

## Green Supply Chain Management: an Analysis of the Supplier-Agro Industry Relationship of a Southern Brazilian Company

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### ABSTRACT

This study aimed to analyze the supplier and agro industry relationship regarding the required environmental management practices in the perception of managers. These partners are also called suppliers or subcontractors. This agro industry exports to about a hundred and ten countries. It is one of the largest private employers in the country and has approximately one hundred and fourteen thousand employees. The study was conducted in only one plant. In this unit there are one hundred and fifty registered suppliers. Six suppliers were selected that provided the greatest number of services for the surveyed unit over the last year of work. It is a case study, descriptive and whose approach is qualitative. We found that the main practices carried out in the evaluated companies are in relation to solid waste management. Only two of the companies surveyed have a standardized management and adequate management of the waste generated in their processes. Similarly, only one company has positive practices in relation to water resources. Therefore, this work can be considered a guide for improving the practices adopted by small and medium-sized suppliers of Alpha. The role of alpha is essential for induction of Green Supply Chain Management in the supply chain as a whole.

**Keywords:** Green supply chain management. Environmental management. Agribusiness.

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## 1 INTRODUCTION

**S**upply Chain Management (SCM) is a strategy that helps organizations move, store, convert and deliver products effectively and efficiently. It is an old concept that was conceived in 1975. In the 90's a new concept, called Green Supply Chain Management (GSCM) was created and is the involvement of the purchasing function in activities that include reduction, recycling, reuse and replacement of materials (NARASHIMAN; CARTER, 1998). It is a closed loop supply chain with minimal use of resources and is environment friendly (JAIN; SHARMA, 2014).

Jain and Sharma (2014) emphasize that Green Supply Chain Management (GSCM) is considered a major part of the organizational strategy for companies that want to become environmentally friendly and socially responsible, to meet the demands of the customers and fit the legal requirements by governments. They also point out that there are 14 elements that have significant impact on the implementation of Green Supply Chain Management (GSCM) in organizations, namely, pressure from customers and competition, governmental regulations, supplier certification of environmental management system, supplier environmental collaboration, customer collaboration, social responsibility and ethics, business benefits, pressure from employees, exports and sales to foreign customers, competition, sustainability of resources, reduced costs, return on investment and organizational factors: commitment, awareness and experience; These are elements that help organizations that need to deal with financial crises, lack of resources, climate change, environmental impact of operations, customer awareness for green products. Furthermore, by adopting Green Supply Chain Management (GSCM) practices, organizations are able to communicate more effectively to the government that they are committed to improving their environmental performance.

Khidir and Zailani (2011) emphasize that the pressures of regulation and the customers can be considered coercive isomorphism, because they focus on the use of rules, laws and persuasion as the basis for compliance. Its social responsibility can be considered normative isomorphism, because it is based on the expectations of society, organizations should respond appropriately. Having acceptable practices or commercial benefits can be considered cultural-cognitive isomorphism because they are based on rational desire for a company to adopt initiatives that prove to have value in other technical organizations. Jain and Sharma (2014) point out that due to the complexity of Green Supply Chain Management (GSCM),

organizations need to aim in the right direction, defining policies, planning practices and strategies for achieving low cost and profitable Green Supply Chain Management (GSCM).

In addition, Green Supply Chain is a strategy that strives for minimal environmental impact. It encompasses best practices to reduce carbon emissions across the supply chain, from material supply, product design, manufacturing, distribution, delivery, and finally recycling at end of life cycle. The demand for traditional Supply Chain Management (SCM) optimization metrics of costs, inventory management, service level, among other organizations. A green supply chain further includes measuring carbon emissions. Due to global warming, climate change, emissions of greenhouse gases increase the costs of energy and resources. And growth and international expansion and market competition corroborate that more organizations opt for operations and activities environmentally friendly (JAIN; SHARMA, 2014).

Brito and Berardi (2010) emphasize that the adoption of environmental practices in the supply chain is driven by institutional pressures, pressures to minimum standards and competitive pressures in the production chain. For the development of Green Supply Chain (GSCM) to occur in Brazil, there are three important perspectives that serve as a stimulus, namely: the National Solid Waste Policy, pressure from the international market and the search for environmental certification (ALVES; BIRTH, 2014).

This context to meet legal requirements, customer expectations, the awareness that natural resources are finite, encourages many organizations to rethink their production processes and to incorporate sustainable practices in its supply chain. Following this reasoning, this study claims to analyze the supplier-agro-industry relationship in environmental management practices issues required in the perception of managers. The specific objectives are to describe the profile of surveyed suppliers; identify the level of understanding of the concepts of sustainability; check for policies or targets related to sustainability in the companies surveyed; describe the important stakeholders for the companies surveyed; report the environmental management practices that Alpha have incorporated in their processes and the required documentation of contracted service providers; analyze existing practices aimed at sustainability, as they are developed and how they can be improved; and propose continuous improvement actions based on the identification of existing practices in the surveyed suppliers.

Therefore, the gap that has motivated this study, is grounded in the fact that in GSCM perspective sustainable development is only associated with the incorporation of

improvements in environmental issues, disregarding aspects of the social dimension. Pagel and Wu (2009) point out that there is a need to incorporate the three dimensions of sustainability - economic, social and environmental supply chain, for achieving a more sustainable performance. This more complete view happens to be called Sustainable Supply Chain Management (SCCM), or management of sustainable supply chain. The GSCM helps to improve performance, demand training throughout the supply chain, as well as periodic monitoring, measurement, improvement programs and cost reductions. This is essential for agribusiness organizations with the purpose of exporting to many countries and meet demanding customers, enlightened and with a high level of awareness regarding the preservation of natural resources, human rights and social responsibility and continuous improvement.

The work is structured as follows: it provides a brief literature review related to GSCM. The methodology describes the subjects who were surveyed and the criteria for selection of research participants. The presentation and analysis of data that refers to the transcription of the conducted interviews. And finally the conclusion that defines a scope for future studies on the subject.

## **2 LITERATURE REVIEW**

The literature review has two main objectives: the first is to present aspects that fit with the theme management of green supply chain. And the second is to present this evolution of studies on Green Supply Chain Management (GSCM) for Sustainable Supply Chain Management (SCCM), which occurred on the perception that GSCM only focused on environmental and economic dimension and neglected aspects of social order. Therefore, this literature review discusses theoretical studies, meta-theoretical analysis and empirical studies that show this evolution of the main theme of this article, emphasizing the studies on SSCM and the stage in which it is implemented in different organizations and contexts.

Jabbour and Santos (2011) point out the existence of different types of environmental management, which were systematized and allowed the development of an integrated and common taxonomy for all evolutionary stages of environmental management, namely, functional specialization, internal integration and external integration.

Xue (2014) points out that since the 1990s the studies within the production has focused on introducing the concept of green manufacturing supply chain, namely: a) the concept and green manufacturing process; b) technologies and green manufacturing processes; c) the applied research on green manufacturing; d) the assessment of green manufacturing system.

Corporations began to consider the product life cycle and have joined in their production processes various management principles and practices such as cleaner production, the principles Valdez, environmental management systems, the guidelines of the technical standard ISO 14001 (MORALI; SEARCY, 2013). In addition, Seiffert (2011) also mentions the reverse logistics, the change in the production process, substitution / modification to the product, the use of inputs and raw materials in the process, the implementation of infrastructure improvements in the process, the approach preventive for waste control, capacity building (training and awareness) for environmental control, environmental monitoring and performance indicators of establishment and the adoption of continuous improvement tools.

In the supply chain, Green Supply Chain Management (GSCM) emerges as a new concept of corporate responsibility to the environment. The reasons for the slow development of the concept in Brazil can relate to characteristics of the national market, businesses focus on internal aspects, lack of strict laws and low consumer pressure. However, supply experts emphasize that there are good prospects for the future of debates on the subject in the country, by virtue of the National Solid Waste Policy, pressure from the international market and the search for environmental certification (ALVES; NASCIMENTO, 2014).

According to Routroy (2009) the use of ISO certifications in supply chain favors the incorporation of green philosophy. Another aspect that favors the incorporation of issues related to environmental management in the green supply chain are strict laws, especially from sectors that cause higher environmental impacts in their production chains. On the other hand, in the perception of Rao and Holt (2005), Andrade and Paiva (2012) and Alves and Nascimento (2014), the benefits resulting from the implementation of Green Supply Chain Management (GSCM) in the supply chain are many, namely cost reduction, higher ease of entry into the global market, reducing the extraction of natural resources, labor and energy consumption, substitution of materials and raw materials, waste reduction, impact on advertising and the image and reputation of the company in society, the integration of suppliers in the decision making process, differentiated purchasing strategies, creates competitive advantage, improving the level of customer satisfaction, impact on brand image, more efficient development of new products and improved relationship with regulators.

In addition, Bowen et al (2001), Alves and Nascimento (2014) emphasize that the GSCM involves waste reduction, recycling, supplier development, performance analysis of buyers, to share skills and risks, to adopt activities cleaner technologies, appropriateness of

specific rules and laws of the acting industry, reuse of materials, the savings in water and energy, use of environmentally friendly raw materials, production processes more streamlined and flexible and responsibilities for all participants the supply chain. The Green Supply Chain Management (GSCM) helps to improve the performance, capacity demand across the supply chain, as well as periodic monitoring, measurement, improvement and cost reduction programs.

But in the GSCM perspective sustainable development is only associated with the incorporation of improvements in environmental issues, disregarding aspects of the social dimension. Pagel and Wu (2009) point out that there is a need to incorporate the three dimensions of sustainability - economic, social and environmental supply chain, to achieve a more sustainable performance. This more complete view happens to be called Sustainable Supply Chain Management (SCCM), or management of sustainable supply chain.

The Sustainable Supply Chain Management (SSCM) is the management of information flows, material and capital of inter companies in a supply chain with emphasis on economic, social and environmental aspects of sustainable development. In this context, the involvement of all members of a supply chain is considered one of the greatest and most important tools for the understanding of the sustainability concept. They contribute to the promotion of improvements in the performance of the parts and the whole. Creating competitive advantage and adding value in transactions and relationships of the chain. Requiring the incorporation of internal controls, monitoring, integration, awareness, engagement and transparent communication with the purpose of reducing the environmental and social problems across the entire chain (WU et al., 2012).

The issue has aroused interest among researchers in different parts of the world.

Morali and Searci (2013) investigated in their study to what extent corporate sustainability principles are integrated into the supply chain management in corporations. A case study was conducted in Canada. The results reveal that there are many challenges in integrating sustainability in supply chain management, which reflect the interconnected nature of environmental economics, and social dimensions of sustainability, particularly in the measurement refers the performance of suppliers on sustainability initiatives.

In addition, Morali and Searci (2013) point out that the integration of social and environmental principles in a company and its suppliers requires integration upstream or downstream with other organizations in the supply chain. This integration can be

implemented in operational or strategic level and helps generate risk management measures and environmental and social standards such as ISO 14.001 to environmental and SA8000 for social purposes and accountability. The aspect of risk management is vital for companies in a global economy where increasing integration demands increased the supply chain definition. This is because the brand enterprises, their image and competitiveness in the market may be dependent practices of its suppliers, defying the principles of sustainability.

In addition, Seuring and Muller (2008b) point out that although the conceptual research and theoretical aspects of SSCM has grown in recent years, research on what is actually being done by the organizations is still scarce. Morali and Searci (2013) mention that there is little research on comparative case studies of organizations that adopt the SSCM, examining patterns of integration of sustainability principles in SCM between organizations regarding the institutional environment in which they operate. The literature on SSCM practices in organizations has gaps in the analysis of the range of formal structures and processes adopted by corporations and the degree to which they are implemented. Furthermore, the literature that is committed to the collaborative paradigm to address issues of SSCM, especially with regard to encouraging the supplier is still scarce. So there is a continuing need to develop studies of cases to investigate to what extent the principles of sustainability are integrated into the supply chain management practices, especially with respect to research on multiple criteria SSCM as governance, collaboration, encouraging supplier, from a holistic perspective.

Zaabi, Dhaheri and Diabat (2013) emphasize that the SSCM becomes an integrated approach to reduce environmental pollution, social responsibility and economic gains. Researchers at SSCM area focus on the pressures and things that motivate the adoption of sustainable practices in the supply chain; barriers to adoption of SSCM in industries and analysis of the performance. Sustainability is driven by legislation, public interest and competitive opportunities. It is difficult for industries to eradicate all the barriers in the early stages of adoption of sustainable concepts in traditional SCM.

Zaabi, Dhaheri and Diabat (2013) developed their research in key manufacturing industries in Tamil Nadu, South India. This industry produce many sizes of screws, nuts, washers, etc., and serve more than 16 car companies, electronics and power plants. 13 of the following barriers are listed below:

1. Too high cost for disposal of hazardous wastes;
2. Cost for environmentally friendly packaging;
3. Lack of clarity regarding sustainability;
4. Cost of sustainability and economic conditions;

5. Lack of sustainability standards and appropriate regulations;
6. Misalignment of short-term and long-term strategic goals;
7. Lack of effective evaluation measures about sustainability;
8. Lack of training and education about sustainability;
9. Complex in design to reduce consumption of resources and energy;
10. Inadequate facility for adoptions of reverse logistic practices;
11. Lack of IT (technology information) implementation;
12. Inadequate industrial self-regulation and
13. Lack of top management commitment to initiate sustainability efforts (ZAABI; DHAHERI; DIABAT, 2013).

Rao and Holt (2005) argue that organizations that adopt GSCM in Asia, are those with greater competitiveness, care about improving efficiency, quality, productivity and cost reduction. In Asian companies, some are working closely with suppliers to reduce emissions, monitoring waste streams, setting its environmental programs and even extend technical support to help them with the conversion of natural resources. Therefore, incorporation of the practices of GSCM demand the improvement of environmental management companies, providing training programs and sharing of environmental management system.

Testa and Iraldo (2010) found in their study developed in industrial companies from seven countries that the factors that determine the implementation of green supply chain are associated with the existence of an environmental management system, reducing the environmental impact of operations and the relationship between environmental and financial performance is still inconclusive and ambiguous. Pagel and Wu (2009) through a qualitative study showed that the capacity for innovation and a positively oriented management for sustainability are needed to build a chain of green supplies. Khidir and Zailani (2011) show that Malaysian companies respond to regulations and customer pressures that require the adoption of green supply chain initiatives, but the decision is based on an assessment of the benefits obtained by the company to adopt these practices. Therefore, the expected business gains may impact on GSCM initiatives, followed by regulations, customer pressures and social responsibility (JAIN; SHARMA, 2014).

In addition, Jun et al. (2010) highlight the following environmental targets of organizations that implement GSCM: reduce energy consumption, water and natural resources; increase the use of clean and renewable sources of energy; reduce emissions of waste and pollution; improve the processing of by-products.

Barbieri et al. (2014) developed a bibliometric study of GSCM and found that the thematic innovation in sustainability, Cleaner Production (CP), Development Mechanism (CDM) and energy efficiency were found in the work produced on GSCM. This finding differs from the model by Srivastava (2007) which classifies the practices associated with

GSCM from the context of the problem, namely the life cycle analysis, environmental or ecological design, Reverse Logistics (RL) and network design, green operations, management waste, green remanufacturing and manufacturing. In the study developed in Brazil, the absence of studies was observed, regarding “planning and scheduling, inventory management, product and material recovery, reuse, repair / refurbishment, disassembly within the green manufacturing and remanufacturing” (BARBIERIET al, 2014, p.20). In the context of reverse logistics studies there is research opportunity on inspection and sorting and pre-processing. On waste management there is room to investigate the disposal, the source reduction and pollution prevention. And also on the theme of ecodesign and green design. The occupation of these gaps will contribute to the consolidation of the area in Brazil and recognition abroad.

However, Leal et al (2009) emphasizes that the incorporation of GSCM principles in a supply chain demand the inclusion of economic, social and environmental issues that should permeate all internal and external relationships and encompass the entire supply chain.

In summary Table 1 shows the assumptions recommended by the authors described this theoretical foundation.

<b>Authors</b>	<b>Emphasis of studies</b>
Srivastava (2007)	Life cycle analysis, Ecodesign and environmental design, And reverse logistics network design, Green operations, waste management, Green manufacturing and remanufacturing
Leal et al (2009)	Integration of economic, social and environmental issues that should permeate all internal and external relationships and encompass the entire supply chain.
Jun et al (2010)	Reduce energy consumption, water and natural resources; increase the use of clean and renewable sources of energy; reduce emissions of waste and pollution; improve the processing of by-products.
Wu et al (2012)	Management of information flows, material and capital, Inter companies cooperation in a supply chain emphasis on economic, social and environmental aspects of sustainable development Engagement of all integral members of a supply chain
Morali and Searci (2013)	Governance, collaboration, encouragement for the supplier, from a holistic perspective
Zaabi, Dhaheri and Diabat (2013)	Integrated approach to reduce environmental pollution, social responsibility and economic gains Pressures and issues that motivate the adoption of sustainable practices in the supply chain; Barriers to adoption of SSCM in industries and analysis of the performance Sustainability is driven by legislation, public interest and competitive opportunities
Barbieri et al (2014)	Innovation in sustainability, Cleaner production(CP), Clean Development Mechanism (CDM) Energy efficiency

Table 1 - Summary table of the theoretical foundation  
Source: Elaborated by the authors (2015).

### 3 METHOD

This research refers to an analysis of environmental management practices adopted by suppliers of agro industry Alpha, located in southern Brazil, in the perception of managers. These suppliers are also called suppliers or subcontractors. This agro-industry exports to about 110 countries. It is one of the largest private employers in the country and has approximately 114.000 employees. The study was conducted in a single plant. In this unit there are 150 registered suppliers. 6 vendors who provided the most services for the unit studied in the last year of work were selected.

Figure 1 shows the links of the supply chain that were surveyed.

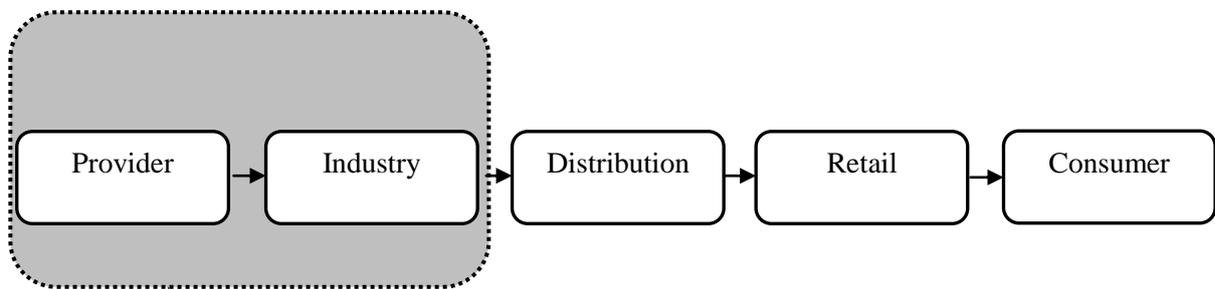


Figure 1 - Locus of analysis of this research  
Source: Elaborated by the authors (2014).

Figure 1 shows that the locus of data collection and analysis of this research is restricted to the vendor and industry links.

The research was descriptive, because the study was thorough in search of information and data on the environmental pillar of sustainable practices in other undertakings of the company Alpha, the plant located in southern Brazil.

Six managers of selected companies were interviewed. In Alpha, professionals Supplies (negotiator) and human resources assistant were surveyed, totaling two interviewees. The negotiator supply area was chosen because of his knowledge of the list of suppliers, negotiation and content of contracts with third parties. Employees of Human Resources, responsible for requirements gathering and documentation of compulsory third party referrals. Subcontractors in the choice of managers and entrepreneurs was associated with the fact that they are important stakeholders to identify the level of knowledge about the relevant environmental management and sustainability issues. For interviews, a recorder was used to record the statements made, in addition to taking notes of the main statements. The data collection for this study was carried out between March to May 2014, researching the subject described in Table 2.

Searches	Education Level	Areas of expertise
* Interview application to Human Resources Manager	Complete undergraduate	Human Resources
* Interview Application for Supply Manager	Complete undergraduate	Supply department
* Supplying company manager	Incomplete high school	Management
* Supplying company manager B	Complete high school	Management
* Supplying company manager C	Full Graduate	Management
* Supplying company manager D	Complete high school	Management
* Supplying company manager E	Complete undergraduate	Management
* Supplying company manager F	Complete undergraduate	Management

Table 2 - Levels and areas of respondents  
Source: Elaborated by the authors (2015).

Such subjects were intentionally selected because they are key organization subject. For the scope defined for this study, it was understood that there is no need to search the director of the plant, which has a more strategic view of the business. The intent of the study was to focus on specific suppliers and departments that interact directly with them, as presented in Table 3.

Target Audience	Questions
Human Resources	<ol style="list-style-type: none"> <li>1) What do you mean by sustainability?</li> <li>2) Does your company have any policies or goals related to sustainability?</li> <li>3) Which partners (stakeholders) do you consider important for your company?</li> <li>4) Review what environmental management practices that Alpha company has incorporated in their processes?</li> <li>5) What documentation is required of the contracted service providers?</li> <li>6) How is the control of this documentation carried out?</li> <li>7) What is the treatment if a supplier does not comply with the delivery of the required documentation?</li> </ol>
Negotiator	<ol style="list-style-type: none"> <li>1) What do you mean by sustainability?</li> <li>2) Does your company have any policies or goals related to sustainability?</li> <li>3) Which partners (stakeholders) do you consider important for your company?</li> <li>4) Review what environmental management practices that Alpha company have incorporated in their processes?</li> <li>5) How do you identify suppliers that are able to participate in an acquisition process?</li> <li>6) In the negotiations with suppliers are documents or information related to sustainability required? Which ones?</li> <li>7) Are the issues related to sustainability important / crucial for the definition of the winning company in a purchase process?</li> </ol> <p>Do you see environmental management practices in the Alpha company suppliers? Which ones?</p>
Suppliers	<p><b>BLOCK A – Respondent’s DATA:</b></p> <ul style="list-style-type: none"> <li>-Name of the interviewee:</li> <li>-Age:</li> <li>-Training (Educational attainment):</li> <li>-Time in the Company / job:</li> <li>-Position held:</li> </ul> <p><b>BLOCK B – COMPANY’S DATA</b></p> <ul style="list-style-type: none"> <li>- How long has your company been in the market?</li> <li>- How many employees does your company have?</li> <li>- What is the business sector of your company?</li> <li>- What is the coverage area of its operations?</li> <li>- What product mix does it offer to the market?</li> </ul>

	<p>- Who are your main customers?</p> <p><b>BLOCK C - ENVIRONMENTAL MANAGEMENT PRACTICES WITHIN THE COMPANIES OUTSOURCED BY THE ALPHA COMPANY</b></p> <ol style="list-style-type: none"> <li>1) What do you mean by sustainability?</li> <li>2) Does your company have any policies or goals related to sustainability?</li> <li>3) Which partners (stakeholders) do you consider important for your company?</li> <li>4) Review what are the environmental management practices that you have incorporated into your business?</li> <li>5) what other practices are being required to be incorporated in your production flow, in order to fulfill your clients' demands? ? are being required</li> <li>6) What other environmental practices do you not have, and that would be important to enter new markets?</li> </ol> <p><b>BLOCK D - KNOWLEDGE AND THE EMPLOYEES OF ENTERPRISES OF THIRD LEVEL OF PARTICIPATION IN ENVIRONMENTAL PRACTICES HELD</b></p> <ol style="list-style-type: none"> <li>1) In your perception, the level of expertise of its employees allows easily incorporate new environmental, social and economic management practices in your company? Why?</li> <li>2) Do your employees easily accept the incorporation of new practices and routines within the company? Explain.</li> <li>3) Is there any training related to sustainability that you consider important for your employees? Which one?</li> <li>4) What kind of behavior do you expect from an employee of the operational sector?</li> </ol> <p><b>BLOCK E - STRUCTURED TIMETABLE FOR IMPLEMENTATION OF AN ENVIRONMENTAL MANAGEMENT SYSTEM</b></p> <ol style="list-style-type: none"> <li>1) Among the environmental practices that you(a) know and consider being important to be incorporated in your company, how long do you believe it is necessary to enable the implementation of the same?</li> <li>2) What are the main difficulties that you consider as present in your company in order to incorporate environmental practices?</li> </ol> <p><b>BLOCK F - ACTION PLAN PROPOSING A GUIDELINE FOR SUSTAINABLE PRACTICES OF INCORPORATION TO SMALL AND MEDIUM-SIZED ENTERPRISES PROVIDERS.</b></p> <ol style="list-style-type: none"> <li>1) In your view, what are the practices that the company should incorporate and contribute to make it more environmentally and socially responsible? What are the environmental and social practices that customers are demanding that the company has established?</li> </ol>
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Table 3 - Master lines of data collection adopted instruments

Source: Elaborated by the authors (2015).

Having the data from the interviews, they were transcribed in full. The steps that were followed meet the postulates of Bardin (2011) and consist of: a) decomposition of the material to be analyzed into parts; b) distribution of parts into categories; c) description of the results of categorization; d) inferences of results; e) interpretation of the results obtained with the aid of theoretical basis adopted.

In this study, we adopted the categorical or thematic analysis, which is described by Bardin (2011) as the process of analyzing text from categorized and grouped units, analogically in relation to the themes.

#### **4 RESPONDENT’S UNDERSTANDING ON THE CONCEPT OF SUSTAINABILITY**

The providers surveyed are not unique suppliers of Alpha Company. However, they were selected because they are enterprises that had the largest number of transactions in the last year with the company. Suppliers of respondents, 33.33% have completed higher education and 16.67% post-graduation sensu. The rest have complete or incomplete high school. The analysis of each employees’ length of time in the researched company shows that 79.40% have been in the company for up to four years. Only 7.40% of employees have been in the business for more than 10 years. This analysis shows that working teams are relatively new and renewed. The average time is 2.84, and the standard deviation 3.15.

With regard to research participants companies, it is clear that the six evaluated companies, five of them have a small number of employees, which may facilitate the implementation of actions and environmental practices due to the ease of gathering and educating employees. There are a total of 88 employees belonging to the functional framework of six companies surveyed. The services and products provided by third parties of five of the surveyed company is included in the manufacturing sector, trade and maintenance of machinery and equipment and a researched company offers food service. Regarding the time that the company provides services for Alpha, we identified that all the companies surveyed have already been supplying for more than three years. The average delivery time is 8.09 years and the standard deviation of 4.62. Regarding the partnership between customer and supplier Martins and Alt (2006, p. 385) argue that "the important thing is to establish a permanent relationship between customer and supplier, involving not only possible or planned purchases, but the very product development". These companies, due to the time of partnership should already know the rules, regulations and requirements of Alpha, as well as its production process. Table 4 describes the accounts given by respondents about the level of understanding of the concept of sustainability.

<b>Respondents</b>	<b>Understanding of sustainability</b>
Human Resources Assistant	Sustainability is the ability of humans to interact with the world, preserving the environment so that future generations are not compromised and enables the continuity of human life on earth.
Negotiator	Sustainability is being consolidated in the market by offering quality products that add quality of life and maintain their revenue through the business of the company. Another understanding is the utilization of natural resources in a conscious way that does not harm the environment or that these resources may be lacking in the future. The involvement of the community and businesses in these actions must be integral. Simply, it can be stated that the effectiveness of sustainability in a project or in a particular region is to guarantee that even explored that area will continue to provide resources and economic and social well-being for communities who live in, where new generations can enjoy these same conditions offered today.

Manager of Company A	I do not have understanding of the sustainability issue.
Manager of Company B	Sustainability is the company be able to maintain a portfolio of clients and have structure to find new customers and thus maintain the economic sustainability of the company.
Manager of Company C	Sustainability is a more conscious way of dealing with natural resources and the disposal of waste generated by man
Manager of Company D	Sustainability is producing for oneself aiming at the survival of the company.
Manager of Company E	Performing tasks efficiently, using fewer natural resources and consequently lesser waste generation in processes. Thus, we seek profitability and economic outcome for the company.
Manager of Company F	They are activities which are focused on the self-sustainable area with environmental and social relationship. For example, manufacturing a conveyer belt by using a more durable a recycled material.

Table 4 - Understanding the surveyed about the concept of sustainability

Source: Elaborated by the authors (2014).

As registered in Table 4, we see that there are different ways of understandings sustainability. The manager A has no knowledge about sustainability. One realizes that the only negotiator Alpha has complete knowledge about sustainability that includes three supporting pillars: environmental, social and economic. The concept of sustainability is also understood to be something that is related to natural resources and the sustainability. Only two interviewees highlighted depicting the social dimension aspects. We can see it in Table 5.

Respondents	Mentioned Aspects
Human Resources Assistant	I believe so, as well as preserving the environment it seeks to reduce impacts to the economy and conscious use of water. Acts preventing pollution by checking the amount of gases emitted into the nature and seeks to develop healthier products with reduced sodium, sugars and fats benefiting the end consumer and the nearby community.
Negotiator	Alpha is directly involved with the community, meeting strict federal, state or local policies, strategically have specialized sector to address the issue, which outline guidelines and goals in the pursuit of continuous awareness of the use of natural and human resources development. An example of a guideline is the consumer awareness of energy / water use. Goal: Reduce energy consumption during peak hours. The company has a power controller programmed in peak hours to manage this goal.
Manager of Company A	Just by not having knowledge on this subject my company has no policies and goals related to sustainability.
Manager of Company B	Currently my company has no policy or target set. I Believe it is still not a priority for me. First I would like to establish financially.
Manager of Company C	Yes, we have implemented operating procedures and indicators that assess them.
Manager of Company D	Formally have nothing policy and goals in my business. I never thought to define and disseminate a policy.
Manager of Company E	The company has sales targets, productivity, turnover and sales. We have no policy or target for sustainability issues.
Manager of Company F	Formally own nothing definite about sustainability.

Table 5 - Existence of policies or goals related to sustainability

Source: Elaborated by the authors (2014).

Totaling eight respondents - Assistant Human Resources, the Negotiator, Managers of Business A, B, C, D, E and F were interviewed.

The definition of policy goals and practice is not held by most of the companies analyzed. Company C is the only company that has a policy and goals related to sustainability.

Environmental policy should contain items that provide a comprehensive framework for setting and reviewing environmental objectives and targets. The best way to demonstrate this condition is the unfolding of the statements contained in the policy goals and objectives of the company (SEIFFERT, 2011).

Importantly, the development of policy and subsequent goal setting is the assurance that the company will have to support the appropriate implementation of an environmental management system and actions related to social context. Table 6 shows the relevant stakeholders to the surveyed organization.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Human Resources Assistant	I believe in suppliers who care about the same causes that our company and deserve special attention. This goes for the social side as well. They must have credibility and reliability in work performed.
Negotiator	One of Beta's goal is to seek for suppliers in the market that are aligned with the policies adopted by Alpha, suppliers who through their actions and results seem to be aware in the globalized world that the exchange of information, commitment and joint efforts allow positive results for all. Thus, I see as important partners those who are aware of their responsibilities, who contribute to innovations and discovering new ways of doing things.
Manager of Company A	The partners I consider to be more important are the customers and also the C (company) who helps my business a lot in relation to management and training.
Manager of Company B	I consider customers and suppliers as the most important partners, is what makes the wheels of the company turn . We must have a good relationship with suppliers to create partnerships and successfully meeting customers' demands as they wish.
Manager of Company C	The partners who I consider as the most important are our customers, in my case, Alpha to be more specific, and I also consider companies that collect our waste production important.
Manager of Company D	The focus and goal of the company is undoubtedly first of all, our employees, having employees aligned with the company means we can produce with quality to sell to our customers. Suppliers are also important so that you can acquire the best raw material.
Manager of Company E	I consider employees as key suppliers. They are the wheels to the achievement of results and generation of good customer service.
Manager of Company F	I consider the customer as the most important suppliers, because the demand is very high and it all starts at the customer's request. From there you get to run your process.

Table 6 - Stakeholders important to one's business

Source: Elaborated by the authors (2014).

As can be seen in the interviews, there is a concern for synergy throughout the production chain. This in turn occurs when there is cooperation between the different subjects studied that interact with the organization. Above all, they are aligned with the politics of agro industry Alfa, which takes inputs from suppliers surveyed. Table 7 shows the environmental Management Practices that Alfa has built into its processes.

Respondents	Mentioned Aspects
Human Resources Assistant	The company has in the environmental control and is constantly audited to ISO 14001, in addition to internal audits (Cup of Excellence) that its outcome impacts the financial bonuses of employees (Profit and Results). It also has control indicators of consumption of utilities such as water, gas and electricity. Treating water first before returning it to the river, reducing environmental impact, replacing equipment with more energy consumption by new and more economical equipment.
Negotiator	Purchase products / materials from companies that meet environmental legislation; Animal welfare goods - Be it on the handling of the transport or the slaughter; Awareness of the separation of garbage in all company processes; Awareness of natural resources (water and electricity) use; Investments linked to environmental management projects, e.g. the cistern to store rainwater; Analysis of waste and its impacts to the environment; Proper disposal of waste produced; Water treatment used before returning it to the soil; Training of its employees and suppliers;
Manager of Company A	In my company we look into conducting the separation of glass, metal and paper.
Manager of Company B	The company has no formal and specific environmental management programs, but we consider the allocation of copper and aluminum waste correctly because we set them apart at specific locations and then make the allocation to specific buyers.
Manager of Company C	The proper disposal of all waste generated by the kitchen, with documentation to date of all the companies involved; Reduce the consumption of cleaning chemicals, requiring a dilution from our supplier in order to use them with quality and economy; Washing and cleaning kitchen with buckets of water and without using hoses, thus reducing water consumption.
Manager of Company D	There is the separation and disposal of hydraulic and mineral oil as waste collection and sale to an authorized company to give it a destination.
Manager of Company E	We have separation of waste, including disposal for the considered class I to CETRIC - Industrial Solid Wastes Treatment Center (company specialized in waste destined class I). The place set for painting has a system to reuse water and turns the air into the ink blots which is also intended to CETRIC. The oils used in the process are stored and shipped to a company in Porto Alegre. We also do not practice 5S program implemented.
Manager of Company F	We try to separate the metal for subsequent sale by steel types. The other residues are destined to the normal gathering hall.

Table 7 - Environmental Management Practices that Alfa has built into its processes

Source: Elaborated by the authors (2014).

Regarding environmental management practices adopted in the processes of the company, the respondents stated mostly that waste sorting is the main practice undertaken. .

The management of Company C reported that the reduction of chemicals in cleaning areas is also a practice that was implemented in the company and the manager of the company reported that in addition to waste separation, there are practices of water reuse in the paint booth, which helps to reduce particulate emissions to the atmosphere through the air in the ink capturing and processing solid residue.

Through information passed on by the employees interviewed agro industry Alpha there are many practices to be implemented in the processes of their suppliers as the implementation of ISO 14001 and the implementation of indicators related to environmental

management. Table 8 shows the documentation required from providers of contracted services.

Regarding the benefits of the ISO 14001 certification, Junior et al (2013, p. 41) describe in their study that was possible "evidence that businesses certified by the NBR ISO 14001 highlight a larger set of environmental factors in its management through controls, actions and structured programs, thereby demonstrating greater environmental concern."

Respondents	Mentioned Aspects
Human Resources Assistant	<p>The documents are divided in three categories:</p> <p>Company documents in the approval of service: social contract, copy CNPJ - National Register of Legal Entities, federal CND - Clearance Certificate of Federal Debts, state CND, Town CND, CND INSS - Debt Clearance Certificate from the National Institute of Social Security, CRF FGTS - Consultation Regularity Employer Guarantee Fund for Time of Service, CNDT labor - Debt Clearance Certificate for Labor, collective agreement category, PPRA signed and stamped - Program for Prevention of Environmental Risks, LTCAT - Technical Report of Environmental Working Conditions signed and stamped ART - Technical Responsibility of the engineer in charge and PCMSO - Program for Medical Control of Occupational Health signed and stamped by the responsible person.</p> <p>Documents of company employees: ASO - Occupational Health Certificate, record of PPE - Personal Protection Equipment, tab, CTPS - Portfolio of Work and Social Security, and technical skills.</p> <p>The following documents are required when issuing invoices and release by controlling subscriptions and TLCD - Hiring release Term Demand and TMSOE - Service Measurements Term works and equipment. Documents required monthly: SEFIP / GEFIP - Enterprise System Collection of FGTS / Guide Collection of FGTS and the Information Security Guide, INSS quittance - National Institute of Social Insurance, Guide to FGTS quittance - Guarantee Fund for Time of service, quittance from the ISS - Tax Over Services for employees.</p>
Negotiator	<p>Normally our future suppliers before joining the register visit us and present their capacities. At this time some important requirements are assessed as number of employees, social capital, business integrity before the tax authorities and other relevant bodies, service capacity, history of services provided in the market. Our engineering team also makes technical analysis of this prospective supplier.</p> <p>After this assessment and registration of the company, the employees who are part of it and provide services with Alpha are invited to a training which is offered on the premises of the agro industry. This training is called basic integration, at this point, all the basic conditions required by Alpha and only after this training for the company and its employees will they be able to enter and perform their services within Alpha's premises.</p> <p>This process is secured with the ordinance, where a system of consultation and third party release is available. Once the third company has provided their documents they await for the service provider (security guard) to access the system which will show whether the company and the employee are free to access and perform the contracted service.</p>
Manager of Company A	<p>There is not a specific requirement. What key customers require hiring a vendor to collect waste metal.</p>
Manager of Company B	<p>Currently there is no demand from customers to introduce practices in my process. What is required, is that when we perform a service within the premises of some customers that we keep the areas clean and allocate the waste in the correct and defined locations.</p>

Manager of Company C	I do not have any requirements beyond those already implemented in our processes.
Manager of Company D	Our requirements are only in the sorting and cleaning of the areas during the maintenance performed within clients' companies.. For example, if an electrode falls on the ground, we gather it with a tow and place it in the identified trash.
Manager of Company E	The recovery is when we perform business services, in relation to disposal of waste we generate, and sometimes we need to bring the waste back to the company intended here. Regarding the documentation here are no requirements.
Manager of Company F	The charge is in relation to separation of waste from maintenance performed in works within the units of some major customers.

Table 8 - Documentation required from providers of contracted services

Source: Elaborated by the authors (2014).

According to information provided by the managers of Other companies with respect to other environmental management practices, most interviewees responded that the main requirement is adequate sorting of waste when performing services within the premises of the Alpha.

Regarding the importance of waste separation in companies, it is possible to identify the study by Alves and Nascimento (2014) that experts are seeing good prospects for the development of future discussions on the management of green supply chain, because of the national policy of solid waste, pressures coming from the international market and seeking certification of its environmental management system.

The above analysis demonstrates the importance and care managers of Outsourced companies have to perform service and maintenance in the areas of agroindustry Alpha. Table 9 shows the control system of documentation required from suppliers.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Human Resources Assistant	<p>The documentation is always delivered in hard copy and 72 hours in advance of the date of entry into the unit to provide the service and after finalization of the contract. When is technical assistance or any emergency service, the release is performed with a waiver completed and signed along with the other documents. After delivery and validation of PPRA - Program for Prevention of Environmental Risks, LTCAT - Technical Report of Working Conditions and Environment PCMSO - Program for Medical Control of Occupational Health at SESMT - Specialized Service in Safety Engineering and Occupational Medicine is made the registration on Third Party Management System (TMS) and released employees to participate in the integration of basic training. After the integration is released employees to enter and render service.</p> <p>All documentation is released on Excel spreadsheets to perform control of validity of documents and perform the collection of the third, so to win the same rectify backlogs. If it does not deliver the overdue documents or documents regarding the monthly payment is blocked until the regularization. All documents are stored in a separate file and per company. At the end of each year, all expired documents are stored in a permanent file for 10 years.</p>

Negotiator	There is a document called the Alpha Memorial descriptive of the work which is prepared by the technical engineering team. This document contains all necessary to perform the contracted service requirements, noting that the requirements are changed according to the requirements of each project. It should also be noted that the integration of basic training is highlighted by safety inspector what are the regulations related to health, safety and environment which must be followed when it is rendering service within the premises of the Alfa.
Manager of Company A	I think a lot about the proper sorting of waste but I do not have the adequate knowledge to perform all the actions to fully and properly implement this environmental practice.
Manager of Company B	I've walked without really taking a look at deepening environmental seals and also the standards mainly ISO 9001 and subsequently ISO 14.001. I believe it is a must before I deploy to ISO 9001 and then to 14.001.
Manager of Company C	I believe that within our own monitoring all practical requirements, since both our company, as our customer are many customers.
Manager of Company D	I believe that improving this system of separation of garbage I have and other programs such as 5S I have worked in an agro industry and helps a lot in the process of the company. Just admit that you lack knowledge and information to put into practice.
Manager of Company E	I believe that we are able to have a control and goals related to solar energy with the goal of saving and cost reduction. Think it necessary to survey the aspects related to the environment of our activities.
Manager of Company F	Separation of some materials not yet accomplished (organic and household waste) and a program such as the 5S, which we do not have formally yet.

Table 9 - Control system of documentation required from suppliers  
Source: Elaborated by the authors (2014).

When asked about environmental practices that have not implemented in your company and that good results could add to its growth, managers consider certification of ISO 14001, 5S program, the implementation of the management of environmental aspects and impacts and the full implementation and effective waste management.

The management of Company C said that due to the requirement of customers your company already has all the necessary for your segment environmental practices.

About ISO 14001 Alves and Nascimento (2014, p. 517) report that "it is a managerial standards which aims to highlight the environmental impacts of management activities enterprise process and the life cycle of products/services".

With respect to the 5S Silva (1996) concludes that program in Brazil 5S program should be disseminated widely, with the application of their senses: use, order, cleanliness, health and self-discipline to implement environmental quality. With the implementation of these senses, the objective is the stimulation of education and continuous development for survival with dignity. Table 10 shows the treatment adopted if a provider fails to comply with the delivery of mandatory documentation.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Human Resources Assistant	If the supplier does not comply with the requirements of the approval documents requested have not made the system registry. If it does not deliver the documents or other accrued monthly (CND's - Debt Clearance Certificate) is blocked if the payment does not have the approval documents and the service is an emergency, the facility manager is to release by the end of the exception, assuming responsibility until the delivery of the required documents.
Negotiator	Surely any negotiations that may occur where the purchased product or service offers some risk whether it is an environmental or social aspect, an analysis is performed considering the environmental, social and economic aspects. We have a policy document - DMS 2158 - Monthly Statement of Services, which classifies each operation and what is the risk that each activity offers. Depending on the classification requirements are allocated and classified as low, medium or high impact on social, economic and environmental purposes.
Manager of Company A	I Surely believe that the employees of my company will absorb the actions and practices and assist with its implementations. In fact, the company has employees attending college.
Manager of Company B	Yes, because all employees are either enrolled or attending college or technical course. I think this helps a lot.
Manager of Company C	No, I believe we may have some difficulty because the employees have little education and do not yet have the flexibility to easily incorporate possible practices to be implemented. They perform the activities and practices with coordination and supervision.
Manager of Company D	I believe that knowledge is not the obstacle to employ environmental practices or other situations of improvement. Depends on each one, I think it is more related to the culture of each employee.
Manager of Company E	Our team is able to receive guidance and are well qualified technically, and are engaged in what they do.
Manager of Company F	Not all employees have knowledge to implement environmental or social practices. Hence the importance of always being guided on what they should do.

Table 10 - Treatment adopted if a provider fails to comply with the delivery of mandatory documentation  
Source: Elaborated by the Authors (2014).

The managers' perception of outsiders about the importance of the knowledge level of employees in the implementation of environmental practices shows that most managers believe that the level of knowledge facilitates the implementation of actions. As a matter of fact, the manager of the company C mentions they may have difficulties in implementing practices due to the knowledge level of the employees actions.

The manager of Company D believes that the knowledge level of the employees will not influence the implementation of practical actions related to the environment. Table 11 shows the perception of managers if employees accept the incorporation of new practices and routines.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Negotiator	Environmental policy is a pillar formed within the Alfa Group, for this purpose, the company has a program called Health Safety and Environment (HSE), which is rigorously practiced by all ranks through training and practical applications. This program exceeds the internal barriers and it requires from employees and third parties who practice in their daily lives while they are within our company.
Manager of Company A	As I mentioned earlier, they accept and contribute with ideas to implement improvements in business.

Manager of Company B	Yes, my employees easily accept all guidelines that are passed on to them in relation to new works. They seem to be open to new ideas and suggestions.
Manager of Company C	They do not accept it so easily, but as managers we invest a lot in training and in this way we are able to get good results with employees.
Manager of Company D	As mentioned earlier, it depends on each one. Some promptly accept everything that you propose and contribute with ideas and with others we have a greater difficulty.
Manager of Company E	They always accept the guidelines appropriately and contribute so that improvements occur according to what was planned.
Manager of Company F	Yes, when they are urged to accept or perform new practices they easily absorb and participate. I always try to encourage partnerships among employees.

Table 11 - Perception of managers if employees accept the incorporation of new practices and routines  
Source: Elaborated by the authors (2014).

Most managers of outsourced companies for Alpha say their companies' employees accept the incorporation of new practices and routines, being an important factor for successful implantation the way to instigate and guide employees on new practices.

The management of Company C reported that employees do not accept so easily, training being very important to obtain success of the proposed actions.

According to Campos (1994) to implementation of a schedule for the accomplishment of control actions of total quality requires a change of behavior, and as such requires time, higher education and training. Table 12 shows the existence of sustainability training for employees.

Respondents	Mentioned Aspects
Manager of Company A	There are certainly important training but I have no knowledge to define. When you need a specific training look into SENAI - (National Commercial Training Service) and even suppliers to seek training.
Manager of Company B	No, as I reported previously, I have other priorities for now and then I'll think about the issue of development and environmental quality.
Manager of Company C	The training that I consider important are those related to the proper disposal of waste, control of waste and proper waste separation, in addition to the 5S program.
Manager of Company D	Certainly there are several important training. But as I do not have knowledge on the subject, the cost to get this training outside the company must be very high.
Manager of Company E	I cannot see at the moment that training is a priority to apply to employees.
Manager of Company F	I consider training in the NR 18 standard, that deals with safety in the workplace, organization, cleanliness of the work environment and always seeking continuous improvement.

Table 12 - Existence of sustainability training for employees  
Source: Elaborated by the authors (2014).

In general the managers of the companies surveyed consider the training program related to 5S, safety and proper disposal of waste as important to assist in the search for sustainability.

The manager of the company D said it lacks knowledge to prepare or acquire appropriate training for its employees. This information demonstrates the importance of this

research in order to provide appropriate material for the manager to incorporate into their business processes.

"Organizations map the competencies to be developed using practical tools to identify the demands on internal learning" (ANDRADE; RODRIGUES, 2008, p.12).

We highlight the importance of defining the necessary training to each employee so that the objectives are achieved in its fullness. Table 13 shows the type of behavior required for the operational sector employees.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Manager of Company A	Regarding their behavior, I try to identify the employee's experience in electrical work, whether they have a flexible schedule, because we have to meet the client's need at the time he needs and they also need to have a license to drive the companies' cars.
Manager of Company B	First I try to identify the technical knowledge of the employee due to the feature of the company is very important. I also hope that he has a proper attitude while working.
Manager of Company C	Because the operating employee has a lower level of education, what I hope is that he can put into practice the teachings that are passed on in training, to compensate for the lack of proactivity.
Manager of Company D	The behavior that I try to observe in employees is humbleness, because that way they will be able to listen and apply the guidelines to carry out the activities correctly. Another feature is proactivity, not waiting around and being still when a job ends and instead look for other things to do.
Manager of Company E	I always expect for the employees' commitment to their work. Their respect to their family, neighbor and the property they are using. The mood is also seen in the behavior of an employee.
Manager of Company F	First of all, what I expect from an employee is dedication in everything they perform within the company and also if they are worried about the professional growth through involvement in the company and developing through courses and studies.

Table 13 - Type of behavior required for the operational sector employees  
Source: Elaborated by the authors (2014).

With respect to a desired behavior contribute to the operational sector, managers of firms A and B mentioned the technical knowledge as an important factor. The dedication, commitment and proactivity were the characteristics considered most important in the analysis of an employee's profile for the operational sector.

The analysis of the data in Table 10 demonstrates that technical knowledge aligned to the interest of the employee to cooperate with the good results of the company are important factors in defining a candidate for the operational sector of outsourced companies by Alpha. Table 14 shows the practices considered as important and how long it is needed for implementation.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Manager of Company A	A program that I know and that we have something implanted is the separation of waste and garbage that I believe takes around 6 months to complete implementation.
Manager of Company B	I believe that the implementation of ISO 14001 in the future will be paramount to the company's growth. With respect to the time necessary I think it will take around three years to enable the implementation.
Manager of Company C	I do not have good knowledge of other important practices in addition to those we already have. An important program such as 5S believe it takes around 1 year to be incorporated in the company.
Manager of Company D	If it is a 5S program I believe it takes around 40 days to implement it. I am not aware of other practices necessary to know the time of implantation.
Manager of Company E	As we talked about formalizing the survey of environmental aspects and impacts I think it is an important practice that should take around six months to complete this work.
Manager of Company F	It is important to consider a more comprehensive environmental management system, we already have some actions embedded in practice. I believe it can take around 90 days to implement these new actions.

Table 14 - Practices considered as important and how long it is / the deadline need for implementation

Source: Elaborated by the authors (2014).

Managers of companies B and F consider the implementation of an environmental management system as important in their practice and the deadline for implementation diverges, as the manager of company B mentioned three years and the manager of company F declared an implementation of 90 days.

Managers of companies C and D defined the 5S program as a major environmental issue, where the management of company C mentioned an implementation period of approximately 1 year. The manager of Company D reported that lack of knowledge to set a deadline for implementation of the program.

Regarding the deadline for the implementation of a quality system Mears (1993) defines that management through total quality must be permanent, long-term, aiming at customer satisfaction using a process of continuous improvement of its products and services provided by the company.

It is important to highlight that there is no set deadline for the implementation of a program or quality system. In the sequence, Table 15 shows the difficulties that may be encountered in the implementation of environmental practices.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Manager of Company A	I think the financial issue, it must be costly to implement the necessary improvements. Another issue that I believe as hindering is the lack of knowledge of other important practices that could improve my business.
Manager of Company B	The main difficulty is in relation to economic, for I will have expenditures with improvements and with the ISO 14001 standard. I would also comment that there

	are other priority projects before thinking in environmental management.
Manager of Company C	As we have previously mentioned the low level of education and the lack of proactivity of employees.
Manager of Company D	The biggest difficulty I have to implement environmental practices is the lack of knowledge and practice to implement the concepts of programs and tools.
Manager of Company E	The difficulties are related to corporate issues, submitting and approving projects can take a long time as it is a multinational company. The positive side is that we would have resources and training for implementation of proposed practices.
Manager of Company F	The characteristics of some works we do, where we have difficulties in keeping the environment clean and properly allocate some materials such as the blade.

Table 15 - Difficulties that may be encountered in the implementation of environmental practices

Source: Elaborated by the authors (2014).

The data exposed by managers related to the difficulties that may be encountered in the implementation of environmental practices demonstrate that the economic issue, the lack of knowledge on matters pertaining to environmental programs and practices and a lack of commitment and proactivity of employees may impair the effective implementation of the planned actions to improve or implement an appropriate environmental management for outsourced companies by Alfa.

In the study by Abdalla and Feichas (2005) on the main difficulties in seeking the certification of the environmental management system the direct cost of compliance audits are considered, the indirect cost with the involvement of employees and expenditures for compliance with environmental compliances.

Thus, the need to draw up action is exposed in order to clarify the operation of an environmental management system, and the development of easy to understand content and procedures and motivational content that allows employees to understand and adhere to the proposed actions for continuous improvement environmental management of the company.

Based on the implementation of hindering, in the perception of respondents on relevant practices for environmental management and theoretical constructs discussed in this paper, we designed a plan of action for the companies surveyed. Table 16 highlights practices that the company must implement that contribute to social / environmental issues.

<b>Respondents</b>	<b>Understanding</b>
Manager of Company A	Firstly, proper waste separation and other programs that have no great cost to my company.
Manager of Company B	As previously commented on the ISO 14001 standard. Focusing on proper waste separation and subsequently on its proper destination.
Manager of Company C	I believe we should maintain the practices that we have carried out today such as the proper separation and proper disposal of waste from the kitchen processes and especially the 5S program.
Manager of Company D	I do not think specifically of a single action, I know that there are several as we have talked about before, but always falls on lack of knowledge.

Manager of Company E	An Environmental Management System based on ISO 14001 formally with documentation and practice.
Manager of Company F	More attention and knowledge of employees in carrying out activities with dust, noise and reuse of materials. Find a way to motivate and educate employees.

Table 16 - Practices that the company must implement that contribute to social / environmental issues  
Source: Elaborated by the authors (2014).

With regard to environmental and social practices that managers have identified as important to compose a plan of action to improve their performance, they defined the implementation of an environmental management system based on ISO 14001 and the proper management of waste from the company's processes.

According to Cajazeira and Barbieri (2005) for some organizations implementation an EMS through the ISO 14001 can generate a significant competitive advantage, especially for those participating in the foreign market.

The manager of the company C mentioned that in addition to actions related to maintaining the separation of waste and the 5S program.

The manager of company F believes that actions to motivate and educate its employees should be included in an action plan for environmental and social improvements. Table 17 presents the social and environmental practice that customers are demanding.

<b>Respondents</b>	<b>Mentioned Aspects</b>
Manager of Company A	The separation and collection of metals, in addition to mandatory training of some important customers as the speech Health Safety and Environment (HSE) environmental and occupational safety.
Manager of Company B	Specifically, no environmental or social practice is required. What happens is when we have to perform a service at the customer's premises we are emphatically required regarding the cleanness of the place, the maintenance and disposal of the waste generated.
Manager of Company C	The requirement is to maintain these environmental practices already commented previously.
Manager of Company D	With respect to the environment we are only required regarding the cleanness and disposal of waste when we run the maintenance within the customer premises. Regarding the social part nothing is required from us.
Manager of Company E	There is no effective requirement from customers. What exists is the demand already mentioned when we perform the services within the customer's premises with respect to waste disposal and cleanness.
Manager of Company F	Our main customers demand the reuse of materials in the maintenance performed, the use of non-toxic materials within the production area and training on HSE (Health, safety and environment). There is also a demand of a check-list with requirements related to health, safety and the environment that must be proven with documents.

Table 17 - Social and Environmental Practices that customers are demanding.  
Source: Elaborated by the authors (2014).

Social and environmental practices that customers are demanding of outsiders Alpha were exposed by managers, and with respect to social issues corporate managers B and D reported that there are no requirements.

In relation to environmental issues, the requirements regarding the maintenance of cleanliness and organization of the areas at the time and after the maintenance performed were recorded by three managers. Reuse, use of nontoxic materials and training on health and safety were mentioned by the manager of company F.

Regarding the good relationship between the stakeholders, in their study Gao and Zhang (2006) describe that the existence of a process of evaluation and reports related to social and environmental performance of organizations, and with the involvement of stakeholders through dialogue, the building of trust relationships might occur, with a commitment to identify and develop cooperation between partners and organizations.

We need suppliers to meet adequately the social and environmental requirements demanded by their customers, always remembering that the partnership should satisfy all parties.

From the data described a typology of environmental strategies adopted by vendors was prepared as described in Table 18, since it was evident that this is the dimension of sustainability that has received more pronounced attention by respondents. The same followed the taxonomy developed by the authors Jabbour and Santos (2011):

Typology	Adopted practices	Suggested practices for Adoption
External integration	-	<ul style="list-style-type: none"> <li>* emphasis on adopting environmental leadership practices</li> <li>* implementation of environmental certifications</li> <li>* environmental control in administrative management</li> <li>* strategic integration of environmental variable</li> <li>* sustainable operations in the supply chain</li> <li>* investment in eco-innovation and eco-design</li> <li>* investments in sustainable practices aligned with the guidelines of Alpha</li> <li>* investment in ecological excellence</li> <li>* spread of environmental activities throughout the organization</li> <li>* product life cycle analysis</li> <li>* analysis of the environmental impacts of production processes and risk management</li> </ul>

Internal integration	<ul style="list-style-type: none"> <li>* Investment in training and development of employees</li> <li>* Innovations and new discoveries</li> </ul>	<ul style="list-style-type: none"> <li>* emphasis on prevention</li> <li>* implementation of an environmental management system</li> <li>* implementation of the 5S</li> <li>* implementation of ISO 14001</li> <li>* control indicators in the industrial practices and processes</li> <li>* inclusion of divisional projects and waste management, effluents and emissions</li> <li>* creating and monitoring specific environmental goals</li> <li>* monitoring the environmental performance of audits</li> <li>* emphasis on efficient use of available resources</li> </ul>
Functional specialization	<ul style="list-style-type: none"> <li>* Service sector legislation</li> <li>* Pollution control</li> <li>* Timely integration of good environmental management practices</li> <li>* Environmental control the outputs (emphasis on processes)</li> <li>* Management of waste produced</li> <li>* Meet the demands of company Alpha</li> <li>* Technical qualifications of staff</li> </ul>	<ul style="list-style-type: none"> <li>* development of cleaner products and processes</li> <li>* elimination and mitigation of impacts and environmental damage resulting from the planning, implementation, operation, expansion and relocation of activities, including all phases of the product life cycle.</li> </ul>

Table 18 - Type of environmental management practices by suppliers  
Source: Elaborated by the authors (2015).

Guided by this mapping made, some proposals have been made for future testing by means of quantitative surveys:

Proposition 1: The higher the level of education of providers, the greater the level of commitment to transform operations on sustainable;

Proposition 2: The higher the level of internationalization of the agricultural industry, the higher the level of commitment to incorporate sustainable practices and tools;

Proposition 3: The external integration of businesses stimulates the incorporation of sustainable operations;

Proposition 4: The internationalization of the company increases the level of concern to transform the supply chain into a sustainable network;

Proposition 5: The loyalty of suppliers contributes to become sustainable;

Proposition 6: A proactive strategy of suppliers in relation to sustainability is derived from a measurable economic performance and derived from this strategy;

Proposition 7: Mitigation and elimination of social impacts along the supply chain is made reactively in food processing industries;

Proposition 8: Investments in eco-innovation and eco-design positively impact the company's economic performance;

Proposition 9: Investments in eco-innovation and eco-design positively impact the image and reputation of the agro-industry company;

Proposition 10: Sustainable Operations positively impact the economic performance of suppliers and the agro-industrial company.

And yet, a proposition of guided improvements in the triple bottom line of sustainability and the recommended guidelines for Morali and Searci (2013) was made. The following Table 19 shows the continuous improvement actions for Alpha and its suppliers.

Dimensions	Actions
Governance	<ul style="list-style-type: none"> <li>- Create measurement indicators of sustainability actions developed in the supply chain</li> <li>- The indicators should reflect economic impacts, significant environmental and social impacts or influence, substantively, evaluations and decisions of stakeholders</li> <li>- Identify impacts, risks and opportunities to become sustainable</li> <li>- Identify needs and demands of sustainability raised by stakeholders with whom the company interacts</li> <li>- Identify the risks related to sustainability that can affect the supply chain</li> </ul>
Collaboration	<ul style="list-style-type: none"> <li>- To provide capacitation and training to educate employees, suppliers and customers of the importance of acting in network and emphasize the sustainable supply chain</li> <li>- Investing in quality education and forming citizens aware</li> </ul>
Incentive to the supplier	<ul style="list-style-type: none"> <li>- Via prices</li> <li>- Via loyalty</li> <li>- Via incentives for adoption of continuous improvement practices</li> <li>- Via traceability actions</li> <li>- Via audit actions of the supply chain</li> <li>- Via awards to the best suppliers</li> <li>- Via marketization of excellence actions taken by suppliers</li> <li>- Via highlights of research, development and innovation</li> <li>- Via highlights of economic performance excellence</li> </ul>
Holistic perspective	<ul style="list-style-type: none"> <li>- Emphasis on longevity and durability</li> <li>- Focus on actions that impact the supply chain as a whole</li> <li>- Focus on actions that touch risks of supply chain</li> <li>- Emphasis on actions to mitigate environmental and social impacts throughout the supply chain</li> <li>- Emphasis on crucial actions for the success of the organization (associated with legislation, regulations, international agreements, relevant voluntary agreements and strategic importance to the organization and its stakeholders)</li> <li>- Focus on core competencies of the organization and identify ways in which they impact on sustainable development and the creation of a virtuous cycle</li> <li>- Think, plan and report the story of your business in an integrated fashion via integrated management report (it is a concise communication on strategy, governance, performance and prospects of an organization in the context of its external environment, lead to the creation of value in the short, medium and long term)</li> <li>- Making sustainability create value for the organization, for customers and for shareholders</li> </ul>

Table 19 - Improvement actions for Alpha and its suppliers  
Source: Elaborated by the authors (2015).

## **5 CONCLUSION**

This study sought to analyze the supplier relationship and agro-industry practices regarding the environmental management required in the perception of managers. It was found that the main practices carried out in the evaluated companies are in relation to solid waste management. Only two of the companies surveyed have a standardized management and proper waste generated in their processes. Similarly, only one company has positive practices in relation to water resources, which reflects a position predominantly in the functional specialization stage. We found that the staff performed the separation of waste, particularly waste oils and flaps steel and metals. It is worth noting the lack of infrastructure like adequate garbage and the identification of each type of waste. Therefore, there are still few practices by service companies of Alpha. The lack of theoretical knowledge about the environmental practices of managers of third companies may reflect the pursuit of good environmental performance of organizations.

However, Lee et al (2009) emphasize that the incorporation of the principles of GSCM in a chain of production requires the integration of economic, social and environmental issues that should permeate all internal processes, external relationships and encompass the entire supply chain. Duber-Smith (2005) argue that the motivations that prompt organizations to adopt the GSCM are alluding to target marketing, sustainability of resources, reduce costs, increase efficiency, differentiate products, increase competitive advantage, supply chain pressures, adaptation- regulation and risk reduction, brand reputation, return on investment, employee's morale and ethical imperative. Christmann and Taylor (2001) point out that the export and sale to foreign customers are two key elements that contribute to improving the environmental performance of companies. Pressures consumers may also contribute.

Therefore, it is understood that there is always space for continuously improving organizational practices and realization of supply chain management. A company seeking to head toward excellence is open innovations, new trends and opportunities for evaluating their practices and propose new tools, models and systems that make it better. And agro-industry Alpha has an important role to mitigate social and environmental impacts and for creating and monitoring indicators related to the triple bottom line. One can even adopt implementation strategies, monitoring and review, via qualified outsourced teams and perform the audit processes.

The main contributions of this study are directly related to the availability of information regarding the environmental practices by suppliers of agro industry Alpha and

especially the actions developed based on the results of research to improve the environmental management of the companies surveyed. Although research has followed a descriptive perspective, to portray what is happening in those links in the supply chain with regard to green dimension and holistic sustainability, it is understood that there are significant contributions, especially regarding the internalization of environmental variable for the generation of value and creating a virtuous circle for the supply chain. Also, on the understanding that the definition of goals, practice and sustainability policy is not held by most of the companies analyzed, which can be a significant opportunity for improvement in the studied context. The role of alpha is essential for induction of Green Supply Chain Management in the supply chain as a whole and even to mitigate social impacts along the supply chain.

Limitations of this study are related to the number of surveyed firms, which may not reflect the full reality on environmental practices of other service companies of Alfa SA South of Brazil unit. Conversely it suggests the new research in the same segment and region encompassing other service providers to ensure the Alfa companies or even increase the number of actions to improve management and adequacy of the green supply chain.

The implementation of environmental strategies is a necessity for businesses. It is, in the production process and the implementation of activities in providing services that generate waste and air emissions, and that these sites are the biggest opportunities for improvement. The exemption of proactive environmental strategies not guarantee for the company to create competitive advantages that can be sustained over the long term.

It is recommended for future studies to extend the analysis to the entire supply chain, namely, feed mill and hatchery, integrated producers, industrial plants, distribution centers, wholesale, retail and consumer. A systemic analysis of the agro industry chain is a prerequisite for the researched organization to incorporate as an argument for the sale of their products - the existence of a green supply chain. Or rather, the analysis in light of economic, social and environmental dimensions contribute to the adoption of a management system for sustainable supply chain. Due to this attitude, one can achieve gains in the market, competitive advantage, superior performance in economic and environmental indicators and waste reduction. Above all, it will impact on customer satisfaction and employees, which in turn will affect the reputation and image of the company.

Another possibility is to replicate this study to survey all suppliers of Alfa, through a survey, to conduct a diagnosis of the reality about the sustainable practices of all agents whom

the agro industry interacts with. Yet further, extend the focus of analysis to the level of cooperation that can be established between the different links in the supply chain for the incorporation of sustainable practices. Further analysis can identify the advantages derived from an attitude of cooperation between the links of the production chain in order to make it sustainable and its impact on economic performance.

## **CONTRIBUTIONS BY THE AUTHORS**

**Gean Pacheco de Oliveira** is lead author of the study.

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