Key Success Factors in the Brazilian Coffee Agrichain: Present and Future Challenges

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ABSTRACT

Coffee production has grown 100% in volume over the past 30 years, accounting for 144 million coffee bags produced in 2015. Brazil responded to 42% of this production, along with Vietnam (19%), Colombia (9%), Indonesia (8%), and Ethiopia (4%) (OIC, 2016). Following this pace, the consumption expanded not only in such traditional markets as the United States (4.2 kg/year), Germany (6.9 kg/year), and France (5.7 kg/year) but also in tea-driven markets, such as Japan, Korea, Russia, and China (CECAFE, 2013). In 2015, Brazil harvested 43.2 million 60-kg bags of green coffee, 32 million of which were of Arabica coffee and 11.2 million of a Conilon species (CONAB, 2016). The planted area in Brazil is 2.3 million hectares, and there are about 287,000 producers, predominantly mini- and small farmers. Having continental dimensions, the country presents a variety of climates, reliefs, altitudes, and latitudes that allow the production of a wide range of types and qualities of coffee (MAPA, 2016). This research aimed to clarify present and future challenges for the Brazilian coffee agrichain, considering the growing demand and also competitiveness between the coffee countries’ producers. To capture the vivid perception of the actors in the coffee chain, a qualitative approach was employed. The research was conducted in three phases. In the first phase, 10 coffee specialists were interviewed to identify the coffee sector’s main milestones for Brazil over the next 30 years. The findings culminated in eight key success factors for coffee-farming management. Finally, in the second phase, the results of phase two were submitted for analysis by 39 coffee farmers through three discussion panels held in the major producing regions: Sul de Minas (corresponding to 25% of the national production), Cerrado Mineiro (with 10%), and Matas de Minas (with 16%) (MAPA, 2016). The third phase comprised the data analysis, aggregating the patterns by regions and by critical factors. The first outcome was a comparative analysis of the three regions using the lens of the key success factors and, second, the main future challenges faced by each region. The study consolidated new drivers of change that directly impact corporate strategies and public policies, namely: (a) increasing complexity in coffee farming, (b) farm succession, (c) mechanization, (d) increased use of pesticides, (e) climate change, (f) consumer behavior, and (g) risk management in the coffee agrichain. Given these drivers of change, companies in the Brazilian coffee agrichain may move forward with relevant strategic focus on important issues, leading to: (i) loyalty from the farmer to guarantee high-quality coffee supply, (ii) increase in entry barriers to ensure the maintenance of leadership in world coffee production and exportation, (iii) operational risk minimization for companies as well as coffee farmers, (iv) encourage and participate in the farmers’ actions to make coffee activity more environmentally friendly, and finally, (v) designing marketing plans connected with the coffee consumers’ habits and desires, current and future.

Keywords. coffee; agribusiness; critical success factors
Introduction

"What I think about coffee is this: that we fulfill the cycle. It was an important instrument to finance the growth of this country. It was the catalyst for investment, the entire railway, ports, all energy, all turned out to be linked to coffee. The coffee produced, in fact, the currencies that were necessary for the start of this industrialization. The coffee made Brazil and Brazil made the coffee." Delfim Netto, former Brazilian Economy Minister (Saes, Nakazone, 2002)

This study aimed to identify and describe the main drivers of change for the current stage of the Brazilian coffee sector, presenting a scenario of trends and challenges for coffee production in the next 10 to 20 years. Therefore, it also investigates the new organizational forms that are shaped to meet the identified drivers of change.

Interviews were conducted with 10 experts, including producers, exporters, leaders of associations, managers of governmental departments, and technical agencies, in order to identify the main drivers of change in the last 60 years and the current scenario of the Brazilian coffee sector. The information collected highlights eight critical success factors that account for the main challenges faced by coffee agri-chain managers and technicians, with a main focus on the reality of coffee farming.

The critical success drivers were subjected to analysis and discussion by 39 Brazilian producers located in three major producing regions: Cerrado Mineiro, Matas de Minas, and Sul de Minas. Therefore, three panels were formed in the aforementioned regions, collecting data on the perceptions of farmers, concerning the future and how they are preparing for the future demands of the coffee sector.

The study identifies some crucial factors in all regions, suggesting the need for more coordinated management between the agents in the coffee chain. Issues such as marketing, mechanization, succession, and sustainability are the main challenges for the development and competitiveness of the coffee sector within and outside the country.

The panels captured the diversity in the investigated regions and also similarities related to the current stage of coffee production in the country, influenced by external factors such as legislation, non-tariff barriers in consumer countries, the enhancement of local labor, and the resulting need for mechanization in order to increase productivity and quality in coffee farming.

This paper is presented in five sections, including this introduction. In the following section, the development of the research and methods are discussed. Section 2 discusses the concept of the Critical Success Factors method. Section 3 presents an overview of coffee production and consumption in Brazil. Section 4 presents the compilation of the panel results for each region investigated, pointing to perceptions regarding the critical factors and the future of coffee farming. Section 5 highlights the new drivers of change for the Brazilian coffee sector and presents final remarks.

2 Conceptual Framework

Strategy literature presents many approaches to characterize the strategy process: to obtain a better positioning in the market (Porter, 1985; Nickerson, 1997), as a process that emerges more than it is deliberated (Mintzberg and Waters, 1985), and as way to economize transaction costs (Williamson, 1993). All approaches have their counterparts in the real world. Therefore the positioning approach presented a range of tools and techniques full more applied than the others such as the strategic planning.

Strategic Planning is defined as “a rational approach that organizations use in order to achieve strategic competitiveness and earnings above the average” (Ireland et al, 2014). This concept demonstrates the faith in rationality. Therefore, as stated by several management researchers and social scientists (Simon, 1972, Mintzberg, 1978), the bounded rationality is part of the science practice and it evolves other elements as opportunism (Williamson, 1993) and considers “human beings are limited in knowledge, foresight, skill and time (..)" (Simon, 1957, p.199). In this sense, the strategic process is much more an exercise of qualitative and analytical thinking than a rational and profit maximization tool.

Rockart (1979, p.82) asserts that “It is clear that a problem exists with defining exactly what data the chief executive (or any other general manager) needs”. Different techniques have been used in order to add
relevant information into the strategic planning process such as the Swot Analysis, the Boston Consulting Group Matrix, the experience curve of the General Electric and the five forces of Michael Porter. According to Hax and Majluf (1990) those techniques introduced a qualitative approach as a complement of the financial rationality that is based most on index evaluations such the Return of Investment or the Net Present Value.

The Critical Success Factors (CSF) method was first used in the 60’s to address information need for management planning based on manager’s experience and analysis (Melo et al, 2015). According to Rockart (1979, p. 85), FCS was born to help managers be more selective and accurate related to a company’s information system focusing on success factors. In his words: “They are the few key areas where things must go right for the business to flourish.”

In the agribusiness field, Zylbersztajn (1995) asserts the importance of information in order to reduce uncertainty in the transactions among economic agents along the agrichain system. For the author: “The problem of uncertainty appears whenever impacts non-anticipated changes occur affecting transactions. In the case of an impact with known probability, contractual provisions can be drawn ex-ante. Thus, in the event manifestation, the parties can minimize the costs of negotiation and adaptation to the new contractual situation.” (Zylbersztajn, 1995, p. 95).

The asymmetric information might amplify the risks and safeguards should be required to minimize opportunism or moral hazard. In this sense, CSF method enhances the manager’s knowledge about the institutional environment as well in the micro-level of the transactions, such as the contracts and alliances built-in.

3 Research Methods

This research was part of a Strategic Planning Process focusing on the Brazilian coffee sector. In the first part of the project, an environmental analysis was conducted, based on desk research and a literature review, aiming to identify the major milestones of the Brazilian coffee agrichain and also important prior studies and technical reports published around the research theme. The main findings were gathered in eight drivers of change illustrated in the first column of the Figure 1: deregulation, new production frontiers, international markets, research in coffee production, associations, climate change and labor cost and scarcity.

The sequence of the research was comprised into three phases. In the first phase, the main objective was to confirm and deepen the environmental analysis conducted in part one of the Strategic Planning Process through personal interviews with 10 experts. The number of participants was determined using the saturation sampling. In this technique, the events under investigation come to a sufficiently comprehensive end when the respondents inputs begin repeat the contents informed (Glasser and Strauss, 2012; Given, 2008). In this particular research, after the 8th interview, the additional ones started to add no significant new information besides the confirmation of the prior data collection.

All the interviews were based on a structured script covering the eight past drivers of change in the Brazilian coffee sector on which the interviewees were asked to comment. They were also asked to identify and comment on five or more critical success factors for Brazilian coffee production in the recent years. The responses were compiled into eight critical success factors related to the actual status of Brazilian coffee production (second column of Figure 1).

In the second phase, the eight critical factors were submitted for validation by 39 producers from the main Brazilian producing regions: Cerrado Mineiro, Matas de Minas, and Sul de Minas. For this, three panels in the mentioned regions were carried out, collecting the perceptions of producers on the present and future of coffee production in Brazil. The panels were divided into two session. In the first session, the producers gathered in groups were asked to discuss and validated the eight critical factors, indicating others if applicable. In the second session, the coffee farmers should present new drivers of change they might consider as crucial for the production of coffee in Brazil. In both sessions, the groups of producers should present their discussion in a formal paper and for the other participants in a plenary format. This process is related to the recommendations of Rockart (1979) for the identification of the critical success factors (CSF).

In third and final phase, all the material gathered from the 3 panels was analyzed and the responses were separated by region and by critical factors. Patterns were gathered and summarized for each critical factor (Seidman, 2006). Figure 1 summarizes and illustrates the phases and the resulting conceptual framework applied.
In this session, coffee production and roasting in Brazil are contextualized demonstrating the leadership in production and exporting as well as a fragmented roast industry with an oligopoly structure. Also, the consumption side is presented summing up the main coffee consumer markets and the actual search for high quality coffee.

4.1 Coffee Production and Roasting

Coffee production grew 100% in volume over the past 30 years, accounting for 144 million coffee bags produced in 2015. Brazil responded to 42% of this production, along with Vietnam (19%), Colombia (9%), Indonesia (8%), and Ethiopia (4%) (ICO, 2016). Following this pace, the consumption expanded not only in such traditional markets as the United States (4.2 kg/year), Germany (6.9 kg/year) and France (5.7 kg/year) but also in tea-driven markets, such as Japan, Korea, Russia and China (CECAFE, 2013).

In Brazil, the production is concentrated in three states: Minas Gerais, Espirito Santo and Sao Paulo, which united account for 86% of the total production in the country. Minas Gerais alone is responsible for 52.75%, and it is also the major Arabic coffee producer (69.3%). Espirito Santo and Rondonia are together the major conilon coffee producers, with 88.8% participation (CONAB, 2016). Mostly small farmers run the activity, approximately 287 thousand, spread in 1,800 cities in the country. Most of these are affiliated with cooperatives or associations, such as Cooxupe, the world’s largest cooperative of coffee producers, with more than 5,000 associates (COOXUPE, 2014; MAPA, 2016).

On the processing side, the market structure is quite concentrated, with 10 companies holding together 74.4% of the volume produced, even though more than 1,400 firms act in this market (ABIC, 2016).

Brazil is also known as the world’s major coffee exporter, accounting for 31% in 2015, followed by Vietnam (20.5%) and Colombia (11.3%). The production in Vietnam has grown 74% since 2010, and in the same period, Brazilian coffee exportation diminished 16%, although it had overcome the 2010 level in 2014, with 36 million bags (OIC, 2016).

The Brazilian coffee exporting sector is also concentrated; with the five major firms accounting for 36% of the total volume exported in green coffee and roasted coffee. This competitive scenario has not changed in the last 14 years, after the sector de-regulation occurred in the 1990s (CECAFE, 2016). Table 1 presents the rank in the coffee exporting sector in Brazil in 2015.
Table 1. The 5 major coffee roasters in Brazil

<table>
<thead>
<tr>
<th>Rank</th>
<th>Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COOP REGIONAL DE CAFEIC EM GUAXUPE LTDA (Cooxupé)</td>
</tr>
<tr>
<td>2</td>
<td>OUTSPAN BRASIL IMPORTAÇÃO E EXPORTAÇÃO</td>
</tr>
<tr>
<td>3</td>
<td>TERRA FORTE / GRANDE LESTE</td>
</tr>
<tr>
<td>4</td>
<td>LOUIS DREYFUS</td>
</tr>
<tr>
<td>5</td>
<td>STOCKLER COMERCIAL E EXPORTADORA LTDA</td>
</tr>
</tbody>
</table>

Source: CECAFE (2016)

It’s important to note that after deregulation process in 1989, there were a strong movement toward high quality coffee for the external marketing in the other hand of a centralized power by the government that discouraged to create an explore opportunities in the market. In this sense, the coffee chain amplified its complexity with the rising of different strategic groups with the adoption of proper governance structures (SAES, NAKZONE, 2002). Nowadays, some of those groups became regions with Origin Indications such as Matas de Minas, Alto Mogiana, Norte Pioneiro do Paraná among others. More recently Cerrado Mineiro in 2013, the region of Cerrado Mineiro became the first coffee region with a Denomination of Origin seal (Giesbrecht et al, 2014).

Two companies played a seminal role in Brazil for the expansion of the quality-driven production inside the farm: Cooxupe Cooperative and Illy.

The first one, the world’s largest cooperative of coffee producers, began operating as an exporter in the 80s, directly reaching the international buyers. This strategy was motivated for the value capture opportunity, meaning increasing yields for the cooperative and its members. High-quality or special coffees sales imply higher prices compared to the commodity ones. In turn, more sophisticated and inter-dependent relationships had to be formed in order to attend the buyer’s coffee specificities. SAES (2008, p.113) indicated the Cooxupe case as: “the major producer’s gain is related to the scale and scope of the coffee commercialization, the agrochemical conjoint purchasing and Access to technical and managerial knowledge through the cooperative support, and in counterpart, it established partnerships with quality seeker buyers.” More recently, Cooxupe became a premier supplier for Nestle, attending the Nespresso’s demand for special coffees and achieving a strategic partnership under Nestlé’s AAA Program.¹

Facing problems to acquire high-quality coffee for the volume needed for his company, Ernesto Illy employed an innovative governance mode in Brazil, thanks to the development opportunities brought to light through the sector deregulation in the country. In 1991, the first coffee contest was set, paying a premium price for the finalists. This works as an economic incentive to keep Brazilian producers supplying quality coffee beans every year for the firm. Nowadays, Brazilian Arabic coffee forms more than 60% of Illy’s blend. This initiative demonstrated for producers as well for other exporters and industries that Brazil has the capabilities to supply excellence in coffee production. Since 2012, Illy has operated an integrated operation, buying directly from the coffee producer and pursuing its own trading and laboratory for coffee-quality analysis (Almeida, 2014).

4.2 Coffee Consumption: A Quality-Driven Consumer

The setting is favorable for global coffee consumption, which doubled the volume consumed from 80 million bags in the 70s to 152 million in 2015. Moreover, even in traditional markets, per capita consumption has grown, such as in Finland (12.3 kg/year), the United States (4.2 kg/year), Germany (6.9 kg/year), and France (5.7 kg/year). New markets, such as Australia (3.9 kg/year) and Algeria (3.3 kg/year) already exceed the per capita consumption of a country like the United Kingdom (3.3 kg/year), and Japan has grown 3.5% annually over the past 10 years and is the third-largest importer (ICO, 2016). The growth is expected for China and Korea.

The domestic market of the coffee producers, typically major consumers of ordinary, quality-roast coffee and soluble coffee, is shifting its demand to more-sophisticated coffee beverages and seeking higher quality. In Brazil, 850 thousand single-dose coffee makers are placed in 3.6% of Brazilian homes (NIELSEN, 2013). In recent research, consumers of lower income pointed out this coffee machine as a desired appliance for their homes, along with computers, cars, and laundry machines (KANTAR WORLDREGION,
Already, the single-dose packs account for 1.1% of the total retail sales of the category, with a growth of 33% compared to the previous year (2011-2012) (NIELSEN, 2013).

Nowadays, Brazil is the second-largest consumer of beverages in the world, and each Brazilian consumes on average 80 liters of coffee per year. This means that 40% of the crop stays in country, corresponding to about 21 million bags. Only the United States is ahead, with an internal participation of 23 million to 24 million bags (ABIC, 2016).

The Starbucks phenomenon inserted a new trend to this scenario, carrying the coffee consumption into a pleasant atmosphere with social appeal. Therefore, Brazilian medium-class families consume 3 coffee cups out of 10 outside home (KANTAR WORLD PANEL, 2013), which indicates a huge opportunity for the coffee shops in turn. In Colombia, Starbucks opened its first store in 2014 and plans to open 50 more by 2019.

Nestle, a traditional coffee player that launched its Nespresso brand in 1986 in Europe, just entered in Brazil in 2006, pursuing in 2014 more than 15 stores in the country, and it premiered in Shanghai, China in 2010 (NESTLE, 2016).

### 5 Critical Success Factors for the Main Coffee-Producing Areas

Table 2 provides a summary overview of the panels, focusing on each critical factor investigated. It can be noted that the region of Cerrado Mineiro exhibits a more-modern mode of coffee production composed of medium- and large-sized coffee farms in constant pursuit of productivity and grain quality. Furthermore, the local farmers have worked in cooperation to achieve common goals, such as maximizing the marketing of the original seal designation through participation in international fairs to publicize the regional coffee, as well as engaging in direct dialogue with the industry to promote the adoption and dissemination of the Cerrado Mineiro brand on their coffee packaging.

The region of Matas de Minas is represented by strength in family farming and sharecroppers, with a strong appeal in terms of sustainability certifications, fair trade, and carbon credits. International buyers have approached the local farmers in search of certified and good-quality coffee. However, the farmers still rely mostly on traditional sales channels, ignoring the benefits that other alternatives could bring or believing that their quality of coffee production does not meet the buyers’ procurement requirements. The region is also characterized by low mechanization, given its topography. The cost of coffee processing by farms is high, due to the expense of maintaining and upgrading machines, as well as maintaining a labor-intensive production structure. There is a lack of strong farmer associations and cooperatives, predominantly because of the local producers’ distrust of existing organizations.

The region of Sul de Minas, comprised of traditional coffee growers, merged with more-professional coffee farms. All revolve around Cooxupe, the world’s largest cooperative, and also other important organizations, such as COOPARAÍSO. These firms determine the quality of the coffee and exert a considerable influence on crop management through the provision of technical support for pesticides and the utilization of machinery. Production costs are high for the majority of farmers, considering the significant use of labor, and their income is in great measure dependent upon the cooperative’s pricing system.
Table 2.
Production Regions and Their Characteristics Based on Critical Factor Analysis

<table>
<thead>
<tr>
<th>Critical Factors</th>
<th>Cerrado Mineiro</th>
<th>Matas de Minas</th>
<th>Sul de Minas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Intensive use of agricultural tools and modern management techniques.</td>
<td>Minimal mechanization, given the topography. High cost of processing for small-property management and machinery in the mountains. lack of farming (pruning, harvesting, labor, costs, etc.).</td>
<td>Mix of mechanization in flat areas and low use of machinery in the mountains.</td>
</tr>
<tr>
<td>Labor</td>
<td>Use of skilled labor with investment in training and differentiated pay.</td>
<td>Intensive labor and sharecroppers, plus family workforce.</td>
<td>Mix of mechanization and hired labor, but still with low qualifications.</td>
</tr>
<tr>
<td>Quality</td>
<td>Designation of origin and coordinated communication efforts concerning the regional coffee.</td>
<td>Certification in progress for the region. The quality of grain is still little exploited in marketing, with the prevailing use of traditional intermediaries.</td>
<td>Selling primarily to the cooperatives, so quality is a function of the cooperatives’ procurement requirements.</td>
</tr>
<tr>
<td>Costs and productivity management</td>
<td>Increasing number of producers adopting modern tools for cost and productivity management.</td>
<td>Shortly to be adopted by local farmers, who are mostly household-sized with traditional property management. Absence of agents to support the farmers, such as cooperatives and government entities.</td>
<td>Adopted mainly in medium-sized and large farms, but still in a simplified manner.</td>
</tr>
<tr>
<td>Financing</td>
<td>Access to the governmental rural credit program and other alternative forms of finance.</td>
<td>Access to PRONAF (the government’s rural credit program for family agriculture) and alternative credit options. Challenge of efficient resource allocation.</td>
<td>Access to the governmental rural credit program and other alternative forms of finance.</td>
</tr>
<tr>
<td>Commercialization</td>
<td>Use of various sales channels (cooperative, direct trade, exporting, etc.), including risk-protection tools, such as forward contracts and derivatives.</td>
<td>Presence of intermediaries, such as traditional marketing channels, but with increasing participation of direct trade, selling to exporters and participation in quality competitions.</td>
<td>Selling primarily to local cooperatives, with Cooxupe having a greater share, and targeting special coffee to exporters or direct trade.</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Conformity, along with bureaucratic processes.</td>
<td>Few properties with sustainability certification or fair trade status, but increasing numbers of adopters.</td>
<td>Concern of the producer to meet the buyers’ requirements. Lack of support from the cooperatives.</td>
</tr>
<tr>
<td>Legislation</td>
<td>Increasingly important for farm management – need for specialized support.</td>
<td>Increasingly important for farm management – need for specialized support.</td>
<td>Increasingly important for farm management – need for specialized support.</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors

6 New Drivers of Change and Conclusions

Despite advances in the complexity of coffee farm management, the producers are optimistic about the future of coffee farming. This perception is based on the potential increase in its yields caused by the growth in coffee consumption around the world and in the domestic market, in addition to the increasing consumption of quality coffees that provide higher income.

The research undertaken with experts and its validation by the producers made it possible to consolidate new drivers of change that directly affect corporate strategies and future prospects in the country, namely: (a) the increasing complexity of the activity, (b) farm succession, (c) mechanization, (d) increased use of pesticides, (e) climate change, (f) consumer behavior, and (g) risk management in the coffee agrichain. Figure 2 summarizes the meaning and main concerns related to the new drivers of change.
Regarding the organizational forms, the main change concerns the growing possibility of the gradual disappearance of medium-sized properties, giving way to large, professionally managed properties and small farms mostly operated by families. The reason for this shrinking phenomenon is the cost structure based on intensive labor, vis-à-vis the volatility of prices, which incurs increasingly tight margins, even if farmers apply cost and productivity management. This is the scenario found in the regions of Cerrado Mineiro and Sul de Minas. The average property size is around 200 hectares, with an average investment of R$13,000.00 per hectare and, thus, working capital of R$2.6 million, considering a cycle of 15 months, employing around 60 permanent employees and another 180 at harvest. Many of these properties are in the mountains. Some experts predict the sale of these properties and the reallocation of land to reforestation.

Another important determinant of the configuration of production units relates to the process of succession in small- and medium-sized farms, as, in many cases, the successors study and work in cities, and rural activity has little appeal for these young people compared to the range of possibilities in the urban setting.

The findings also permitted to indicate for the entrepreneurs and government agents working in the Brazilian coffee industry some insights such as: (i) incentive loyalty from the farmer in order to guarantee high-quality coffee supply through formal or informal contracts, (ii) increase in entry barriers to ensure the maintenance of leadership in world coffee production and exportation, (iii) operational risk minimization for companies as well as coffee farmers, (iv) encourage and participate in the farmers’ actions to make coffee activity more environmentally friendly, and finally, (v) designing marketing plans connected with the coffee consumers’ habits and desires, current and future.

The main contribution of the presented research consists in its compilation of what was significant for the actual state of the coffee production in Brazil aggregating bibliographical research with personal interviews. Also, the coffee regions comparative analysis focusing in the success critical factors permits a clear overview of the differentiation and diversity presented in the Brazilian coffee production.

References


and the social sciences. 3rd ed, Teachers College Press, New York.


NIELSEN (2013). Relatório de estudo setorial de café. (in portuguese).


