

**BUSINESS
OPPORTUNITIES**

**FOOD
PROCESS-
ING IN
ETHIOPIA**



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For quality of life

**BUSINESS
OPPORTUNITIES**

**FOOD
PROCESS-
ING IN
ETHIOPIA**

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MOTIVATION

For many years, Ethiopia has been in need of support from other countries around the world to reduce hunger among the population. The Government of Ethiopia (GOE), aiming for greater independence, has introduced a Growth and Transformation Plan (GTP) that foresees a Food Security Programme, including measures on industrial and household levels.

Remark: In this document, we use Gregorian dates only. About 8 years should be subtracted to obtain the corresponding Ethiopian year.

On behalf of the Dutch Embassy in Addis Ababa, Ethiopia, a study was carried out to describe the current state of food processing in Ethiopia (with a focus on Addis Ababa), with two aims:

- **Identify possible interventions that might increase the processing and preservation of food at all levels, by looking at the current market and its bottlenecks.**
- **Identify business opportunities for new Dutch, foreign, and Ethiopian food processing factories for regular and fortified foods, and for new, small-scale processing and storage technologies.**

The study was carried out by Johan van der Riet (Agriplan, processing expert), Yared Sertse (Ethiopian consultant), and Han Soethoudt (Wageningen UR, senior researcher for national and international food marketing and logistics). The approach consisted of a short desk study and a one-week mission to Addis Ababa, including trips to Adama (also known as Nazreth) and Upper Awash. This report is based on the findings of the desk study and more than twenty interviews.

REPORT STRUCTURE

To identify opportunities for the food-processing sector, it's necessary to study the market in Addis Ababa, and this is undertaken in Chapter 1. Market channels, expenditure, consumption, and international trade are discussed for both food in Ethiopia in general, and for processed food in particular.

In Chapter 2 we present a quantitative overview of the food-processing sector in Ethiopia, considering its range, trends, use of capacity, imported raw materials, and number of companies. Chapter 3 describes the state of the art in the sector, based on visits to a number of processing companies. In Chapter 4, the sector and market knowledge is combined with supply chain structures in a series of case studies that identify market potential. Fortification is a special topic, and it's approached from the point of view of government planning as well as that of practical experience in Chapter 5. Chapter 6 offers information on preservation with examples that increase food security. Chapter 7 lists opportunities and presents the final conclusions.

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THE FOOD MARKET

In this chapter the Addis Ababa food market is described on the basis of the consumption of its citizens and international trade.

The analysis of consumption gives insight into expenditure, food preferences, and markets. Import and export are naturally discussed on a national level. In the analyses, much attention is paid to processed food.

THE MARKET IN ADDIS ABABA

This section presents an overview of the food market in Addis Ababa, including outlet types and information on prices and quality, especially for processed food.

MARKET OUTLETS

In Addis Ababa there are many types of outlet at which food can be bought. Unlike European countries, where supermarkets rule the supply chain, traders in the food supply chain in Ethiopia have significant market share selling directly to consumers. The identified outlet types are:

- Supermarkets
- Consumer cooperatives
- Private commercial
- Kebele shops
- Etfruit shops
- Flour mills
- Regular shops
- Fruit and vegetable grocery shops
- Cereal shops
- Baltena shops
- Gulit (microsellers)
- Kiosks

Thus, the power of supermarkets in Addis Ababa cannot be compared to the situation in Western countries, where retailers have economies of scale in purchasing and hence dominating the food supply chain. This point of view is supported in a study from 2012 ^[14] that examined 1,226 outlets.

Processors also sell their products through these channels. Factory products are supplied to the market following the usual marketing chain, which begins at the factory gates and ends at the consumer's home. Within this chain, wholesalers and retailers serve as intermediaries between the factory and the shop, and between the shop and the customer's home, respectively. Nearly every food-processing industry in Ethiopia follows this supply chain. However, there are occasions when some factories circumvent the chain by supplying their products directly from their own retail shops. This mode of marketing is the exception rather than the rule, and the amount supplied this way is miniscule ^[12].



Efruit outlet in Addis Ababa



A kiosk in Addis Ababa

Supermarkets do not have a significant market share in either cereals (one of the most important food categories in Ethiopia) or processed food. Modern retail is a niche market for cereals and processed food, where prices are higher because of higher quality and quality control. However, the different types of outlets provide different products for the consumers in Addis Ababa. A significant share of the higher income groups shop for dairy in supermarkets [11].

PRICES

The market for food products in Addis Ababa is generally unstable, as it is for Ethiopia as a whole. The figures for inflation, food prices, and Consumer Price Indices show tremendous negative impact on the financial situation of people in Ethiopia over recent years.

The minimal price in most food categories tripled, with greater increases seen in potatoes and coffee, which had a CPI of well above 400. The effect of the high inflation in 2009 on the people of Addis Ababa was studied in [9]. From the results can be concluded that there are limited options for those affected, and this shows the increasing vulnerability of the population. Inflation has an immediate impact on buying behaviour, which is a risk for investment in added-value products such as food that is processed more than minimally.

Prices vary for three reasons. The first reason is inflation, as described above, while the second is seasonality (varying from harvest period to shortage or no supply). The third issue is fasting: on more than 200 days of each year, the Orthodox Christian population in Ethiopia (about 50% of the total) does not consume animal products, such as meat or dairy. Although not all strictly fast, the effect on the demand may be a drop of 25–30%.

In Table 1, retail prices are listed for the bestselling food products in Addis Ababa*.

Injera and teff have equal price spreads, whereas lentils, peas (milled), beef, edible oil (local), coffee beans, and unrefined butter were expensive in the second half-year. Only onions decreased in price between March and September. The variation in price is essential to investment calculations in food processing, as procurement is a significant part of the cost price.

* Average Retail Price of Goods and Services by Region and Selected Market Places, CSA, 2011. Remark: data for the months of July and August were not found.

TABLES & FIGURES

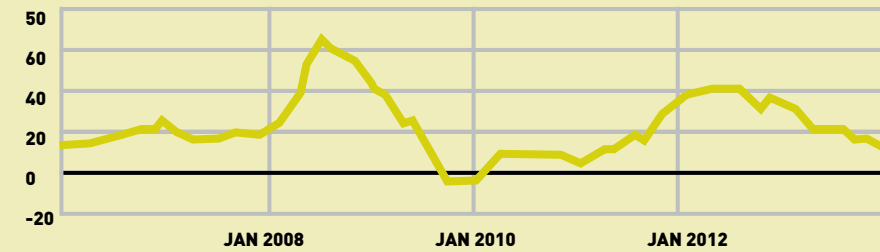


Figure 5: Inflation rate in Ethiopia for the last 6 years.

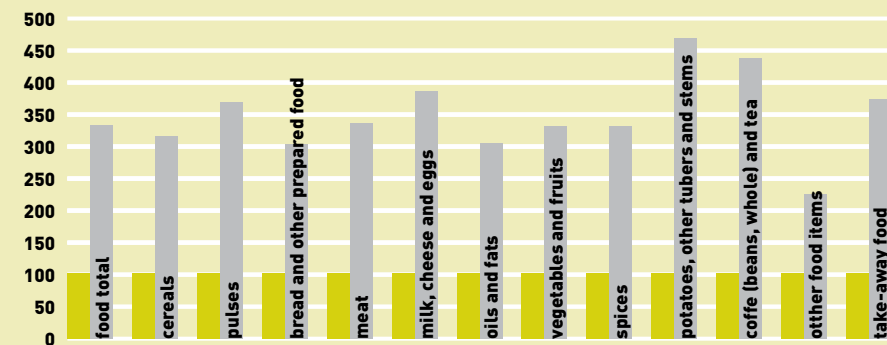


Figure 6: CPI of total food and its components for Addis Ababa

Table 1: Monthly retail prices in 2011 for the most common food products in Addis Ababa

Retail prices 2011	Jan	Feb	Mar	Apr	May	Jun	Sep	Oct	Nov	Dec
Teff injera (325 gram)	2.24	2	2.2	2.3	2.4	2.6	2.4	2.4	2.5	2.4
Teff, mixed (flour)	10.1	10.2	9.8	11.1	11.4	11	11.3	11.4	11.4	11.2
Wheat bread/baked goods (350 gram)	3.5	3.4	3.5	3.5	3.8	3.9	3.9	4.1	3.7	3.8
Teff, white (flour)	11.1	11.6	11.5	11.4	12.5	12.6	12.2	12.7	13	12.3
Onions	7.0	4.9	5.8	4.5	3	2.9	6	4.6	4.1	5.9
Potato	4.8	4.8	5.6	6.3	5.9	5.9	4	4.2	4.6	4
Teff, black (flour)	10.0	—	7.2	—	9.3	10.6	10.4	10.7	10.6	10.3
Wheat, white	—	—	—	8	10.5	—	—	—	—	—
Sugar	14.0	13.8	13.6	14	14	13.5	14	14	14.5	14
Beef	51.8	51.8	51.1	51.2	52	60.4	71.5	72.7	72.9	65.8
Edible oil (local)	35.3	34.25	36.8	40.7	55.4	57.3	55.1	54.9	52.7	55.3
Lentils	14.2	14.2	14.4	15.8	19.4	21.3	22.2	21.4	20.9	21.8
Peas (milled)	19.3	19.3	19.8	21.7	24.9	28.2	31.2	33.9	33.6	33.8
Coffee beans	67.0	75.52	94.91	96.1	98.2	100.6	103.4	110	106.6	101.8
Butter, unrefined	82.7	83.7	88.1	114.9	126.4	132.6	115.4	110.2	108.2	113.8

Table 2:
Consumption and expenditure in Birr per person in Addis Ababa, 2004/2005

product name	sub category	expenditure y/per.	expend. %	price/kg	kg\y/per.	g/d per.
Teff injera	Injera (bread) & other prep. food	65.2	9.9%	1.97	33.1	91
Teff, mixed	Cereals	83.61	12.6%	3	27.9	76
Wheat bread (baked goods), pies	Injera (bread) & other prepared food	50.57	7.6%	2.95	17.1	47
Teff, white	Cereals	45.66	6.9%	3	15.2	42
Onions	Vegetables and fruits	34.24	5.2%	2.7	12.7	35
Potato	Tubers and stems	11.26	1.7%	1	11.3	31
Teff, black	Cereals	25.66	3.9%	3.3	7.8	21
Wheat, white	Cereals	20.88	3.2%	2.92	7.2	20
Sugar	Other food items	34.27	5.2%	6.9	5.0	14
Beef	Meat	73.07	11.0%	16.6	4.4	12
Edible oil (local)	Oils and fats	64.78	9.8%	16	4.0	11
Lentils	Pulses	14.22	2.1%	4.7	3.0	8
Peas	Pulses	12.75	1.9%	6.1	2.1	6
Coffee beans	Coffee, chaat, and hops	21.28	3.2%	12.6	1.7	5
Butter, unrefined	Oils and fats	11.39	1.7%	29.7	0.4	1
Pepper flour	Spices	23.64	3.6%			
Mutton	Meat	19.8	3.0%			
Wheat bread traditional	Injera (bread) & other prepared food	17.04	2.6%			
Fasting meal without fish	—	16.5	2.5%			
Keywot, beef	—	15.89	2.4%			
Total		661.71			152.8	419

Table 3: Food expenditure in Birr per person in Addis Ababa, 2010/2011 (compared with 2004/2005)

	2010/2011	Birr	% 2010/11	% 2004/05
Cereals		670.34	21.2%	26.3%
Expenditure on restaurants, cafes, and hotels		523.43	16.6%	
Meat		325.53	10.3%	14.0%
Oils and fats		287.95	9.1%	11.5%
Vegetables		244.23	7.7%	5.2%
Pulses		226.34	7.2%	4.0%
Coffee, tea, chaat, and buckthorn leaves		208.26	6.6%	3.2%
Injera, bread, and other prepared foods		195.51	6.2%	22.1%
Spices		179.31	5.7%	3.6%
Other food items		131.93	4.2%	5.2%
Milk, cheese, and eggs		78.83	2.5%	
Potatoes, and other tubers and stems		62.2	2.0%	1.7%
Fruits		19.4	0.6%	
Oilseed		2.45	0.1%	
Total		3,155.71		

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Table 4: Number of employed people in Addis Ababa per income category, 2011

payment (ETB/month)	payment (ETB/year)	% of urban pop.	People in Addis Ababa
< 50	<600	0.7%	14,881
50–99	600–1,199	2.0%	45,502
100–199	1,200–2,399	5.7%	128,461
200–399	2,400–4,799	14.8%	333,156
400–699	4,800–8,399	21.2%	475,954
700–999	8,400–11,999	15.6%	351,341
1,000+	12,000+	40.0%	897,705
Total		100%	2,247,000

Figure 7: Distribution of the African population by subclasses

	1980	1990	2000	2010
Rich class >20\$	4.77%	4.32%	6.49%	4.84%
Upper middle \$10-\$20	5.17%	5.22%	5.06%	4.70%
Lower middle \$4-\$10	9.41%	9.14%	8.04%	8.74%
Floating class \$2-\$4	11.61%	12.59%	14.07%	20.88%
2nd poverty line \$1.s25-\$2	19.05%	19.09%	18.51%	16.70%
1st poverty line <\$1.25	49.99%	49.65%	47.82%	44.15%

Table 5: Value of most important imported food products in 2011 (source: www.comtrade.un.org)

Import trade in 2011 (million USD)	value	% of total	cum. %
Cereals	471.4	35%	35%
Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal and vegetable waxes	391.7	29%	64%
Sugars and sugar confectionery	182.8	14%	78%
Products of the milling industry; malt; starches; inulin; wheat gluten	81.9	6%	84%
Preparations of cereals, flour, starch, and milk; pastry products	46.8	3%	88%
Edible vegetables and certain roots and tubers	27.9	2%	90%
Pasta, whether or not cooked, stuffed (with meat or other substances), or otherwise prepared, such as spaghetti, macaroni, noodles, lasagne, gnocchi, ravioli, cannelloni; couscous, whether or not prepared.	27.7	2%	92%
Preparations of vegetables, fruit, nuts, and other parts of plants	21.3	2%	93%
Miscellaneous edible preparations	17.3	1%	95%
Malt extract; food preparations of flour, groats, meal, starch or malt extract, not containing cocoa, or containing less than 40% by weight of cocoa, calculated on a totally defatted basis, not elsewhere specified or included	15.3	1%	96%
Oil, seeds and oleaginous fruits; miscellaneous grains, seeds, and fruit; industrial and medicinal plants; straw and fodder	11.8	1%	97%
Beverages, spirits, and vinegar			
Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	11.0	1%	97%
	10.6	1%	98%

CONSUMERS IN ADDIS ABABA

This project focuses on consumers from Addis Ababa, the capital city of Ethiopia. Addis Ababa had more than 3 million inhabitants as of 2012. Relative to rural consumers, this group has more potential as a target market for processed food, because of their (on average) better and more stable financial situation.

EXPENDITURE

In Ethiopia, consumer research is scarce. Data from the 2004 study of the Ethiopian Central Statistical Agency are presented in Table 2. Injera and cereals cover more than 70% of the food intake, whereas vegetables (nutritionally interesting products) constitute about 8%. With respect to expenditure, teff, injera, meat, oils, and fats are the main products. These products are all at least minimally processed. So, for instance, cereals are not the whole grain, but the flour. Fish consumption is extremely low (475 g per household in 2001 ^[10]) and expenditure on fish is insignificant. The CSA study results for 2010/2011 are shown in Table 3.

Clearly, there are extreme differences in food expenditure. The increase over six years from 661 Birr to 3,155 Birr per year per person is an increase of about 377%. The share per food category did not change dramatically, except for the emergent consumption of dairy products and the huge drop in traditional injera. However, if this is consumed in restaurants, the change may be less significant.

INCOME

The food expenditure, which in Addis Ababa totals about 9.5 billion Birr or 600 million USD, is significant when compared to the income of the city population. Food expenditure will vary between income groups, but for the majority of people in Addis, the annual amount of ETB 3,155 is acceptable. Table 4, which is based on ^[16] (pp. 179, 211), identifies payment categories for employed people in Addis Ababa. Note that the unemployment rate there is 25.1%.

The potential for the processed food sector is in the higher-income segments. Hence, the sizes of these segments are relevant. According to a study by the African Development Bank ^[36], there is a shift from the poor upward, though this is not significantly enlarging the middle class as defined in our study (3,000–5,000 ETB/month).

Although this graph represents the total African population, it shows that changes in the higher income classes are marginal. The main shift is in class F, below the middle class. The conclusion is that there is a shift from the poor upward, though this is not significantly enlarging the middle class as defined in our study (3,000–5,000 ETB/month).

IMPORT AND EXPORT

IMPORT

Ethiopia imported a total of 1.340 million USD of food products in 2011. Imports mainly enter Ethiopia via three ports: Port of Sudan, Port of Djibouti (main port), and Port of Berbera (Somali) ^[5], and from there, are transported mostly by truck, as transport by plane is very expensive. The main imported food categories in 2011 with respect to value are listed in Table 5.

Most relevant categories are processed food, except for cereals, edible vegetables, oilseeds and oleaginous fruits. Because of inflation over the last five years, it is wise to not consider the trend in trade value, but rather to consider the changes in the volume imported per food product. In 2011, the total volume of food products imported in Ethiopia was 1,945 kilotons. On a product level, the main imports are listed in Table 8.

Note that it is difficult to differentiate between food-aid and real trade. In this document, this issue will not be addressed. Among the products in Table 13 are unprocessed items, such as wheat and meslin, rice and grain sorghum. Other processed products relevant to the project are not imported on a significant scale, and hence do not appear in the main statistics. Such products are either not imported at all, or only on a small scale. This is shown in Table 9.

From Tables 10 and 11, cane or beet sugar, palm oil and pasta, are the only processed food items showing a stable upward trend implying an increase in demand. A declining trend is observed for malt extract. More details on import are available from ERCA*. Interesting details on the palm oil strategy become clear by showing the countries of origin. It can be seen that the total volume of more than 228,000 tons in 2011, according to ERCA, corresponds to the 231,000 reported by UNComtrade. However, the sources do not agree on export.

* Ethiopian Resource
and Customs
Authority.

Whereas in 2010, most imported palm oil (about 80%) came from Malaysia, in 2011 significant volumes were imported from Indonesia as well. The Government of Ethiopia is responsible for these volumes, and in May 2013 this volume was doubled.

Similar levels of detail are available for other processed products, such as pasta and juices. For pasta, the largest volume originates from Turkey (72%) and Oman (12%). Juice concentrates are produced chiefly (88%) in the Middle East (55% in Saudi Arabia, 19% in the United Arab Emirates, 9% in Yemen, and 5% in Egypt). Since value is available in these statistics, the cost price for competitiveness in domestic production can be derived.



Processing at
Mulge coffee
exporter PLC
(Addis Ababa)

EXPORT

The export value of food and beverages in Ethiopia was 2.009 million USD, about 1.5 times the import value. As with importing, the Port of Djibouti is the main hub for international trade. Three food products cover 83% of the export value exported from Ethiopia: coffee, edible vegetables and oilseeds. All these are largely unprocessed, implying that processed food is exported on a small scale. Only meat and edible meat offal can, in some sense, be considered as significant trade in processed food.

Notwithstanding its enormous share in trade value, coffee is not at the top of export volume from Ethiopia. Together with oilseeds and oleaginous fruits and dried leguminous vegetables, coffee represents 2/3 of the total food export volume of 992 kilotons in 2011.

As with import, not many processed categories are exported at a significant level. The other processed food categories exported are listed in Table 13.

Although the volumes are low, a steady positive trend can be identified for bread, pastry, cakes, biscuits, fruit juices and perhaps also for flour, meal and powder of dried leguminous vegetables.

CONCLUSIONS FOOD MARKET

- **Food expenditure per capita increase from 661 ETB per year in 2004/2005 to 3155 ETB in 2009/2010**
- **Main products bought are cereals (21% of expenditure), meat (10%), oils/ fats (9%), vegetables (8%) and pulses (7%)**
- **On average the share of African people considered 'poor' is slowly decreasing. A shift is made towards a category just below the middle class. The middle and rich class remain very small (together about 18% for African people). The middle class is crucial for development of the food supply chains**
- **In 2011 the import of food products in Ethiopia are 1945 ktons. Top 3 in kilotons: wheat and meslin (1078), cane/beet sugar (246) and palm oil (231). Processed food is hardly imported; about 11 kton (fruit juice 8 kton). The total import value in 2011 was 1340 million USD**
- **The trade value of the export of food products in 2011 from Ethiopia was 2009 million USD. In value coffee, edible vegetables and oilseeds represent a share of 83%, whereas in volume their share is 65% of 992 ktons. Other significant export flows are maize and potatoes. The export of processed food in volume in 2011 was below 7 kton.**

TABLES & FIGURES

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import volume (× 1,000 tons)	2007	2008	2009	2010	2011	% total	cum %
Wheat and meslin	384	1,100	1,112	1,049	1,078	55%	55%
Cane, beet sugar, and chemically pure sucrose, in solid form	90	159	84	173	246	13%	68%
Palm oil and its fractions, whether or not refined, but not chemically modified	70	143	198	224	231	12%	80%
Rice	45	23	31	43	80	4%	84%
Wheat or meslin flour	1	6	100	7	46	2%	86%
Dried leguminous vegetables, shelled, whether or not skinned or split	28	34	43	48	39	2%	88%
Malt, whether or not roasted	32	30	23	34	35	2%	90%
Grain sorghum	0	253	70	113	34	2%	92%
Pasta, whether or not cooked or stuffed (with meat or other substances) or otherwise prepared	3	3	6	7	25	1%	93%
Cereal flours other than of wheat or meslin	0	12	9	6	22	1%	94%
Malt extract; food preparations of flour, groats, meal, starch, and malt extract, containing less than 40% by weight of cocoa	1	54	38	35	14	1%	95%
Animal and vegetable fats and oils and their fractions	15	5	8	13	10	1%	96%

Table 6: Volumes of the most important imported food products, 2007–2011 (source: www.comtrade.un.org)

Table 7: Imported volume of other relevant products, 2007–2011 (source: www.comtrade.un.org)

Import volume (× 1,000 tons)	2007	2008	2009	2010	2011
Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit	5.35	7.75	9.45	6.64	8.17
Bread, pastry, cakes, biscuits, and other bakers' wares	1.57	1.36	0.84	1.48	2.05
Flours and meals of oilseeds or oleaginous fruits, other than those of mustard	0.13	5.19	1.46	0.17	0.83
Flour, meal, and powder of the dried leguminous vegetables	0.00	0.01	0.00	0.00	0.31
Flour, meal, powder, flakes, granules, and pellets of potatoes	0.00	0.01	0.00	0.00	0.00

Table 8: Import of palm oil by country of origin in 2011

Imported palm oil from (2011)	Volume x 1,000 tons	% volume	Value million ETB	Value million USD	price per litre (ETB)
Malaysia	143.39	63%	3,452.90	202.34	24.1
Indonesia	65.06	29%	1,569.97	92.00	24.1
Egypt	8.37	4%	211.55	12.40	25.3
United Arab Emirates	7.93	3%	190.76	11.18	24.1
United States	2.54	1%	62.33	3.65	24.5
Total	228.24		5,508.98	322.83	

Table 9: Values of the most exported food products in 2011 [source: www.comtrade.un.org]

Export trade in 2011 (million USD)	value	% of total	cum %
Coffee, tea, and spices	887.1	44.16%	44%
Edible vegetables and certain roots and tubers	416.7	20.74%	65%
Oilseeds and oleaginous fruits; miscellaneous grains, seeds, and fruit; industrial and medicinal plants; straw and fodder	368.7	18.35%	83%
Meat and edible meat offal	77.2	3.84%	87%
Cereals	21.9	1.09%	88%
Lac; gums, resins and other vegetable saps and extracts	12.6	0.63%	89%
Preparations of cereals, flour, starch, and milk; pastry products	4.2	0.21%	89%
Edible fruit and nuts; peel of citrus fruit or melons	4.0	0.20%	89%
Beverages, spirits, and vinegar	3.8	0.19%	89%
Bread, pastry, cakes, biscuits, and other bakers' wares, whether or not containing cocoa; communion wafers, empty cachets of a kind suitable for pharmaceutical use, sealing wafers, rice paper, and similar products.	3.6	0.18%	90%
Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	3.2	0.16%	90%
Preparations of vegetables, fruit, nuts, and other parts of plants	3.2	0.16%	90%
Residues and waste from the food industries; prepared animal fodder	3.0	0.15%	90%
Products of animal origin, not elsewhere specified or included	2.0	0.10%	90%
Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	1.9	0.10%	90%

Table 10: Volume of most important exported food products, 2007–2011 [source: www.comtrade.un.org]

export volume (x 1,000 tons)	2007	2008	2009	2010	2011	% of total	cum %
Oilseeds (cotton, sesame, poppy, mustard) and oleaginous fruits, whether or not broken	0.00	159.31	316.56	277.57	272.04	27%	27%
Dried leguminous vegetables, shelled, whether or not skinned or split	0.00	178.52	181.46	218.20	210.00	21%	49%
Coffee, whether or not roasted or decaffeinated; coffee husks and skins; coffee substitutes containing coffee in any proportion	0.00	179.53	130.15	212.00	159.18	16%	65%
Maize (corn)	0.00	0.00	0.00	35.99	60.15	6%	71%
Potatoes, fresh or chilled	9.70	8.46	10.07	21.02	45.08	5%	75%
Other vegetables, fresh or chilled	0.53	16.08	29.48	44.31	42.31	4%	79%
Grain sorghum	2.40	2.22	0.00	21.79	21.71	2%	82%
Tomatoes, fresh or chilled.	6.67	5.28	6.00	11.61	17.67	2%	83%
Onions, shallots, garlic, leeks, and other alliaceous vegetables, fresh or chilled	0.00	8.95	10.63	13.11	15.86	2%	85%
Meat of sheep or goats, fresh, chilled or frozen	4.55	7.91	6.18	9.69	14.71	1%	87%

Table 11: Export volumes of processed food in 2011

Export volume (x 1,000 tons)	2007	2008	2009	2010	2011
Bread, pastry, cakes, biscuits and other bakers' wares, whether or not containing cocoa; communion wafers, empty cachets of a kind suitable for pharmaceutical use, sealing wafers, rice paper, and similar products	0.00	0.73	0.97	1.35	2.02
Milk and cream, concentrated or containing added sugar or other sweetening matter	0.00	0.05	1.27	2.58	1.96
Pasta, whether or not cooked or stuffed (with meat or other substances) or otherwise prepared	0.00	0.14	0.03	0.80	0.58
Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit	0.00	0.00	0.00	0.03	0.48
Cereal flours other than of wheat or meslin	0.26	0.17	0.17	0.45	0.42
Flour, meal, and powder of dried leguminous vegetables	0.00	0.05	0.01	0.04	0.40
Oil cake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of soybean oil	0.00	0.10	0.60	0.00	0.20
Buckwheat, millet and canary seed; other cereals	0.45	0.13	0.03	1.35	0.15
Manioc, arrowroot, salep, Jerusalem artichokes, sweet potatoes and similar roots and tubers with high starch or inulin content, fresh, chilled, frozen or dried, whether or not sliced or in the form of pellets; sago pith	0.00	0.71	1.02	1.22	0.08
Cereal grains otherwise worked (for example, hulled, rolled, flaked, pearled, sliced or kibbled), germ of cereals, whole, rolled, flaked or ground	0.00	0.03	0.01	0.06	0.07

THE FOOD PROCESSING SECTOR IN ETHIOPIA

Research was performed along two lines: a desk study and a fact-finding mission in February, 2013. The desk study covered a quantitative overview of the sector, whereas the mission provided insight into the levels of professionalism (technology, management, quality control, food safety, and input guarantee).

A QUANTITATIVE ANALYSIS OF THE FOOD-PROCESSING SECTOR IN ETHIOPIA

The food-processing sector is by far the largest manufacturing industry in Ethiopia, covering 39% of the gross value of production (GVP) in 2009/2010 of large and medium size manufacturing industry [1].

The gross value of production equals 16,220 million Birr – corresponding to about 900 million USD – whereas small-scale manufacturers together show a GVP of 308 million Birr in food processing, excluding grain milling. The grain millers alone account for a GVP of 1,113 million Birr [4].

For a more detailed view, data from the Ethiopian Central Statistical Agency were analysed. The CSA differentiates between, on one hand, large and medium-scale processors (LMP), and on the other, small-scale enterprises. This leads to separate ways of reporting the status in the sector. The agency delivered a survey on large and medium-scale manufacturers [1], from which most of the information reported below was retrieved. The figures for the small-scale manufacturers are derived from [4].

Remark: Note that the data for small-scale manufacturers cover the time period 2007/2008 (which represents the latest data available), whereas the LMP data refer to 2009/2010.

Among the LMP, which total 2,172 manufacturers, 560 establishments are in the food sector and employ more than 60,000 people, which is about 45% of all the jobs in the food-processing industry (including small scale). Small-scale food processing, excluding grain millers, covers 1,541 food processors providing 4,748 jobs. The grain millers include 23,047 manufacturers, and 70,023 people work in this industry [4]. In Table 14 a breakdown of establishments is presented for the various product groups in the LMP food sector.

The grain milling and the bakery industries are by far the largest in numbers, representing two-thirds of the factories. With respect to GVP, sugar is the largest industry. Together with grain milling and bakery, it covers 47% of the total of 16,220 million Birr in the food-processing sector of LMP.

Not only is the size of the sector significant, its growth trend reveals future opportunities. In Table 16, this trend is summarized in detail over the time period 2006/2010.

Products with an asterisk are listed in hectolitres in the source statistics. For reasons of comparability, it is assumed that these fluids have the same density as water, i.e. that 10 hl weighs 1 ton.



Domestic biscuits
(retail price
ETB 2)

Lemonade, beer, and mineral water dominate the volume in the processing of food and beverages. However, if the focus is on food, then wheat flour, sugar, and biscuits are the main categories. The production of biscuits in 2010 was ten times greater than in 2009. None of the products with a significant contribution to production volume shows a stable trend, which implies a very unstable market.

The growth of GVP is steep, relative to the growth in quantity, which is a consequence of the inflation rate. The increase in quantity was 50% over 5 years, but is nonetheless very small if considered as an absolute value.

It is important to obtain insight into the flow of raw materials, since if the imported share is large, then the domestic production does not match the processors' demand in some way: there may be no production, or the available produce might be sold elsewhere for a higher price than that paid by the processors (e.g. the domestic market or export); import prices may be lower (e.g., as when imported cooking oil is cheaper than local oil [13]); or the available quality may not match the input control. Nevertheless, opportunities can arise suddenly if imported raw materials are imported at high prices, since the margin is affected in a negative way in such cases. An overview of the imported input share per food category is presented in Table 18.

The raw material for beverages in medium and large-scale processing very much depends on imports. For food, this is particularly the case for baked goods, sugar, and pasta. Whereas sugar and pasta are relatively stable in processed production (see Table 18), baked goods (e.g. biscuits) are booming, which might explain the significant increase in the import of its raw materials. On the other hand, the raw materials for processing vegetables, animal oils and fats, grain, and animal feed are of domestic origin. For small-scale manufacturers, the proportion of imported raw material costs is 3.1% among food processors excluding grain milling, and 16.6% for grain millers [4].

Another important aspect of feasibility in the sector is the occupation rate of factories. In Table 20, these figures are summarized for the various food subsectors. It is striking that the lowest rate is found in the one of the largest industries, grain milling.

TABLES & FIGURES

No of Manufacturers of food products and beverages	public	private	total
Production, processing and preserving of meat, fruit and vegetables	2	8	10
Manufacture of vegetable and animal oils and fats	2	34	36
Manufacture of dairy products	0	34	34
Manufacture of grain mill products	9	163	172
Manufacture of prepared animal feeds	0	7	7
Manufacture of bakery products	2	194	196
Manufacture of sugar and sugar confectionery	3	18	21
Manufacture of macaroni and spaghetti	3	11	14
Manufacture of food products n.e.c.	1	11	12
Distilling, rectifying and blending of spirits	2	12	14
Manufacture of wines	2	0	2
Manufacture of malt liquors and malt	4	3	7
Manufacture of soft drinks & production of mineral waters	0	35	35
total	30	530	560

Table 13: Number of LMP
in the food and beverages
industry, 2009/2010
(source: [1])

Table 14: Gross value
of production of LMP
per food product
category, 2009/2010
(source: [1])

Manufacture of food products and beverages	gvp (million birr)	gvp (million us\$)
Production, processing and preserving of meat, fruit and vegetables	475	26
Manufacture of vegetable and animal oils and fats	243	13
Manufacture of dairy products	661	36
Manufacture of grain mill products	2918	160
Manufacture of prepared animal feeds	108	6
Manufacture of bakery products	1049	58
Manufacture of sugar and sugar confectionery	3735	205
Manufacture of macaroni and spaghetti	449	25
Manufacture of food products n.e.c.	241	13
Distilling, rectifying and blending of spirits	421	23
Manufacture of wines	151	8
Manufacture of malt liquors and malt	3312	182
Manufacture of soft drinks & production of mineral waters	2458	135
Total	16220	892

Table 15: Production of the various LMP sectors in tons and index growth of production, 2006/2010 (source: [1])

Manufacturer food production Ethiopia	Index growth					
	2010	2006	2007	2008	2009	2010
Lemonade*	322,407	100	47	101	90	156
Flour (wheat)	314,053	100	81	88	150	181
Beer*	293,847	100	111	137	161	188
Sugar	283,205	100	70	102	107	97
Mineral water*	217,306	100	101	110	128	485
Biscuits	193,773	100	134	283	185	1858
Molasses	83,730	100	84	142	138	203
Bread	70,765	100	142	129	126	292
Macaroni and pasta	43,691	100	110	105	80	124
Fafa, Dube, Edget, Meten, etc.	37,971	100	82	78	75	261
Malt	26,754	100	75	112	46	179
Milk pasteurized*	24,256	100	83	90	99	150
Animal feed	19,392	100	63	42	127	147
Sweets	14,625	100	260	227	295	796
Liquors*	14,336	100	104	112	92	200
Flour (others)	13,644	100	3880	2863	4577	6688
Edible oil	10,881	100	58	51	50	95
Tea	9,538	100	111	107	134	146
Oil cakes	9,455	100	30	24	21	14
Wine*	5,734	100	103	96	102	112
Alcohol*	4,978	-	100	79	55	246
Meat	4,449	100	128	128	168	2099
Tomato paste	4,292	100	103	131	163	240
Orange juice	1,824	-	100	15	21	33
Coffee(milled)	1,708	100	9	17	12	10
Galetta (kind of biscuit)	1,707	100	124	133	838	992
Butter and ghee	982	100	60	62	104	167
Vegetable,soup	870	-	100	122	100	81
Zigin and shiro wet	834	100	214	140	164	220
Cheese	185	100	393	193	221	152
Marmalade	-	100	487	566	-	-

* These products are listed in hectolitres in the source statistics. For reasons of comparability, it is assumed that these fluids have the same density as water, i.e. that 10 hl weighs

Table 16: Trends in value and volume, 2006/2010

YEAR	GVP (x Million Birr)	QUANTITY (x Million kg)
2006	3,413	728
2007	3,720	555
2008	4,787	685
2009	6,375	805
2010	9,879	1,144

Table 17: Trend in the share of raw material costs imported per food category (source: [1])

% of raw materials that is imported	2006	2007	2008	2009	2010
Manufacture of food products and beverages	21%	24%	28%	31%	25%
Production, processing and preserving of meat, fruit and vegetables	19%	47%	46%	43%	19%
Manufacture of vegetable and animal oils and fats	13%	1%	7%	5%	1%
Manufacture of dairy products	18%	13%	12%	9%	11%
Manufacture of grain mill products	5%	3%	5%	16%	5%
Manufacture of prepared animal feeds	27%	-	-	-	6%
Manufacture of bakery products	24%	5%	15%	8%	26%
Manufacture of sugar and sugar confectionery	18%	19%	7%	33%	34%
Manufacture of macaroni and spaghetti	24%	23%	24%	27%	20%
Manufacture of food products (other)	0%	1%	3%	5%	1%
Distilling, rectifying and blending of spirits	38%	29%	21%	24%	37%
Manufacture of wines	48%	20%	66%	75%	50%
Manufacture of malt liquors and malt	55%	49%	60%	59%	48%
Manufacture of soft drinks & production of mineral waters	43%	58%	66%	57%	50%

Processing sector	Capacity/use
Manufacture of food products and beverages total	76.58%
Production, processing and preserving of meat, fruit and vegetables	83.53%
Manufacture of vegetable and animal oils and fats	63.99%
Manufacture of dairy products	68.88%
Manufacture of grain mill products	54.45%
Manufacture of prepared animal feeds	77.33%
Manufacture of bakery products	67.65%
Manufacture of sugar and sugar confectionery	96.27%
Manufacture of macaroni and spaghetti	64.50%
Manufacture of food products n.e.c.	73.51%
Distilling, rectifying and blending of spirits	95.03%
Manufacture of wines	100.00%
Manufacture of malt liquors and malt	84.60%
Manufacture of soft drinks & production of mineral waters	86.15%

Table 18: Actual value of production as percentage of capacity, 2009/2010 (source: [1])

STATE OF THE ART IN FOOD PROCESSING

Despite the fact that the food-processing sector contributes a major part to the gross value of the combined manufacturing sectors, with a total manufacturing value of 16 billion Birr, the sector is nonetheless relatively limited. Taking into consideration the population of 80 million, the consumption of processed food comes to about USD 12 per capita per year. Next, based on the field visits and the statistical information uncovered in the desk review, an overview of the different sectors is described*.

CEREALS, OILSEEDS AND PULSES

The milling of cereals is mainly restricted to the milling of teff, wheat, and corn. Local production of cereals in 2012 comprised 18 million tons, of which 3.5 million tons were of teff, 3 million tons of wheat, and 6 million tons of corn. In addition to local production, 1.5 million tons (with a value of USD 471 million) were imported in 2012.

CEREALS

The milling industry in Ethiopia is widely dispersed. In and around Addis Ababa, there are nine state owned mills, which are outdated but provide basic milling services in order to secure minimum flour volumes. In addition, the milling sector has 160 small private mills located throughout the country. Most of these mills are outdated and obsolete, but still operate. Most cereals, however, never reach these mills, as they are milled at village level. Each village has a number of artisanal mills where farmers and the rural population have their corn and teff milled. On account of this artisanal informal sector, it is estimated that, of the total cereal production, not more than 10% to 15% is processed in (semi-)industrial mills, corresponding to a volume of 2 to 3 million tons.

One exception is formed by the milling and cereal processing factories that produce the Enriched Corn-Soya Blends supplied to relief agencies, such as the World Food Programme (WFP) and the United Nations. In and around Addis Ababa, there are 7 or 8 companies such as Faffa, Healthcare Foods, Guts, and Hilina Enriched Food Products, which are professional businesses that meet the strict standards and certification schemes imposed by the relief agencies. On average, these companies each produce between 5,000 and 10,000 tons of Corn-Soya Blends for WFP, but recently demand has dropped significantly. As a result, the companies are diversifying into the production of commercial products like instant baby foods, breakfast cereals, bread improvers, and extruded snacks. The most innovative company in this respect is Faffa which, with Cerifam, has a 40% market share in the instant baby food segment, and has recently introduced a range of bread-improving products, produced under license from France. Another innovating company is Hilina Enriched Food Products, which produces Plumpy'Nut and Plumpy'Sup (under licence from Nutriset in France), a high-energy product for children diagnosed with Severe and Acute Malnutrition (SAM). In order not to depend too much on relief agencies, Hilina has also expanded its product range with peanut-based snacks.

OILSEEDS AND PULSES

With a total production of over 3 million tons, the oilseeds and pulses sector in Ethiopia is important. The main pulse crops include various types of beans and peas (such as fava beans, chick peas, and lentils). These are mainly used

** It should be noted that not all sectors are described. Only sectors with specific interest for the Dutch Agribusiness and with sufficient volume are included in this report. So for instance, the honey sector is small and hence not included, while the coffee sector, which is important in Ethiopia, is less relevant for Dutch entrepreneurs, and therefore also excluded.*

** The animal feed sector does not form part of this study. In Ethiopia, however, the sector is emerging. Alema-Koudijs is a front runner and with its fully automated production line, the company is manufacturing annually 13,000–15,000 tons of complete feed for, in order of significance, poultry, cattle, swine, and camel. In addition, another 4 to 5 factories are producing animal feed, but Alema-Koudijs is market leader.*

for home cooking and, to a limited extent, are processed into animal feed*. Similar to the cereals, pulses are milled by artisanal millers. Surpluses are sold in urban areas through wholesalers, as is visible on the Mercato in Addis Ababa (see picture).

The oilseed sector is developing rapidly. Niger seed (neug) is the oilseed locally known and consumed. With a production of 250,000 tons in 2012, sesame seed forms an important crop with increasing exports. The most vivid example of this is Selet Hulling, an innovative company that annually procures over 10,000 tons of organic sesame seeds from its 1,300 growers. Selet Hulling adds value in its advanced factory in Addis Ababa through cleaning and dehulling. The final product is exported to the Netherlands for onward sales by Tradin Organic.

Foreign investors are also emerging in the linseed sector. Van de Bilt Zaden en Vlas, in conjunction with SolaGrow PLC, are investing in large-scale linseed production and processing. As market perspectives for linseed in Ethiopia are favourable, local markets will be served initially, but in the long term, the linseed will be exported. The cultivation of soybean has been recently introduced in Ethiopia. With a current production of 35,000 tons, volumes are still small but rapidly increasing. Chinese, Turkish, and Indian companies have been granted large land concessions in the west of the country (there are over 100 companies leasing more than 10,000 ha each), which are increasingly planted with soybean. This is resulting in soybean gaining importance as food-processing ingredient for corn-soy blends, oil crushing, and the production of tasty soya pieces. Tasty soya pieces are an innovative food concept which the Indian company Pramukh Agro Industries has recently introduced with the help of a Dutch PSI grant. Its advanced factory, located near Debre Zeit, is currently launching the product in Addis Ababa. The demand for this low priced, but highly nutritious, meat replacer appears to be high (consumer price: 6 Birr for 90 g, sufficient for 3 portions) appears to be high. The Pramukh Company has successfully launched tasty soya pieces in Malawi, Zambia, and Uganda as well.

The crushing industry for the production of edible oils is in Ethiopia a relatively small sector. Two larger companies (including Addis Modjo Edible Oil Complex) are active, and this in addition to a large number of smaller companies (approximately 35). Processing technologies in place are mainly for the mechanical pressing of oilseeds. Solvent extraction is only applied at Addis Modjo. As a result, oil residues in the cakes are high. As with cereals and pulses, a large percentage of the oilseed is processed at village level in simple mechanical presses, producing crude, unrefined oil.

Over 95% of the daily edible oil consumption is covered by palm oil imported from Malaysia. Despite the fact that Ethiopia is an important producer of oilseeds, the greatest consumption consists of edible oil extracted from palm seeds, due to the fact that palm oil is much cheaper than edible oil from soybeans, sunflower seeds, peanuts, corn, or olives. As of February 2013, palm oil is sold to the consumer for 24 Birr/litre, while other oils are priced 40 Birr/litre or higher. In order to secure sufficient quantities cheap edible oil, the Ethiopian Government has signed a Letter of Intent with a Malaysian Company to initiate the construction of a factory producing 300,000 tons of edible oil annually, initially from crude imports, and gradually to be replaced with raw materials sourced from its own plantations. Palm oil, however, presents a health risk, as it contains high levels of saturated fats that increase cholesterol. Obviously this is a trade-off: low priced oils versus health risks.



FRUITS, VEGETABLES AND POTATOES

POTATO

Official statistics indicate that 500,000 tons of potatoes are produced on 50,000 ha, but a recent Wageningen UR study indicated that there were 160,000 ha, producing 1.6 million tons. Despite the difference in statistical data, it is clear that the productivity, at 10 tons/ha, is low, and can be improved. Under the Topsector programme, the Netherlands Government has given priority to the potato sector through assigning WUR for studies and technical assistance.

WUR has indicated good perspectives for potato sector development through improvements in genetics and cultivation practices. In addition, WUR has indicated good opportunities for potato value-addition through improved sorting and packing for the fresh segment, and processing through the establishment of a French fry factory or a potato chip plant.

Currently in Ethiopia, no processing of potatoes exists, other than home or roadside frying. Supermarkets sell a wide range of imported potato chips at high prices, while imported frozen French fries are not seen. Storage of potatoes is nonexistent, while sorting, grading, and packing are done manually.

FRUITS

Many fruits can be produced in Ethiopia, as the climate, in particular in the highlands, is favourable. In addition, current investments in irrigation schemes will further contribute to the development potential. The main fruit crop is the bananas, with 290,000 tons annually, followed by mango (70,000 tons), orange (49,000 tons), and papaya (43,000 tons). It is believed, however, that the potential fruit base is considerably higher. Due to absence of markets, postharvest handling facilities, and processing industries, a large part of the fruit may be left untouched or be sold for low prices during harvest season.

In the urban areas, in particular in Addis Ababa, fruit can be observed in sufficient quantities at markets, but demand for fresh fruits is limited due to the fact that most consumers cannot afford them. Except for bananas, fruit is consumed by middle and higher income classes, which represent not more than 10% of the overall population.

Fruit processing industries, and in particular the production of fruit juices, are in their infancy, and this segment offers good investment opportunities. Recently, one factory for the processing of passion fruit (not indigenous in Ethiopia, but imported from Brazil) has been opened (Africa Juice), but the fruit concentrates are primarily exported to the Netherlands. Upper Awash Agro Industries in Adama processes citrus into marmalade, but this factory is outdated and requires renovation. Prigat Juice in the east of the country



The Netherlands Government has given priority to the potato sector

appears to be the only company producing juice from imported concentrates. The demand for fruit juices is increasing rapidly, and shops and supermarkets exclusively sell expensive imported juices. Initiatives to produce juice, whether from local fruits or from imported fruit concentrates, will generate good returns on investment.

VEGETABLES

The Rift Valley, including Upper Awash and the lake region in Eastern Showa, is currently the major vegetable production area in Ethiopia. The production areas are located along the main roads from Addis Ababa to Djibouti and to various regional cities. The climate conditions in this region are favourable for a broad range of vegetables including avocado, onions, green beans, and tomatoes. In total, vegetable production is estimated to be in the range of 600,000 to 750,000 tons, with over 90% of production by small-scale farmers, and the remainder produced by larger producers such as Upper Awash Agro Industries and the Horticulture Development Enterprise. In recent years, vegetable exports from Ethiopia have increased from 25,000 tons in 2002/2003 to 63,000 tons in 2009/2010. The main export crops include mangetouts, green beans, snow peas, and to a lesser extent, avocados.

The processing of vegetables in Ethiopia is virtually nonexistent. The sole such facility still in operation is the Upper Awash Agro Industries factory in Merti, which processes tomatoes into tomato paste. The factory also has a tomato juice line, but at the time of the visit, this was not in operation. The factory was constructed 30 years ago with assistance from East Germany and with Italian equipment installed. Though still in operation, the factory processes a marginal volume of 12 tons per day in the high season. The factory is in need of refurbishment, and processing capacities are to be increased.

No other vegetable processing industries, such as vegetable freezing, drying, and canning, could be identified. A limited number of cooling and packing centres for fresh vegetables have been seen, but these facilities primarily serve export markets. A good example is Van Oers from the Netherlands, which, in cooperation with Upper Awash Agro Industries, is cultivating 200 ha of green beans for export purposes.

Business development opportunities lie mainly in the export of beans and peas to Europe and the Middle East. The further growth of the vegetable export sector is highly dependent on the development of reefer transportation, which would enable Ethiopia to compete with countries such as Guatemala, Morocco, Egypt and, Tunisia. Due to the logistically unfavourable location of Ethiopia, with no direct access to sea, the country has a cost disadvantage. It is believed that other opportunities lie in processed products, such as dried chillies and ginger. Processing vegetables for the local market in the short term will be difficult, but in the longer term, taking continued economic growth into account, opportunities may arise.

DAIRY SECTOR



Holland Dairy produces pasteurized and UHT milk, yoghurt, cheese, and ice cream

The fact that Ethiopia has one of the largest cattle stocks in Africa, of over 52 million, does not prevent the milk processing sector in Ethiopia from being relatively small at present. Most of the cattle in Ethiopia form part of household and nomad stock, and are not raised for commercial purposes. In addition, the milk produced by cattle is often consumed raw and uncooled. Around 12–14 (semi-)industrial milk factories are in operation in Ethiopia.

The market for milk is mainly in Addis Ababa and the larger towns and cities. For Addis Ababa, it is believed (from interviews) that around 300,000 litres per day are sold, including pasteurized, UHT, and raw milk. The main dairy factories processing substantial volumes currently are LAME and Sebeta Dairy. These companies jointly hold a market share of 70% of the processed milk segment (approximately 50,000 to 70,000 litres per day). A newcomer is Holland Dairy, located in Debre Zeit, and this Dutch-owned company processes 8,000 litres per day for sale in Addis Ababa. The factories produce a limited product range, including pasteurized and UHT milk, yoghurt, cheese, and ice cream. The only factory that could be observed was Holland Dairy, and this factory, though small, is well equipped with (second-hand) milk processing equipment from the Netherlands. The other factories appear from the outside to be of a similar size to Holland Dairy. The average milk prices paid to the farmer are in the range of 8 to 9 Birr/litre, corresponding to €0.35–€0.38 per litre. Compared to the Netherlands, where milk prices are around €0.30 per litre, this can be considered a good price. The consumer price in Addis Ababa for pasteurized milk packed in plastic pouches is 8 to 9 Birr per half litre, almost double the raw material price.

The further development of the industrial milk-processing sector is believed to be constrained by the following factors:

Income: The higher income class can afford milk comprises only 1% to 2% of the population, and perhaps a bit higher in Addis Ababa. The middle income class earns within the range of 3,000 to 5,000 Birr per month—that is, a maximum of USD 300. Though classified as middle income, this cannot be considered a middle-class market in the European sense. In other words, the middle income class in Ethiopia does not earn enough to be able to afford substantial processed milk consumption. **Culture:** With more than 200 fasting days per year, over 50% of the population does not consume milk, at least partly*, and during fasting, shifts to other products. **Consumer habits:** The population in Ethiopia has little understanding of the nutritious values of milk and milk products. In addition, milk is not common in the daily diet, even during childhood. This is different to the Netherlands, where children drink milk every day. **Farming practices:** Dairy farming is performed under primitive circumstances. Farmers lack almost everything needed and have little knowledge. The main constraint is the lack of feed and of land to produce feed.

* It would be interesting to investigate to what extent the Addis Ababa population actually fasts strictly.

WUR and SNV are assisting primary producers through the MIDD programme (Market-linked Innovation for Dairy Development). A positive example of the improvement of dairy farming is demonstrated by the Dutch-owned Alfa Farm, which implements best dairy practices. Alfa Farm receives many visitors eager to learn.

LIVESTOCK AND MEAT

BEEF CATTLE

As indicated, cattle raising is a way of life, rather than a means to a commercial end. The largest slaughterhouse in Ethiopia, the Public Addis Ababa Abattoir, slaughters 1,200 cattle per day (in addition to 1,500 sheep and goats). Besides the Addis Abattoir, there are a number of smaller private slaughterhouses which, combined, slaughter a similar number of cattle. In Ethiopia at this stage, about 2,000 to 2,500 cattle are slaughtered daily in (semi-)industrial slaughterhouses. This represents 600,000 cattle slaughtered each year, or slightly higher than 1% of the total stock of 55 million head of cattle.

The Addis Ababa Abattoir is over 55 years old, and is located in the centre of the city. In the autumn of 2013, a tender will be launched for the turnkey construction of a new slaughterhouse with a capacity of 5,000 cattle per day, as well as sheep and goats. The turnkey tender also includes a rendering plant, waste water treatment, cold and freezer stores, and a complete slaughterhouse building. This may be a good opportunity for foreign companies, such as MPS Red Meat Slaughtering, Stork Food Systems, Meyn, and NAWI.

POULTRY

With approximately 45 million head of poultry (layer and broiler), the sector is becoming increasingly important. Primary production is dominated by a number of large players, including Alema with 12 farms, and Maranata in the Debre Zeit region. The development of the poultry sector will need to be supported through the emergence of animal-feed factories like that of Alema Koudijs, and professional hatcheries for the production of day-old chicks. Both sectors in Ethiopia are in their early stages of development and rely heavily on know-how and input supply (genetics, feed premixes, and concentrates) from foreign companies, in particular the Netherlands.

With continued economic growth, the poultry sector will further develop, but with the remark that the slaughterhouses and further meat processing will have to be developed further. In the Debre Zeit, region there are two slaughterhouses (one belonging to Alema) which require upgrading. With further growth, the construction of professional slaughterhouses will have priority and will certainly create opportunities for Dutch Agribusiness*.

* Note that there is a Dutch-Ethiopian project on poultry already with the NABC: [www.nabc.nl/Services/Consortia/Poultry\(Ethiopia\).aspx](http://www.nabc.nl/Services/Consortia/Poultry(Ethiopia).aspx)

Based on the literature review and the interviews, the food-processing sector in Ethiopia can be characterized by limited market demand, as companies are relatively small in size and the amount and annual expenditure of processed food per capita in Addis Ababa is around 200 Birr and growing. There is also underutilization of capacity, since there is a seasonal effect and an unstable relief program*. Some companies (such as Hilina, Faffa, and Guts Agro) anticipate declining financial relief support and thus diversify their strategies, while others simply go idle. An overview of the funding of each company is public information, and is listed in Table 21.

This is not an ideal situation, since the United Nations cannot find enough processing capacity, and as a result Ethiopian processors are idle for a significant period of the year. This might be explained by the total amount of money funded, which is too much for some companies. Combining Tables 2 and 3, it is clear that the relevant companies (deleting drinks) have a maximum turnover of 1 million USD, which is far too small, compared to the last row in Table 21. This is even more significant if the UN funding is restricted to a certain part of the year, requiring a higher production potential per month. The gap between the production capacity in the Ethiopian food-processing industry, which is linked to low market demand and food supplies by NGOs, is huge. Hence it might be thought that Ethiopia is missing an opportunity here. However, as noted earlier, these findings are very unreliable, and consequently there is not a good business case for further investment to decrease this gap.

Processing companies also have the problem of the unstable volume and quality of raw materials. Companies respond to this by setting up their own farms, and in some cases, the situation is slowly improving.

Summarizing, there are companies where good entrepreneurship pays off, and others where the management might have no investment opportunities for a new strategy, leading to a dependent market position. The country has a great deal of potential on the supply side, but is badly organised with respect to connectivity, level of technology, and knowledge. This opportunity can be tackled if there is good coordination between stakeholders, and especially if the Government makes good long-term decisions for the integral development of the country.

* www.ungm.org/Info/annual-statistical-report-UN-sustainable-procurement.aspx

CONCLUSIONS FOOD PROCESSING SECTOR IN ETHIOPIA

- The food-processing sector is by far the largest manufacturing industry in Ethiopia, covering 39% of the gross value of production (GVP) in 2009/2010 of large and medium size manufacturing industry; the GVP of the food industry equals 16,220 Million ETB (900 Million USD)
- These 560 enterprises in the food industry, of which 530 are private, provide 60,000 jobs; Grain millers and bakeries account for 370 out of these 560 industries
- The average GVP per industry equals 1,6 Million USD/year
- Excluding drinks the top products in food processing are flour (wheat) (314 ktons in 2010), sugar (283 ktons) and biscuits (193 ktons)
- Note that none of the food products with a significant contribution to the production volume shows a stable trend, implying a very unstable market. The total production volume of food products (excluding drinks) in 2010 was 1144 ktons, whereas in 2006 it was 728 ktons
- The food processing sector in Ethiopia can be characterized by lack of market demands and low competitiveness in the market, since companies are relatively small in size and number and annual expenditure on processed food per capita in Addis does not exceed 200 Birr.
- The country has a lot of potential from the supply side but is badly organised with respect to connectivity, reliable supply (stable in quality and quantity), technology level and knowledge. However there are various industries tackling this issue by setting up their own supply chain

Table 19: Funding to Ethiopian companies by UN NGOs (in USD)

Ethiopia UN Funding	Product	2003	2007	2008	2009	2010	2011
Health Care Food Manufacturer	nutrition	654,521					
Hilina Enriched	nutrition		801,375	1,191,162	5,162,885	6,484,248	8,045,074
Food Processing Center PLC	prepared/preserved foods						805,012
Avon Industries PLC	nutrition		37,498		66,298		
Fits Private Limited Company	nutrition		76,777	38,429	56,120		49,655
Kalu Works Ethiopia PLC	nutrition		79,844	70,735			
ESMS Selective Marketing Service	tomato concentrate			86,406			
Faffa Food Share Company	corn soy blend			149,686			
	prepared/preserved foods				65,970	101,659	106,910
Fast Foods Supply Enterprise	supplementary food pack			39,461			
	prepared/preserved foods				43,000	62,239	
Various Suppliers	food			30,212,539	40,431,278	88,415,760	42,684,636

CASE STUDIES

To get a feeling for the opportunities for food processing, three cases are elaborated here: dairy, soybeans, and potato chips. In addition to the analysis of processing, these products are considered in relation to their supply chain. Hereafter, other products will also be discussed, though in much less detail.

DAIRY

The dairy sector in Addis Ababa has been researched in depth in various studies ([23], [24], [25]). These results, in combination with findings from the mission for this study, can yield an updated view on the dairy sector in Addis Ababa.

SUPPLY CHAIN STRUCTURE

Throughout Ethiopia, including urban regions like Addis Ababa, dairy is mainly distributed and consumed in a traditional way. Most milk production is for domestic use or sale, possibly after minimal processing at home. The traditional (informal) and industrial (formal) dairy supply chain are shown in Figure 11 [26]. Because of this tradition, cows are considered important assets that contributing to regular income when the milk is sold through the informal channel of neighbours and family. As a side effect, lactating animals are supplied to meat processors irregularly.

PRODUCTS

Dairy consumption in Addis Ababa had the following breakdown in 2006. Fermented butter, raw milk, and ayib are traditional products (about 75% of dairy is traditional), whereas the rest is industrially processed in or outside Ethiopia. UHT and powder milk are mostly imported. Pasteurized milk is the main industrial dairy product processed in Ethiopia. People in Addis save money by 'processing' at home.

CONSUMPTION

Daily take-off in Addis (in 2006, [25]) is estimated at 300,000 litres/day* for the 75% of dairy that is traditional. About 17%, thus 68,000 litres/day, is industrial, mainly pasteurized milk. The market for this product is in hands of LAME and Sebeta Agro-Industry, since they account for about 70% of the market. To put the industrial processing market in perspective, the total amount of milk available in Ethiopia is presented in Table 23.

In 2011/2012, the daily average production equalled 9.12 million litres**. Compared to this amount, and taking into account that Addis Ababa represents about 25% of the urban population in Ethiopia, the industrial dairy processing of pasteurized milk is rather limited.

Sebeta has argued that sourcing problems are increasing, and it has set up its own farm for production and support of the nearby farmers that supply milk to Sebeta. However there is a lack of grazing land, implying a declining yield and a need for a supply of feed, which is costly. Buying more land is difficult, since prices are increasing and the Government prefers labour-intensive uses, a policy that is not favourable for the dairy sector.



Trader of raw milk
in Addis Ababa



* During fasting, the market goes down by 30-40% [23].

** The lactation period is about 300 days. Nevertheless, to obtain an average daily production, we divide by 365 days.

* This figure seems high, but in [35] the yield per cow per day shows a stable increasing trend.

COST STRUCTURE SUPPLY CHAIN

At the moment, the status of the dairy sector is difficult, since inflation is decreasing though still significant, and industrially processed products are out of reach for a large part of the population of the capital. Hence, cost reduction may help avoid a deadlock. One way to achieve this is to increase milk production per cow. The current herd has a yield of about 14 litres/day*, which is average in a worldwide context. Sebeta wants to invest in a more productive breed and, to consider the investment opportunities involved in this, the revenue share in the supply chain of pasteurized milk was determined in the desk study [23].

The current price for pasteurized milk was 18–20 Birr/litre as of February, 2013. The production of pasteurized milk in Addis Ababa was maximized at 68,000 litre/day, and related to a share of about 24%, the profit (excluding costs) per day is about 300,000 Birr (around €12,000). Since cost of packaging is high, and the added value at processing and packaging is about 4.5 ETB, the margin (i.e. the added value minus costs) is too small for large investment.

CONCLUSION

Although opportunities are available in the dairy sector, more time is needed. The middle income class is too small, and inflation is high. These processes are also slow, as is the development of consumer awareness of the nutritional value of the product, another driver of the dairy market. The mission established that nutritional value, fortification, and diet diversification are not important issues for consumers in Addis Ababa. Awareness should increase to allow marketing of the nutritional value of dairy, and of the calcium and fortification options.

Often it is argued that the population of 85 million people offers a huge market. Yet traditions change slowly, milk prices are relatively high, and neither structured markets nor infrastructure are available for most people. Production can clearly be increased, but at the moment, taking into account the fact that the occupation rate is not optimized, the demand side does not justify serious investment on the supply side, unless there is a market in the neighbouring countries. This opportunity needs to be investigated.

TABLES & FIGURES

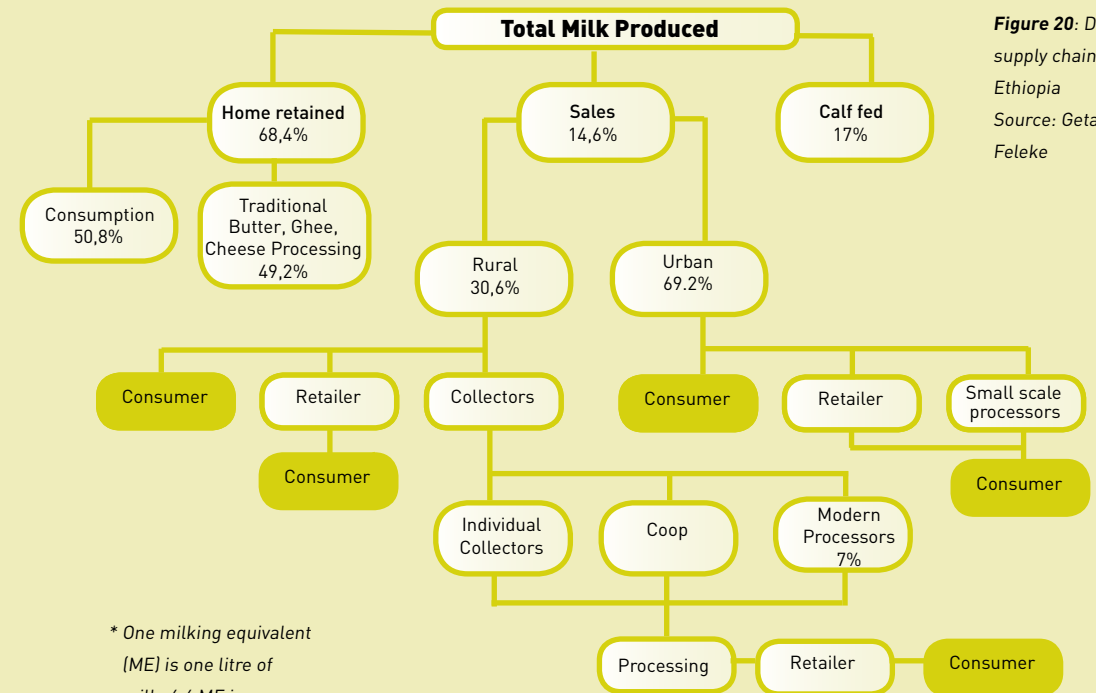


Figure 20: Dairy supply chain in Ethiopia
Source: Getachew Feleke

* One milking equivalent (ME) is one litre of milk, 6.6 ME is one litre of fermented butter, 4.4 ME is one litre of cheese and 7.6 ME is one litre of milk powder [25].

Dairy consumption in milking equivalents*			
Fermented butter	38%	yogurt	1%
Raw milk	30%	Other cheeses	1%
Pasteurized milk	15%	Pasteurized table butter	1%
Powder milk	8%	UHT milk	0%
Ayib (cottage cheese)	6%		

Table 21: Percentage consumption of dairy products in Addis

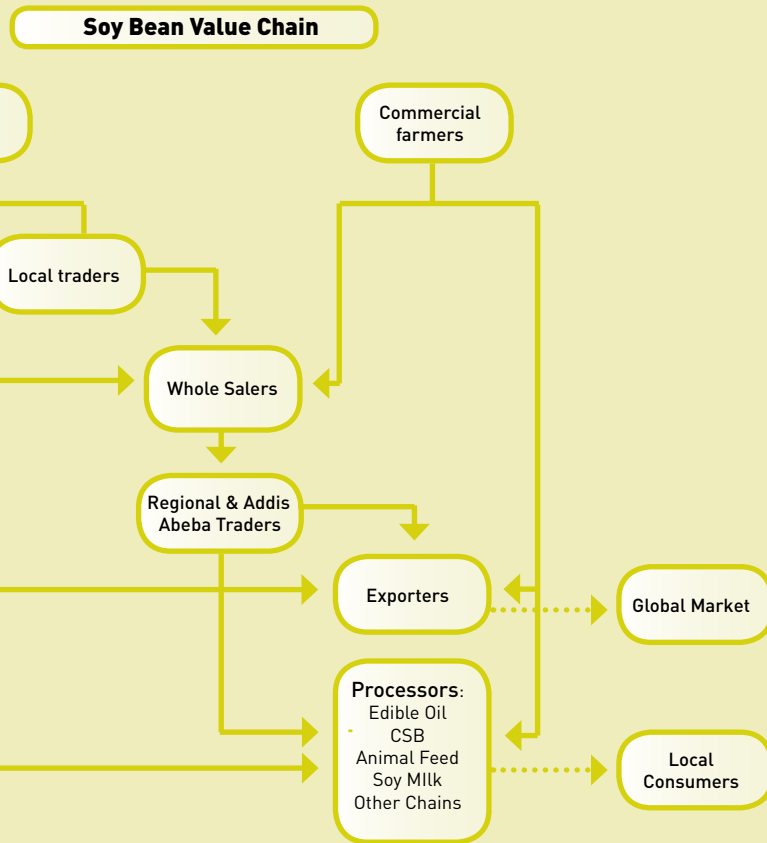
Production (× Million litre)	2009/2010	2010/2011	2011/2012
Cow milk	2,940	4,058	3,330
Camel milk	150	263	176

Table 22: Annual production of milk in Ethiopia in millions of litres

	Farmer	Transporters	Bulking & Cooling	Processing & Packaging	Transport & Distribution	Retailing
Share of price	35–47%	2–3%	11–13%	22–25%	6%	3%

Table 23: Share of consumer price by link in the supply chain of pasteurized milk

The current structure of the soybean value chain.



Cost structure supply chain

* Qtl = quintile = 100 kg

Process	costs (Birr/Qtl*)	Process	costs (Birr/quarter)
Farm gate	316	Electricity	15
Storage and warehousing	2	Water	7
Cleaning and packaging	4	Packaging and labelling	16
Sales and marketing	5	Waste management	11
Transport	39	Distribution	26
Brokers and resellers' margin	107	Marketing	20
Seed: factory gate	474	Total cost	614
Cleaning and processing loss	14	Revenue	700
Labour cost	10	Profit before tax	86
Depreciation	16	Tax	26
Maintenance and spare parts	5	Profit after tax	60

SOYBEANS

Soybeans have many possible applications in processing. Apart from soy edible oil, soymilk and soy meat replacements could serve as alternatives to animal products during fasting periods.

SUPPLY CHAIN STRUCTURE

Most of the soy processing factories are concentrated in Addis and the surrounding cities (Dukem, Debre Zeyt, and Adama). The chart below shows the current structure of the soybean value chain.

Like many other agricultural commodities, the soybean trading system in Ethiopia is a highly fragmented and dominated by middlemen and brokers. Unlike many other products, 95% of the commercial crop needs to be transported over 500 km in order to reach the principal market in Addis Ababa. In most cases, there are four or five product ownership exchanges involved in the trading and transporting of soybeans from the upstream to the downstream stage of the chain.

PRODUCTS

There are an enormous number of products that can be produced from soybeans (see [13]). The most common are soy edible oil, soy milk, soy meat replacements, soy flour, tofu, soy sprouts, and soy candy. However, soybeans are also used in feed processing for soy meal and soy cakes.

CONSUMPTION

In 2007, the consumption of soy edible oil was 200 g/year. This is less than palm oil and also less than domestically produced oils like linseed and neug.

CONCLUSION

Soy meal and cakes can be considered as an option for soybean processing, on account of the enormous amount of livestock in Ethiopia and the lack of grazing land. The soy milk market for human consumption, on the other hand, is not well developed in Addis Ababa, as could be seen by the many pallets in a Faffa warehouse waiting to be dispatched. In Jimma, there seems to be a better start for this product*.

* Input from Yared Sertse.

Soybean edible oil is considered to be one of the best options for the future, next to linseed and niggerseed (neug). The prices for these edible oils are average in the range of edible oils, and the cheaper palm oil is less healthy. However, if the development of the palm oil market remains supported by the Government, these products will not be able to compete on price.

POTATO PROCESSING

This kind of calculation supports the decision-making of the investor, who can evaluate his risks more adequately this way. Some examples are shown in the Appendix.

The third case study differs from the previous two, as the supply chain does not exist at the moment. This case is nevertheless included here, as it provides insight into business calculations regarding investment, and shows the information required to be able to make these calculations.

In several retail shops, Lay's potato chips were sold for a high price, and this was an important input to the feasibility calculations in this case of production of potato chips from locally produced potatoes, and for distribution to local shops and supermarket chains in Addis Ababa and larger urban area.

Distribution is to be carried out door-to-door, including to small grocery shops, supermarkets, hotels, and restaurants. In total, 4 distribution trucks are expected. Branding in chips is important, and in this case should indicate that the product is local. The chips should be of good quality, nearing the quality of imported chips. Once the brand has been established, it can be extended with a range of extruded (corn-based) snacks in all forms and shapes.

CONCLUSION

There is an opportunity for a 600-ton potato chip factory. The investment needed is about €2.5 million and the yearly gain is estimated at €0.5 million.

REMARKS ON OTHER PRODUCTS

Unlike pasta-producing firms, which need rather higher levels of technology, capital, and skilled manpower, the investment required to establish a biscuit production facility is relatively low. This is why the number of firms in this sector is higher than the number of pasta-producing firms. The easy success of NAS Foods in dominating the market (mainly on account of low resistance from its competitors and its aggressive promotion) has motivated newcomers to enter the business.

Market entry in the biscuit line of business is easier than for the pasta line, as measured in terms of capital requirements. As estimated by the General Manager of Dire Dawa Food Complex, a European-built pasta line with one

packing machine and utilities (boilers, chillers, compressors, etc.), the cost is about Birr 55 million, while a biscuit line with a single packing machine costs Birr 20 million. Besides the capital requirements, skilled manpower and the availability of quality wheat, particularly for the production of pasta, also affect entry into the business. The quality of locally produced macaroni and spaghetti are inferior to the imported varieties, mainly because of the low quality of the wheat flour, and specifically the lack of durum wheat, in the country. Because of relatively lower capital requirements and the low-quality utilization of wheat, the number of firms in biscuits is higher than those in pasta.

The effects of branding and advertisement have not yet created any significant barriers to entry, as these products are easily substitutable. Although companies in this sector are adopting marketing tools such as branding, packaging, and advertisements among their strategies, competition is still based mainly on price [28].

CONCLUSIONS CASE STUDIES

Although opportunities are available in the dairy sector, more time is needed. The middle income class is too small, and inflation is high. Nutritional value, fortification, and diet diversification are not important issues for consumers in Addis Ababa. Awareness should increase to allow marketing of the nutritional value of dairy, and of the calcium and fortification options. Traditions change slowly, milk prices are relatively high, and neither structured markets nor infrastructure are available for most people. The market in the neighbouring countries might justify investment on the supply side. This opportunity needs to be investigated

Soy meal and cakes can be considered as an option for soybean processing, on account of the enormous amount of livestock in Ethiopia and the lack of grazing land. Soybean edible oil is considered to be one of the best options for the future, next to linseed and niggerseed (neug). The prices for these edible oils are not too high, and the cheaper palm oil is less healthy. However, if the development of the palm oil market remains supported by the Government, these products will not be able to compete on price.

There is an opportunity for a 600-ton potato chip factory. The investment needed is about €2.5 million and the yearly gain is estimated at €0.5 million.

FORTI- FICATION

Malnutrition is one of most serious problems in Ethiopia. Of all Sub-Saharan African countries, Ethiopia has the second-highest rate of malnutrition, and at least 53% of the country's mortality is attributed to malnutrition. Ethiopians primarily suffer from four major forms of malnutrition: acute and chronic malnutrition, iron deficiency anaemia (IDA), vitamin A deficiency (VAD), and iodine deficiency disorder (IDD) [20]. To tackle this problem, there is a role for both the Government and the private sector.

GOVERNMENT

The Government of Ethiopia (GOE) claims a key role for food fortification within the context of comprehensive multiple strategies to reduce micronutrient deficiencies [21].

Wheat flour, edible oil, and sugar are three proven food fortification vehicles with high consumption, wide distribution, and the centralized processing required by fortification.

THE GOE SUGGESTS THE FOLLOWING ACTIVITIES:

Further developing NNP capacity to mobilize stakeholders to initiate, support, and coordinate fortification. This includes the creation of a multisectoral fortification workgroup within the National Nutrition Program (NNP) or Ministry of Health, developing a Five-Year National Fortification Strategy

Creating public and private stakeholder awareness and support for fortification. This includes creating government support for mandatory regulations, as well as developing a package of incentives for industry. We recommend that food aid donors process and mill their oil and wheat flour with domestic industries capable of fortification.

Revising the Ethiopian National Standards for flour and oil to include mandatory fortification. The Standards Council of Ethiopia should convene the appropriate technical subcommittees and charge them with reforming current product standards for oil and flour so as to include fortification. In parallel, the NNP should work with stakeholders to the clarify roles and responsibilities for regulation and enforcement among the relevant governmental organizations.

Resource mobilization for program development, capacity building, and initial operations. Currently, there are limited budgets for development and implementation of a national fortification program. The NNP should work with stakeholders to determine resource needs and to identify financing from within the current NNP, as well as open discussions with Global Alliance for Improved Nutrition (GAIN) for support, beginning in 2011.

THE FOOD PROCESSING SECTOR

To date, aid agencies and Government policies have been primarily focused on addressing acute malnutrition throughout the country, and have neglected nonemergency nutrition policies and interventions. In addition, there has been little commercial interest in developing or delivering nutritional products, which is a part of the solution as proposed by the GOE.

One of the first food-processing companies involved in fortification was Faffa Food PLC. This was established in 1962 as an Ethiopian-Swedish joint venture with the objective of reducing the risk of malnutrition among children in Ethiopia by producing low-cost, high-protein weaning food. They explored the economic viability of staple foods, including salt, sugar, oil, flour, water, and vitamin powders (Sprinkles). Unfortunately their effort, mainly concentrated around Addis Ababa, was without much success [20]. Iodized salt was eliminated, because the Government had just passed universal iodization salt legislation, and key NGOs were already engaged, including the Micronutrient Initiative*. Sugar was eliminated because interviewees reported that officials at the Ministry of Health opposed sugar fortification, on the basis that it might encourage people to increase their consumption of sugar, resulting in adverse health effects. Oil fortification, though very cost-effective, was eliminated because Micronutrient Initiative was already involved in this, and because the Government had recently intervened by importing oil, on account of assumed price-fixing on the part of traders and sellers; the potential to fortify oil is, however, high, because it is imported from countries that fortify domestically sold oil (e.g., Malaysia and Indonesia). Sprinkles were eliminated because there is no comparable market-based distribution model; they are currently distributed or subsidized by NGOs. Water was eliminated, because the only vehicle for fortification is bottled water, which is prohibitively expensive for most Ethiopians.

Nevertheless, Faffa invested in other products with ingredients such as wheat flour, soya flour, vitamins, and minerals.

In the same study [20], other food processors were asked about food fortification. The most relevant concern they presented was the insufficient supply and low quality of the raw materials required for production. In the last few years, two other private companies, Guts Agro Industry and Hilina Enriched foods, have invested in food fortification. Guts Agro Industries is looking to expand its fortified blended food-processing activities by diversifying its product line into products such as baby foods, iodized salt and corn-soy blends. Hilina wants to introduce commercially viable yet nutritionally rich products, such as soy-based products, iodized salt, and fortified flours, flakes, and extruded local cereals.



Faffa fortified products

* This is a relief programme supporting the Ethiopian people in the context of malnutrition, providing machinery and (subsidized) food.

CONCLUSION FOOD FORTIFICATION

Opportunities in food fortification seem to be small or absent for two reasons. Although there are only small additional costs for food fortification, regular consumers tend not to buy such products, whereas the wealthier in most cases do not suffer from nutritional issues, since they can buy meat, vegetables, and other healthy products as much as they need.

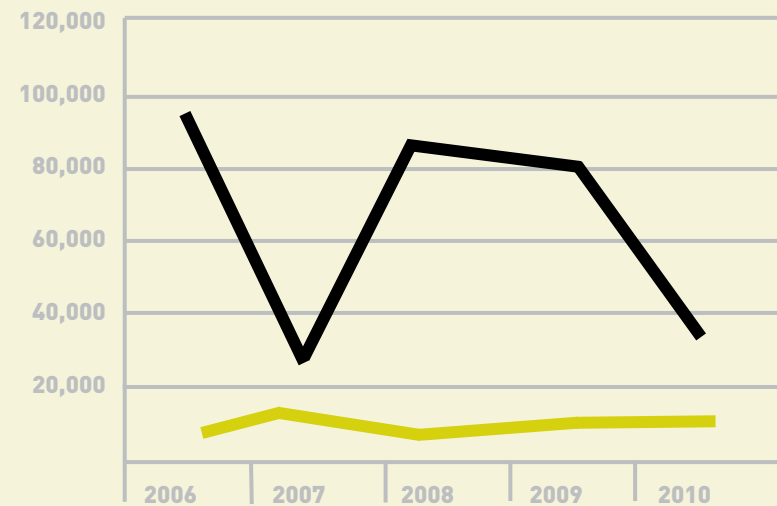
The second reason is the policy of the Government of Ethiopia. GOE's strategy is to assist the low-income consumers with minimal needs, such as by making palm oil available at a low price. These initiatives restrict the competitiveness of other processors of fortified food, which fact, together with unstable and declining international funding for these kinds of food processing, keeps the development of fortification in the private sector.



Faffa fortified products



Iodized salt (Hilina)



Relief Commercial

Faffa Sales (in quintiles) of fortified processed food [20]

PRESER- VATION

Clearly, one of the main issues in food security is postharvest losses. Many studies demonstrate that food availability in this region can be prolonged by improving postharvest technology, infrastructure, and logistics (see, for example, the literature review on fruits and vegetables in [30]). Despite being a small element in food security, input was requested on this issue on the consumer and small community level. Available options are small-scale/home processing of fresh produce or other means of preservation. Some examples are mentioned in what follows.

REFRIGERATOR

Statistics on preservation are few, and figures were found only for the household level in Addis Ababa. In 2005, about 11.9% of the urban population in Ethiopia was in possession of a refrigerator [18]. The capital at that time had about 2.44 million citizens and 493,000 households, implying the presence of about 59,000 refrigerators. In 2011, this had changed to 14.3% [19] of a population of 2.9 million, or about 86,000 refrigerators. If the trend continues, opportunities for food security will increase, as will sales opportunities for processed products such as meat, cheese, and milk.

SIMPLE GRAIN-STORAGE TECHNOLOGY

Traditional storage practices in developing countries do not guarantee protection against major storage pests of staple food crops like maize, leading to 20–30% grain losses, particularly due to postharvest insect pests and grain pathogens. The potential impact on poverty reduction and greater livelihood security will not be realized, however, if farmers are unable to store grains and to sell surplus production at attractive prices. Apart from causing quantitative losses, pests in stored grain are also linked to aflatoxin contamination and poisoning. To address this problem, a metal silo was developed as a valid option, and has been proven to be effective in protecting stored grains from attack by storage insect pests. The metal silo is a cylindrical structure constructed from a galvanized iron sheet and hermetically sealed, killing any insect pests that may be present. The impact of metal silo technology in Africa, Asia, and Latin America includes improving food security, empowering smallholder farmers, enhancing income opportunities and job creation, and safeguarding agroecosystems. Such metal silos can be fabricated in different sizes (100 kg–3,000 kg holding capacity) by trained local artisans, and have corresponding prices of \$35 to \$375. The use of metal silos, therefore, could be investigated in order to prevent storage losses and enhance food security in developing countries ([31], [34]).

MAKING JAMS, JELLIES ETC. FROM HIBISCUS

Hibiscus jellies, jams, fruit pastes, traditional medicines, teas, syrups, and refreshing drinks can be found in almost every market stall in West Africa. These beautiful flowers have a high concentration of vitamin C, and have been medically proven to reduce high blood pressure.

SOLAR GREENHOUSES

Malnutrition is common because the harsh climate restricts production and access to fresh food. Simple conventional greenhouses can provide some improvement of growing conditions, but the benefits are limited on account of the high heat losses from these structures. Solar greenhouses, however –



NRI-modified Kawanda solar cabinet dryer (front view) constructed at JUCAVM, Ethiopia. The dryer consists of a main frame with eight supporting legs, incorporating the drying chamber covered with transparent polyethylene sheet. The drying chamber is 4.4 m long × 1.5 m deep × 0.8 m high, and contains 12 trays to provide a total drying area of 10 m²

which are designed to store some of the heat generated within the structure – can overcome these limitations. Family-owned greenhouses, which avoid the issues associated with community ownership and operation, have been successful. A validated computer model based on the first solar greenhouse has been used to predict the thermal performance of a new family-sized design. Training and education are vital to the success of solar greenhouse technology in remote areas [32].

SOLAR DRYING OF FRUITS (VALUE-ADDED PRODUCTS)

Despite these attempts, postharvest losses of fruit in Ethiopia are very high. This may be due to their perishable nature, poor postharvest handling, and lack of cheap and appropriate postharvest technology. Hence much effort is needed in the area of developing technology that would minimize postharvest losses of fruit. One such method is to increase local value-added food products through the development of micro and small-scale agroindustries such as solar drying of fruits, an approach that which can enhance the shelf-life of fruits

This would also enable more money to be gained, employment opportunities to be provided, sustainable income-generating schemes to be created, nutritional standards in diets to be improved, foreign-exchange earnings to be enhanced, seasonal gluts to be minimized, and transportation costs to be reduced. On the other hand, Ethiopia has favourable conditions, such as increased fruit production, favourable weather for solar drying, cheap labour, strong market linkage, air transport, and favourable policies, and these conditions favour the establishment of solar drying as a business in the country. Therefore, Ethiopia must use these windows of opportunities to reduce the postharvest loss of fruits and the achieve the multiple benefits that can be obtained from solar drying by introducing and adopting fruit-drying technologies from abroad and developing appropriate technologies in the country [33].

CONCLUSION PRESERVATION

Preservation is crucial in many developing countries, since post harvest losses including the consumer level are huge. Cold storage at home (refrigerator) will increase by organic growth of income, but solutions in the food supply chain are more difficult to implement. Examples of technology are shown and deep research will lead to more adhoc options to reduce food losses, however investment for this technology is probably difficult in view of the commercial size of most of the agribusiness. Bringing simple examples of technology to the farmers (knowledge transfer and facilitating the process) might lead to joint regional efforts to help each other.

CONCLUSIONS AND OPPORTUNITIES

From the desk study and mission, the following most relevant conclusions and opportunities can be identified:

CONCLUSIONS

- **Flour (wheat), sugar, and biscuits are the largest processing subsectors, excluding drinks.**
- **Ethiopia has great potential from the point of view of resources, but lacks connecting infrastructure (on a national and international level, being landlocked), has low technology levels, and low agricultural productivity.**
- **Processing factories gained business from relief programs, but now these sources of funding are being withdrawn, so the companies need to commercialize and develop new strategies.**
- **The GOE has impact on the development of various sectors. By importing palm oil and selling it cheaply, cholesterol issues appear for an increasing part of the population, while the more healthy edible oils will have difficulties entering the market. Cattle pasture is expensive, and the political preference seems to go to more labour-intensive land use.**
- **The consumption of (more than minimally*) processed food is focused on meat, edible oil, and coffee.**
- **The total volume of food products imported into Ethiopia is relatively small: 1,945 kilotons in 2011; the total export volume in 2011 was 992 kilotons.**

OPPORTUNITIES

Based on the desk study and the company interviews, the following business development opportunities in Ethiopia appear relevant:

- **Potatoes:** The potato sector offers opportunities in seed-potato multiplication, currently undertaken only by Solagrow (HZPC). In the value chain, the sector offers opportunities in the production of potato chips, as all chips are currently imported (Lays). Potato chip production could start on a limited scale with a line of 100 kg/hr output (400 kg/hr potato input), since the market has not yet developed to a significant scale yet. We do not consider French fries as an opportunity, as their production is highly competitive and is only possible on a large scale with line minimum capacities of 4 to 5 tons per hour output, corresponding with 8 to 10 tons per hour input. On an annual basis, this would result in a minimum raw-material requirement of 25,000 tons of potatoes. Ethiopia does not produce such quantities of good quality potatoes at this stage.
- **Fruits:** The fruit processing sector in Ethiopia offers ample opportunity. The production of fruit juices is in its infancy, but demand in the urban areas is increasing. Importing juice concentrates as a basis for the production of fruit juices is an immediate opportunity. Processing juices from local fruits (mango, citrus) may even offer better perspectives, but will require higher initial investments for the processing of primary fruits (pulping, filtering, pasteurization, and aseptic packing), and hence is a secondary step in the development of this market. A concrete example is the region of Upper

Awash, where infrastructure is available already, as is land. A feasibility study could support its attractiveness for foreign investors.

- **Vegetables:** In Ethiopia, the processing of vegetables is absent, with the exception of outdated tomato processing facilities. Opportunities that have been observed lie more in the export of fresh vegetables (mangetouts, snow peas, haricot verts, and sugar snaps) airfreighted to Europe and the Middle East (or by reefer transport in the near future). Considering that world market trends and the highly competitive production of processed vegetables elsewhere (e.g. freezing and canning of corn, drying of cabbage and onion) in the world, it is doubtful whether short-to-medium term opportunities exist. Processes with competitive advantages in Ethiopia might include the drying or grinding of pepper and ginger for export.
- **Edible oils:** In the medium term, the crushing of oilseed for edible oil manufacturing certainly offers opportunities, as Ethiopia is an important producer of oilseed. Sesame seed, soybean, nigger seed, cotton seed, rape seed, sunflower seed, linseed, and peanuts, all produced locally and offering ample opportunities for processing. With the current focus and support of the Ethiopian Government for the import of cheap palm oil, the development potential for the local industry will be limited.
- **Cereals:** Industrial flour milling (of wheat and teff) is still largely under Government control although commercial companies are emerging. Most flour milling, however, takes place on the village level, carried out artisanal millers. Professional private companies manufacturing corn-soya blends and other enriched products are currently diversifying into baby food, breakfast cereals, and extruded snacks, and these companies (Faffa, Hilina Food products) are doing well. Hence, this sector offers little opportunity for direct foreign investment.
- **Poultry:** The poultry sector certainly offers good development perspectives, especially since the conversion factor for chicken is better than for most other animals. The introduction of professional stable and feeding systems, combined with improved genetics, hatchery technology, and know-how, may boost the primary sector. The next steps in the value chain in Ethiopia are absent, and investment in poultry slaughterhouses, meat processing, and the refrigerated distribution chain will emerge in the near future. In 2013, the slaughterhouse in Addis Ababa will move to another location in the city and undergo expansion. Along with the fact that much of the supply of meat is coincidental, this is an excellent moment to start chicken farms on a professional level and to become an interesting partner for medium and high-end outlets. A cost analysis can provide the economic parameters for such a farm.
- **Dairy:** Interviews with stakeholders in the dairy chain indicate limited opportunities for dairy processing, due to the fact that dairy products are not widely consumed in the daily diet, and extensive fasting periods further

* Apart from simple activities such as washing and sorting.

restrict the consumption of dairy products. The continued development of the refrigerated distribution chain, combined with further economic growth and improvements in primary milk production at farm-level (e.g. the MIDD technical assistance scheme) will allow for modest annual growth in the dairy processing sector but, the market for processed dairy products is may remain limited, due to cultural habits. In Addis Ababa, there is a shortage of raw milk, a lack of supply based on less productivity and less grazing opportunities. The quality decreases, and dairy processors suffer from this. For this reason, funding will be in place to support the dairy production sector, and eventually the processing sector may profit by investigating the market in neighbouring countries.

- **Soybean:** considering developments that will boost the dairy sector and the opportunities for increasing meat consumption, soybean has great potential for feed processing.
- **Food fortification:** during the mission, it became clear that most consumers lack knowledge of nutrition. In times when inflation is high, every penny counts, although fortification hardly contributes to price increases, people will typically choose the cheaper product. Flour is an excellent product to start food fortification, and in fact, the Government has taken initiative to support a food processor to begin this business. It is, however, unclear how the consumer will respond once it is on the market.
- **Food security:** some practical examples (such as silos, solar greenhouses, and solar drying) to keep food from being wasted were illustrated, and could be integrated into supporting programmes for households and small communities

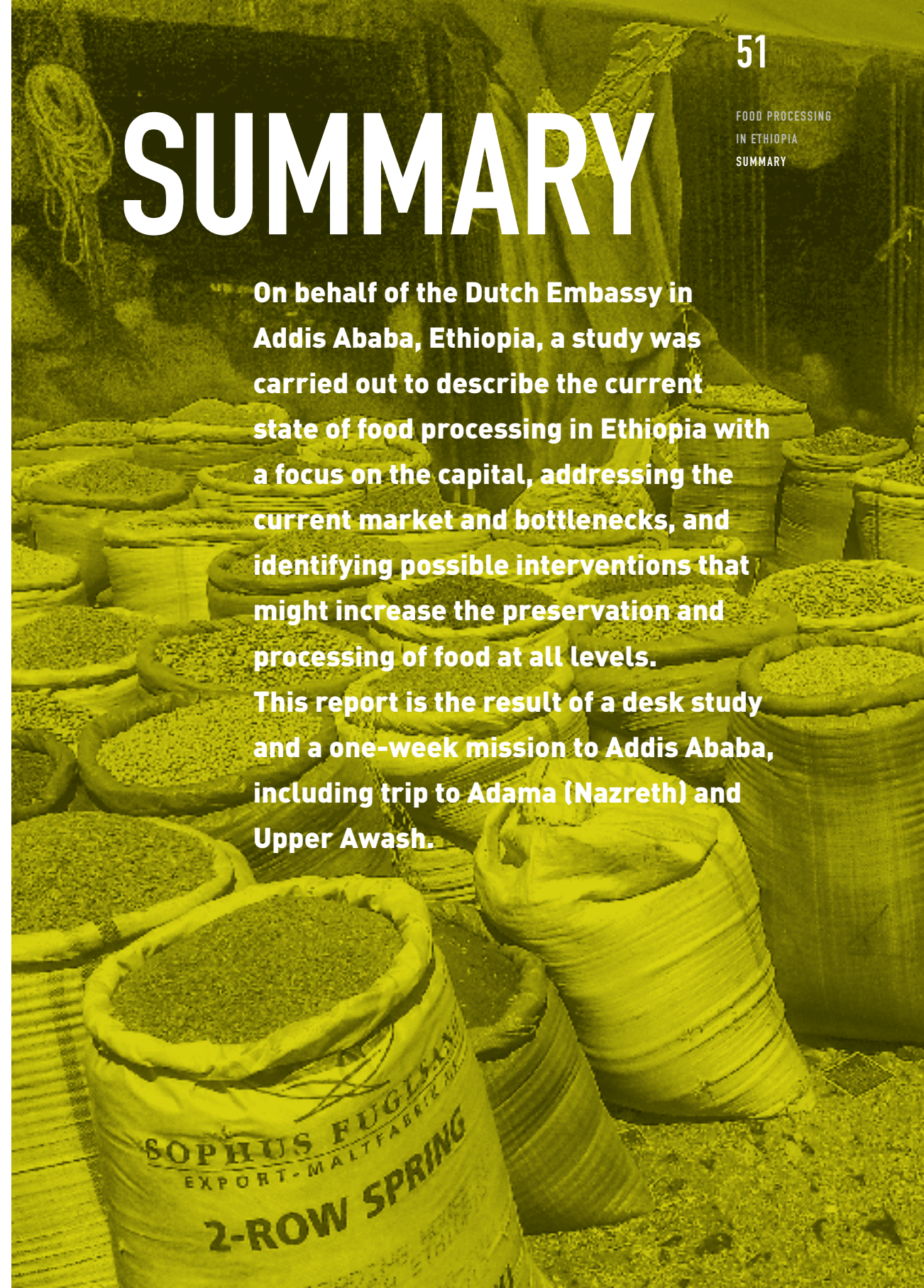
SUPPORTING INFRASTRUCTURE

The enablement of food industry development through certification schemes (ISO, BRC, HACCP, Global GAP), laboratories, extension services that improve primary production, and refrigerated distribution systems, is very necessary. In part, the development of such schemes will need to be initiated by the Government, and where possible, private sector involvement will further contribute to the development of the supporting infrastructure based on commercial interest. A concrete example would be to support alternatives for airfreight, by studying what transportation chains have the potential for frozen products: road, train, or water.

SUMMARY

On behalf of the Dutch Embassy in Addis Ababa, Ethiopia, a study was carried out to describe the current state of food processing in Ethiopia with a focus on the capital, addressing the current market and bottlenecks, and identifying possible interventions that might increase the preservation and processing of food at all levels.

This report is the result of a desk study and a one-week mission to Addis Ababa, including trip to Adama (Nazareth) and Upper Awash.



The food-processing sector is by far the largest manufacturing industry in Ethiopia, and accounts for 39% of the gross value of production in large and medium size manufacturing in 2009/2010. The gross value of production (GVP) equals 16,220 million Birr (900 million USD), of which small-scale manufacturers achieve a GVP of 308 million Birr in food processing excluding grain milling, and the grain millers produce a GVP of 1,113 million Birr. The largest sectors are sugar, bakery, and grain milling, which together cover about 47% of the total GVP.

Sectorial analysis shows problems with quality and continuity on the supply side. In various sectors, the input of raw materials is badly organized and unstable. Hence, food processors have begun to set up their own supply chains, and this itself is an opportunity for the development of local farmers. This initiative is frequently practised worldwide, particularly where there is no way to avoid investment.

In Addis Ababa, the average food consumption per year is slightly higher than 152.8 kg*. Injera and cereals cover more than 70% of the food intake, whereas vegetables (a nutritional interesting product) constitute about 8%. With respect to expenditure, teff, injera, meat, and oils and fats are the main products. These products are at least minimally processed. Ethiopians, including the urban population in Addis, like to eat and prepare food in a traditional way, whether because of the cost savings involved or simple preference. This attitude, together with the financial situation of the Addis population (where 60% earned less than 1,000 Birr/month in 2011), results in a slow increase (along with economic development) of the consumption of value added products, such as processed food. Nevertheless, the small-scale growth leads to opportunities in the domestic market for poultry, dairy, and the related soybean feed sector.

Another opportunity for food processors is to replace the import flow by domestic production. Processed food imports are dominated by cane or beet sugar and palm oil. Palm oil has been imported by the Government for a number of years in order to make edible oil available to the poor. The imported palm oil sells for half the price of other edible oil. The Government also plans to set up a factory in Ethiopia soon that produces 300,000 tons of edible palm oil annually.

On the export side, coffee is the only significant commodity. Exportation general is affected by the fact that Ethiopia is landlocked. It has no port, and the use of Djibouti involves much delay and unstable lead times, although the Government has begun to renew the railway from Addis Ababa to Djibouti. Export by plane is very rare for food products, since the added value needs

* In the UK in 2010, food consumption was about 463 kg per year (reference will be added later).

to be high. In interviews with food-processing companies, the suggestion was made several times of considering neighbouring countries as potential markets. Currently, these trade flows are marginal, but it might be interesting to investigate these markets, including their logistics. Sectorial analysis showed that products with a competitive advantage in Ethiopia might include the drying or grinding of pepper and ginger for export.

Opportunities in the food fortification seem to be small or absent for two reasons. In Addis, the poor population dominates, and every penny counts. Even though only small additional costs are involved in food fortification, the poor tend not to buy it, whereas the wealthier, in most cases, do not suffer from nutritional issues, as they can afford meat, vegetables, and other healthy products as much as they need. The second reason is the policy of the Government of Ethiopia. Their strategy is to help the poor with their minimal needs, such as making palm oil available at a very low price. Soon a Government-backed factory will open to produce fortified flour. These initiatives restrict the competitiveness of other processors of fortified food, and this fact, together with the unstable and declining international funding for these kinds of food processing, keeps the development of fortification in the private sector. Moreover, increasingly stringent and annually changing UN regulations increase cost prices.

An integral view of the food-processing sector in Ethiopia shows a slowly increasing domestic market for this kind of product, leading to a few interesting sectors for investment. A necessary condition is to upgrade the quality and stability on the supply side. The short-term growth of the sector might be stimulated by considering markets in the surrounding countries as well.

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COST STRUCTURE IN FOOD PROCESSING

The cost analysis of a food supply chain provides insight into the position of the various stakeholders in that supply chain with respect to the added value and, where possible, the margin. This information, in combination with the production volume, is important in estimating the investment power of the sector. The study is focused on processing, and will therefore consider food supply chains from this sector only. In fact, only medium and large processors are considered.

Costs (× 1,000 ETB)

MO: Manufacture of production	Raw material	Energy	Industrial services	Transport	Non industrial services	Total costs	Gross value
Production, processing, and preservation of meat, fruit & vegetables	256,489	15,444	36,472	27,787	18,209	354,402	475,093
MO vegetable and animal oils & fats	120,408	10,835	25,720	12,410	12,393	181,767	242,917
MO dairy products	415,191	15,618	25,081	26,847	26,384	509,121	660,996
MO grain mill products	2,265,469	65,914	34,895	36,273	62,072	2,464,622	2,918,072
MO prepared animal feeds	63,129	2,036	386	2,265	4,505	72,322	108,222
MO baked products	596,190	34,839	23,440	16,749	44,630	715,848	1,049,162
MO sugar & sugar confectionery	321,979	24,665	56,145	26,267	1,425,229	1,854,285	3,734,523
MO macaroni & spaghetti	286,885	11,831	5,810	5,015	6,894	316,435	448,876
MO food products n.e.c.	122,182	6,784	2,699	4,656	10,248	146,568	241,312
Distilling, rectification, and blending of spirits	79,491	15,614	3,345	12,461	12,760	123,671	420,587
MO wines	38,676	3,010	1,634	2,028	8,798	54,146	150,944
MO malt liquors & malt	1,273,654	173,908	41,126	113,217	528,626	2,130,531	3,311,868
MO soft drinks & production of mineral water	1,025,224	94,934	89,473	41,775	199,826	1,451,232	2,457,694

In the literature, studies on food supply-chain cost analysis in developing countries in general, and in Ethiopia in particular, are scarce and often relate to fresh (unprocessed) food products. In the CSA statistics, a cost analysis is available for the processing sector (see [1]). In the table below, this breakdown of costs in processing is presented by subsector.

For the exact definitions of the column headers, see [1]. The Gross Value Production could be considered as the sales value, and by subtracting, the total cost profit and margin could be calculated. The results are listed in the table below. The drinks show good margins, while for food, the sugar industry performs best.

Profit per company (× 1,000)

Cost structure	Raw material	Energy	Industrial services	Transport	Non industrial services	Margin	Average profit per Co (ETB)	Average profit per Co (USD)
Production, processing, and preservation of meat, fruit, & vegetable	54%	3%	8%	6%	4%	25%	12,069	655
MO vegetable and animal oils & fats	50%	4%	11%	5%	5%	25%	1,699	92
MO dairy products	63%	2%	4%	4%	4%	23%	4,339	235
MO grain mill products	78%	2%	1%	1%	2%	16%	2,606	141
MO prepared animal feeds	58%	2%	0%	2%	4%	33%	5,129	278
MO baked products	57%	3%	2%	2%	4%	32%	1,675	91
MO sugar & sugar confectionery	9%	1%	2%	1%	38%	50%	89,535	4,857
MO macaroni & spaghetti	64%	3%	1%	1%	2%	30%	8,278	449
MO food products n.e.c.	51%	3%	1%	2%	4%	39%	7,288	395
Distilling, rectification, and blending of spirits	19%	4%	1%	3%	3%	71%	19,794	1,074
MO wines	26%	2%	1%	1%	6%	64%	48,399	2,626
MO malt liquors & malt	38%	5%	1%	3%	16%	36%	168,762	9,155
MO soft drinks & production of mineral water	42%	4%	4%	2%	8%	41%	27,202	1,476

EXAMPLES OF INVESTMENT CALCULATIONS

Potato

Storage, sorting, and fresh packing centre for potato (and onion)

Capacity and area

The investment proposition consists of the construction of (limited) storage, sorting/grading, packing, and distribution centre for fresh potato and onion. The total site area required will be 5 ha, on which a cooled/ventilated storage capacity of 5,000 tons will be built, including a sorting/grading and packing hall. The projected capacity is 40–50 tons of fresh potato and onion dispatched per day, resulting in the handling of approximately 10,000 tons of per year. A 200-ton conditioning area for the final packed product will be needed, as will investment in a reefer truck fleet for distribution (2–3 ten-ton capacity trucks)

Inputs

- Potato and onion
- Packaging material

Final product

Cleaned, sorted, and graded potato and onion, packed in net bags (or plastic) ranging from 1 to 2.5 kg

Investment

Building (storage and packing): €2 mln
Sorting/grading lines: €1 mln
Cooling/ventilation: €1 mln
Utilities/waste: €500,000
Internal transport: €500,000

Remarks

The market can be restricting. Though WUR has recommended in its evaluations that such a centre be realized, market research and detailed business planning should justify the investment and its economies of scale. In order to reach a sufficient scale, a combination with other vegetables (such as cabbage, carrot, or beet) could be investigated.

Total investment: €5 mln

Fruits

Tropical fruit processing

Capacity and area

As Ethiopia is abundant in mango, papaya, and pineapple, and in addition lacks fruit juice production, the construction of a tropical fruit processing plant for the production of frozen fruits (exports) and juices (for the local market) appears to be an interesting business proposition.

Capacity planned in the range of 5,000 tons of fruit processing including storage (500 tons), fruit preparation areas, blast freezer or freezing tunnel, freezing cells, pasteurizer, juice blending, and aseptic filling equipment.

Inputs

- Fruits
- Packing materials

Final product

- Frozen tropical fruit for export (cubes 10x10x10 or 20x20x20 mm), packed in 10 kg boxes
- Pasteurized and aseptically packed fruit juices for local market (range 200 ml to 1.5 litre pack)

Investment

Technology: €2 mln
Building: €1 mln
Utilities/waste: €1 mln
Site: €1 mln

Remarks

In order to expand product range, fruit concentrates could be imported, from which to produce juice.

In order to be able to export frozen fruits, the logistical chain requires improvement. Exports will be directed through Djibouti Port where freezer containers may face delays. This constraint needs to be solved. Otherwise, fully focus on juices for local market.

Total investment: €5 mln

Vegetables

Storage, sorting, and fresh packing centre for high-value fresh vegetables mange tout, snow peas, haricot verts, sugar snaps, chilies, baby corn for export to the Middle East and Europe

Capacity and area

Good opportunities exist in the production and export of high-value fresh vegetables airfreighted to Europe and Middle East. To a certain extent, this is already taking place, but an expansion in volume and product range is anticipated.

The construction of a collection and packing centre for green beans (mange tout, snow peas, haricot verts, sugar snaps), chilies, and baby corn (other perishables can easily be added) would be a good business proposition. A packing and distribution centre with cooling cells (500–1,000 tons) equipped with inspection, weighing, and packing tables is to be realized. Sorting and packing will be mainly by hand. Initial capacities to be handled in the range of 5,000–6,000 tons per year.

Including

- Selected vegetables, including mangetouts, snow peas, haricot verts, sugar snaps, chilies, and baby corn, as well as others. A total volume of approximately 6,000 tons per year
- Packing materials

Final product

- Sorted and graded packed fresh beans, chilies and baby corn
- Volume about 5,000 tons per year

Investment

Building (storage and packing): €1 mln
Inspection/packing, weighing tables: €0.5 mln
Cooling: €0.6 mln
Utilities/waste: €0.7 mln
Internal transport: €0.2 mln

Remarks

Exporting to Europe and Middle East requires GlobalGAP certification of raw materials, as well as HACCP or ISO 22000 (combination of HACCP and ISO) for the packing facility.

Total investment: €3 mln

EXAMPLES OF INVESTMENT CALCULATIONS

Vegetables

Tomato paste and tomato based sauces/ketchup

Capacity and area

The Upper Awash Agro Industry is currently being privatized. The company also operates a tomato processing facility producing tomato paste (though the factory is outdated). A good investment opportunity may exist in the upgrading and expansion of the tomato paste line and in expanding the factory with the addition of processing lines for the production of ketchup and tomato-based sauces.

A tomato paste production line to be installed with a capacity of 5 tons/hr with a yield of 4,500 kg/hr puree/juice at 5°Brix. When further concentrated, it yields 750 kg/hr tomato paste at 30°Brix. Based on the juice/paste, a range of ketchups and tomato based sauces could be developed

Inputs

- 10–15,000 tons of tomato (400–600 ha field tomato).
- Sauce ingredients (vegetable preparations, salt, edible oil, cheese, herbs, spices, aroma, stabilizers, emulsifiers, sugar)
- Packaging materials

Final product

- Tomato puree/juice at 5°Brix
- Tomato paste at 30°Brix
- Ketchups
- Tomato sauces

Investment

Building expansion/renovation: €1 mln
Technology:
• Paste line: €1.5 mln
• Ketchup line: €0.75 mln
• Sauces line: €0.75 mln
Utilities/waste: €1 mln

Remarks

In addition to factory development, the raw material supply base will require attention. Currently, Upper Awash is producing field tomatoes, but this will require improvement.

In addition it should be studied whether tomato paste can be produced in Ethiopia at competitive prices. Chinese-produced tomato paste should serve as a reference

Total investment: €5 mln

Meat

Poultry

Capacity and area

The poultry sector is rapidly developing. Good investment opportunities exist in:

- Establishment of Grand Parent Stock farms and hatcheries. Demand for day-old-chicks (doc) is high
- The construction of an advanced poultry slaughterhouse including secondary processing such as cutting and packing of different chicken parts

Inputs

Slaughterhouse:
• Minimum 500 birds/hour is 1 mln birds per year
• Packaging material

Final product

- Whole chicken packed and refrigerated
- Chicken parts (breast, leg, wings) packed and refrigerated

Investment

Technology: €2 mln
Building: €2 mln
Utilities/waste: €1 mln

Remarks

For whole chicken local market demand will exist. For chicken parts local market opportunities will have to be further evaluated.

Export possibilities may exist to the Middle East (Gulf States, Saudi Arabia, Yemen) and have to be further studied

Total investment: €5 mln

Meat

Cattle

Capacity and area

In the autumn 2013 the Addis Ababa Abattoir (AAA) will launch a tender for the construction of a new slaughterhouse for cattle and goat/sheep, with a capacity of 5,000 animals per day (2,000 cattle and 3,000 goat/sheep). It will be a complete project including rendering plant, cold and freezer stores and waste water treatment.

The product range will include half and quarter carcasses in fresh and/or frozen form. Secondary meat processing for the time being is not foreseen. The investment is estimated in the range of €43–58 mln and offers good opportunities for Dutch suppliers of slaughtering technology

Inputs

Slaughterhouse (at full capacity):
• 500,000 head of cattle per year
• 750,000 head of goat/sheep per year
• Packaging materials

Final product

- Cattle half and quarter carcasses fresh (local market) or frozen (export market)
- Goat/sheep half and quarter carcasses fresh (local market) or frozen (export market)

Investment

Buildings: €10–15 mln
Cooling/freezing: €5 mln
Slaughter techn.: €15–20 mln
Waste water: €4 mln
Rendering: €4 mln
Utilities: €5–10 mln

Remarks

Opportunities for the export of beef in fresh or frozen form to Middle East countries exist, this in addition to local market development.

Europe is not considered to be a potentially interesting export market

Total investment: €43–58 mln

COMPANIES IN ETHIOPIAN FOOD PROCESSING

Here are listed names of Ethiopian food-processing companies found in the desk study:

Oil producing Factories

Addis Mojo Food Oil Producing Share Company
Nazret Food Oil Factory
Bahir Dar Food Oil Factory
Adama Food Oil Factory
Amaressa Food Oil Share Company
Digafe Shinkt Food Oil Production
Tamam Hassen
Shiferaw Metaferia
Inter-Trade plc.
Jemil Ahmed Edible Oil Factory
Mamo & His Sons Edible Oil
Esmael Abdela edible oil factory
Kabew trading*
Al-Impex Ethiopia*
Ajib Omar Ismail
Bajiba PLC*
Yegenet PLC
Hamaressa Edible Oil Factory

Live Animal and Meat Export Companies

ELFORA Agro-Industry PLC
Hashim Ethiopian Livestock & Meat Exporter
Modjo Modern Export Abattoir PLC*
LUNA Export Slaughter House*
Mewashi Ethiopia PLC
SAAFI Trading PLC
Shifare Assefa Import & Export Enterprise
ALFOZ P.L.C
TAKEM PLC
Ethio-LEE Livestock Enterprise S. Co.
Haile & His Sons Agro-industry S. Co.
Yesuf Omer General Import & Export
GASCO Trading PLC
Helmex PLC

Fruits & Vegetables

Merti Makenebaberia Plant
Green Star Food Plc.
Melge Wendo ELFORA Agro Industry
Sebeta Agro Industry
Fish Processing
Ethio-Fishery
Sesame
Peeled Sesame and Tahina paste manufacturing and agro processing

Local Powder Producing Factories

Kaliti Food Share Company*
Dire-Dawa Food Complex*
Ada Food
Fafa Food
Misrak Powder
Yerer Powder
Kokeb Powder
Tigray Powder
Guder Agro Industry Plc.
Astico Plc.
Eshet Food Grain Factory
Sunlight Industry & Distribution Plc.
Nile Food Preparation Factory
Fiseha Eshete powder Factory
Astico Food Complex
NAS Foods*
Grano Doro
Flour factory*
SEKA Business Group*

Pasta, Macaroni & Biscuit Factories

Dire-Dawa Food Complex*
Guder Agro Industry
East Africa Industrial Park Plc.
Yesuf Ibrahim Ume
Grano-Doro Wheat Powder, pasta & macaroni factory
Nas Food Plc.
KA.O.JJ Food Production Complex
Abay Pasta & Macaroni Factory
Kaliti Foods SC
Kokeb Flour
2Brothers
Univers Food Complex
Ada pasta and macaroni (Addis)
Brothers Biscuit*

Sugar

The Finchaa Sugar Factory*
Metehara Sugar Factory*
Soft Drinks
Access Capital Group
Fortification
Health care Food Manufacturers*
Dairy and fruit juices
Sebeta Agro Industry PLC*

LIST OF INTERVIEWS

• Healthcare Food Manufacturers

- Addis Modjo Edible Oil Processing SC
- Health and Nutrition Research Institute
- Ministry of Industry
- Consumer Association
- Luna Export Slaughterhouse

- Zewditu hospital
- Hilina Enriched Foods Processing Centre

• Selet Hulling PLC

• Kera slaughterhouse

- Milk shop
- ETfruit
- Sebeta Agro Company
- Africa juice
- Alema Koudijs Feed PLC
- Faffa

• Guts Agro Industry

- Holland Dairy
- Lesese farm
- Tasty Soya Pieces

• Upper Awash Agro Industry

Food processor (soybean oil, corn-soy blend)

Food processor (edible oil)

Research Institute

Government Ministry

Outlet in Addis

Slaughterhouse/meat trading company

Hospital in Addis Ababa

Food processor (Plumpy'Nut, iodized salt)

Food processor (organic sesame seed)

Slaughterhouse and quality control

Outlet in Addis Ababa

Outlet in Addis Ababa

Food processor (dairy)

Food processor (fruit juices)

Feed producer

Food processor (corn-soy blend, soybean milk, milk powder, cornflakes, bread improver)

Food processor (corn-based snacks, infant food, shiro powder mix, corn-soy blend)

Food processor (dairy)

Feed mill, chick producer

Food processor (soya pieces as meat replacer)

Food processor (tomato paste, orange marmalade)

* additional info about the company can be found in [2]

CREDITS

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FOOD PROCESSING IN ETHIOPIA

For many years, Ethiopia has been in need of support from other countries around the world to reduce hunger among the population. The Government of Ethiopia (GOE), aiming for greater independence, has introduced a Growth and Transformation Plan (GTP) that foresees a Food Security Programme, including measures on industrial and household levels.

On behalf of the Dutch Embassy in Addis Ababa, Ethiopia, a study was carried out to describe the current state of food processing in Ethiopia (with a focus on Addis Ababa), with two aims:

Identify possible interventions that might increase the processing and preservation of food at all levels, by looking at the current market and its bottlenecks.

Identify business opportunities for new Dutch, foreign, and Ethiopian food processing factories for regular and fortified foods, and for new, small-scale processing and storage technologies.