



POTENTIAL FOR GEOGRAPHICAL INDICATION REGISTRATION OF ARTISANAL ALEMBIC CACHAÇA FROM CORONEL XAVIER CHAVES, MINAS GERAIS, BRAZIL: A CASE STUDY

**POTENCIALIDADE DE REGISTRO DE INDICAÇÃO GEOGRÁFICA
DA CACHAÇA ARTESANAL DE ALAMBIQUE DE CORONEL
XAVIER CHAVES – MG: UM ESTUDO DE CASO**

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POTENCIALIDADE DE REGISTRO DE INDICAÇÃO GEOGRÁFICA DA CACHAÇA ARTESANAL DE ALAMBIQUE DE CORONEL XAVIER CHAVES – MG: UM ESTUDO DE CASO

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ABSTRACT

Geographical Indications (GIs) are intellectual property instruments designed to protect and add value to distinctive products and their regions of origin, contributing to the preservation of traditional cultural expressions and the expansion of market access through associative actions. Within this framework, the present study aimed to analyze the potential of the municipality of Coronel Xavier Chaves, in the state of Minas Gerais, Brazil, to be recognized as a Geographical Indication for the production of artisanal alembic cachaça. To this end, a qualitative, descriptive, and analytical research approach was adopted, based on a case study and guided by the SEBRAE methodology entitled "Guide for Diagnosing a Potential Geographical Indication." The analysis considered factors such as the product's reputation and its link to the territory, the role of producers and other stakeholders within the production chain, as well as local historical, cultural, and socioeconomic characteristics. The findings revealed attributes that strongly associate the cachaça with its territory, conferring a unique identity and supporting the interest in pursuing GI registration. Although official recognition may generate economic and cultural benefits, the absence of a producers' association constitutes a significant challenge. The establishment of a representative organization is therefore recommended in order to strengthen governance structures and enable the GI registration process, thereby fostering local economic and cultural development.

Keywords: Intellectual property. Valorization of traditional products. Territorial development.

RESUMO

A Indicação Geográfica (IG) é um instrumento da propriedade intelectual desenvolvido para proteger e valorizar produtos singulares e sua região de produção, com impacto na preservação das expressões culturais tradicionais e na ampliação de comercialização por meio de ações associativistas. Com esse enfoque, o presente trabalho teve por finalidade analisar a potencialidade do município de Coronel Xavier Chaves-MG para ser reconhecido como uma IG para a produção de cachaça artesanal de alambique. Para isso, foi realizada uma pesquisa de abordagem qualitativa, de cunho descritivo e analítico, conduzida por um estudo de caso, seguindo a metodologia do SEBRAE, intitulada “Guia para Diagnóstico de uma Potencial Indicação Geográfica”. Foram analisados aspectos, como a reputação do produto e sua ligação com o município, a atuação dos produtores e demais agentes da cadeia produtiva, bem como as características histórico-culturais e socioeconômicas locais. Os resultados revelaram atributos, que vinculam a cachaça ao território local, conferindo-lhe identidade única e justificando o interesse pelo registro de IG. Embora o reconhecimento possa trazer benefícios econômicos e culturais, a falta de uma associação de produtores representa um desafio. Recomenda-se a formação de uma entidade representativa para fortalecer a governança e viabilizar o registro de IG, e, assim, fortalecer o desenvolvimento econômico e cultural local.

Palavras-chave: Propriedade intelectual. Valorização dos produtos tradicionais. Desenvolvimento territorial.

INTRODUCTION

The municipality of Coronel Xavier Chaves has approximately 70 hectares of sugarcane plantations and produces around 5,600 tons of sugarcane annually, with 40% of this production originating from family farming. Part of the sugarcane cultivated in the region is used in the production of artisanal alembic cachaça, an activity that contributes significantly to local economic and cultural development. Among the seven alembics currently operating in the municipality is the oldest alembic in continuous operation in Brazil, formerly owned by the family of Tiradentes and officially listed as national heritage by the National Institute of Historic and Artistic Heritage (IPHAN). This historic facility features preserved architectural elements and has produced artisanal cachaça since its foundation in 1755 (Instituto Estrada Real, 2022). Over nine generations, the alembic has maintained traditional production methods, preserving the same manufacturing process for centuries despite successive regulatory changes affecting the product.

The fact that cachaça produced in this region exhibits attributes of quality, tradition, and distinctive know-how makes the pursuit of a Geographical Indication—either as a Designation of Origin (DO) or an Indication of Source (IP)—particularly relevant for protecting the product and enhancing the municipality’s production potential. Such recognition may contribute to the preservation of traditional



cultural expressions and to the expansion of commercialization through associative initiatives, thereby supporting regional management and development processes (Rodrigues, Mendonça & Siqueira, 2024).

Despite the importance of protection, it is essential to ensure that a project aimed at obtaining a Geographical Indication (GI) registration with the Brazilian National Institute of Industrial Property (INPI) is viable. Therefore, conducting a diagnostic assessment using an appropriate methodology is crucial to accurately determine the region's potential and avoid the allocation of significant resources to an initiative that may ultimately prove unfeasible. In this context, the guiding research question is: What is the potential of the municipality of Coronel Xavier Chaves to be recognized as a Geographical Indication for artisanal alembic cachaça?

Accordingly, this study seeks to analyze the potential of Coronel Xavier Chaves, Minas Gerais, to be recognized as a Geographical Indication for the production of artisanal alembic cachaça. The specific objectives are: (a) to describe the historical elements related to alembic cachaça production in the municipality; (b) to diagnose the region's GI potential through the application of the selected methodology; and (c) to analyze the findings and propose improvement measures aimed at strengthening strategies to enhance the competitiveness of artisanal alembic cachaça in the market.

THEORETICAL FRAMEWORK

ARTISANAL CACHAÇA AND GEOGRAPHICAL INDICATIONS: CHALLENGES AND POTENTIAL FOR LOCAL DEVELOPMENT

Cachaça is a cultural product of Brazil, nationally and internationally recognized as the country's typical distilled spirit (Brazil/MAPA, 2024). Alembic-produced cachaças add both economic and cultural value and are closely linked to production practices rooted in regional traditions (Fonsêca, 2020). Artisanal production involves traditional know-how transmitted across generations, contributing to the construction of territorial identity. Products and services may present specific attributes that influence differentiation, quality, and market reputation, factors that enhance competitiveness (Conceição et al., 2020).

The state of Minas Gerais is the largest producer of alembic cachaça in Brazil and also leads overall national production of the beverage (SEAPA, 2024). This product was recognized as cultural heritage by State Law No. 16,688 of January 11, 2007 (Minas Gerais, 2007).



Alembic production allows for greater control over the manufacturing process, resulting in cachaça with more complex and distinctive sensory characteristics. Producers are able to select the “head,” “heart,” and “tail” fractions during distillation, ensuring a high-quality beverage. Oliveira and Medeiros (2024) argue that although cachaça has been part of Brazilian culture since the colonial period, artisanal alembic cachaça offers gastronomic advantages over its industrial counterpart, thereby adding greater value to the product.

Within this context, protecting and valuing cachaça know-how through the use of Geographical Indications—either as Indication of Source (IP) or Designation of Origin (DO)—is particularly relevant. An IP identifies the geographical name of a location that has become known for producing a given product or providing a service, whereas a DO refers to a geographical name whose product qualities or characteristics are essentially or exclusively attributable to natural and human factors specific to the region (INPI, 2024).

Under both protection modalities, GIs serve as tools to safeguard quality, preserve tradition, and promote regional products. However, several studies highlight challenges associated with GIs in Brazil. According to Da Cruz Rangel et al. (2024), post-registration challenges include organizational and technological management, implementation and monitoring of technical specification rules, effective stakeholder participation, and mutual cooperation among members. Machado and Bicalho (2022) emphasize that small producers often face difficulties in meeting legal requirements, reinforcing the complexity of GIs, which demand collective organization and structural capacity.

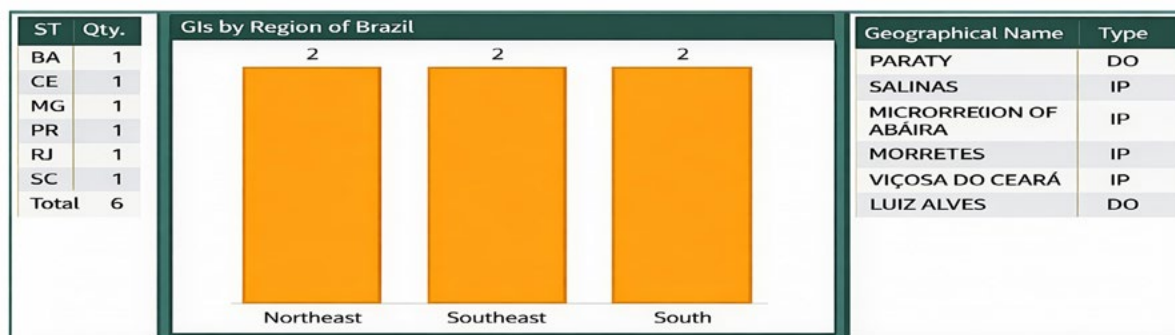
GIs are collective instruments that protect local traditions and can foster regional development. Regional development is understood as a process of economic, social, and political transformation based on the mobilization of local resources and the active participation of stakeholders, linked to the capacity to leverage local—often intangible and unique—assets with cultural and natural components. By valuing these assets, regions become differentiated and competitive, promoting economic, social, environmental, and cultural advancement that reinforces territorial identity and development. However, success depends on organized governance structures that encourage collaborative action among producers (Pellin, 2019; Rodrigues, Mendonça & Siqueira, 2024).

Nevertheless, weaknesses in post-registration management mechanisms have been identified (Vieira & Soares, 2019), as observed in GIs for table grapes and mangoes from the Lower São Francisco Valley in the states of Pernambuco and Bahia. These weaknesses are linked to issues such as geographical delimitation, usage regulations, planning and execution of promotional strategies, and, notably, the absence of strong local producer leadership and cooperative institutions, alongside the presence of private brands that partially substitute the GI function (Sá & Lima, 2018). Similar challenges were identified in the case of filé embroidery in the Mundaú-Manguaba Lagoons Region in Alagoas, where interviews conducted four years after recognition revealed a lack of consensus among artisans regarding the meaning and purpose of the GI, as the process was largely driven by SEBRAE without active community participation (Oliveira, 2019). Comparable issues were also observed in capim dourado handicrafts from the Jalapão region in Tocantins (Silva et al., 2023) and in handcrafted tinware from São João del-Rei, Minas Gerais, where GI recognition remained largely limited to formal registration (Rodrigues, Mendonça & Siqueira, 2024).

BRAZILIAN PANORAMA OF CACHAÇA GEOGRAPHICAL INDICATIONS

As of October 2024, six Geographical Indications for cachaça had been registered with INPI, as illustrated in Figure 1. These GIs are evenly distributed across Brazil's Northeast (2), Southeast (2), and South (2) regions, collectively covering 14 municipalities. Regarding the type of protection, two are registered as Designations of Origin and four as Indications of Source.

Figure 1 | Geographical Indications (GIs) for cachaça registered with the INPI (Brazilian National Institute of Industrial Property).



Source: Adapted from SEBRAE, 2024



The Paraty GI, in the state of Rio de Janeiro, was the first GI granted by INPI for cachaça, recognized as an Indication of Source (IP) in 2007—five years after Brazil's first GI, Vale dos Vinhedos, recognized in 2002. Although production began in the 17th century, it declined with the city's loss of geographic importance. In the mid-1990s, local producers undertook revitalization efforts to restore the tradition (Bruch, Vitrolles & Locatelli, 2014), which later motivated the pursuit of GI recognition (Silva et al., 2024). To obtain recognition, producers faced difficulties adapting to regulatory requirements, with some requiring financial support to modernize equipment and improve productivity (Almeida, Leandro & Nascimento, 2017). In January 2024, Paraty's GI status was upgraded to Designation of Origin due to natural factors such as Serra do Mar topography, high rainfall, and elevated temperatures, which impart unique characteristics to the product (Brazil/INPI, 2024).

The second approved GI was Região de Salinas, covering six municipalities in northern Minas Gerais, recognized as an IP. According to Jesus, Ortega, and Perosa (2016), GI protection was sought primarily to ensure commercial security and combat counterfeiting. The GI structuring process, led by the Association of Artisanal Cachaça Producers of Salinas (APACS), received institutional support from organizations such as EMATER-MG, SEBRAE-MG, IFNMG, MAPA, INPI, the municipal government, and local producers. Despite achieving GI recognition, institutional challenges remain that hinder full product valorization.

The third cachaça GI granted was Microrregião de Abaíra, in the state of Bahia, also recognized as an IP and covering four municipalities (Dutra, 2022). Producers organized themselves through the Cooperative of Sugarcane Producers and Derivatives of the Abaíra Microregion (COOPAMA). Following GI registration, improvements were observed in natural resource management throughout all production stages, from harvesting to distillation, while also promoting sustainability awareness and environmental preservation (Santos & Nery, 2023).

The Morretes GI, located on the coast of Paraná and registered as an IP, represents the fourth GI recognized by INPI. Discussions began in 2000, but formal recognition occurred on December 5, 2023 (Oliveira, 2021; Brazil/INPI, 2023). Morretes cachaça is distinguished by the unique quality of locally cultivated sugarcane varieties and traditional natural fermentation methods maintained since the 18th century, preserving cultural significance (Rocha & Deretti, 2024).



The GIs Viçosa do Ceará (Ceará) and Luiz Alves (Santa Catarina), recognized respectively as IP and DO in 2024, have not yet been the subject of published academic studies (INPI, 2024a; 2024b).

The trajectory of these cachaça concessions in Brazil, compared to the date of the first GI concession in the country, can be visualized in Figure 2.

Figure 2 | Timeline of GIs for cachaça compared to the first GI granted in Brazil.



Source: Own elaboration based on INPI (2024; 2024a; 2024b).

According to Vieira and Soares (2019), seeking registration for a Geographical Indication (GI) requires a set of bureaucratic procedures that demand time and resources for the development and implementation of the project. Therefore, they recommend that the work should begin with a diagnosis capable of identifying the GI potential, considering all aspects of the territory. This requires an appropriate methodology.

METHODOLOGIES FOR DIAGNOSING GEOGRAPHICAL INDICATIONS: CONCEPTS AND PERSPECTIVES

Geographical Indication (GI) identification methodologies aim to understand the specific characteristics of a product, its link to the territory, and the level of organization and engagement of local producers. In Brazil, three main methodologies stand out for GI identification: the method proposed by the Brazilian Association of Technical Standards (ABNT), the Virtuous Circle of Origin-Linked Quality, and the methodology developed by the Brazilian Micro and Small Business Support Service (SEBRAE) (SEBRAE, 2022).

The ABNT methodology establishes quality standards that require the product to be directly associated with exclusive characteristics of its territory of origin. It demands detailed control of production practices and a consolidated governance structure, as well as periodic certifications to ensure compliance with technical standards (ABNT, 2020). The requirement for structured governance and certifications increases costs and demands resources that small producers generally lack. Moreover, ABNT's control and documentation standards make its application more complex for artisanal production systems based on traditional practices (Silva, Lima & Santana, 2022).

The Virtuous Circle of Origin-Linked Quality proposes an integrated method for GI recognition, focusing on the creation of added value derived from the territorial characteristics of the product. This methodology is composed of several stages, including: Identification, which defines the links between the product, the territory, and the actors involved; Qualification, related to the assessment of reputation and traditional know-how; Remuneration, based on the economic valorization of the product; Reproduction, which addresses the sustainability of the production chain; and Public Policies, aimed at securing institutional and legal support for the implementation and maintenance of the GI. As observed in the case of licuri, the Virtuous Circle approach prioritized the continuous construction of identity and quality linked to the product, emphasized sustainability, and strengthened territorial identity throughout the value chain (Silva, Lima & Santana, 2022).

SEBRAE's methodology adopts a more technical and pragmatic approach, focusing on the initial assessment of the potential and feasibility of GI recognition. It employs specific diagnostic tools to evaluate production conditions and organizational structures and is adaptable to contexts of small-scale artisanal production. The method is structured around four diagnostic dimensions: productive, market, organizational, and structural. Its objective is to train and organize producers to achieve GI recognition without requiring the rigid institutional framework demanded by the ABNT methodology (SEBRAE, 2022). Unlike the Virtuous Circle approach, SEBRAE's method does not prioritize sustainability criteria or the strengthening of territorial identity.

Compared to European methodologies, which often require a more rigid organizational structure, the SEBRAE method is more flexible and accessible to small producers. A study on coffee production in the Chapada Diamantina region demonstrated that the SEBRAE methodology

effectively supported the evaluation of regional productive capacity for obtaining GI registration with the National Institute of Industrial Property (Lima et al., 2023).

This methodology was also applied to assess the GI potential of the Paraty and Salinas regions, both recognized for cachaça production, reinforcing cultural identity and enhancing the reputation of these beverages in national and international markets. In Salinas, for example, GI registration stimulated regional economic development by promoting tourism and supporting exports, highlighting the effectiveness of the SEBRAE methodology in valuing artisanal products with high cultural significance (SEBRAE, 2022).

These cases illustrate the adaptability of the SEBRAE methodology to contexts characterized by fragmented production systems and limited governance structures, such as the cachaça sector in Coronel Xavier Chaves. In this municipality, artisanal production traditions dating back to the 18th century remain preserved, and GI recognition could enhance the value of local cachaça, strengthen tourism, and promote territorial and cultural development.

METHODOLOGY

To achieve the proposed objectives, a qualitative, applied research design was adopted between September and November 2024. Non-standardized data collection methods were employed in order to capture participants' perspectives and analyze interactions among individuals, groups, and communities (Sampieri, Collado & Lucio, 2013). With respect to its objectives, the research was descriptive—detailing the characteristics of the population—and explanatory, as it sought to identify factors that determine or contribute to the occurrence of the phenomenon under analysis, as well as their cause-and-effect relationships (Gil, 2008). The research strategy adopted was the case study, which, according to Sátyro (2020), enables higher levels of conceptual validity and facilitates the identification and establishment of indicators that accurately reflect the concepts being measured.

The object of analysis was the artisanal alembic cachaça produced in the municipality of Coronel Xavier Chaves, located in the Campo das Vertentes region of the state of Minas Gerais (Figure 3). The municipality has an estimated population of 3,586 inhabitants, and its economy is predominantly based on agriculture and livestock (IBGE, 2022). One of the most visited local attractions is Engenho



Boa Vista, the oldest alembic in continuous operation in Brazil. This facility, which once belonged to Father Domingos da Silva Xavier—older brother of Tiradentes—produces cachaça using the same methods employed more than 250 years ago (Instituto Estrada Real, 2024).).

Figure 3 | Map of Minas Gerais showing the location of the municipality of Coronel Xavier Chaves.



Source: Prepared by the author based on IBGE (2022).

Data collection was conducted through: (a) bibliographic research, involving the review of dissertations, scientific articles, books, and theses, with the objective of understanding existing scientific contributions on the topic and avoiding redundant data collection, in accordance with the guidelines proposed by Lakatos and Marconi (2001); (b) documentary research, based on reports, indicators, and information available from alembics, municipal authorities, and other relevant sources; and (c) participant observation, carried out during on-site visits to the municipality's alembics. During these visits, production stages were observed, production facilities were examined, and active listening was employed to capture spontaneous narratives regarding the history of cachaça, the municipality, traditional practices, and daily challenges—particularly those related to compliance with current legislation. The researchers also participated in informal social interactions, including cachaça tastings, group discussions, and shared meals traditionally associated with cachaça consumption. These activities enabled access to local narratives that reinforce cultural values and perceptions not typically captured through structured interviews. This method allowed for the validation and complementation of documentary and bibliographic data, while also capturing

identity-related elements essential to understanding the territorial link required for Geographical Indication recognition.

Ethical considerations were rigorously observed throughout the study. Participation was voluntary and based on free and verbal informed consent, obtained after participants were fully informed about the research objectives. Confidentiality and anonymity were ensured, with no disclosure of personal data or direct or indirect identification of participants. All information collected was used exclusively for academic purposes and treated confidentially, and no recordings were made without prior authorization. Participants were not exposed to physical, moral, or economic risks, and their privacy, identity, image, and voice were fully protected. The entire research process complied with the ethical principles established by Brazilian National Health Council Resolution No. 510/2016, ensuring respect, integrity, and credibility.

For the identification of GI potential, the SEBRAE methodology—originally developed in 2010—was adopted. This methodology aims to assess the potential of regions to obtain Geographical Indication recognition, encompassing both Indication of Source (IP) and Designation of Origin (DO). Since its creation, the method has evolved to more accurately identify the feasibility of GIs in specific regions (SEBRAE, 2022).

Responses to the 35 questions included in the SEBRAE diagnostic tool were obtained through secondary data analysis, dialogue with producers, and on-site observation. The questions are divided into two groups:

- a. **Critical Questions**, which assess the essential feasibility for a product and region to be recognized as an Indication of Source (IP) or Designation of Origin (DO). Responses in this block were based on verification of the historical linkage between *cachaça* and the territory, analysis of the municipality's reputation, identification of product-specific characteristics, and confirmation that local know-how is traditional and transmitted across generations.
- b. **Structural Questions**, which allow for a more in-depth analysis of the region's potential for GI recognition (SEBRAE, 2022). These include: Product, assessing quality standards, distinctive characteristics, and differentiation; Territoriality, identifying historical, cultural, environmental, or productive links between the product and the territory; Production Method / Production

Chain, evaluating shared practices, production stability, and supply-chain structure; Governance, analyzing collective organization, cooperation, and institutional articulation capacity; Identity and Sense of Belonging, examining recognition of the product as part of local culture; Economic Performance, considering the relevance, stability, and value-addition potential of the activity; Need for Protection, assessing risks of unfair competition or misuse of the geographical name; Research Involvement, evaluating available technical and scientific support; and Future Vision, analyzing producers' interest in product qualification and compliance with future GI requirements.

After data collection and application of the diagnostic tool, scores ranging from 0 to 5 were assigned, where 0 indicates non-compliance with the analyzed requirement and 5 indicates full compliance. The responses were based on data from seven cachaça producers in the municipality, three of whom operate formally and four informally. This qualitative approach sought to deepen understanding of the contextual realities faced by these producers.

RESULTS AND DISCUSSION

HISTORICAL BACKGROUND OF ARTISANAL ALEMBIC CACHAÇA FROM CORONEL XAVIER CHAVES

Cachaça production in Brazil originated during the sugarcane cycle. In this context, the state of Minas Gerais stands out due to its leadership in national production and its pioneering role in artisanal cachaça manufacturing. This prominence is particularly evident in specific regions of the state, such as the Região de Salinas, which gained recognition for the excellence and identity of its product, enabling producers to obtain a Geographical Indication (GI) for local cachaça (Gomes et al., 2021).

Following the traditions of artisanal cachaça production in Minas Gerais, the region of São João del-Rei has gained prominence for hosting a cluster of alembics with diverse niches, quality levels, purposes, and ages. As a historically significant area dating back to the colonial period, cachaça production has accompanied the region since the early stages of settlement, adding strong cultural and identity value to the beverage.



Historical records indicate the existence of cachaça production since the 18th century, as exemplified by Engenho Boa Vista, built in 1755 and still operating in the municipality (Gomes et al., 2021). This alembic preserves traditional production practices, avoiding the use of agrochemicals and commercial yeast strains such as CA11—typically designed for large-scale industrial production—thus safeguarding artisanal cachaça and local know-how (Figure 4). According to Medeiros and Passador (2022), such practices associate quality criteria and standards with the geographical environment.

The continuity of this activity over nearly three centuries has preserved traditional practices, including manual sugarcane cultivation and copper alembic distillation, which remain common among local producers. Currently, seven alembics operate in the municipality, utilizing part of the approximately 8,500 tons of sugarcane produced annually in the region, of which 40% originates from family farming. This historical permanence, combined with intergenerational transmission of know-how and strong territorial linkage, explains the reputation of local cachaça and reinforces its potential for obtaining a GI under the Indication of Source (IP) modality (Dutra, 2022).

Figure 4 | Artisanal cachaça produced in the oldest operating sugar mill in Brazil, Engenho Boa Vista, in Coronel Xavier Chaves, Minas Gerais.



Source: Authors' collection (2024).

Among local producers, three operate formally, while four remain informal. All rely primarily on family labor, with production carried out by family members and the occasional involvement of external workers, ranging from three to eight individuals, characterizing small-scale agricultural production. The transmission of know-how across generations is common to all producers; however, only one—recently formalized—operates fully in accordance with industrial regulatory requirements.

A complex relationship exists between current legislation and artisanal cachaça production in Coronel Xavier Chaves, highlighting how product identity is deeply connected to traditional production techniques and facilities. Regulatory frameworks establish both identity and quality standards, creating a paradox: while regulations impose production requirements aimed at ensuring safety, hygiene, and uniformity, they often require adaptations that result in the loss of cultural and sensory authenticity.

The situation faced by producers illustrates the tension between modernization and cultural preservation. Many alembics, unable to meet all legal requirements, have ceased operations, indicating that traditional production is being suppressed in favor of standardization that prioritizes technical quality over cultural identity. This dynamic not only harms small producers economically but also threatens the continuity of practices transmitted across generations, leading to a rupture in the preservation of the intangible cultural heritage associated with cachaça.

DIAGNOSIS OF THE POTENCIAL FOR REGISTERING A GEOGRAPHICAL INDICATION

The application of the diagnostic tool made it possible to assess the feasibility of recognizing a region associated with a specific product as a Geographical Indication under the Indication of Source modality (SEBRAE, 2022). Table 1 presents a summary of the diagnostic results.



Table 1 | Summary of Diagnostic Results and Evaluation Parameters

Geographical Name: Coronel Xavier Chaves		
Parameters	Compilation of the diagnosis	Score:
Potential for Indication of Source (IP)	The municipality of Coronel Xavier Chaves demonstrates potential to obtain GI recognition for cachaça. The region is recognized in different areas of Brazil and has been featured in newspapers and research studies ranking the best cachaças in the country.	4
Product	The product consists exclusively of alembic cachaça, aged using local techniques that impart distinctive flavor characteristics. It exhibits differentiated sensory attributes. The activity complies with legal requirements, and remaining regulatory gaps are gradually being addressed, provided that traditional production methods transmitted across generations are preserved.	4
Territoriality	Production occurs entirely within the geographical boundaries of Coronel Xavier Chaves and includes sugarcane planting and manual harvesting, aging or resting techniques, fermentation, distillation, bottling, and distribution, all carried out within the municipality.	5
Production Method	The production chain encompasses sugarcane cultivation and harvesting, cachaça production, and distribution. Harvesting is manual, and each producer maintains their own plantations and production techniques. There is no Regulatory Council to ensure quality and uniformity due to the absence of a producers' association or union. However, producers occasionally cooperate for joint purchases of inputs. Support is provided by the municipal government, particularly through the rural development department, and by institutions such as SEBRAE, which promote events, lectures, and festivals that highlight regional products.	5
Governance	There is no formal association representing cachaça producers collectively within the geographical area. Although a general rural producers' association (ARCEL) exists, it encompasses multiple agricultural activities. Producer representation is limited by the lack of formal organization and low levels of interaction.	1
Identity and Sense of Belonging	Producers' values and principles are linked to the preservation of family-based practices transmitted across generations. Events promote innovation while reinforcing local pride and identity.	3
Economic Performance	The area has seven main producers, each carrying out all stages of production in their own alembics. Annual production ranges from 156,000 to 300,000 liters.	5
Need for Protection	There is no evidence of counterfeiting or misuse of the geographical name, tradition, or know-how by producers outside the area. However, protection is necessary to ensure differentiation of Coronel Xavier Chaves cachaça based on historical and cultural production characteristics.	3
Research Involvement	Producers' know-how and family traditions are essential to product quality and identity. Knowledge is transmitted across generations and reinforced through innovation, while preserving core production methods.	5
Future Vision	Producers aim to expand market reach at both local and national levels. Territorial development is viewed as an opportunity, particularly through tourism and regional economic strengthening, helping to prevent population outmigration.	4

Source: Research data (2024).

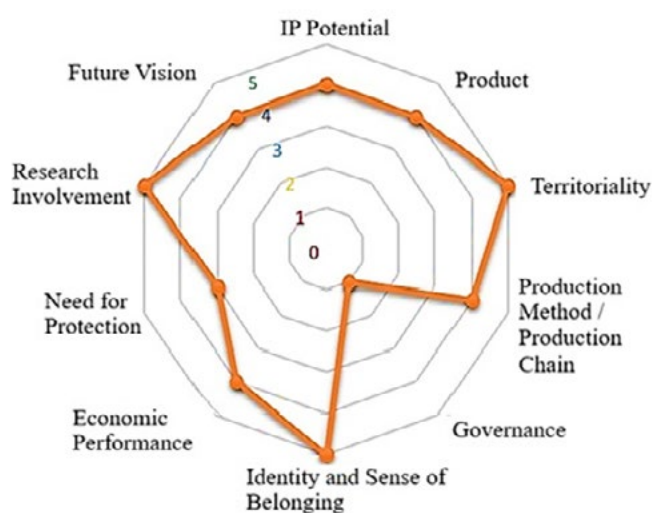


The municipality of Coronel Xavier Chaves presents historical and market-based evidence demonstrating that its geographical name is recognized by consumers as a center of cachaça production. This recognition is evidenced by mentions in newspapers, magazines, television programs, research studies, and rankings of Brazil's best cachaças, as well as international recognition. In addition to notoriety, intergenerational know-how characterizes both production and product, reinforcing its relevance to the local economy.

Based on the data collected and perceptions identified during interviews and field research, a radar chart was developed (Figure 6), revealing weaknesses in governance and strong performance in territoriality, identity and sense of belonging, and research involvement.

Regarding governance, the absence of a representative association and structured cooperation among producers limits collective action capacity. Encouraging associativism and cooperativism would enhance market organization and territorial initiatives, aligning with GI requirements (Da Cruz Rangel et al., 2024; Machado & Bicalho, 2022). Establishing a collective entity to act as a legal representative could address the need for formal representation in the GI registration process and facilitate engagement with other stakeholders to expand markets and strengthen territorial visibility (Bruch, Vitrolles & Locatelli, 2014). Additionally, formalizing informal producers requires coordinated efforts involving local government and support institutions such as SEBRAE, EMATER, universities, and federal institutes.

Figure 6 | Evaluation of the structural parameters of GI potential of the Coronel Xavier Chaves region for artisanal pot-still cachaça.



Source: Research data (2024).



With respect to production methods, the absence of a Regulatory Council to ensure standardized quality and manufacturing practices affects the production chain, as products must comply with minimum legal quality requirements to reach final consumers.

Concerning the need for protection, formal recognition would enhance differentiation based on historical and cultural production characteristics, valorize cultural heritage, strengthen regional identity, increase competitiveness, and reduce the risk of future counterfeiting. Overall, the results indicate significant potential for GI recognition of artisanal alembic cachaça from Coronel Xavier Chaves.

CONCLUDING REMARKS

This study aimed to analyze the feasibility of obtaining Geographical Indication (GI) recognition for the municipality of Coronel Xavier Chaves as a producer of artisanal alembic cachaça, using the SEBRAE diagnostic methodology. To this end, a qualitative research design with descriptive and explanatory characteristics was adopted.

The results indicate that the municipality possesses cultural, historical, and productive attributes that clearly demonstrate the linkage between cachaça production and the local territory. The authenticity of the product and its strong connection to traditional know-how confer a unique cultural identity on Coronel Xavier Chaves cachaça and justify the interest in pursuing GI registration.

With respect to notoriety, the activity is nationally recognized, having appeared for more than 25 years in rankings of the best cachaças in Brazil, as well as in newspapers, magazines, television programs, fairs, books, and scientific studies. The volume and quality of these materials provide robust evidence of the municipality's reputation. In this sense, the geographical name is widely recognized by consumers as a center of cachaça production. These findings indicate that Indication of Source (IP) is the most appropriate GI modality for the product.

The registration of an Indication of Source for Coronel Xavier Chaves cachaça may enhance visibility (Bruch, Vitrolles & Locatelli, 2014) and generate economic benefits, including regional development, strengthening of producers, job creation, and recognition of traditional know-how and product quality (Rodrigues, Mendonça & Siqueira, 2024). However, the absence of a producers' association and a structured governance framework compromises the standardization



of practices and quality control. Therefore, the creation of a representative producers' entity is strongly recommended, with support from public policies and institutions such as SEBRAE, EMATER, universities, and federal institutes.

Such support would strengthen associativism and local governance, enabling the development of a Technical Specifications Manual and the standardization of production practices—both fundamental requirements for obtaining and maintaining GI recognition. Assistance from governmental bodies and regional development organizations would be strategic in overcoming structural barriers, fostering learning processes, consolidating collective organization, and maximizing the economic and cultural benefits for the region.

In addition to the lack of a producers' association, it is necessary to reinforce organizational structures and promote initiatives that support formalization and the valorization of this cultural heritage prior to initiating the GI recognition process. With the implementation of these improvements, GI recognition would protect the traditional know-how associated with Coronel Xavier Chaves cachaça and contribute to local socioeconomic development by enhancing the product's visibility in both national and international markets.

This research contributes to the advancement of knowledge in the field of regional management and development by demonstrating how GI feasibility analysis serves as a useful tool for understanding the relationship between territorial identity, productive organization, and local competitiveness. The study expands understanding of how the valorization of productive and symbolic assets can be transformed into development strategies. The findings also reinforce the importance of governance, producer cooperation, and institutional support as key elements in policies aimed at valorizing traditional products, offering insights that may guide public managers, support institutions, and researchers in the formulation of initiatives to strengthen local economies.

Despite the study's limitations—particularly the objective nature of the SEBRAE methodology, which restricts the collection of subjective data, and the limited generalizability of the results due to the number of participants—these constraints also point to opportunities for future research.

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