



## **SOCIO-ENVIRONMENTAL CERTIFICATIONS IN AGRI-FOOD SYSTEMS: CONVERGENCES AND DIVERGENCES OF ATTRIBUTES**

**Andrea Rossi Scalco**

[andrea.scalco@unesp.br](mailto:andrea.scalco@unesp.br)

São Paulo State University Júlio de  
Mesquita Filho - UNESP, São Paulo,  
São Paulo, Brazil.

### **ABSTRACT**

Food products with socioenvironmental seals differ from conventional ones because they follow standards determined by regulators that issue certificates that guarantee that the productive practices, whether in agriculture or in their processing, protect the environment, preserve the health of the consumer and the worker, and respect human rights. Farmers/processors who seek certification and are in compliance with the standards may use the socio-environmental seal on their products. Because of the profusion of social and environmental seals, they can often confuse consumers with regard to their requirements. In this sense, this article was based on the investigation, through a content analysis, of the requirements of the three main socio-environmental certifications present in Brazil: organic system, ISO 14001 and Fair Trade. An analysis of the content addressed in the requirements of these socio-environmental certifications was carried out through its norms in order to identify the attributes, allowing ascertaining which aspects are convergent and which are divergent between the three certifications. The requirements of the standards were categorized in: Compliance with environmental legislation; Sustainable practices; Preservation of biodiversity; Sustainable development; Compliance with labor legislation; Fair trade; Social responsibility; Traceability; Non-genetically modified organisms; Environmental policy; Regional production and trade; Non-use of synthetic materials; and Free from contaminants. It was observed the divergence of the attributes present in the certifications studied, explaining the diversities of each of them, even in the convergent attributes, taking into account their particularities.

**Keywords:** Socio-environmental Certification; Product Quality; Seals.



## 1. INTRODUCTION

Food products with socioenvironmental seals differ from conventional seals because they follow standards determined by regulatory authorities that issue certificates which ensure that production practices, whether in agriculture or processing, protect the environment, preserve the health of the consumer and the worker, and respect human rights.

Two concepts are fundamental in the production and marketing of socio-environmental products: the relationship of trust between producer and consumer, and quality control, since there is the consumer's difficulty in evaluating some quality attributes of the product at the time of purchase. In this sense, goods and services can be classified into goods of research, experience and belief (Douglas, 1992). Research goods are those attributes that are observed at the time of purchase. Some examples are color, smell and appearance. The assets of experience are those attributes which are observed only after experience and consumption. And the assets of belief are those attributes that are not observed and can be measured neither before purchase nor after consumption.

With respect to agri-food products that were obtained through predetermined social and environmental practices, in view of the concept of sustainability, their attributes are considered attributes of belief. And, in this sense, a mechanism is needed that can provide the consumer with a guarantee that the product actually meets social and environmental standards. The guarantee of the quality of products that use a socio-environmental approach as a means of market differentiation is done by verifying such information, since the consumer has no way of acquiring information regarding the veracity of the socio-environmental attributes of the products. In this sense, certification in the production and commercialization of socio-environmental products is a relevant instrument for producers and traders, in order to inform and assure the consumer that, in fact, the product purchased meets the social and environmental precepts. Certification reduces trade barriers, since it reduces information asymmetry, which occurs when one of the agents in a business transaction has more information about reliability, security, and value of the product than the other agent (Brown; Hillegesist, 2007).

According to Souza (2001), certification is the process in which a third party - which has no link with who will be certified - ensures, in writing, that a product, process or service meets certain requirements, by issuing a certificate. Farmers/processors that seek certification and are in compliance with the standards may use the socio-

-environmental seal on their products. There is a range of social and environmental certificates, such as Organic, Fair Trade, Certified Humane, Rainforest, among others.

Among the seals mentioned, only the organic product seal is compulsory in Brazil, the others are voluntary. The seal of the Brazilian Organic Conformity Assessment System (SisOrg, acronym in Portuguese) is the official seal created by the Brazilian State and is managed by the Ministry of Agriculture, Livestock and Supply (MAPA, acronym in Portuguese), with the purpose of identifying and controlling the national organic production. This seal has been in force in Brazil since the beginning of 2011, and is distributed only for products from certified crops by audit (third party certifiers) or participatory certification systems.

Although there are around 600 seals in the country that refer to sustainability in all categories of products, most are seals issued by the first part, that is, by the company itself (Vialli, 2010). Seals differ in scope, reputation in the market and rigor. Although the seals have the same objective, they can differ in terms of requirements to be met, some being more rigorous and others not. However, such information is not perceived by consumers because of their lack of knowledge.

Given the profusion of socio-environmental seals present in the market, there are the following problems: what are the divergences and convergences in terms of attributes among the main socio-environmental certifications that are the focus of study in Brazil, specifically for processed food products?

## 2. ASSESSMENT OF CONFORMITY AND CERTIFICATION

Conformity assessment is a systematic process, monitored and evaluated in a way that adds a certain level of confidence to a particular product or service (INMETRO, 2017). It can be characterized referring to its economic and social agent. Thus, the evaluation, according to ABNT (2008), can be:

- *Part One:* performed by the supplier or by the person responsible for representing the interest;
- *Part Two:* performed by the buyer, final or potential consumer, or by the representative of their interests;
- *Part Three:* made by an independent organization of the manufacturer, supplier or customer.



Conformity assessment, which is responsible for ensuring consumer confidence, takes place through certification, supplier's declaration, labeling, or inspection and testing. Among them, the most common, and that is part of the scope of this study, is certification. This evaluation process is a procedure for the purpose of giving confidence to a product, through standards and regulations (INMETRO, 2017).

Certification can be presented in two distinct natures, voluntary and compulsory. Certifications of voluntary adherence are based on technical standards and it is the company's decision to acquire them or not. This type of certification is intended for marketing, since its goal is to convey information to the consumer, add value to the product and confer competitive advantage (ABNT, 2008; Martinez et al., 2008).

The compulsory one, whose reference instrument is a regulation, demands the adequacy of the producers so that their product can participate and remain in a certain market. The mandatory nature is necessary in the case of products that may affect the consumer's safety in the consumption of the product or even interfere in a market in which one of the parties, in the case the consumer, has the guarantee of the characteristics of the product that is being consumed, having in mind that, in this case, they are characteristics related to the goods of belief (ABNT, 2008; Martinez et al., 2008). Specifically when dealing with products with social and environmental certificates, the consumer "believes" that, through the socioenvironmental certificate (or seal), the product being purchased is manufactured through practices of production and processing that do not negatively impact the environment and the human being. To give greater reliability to the process, certification bodies are accredited by national and/or international institutions. Accreditation bodies are generally government agencies or non-profit organizations with national or international action, responsible for enforcing the rules and which audit the certification bodies or companies and certifications issued.

In the definition of the authors Martinez et al. (2008), certification is an instrument whose end-purpose is to give organizations a way to manage and guarantee the level of quality attributed to their products, contemplating, in its scope of utilities, as a tool to reduce informational asymmetry to the consumer.

According to the Brazilian Association of Technical Standards (ABNT, 2017, acronym in Portuguese), certifications serve to ensure that production meets technical standards constantly and is controlled. In addition, certification brings benefits to companies, including attesting to the efficiency and effectiveness of a product, service

or system; gaining strength in the face of unfair competition; improving the image of the organization; ensuring the conformity of the product, service or system with their respective standards, among others.

The Brazilian Institute of Metrology, Quality and Technology (INMETRO, acronym in Portuguese) is the institution in charge for accrediting the certifiers, which must meet the criteria required by INMETRO itself, based on international criteria. The certification company receives the recognition by that body, gaining the recognition to carry out the evaluation of the conformity of a given product (INMETRO, 2017).

## 2.1 Social and environmental certifications

Socio-environmental certification came as a consequence of environmental and social movements and the concern of European and American consumers with the negative impacts related to the production of tropical or developing countries (Alves et al., 2008).

Since the 1960s, production systems have gradually become less productive, more dependent on electrical energy and more environmentally damaging on natural resources. These characteristics are consequences of the reductionist models adopted by the "Green Revolution", which also led to the intensification of monocultures in large areas (Pessoa, 2002).

Since the 1970s, as a result of the events of the previous decade, the environmental issue related to food production has become a strong differential in consumer decision-making. This period was marked by consumer pressure on consumer markets to introduce products that were less harmful to the environment and the large number of environmental laws and certification standards (Pessoa, 2002).

In 1971, the International Standardization Organization (ISO), a worldwide organization of standardization bodies, established three committees dealing with the environmental issue: TC-146 – Air quality, TC-147 – Water quality, and TC-190 – Soil quality, which were martyrs of the importance given to environmental standards (Nahuz, 1995).

It was in 1972 that the International Federation of Organic Agriculture Movement (IFOAM) was founded. Its purpose was to establish basic standards that would preserve the diversity of the Organic Movement. These precepts subsequently became a fundamental basis for organic regulation, some twenty years later (Alves et al., 2012).



The first idea of socio-environmental certification came true in Germany in 1978 with the creation of the Blue Angel seal. This certification certifies that the products that contain its seal are recycled products, with low toxicity. At that time, this seal presented criteria for 103 categories of products (Deus et al., 2010).

The 1980s was strongly marked by the growing relevance of environmental issues, especially those related to industry and commerce, mainly North American and European. As a result of these concerns, trade relations became more concerned with the environmental impacts of industrial production processes, as well as the disposal (Nahuz, 1995). As a result of the initiative of the Dutch development agency, Solidaridad, which wanted to market Mexican coffee, the first Fair Trade certification seal was created in 1988 (Fairtrade, 2017).

In the late 1980s, more specifically in 1989, the Green Seal certification, which mandates parameters for products, product labels, and environmental education in the USA, was created (Deus et al., 2010).

The decade of 1990 is remembered by the appearance of several seals that have become known in the world. The first of them was in 1991, when the first organic standard appeared. This norm established standards for the production, processing, marketing and import of products of plant and animal origin to member countries of the Council Regulation program of the European Economic Community (EEC), responsible for these first organic standards (Alves et al., 2012).

In 1992, the Ecolabel was launched in the European Union, with the mission of reducing emissions, waste, noise levels and the use of natural resources and energy in production processes (Deus et al., 2010).

In 1993, the first seal linked to the forestry sector, called the Forest Stewardship Council (FSC), emerged. As a result of concerns about global deforestation and the fate of forests, its value generation is to attest to good forest management, meeting three criteria: being environmentally correct, socially beneficial, and economically viable (FSC, 2017; Sartori; Baccha, 2007; Basso et al., 2012).

In 1996, the ISO 14001 standard was developed with the purpose of ensuring the participation of an organization in an Environmental Management System (EMS), whose implementation has a strong impact on the production (Avila; Paiva, 2006).

It can be said that certification would be an instrument that, besides attesting to the environmentally and

socially correct production practices, adds value to the product. Value can be defined according to three perspectives: price, consumer behavior, and strategy. With regard to "price", value is defined as the trade-off perceived by consumers between the benefits received and the investments (monetary and non-monetary) for the purchase of the product/service. From the strategic point of view, value refers to how much buyers are willing to pay for what the company is willing to offer them. In the perspective of "consumer behavior", the value is defined according to the needs and desires of the consumer for the product/service purchased. As far as socio-environmental products are concerned, product differentiation, as a strategy, seeks its "decommodification", and corroborates, within certain limits, that producers can impose the price of products (Vilckas; Nantes, 2007).

According to Cerveira and Castro (1997), who investigated the pattern of consumption of organic products in the city of São Paulo, the main reason that leads consumers to buy organic products refers to personal and family health. It is emphasized in this research that, among eight options, the concern with the preservation of the environment appears only in fifth place in order of importance.

Braga Júnior et al. (2013) sought to identify the intention to buy "green" products related to environmental concern, and concluded that this concern does not yet substantially reflect the buying behavior for green products in retail. In another research, Braga Júnior and Silva (2013) sought to identify the declared purchase of green products related to environmental concern and concluded that environmental concern is not yet a factor that interferes with the purchase decision. Krischke and Tomiello (2009), in a survey carried out in a supermarket in the city of Florianópolis, identified that the reason consumers buy organic products refers to health from the standpoint of the ego-trip style (consumption of healthy products) as opposed to ecological-trip style (consumption of organic products facing an ecological and social attitude).

Some consumers buy organic products because they believe those products have something unique when compared to conventional products. On the other hand, many do not buy organic products because they do not perceive that these products are better than the normal products (Yiridoe et al., 2014).

### 3. METHODOLOGY

In order to determine the socio-environmental certifications that would be selected for analysis, a systematic



bibliographic review (RBS, acronym in Portuguese) was first carried out. This RBS identified national articles in the databases of the CAPES journal portal that dealt with the theme of social-environmental certifications or seals. The protocol proposed by Levy and Ellis (2006) was followed. The result of this RBS identified that, of the published works, 33% dealt with organic certification, 19% with ISO 14000 certification and 14% with Fair Trade certification.

Thus, we analyzed the content of the attributes of the standards of each of these certifications. The rules and regulations governing each certification based on the three main certificates found in the systematic literature review are:

- Decree No. 6,323, of December 27, 2007 (Organic);
- Environmental management systems - Guidance requirements for use (ISO 14001);
- IBD program for fair relations in trade in organic products with social and environmental certification (Fair Trade).

To identify the convergent and divergent attributes among the certificates, the content analysis was chosen as the best methodological strategy. According to Berelson (1984), one of the pioneers in the studies on the technique of content analysis, this is “a research technique that aims at a description of the manifest content of communication in an objective, systematic and quantitative way”. From the point of view of the author Bardin (1977), the content analysis is configured as a “set of communication analysis techniques that uses systematic procedures and objectives to describe the content of the messages”. Content analysis can now be defined as a set of methodological tools, constantly improving, analyzing different sources of content (verbal or non-verbal), such as interviews, reportages, reports, documents, standards, etc. (Silva; Fossá, 2013). There are several methodologies to carry out content analysis, with several similarities between them. For this study the methodology used will be that of Bardin (2006), who divided the stages of content analysis into three: 1) pre-analysis, 2) material exploration and 3) treatment of results, inference and interpretation.

The first phase comprises the reading of the material chosen for analysis, which in the case of this research will be the requirements of social and environmental standards. At this stage, it will be possible to determine the indicators that will be worked on the analysis. The second phase, exploration of the material, is the moment that consists in the construction of codification opera-

tions and in which cuts and successive groupings are made in thematic categories until the final thematic categorization. The third phase comprises the treatment of results, inference and interpretation in order to capture the manifest and latent contents contained in all collected material, which in this case are the norms (Bardin, 2006).

The reading of the rules and regulations that were used to elaborate the socio-environmental attributes present in the content analysis was elaborated. Subsequently, the data were finally distributed according to the convergence and divergence of attributes.

#### 4. DISCUSSION OF RESULTS

With the initial aim of systematizing the convergent and divergent attributes among certifications, the standards were initially read (content), seeking to identify, in a broader context, the attributes related to standards: compliance with environmental legislation, sustainable practices, preservation of biodiversity, sustainable development, compliance with labor legislation, fair trade, social responsibility, traceability, non-GMO, environmental policy, production and regional trade, and non-use of synthetic materials and free of contaminants.

After the attributes were cut across the socio-environmental certifications studied, the content of the standards requirements was analyzed in order to find the corresponding requirements convergent with respect to attributes, Table 1, and the divergent attributes.

When analyzing Compliance with environmental legislation (1), it is observed that the three certifications are in agreement with the current environmental legislation, but they have particularities: in the case of organic certification, the standard does not specify any instance, be it municipal, state or federal, leaving the broad understanding that every standard must be met; ISO 14001 states that the organization shall identify the legal requirements applicable to it, whether national or international, municipal, state, departmental, orders, rules or regulations of regulatory agencies, company or industry standards, contractual relationships or even agreements with community groups or non-governmental organizations (NGOs); and Fair Trade specifies the areas of environmental legislation to be complied with, the laws being relevant in the areas of permanent preservation and use of natural resources.

In turning to the analysis of Sustainable Practices (2), it is clear that the three certifications are concerned with the natural resources and with the residues resulting



from their operations, as well as their rational use, in order to avoid waste and pollution, and the rational use of electricity. Also linked to the issue of waste reduction, it is noted that ISO 14001 and Fair Trade deal specifically with atmospheric emissions, while the organic only mentions healthy air management, and there is no deepening compared to the other two certifications. The organic certification diverges from the other two in this attribute, since it turns its attention to sustainable practices throughout the process, from production to distribution; finally, the distinction of ISO 14001 is in the concern with the generation of tailings and/or by-products from the company's activities.

Regarding the Preservation of Biodiversity (3), the three certifications have this commitment; however, a greater convergence is observed between organic certification and Fair Trade, highlighting the efforts in relation to the protection, and the increase of biodiversity. Regarding sustainable development (4), organic certification and Fair Trade are based on sustainable development with well-defined social and economic aspects, while in ISO 14001 the economic development comes from the pursuit of financial and operational benefits, resulting from the implementation of environmental alternatives, making clear that the basis of sustainable development lies in the environmental activities that the company executes.

Within the scope of the fourth attribute mentioned in the previous paragraph, organic certification highlights a point that diverges from the others: local development, emphasizing regional trade, which generates an approximation in the relation between the producer and the final consumer. When the Fair Trade deals with human and social development, it also discusses the relations of the producer with other links in the chain, explaining the search for an improvement in the working conditions of producers and wage earners and access to basic rights, granting social benefits necessary for individual and community well-being and distinguishing itself from others by highlighting the harmonization between economic and environmental developments. The great divergence visible in ISO 14001 is the attribution of greater weight to environmental actions, linked to the prevention or mitigation of adverse environmental impacts, and to mitigation of potential adverse effects of environmental conditions in the organization, even though it also uses the control or influence in the way the organization's products and services are designed, manufactured, distributed, consumed, and disposed of.

The other convergent attributes were observed only between organic certification and Fair Trade certification. The Compliance with labor legislation (5) is explicit

in both the Organic and Fair Trade rules, and in this sense "must be in accordance with current labor legislation". In the case of ISO 14001, this requirement is not explicit, since it deals with a unique and exclusively environmental certification.

In view of Fair Trade (6), organic certification summarizes the point of view of justice, ethics and solidarity in trade relations. Fair Trade, in turn, approaches a more complex view, starting from the definition of what is the fair trade in its conception, of the existence of a reliable relationship between who buys and who sells, in which the commercial commitments are established in the long term, so that these negotiations impact on investments in the social and environmental development of producers or wage earners. Regarding Social Responsibility (7), the norms converge to emphasize justice in the commercial relations and the security of the people. In the case of organic certification, it emphasizes the supply of healthy products, free of contaminants, without endangering the health of producers, workers or consumers. And the Fair Trade stipulates that there are adequate, healthy and safe conditions, according to the existing safety standards, for the working environment. However, they differ, when organic certification is intended for tradition, culture and any other form of social organization in labor relations when it occurs in traditional local communities, and the Fair Trade explicitly vetoes child labor, forced labor and discrimination, aiming at the adaptation of the enterprise with the social legislation, promoting a program of readjustment in case some legislation is not being attended to. Analyzing Traceability (8), organic certification differs from Fair Trade in parts. This is because the direct marketing between the producer and the final consumer is allowed, not requiring a certificate of proof, but rather the link of the producer to an association with social control registered in some inspection body, be it federal, state or district, allowing the access of inspection agencies and local consumers to the place of production of a certain organic production. In turn, the marketing of organic products, which are not a direct route, follow in the same way as determined by the Fair Trade certification with traceability audits. As for genetically modified organisms (9), these are prohibited both in organic certification and in Fair Trade. This requirement is not mandatory for ISO 14001 certification.

The convergent attribute between the Organic and ISO 14001 certifications is the Environmental Policy (10). The Environmental Policy of the ISO 14001 certification confers greater freedom on the part of the manager in its elaboration, ensuring the minimum requirements demanded by the standard (consistency with the purpose and context of the organization; the nature, scale and environmental impacts of its products, activities or ser-



**Table 1.** Convergent Attributes between Certifications

CONVERGING ATTRIBUTES	CERTIFICATIONS		
	Organic	ISO 14001	Fair Trade
1. Compliance with environmental legislation	Continued efforts must be made to ensure that organic production is in compliance with existing environmental legislation (Brasil, 2007).	The organization shall identify the legal requirements, be they national or international, state, municipal or departmental; judgments of courts or administrative bodies; orders, rules or guidelines of regulatory agencies; organization and industry standards; contractual relations; and codes of practice and agreements with community groups or non-governmental organizations. (ABNT, 2015).	Regulation of establishments with environmental agencies; be in compliance with the current environmental legislation regarding the areas of permanent preservation; use of natural resources regularized with the supervisory bodies (IBD, 2015).
2. Sustainable practices	Sustainable practices should be included in the whole process, ranging from the choice of the crop to its disposition in the market and practices consistent with the healthy management of soil, water and air, in order to reduce in any way contamination or waste of these elements, use products and processes to maintain soil fertility, recycle organic waste, and minimize reliance on non-renewable energy sources (Brasil, 2007).	Controllable environmental aspects that must be taken into account by the organization when stipulating its Environmental Management System (EMS): atmospheric emissions; releases into bodies of water and soil; use of raw materials and natural resources; energy use; generation of waste, tailings and/or by-products; prevention of pollution and space (ABNT, 2015).	Optimization of the use of energy resources; management of the gaseous tributaries, in accordance with the law; management of solid waste and natural resources; reduction of emissions of greenhouse gases, among others; minimization of environmental impacts for agricultural, extractive and industrial enterprises (IBD, 2015).
3. Preservation of biodiversity	Preservation and enhancement of biological diversity, both natural ecosystems and modified ecosystems, with special attention to endangered species (Brasil, 2007).	Commitment to protecting the environment, including pollution prevention, sustainable use of resources, mitigation and adaptation to climate change, and protection of biodiversity and ecosystems (ABNT, 2015).	Increasing biodiversity, stipulating projects to increase it through the use of biodiversity barriers rich in diversity, ecological corridors, and increase of the environmental preservation reserve (IBD, 2015).
4. Sustainable development	Local sustainable development, promoting regional trade, seen in the direct relationship between the producer and the final consumer, social development, at the end of a fair treatment, and dignity and fairness in labor relations, regardless of the forms of employment contract and economic development (Brasil, 2007).	Prevention or mitigation of adverse environmental impacts; mitigation of potential adverse effects of environmental conditions in the organization; assistance to the organization in meeting legal requirements and other requirements; increased environmental performance; achieving financial and operational benefits resulting from the implementation of environmental alternatives; control, or influence on how the organization's products and services are designed, manufactured, distributed, consumed, and disposed of (ABNT, 2015).	Economic development, located by the commitment between the rural producer, both with its suppliers and its buyers, praising a long-term business relationship, conveying confidence, transparency and continuity; human and social development, seeks to improve the working conditions of producers and wage-earners, ensuring access to basic rights, providing the social benefits necessary for individual and community well-being, and, within the scope of environmental development, it encompasses environmental conservation and sustainable management of natural resources, and seeks to harmonize economic development with environmental development (IBD, 2015).



5. Compliance with labor legislation	To maintain the continuous efforts so that the organic production is in compliance with the current labor legislation (Brasil, 2007).	-	To comply with current labor legislation and be regularized with government agencies; their employee hiring needs to be direct, establish the value of the remuneration, the work day, the rights, the labor obligations, and job description (IBD, 2015).
6. Fair trade	Fair trade and solidarity, whose basis is structured in ethical precepts (Brasil, 2007).	-	It aims to improve the working conditions of both wage earners and the producers involved in the process, a reliable relationship between those who buy and who sells, in which commercial commitments are signed in the long term, so that these negotiations proliferate investments in the social and environmental development of producers or employees (IBD, 2015).
7. Social responsibility	Justice, equity and dignity in all labor relations; supply of healthy products, free from contaminants, without endangering the health of the producer, the worker or the consumer; respecting tradition, culture and other forms of social organizations in labor relations in traditional local communities (Brasil, 2007).	-	Fair remuneration; be in compliance with social legislation; readjustment program in case some legislation is not being met (IBD, 2015).
8. Traceability	For direct marketing with the final consumer, the producer must be linked to an association with social control registered in some inspection body, be it federal, state or district agreement. Indirect marketing requires certification (by audit or participatory system). These mechanisms guarantee the traceability of their products and the access of inspection bodies and local consumers to the place of production and processing (Brasil, 2007).	-	Execution of traceability audits, obligation of marketers to keep lists of buyers and sellers up to date, tags on labels must be pre-approved by IBD; provision of the supply plan to the supplier annually before the start of the season; indication of fair trade in internal documents and invoices (IBD, 2015).
9. Non-GMO	Organic production may not contain genetically modified organisms (Brasil, 2007).	-	The cultivation of genetically modified organisms and inputs containing any traces of such products shall be prohibited (IBD, 2015).



10. Environmental policy	<p>The organic certification has the Organic Management Plan, as a policy metric that must be followed in the period of conversion of the property, from a non-organic property to an organic one (BRASIL, 2007). In this plan there are issues related to plant production, animal production, sustainable extractivism and processed production, and they are fundamental for the conversion of the property into a producer of organic products (MAPA, 2017).</p>	<p>Environmental policy is mandatory for any organization seeking such certification, but companies themselves are free to define their environmental policy, ensuring at least that they meet certain prerequisites: consistency with the purpose and context of the organization, including the nature, scale and environmental impacts of their products, activities or services; have a commitment to environmental protection, including pollution prevention, sustainable use of resources, mitigation and adaptation to climate change, and protection of biodiversity and ecosystems, and continuous improvement with environmental policy to increase its environmental performance; shall be maintained as documentary information; be communicated in the organization; and be available to interested parties (ABNT, 2015).</p>	
--------------------------	--	---	--

Source: Prepared by the authors.

vices; environmental protection). In organic certification, in terms of environmental policy, the organization must provide the organic management plan with issues related to crop production, animal production, sustainable extractivism and processed production.

The attribute Production and regional trade (11) is directly linked with the attribute Traceability (6) of organic certification, since they respectively measure the regionalization of the products in the local scope, where there is a direct relationship between producer and final consumer, such as the street market, and the traceability that must have an organic product, linked to an organ of social control registered in some control organ. Organic certification also stipulates non-use of synthetic materials (12), promoting the independence of the enterprise from non-renewable energy sources and adopting cultural, biological and mechanical methods, rather than relying on synthetic materials, as agricultural pesticides. The last attribute of this study is to be free of contaminants (13), specifically in organic certification, so that it does not endanger the environment and the health of producers, workers or even consumers.

In terms of the scope of attributes, organic certification is evident as the most transversal among the certifications presented. Note also the convergence between the three certifications in most attributes, with some divergences within the same attribute presented.

## 5. CONCLUSIONS

This study aimed to identify the convergent and divergent attributes among the main certifications studied in Brazil: organic certification, fair trade and ISO 14000. Although there is a great convergence in terms of attributes, it can be noted that there are some divergences in the same category of attribute, explaining the diversity of each attribute, taking into account its particularities, such as organic certification, which is strongly linked to agricultural production, while ISO 14001 is related to the industrial scope, and Fair Trade is a medium between the other two, and is used from agricultural and extractive enterprises to agro-industries. These divergences make each certification unique, even referring to the same attribute, reinforcing those aspects that are more tied to the scope and purpose for which they were created. However, in terms of information asymmetry, it should be emphasized that, on the consumption side, the perception of the boundaries between the attributes of the seals is difficult to perceive, and, in this sense, the message that the certificate transmits through the seal can mislead the information to be transmitted.

## REFERENCES

ABNT, Associação Brasileira de Normas Técnicas (2008). Programa de Capacitação de Recursos Humanos em Normatização: unidade 1.4: noções básicas de avaliação da conformidade. Brasília, SENAI/DN.



- ABNT, Associação Brasileira de Normas Técnicas (2015). *Sistemas de gestão ambiental - Requisitos com orientação para uso*. NBR ISO 14001. 3. ed. Rio de Janeiro. Disponível em: <[https://edisciplinas.usp.br/pluginfile.php/3203163/mod\\_folder/content/0/NBRISO14001.pdf?forcedownload=1](https://edisciplinas.usp.br/pluginfile.php/3203163/mod_folder/content/0/NBRISO14001.pdf?forcedownload=1)>. Acesso em 17 mar. 2018.
- ABNT, Associação Brasileira de Normas Técnicas (2017). *O que é certificação e como obtê-la?* Disponível em: <<http://www.abnt.org.br/certificacao/o-que-e>>. Acesso em: 14 mai. 2017.
- Alves, A. C. O. et al. (2012). *Agricultura Orgânica no Brasil: sua trajetória para a certificação compulsória*. Revista de Agroecologia, Rio de Janeiro, Vol. 7, No. 2, pp. 19-27. Disponível em: <[http://orgprints.org/22814/1/Alves\\_Agricultura%20org%C3%A2nica.pdf](http://orgprints.org/22814/1/Alves_Agricultura%20org%C3%A2nica.pdf)>. Acesso em: 30 abr. 2017.
- Alves, F. et al. (2008). *Certificação Socioambiental para a Agricultura: desafios para o setor sucroalcooleiro*. EdUFSCar, São Carlos, SP.
- Avila, G. J.; Paiva, E. L. (2006). *Processos operacionais e resultados de empresas brasileiras após a certificação ambiental iso 14001*. Gestão e Produção, Vol. 13, No. 3, pp. 475-487. Disponível em: <<http://www.scielo.br/pdf/gp/v13n3/09.pdf>>. Acesso em: 5 mai. 2017.
- Bardin, L. (1977). *Análise de conteúdo*. 70 edições, Lisboa.
- Bardin, L. (2006). *Análise de conteúdo*. 70 edições, Lisboa.
- Basso, V. M., et al. (2012). *Contribuição da certificação florestal ao atendimento da legislação ambiental e social no estado de minas gerais*. Revista Árvore, Vol. 36, No. 4, pp. 747-757. Disponível em: <<http://www.scielo.br/pdf/rarv/v36n4/a16v36n4>>. Acesso em: 30 abr. 2017.
- Berelson, B. (1984). *Content analysis in communication research*. Hafner, New York.
- Braga Junior, S. S.; Silva, D. (2013). *A relação da preocupação ambiental com compra declarada para produtos verdes no varejo: uma comparação da percepção do indivíduo com sua percepção de sociedade*. Perspectivas em Gestão & Conhecimento, Vol. 3, No. 2.
- Braga Junior, S. S. et al. (2013). *A preocupação ambiental é transformada em intenção de compra*. Revista de Gestão Ambiental e Sustentabilidade, Vol. 2, No. 1, pp. 03-27.
- Brasil (2007). Decreto n. 6.323, de 27 de dezembro de 2007. Disponível em: <[http://www.planalto.gov.br/ccivil\\_03/\\_ato2007-2010/2007/decreto/d6323.htm](http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2007/decreto/d6323.htm)>. Acesso em: 23 jun. 2017.
- Brown, S.; Hillegeist, S. A. (2007). *How disclosure quality affects the level of information asymmetry*. Review of Accounting studies, Vol. 12, No. 2-3, pp. 443-477.
- Cerveira, R.; Castro, M. C. (1997). *Consumidores de produtos orgânicos da cidade de São Paulo – características de um padrão de consumo*. Informações Econômicas, Vol. 29, No. 12, pp. 7-20.
- Deus, N. S. et al. (2010). *O consumidor socioambiental e seu comportamento frente aos selos de produtos responsáveis*. Revista Brasileira de Administração Científica, Vol. 1, No. 1, pp. 32-54.
- Douglas, E. J. (1992). *Managerial economics: analysis and strategy*. Prentice-Hall, New Jersey.
- Fairtrade (2017). *History of Fairtrade*. Disponível em: <<https://www.fairtrade.net/about-fairtrade/history-of-fairtrade.html>>. Acesso em 23 jul. 2017.
- FSC, Forest Stewardship Council (2017). *Histórico da Certificação FSC*. Disponível em: <<https://br.fsc.org/pt-br/fsc-brasil/historico>> Acesso em: 23 jul. 2017.
- INMETRO, Instituto Nacional de Metrologia, Qualidade e Tecnologia. *Avaliação da Conformidade*. 6 ed. INMETRO, Rio de Janeiro Disponível em: <<http://www.inmetro.gov.br/inovacao/publicacoes/acpq.pdf>>. Acesso em: 14 maio 2017.
- Instituto Biodinâmico (IBD) (2015). *Programa IBD para relações justas em comércio de produtos orgânicos com certificação socioambiental*. 12 ed. IBD, São Paulo.
- Krischke, P. J.; Tomiello, N. (2009). *O comportamento de compra dos consumidores de alimentos orgânicos: um estudo exploratório*. Cadernos de Pesquisa Interdisciplinar em Ciências Humanas, Vol. 10, No. 96.
- Levy, Y.; Ellis, T. (2006). *A systems approach to conduct an effective literature review in support of information systems research*. Informing Science: The International Journal of an Emerging Transdiscipline, Vol. 9, pp. 181-212. Disponível em: <[http://nsuworks.nova.edu/gscis\\_facarticles/41/](http://nsuworks.nova.edu/gscis_facarticles/41/)>. Acesso em: 16 mar. 2017.
- MAPA, Ministério da Agricultura, Pecuária e Abastecimento. *Caderno do plano de manejo orgânico*. Disponível em: <[http://www.agricultura.gov.br/assuntos/sustentabilidade/organicos/arquivos-publicacoes-organicos/caderno\\_do\\_plano\\_de\\_manejo\\_organico.pdf](http://www.agricultura.gov.br/assuntos/sustentabilidade/organicos/arquivos-publicacoes-organicos/caderno_do_plano_de_manejo_organico.pdf)> Acesso em: 14 Ago. 2017.
- Martinez, J. R. L. T. (2008). *Casos sobre a Certificação UTZ KAPEH em empresas cafezeiras informatizadas: impactos nas pessoas, gestão e competitividade*. In: Congresso da Sociedade Brasileira de Economia, Administração e Sociologia Rural, 46, 2008, Rio Branco. Anais..., Rio Bran-



co, 20-23 jul. 2008. Disponível em: <<http://econpapers.repec.org/paper/agssbrfsr/102895.htm>>. Acesso em: 22 abr. 2017.

Nahuz, M. A. R. (1995). O sistema ISO 14000 e a certificação ambiental. *Revista de Administração de Empresas*, São Paulo, Vol. 35, No. 6, pp. 55-56. Disponível em: <<http://www.scielo.br/pdf/rae/v35n6/a07v35n6.pdf>>. Acesso em 4 maio 2017.

Pessoa, M. C. P. Y. et al. (2002). Qualidade e Certificação de produtos agropecuários. Embrapa Informação Tecnológica, Brasília. Disponível em: <<https://www.embrapa.br/busca-de-publicacoes/-/publicacao/927385/qualidade-e-certificacao-de-produtos-agropecuarios>>. Acesso em: 27 mar. 2017.

Sartori, R. S.; Bacha, C. J. C. (2007), A evolução da certificação florestal no Brasil. *Anais...* Londrina: Sober. Disponível em: <<http://repository.usp.br/single.php?id=001617414>>. Acesso em: 2 mai. 2017.

Souza, M. C. M. (2001). Certificação de produtos orgânicos. Disponível em: <<http://www.iea.sp.gov.br/out/verTexto.php?codTexto=260>>. Data de acesso: 14 jul. 2017.

Vialli, A. (2010). Selos verdes confundem o consumidor. *O Estado de São Paulo*, 14 de julho de 2010.

Vilckas, M.; Nantes, J. F. D. (2007). Agregação de valor: uma alternativa para a expansão do mercado de alimentos orgânicos. *Organizações Rurais & Agroindustriais*, Vol. 9, No. 1, pp. 26-37.

**Received:** April 09, 2019

**Approved:** May 06, 2019

**DOI:** 10.20985/1980-5160.2019.v14n2.1523

**How to cite:** Scalco, A. R. (2019), "Socio-environmental certifications in agri-food systems: convergences and divergences of attributes", *Sistemas & Gestão*, Vol. 14, No. 2, pp. 177-187, available from: <http://www.revistasg.uff.br/index.php/sg/article/view/1523> (access day month abbreviation).