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Comparative Analysis of the Legal Frameworks for Organic Production in the Southern Cone

Análise Comparativa das Estruturas Legais da Produção Orgânica no Cone Sul

Análisis Comparativo de los Marcos Legales de la Producción Orgánica en el Cono Sur

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Abstract

Organic agriculture has become increasingly relevant in the Southern Cone, contributing to sustainability, food sovereignty, and access to specialized markets. This study aims to compare the legal frameworks regulating organic production in Brazil, Argentina, Uruguay, Paraguay, and Chile. A qualitative and descriptive methodology was adopted, based on documentary analysis of national legislation, certification systems, and international agreements. Data were collected between June 2024 and February 2025, from the official websites of the Brazilian Ministry of Agriculture and Livestock, Argentina's National Service of Agri-Food Health and Quality, Uruguay's Ministry of Livestock, Agriculture and Fisheries, Paraguay's National Service for Plant and Seed Quality and Health, and Chile's Agricultural and Livestock Service and analyzed across six dimensions: legal structure, definitions, certification, regulation of inputs and seeds, inspection systems, and international equivalence. Results show that all countries prohibit GMOs, restrict synthetic inputs, and require certification. Brazil and Paraguay stand out for recognizing participatory guarantee systems and for encouraging the use of heirloom seeds. Differences remain in certification types, inspection practices, and alignment with global trade norms. While Argentina, Chile, and Uruguay maintain formal equivalence agreements, Brazil and Paraguay are pursuing distinct bilateral strategies. The study concludes that regulatory harmonization must respect socio-productive diversity and promote participatory governance, seed sovereignty, and agroecological policies rooted in social justice.

Keywords: Participatory certification, Comparative legislation, Agroecology, Food sovereignty, Regulatory frameworks.

Resumo

A agricultura orgânica tem ganhado relevância crescente no Cone Sul, contribuindo para a sustentabilidade, a soberania alimentar e o acesso a mercados diferenciados. Este estudo tem como objetivo comparar os marcos legais que regulam a produção orgânica no Brasil, na Argentina, no Uruguai, no Paraguai e no Chile. Foi adotada uma metodologia qualitativa e descritiva, com base na análise documental das legislações nacionais, dos sistemas de certificação e dos acordos internacionais. Os dados foram coletados entre junho de 2024 e fevereiro de 2025, a partir dos sites oficiais do Ministério da Agricultura e Pecuária do Brasil, do Serviço Nacional de Saúde e Qualidade Agroalimentar da Argentina, do Ministério da Pecuária, Agricultura e Pescas do Uruguai, do Serviço Nacional de Qualidade e Saúde de Plantas e Sementes do Paraguai e do Serviço Agropecuário do Chile e analisados a partir de seis dimensões: estrutura legal, definições, certificação, regulação de insumos e sementes, sistemas de fiscalização e equivalência internacional. Os resultados mostram que todos os países proíbem OGM, restringem o uso de insumos sintéticos e exigem certificação. Brasil e Paraguai se destacam por reconhecer sistemas participativos de garantia e por incentivar o uso de sementes crioulas. Permanecem diferenças nos modelos de certificação, nas práticas de fiscalização e no alinhamento com as normas comerciais globais. Argentina, Chile e Uruguai mantêm acordos formais de equivalência, enquanto Brasil e Paraguai seguem estratégias bilaterais próprias. Conclui-se que a harmonização regulatória deve respeitar a diversidade socioprodutiva e promover a governança participativa, a soberania das sementes e políticas agroecológicas baseadas na justiça social.

Palavras-chave: Certificação participativa, Legislação comparada, Agroecologia, Soberania alimentar, Marcos regulatórios.

Resumen

La agricultura orgánica ha ganado creciente relevancia en el Cono Sur, al contribuir con la sostenibilidad, la soberanía alimentaria y el acceso a mercados diferenciados. Este estudio tiene como objetivo comparar los marcos legales que regulan la producción orgánica en Brasil, Argentina, Uruguay, Paraguay y Chile. Se adoptó una metodología cualitativa

y descriptiva, basada en el análisis documental de las legislaciones nacionales, sistemas de certificación y acuerdos internacionales. Los datos fueron recolectados entre junio de 2024 y febrero de 2025, de los sitios web oficiales del Ministerio de Agricultura y Ganadería de Brasil, el Servicio Nacional de Sanidad y Calidad Agroalimentaria de Argentina, el Ministerio de Ganadería, Agricultura y Pesca de Uruguay, el Servicio Nacional de Calidad y Sanidad Vegetal y de Semillas de Paraguay y el Servicio Agrícola y Ganadero de Chile y analizados en seis dimensiones: estructura legal, definiciones, certificación, regulación de insumos y semillas, sistemas de fiscalización y equivalencia internacional. Los resultados muestran que todos los países prohíben los OGM, restringen los insumos sintéticos y exigen certificación. Brasil y Paraguay se destacan por reconocer sistemas participativos de garantía y promover el uso de semillas nativas. Persisten diferencias en los tipos de certificación, prácticas de fiscalización y alineación con normas comerciales globales. Argentina, Chile y Uruguay mantienen acuerdos formales de equivalencia, mientras que Brasil y Paraguay desarrollan estrategias bilaterales propias. Se concluye que la armonización debe respetar la diversidad socioproductiva y fomentar la gobernanza participativa, la soberanía de las semillas y políticas agroecológicas con justicia social.
Palabras clave: Certificación participativa, Legislación comparada, Agroecología, Soberanía alimentaria, Marcos regulatorios.

INTRODUCTION

Organic farming has gained significant relevance in the global agri-food context, driven by the increasing demand for healthy food grown without the use of synthetic pesticides, soluble mineral fertilizers, or genetically modified organisms (GMOs). Furthermore, systems based on organic practices aim to foster environmental balance, soil vitality, and the quality of life of both workers and consumers, in line with the principles of agroecology and sustainability (Altieri; Nicholls, 2022). In the Southern Cone countries, organic production has been established both as an ancestral practice of rural communities and as a contemporary alternative for territorial valorization, added value generation, and access to specific markets (Céspedes-León *et al*. 2017).

Within the South American context, the first regulations concerning organic agriculture began to be drafted in the 1990s, in response to the sector's expansion and the need to establish objective parameters for the certification and marketing of such products. Brazil implemented its national legislation in 2003, in Law 10.831/2003 (Brasil, 2003), while Argentina had already enacted Law 25.127 in 1999 (Argentina, 1999). Uruguay, Paraguay, and Chile followed similar paths, adapting their legal provisions and institutional frameworks over the subsequent decades. Simultaneously, international demand for certified products encouraged these countries to adopt international standards and reinforce their systems of control and auditing (FAO, 2022; Willer *et al.*, 2023).

The implementation of a specific legal framework for organic products is crucial for several reasons. First, it defines the technical and operational parameters that determine what can or cannot be classified as organic, ensuring credibility for consumers and

protecting the market from irregularities. Second, the legislation enables the formal recognition of different types of certification, including participatory guarantee systems, thereby strengthening family farming and short distribution channels (Guzmán; Woodgate, 2020). Third, legal guidelines allow for sanitary and environmental oversight, aligning organic production with food safety standards and the preservation of natural resources (Céspedes-León *et al*. 2017; Barraquio; Barraquio, 2021).

In the Southern Cone, regulations on organic products also play a strategic role in integrating agricultural, environmental, and public health policies. They contribute to promoting food sovereignty, valuing traditional knowledge, and including small farmers in differentiated markets. The presence of robust legal frameworks also facilitates the establishment of bilateral mutual recognition agreements, easing foreign trade and economic integration among countries in the region.

Given the consolidation and heterogeneity of these legal instruments, it becomes essential to conduct a comparative assessment of the national legislations of the Southern Cone. This comparison allows for identifying similarities and differences in concepts, organizational structures, certification systems, the use of inputs, and the enforcement strategies employed. Moreover, it provides a foundation for developing public policies more aligned with the foundations of agroecology and regional sustainability.

From a theoretical standpoint, the regulation of organic production is embedded in broader debates on agri-food governance, particularly regarding how standards, certification systems, and institutional arrangements shape sustainability transitions. Studies demonstrate that organic regulations function not only as technical instruments but also as socio-political mechanisms that influence market access, power relations, and the coordination of actors across agri-food chains (Loconto; Busch, 2010). Research in Latin America highlights that the governance of organic agriculture intersects with agroecology, food sovereignty, and participatory certification processes, revealing how traditional knowledge and community-based practices are negotiated within formal regulatory frameworks (Méndez *et al*., 2013; Altieri; Nicholls, 2022). These theoretical contributions help situate organic legislation as a central institutional tool for organizing sustainable production systems, rather than merely a regulatory requirement.

Thus, the purpose of this article is to conduct a comparative analysis of the legislations concerning organic products in the Southern Cone countries, with emphasis on the various legal and institutional structures, the definitions assigned to organic products, the existing certification models, the regulations on inputs and seeds, as well as the monitoring mechanisms and international recognition strategies established among these countries.

METHODOLOGY

This study employs a qualitative, descriptive, and comparative approach, with an emphasis on legal and documentary analysis, aiming to investigate the similarities and differences between the legal frameworks that regulate the production, certification, and commercialization of organic products in the Southern Cone countries. This methodological design is grounded in the theoretical perspectives of qualitative interpretative research, particularly the contributions of Bowen (2009) on document analysis as a systematic and rigorous method for interpreting policy and legal texts, Flick (2018) broader framework for qualitative inquiry. This qualitative method is particularly relevant for research focused on understanding public policies and regulations, as it allows for interpreting legal content in light of its sociopolitical, institutional, and ideological contexts (Bowen, 2009 & Flick, 2018;).

The selection of countries, Brazil, Argentina, Uruguay, Paraguay, and Chile, was based on their historical and current relevance to organic farming, the existence of national legislation specific to the sector, and their strategic role in South America's agri-food integration. Although Chile does not share regional regulatory frameworks with the other countries in an institutionalized manner, its significant commercial activity and involvement in bilateral agreements with Southern Cone neighbors, especially in sanitary, certification, and export matters, fully justify its inclusion in this comparative assessment (SAG, 2020; SENASA, 2023;). The time frame considered legislation in effect until July 2025, prioritizing updated and publicly accessible legal documents from official websites of national regulatory agencies.

The data collection was carried out through systematic documentary research in primary government sources, between June 2024 and February 2025. Legal texts were obtained from the official websites of the Brazilian Ministry of Agriculture and Livestock (MAPA), Argentina's National Service of Agri-Food Health and Quality (SENASA), Uruguay's Ministry of Livestock, Agriculture and Fisheries (MGAP), Paraguay's National Service for Plant and Seed Quality and Health (SENAVE), and Chile's Agricultural and Livestock Service (SAG). Each regulation was reviewed in its latest version, ensuring legal validity at the time of analysis. To ensure data reliability, documents were verified in at least two independent sources, prioritizing official repositories and, when needed, complemented with institutional publications such as technical manuals, certification guides, and reports issued by regulatory agencies. In total, following an initial screening phase, approximately 60 legal documents were examined in depth, including laws, decrees, resolutions, technical standards, and procedural guidelines pertaining to organic production, certification, and commercialization.

The comparative analysis was structured into six thematic axes: (i) legal and institutional framework for organic regulation; (ii) normative definitions of organic products; (iii) recognized certification systems; (iv) guidelines on the use of inputs and seeds; (v) enforcement mechanisms and legal sanctions; and (vi) international equivalence instruments. These axes were defined based on recent studies on agroecological regulation and international food governance (Hamm; Michelsen, 2000; Guzmán; Woodgate, 2020; FAO, 2022; Willer *et al.*, 2023), allowing assessments beyond technical aspects to include the ethical, political, and institutional foundations that underpin the regulatory models in the region.

The information was compiled in thematic comparative tables, enabling a direct view of the similarities and divergences among the national legal frameworks. Each axis was later discussed in light of agroecology principles, food sovereignty, and legal sustainability. The critical interpretation sought to connect legal data with contemporary theoretical perspectives on agroecological transition, environmental justice, and sustainable policy formulation (De Molina, 2013; Altieri; Nicholls, 2022; Wezel *et al.*, 2020).

Alongside the documentary analysis, an integrative literature review was conducted to complement and contextualize the legal findings within broader academic and policy debates. Searches were performed in Scopus, Web of Science, SciELO, and Google Scholar, using combinations of descriptors and Boolean operators. The inclusion criteria comprised publications from the last ten years (2014-2024) addressing organic agriculture, certification systems, agroecological policies, or food governance frameworks, written in English, Spanish, or Portuguese and published in peer-reviewed journals, academic books, or institutional reports. Exclusion criteria removed duplicated records, documents without methodological transparency, and grey literature lacking institutional credibility. After the screening process, 56 publications met the criteria and were incorporated into the analysis. This literature review provided the theoretical foundation necessary to interpret the regulatory models identified in the Southern Cone and situate them within wider regional and international dynamics of agri-food governance.

The triangulation of documentary analysis, literature review, and systematic comparison provided analytical robustness to the study, ensuring validity, interpretative coherence, and reliability of the findings, as recommended by Bowen (2009), Flick (2018), and Carbonell (2018).

RESULTS AND DISCUSSION

Definitions, legal and institutional framework

The comparative examination of organic regulations in Southern Cone countries reveals both structural similarities and significant conceptual distinctions, reflecting each nation's sociopolitical contexts and agri-food priorities. All twelve reviewed legislations, according to the Table 1 share a common legal basis grounded in Codex Alimentarius guidelines and International Federation of Organic Agriculture Movements (IFOAM) standards, emphasizing the elimination of synthetic chemical inputs, the exclusion of genetically modified organisms (GMOs), and the promotion of soil and ecosystem health (CODEX ALIMENTARIUS COMMISSION, 1999; IFOAM, 2014). However, the degree of agroecology institutionalization and the scope of normative definitions vary

considerably. According to Table 1, although all countries have consolidated legal frameworks, only Brazil has legislation that combines technical criteria with explicit political directives in favor of agroecology. Organic production institutionalization in the region still operates, for the most part, as a system of oversight and certification focused on market regulation rather than as a mechanism for transitioning to sustainable food systems.

Table 1. Main legislation on organic products in the Southern Cone countries.

Country	Main legislation on organic products	Reference
Brazil	Law No. 10.831/2003; Decree No. 6.323/2007; MAPA Normative Instruction No. 46/2011	Brasil, 2003; 2007; 2011
Argentina	Law 25.127/1999; Decree 206/2001; SENASA Resolution 374/2016	Argentina, 1999; 2001; SENASA, 2016
Uruguay	Decree 505/002; Requirements of the Organic Production Unit (MGAP)	Uruguay, 2002; MGAP, 2023
Paraguay	Decree 1864/2001; SENAVE Technical Manual (updated 2023 version)	Paraguay, 2001; SENAVE, 2023
Chile	Law 20.089/2005; Technical Standard for Organic Production (2020)	Chile, 2005; SAG, 2020

Source: Argentina, 1999, 2001; Brasil, 2003, 2007, 2011; Chile, 2005; MGAP, 2023; Paraguai, 2001; SENASA, 2016; SENAVE, 2023; SAG, 2020; Uruguai, 2002.

In Brazil's case, the legislation stands out by explicitly including agroecology as a guiding paradigm for organic production, also recognizing the strategic role of family farming and territorially rooted sociotechnical networks (Bittencourt; Schmitt Filho, 2021). This approach aligns with public policies promoting agroecology (such as National Plan for Agroecology and Organic Production) and with the perspective that organic systems should advance food sovereignty, social equity, and environmental conservation (Altieri *et al.*, 2020).

Argentina and Chile, in contrast, exhibit more technocratic legal frameworks aimed at standardizing and tracing production processes, prioritizing sanitary compliance and export requirements. This reflects a model of "market-driven organic agriculture," where trust is built through third-party certifications, but with less integration of agroecology as a political and epistemological project (Méndez; Severino, 2020; Fonte; Galli, 2022).

Uruguay and Paraguay hold intermediate positions because Uruguay has recently made progress in traceability and official control, reinforcing public regulation. Paraguay, in turn, has updated its technical manual with clearer guidelines on inputs, sustainable

practices, and certification protocols, though it still faces challenges regarding enforcement and support for agroecological transition in small-scale farms (SENAVE, 2023).

When reviewing the information detailed in Table 2, important differences are observed in the legal definitions of organic products, which impact both how producers adapt to regulatory requirements and how consumers interpret labels and certifications. Countries such as Brazil and Uruguay adopt broader, ecologically oriented definitions that include concerns for animal welfare, human health, and environmental preservation. This more holistic perspective aligns with the core principles of agroecology and systemic sustainability (FAO, 2018; Wezel *et al.*, 2020).

Table 2. Legal definition of organic product in the Southern Cone countries.

Country	Legal definition of organic product
Brazil	Product obtained through an organic production system without the use of synthetic pesticides, GMOs, or soluble fertilizers, using practices that respect soil, ecosystem, and human health.
Argentina	Product derived from production systems that maintain and enhance the health of soil, ecosystems, and people without using synthetic inputs or GMOs, and under the control of a certifying body.
Uruguay	Product originating from processes that consider environmental conservation, animal welfare, and human health, free of pesticides and GMOs, with traceability and official oversight.
Paraguay	Agricultural product obtained sustainably without synthetic chemicals or GMOs, respecting natural cycles and renewable resources.
Chile	Product resulting from a sustainable agricultural system that excludes synthetic fertilizers, pesticides, antibiotics, and GMOs with mandatory certification.

Source: Argentina, 1999, 2001; Brasil, 2003, 2007, 2011; Chile, 2005; MGAP, 2023; Paraguai, 2001; SENASA, 2016; SENAVE, 2023; SAG, 2020; Uruguai, 2002.

Conversely, definitions that are overly focused on technical aspects, as seen in Chile and, to some extent, in Argentina, tend to constrain the diversity of agroecological practices and favor operators with higher compliance capacity, such as large certified exporters. This can hinder the inclusion of smallholder farmers and traditional communities, thereby undermining the principles of food security and social justice (Silva; Petersen, 2021).

Moreover, as emphasized by Roubineau and Lebret (2018) and Lamine *et al.* (2021), the clarity and conceptual robustness of regulations are vital to prevent greenwashing practices and maintain consumer trust. Countries that employ more integrated and

transparent definitions create more favorable conditions for strengthening local markets and short supply chains, which are essential for sustainable rural development.

Certification systems and regulations on inputs and seeds

The comparative assessment highlights two prevailing models: (i) the audit-based certification model, with strong technical and market-oriented characteristics, adopted by all countries; and (ii) the participatory model, officially recognized only in Brazil and partially in Paraguay, based on mutual trust, peer assessment among farmers, and social engagement (Table 3).

Table 3. Organic product certification mechanisms in the Southern Cone countries.

Country	Types of certification allowed	Participatory certification recognized?
Brazil	Third-party certification (audit), participatory certification (OPACs), and social control for direct sales	Yes
Argentina	Third-party certification (certification bodies authorized by SENASA)	No
Uruguay	Third-party certification, authorized by DIGEGRA/MGAP	No
Paraguay	Third-party certification; participatory certification recognized for organized family farmers	Yes
Chile	Only third-party certification (accredited by SAG); participatory certification not recognized	No

Source: Argentina, 1999, 2001; Brasil, 2003, 2007, 2011; Chile, 2005; MGAP, 2023; Paraguai, 2001; SENASA, 2016; SENAVE, 2023; SAG, 2020; Uruguai, 2002.

The institutional recognition of Participatory Guarantee Systems (PGSs) represents a significant shift away from the traditional certification paradigm, enabling greater accessibility, decentralization, and community oversight in verifying organic compliance (Fonseca *et al.*, 2022). In Brazil, the OPACs (Participatory Conformity Assessment Bodies) are endorsed by the state and connected to public policies such as the Food Acquisition Program and National School Feeding Program, enhancing their economic viability (Silva; Araújo, 2020).

In several Latin American contexts, particularly where small-scale and family-based agriculture prevail, the reliance on conventional third-party certification (TPC), or the lack of acceptance of Participatory Guarantee Systems (PGSs), reflects a regulatory framework heavily skewed toward export-oriented standards and internationally recognized certification schemes (Santacoloma, 2007; Kaufmann *et al*., 2023). Empirical

research in Costa Rica highlights that certification costs pose a significant barrier for smallholders: even when adopting PGS, reduced explicit fees are often accompanied by substantial implicit costs in terms of time, labour, and organizational burden, limiting effective participation (Kaufmann *et al*., 2023). Historically, international analyses have shown that many small farmers in developing countries are unable to bear the managerial and financial demands associated with conventional organic certification, due to costs of inspections, documentation, and compliance (Santacoloma, 2007). In Brazil, PGS schemes have been proposed and implemented as alternative certification pathways precisely to overcome these barriers, although their reach remains uneven and contingent on recognition by markets and public policy (Hirata*et al.*, 2020). As a result, the formal organic market remains largely inaccessible to many small-scale producers in the absence of state subsidies or supportive policies for certification (Barrera; Latorre, 2021).

According to Teixeira *et al.* (2019), expanding PGSs can support a more inclusive and democratic agroecological transition, while strengthening solidarity-based marketing networks. Therefore, regional integration in the Southern Cone should consider not only mutual recognition of audit-based certifiers but also the establishment of regional mechanisms to ensure reciprocal acceptance of participatory systems, while respecting their socio-territorial uniqueness.

The regulations of Southern Cone countries align in the prohibition of GMOs and synthetic inputs, with exceptions governed by positive lists, and in the encouragement of heirloom seed use. For example, staple crops such as maize, with landraces conserved across Southern Cone germplasm banks (Vilaró *et al*., 2020), and legumes such as common bean, represented by certified organic-system landraces (Simioni *et al*., 2024), illustrate the role of traditional varieties in farmer-managed seed systems. Such seed reservoirs, often preserved by smallholder farmers, play a central role in sustaining agrobiodiversity and enabling regional adaptation (Antunes *et al*., 2018). This shared foundation strengthens the principles of agroecology and environmental sustainability (Table 4). The exclusion of GMOs is not limited to a technical issue but also involves disputes over genetic sovereignty, corporate dominance, and ecological risks, especially in the Global South, where certification schemes are more susceptible to the influence of

major seed industry corporations (Altieri *et al.*, 2020). In Chile, organic regulations require the exclusion of GMOs from certified organic products, although GM seeds are produced in the country, which demonstrates the tension between biotechnological and organic agriculture (Sánchez; Campos, 2021). Recent studies suggest that, beyond prohibition, it is essential to develop public policies that ensure access to open-pollinated, regionally adapted, and farmer-reproducible seeds (Kiss *et al.*, 2023).

Table 4. Regulations on inputs and seeds in organic production in the Southern Cone countries.

Country	GMOs allowed?	Synthetic inputs allowed?	Use of heirloom seeds allowed?	Use of treated seeds allowed?
Brazil	No	No, except in authorized cases (e.g., sprays, pheromones)	Yes, encouraged	No, unless organic
Argentina	No	No, except those approved by SENASA in positive lists	Yes, allowed	No, unless authorized
Uruguay	No	No, with exceptions provided in technical regulations	Yes, allowed	No, with some technical exceptions
Paraguay	No	No, except additives approved by SENAVE	Yes, recommended	No
Chile	No	No, with the approval of some natural/mineral substances	Yes, valued	No

Source: Argentina, 1999, 2001; Brasil, 2003, 2007, 2011; Chile, 2005; MGAP, 2023; Paraguai, 2001; SENASA, 2016; SENAVE, 2023; SAG, 2020; Uruguai, 2002.

The use of heirloom and native seeds, permitted in all the countries analyzed, is vital for the protection of agrobiodiversity, for adaptation to climate change, and for the appreciation of traditional knowledge systems (Silva; Costa, 2022). Brazil and Paraguay stand out for including explicit incentives for in situ seed conservation and the strengthening of community seed banks in their legal provisions.

Conversely, even under restrictions, conditional authorization to use chemically treated seeds in some countries may compromise the consistency of organic systems, as indicated by Bernet *et al.* (2018). The lack of effective traceability mechanisms for this category of input still constitutes a regulatory weakness.

Inspection systems and multilateral agreements

The five countries under review have established legal frameworks for the supervision and oversight of organic production, with administrative penalties ranging from warnings and financial sanctions to the revocation of label-use rights (Table 5). However, notable

differences exist in the degree of decentralization, the extent of social participation, and the available technical infrastructure to implement these functions.

Table 5. Inspection, control, and penalties in organic product legislation in the southern countries.

Country	Main inspection authority	Control mechanisms used	Applicable penalties
Brazil	MAPA (by DIPOV/CGPOA)	Technical audits, field inspections, and records in SisOrg	Fines, warnings, suspension, or cancellation of registration or certification
Argentina	SENASA	Audits, document checks, and supervision of certifying bodies	Warning, fine, suspension of the operator or certifying body
Uruguay	DIGEGRA/MGAP	Periodic inspections, audit reports, certification validation	Suspension or revocation of authorization, fine, prohibition of seal use
Paraguay	SENAVE	Direct and third-party inspection; document and technical verification	Warning, fine, embargo, and revocation of registrations
Chile	SAG	Periodic inspections, sampling-based checks, and oversight of certifiers	Fine, loss of organic status, administrative sanctions

Source: Argentina, 1999, 2001; Brasil, 2003, 2007, 2011; Chile, 2005; MGAP, 2023; Paraguai, 2001; SENASA, 2016; SENAVE, 2023; SAG, 2020; Uruguai, 2002.

In Brazil, the decentralized role of MAPA, together with the operation of the Organic Production Commissions (CPOrgs) and the State Food Security Councils, promotes the territorialization of inspection actions, although challenges remain regarding coverage and efficiency (Pinto *et al.*, 2020). In Chile and Argentina, oversight systems are more centralized and technologically driven, which aids in monitoring large operations but may limit responsiveness to local conditions.

Academic contributions highlight that the effectiveness of inspection systems depends not only on technical resources but also on institutional legitimacy and community engagement in monitoring processes (García *et al.*, 2017; Hruschka *et al.*, 2022). The absence of participatory control mechanisms in countries that do not recognize PGSs restricts the development of more inclusive and transparent governance approaches (Hruschka *et al.*, 2022).

Moreover, researchers such as Fonseca *et al.* (2022) argue that strict sanctions should be paired with educational and restorative measures to prevent the system from becoming

exclusionary and punitive. This aspect is especially relevant for smallholder farmers, who often face barriers in complying with complex regulatory requirements.

The regulations reviewed show a strong tendency toward integration into the international market, with alignment to globally recognized frameworks such as Codex Alimentarius, IFOAM, and the United States' National Organic Program (NOP). Argentina, Chile, and Uruguay maintain formal equivalence agreements with several countries, while Brazil and Paraguay are progressing in bilateral and regional negotiations (Table 6).

Table 6. Mechanisms of equivalence and international recognition in the Southern Cone countries.

Country	Recognition of foreign certifications?	Bilateral or multilateral equivalence agreements?	Adherence to international standards (Codex, IFOAM etc.)
Brazil	Yes, subject to technical review by MAPA	Participation in Brazil–European Union Equivalence negotiations; recognizes Mercosur labels	Yes (Codex, IFOAM)
Argentina	Yes, through SENASA and accredited bodies	Mutual recognition with the European Union, Switzerland, and Japan	Yes (Codex, IFOAM)
Uruguay	Yes, with technical assessment by MGAP	Equivalence agreement with the European Union and Canada	Yes (Codex)
Paraguay	Yes, with restrictions and validation by SENAVE	Participation in multilateral negotiations via Mercosur	Yes (Codex)
Chile	Yes, with automatic recognition for countries with established protocols	Bilateral agreements with the European Union, Switzerland, South Korea, USA	Yes (Codex, IFOAM, NOP)

Source: Argentina, 1999, 2001; Brasil, 2003, 2007, 2011; Chile, 2005; MGAP, 2023; Paraguai, 2001; SENASA, 2016; SENAVE, 2023; SAG, 2020; Uruguai, 2002.

This global integration broadens export opportunities but also imposes strict regulatory demands that may affect the normative sovereignty of the countries and introduce technical barriers for small-scale farmers (Valente; Oliveira, 2020). Regulatory harmonization is important, but it must take into account the diversity of the Southern Cone's socio-productive realities.

According to Kremen *et al.* (2022), equivalence arrangements must go beyond technical recognition and incorporate the ecological and social dimensions of production, including agroecological practices, territorial justice, and fair-trade relations. This implies not only adapting to international standards but also shaping those standards based on the lived experiences of the Global South, emphasizing their innovations in participatory certification, heirloom seed use, and community-based oversight mechanisms.

Thus, a key challenge is to design regional instruments for mutual recognition that simultaneously ensure sanitary safety, commercial transparency, and the valorization of territory-rooted farming systems.

CONCLUSION

The comparative assessment of organic product regulations in the Southern Cone, composed by Brazil, Argentina, Uruguay, Paraguay, and Chile, reveals significant progress in the development of legal frameworks aligned with the principles of organic agriculture and environmental sustainability. Across countries, a shared regulatory foundation is evident, including prohibitions on GMOs, restrictions on synthetic inputs, promotion of ecosystem health, and mandatory certification for the commercialization of organic products. These similarities reflect a regional commitment to the integrity of organic production and consumer protection.

Nonetheless, meaningful differences influence the structure and implementation of these regulations. Among the most distinct elements are: (i) the types of certifications recognized, with Brazil and Paraguay standing out for endorsing participatory guarantee systems; (ii) the rules concerning inputs and seeds, including variations in positive lists and incentives for heirloom seed use; and (iii) the inspection mechanisms, more decentralized in Brazil and more centralized in Chile and Argentina.

From an international trade perspective, countries exhibit different levels of engagement in bilateral and multilateral equivalence agreements. Chile, Argentina, and Uruguay have stronger relationships with blocs such as the European Union and the United States, while Brazil and Paraguay continue to develop their own mechanisms. Despite widespread adherence to global standards like Codex and IFOAM, the lack of a regional framework for mutual recognition remains a barrier to regulatory integration in the Southern Cone.

The observed differences should not be viewed solely as obstacles, but also as reflections of the region's productive, cultural, and institutional diversity. In this regard, creating regional harmonization instruments that respect national sovereignty and specificities can enhance technical cooperation, product exchange, and the recognition of local agroecological practices.

The comparison of regulatory frameworks shows that strengthening organic agriculture in the Southern Cone depends not only on technical refinement but also on coordinated public policies, support for participatory certification, promotion of heirloom seeds, and more inclusive inspection systems. Mutual recognition among countries, grounded in shared values of agroecology, social justice, and sustainability, offers a promising path to establishing the region as a global reference in organic production and food sovereignty.

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