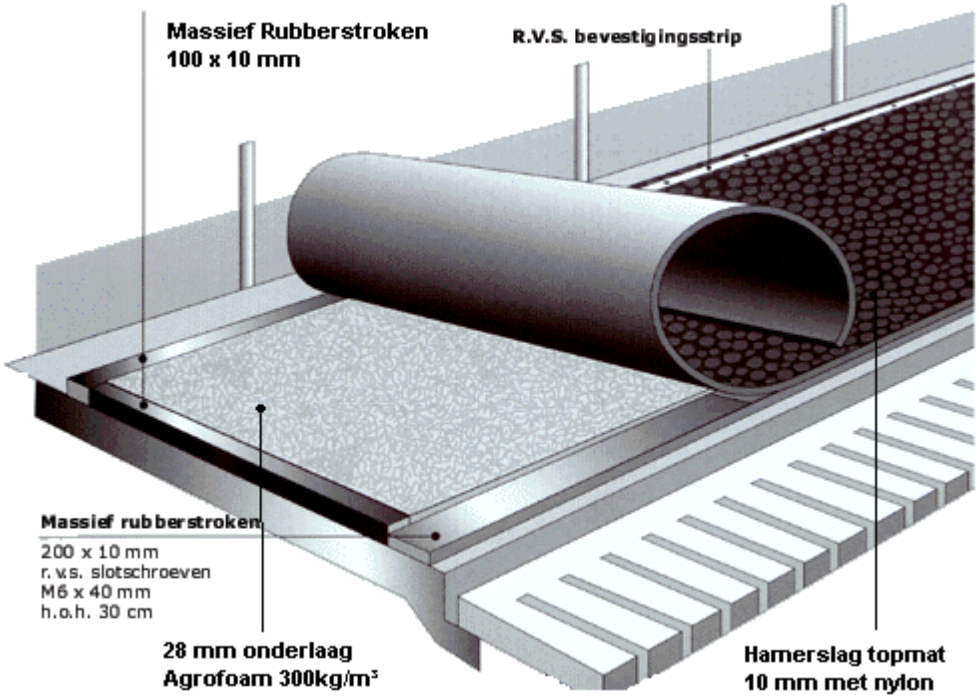


Movements when laying down, (according to Schnitzer 1971, quoted by Fritsch 1991)



Movements when standing up (according to *Schnitzer 1971, quoted by Fritsch 1991)*

Source:: Present Tie up stables for Dairy Cows, Flemish Government, May 2004



Source: Bos Rubber, Schagerbrug

Rubber cover in practice

Source: Present Tie up stables for Dairy Cows, Flemish Government, May 2004

Waterwell

Watersupply is poor in Naqamte. Not just at the farm, but in the whole town. Traditionally animals in a tie up stable drink from small waterpots: 1 per 2 animals. As far as availability is concerned in principle adequate, differences in dominance can have a disturbing effect on either of the 2 animals. In this case many animals do not even have a drinkingpot at all. If there are, the water main has fallen apart due to oxidation.

Drinking pot per 2 animals

The reality: wet byproducts provide some moist

The present solution

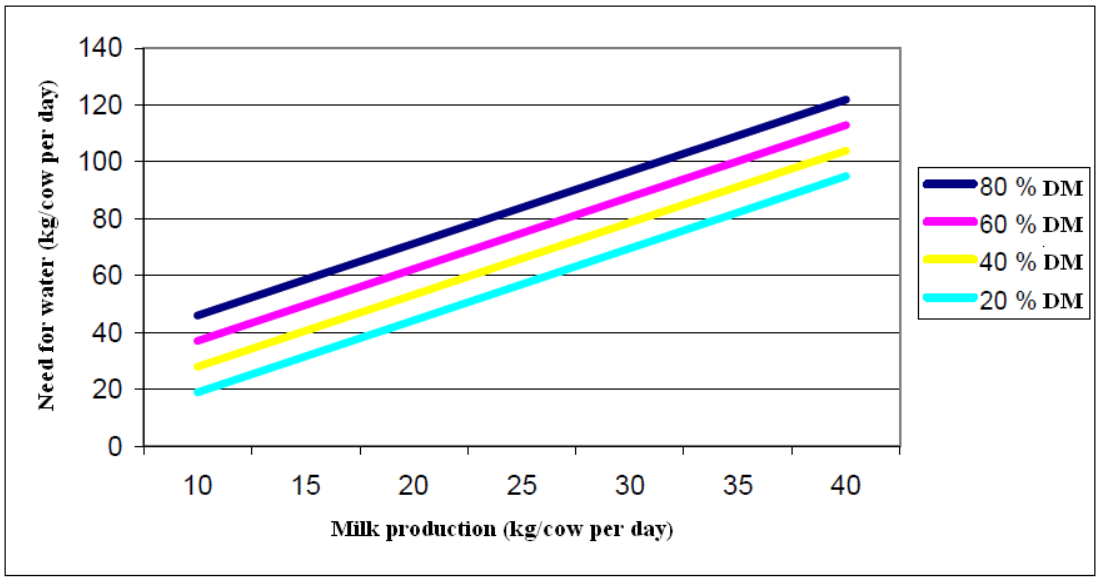


Image 19 Need for water per cow as function of milk production and dry matter content of feed

Source: Present Tie-up stables for Dairy cows, May 2004, Flemish Government

Table 6.18 Total need for moisture for dairy cows

Production level	Total need for moisture (l/cow/day)
Dry period	30 – 60
10 kg milk per day	30 – 60
20 kg milk per day	70 – 100
30 kg milk per day	90 – 140
40 kg milk per day	100 – 170

Source: IKC, 1993

Source: Handbook for Dairy Husbandry, 2012, WUR

The total need of water for the animals is (30 dairycows * 70 litre) + (20 youngstock * 30 litre) + (15 bulls * 60 litre) + 30 sheep = 3800 litre per day.

Besides, water is needed for the processing unit, cleaning the milk equipment etc. and for the people as well. The total capacity required for the well is at least 5000 – 6000 liter per day. Because of the nearby river Dr.Tesfa expects the groundwater table to be not too deep; because of the seasonal weatherpatterns water-from-the-river is not an option. The dry period is from December – April; in the rainy periode precipitation is appr. 2000 mm per year, mostly in the form of tropical downpours. Erosion is most certainly an issue, be it not on the farm directly. The water collecting tanks have been rusted due to the use of alligations of inferior quality, not unusual in Ethiopia. The costprice of the well is : € 35.000 *(Source: Dr.Tesfa)*

Ventilator

Ventilation at present

The ventilation is suboptimal. The more milk cows produce, the more bodyheat they give off. For the ventilator € 5.000 has been estimated.

.*Processing Unit*

For a detailed description we refer to the price indication as given by Scherjon Dairy Equipment, Surhuisterveen. Scherjon is known for having experience in several Sub Saharan countries. Recently they have signed a contract for Uganda, at a value of € 4 mio. CEO Hielke Scherjon most sincerely invites the decision makers for a 2 day trip to Uganda.

The price - indication is including installation and transport; excluding commission and import levies. Indicated is 188.500; taken up € 200.000.

The quotation needs to be made company specific.

Working capital

For working capital ⅔ of the variable animalcost is estimated as being sufficient.

Unforeseen

For unforeseen a little over 5 % is reserved.

3 Financial situation

3.1 Financial position form

Assets * € 1	2013	BSF Self*	BSF Coop*
Buildings and structures	88.000	98.000	98.000
House, incl. site	43.000	43.000	43.000
Laboratory equipment	4.000	4.000	4.000
Livestock	40.000	55.000	55.000
Machinery, furniture and fixtures	22.000	177.000	377.000
Intangible fixed asset: right of ground lease	22.000	22.000	22.000
Financial fixed assets			
Fixed assets	219.000	399.000	599.000
Stock			
Receivables			
Liquid resources		20.000	20.000
Current assets	-	20.000	20.000
Total assets	219.000	419.000	619.000

*after extension of credit/balance sheet forecast without and with processing unit

Liabilities * € 1	2013	BSF Self*	BSF Coop*
Owner's equity	219.000	219.000	219.000
Total equity	219.000	219.000	219.000
Loan Awash		31.500	31.500
Loan Donor		130.500	310.500
Loan Family			
Long-term liabilities	-	162.000	342.000
Debetbalance Current Account		20.000	20.000
Repayment next year		18.000	38.000
Trade accounts payable			
Current liabilities	-	38.000	58.000
Total liabilities	219.000	419.000	619.000

3.2 Explanation

Assets:

House including site
0.30 ha ground underneath the house; appraised value.

Buildings and structures
Tie up stable, type 'Hollandse Stal', built in 2008/2009. 20 livestock units on one side and 17 on the opposite side; separation room, delivery room, milkcollecting room, feedstorage. Depreciation period for buildings is 10 year; appraised value taken.

Livestock
This is not an appraised value, but an estimated value on the basis of current prices.

Machinery
The farm is not heavily mechanised. From Finland is imported: baler, tractor Massey Ferguson, feedmixer, mower. Acquisition value minus 10 % depreciation per year is taken here.

Financial fixed assets
Shares in the cooperative Robsan are left out of account. Acquisition value 5 * € 75 = € 375. The expectancy value has not been calculated.

Intangible fixed assets
The right of long-term lease has an estimated value € 0,46 per m². 47.000 m² * € 0,46 = 22.000 € . Key money ad € 2.200 is depreciated.

Receivables & Stock
Pro memori

Liquid resources
Pro memori

Liabilities:

Owner's equity
At present there is no long-term borrowing.

Loan
Concerns an amortised mortgage loan from the Awash Bank; coverage has to be provided for the current account as well. Securing by a mortgage seems likely.

Family loan:
At present there is no such loan, nor is any foreseen.

Current liabilities

Concerns an executed current account and the proposed repayments for next year. The financial year runs from July 1 till June 30.

4 Solvability and liability capital

(* € 1,-)	SFC Self*	SFC Coop*
Owner's equity	219.000	219.000
Adjustment within Balance: intangible assets	-22.000	-22.000
Liability capital within Balance	197.000	197.000
Undisclosed reserves		
Total liability capital	197.000	197.000
Revaluated Balance Sheet Total	397.000	597.000
Solvability after adjustment	50%	33%

* solvability forecast after credit has been expanded

4.1 Graphical representation

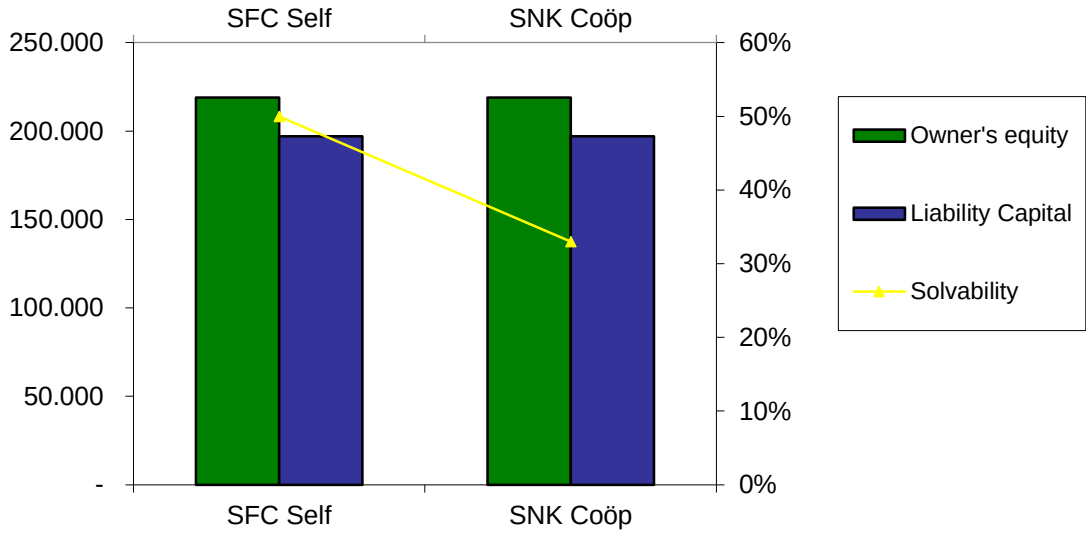


Figure 1: Solvability and Liability Capital

4.2 Explanation

After investment the farm is still solvent. The assets have been revaluated at sellingprice value or have been revaluated on the basis of an appraisal. In the odd case on the basis of an estimation: livestock, machinery, right of long-term lease. Tax deferrals or offsets of losses can not be taken into consideration due to unknown rules and regulations of a fiscal and legal nature.

5 Profit & Loss account

profit & loss account * € 1,-	prog.self	prog. coop
Proceeds from milk	122.000	390.000
Proceeds from meat	2.000	2.000
Miscellaneous revenues	-	-
Purchase expenses milk	-	-159.000
Total revenu	124.000	233.000
Feed cost	28.000	28.000
Animal health cost	1.000	1.000
Packaging materials	-	58.000
Variable costs	29.000	87.000
Net proceeds	95.000	146.000
Land and buildings	2.000	4.000
Outwork	7.000	9.000
Machinery	15.000	22.000
General expenses	1.000	1.000
Rent	1.000	1.000
Depreciation	33.000	53.000
Total business expenses	88.000	177.000
Interest expenses	15.000	25.000
Total cost	103.000	202.000
Operating result	21.000	31.000
Cashflow	54.000	84.000

	prog. self	prog. coop
Number of cows	30	198
Number of young stock > 1 yr	7	pm
Number of young stock < 1 yr	7	pm
Ha's for roughage	3,50	pm
Total acreage in ha's.	3,50	pm
Yearly production of kg milk	122.000	122.000
Fat %	3,50	3,50
Yearly purchase of kg milk	-	258.000
Fat %	inapplicable	3,50
Total production of kg milk	122.000	380.000
Kg of milk to be sold	117.000	375.000
Kg milk/own cow	4.067	pm
Fat %	3,50	3,50
Proteine %	3,00	3,00

fat % = weighted average; proteine % conform competitor and report

prognosis self = upgrading estate / prognosis coöp = including processing unit

5.1 Graphical representation

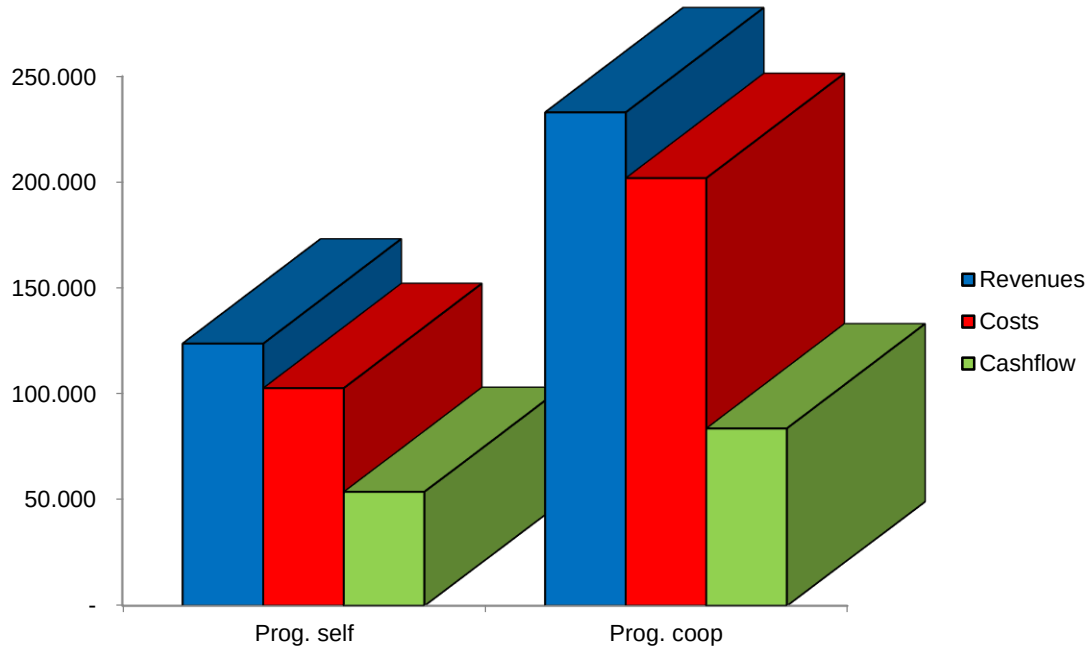


Figure 2: Revenues, costs and cashflow

5.2 Explanation

Concerning the yearly production on the farm, assumptions on a yearly basis:

- 50 % birthrate / calving interval 18 months (calculated)
- 25 % replacementrate (given)
- 10 % mortalityrate < 1 yr (normative, in 2013 5 %)
- calfs 8 weeks untill weaning from sweet milk (given)

18 cows minus 5 plus 10 purchase = 23 animals + 7 new reared = 30 cows

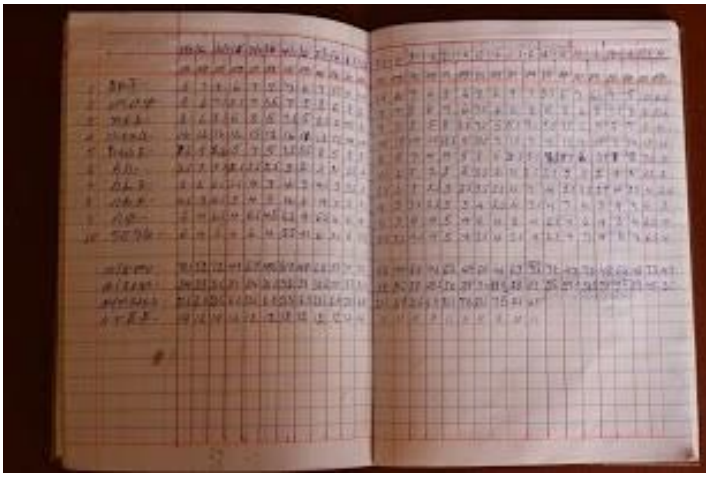
30 cows * 14,5 kg/day * 280 days in lactation = 122.000 kg.

30 cows * 50 % birthrate minus 10 % mortalityrate = 14 youngstock

- own use

14 calfs * 6 litre * 28 days	=	2.500 litre
14 calfs * 4 litre * 28 days	=	1.700 litre
private use	=	800 litre
total	=	5.000 litre

- In 2013 the milkproduction was about 2.500 kg per animal. Milkyields per cow are recorded on a daily basis.



Milkrecordingbook: frontpage and content

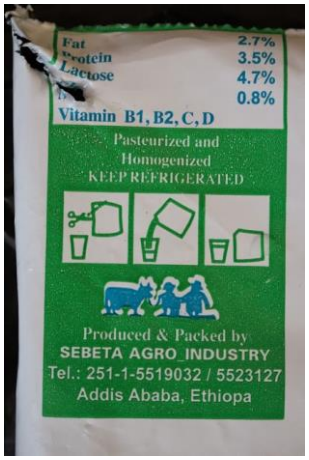
Dr.Tesfa working in the lab

After installation of the recently bought laboratory equipment milk can be checked on fat %, proteine %, lactosis %, pathogenes, etc.. As a result of an improved waterintake an increase of 1500 kg milk per year per cow is not unrealistic. Furthermore, an improved waterintake leads directly to a higher dry matter intake, in itself stimulated by a better feedsupply which is a consequence of a working feedmixer (electricity supply !).

For sale: 117.000 litre; ⅔ will be sold with a fatcontent of around 4 % at 28 Birr/litre and ⅓ will be sold with around 2,5 % fat at 26 Birr/litre.

117.000 litre * ⅔ * € 1,07 = € 83.000
117.000 litre * ⅓ * € 1,-- = € 39.000

Total proceeds from milk: € 122.000



½ litre of pasteurized milk, bought in a supermarket in Naqamte, 17-01-2014 at 0,50 €.

For processing milk will be purchased from farmers, i.e. members from the local cooperative Robsan. 28 member-farmers have on average 6 dairycows * 8 litre per day * 200 days lactation period.

28 * 6 * 8 * 200 = 269.000 litre * 96 % (because of own use) = 258.000 litre

258.000 litre * ⅔ * € 1,07 (4 % fat) = € 183.000
258.000 litre * ⅓ * € 1,-- (2,5 % fat) = € 85.000
€ 122.000 +
€ 390.000

Purchase price of milk: € 0,615/litre: 258.000 litre * € 0,615 = € 159.000
Cup 500 ml price: 2 EthB, makes per 1 litre € 0,154 * 375.000 litre = € 58.000

(Source: Gerard vd Wal, Crown Ethiopia, January 2014, packaging material incl. sealing, print)

Proceeds from meat: 14 calfs means 7 males and 7 females. The 7 females are necessary for the replacement of culled animals. At present there are 13 females in the youngstock, so a buffer is available as far as replacement is concerned. A possible surplus of animals will be sold to members of the cooperative. Such proceeds are not taken into consideration here.

Culling 7 animals yield : 7 cows * € 115 = € 800

For bullcalfs there is no market in Ethiopia ; the consumer prefers 'tough' meat; in 2013 the 4th hotel in Naqamte has opened with 50 rooms. Visitors might have an additional demand if it comes to meatproducts. At the census of 2007 Naqamte counted 75.000 inhabitants, from which 48 % protestants, 39 % Ethiopian orthodox and 11 % moslims. (*Source: www.wikipedia.org)* . Naqamte is the main city in the Oromia region. In a radius of 50 km around Naqamte about 500.000 people are living. Under Chinese guidance roads are being modernised in the whole country at a fast speed. Recently an artificial lake has been made to improve the water supply. *(Source: Dr.Tesfa)*

As stated under 1.1 foodrestrictions with regard to dairyproducts are observed by members of the Ethiopian Orthodox Church only. About ¼ of the orthodox are less observant and follow less strict rules in this respect.

For a further analysis of the market we refer to the report of Mr.M.Kooijmans, previously published and known to the principals.

Bulls are being fattened at the farm till an age of appr.1,5 year. 1 bull is kept for natural insemination, a 2nd, a little older, will be sold for the same purpose to the highest bidder within the cooperative.

Summarising: 7 bulls minus 1 for own use = 6 bulls;

5 bulls are sold at an age of 1,5 year at € 200 each = € 1.000

1 breedingbull is sold at an older age to others = € 400

Culled animals yield : 7 cows * € 115 = € 800

28 sheep are kept for own use as well; no proceeds have been added.

Values due to rearing (an animal > 1 yr has a higher value than a calf; a cow has a higher value than an animal between 1 yr and 2 yr) are considered to make up for the regular expenses involved in purchasing animals. Miscellaneous revenues are not foreseen.

Bulls stable

Sheepbarn

In agricultural economics variable costs are usually called ‘allocated costs’, i.e. allocated directly to the number of animals.

Here these allocated costs are confined to feedcosts and costs for animal health care. Feedcosts are solely costs for purchasing feed, no value is given to the ‘fruit of the land’. Animal health care refers to: vaccinationcosts, medicines, hoofcare, etc.

In 2013 expenses for feed mounted to nearly € 17.000 (46 cattle, 28 sheep)

€ 3.000	hay
6.700	corngrain, incl. milling and transport
3.400	soja, incl. transport
200	rapeseedcake
3.000	minerals
600	salt
€16.900	total

Converted to a lactating herd of 30 animals, incl. bulls and youngstock, € 28.000 has been taken into account.

For animal healthcare € 1.000 is budgetted in a similar manner. Many issues in this field belong to the expertise of Dr.Tesfa herself: screening for pregnancy, disease treatment, etc. Costs for sperm are avoided by using a bull.

Maintenance for buildings is always very fluctuating. In 2013 € 1.000 has been spent; here € 2.000 taken into account.

Costs for payed labour added in 2013 up to € 7.000. For the processing unit and all that goes with it - transport, extra animals, cleaning, etc. etc. 4 extra employees are needed. Nightshifts are not necessary. 7.000/14*18 = € 9.000. The supply of labour or in other words ‘the unemploymentrate’ will prevent a serious rise in labourcosts for a long time to come. Costs for board & lodging of the employees have not been calculated separately.

Machinery-costs 2013, including a 30 % rise, for reasons of a solid prognosis.

€ 1.500	fuel
1.000	oil and grease
1.500	tires
1.000	maintenance
1.000	insurance
€ 6.000	total

Fuelcost of the generator 15 KW : 12 machine hours * 100 % charge * 4 litre diesel * € 0,73 * 365 days = € 13.000. Generatorcosts without a connected processingunit: 50 % = 7.000 = an approximate estimate. Total 'prognosis self' 6.000 + 7.000 + 2.000 insurances = € 15.000

Insurances and maintenance of the processingunit : € 1.000 extra. 'Prognosis coop' : 6.000 + 13.000 + 3.000 = € 22.000

General costs: contributions, subscriptions, utilities, miscellaneous, is budgetted at € 1.000

Depreciations:

Depreciations have not been calculated according to the exact moment of purchasing the item. However, this does not influence the cashflow. An increase in depreciations is obvious due to the investments presented. Present depreciations refer to machinery (2.000) and buildings, including the house of the entrepeneur (13.000). For physical depreciation a period of 10 year is maintained, compliant with common practice in Ethiopia.

Increase of depreciations due to investment: € 380.000/10 = € 38.000

Total depreciations: 15 K + 38 K = 53 K in 'prog. coop'.

In 'prog. self' the increase in depreciations is € 18.000 (180.000/10).

Total depreciations: 15 K + 18 K =33 K in 'prog.self'.

Interest**:**

The total liability adds up to 400 K, including 20 K working capital. On itself therefore the total investment is 380 K. From this 195 K – building (10 K) and processing unit (200 K) minus milktank (15 K) - is a direct result from the decision to start with processing. The generator can possibly be 5 K cheaper when no processing is done, because a lesser capacity will suffice. So in total 200 K is directly linked to the processing unit.

Remains 180 K for investments, meant for upgrading to a modelfarm. Then a lesser current account could do by the way, but never mind. Awash National Bank has indicated, that a loan of 55 K could be given. The Awash National Bank works with 3 types of loans: short-, mid- and long-term, respectively with loanterms of 0-3 year, 3-5 year, 5-10 year. In this case a loan with a repaymentperiod of 10 year is recommendable since it complies with the physical depreciation period. The rate

of interest can only be variable. At present the variable interest rate is 15 %; the interestrate on the current account is around 20 %.

35 K * 15 % = € 5.250 interest in yr 1
31,5 K * 15 % = 4.725 2
28 K * 15 % = 4.200 3

Year 2 shows the average of the remaining principal sum over a period of 3 years. A notional interest of 19 % * 31.500 results in € 6.000 interest expenses.

20 K * 20 % = € 4.000 interest; a current account facility is not meant to create a maximum overdraft; an average overdraft of 10 K should be realistic. Interest expenses will be reduced by 50 % to € 2000.

The Dutch donor contributes 145 K * 5 % notional interest = € 7.250 interest cost, on average the interest expenses will be less due to repayment.

Total interestcost: € 15.000

As far as the entire investment is concerned, admittedly realised in phases, (deposit costs are not charged by the Awash National Bank; a one time 2 % fee is charged) interestcosts are as follows:

Average principal sum over 3 years: 31,5 K * notional interest 19 % = € 6.000

Current account: on average 10 K overdraft * 20 % = € 2.000

In this scenario the Dutch donor contributes 345 K * 5 % notional interest = € 17.250

Total interestcost: € 25.000

Attention must be paid to the fact that the conditions for financing from the Dutch donor are not known at present; just to be on the safe side interest from year 1 is put into the prognosis. Actually another division of the syndicate loan will obviously have consequences for the payable interest. The more so when a partial grant is materialized.

Visiting the bank, from left to right: Dr.E.Aberra, successor, Dr.A.T.Tesfa entrepreneur, H.-W.Leeraar agronomist and financing expert, M.Kooijmans, marketeer and public relations expert.

6 Capacity for repayment

Amounts * € 1,-	prog. self	prog. coop
Cashflow	54.000	84.000
Private withdrawals	15.000-	15.000-
Interest expenses	15.000	25.000
Available for interest and repayment	54.000	94.000
Interest expenses	15.000	25.000
Mandatory repayment	18.000	38.000
Total financing expenses	33.000	63.000
Repayment capacity	1,6	1,5

6.1 Graphic representation

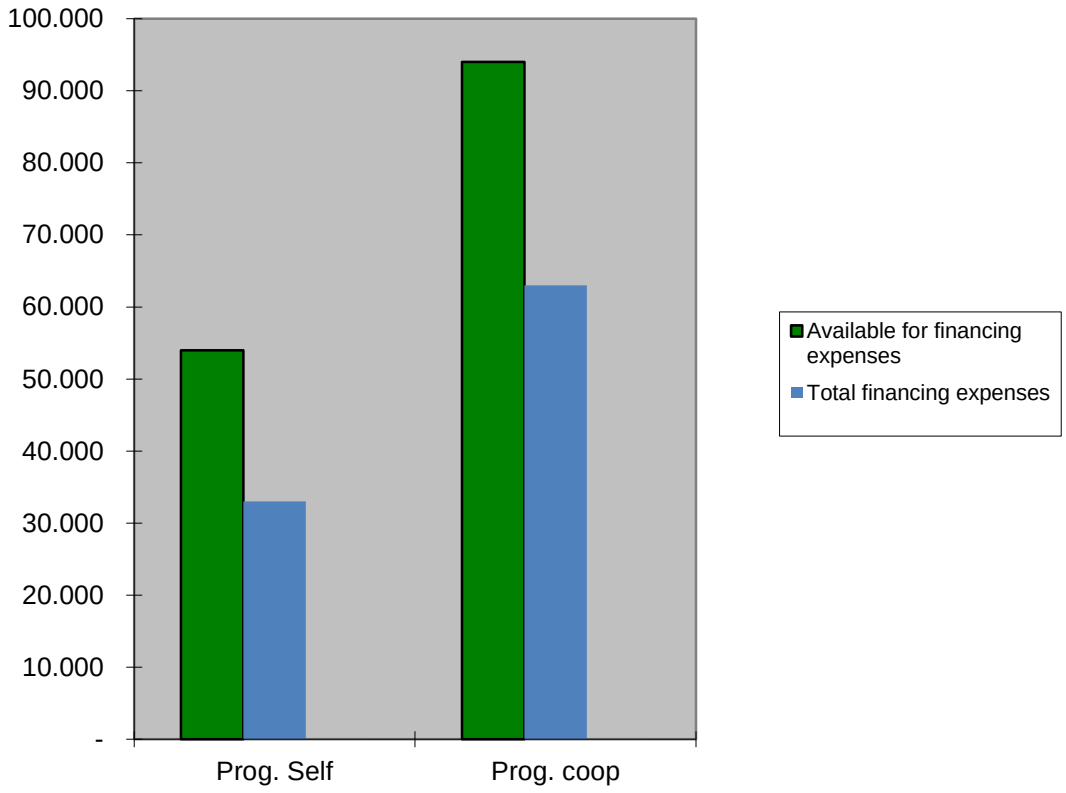


Figure 3: Repayment capacity

6.2 Explanation

Private-withdrawals from the company are limited. Dr. Tesfa enjoys a pension from Finland. In 2013 the private withdrawals mounted up to appr. € 7.000. Incometax in Ethiopia is about 30 % . Considering the expected result, private withdrawals have been raised with 8.000 till 15.000 €. The pension of Dr.Tesfa must be regarded as an insurance for healthcare costs, in a country where social security is unknown. The farm can fullfill its financial obligations, by the given assumptions, with a factor 1,5.

Financial condition for replacement investment:

	Prog.self	Prog. coop
Cashflow:	54.000	84.000
Minus: Private withdrawals	15.000	15.000
Minus: Repayment	18.000	38.000
Minus: Replacement investments	10.000	10.000
Liquidity surplus	11.000	21.000

Repayment term at the Awash International Bank as well as for the Dutch donor is set at 10 years.

Prognosis Self	Awash	35.000/10	= 3.500
	Donor	145.000/10	= 14.500
Prognosis Coöp	Awash	35.000/10	= 3.500
	Donor	345.000/ 10	= 34.500

It is recommended to start with the repayment, after implementation of the investments. The first year or even two years a loan without repayment is desirable, certainly as far as the donor is concerned. Also the Awash Bank is not unwilling to consider this matter. Repayment in 15 years gives somewhat more ‘breathing space’ for the entrepreneur to tackle misfortunes. A deposit for the loan might be applicable. Possibly a bridging loan is necessary, for instance to prefinance the VAT, in Ethiopia 15 %. When some of the liabilities can be transformed into a gift, the calculations need to be readressed.

6.3 Risk - analysis

When the interestrate deviates by 1% the entrepreneur has 4.000 more/less to spend.

As the implementation of the project takes time, the financial engineering needs to be tailor-made and monitoring on grassroot – level is recommended.

The legal scope of the cooperative needs to be cristalclear and rocksolid. The entrepreneur is willing to take advice and has indicated that the legal structure of the cooperative needs to be developed further.

7 Coverage value

7.1 Overview in figures

e/n	specification	selling price	coverage %	pretax	registration	coverage value
						-
						-
e	House, incl.site	43.000	60%			25.800
e	Farmbuildings	88.000	60%			52.800
n	Expansion building	10.000	60%			6.000
	Total real estate	***141.000***				-
Coverage overview securities* € 1						
e/n	specification	carrying value	coverage %			coverage value
						-
e	Herd	40.000	50%			20.000
n	Herd	15.000	50%			7.500
e	Machinery	22.000	50%			11.000
n	Machinery	355.000	50%			177.500
e	Right of longterm lease	22.000	80%			17.600
e	Laboratory equipment	4.000	50%			2.000
		Total coverage				320.200
		Total liability				400.000
		Total coverage percentage				80%

7.2 Explanation

The sellingprices of the immovable property follow from the appraisal report of Yewondwosen Yassin, January 2014.

Coverage percentages are according to Dutch banking practice.

The coverage of the total liability is 80 %. Per bank is the coverage for the Awash Bank 84.600/55.000 = 154 % and for the Dutch donor 235.600/345.000 68 %. Assuming, that the Awash Bank is satisfied with the immovable property as collateral.

The legal scope - creation of mortgages, possessory lien - has not been looked into. Here as well it is clear that a different agreement between the financers alters this scheme entirely.

8 Preferred financing structure

Loan	Funder	Capital Sum	Repayment p/y	Interest %	Amount
NEW					
Mortgage Loan	Awash	35.000	3.500	15,00%	pm
Mortgage Loan	Donor	345.000	34.500	4,00%	pm
Current Account	Awash	20.000	-	20,00%	pm
Total		**400.000**	**38.000**		**-**

8.1 Technical motivation

The financing structure can only be substantiated when quotations are finalized and when the total liability is known, including the funding of all those involved in the syndicate. This must obviously be considered here.

9 Conclusion

9.1 Dairy Farm

The enterprise is judged on its technical and financial merits. The estate in its present form has been built from 2008 onwards. From an agricultural point of view the farm is a forerunner in a surrounding where dairyfarmers have no agricultural education, throughout with herds of 10 lactating animals at most, mostly grazed in nearby pastures. The status of the farm cannot be judged separately from the position of the entrepreneur, previously a lecturer at the Faculty of Animal Science in Helsinki. Do remigration and reconstruction appeal to the imagination, the descent of the family plays an important role as well in a rural society such as Naqamte.

From the many mutual conversations it became clear that the farmer has an open eye for further technical improvements, such as watersupply, floorcovering, ventilation, leveling a nearby pasture, use of the feedmixer, etc.. The vast majority of these improvements are already part and parcel of the ‘ideal situation’, as imagined by Dr.Tesfa. However, Dr. Tesfa has also indicated that her financial limits have been reached. What has been realized up till now deserves each and everyone’s respect. Her attitude towards animals, her care for those animals as well as for the gardens, both kitchengarden and flowergarden, her care for the employees are an example to us all, in a surrounding where humans have enough to cope with in order to earn a day to day living.

9.2 Finances

Ratio's, on the basis of which bankers judge their clients, follow from the financial analysis. These ratio's can be summarized as follows.

The owner's equity in the company is at present 100 %. There are indeed no long-term borrowings. After the first investment phase solvability is 50 %. The solvability is corrected for intangible fixed assets. After implementation of the processing unit solvability is still over 30 %. The assets have been valuated as accurate as possible, amongst others based upon a recent appraisal report concerning the immovable property.

As far as the projected investments are concerned a recent and specified quotation must be presented to be able to present final figures. The many sources, frequent contact with Dutch suppliers, sometimes even located in Ethiopia, guarantee sufficient confidence to come to the conclusions and ratio's as mentioned. But especially transportcosts and importlevies are just a rough estimate. And as far as not mentioned explicitly in the quotations, verbally or written, the same applies to the installationcosts.

When we look into the two phases of the project, expansion to modelfarm respectively installation of the processing unit, the investments must be projected in the near future according to a plan of approach. Financing conditions must be in conformity herewith, as has been stated earlier. Due to cultural-religious and infrastructural constraints (distances) expanding the production-capacity on the farm is of little use when shelflive of the endproducts cannot be lengthened or when the assortment cannot be enlarged. The assesment of the market has been dealt with in the report of Mr. Kooijmans. The general information about Ethiopia in 1.6 en 1.7 is in agreement with this report. The processing unit is admittedly phase two, but should be regarded as a conditio sine qua non, as far as phase one matters, the upgrading of the farm.

The enterprise can for both phases, with the given assumptions, amply fullfill her obligations. Even with a strict repayment scheme of 10 years. Private withdrawals are minimal due to the Finnish pension of the entrepreneur. Proceeds for milk have been checked in a nearby supermarket. Costs have been recalculated because of an enlarged herd and moreover they have been rounded off, or better strongly increased, for a safer prognosis. For that same reason a higher notional interest is taken. The repayment capacity is 1,5. The farm can meet its mandatory financial obligations 1,5 times.

The coverage position is figurative, because legal issues have not been looked into. The Awash International Bank indicated, as expected, to opt for the first mortgage. The financing conditions of the Dutch donor need to be made explicit, before a financing structure can be proposed. As far as the coverage position is

concerned, for the Dutch donor the integrity of Dr.Tesfa and her successor Dr. Aberra are the one and only compass.

Before giving any funding the Awash Bank requires an English version of the final report, that is to say after confirmed quotations have been received and the absolute total liability is known.

9.3 Surroundings

Special attention must be paid to the social component of the farm. Farm and processing unit will provide employment for some 20 people. The employees work and live on the compound; smoking and drinking alcohol are prohibited. Apart herefrom the cooperative Robsan is involved in the supply of milk. It is expected that the cooperative will attract more members, when processing has started. To increase involvement and commitment the entrepreneur has already made shares available to the members, although a number of details concerning the cooperative structure still needs to be filled in. Dr. Tesfa has indicated the women- selfhelp group Darartu Wacha must somehow be made part of the project.

9.4 Advice

On behalf of Dr.Tesfa and Dr.Aberra we advise the decisionmakers to contribute to and to cooperate with the project in Naqamte, in a manner as described above.

Kind regards,
on behalf of Dr. Tesfa & Dr. Aberra,

Hein-Willem.Leeraar,
Owner of Hein-Willem Leeraar & partners