



AgEcon SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

OPEN ACCESS



International Food and Agribusiness Management Review
Volume 25, Issue 3, 2022; DOI: 10.22434/IFAMR2021.0123

Received: 23 September 2021 / Accepted: 19 December 2021

Fertilizantes Tocantins: growing in the challenging fertilizer business

CASE STUDY

Marcos Fava Neves^a, Lourival Carmo Monaco Neto^{Ⓣb}, Vinícius Cambaúva^c, Luciano Thomé e Castro^d
and Carlos Eduardo Lourenço^e

^aFull Professor, College of Economy, Business and Accounting, University of São Paulo,
Av. Alice de Moura Braghetto 691, Ribeirão Preto, São Paulo, Brazil

^bPostdoctoral Research Associate, Agribusiness Management and Marketing, Agricultural Economics
Department, Purdue University, 403 W. State Street, West Lafayette, IN 47906, USA

^cAssociated Consultant, Markestrat Group, Av. Alice de Moura Braghetto 691, Ribeirão Preto, SP, Brazil

^dInternational Affiliated Professor, Agricultural Economics Department, Purdue
University, Av. Alice de Moura Braghetto 691, Ribeirão Preto, SP, Brazil

^eProfessor, Fundação Getúlio Vargas (FGV-EAESP), Business Administration
Department, Avenida Nove de Julho, 2029, São Paulo, SP, Brazil

Abstract

Fertilizantes Tocantins was founded by José Eduardo Motta in 2003, out of his desire of taking advantage of the fast-growing agricultural businesses in the northern region of Brazil. He had previous knowledge of the fertilizer sector due to his work in his father's business for several years. After an impressive success and enormous growth rates until 2016, 50% plus one shares of the company were sold to EuroChem, a European fertilizer producer. This was part of Fertilizantes Tocantins' strategy to achieve even greater and sustainable growth. In 2020 EuroChem bought the remaining shares of Fertilizantes Tocantins, becoming its sole controller. The company still maintains most of its operational structure and now is fueled with capital and other assets from EuroChem. The challenge ahead lies in being able to maintain the organizational culture and winning position while bringing the best of its controller's assets to achieve the goal of being a leader in the Brazilian fertilizer market.

Keywords: fertilizer, agricultural inputs, agribusiness, Brazil

JEL code: A22, A23, Q13

[Ⓣ]Corresponding author: lmonacon@purdue.edu

1. Introduction

The agricultural fertilizer market in Brazil has been transformed greatly in recent years. The pandemic has accelerated some trends that made this industry more complex and challenging than ever before. The complexity came from factors like the restructuring of supply chains, that had their flows deeply affected or were overall shortened, sacrificing some efficiency for more resiliency. This movement affected the country's fertilizer supply chain deeply due to its large dependence of imported raw materials and nutrient sources. Some of the challenges sprouted from the devaluation of the Brazilian currency, Real, against the Dollar and Euro, in many cases reducing greatly the margins of companies that participate in this value chain.

Despite all this turbulence Fertilizantes Tocantins has been positioning itself as the company to be observed in the Brazilian fertilizer market, due to its capacity of achieving above market growth rates. Moreover, being founded as a relatively small family ran company dictated some of the growth strategies adopted to achieve this impressive growth. Now, in a new phase of its existence, the company needs to understand what are growth strategies that will point the company in a new growth period, now competing with the incumbent companies in this industry.

2. The entrepreneur and Fertilizantes Tocantins' history

José Eduardo Motta (Figure 1) is the oldest son of a couple from Minas Gerais State, Brazil, who moved to Itumbiara (GO), Brazil, to work on the local clothing commerce. In 1970, when he was 2 years old, his parents decided to start a new business, this time on the agricultural input retail sector, understanding that there was a great potential in the region's developing agriculture.

In 1987, with the experience gained in the agricultural input business, once again they decided to innovate, creating their own fertilizer mixing company. José Eduardo Motta, noticing the opportunities that this business could bring to his family, decided to go to college, seeking a business administration degree.

You must find in people's life-projects opportunities to create a great team.

José Eduardo Motta

Working on his father's company, José Eduardo Motta oversaw fertilizer sales, including some operations in different states, such as Tocantins, where he foresaw some great market opportunities. He tried several times to convince his father to expand the company's coverage in that state, even though the response was always that his father was not willing to move. For this reason, José Eduardo pitched the idea of being put in charge of a new business unit in that state, alongside his brother. This was the birth of the company that received the state's name: Fertilizantes Tocantins (FTO) (Figure 2).



Figure 1. José Eduardo Motta, Fertilizantes Tocantins CEO.



Figure 2. Fertilizantes Tocantins logo.

2.1 Phase 1 – 2003 to 2007

Fertilizantes Tocantins' history can be divided into four phases. The first is regarding its foundation, in 2003, which was only possible, according to José Eduardo, due to his father's endorsement and the financing provided by the Banco da Amazônia – a partner who would become very important for the company in later years. With that, the first mixing plant was built in the city of Porto Nacional (TO). The plant, which started its operations in 2004, had the producing capacity of 40 tons of fertilizer per year, even though it only produced half of its capacity in its first year.

In the beginning of its activities, Fertilizantes Tocantins had a family driven governance, in which both Motta brothers were 50/50 partners and owners. As time went by, the company grew and consolidated itself in the regional market. In 2007, in a tragic airplane accident, José Eduardo's father passed away. Sometime later José Eduardo bought his brother's share of the company, making him the sole proprietor and CEO of Fertilizantes Tocantins.

The cycle with both brothers sharing the company's management lasted approximately 5 years. By the end of this first phase, in 2007, the company had 30 employees and a fertilizer revenue of around R\$ 20 million (approximately US\$ 10.3 million, in 2007 average exchange rate).

2.2 Phase 2 – 2008 to 2013

In 2008, when José Eduardo Motta took over the company's management, Fertilizantes Tocantins started its second phase, with an intense acceleration in its sales activities. With minimal financial leverage, good gross margins and great knowledge of the growing regional agribusiness, even though going through a great global economic crisis, the company started building its second plant in São Luis (MA), which would start its operations in 2010.

After the crisis, as the markets started to rebound, Fertilizantes Tocantins inaugurated its second plant, opening new opportunities for the company. As the possibilities of increased demand started to solidify, the company put in place a project to build two new production plants, one in Querência (MT), which would be inaugurated in 2012 and another in Barcarena (PA), alongside expansion projects like doubling São Luis's (MA) production capacity, in 2013.

Some of the main strategies adopted by José Eduardo Motta during this phase was governance strengthening and controlling systems, which was possible through the collaboration with Deloitte's auditing services.

The governance strengthening created a more structured, streamlined and transparent organizational structure, eliminating some administrative inefficiencies. The controlling activities had the objective of enhance the company's capacity of accountability and transparency, which was very important for working with a much larger, structured and complex business partner like EuroChem.

By the end of 2013, Fertilizantes Tocantins already sold over 600,000 tons of fertilizers, going through a very intense growth process with plants under construction and several other projects under development.

2.3 Phase 3 – 2014 to 2016

The third phase in Fertilizantes Tocantins' history starts in 2014 with complete focus in the company's professionalization. In that year José Eduardo Motta assembled a board of directors and founded a business office in São Paulo (SP), where the supply chain leadership team would be placed from that moment forward. For the CEO position, José Eduardo hired Valter Kindliman, previously from ICL (Israeli company) with vast knowledge in the fertilizer sector.

This meant a great change in the company's strategy and in the way it operated, since up to this point José Eduardo Motta was the responsible for the supply chain management. By the end of 2014 the company had over R\$ 600 million in revenue (approximately US\$ 255 million, in 2014 average exchange rate), a number thirty times greater than what was its revenue in the company's early years.

In 2015 the company's fourth plant began to operate in Barcarena (PA). It was very important strategically due to its direct connection to the Vila do Conde port, that alongside Itaqui port (in the city of São Luis – MA) are the main entrances to the country in the north region for raw materials. In the same year an important branch was inaugurated in Luiz Eduardo Magalhães (BA), which focused in importing and distributing fertilizers. With all that, in 2015 the company reached the important mark of 900,000 tons of fertilizer sold, accruing R\$ 1 billion in revenue (approximately US\$ 300 million, in 2015 average exchange rate), with 4 active industrial plants.

However, even though Fertilizantes Tocantins was going through a major growth period and accumulated many successes in its endeavors, José Eduardo Motta foresaw that the company was headed to a very singular moment. The difficulties of achieving an even higher growth in this very competitive market and the lack of large-scale investment capabilities steered him into making a tough decision, based on his ideal of continue growth: selling 50% plus one of Fertilizantes Tocantins' shares to EuroChem.

EuroChem (Figure 3), a Swiss company in the fertilizer manufacturing sector, is one of the largest companies in this sector worldwide. With an EBITDA of over US\$ 1.5 billion in 2018 it is the 5th largest fertilizer producer and the 3rd largest producer of nitrogen, phosphorous and potassium (EuroChem, internal communication). The company has over 10,000 customers in more than 100 countries, with 21% of its sales in Latin-America, mainly in Brazil.



Figure 3. EuroChem logo.

2.4 Phase 4 – 2016 to current days

On August 31st, 2016, EuroChem's purchase of 50% plus one shares of Fertilizantes Tocantins was consolidated, which initiated the company's fourth phase, the last with José Eduardo Motta as the company's main executive. This happened due to several reasons, like his children choosing not to work in the family business, which in turn made the family succession plans impossible, but also due to the perception that the company was too dependent on José Eduardo Motta. The renewal of personnel and ideas was the chosen path for the company's future survival.

Fertilizantes Tocantins' partial purchase by EuroChem was conducted in a very methodical and particular way. Thinking about the transition phase, the deal included keeping the current CEO and José Eduardo Motta active for a few years, to preserve some of the cultural aspects that made the company so successful. Gradually, they would be replaced by new people. Also, it was included in the deal the detachment of some processes, such as the fertilizer distribution.

Leveraging EuroChem strengths, while training new professionals and teams to take his place, José Eduardo Motta started a new expansion cycle for the company. In July 2017, he transferred the administrative headquarters from Palmas (TO) to Goiânia (GO). In this period projects for three new production plants were initiated, in Sinop (MT), Catalão (GO) and Araguari (MG). This last one being integrated to VLI's railroad system, giving the company direct access to a third port, the Vitória (ES) port.

For EuroChem, Fertilizantes Tocantins' acquisition meant the entrance and participation in the growing Brazilian agribusiness, and the group recognized that Fertilizantes Tocantins had great knowledge in the distribution business, a highly valuable asset for the European company. As for Fertilizantes Tocantins, this meant the possibility of competing against the major players in the fertilizer business, such as Yara and Mosaic.

The acquisition process was concluded in April 2020, when EuroChem bought the remaining 50% shares from José Eduardo Motta, and took complete control of the company. The former CEO became an adviser and will help make the company's plan of becoming market leader in 2024 into reality.

From 2007 to 2019 Fertilizantes Tocantins had an annual compound growth rate (CAGR) of 49% in fertilizer sold and a total sales growth of 12,290% (Figure 4). Between the years of 2018 and 2019 the company had an incredible growth in volume sold, jumping 38%, or a surplus of 685,000 tons.

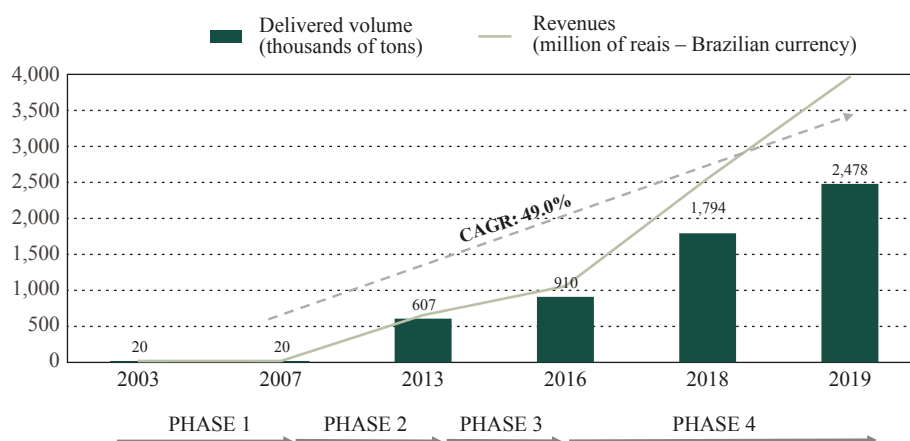


Figure 4. Volume of fertilizer delivered and revenues – Fertilizantes Tocantins (Fertilizantes Tocantins, internal communication).

With around 800 employees (27 times more than in 2008), Fertilizantes Tocantins ended 2019 with 9 industrial plants and production capacity of 4.2 million tons of fertilizer. After a period of 8 consecutive years with double digit growth, in 2019 it achieved the number of 2.5 million tons of fertilizer sold and about R\$ 4 billion in revenue (approximately US\$ 1.01 billion, in 2019 average exchange rate).

3. Current business model

3.1 The company: composition and organizational structure

Fertilizantes Tocantins can be classified mainly as a fertilizer distributing company, because it buys the inputs, creates the formulations and delivers them as final products to its clients. By their own definition the company's business is perceived as relationship (with its customer) driven (Figure 5).

EuroChem Group, which Fertilizantes Tocantins now belongs to, has a verticalized supply-chain, with activities that start with the raw nutrient extraction, formulation and mixing, all the way down to sales and distribution to the end consumer. Because of this strategy, Fertilizantes Tocantins has a major strategic role in Brazil for the group, since it represents the mixing, sales and distribution roles in this process.

Currently, Fertilizantes Tocantins employs around 800 people, across all its divisions and regions. There are nine production plants, with seven under the company's full ownership and two that being used in a toll processing model. The company also has its headquarters in Goiânia (GO) where the administrative and strategic activities are located.

The toll processing model consists of one company (Fertilizantes Tocantins) outsourcing production capacity from another company, which is not part of their asset base. Even though another company is working on the production process, it must follow all the rules and standards set by Fertilizantes Tocantins, assuring product quality and consistency. This model is used in the Rondonópolis (MT) and Candeias (BA) plants, that can produce more the 370,000 tons of fertilizer per year combined.

The other seven production plants have the combined production capacity of 3.84 million tons of fertilizer per year. Their biggest plant is the one in São Luís (MA) with capacity for more than 880 million tons (21% of the company's total annual capacity).

In total, Fertilizantes Tocantins has producing capacity of 4.2 million tons of fertilizer per year and can storage up 720,000 tons of it. This capacity is divided between its producing plants, as shown in Figures 6 and 7.

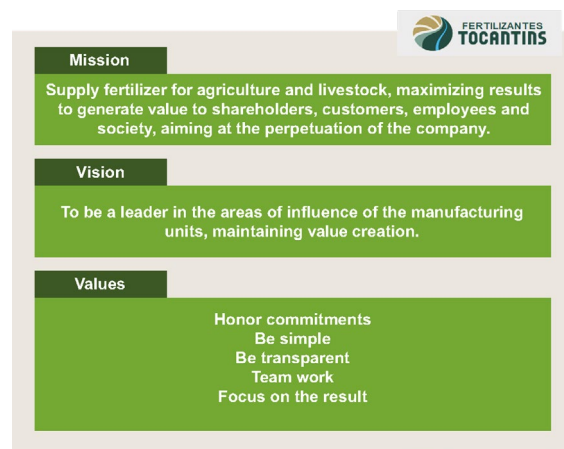


Figure 5. Fertilizantes Tocantins' mission, vision and values (Fertilizantes Tocantins, internal communication).



Figure 6. Fertilizantes Tocantins production units (Fertilizantes Tocantins, internal communication).

	<p>PORTO NACIONAL, TOCANTINS Production: 240,000 tons/year Storage: 40,000 tons</p>		<p>ARAGUARI, MINAS GERAIS Production: 700,000 tons/year Storage: 100,000 tons</p>
	<p>SAO LUIS, MARANHAO Production: 800,000 tons/year Storage: 160,000 tons</p>		<p>SINOP, MATO GROSSO Production: 600,000 tons/year Storage: 100,000 tons</p>
	<p>QUERENCIA, MATO GROSSO Production: 500,000 tons/year Storage: 80,000 tons</p>		<p>CATALAO, GOIAS Production: 400,000 tons/year Storage: 80,000 tons</p>
	<p>BARCARENA, PARA Production: 600,000 tons/year Storage: 100,000 tons</p>		<p>RONDONOPOLIS, MATO GROSSO Production: 250,000 tons/year Storage: 60,000 tons</p>
	<p>(no picture) LUISEDUARDO MAGALHÃES, BAHIA Production: 130,000 tons/year Storage: 100,000 tons</p>		

Figure 7. Fertilizantes Tocantins production units and their annual production and storage capacities (Fertilizantes Tocantins, internal communication).

Fertilizantes Tocantins' organizational structure (Figure 8) is led by its CEO, responsible for not only managing the relationship between the company and its stakeholders and the organization it belongs to (EuroChem) but also for leading the activities of the 6 divisions that compose the company:

- Sales North: composed by the professionals responsible for sales activities in the Tocantins state and in the North and Northeast regions of Brazil.
- Sales South: composed by the professionals responsible for the sales activities in Goiás, Minas Gerais and Mato Grosso states. Encompasses the intelligence and supply chain areas, mainly focused on new market access activities.
- Human resources: responsible for employee management, competencies development and all the related activities.

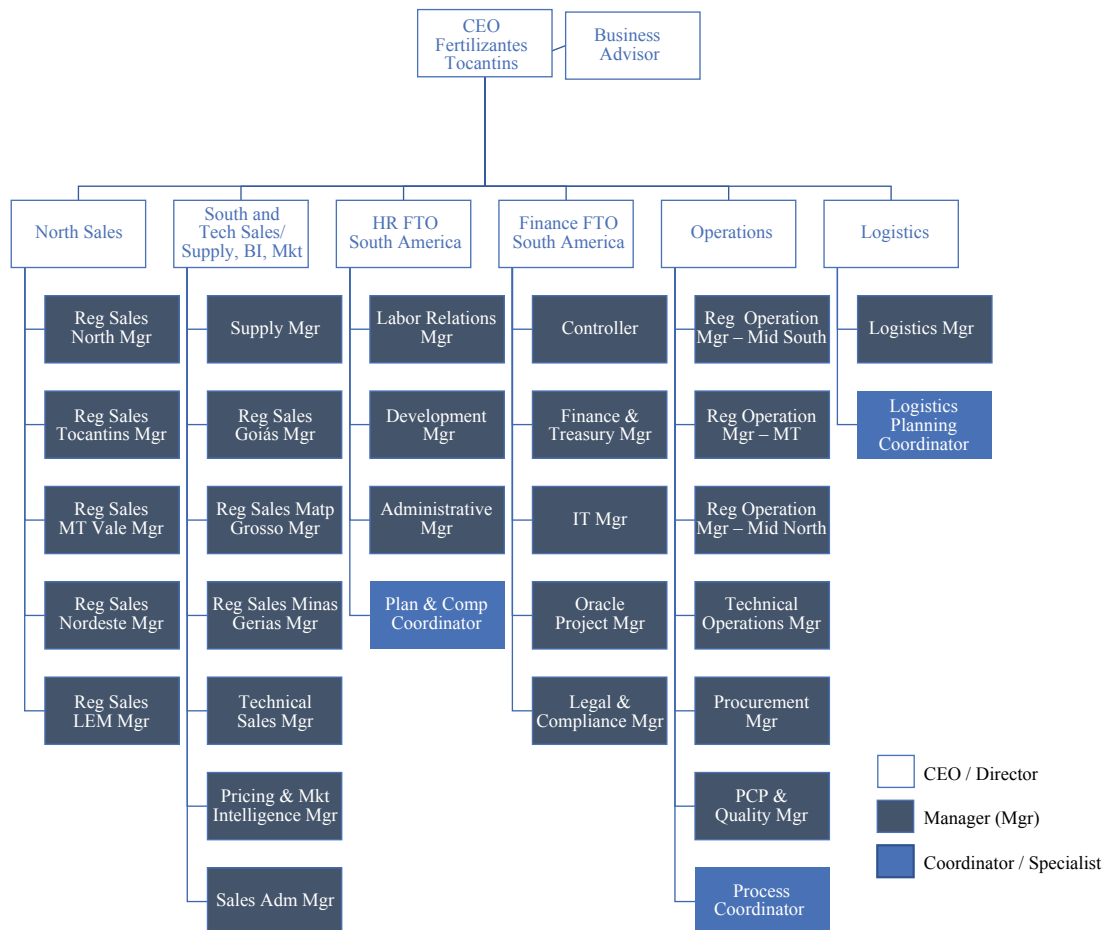


Figure 8. Fertilizantes Tocantins organizational chart, March 2020. (Fertilizantes Tocantins, internal communication).

- Financial area: composed by the professionals accountable for legal matters, financial management and controllership.
- Operations: composed by the professionals that work on input onboarding, product manufacturing and loading.
- Logistic/supply: logistics processes management involving receiving and distributing fertilizers.

Fertilizantes Tocantins’ organizational culture is deeply rooted in the way its founder, José Eduardo Motta thinks and acts. The teams are constantly motivated to put in practice the company’s values through a customer relationship focused strategy, giving each person in the organization the sentiment of ownership and belonging.

3.2 Cost and revenue structures

Fertilizantes Tocantins cost structure is composed of 4 main items: inputs, processing, delivery and administrative costs. The input and internalization costs represent from 80 to 85% of all the production cost. It is included in this number the cost of the inputs ‘free on board’, the port/internalization and administrative costs and the logistics to bring them to the production plants.

Because the input cost is so relevant for the company, it is strategically crucial that Fertilizantes Tocantins invest many of its assets into access and acquisition, pricing and market analysis, contracts and supply chain management of those inputs.

Currently 90% of Fertilizantes Tocantins' sales are through the CIF (cost, insurance and freight) modality, in which the seller is responsible for costs and liabilities until the buyer receives the goods. The logistics operation (loading, transporting and delivery) is not a source of revenue for the company. This might be an interesting improvement opportunity for the future.

Fertilizantes Tocantins' revenue comes exclusively from fertilizer sales. It doesn't co-produce any other products or integrates any processes that generates revenue.

3.3 Product line and value proposal

Fertilizantes Tocantins' portfolio has two product lines: 'premium' and 'forte' (strong, in Portuguese) (Figure 9). The 'premium' line is composed by, as the name suggests, premium products that belong to the EuroChem portfolio, such as Nitrofoska[®], Croplex[®] and UTEC[®]. The 'forte' product line is composed by simpler fertilizer mixes, and originally belonged to Fertilizantes Tocantins, such as NPK Forte[®], PASTO Forte[®] and K Forte[®].

Nitrofoska[®] fertilizers are developed for different crops and climatic conditions. They offer N, P and K combined in single grain format. Croplex[®] fertilizers are also developed to contain N, P and K in single grain format but are focused on early crop stages. Some Croplex[®] formulations contain zinc and boron, important micronutrients. Finally, UTEC[®] are urea-based (source of nitrogen) fertilizers with a urease inhibition enzyme, which prevents volatilization (transformation of nitrogen into NH₃, a greenhouse gas) reducing losses, increasing product efficiency and increasing storage time.

The NPK Forte[®] fertilizer line, as the name says, supplies N, P and K in different formulations with micronutrients incorporated to every fertilizer grain (but N, P and K are in separated grains). This technology helps the micronutrients to be more evenly distributed, which in turn boosts application efficiency.

Pasto Forte[®] is another fertilizer line from Fertilizantes Tocantins. This line is focused on pasture's nutritional needs, offering different formulations for their maintenance, recovery and/or intensive management.

The last fertilizer line is the K Forte[®] that offers a slow-release source of potassium, reducing losses by lixiviation. Also contains soluble and slow-released sulfur, calcium and magnesium.



Figure 9. Fertilizantes Tocantins product line (Fertilizantes Tocantins, internal communication).

3.4 Market access and customer relationship

Fertilizantes Tocantins is currently present in 18 Brazilian states (2019). It has well-structured sales teams distributed across several strategically divided regions in the country. Each region the team is divided into sales managers, supervisors and third-party salespeople, that integrate this team under a commission-based work system.

The main sales strategy used by Fertilizantes Tocantins is direct sales. The company currently has around 5,200 customers, of which 70% are farmers, 18% are retail companies and 12% are trading companies.

As far as suppliers, Fertilizantes Tocantins has the option of buying from any company, including its controller, EuroChem. Between 2018 and 2019 EuroChem's share of wallet in Fertilizantes Tocantins' portfolio was 29.3%. There is a tendency of increasing this percentage moving forward, especially on potassium chlorate, due to EuroChem's plan of increasing this raw material's production. Other raw materials that are not in EuroChem's portfolio are still going to be purchased from other suppliers.

To this topic, Fertilizantes Tocantins has a well-structured supply area, working with its suppliers to develop good contracts, including financing, pricing and volume.

Among the company's strategical partners, the port and logistics operators (VLI and Rumo) are of great importance, due to the company's crucial need to efficiently supply its production plants. This importance is further highlighted when considering how much acquiring raw materials and delivering them to the production plants represent in the company's cost of goods sold. As an example, the Araguari (MG) production plant has a cargo terminal integrated to a VLI railroad, which connects the plant to the Vitoria (ES) port, a very important access route to raw materials.

Another important group of partners to Fertilizantes Tocantins business are the manufacturers and suppliers of packaging, like polypropylene bags and plastic containers. Since those items are not produced by the company, there is a great need to establish good relationship with those suppliers to maintain the efficiency and quality of their process.

4. Growth strategies

Fertilizantes Tocantins has been pondering its strategical options for the future, observing the potential market-share growth in their covered areas, the expansion possibilities and opening new sales channels. But raw materials high prices, the enormous dependance in imported goods and the crescent verticalization of the players in the market may impose major threats to the company's success. Therefore, a series of strategical projects are being put in place to protect the company from these threats and take advantage of possible opportunities.

The acquisition by EuroChem was one the steps in Fertilizantes Tocantins' strategical plans in the last 4 years. The investments for 3 new production plants' construction and the creation of new business offices in new areas of Brazil represent the company's movements towards accessing new markets and increasing its productive capacity to fulfill this market's needs.

With EuroChem's acquisition, Fertilizantes Tocantins was able to set up audacious goals, such as:

- Be one of the 3 largest players in the Brazilian fertilizer market, producing 4 million tons by 2021.
- Solidify its position in the center-south region of the country, while also initiating a presence in states where it doesn't currently have business.
- Achieve national leadership in the fertilizer market by 2024, selling 7 million tons and generating revenue of R\$ 11 billion.

The company has a clear understanding that human resources are a fundamental part in achieving the bold goals it has set. Moreover, company's employees, fully immersed and integrated in the company's culture, have always been a central part in Fertilizantes Tocantins' strategy. That allowed a customer relationship and operational efficiency driven growth strategy to be put in place and be successful since the company's foundation. For this reason, the company has been developing many projects to integrate its team (workshops, meetings, group dynamics), bringing together older Fertilizantes Tocantins' employees with new personnel and the talent coming from EuroChem into a cohesive team.

With that in mind the company created the model '#OJeitoFTOdeSer' (which translates to 'the FTO way of being'), in which constant activities are employed to reinforce the company's culture. Some of the values reinforced are determination, leadership with systemic and strategic vision, act nimbly and efficiently, inspire and develop people, be connected, be responsible for and act in the present but with focus in the future.

To develop a new generation of employees, that will have to innovate and be bold to face the new challenges set by the company and by the ever-evolving complex market, while maintaining the company's core values, Fertilizantes Tocantins created in 2017 the 'young professionals program'. This was a voluntary program in which those who had the intent of growing with the company could join and develop their capabilities.

During this program the participants go through a complex process, that includes the creation of projects aimed to improve the company's overall strategy. By the end of the program the best projects are selected and rewarded. In 2019's program the authors of the best project were rewarded with a trip to Russia, to attend to the 2019 EuroChem Young Professional Meeting.

The 'young professionals program' happens every year and currently around 20% of Fertilizantes Tocantins' employees are alumni from the program.

Another important project to achieve the company's goals is the sales processes and administrative headquarters centralization in Goiânia (GO). The intention is to make possible real-time production, stocking and distribution management, creating big-data mentality and processes in the company. This would be groundbreaking for the fertilizer industry in Brazil.

This project should allow the company to optimize the work on the supply, operation and logistics areas, making it more efficient and delivering better value to the final customer through traceability.

For this next phase in its existence, Fertilizantes Tocantins also plans to have more engagement on the social level, establishing some social and philanthropic projects with participation of its employees.

The sum of all this projects, plus more to be announced, will propel Fertilizantes Tocantins, and its controller EuroChem, to a new phase of growth and major contributions to the country and the agribusiness sector.

Supplementary material

Supplementary material can be found online at <https://doi.org/10.22434/IFAMR2021.0123>

Appendix 1. Global and Brazilian fertilizer markets.

Appendix 2. Suppliers' strategies in the fertilizer distribution.

Teaching Note.

