Chococam, Cameroon

Country : Cameroon
ISO member body : Standards and Quality Agency (ANOR)
Project team :
Project leader : Mr. Guy Aimé Fondja, Head of Cooperation, Watch and Forecast Unit
Consultant : Mr. Samuel Raoul Maah Maah
Member : Mrs. Garonne Chouya Tchakoute (ANOR), Contact or Focal Point for Codex/ITU
Member : Ms. Salomé Medem Fotso, Student at the Sub-regional Institute of Statistics and Applied Economics (ISSEA)
ISO Central Secretariat advisor : Daniele Gerundino, Strategic Advisor to the Secretary-General
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9.1 Objectives

Cameroon is projected to become an emerging country by the year 2035. This path to economic openness must be accompanied by measures to reinforce the country's economic competitiveness, and, in particular, to support upgrading, the development of standards systems, and help businesses in their quest for certification.

A governmental organization, the Standards and Quality Agency of Cameroon (ANOR), is striving to establish an efficient quality infrastructure in which standardization has a key role, contributing to Cameroon's emergence by bringing its added-value to the creation of wealth and jobs in the medium term.

However, the importance of standards is not always easy to demonstrate, due to a lack of studies on the impact and benefits of standards in the socio-economic development of Cameroon. As a member of ISO, ANOR agreed to carry out a case study using the ISO Methodology to determine the benefits that standards have brought in terms of reduced costs and higher quality to the chocolate manufacturing company, Chococam.

9.2 Introduction to the industry and selected company

9.2.1 Introduction to the industrial sector of Cameroon

Compared to its neighbouring countries and more generally to countries of the CEMAC (Commission of the Economic and Monetary Community of Central Africa), Cameroon has a relatively diversified industrial base both in terms of variety of activity and in company size, with a large number of SMEs and informal businesses.

According to the last general census of enterprises (RGE 2009), Cameroon counts 12 154 companies in the secondary or manufacturing sector, which represent approximately 13 % of the total number of enterprises. The breakdown of manufacturing firms by sector is the following : mining (0.2 %), food industry (6.1 %), beverages and tobacco (0.3 %), electricity, water and gas (1.6 %), and others (11.3 %), including the textile, wood, metallurgical and chemical industries.

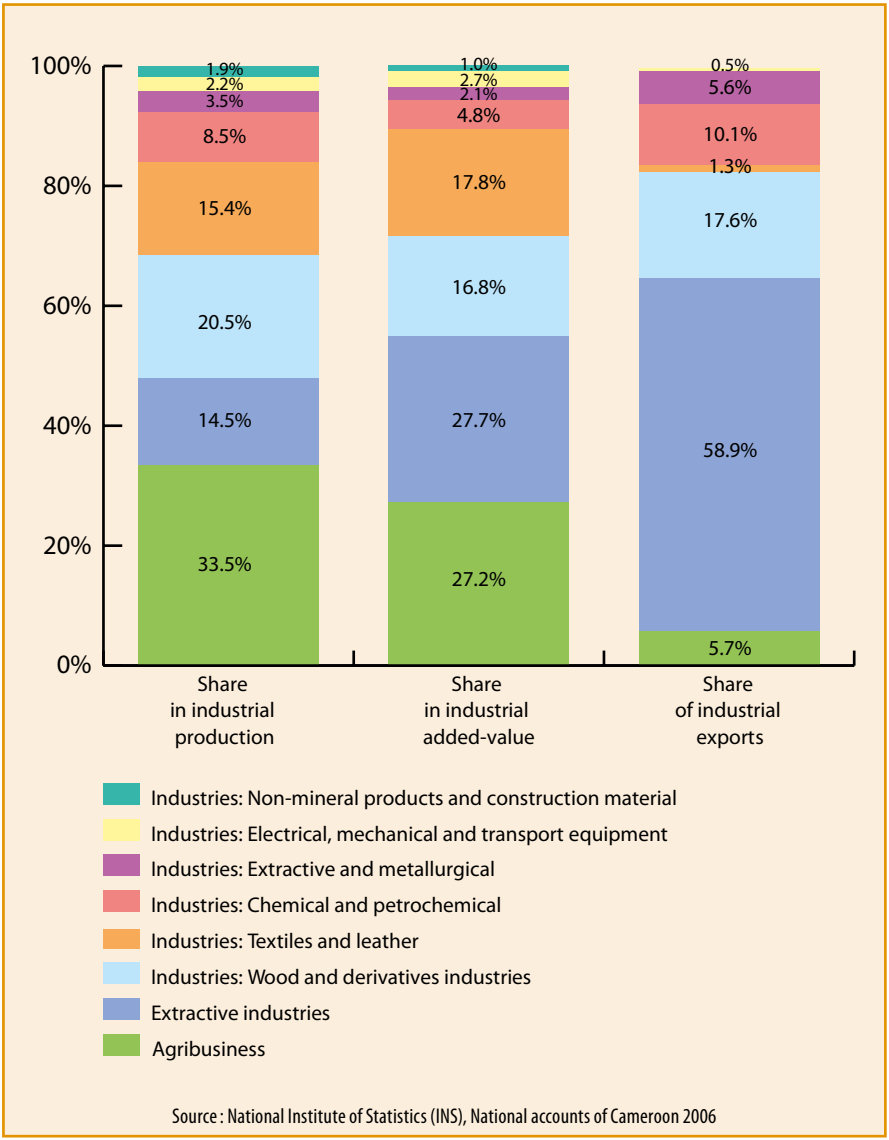
Manufacturing accounts for 22.8 % of total employment and turnover represents 34.3 % of the national total. On average, each company in this sector employs 8 people and generates an average turnover of XAF 300 million (CFA[1)] Francs).

Table 1 outlines the structure of industrial activity in Cameroon according to the latest available data and proposed segmentation.

	Share in industrial production		Share in industrial added-value		Share of industrial exports	
	Bill. XAF	%	Bill. XAF	%	Bill. XAF	%
Extractive industries	622.6	14.5	552.3	27.7	707.7	58.9
Agribusiness	1433.2	33.5	541.5	27.2	68.8	5.7
Industries : Textiles and leather	657.0	15.4	355.2	17.8	15.8	1.3
Industries : Wood and derivatives industries	875.7	20.5	334.7	16.8	212.2	17.6
Industries : Chemical and petrochemical	362.4	8.5	96.7	4.8	121.2	10.1
Industries : Non-mineral products and construction material	81.5	1.9	19.2	1.0	3.3	0.3
Industries : Extractive and metallurgical	151.1	3.5	41.4	2.1	67.2	5.6
Industries electrical, mechanical and transport equipment	95.6	2.2	53.4	2.7	6.1	0.5

Table 1 – Industry structure in Cameroon (2006)

1) Fixed exchange rate with the Euro : 1 Euro is equal to XAF 655.957 (CFA Franc BEAC) and XAF 1 is equal to 0.001524 Euro.



Source : National Institute of Statistics (INS), National accounts of Cameroon 2006

Figure 1 – Composition of the manufacturing sector (2006)

According to the table and graph above, the five major industry sectors are :

- The mining sector, representing 14.5 % of industrial output, 28 % of the added-value and almost 60 % of exports
- The agro-industries sector which accounts for more than 33 % of industrial production, 27.2 % of industrial added-value and nearly 6 % of exports
- The textile, garments and leather sector accounting for 15.4 % of industrial output, 18 % of the added-value and 1.3 % of exports
- The wood industries and derivatives, representing 20.5 % of industrial output, nearly 17 % of the added-value and 18 % of exports. Wood industries come second after mining in terms of export importance
- The chemical and petrochemical industries, which account for 8.5 % of the production value, nearly 5 % of industrial added-value and 10 % of exports

Cameroonian industry is poorly integrated and produces mainly for the local market. Its exports consist mainly of low-processed products (hydrocarbon and wood) that generate little added-value. It is more geographically concentrated in the littoral region, located at the coast, and particularly in Douala, Limbe and Edea where nearly 80 % of industries are found. Other industrial units are scattered throughout the rest of the country, with a local concentration around Yaounde in the centre of the country and Bafoussam in the west. Corporate concentration in the littoral region is explained by its infrastructure (roads, energy, telecommunications) and the largest seaport of the country. Major roads connecting the regions of the littoral, centre, west and north-west as well as the expansion of electric power have, to a large extent, contributed to industrial decentralization in these other regions.

SMEs and informal sector companies are actively involved in industrial activity. They cover all sectors but are particularly prevalent in areas such as wholesale trade, household services, hospitality and catering, business services, etc. These are small-sized companies with sole ownership, characterized by:

- Weak managerial capacity
- Outdated production tools
- Low-skilled and poorly trained staff
- Lack of reliable accounting records of their activities
- Limited ability to mobilize guarantees to finance their activities

9.2.2 Introduction to the selected company

The Chococam company (Chocolate Confectionery Cameroon) was founded in 1965 and began operations in 1967.

Chococam was part of the Swiss group Barry Callebaut (the number one worldwide manufacturer of bulk chocolate) until 2008. In August 2008, the majority shares of Barry Callebaut were purchased by the Tiger Brands Group (a dynamic brand of consumer packaged goods, operating mainly in South Africa and in some emerging markets).

Chococam is a limited company with a capital of XAF 4 billion, of which 74.41 % is held by Tiger Brands and 25.59 % by national shareholders.

The company employs approximately 470 people composed of:

- Executives: 29
- Supervisors: 94
- Permanent workers: 199
- Infrequent: 168 including 121 temporary and 47 pieceworkers

Following the acquisition by Tiger Brands, the company experienced substantial changes in management and strategy. It is currently focused on operational improvement in all key business functions:

strengthening customer relationships and favouring new business opportunities (especially export markets). Further integration with Tiger Brands is expected in the short to medium term.

The cocoa industry in Cameroon is dominated by two large companies, Sic-Cacao and Chococam. Chococam is specialized in the manufacturing and marketing of confectionery products and chocolate.

Sic-Cacao produces cocoa butter, cocoa mass for industrial use and cocoa powder. Its processing capacity is around 20 000 to 25 000 tons of beans per year and production is on average 1 200 tons of butter and 22 000 tons of cocoa mass, both largely exported to France and the Netherlands. The introduction of vegetable fats in chocolate production has had a depressive effect on the production of cocoa butter.

Chococam is specialized in the manufacture of chocolate-based products and various sweets from cocoa mass. The different product lines are :

- Chocolate (chocolate bars, bars with chocolate, professional chocolates)
- Chocolate spread (chocolate paste, peanut butter)
- Pure cocoa powder
- Confectionery (unwrapped sweets, wrapped sweets and curly wrapped gum)

Chococam produces around 36 000 tons per year, sold mainly on the local market and in the CEMAC[2)] countries. Its market share is 55 %, the balance being divided between Conficam, a confectionery company, and industrial or handicraft production plants or importers.

The company's average annual turnover for the past few years is around XAF 19 billion.

2) Economic and Monetary Community of Central Africa

As one of Cameroon's largest manufacturing companies in the food sector, Chococam manufactures cocoa-based consumer products at its factory in Douala and sells these products in Cameroon, Nigeria and other countries of Central and West Africa.

9.3 Attitude of the company towards standardization

The company uses a number of product and testing standards (product specifications and analysis methods) to meet the needs of domestic and foreign markets. While it is clear that these standards effectively support Chococam's business processes, they have been in use for many years and it was not possible to make a specific assessment of the benefits they bring to the company. However, management system standards, and in particular ISO 9001, have had a key impact on Chococam's operations and it is in particular this standard which contributed significantly to the operations of Chococam which will also become apparent from the results of this report.

Chococam's certification to ISO 9001 was renewed in 2008. Since acquisition by Tiger Brands, the quality management system has been reorganized and its implementation now plays a key role in the company's focus on operational improvement. In particular, performance indicators are defined for all business processes and related business functions. They are regularly monitored and checked, and new goals are set based on a philosophy of continual improvement.

Table 2 lists the standards used by Chococam.

N°	Designation of the standard		Area of application
1	ISO 7402:1993	Microbiology – General guidance for the enumeration of Enterobacteriaceae – MPN technique and colony-count technique	Microbiological analysis

N°	Designation of the standard		Area of application
2	Modified OICC method ; ISO 4833:1991	Microbiology – General guidance for the enumeration of micro-organisms	Microbiological analysis
3	Modified OICC method ; ISO 7954:1987	Microbiology – General guidance for the enumeration of yeasts and moulds – Colony count techniques at 25 degrees C	Microbiological analysis
4	Modified group method ; ISO 6579:1993	Microbiology – General guidance on methods for the detection of Salmonella	Microbiological analysis
5	Codex 87-1981	Codex standard for chocolate and chocolate products	Specifications for types of chocolate
6	Circular ANOR 000803 of 06 October 2010	Circular relating to the certification of food products, raw material, additives and imported ingredients	Specifications for raw materials and finished products
7	Codex Alimentarius	Inspection and certification systems for food imports and exports	Specifications for raw materials and finished products
8	EC Regulation 2073/2005 of the European Commission of 15 November 2005	Concerning the microbiological criteria applicable to foodstuffs	Microbiological specifications for raw materials and finished products
9	EC Regulation 178/2002	Grand-Duchy of Luxembourg National health laboratory Microbiological criteria for foodstuffs Interpretation guidelines	Microbiological specifications for raw materials and finished products
10	Codex standard 192-1995, Rev. 7-2006	Codex general standard for food additives	Microbiological and physico-chemical specifications for raw materials and finished products
11	Codex Alimentarius and Cameroonian standard NC 30	Hygiene of food stuffs ; good hygiene and manufacturing practices	Good practices for hygiene and manufacture
12	Codex standard 107-1981	General standard for the labelling of food additives when sold as such	Microbiological and physico – chemical specifications for raw materials
	Codex standard 207-1999	Codex standard for milk powders and cream powder	Microbiological and physico – chemical specifications for raw materials
13	Cameroonian standard NC 04:2000-20	Standard for labelling of pre-packaged foods	Physico-chemical specifications for raw materials and finished products

N°	Designation of the standard		Area of application
14	Summary of EC Decree n° 2005/1928/pm of 03 June 2005	Establishing the metrological specifications for pre-packaged or similar products and the procedures for their metrological control	Physico-chemical specifications for finished products
15	Internal standard	Standard on the smoothness of chocolate pastes and chocolate spread	Physico-chemical specifications for finished products
16	ISO 9001:2008	Quality management systems – Requirements	Improvement of company performance

Table 2 – List of standards used by Chococam

9.4 Analysis of the value chain

9.4.1 Industry value chain

Three stages determine the competitive advantage of Cameroon's agro-industrial sector on the market : raw material supply, production and distribution, and consumption. Raw materials are supplied both by the local and international markets. Indeed, the agricultural potential provides a good basis for the development of the agribusiness which, by tradition, has always been one of the most important within the national manufacturing sector. The domestic market provides raw materials such as cocoa, peanuts, and sugar.

However, other important raw materials come from the international market through imports. These are products such as milk, oil, glucose.

The industry value chain is described as follows in **Figure 2** :

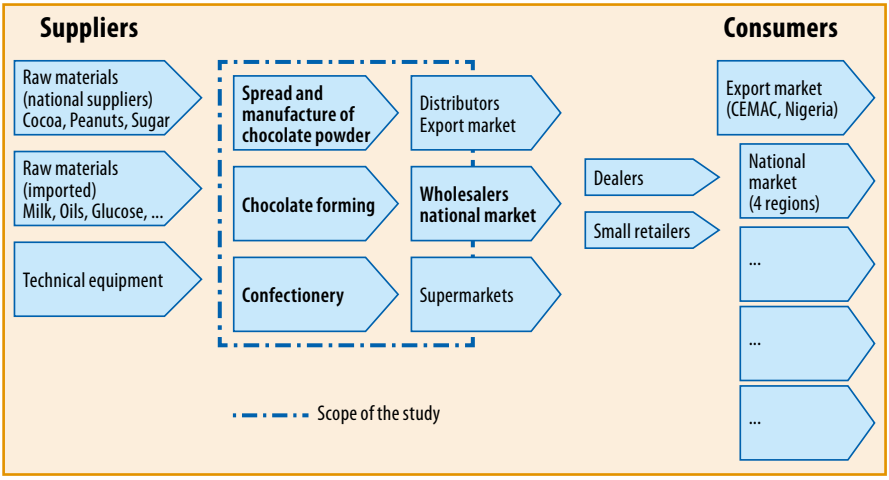


Figure 2 – Industry value chain

9.4.2 Company value chain

The concept of the value chain has enabled the analysis of Chococam's various activities, and how each contributes to create value for the company.

Thirteen activity clusters have been identified : eight primary functions, four supporting activities and one management activity. Supporting activities are horizontal and can affect one or more basic or productive activities.

Primary activities

- Marketing (makes finished products known to the customer)
- Sales (collects, stores and distributes the finished product to the customer and enables the customer to purchase the product)
- Planning (defines and ensures the planning of production and the necessary raw material supplies)
- Procurement and logistics / raw material warehouse (reception, stockage and distribution of raw materials)

- Manufacture of confectionery (transforms raw materials into finished confectionery products)
- Manufacture of chocolate spread and chocolate powder (transforms raw materials into semi-finished chocolate products
- Manufacture of chocolate forming (transforms raw materials into finished chocolate and pure cocoa powder)

Supporting activities

- Maintenance (ensures the maintenance and availability of equipment)
- Information technology (ensures the organization's management system, information and communication)
- HSE (Health and safety – ensures the implementation of GHP – Good Hygiene Practices –and compliance with safety at work regulations)
- Human resource management (provision and optimization of the workforce)

Management activities

- Quality management (establishes, documents and coordinates the implementation and continual improvement of the quality management system)

The activities comprising Chococam's value chain are described in **Table 3**:

Type of activity	Selected business functions	Missions
Primary activities	Marketing	Management and development of Chococam's brands and products
	Sales	Sale and delivery of Chococam products to local market customers
	Planning	Define and ensure the production schedule and necessary raw material supplies
	Procurement	Purchase of raw materials, packaging, services, engineering, spare parts and other

Type of activity	Selected business functions	Missions
Primary activities	Raw material warehouse	Ordering of raw materials and packaging, receipt of raw materials and packaging, storage of raw materials, making available raw materials for use
	Confectionery	Management and packaging of confectionery products, compliance with product and quality standards, management of workforce, optimal management of raw materials and resources, compliance with the production schedule
	Chocolate spread and powder making	Manufacture of semi-finished production for chocolate forming, manufacture and packaging of finished products (spread, chocolate powder and peanut butter), compliance with product and quality standards, management of the workforce, optimal management of raw materials and resources, compliance with the production schedule
		Moulding and packaging of chocolate products, compliance with product and quality standards, management of the workforce, optimal management of raw materials and resources, compliance with the production schedule
Supporting activities	Maintenance	Ensure the maintenance and availability of equipment
	Information technology	Ensure the organization of the management system, information and communication
		Ensure the operation and optimal management of IT supplies, of the information system and make correlated management applications available
	HSE (Health and Safety)	Ensure the implementation of GHP (good hygiene practices) and compliance with safety at work regulations
	Human resource management	Provision and optimization of the workforce
Management activities	Quality management	Establish, document and coordinate implementation and continual improvement of the quality management system

Table 3 – Activities in Chococam's value chain

9.4.3 Key value drivers

On the basis of information gathered through interviews and documents (audit report 2010, Chococam's quality manual, etc.), four major value drivers have been identified:

- Quality and product safety
- Effectiveness and efficiency of processes (particularly manufacturing and sales)
- Attractiveness of Chococam products for the customer and for customer satisfaction
- Training and motivation of the workforce

Most objectives and corrective actions can be linked to the four value drivers mentioned above. Product quality and safety constitutes the key driver at this stage. Significant efforts are made to reduce non-conformities in order to improve product quality and ensure that it is the best, most stable and consistent.

9.5 Scope of the pilot project assessment

The scope of the evaluation is limited to those business functions for which quantifiable benefits, arising from those operational improvements supported by the implementation of the quality management system, are the most significant (operations and supply) and to the management function responsible for coordination (quality assurance).

In other words, the analysis focuses on the functions of marketing, sales (including planning), procurement, operations (including raw material warehouse, confectionery, chocolate spread and powder making).

9.6 Use of standards in the company value chain

Selected business functions	Related activities	Value drivers	Standards used
Marketing	Management and development of Chococam brands and products	Products attractive to the customer and for customer satisfaction	ISO 9001:2008
Sales	Planning Sales forecasts	Process effectiveness and efficiency	ISO 9001:2008
Procurement	Purchasing of raw materials	Quality and safety of products Process effectiveness and efficiency	Codex standard 207-1999 (Codex standard for milk powders and cream powder) Codex standard 192-1995, Rev. 7-2006 (General Codex standard for food additives) NC 04:2000-20 : Cameroonian standard on the labelling of prepackaged foodstuff (Physico-chemical specifications of raw materials and finished products) ISO 9001:2008
Operations	Management of raw materials warehouse : • Ordering of raw materials and packaging • Receipt of raw materials and packaging	Process effectiveness and efficiency	Codex standard 207-1999 (Codex standard for milk powders and cream powder) Codex standard 192-1995, Rev. 7-2006 (General Codex standard for food additives) NC 04:2000-20 : Cameroonian standard on the labelling of prepacked foodstuff (Physico-chemical specifications of raw materials and finished products) ISO 9001:2008

Selected business functions	Related activities	Value drivers	Standards used
Operations – Chocolate spread and manufacture of chocolate powder	• Manufacture of semi-finished products for chocolate forming • Manufacture and packaging of finished products (spread, chocolate powder and peanut butter)	Product quality and safety Process effectiveness and efficiency	Internal standard on the smoothness of chocolate pastes and spread (Physico-chemical specifications of finished products) Codex standard 87-1981 (Codex standard for chocolate) Codex standard 192-1995, Rev. 7-2006 (General Codex standard for food additives) Codex Alimentarius and Cameroonian standard NC 30 (Hygiene of foodstuff, good hygiene and manufacturing practices) ISO 7402:1993 (Microbiology – General guidance for the enumeration of Enterobacteriaceae) ISO 4833:1991 (Microbiology – General guidance for the enumeration of micro-organisms) Method OICC modified ; ISO 7954:1987 (Microbiology – General guidance for enumeration of yeasts and moulds) Group method modified : ISO 6579:1993 (Microbiology – General guidance on methods for the detection of Salmonella) ISO 9001:2008

Selected business functions	Related activities	Value drivers	Standards used
Operations – Chocolate forming	• Moulding and packaging of chocolate products	Product quality and safety Process effectiveness and efficiency	Internal standard on the smoothness of chocolate pastes and spread (Physico-chemical specifications of finished products) Codex standard 87-1981 (Codex standard for chocolate) Codex standard 192-1995, Rev. 7-2006 (General Codex standard for food additives) Codex Alimentarius and Cameroonian standard NC 30 (Hygiene of foodstuff, good hygiene and manufacturing practices) NC 04:2000-20 : Cameroonian standard on the labelling of prepackaged foodstuff (Physico-chemical specifications of raw materials and finished products) ISO 7402:1993 (Microbiology – General guidance for the enumeration of Enterobacteriaceae) ISO 4833:1991 (Microbiology – General guidance for the enumeration of micro-organisms) OICC Method modified ; ISO 7954:1987 (Microbiology – General guidance for enumeration of yeasts and moulds) Group method modified : ISO 6579:1993 (Microbiology – General guidance on methods for the detection of Salmonella) ISO 9001:2008

Selected business functions	Related activities	Value drivers	Standards used
Operations – Confectionery	• Manufacture and packaging of confectionery products	Product quality and safety Process effectiveness and efficiency	NC 04:2000-20 : Cameroonian standard on the labelling of prepacked foodstuff (Physico-chemical specifications of raw materials and finished products) Codex Alimentarius and Cameroonian standard NC 30 (Hygiene of foodstuff, good hygiene and manufacturing practices) Codex standard 192-1995, Rev. 7-2006 (General Codex standard for food additives) ISO 7402:1993 (Microbiology – General guidance for the enumeration of Enterobacteriaceae) ISO 4833:1991 (Microbiology – General guidance for the enumeration of micro-organisms) OICC Method modified ; ISO 7954:1987 (Microbiology – General guidance for enumeration of yeasts and moulds) Group method modified : ISO 6579:1993 (Microbiology – General guidance on methods for the detection of Salmonella) ISO 9001:2008
Operations – Maintenance	Ensuring equipment maintenance and availability	Product effectiveness and efficiency	ISO 9001:2008
Human resources (with all business functions concerned)	Provision and optimization of the workforce for greater efficiency	Training and motivation of the workforce	ISO 9001:2008

Table 4 – Standards used by Chococam's business functions

9.7 Selection of operational indicators to measure the impacts of standards

Not all the performance criteria contained in Chococam's quality manual were applied in this assessment. Only indicators related to the business functions selected, relevant to the policy of continual improvement and measurable on the basis of information received from the interviews, were retained.

Operational indicators selected to quantify the impact of standards used within the Chococam company are listed in **Table 5.**

Selected business functions	Related activities	Value drivers	Indicators
Marketing	Management and development of Chococam brands and products	Attractiveness of Chococam products for the customer and for customer satisfaction	• Degree of customer satisfaction • Recognition rate
Sales	Planning Sales forecasts	Process effectiveness and efficiency	• Gap between forecasts and orders • Availability of the forecast for the following month during the third week of the current month
Procurement	Raw material purchases	Quality and safety of products Process effectiveness and efficiency	• Nonconformity of raw material supplies • Stock disruption • Purchase costs • Internal customer satisfaction
Operations	Management of raw materials warehouse : • Order of raw materials and packaging • Receipt of raw materials and packaging	Process effectiveness and efficiency	• Stock disruption • Stock turnover

Selected business functions	Related activities	Value drivers	Indicators
Operations – Chocolate spread and manufacture of chocolate powder	• Manufacture of semi-finished products for chocolate forming • Manufacture and packaging of finished products (spreads, chocolate powder and peanut butter)	Product quality and safety Process effectiveness and efficiency	Number of : • Returns • Contaminations • Product defects • Amount of temporary work in relation to production volume • Degree of raw material conversion • Energy consumption
Operations – Chocolate forming	Moulding and packaging of chocolate products	Quality and safety of products Process effectiveness and efficiency	Number of : • Returns • Contaminations • Product defects • Amount of temporary work in relation to production volume • Degree of raw material conversion • Energy consumption
Operations – Confectionery	Manufacturing and packaging of confectionery products	Quality and safety of products Process effectiveness and efficiency	Number of : • Returns • Contaminations • Product defects • Amount of temporary work in relation to production volume • Degree of raw material conversion • Energy consumption
Operations – Maintenance	Ensure maintenance and availability of equipment	Process effectiveness and efficiency	• Maintenance costs • Rate of smooth operation • Energy consumption

Selected business functions	Related activities	Value drivers	Indicators
Human resources (with all relevant business functions)	Provision and optimization of the workforce for greater efficiency	Training and motivation of the workforce	• Review of workers' activities and profiles • Objectives/bonus policy • Operator awareness of compliance with good hygiene and manufacturing practices and of the food safety risks of Chococam products

Table 5 – Value drivers and operational indicators

9.8 Calculation of the economic benefits of standards

Owing to lack of data, it was not possible to find financial data for all the above indicators. The analysis is focused on those for which it was possible to obtain company data and estimates from the company management.

9.8.1 Economic benefits in the selected business functions

9.8.1.1 Procurement

1. Purchasing cost of raw materials

Chococam's expenditures on goods and services cover raw materials, spare parts and purchasing services, which account, respectively, for 60 %, 30 % and 10 % of the total. The declarations of the quality of raw materials are occasionally double-checked.

The improvements driven by the implementation of the quality management system for this function were identified in a reduced number of noncompliances and stock shortages, optimization of

purchasing costs, faster treatment of spare parts, and improved rate of completion of corrective actions.

The number of cases of nonconformities recorded decreased from ten in 2010 to seven in 2011, an improvement of 30 %.

The number of raw material shortages decreased from 14 in 2010 to eight in 2011, an improvement of 42 %.

The completion rate of corrective and preventive actions improved from 60 % in 2010 to 85 % in 2011, increasing the level of internal customer satisfaction.

The objective of the procurement department for the year 2011 was to achieve a saving of XAF 300 million compared to 2010. This was not possible to achieve due to the drastic increase in the price of cocoa. However, improved purchasing techniques enabled the department to maintain expenditures at the 2010 budget level, whilst production increased. The value created through improved purchasing techniques was estimated at around XAF 300 million.

2. Better stock management

Between 2010 and 2011, the total mean value of stock decreased from XAF 400 million to XAF 60 million due to better stock management of raw materials and consumables. More detailed data could not be obtained in time for the publication of this study, therefore, to estimate the benefits deriving from this improvement, the following assumptions have been made :

a) 50 % was attributed to the reduction of waste (50 % of XAF 340 million = XAF 170 million)

b) 50 % was attributed to improved stock rotation with decreased capital immobilization. Considering an average annual cost of capital[3)]

3) Source : Architecture de la tarification des services bancaires dans la CEMAC, Secrétariat Général de la Commission Bancaire de l'Afrique Central, Avril 2010.

of approximately 10 %, this generates additional cost savings of 10 % of XAF 170 million = XAF 17 million.

The creation of value due to this change can be estimated at XAF 170 million + XAF 17 million = XAF 187 million.

9.8.1.2 Operations

As mentioned above, significant efforts were made to reduce non-conformities in order to ensure continual improvement and a consistently high and stable level of product quality. Increasing company productivity is also a key objective.

Product and test standards are used to evaluate the product, that is, the conformity of the various categories of products to properties and quality criteria set by the standards – for example, for chocolate, properties such as texture (granularity of the chocolate paste), weight (in particular, fluctuations in weight), fat, wrapping.

Management system standards are used as the basis on which to structure the description of processes and activities, define indicators, measure performance, and define and monitor corrective and preventive actions.

The operations business function is actively pursuing a number of initiatives aimed at increasing the productivity of the company, the most important of which are :

- The production process improvement programme (which is concerned with the elimination of maintenance breaks to achieve a *continuous line of production* and the optimization/acceleration of working time, through more efficient shifts and other measures)
- The human resource programme (revision of profiles and personnel responsibilities, and motivation – through bonus and reward policies and by enhancing awareness of the importance of quality and safety at work, accomplished by dedicated training and on-the-job coaching)

The philosophy of continual improvement is supported by the annual ISO 9001 audit, and by safety audits (work and site).

The managers interviewed consider the implementation of ISO 9001 a very important tool, which contributes in particular to:

- The objective definition and clarification of activities and roles
- Better understanding of activities and organization by personnel
- Defining specific performance objectives (for the various groups and individuals)
- Developing a greater sense of employee responsibility
- Spreading the philosophy of continual improvement

The main results achieved so far by the operation function are summarized below.

1. **Reduction in the contamination level (noncompliance at the micro-biological level)**

Between 2010 and 2011, the number of nonconformities owing to contamination decreased from 68 cases to 29, a reduction of 57 %. The cost of recycling due to nonconformance is estimated at XAF 5 million. The value creation of this reduction is therefore XAF 195 million.

2. **Production costs**

In 2010, a ton of production cost XAF 200 000. This decreased to XAF 185 000 in 2011. On average, the company produces 15 050 tons per year and the value created through this reduction amounts to XAF 225 750 000.

3. **Reduction in maintenance costs**

Better maintenance techniques have led to a reduction in costs of XAF 360 million for a production total of 10 000 tons in 2010, to XAF 276 million for a production level of 15 000 tons in 2011. This reduction in maintenance costs has created an absolute value amounting to XAF 84 million.

The rate of smooth running of the machines increased from 78 % in 2010 to 92 % in 2011.

9.8.1.3 Sales

In 2011, Chococam's sales increased 5 % over 2010. Process improvements for this business function are underway (focused on the indicators presented in **Table 6)** and to some extent they have been influenced by the implementation of the quality management system. However, it was not possible to quantify this contribution. In conclusion, the economic benefits of standards for Chococam are summarized below.

9.8.2 Financial impact of standards on business functions assessed

Selected business functions	Indicators	Financial impact on the operational indicators (in XAF)
Marketing	Customer satisfaction survey	N/A
	Recognition rate	N/A
Procurement	Stock management – nonconformity of the raw material supplied	187 000 000
	Purchasing costs	300 000 000
Operations – spread and manufacture of chocolate powder Operations – Chocolate forming Operations – confectionery	Contamination	195 000 000
	Amount of temporary work in relation to production volume	225 750 000
Operations – Maintenance	Maintenance costs	84 000 000
Total contribution to the company EBIT (in XAF)		**991 750 000**
Total contribution to the company EBIT (in EUR) (there is a fixed exchange rate with the Euro : 1 000 XAF equal 1,53 EUR)		**1 517 377**
Contribution to EBIT as a percentage of total sales		**5.2 %**

Table 6 – Financial impact of standards on business functions assessed

9.9 Qualitative and semi-quantitative considerations

Additional considerations on the qualitative benefits of standards identified by the analysis are outlined below.

1. Marketing

Key indicators are the customer satisfaction survey and the recognition rate. The survey covered more than one million consumers and was first conducted in March 2010. The main consequence has been the improvement in product quality and the purchase of new equipment.

2. Sales

The main value indicators for the marketing and sales services are the variations between forecast and order, and availability of the forecast for the following month during the third week of the current month.

Despite its position of market leader, Chococam does not yet cover the total Cameroonian market. In addition, the company aims to reduce the ratio of returns, generated by a variety of factors.

Improved sales planning and optimal management of the sales calendar would allow the company to serve the market more efficiently, extend its outreach, and reduce the product return ratio.

3. Operations

More efficient energy consumption is another important driver of value creation. Some results have been achieved, but further improvement needs to be pursued.

9.10 Evaluation of results

The application of the ISO Methodology for assessing the economic benefits of standards at Chococam has indicated a contribution to

the company EBIT of XAF 991 750 000 (about USD 1 814 902) which represents 5.2 % of the company's total annual turnover.

It should be noted that the results are influenced by the fact that it was the first time that an analysis of this kind was undertaken by the company and, in several cases, the persons interviewed have clearly identified qualitative benefits of standards but were not able to quantify them.

This seems to indicate that, while already significant, the economic benefits of standards for Chococam are most probably underestimated.

9.11 Conclusion

Standards help Chococam to produce more efficiently and be more competitive on the market. In particular, the study has demonstrated that the use of standards contributes to the creation of value for Chococam, with an estimated contribution to the company EBIT of XAF 991 750 000, representing over 5 % of the company's total annual turnover.

This value is very significant and is strongly related to a thorough implementation of ISO 9001 in support of the company's operational improvement.

The value assessed by this study can be further increased, following the continual improvement philosophy that Chococam has adopted.