

SUGAR CANE AND SUGAR PRODUCTION IN THE CAPE VERDE ISLANDS IN THE CONTEXT OF REGIONAL DEVELOPMENT

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Abstract

This article describes the historical development and selected trends in the production of sugarcane and sugar in the Cape Verde Islands, focusing on key stages from the colonial era to the present and analysing significant changes in the agricultural sector. It discusses transformations driven by colonial practices, land-use patterns, and the impact of political and economic challenges that have shaped sugar production in Cape Verde. In a modern context, it examines factors such as geographical and climatic limitations, the decline of local production, and the reliance on sugar imports, emphasising the importance of regulating sugar consumption and adapting to evolving environmental and economic conditions.

Keywords: Regional Development, Sugar, Agriculture, Cape Verde, Colonization, Sugarcane, Innovation

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Introduction

This paper focuses on the production of sugar and sugarcane in the Cape Verde Islands within the context of regional development. It examines the challenges associated with the unfavourable conditions for sugarcane cultivation, discusses the potential of Cape Verdean agriculture in relation to this crop, and introduces grogue, a distinctive sugarcane-based beverage that represents an important export commodity. The article addresses both the historical background and the present situation of sugar production, highlighting the significant transformations that have occurred over time. The aim of this study is to provide an overview of the development of Cape Verde's modest sugar industry and to outline key trends in this field within the framework of regional research.

Methodological Framework

This paper focuses on the production of sugar and sugarcane in the Cape Verde Islands within the broader context of regional development and tourism. In addition to theoretical foundations and scholarly literature, an important pillar of this study lies in the author's personal experience from fieldwork in Cape Verde. A stay on the island of Sal in December 2024 provided an opportunity for direct engagement with the tangible manifestations of local climatic conditions and their impacts on agriculture. During the fieldwork, detailed notes and photographic documentation were collected, forming an integral part of this study.

The adopted approach is analytical-descriptive, meaning that the text first systematically outlines the fundamental characteristics of Cape Verdean agriculture—its historical development, current limitations, and structural features—and subsequently focuses on an analysis of both external and internal factors shaping the sector. Particular attention is devoted to the effects of climate change, extreme drought, and the issue of food self-sufficiency. Tourism is incorporated into the analysis as a contextual factor that reduces the economy's dependence on agriculture while simultaneously imposing new demands on natural resources. This approach enables the integration of empirical findings with broader ecological and socio-economic questions that are crucial for the future development of Cape Verde.

The Cape Verde Islands: Agricultural Production

The Cape Verde Islands (officially the Republic of Cabo Verde, República de Cabo Verde), located in the Atlantic Ocean near the west coast of Africa, face limited conditions for agricultural production due to their arid climate and low soil fertility (see Fig. 1). The archipelago covers a total area of 4,036 km² (Klíma, 2008).

The relationship between land and sea—viewed from physical, biological, and economic perspectives—is so complex and significant that coastal areas, more than any others, require an integrated approach



1: Arid landscape on the island of Sal

Source: photo by the author

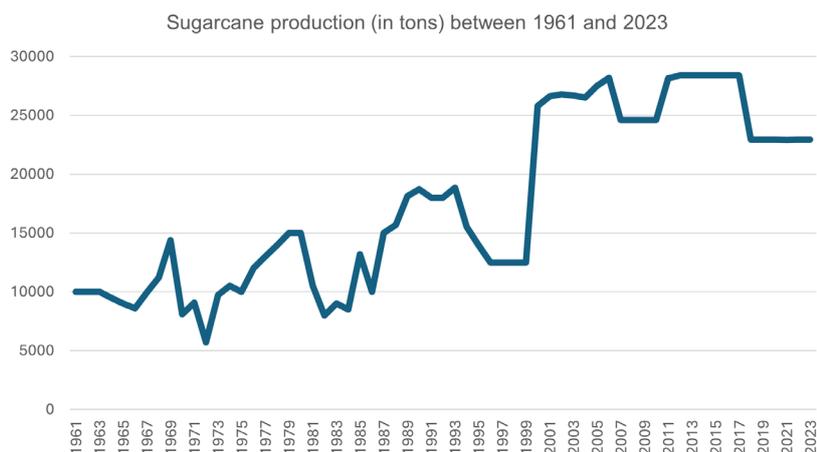
encompassing all measures and practices with a spatial reach capable of ensuring coherence and mutual balance. Spatial planning, particularly in terms of land use, also manifests itself in the field of regional development, including agriculture (European Commission, 1997).

The climate of Cape Verde is influenced by the northeast trade winds and is characterized by a long dry season lasting eight to ten months and a short rainy season between August and September. Annual precipitation does not exceed 300 mm in the lowlands and 700 mm in the higher areas. The total cultivated area amounts to 36,450 hectares, of which 81.9% is rain-fed agriculture, 16.8% irrigated, and 1.3% mixed. Santiago constitutes the largest agricultural region, accounting for 52.5% of the total cultivated land, followed by the islands of Santo Antão and Fogo. Most agricultural production focuses on resilient crops such as maize, beans, sweet potatoes, cassava, bananas, and coconuts (Monteiro *et al.*, 2020).

On the island of Fogo, coffee is cultivated, and several islands produce tropical fruits such as papaya and mango. Although agriculture represents an important component of local livelihoods, the country remains far from self-sufficient, relying heavily on imports of staple foods such as cereals and rice. Among the major agricultural products is sugarcane, which is primarily cultivated on the more humid islands, notably Santo Antão and Santiago. In the past—as in many other destinations—sugarcane cultivation was closely linked to slavery. As early as 1466, the Portuguese Crown issued a “concession contract” for the purchase and sale of enslaved Africans from the West African coast (Klíma, 2008). Although sugarcane cultivation initially flourished, recurrent droughts (for example, between 1580 and 1583) hindered long-term agricultural activity. Consequently, a portion of the enslaved population from Cape Verde was later transferred to the expanding plantations in Brazil. The Cape Verde Islands thus served as a site for the “acclimatization” of enslaved people, where they were trained in labor duties, social conduct, and the Portuguese language. Throughout the 16th and 17th centuries, sugarcane was successfully cultivated and processed into sugar, molasses, and spirits (Klíma, 2008).

In 1790, coffee cultivation began on the islands, and irrigated plantations produced satisfactory yields. In 1836, Portugal abolished the slave trade, and by the mid-19th century, Cape Verde—once a strategic hub of the global slave trade—had become an important outpost in the fight against its remnants (Klíma, 2008).

Cape Verde continued to struggle with cyclical droughts, which repeatedly led to famine and migration, most frequently to Brazil and Portugal. These tragedies are encapsulated in the Creole term *nhanhida* (ñañida), denoting despair, hopelessness, and the collective trauma of poverty and drought. The situation began to improve in 1971 with the introduction of new artesian wells, which contributed to better water management (Klíma, 2008). Thanks to terraced fields and improved irrigation systems, sugarcane cultivation became possible despite persistently harsh conditions. By 1972, Cape Verde produced a total of 5,719 tons of sugarcane (Klíma, 2008). The severe drought of 1974 prompted the arrival of a special UN mission, including delegates from specialized agencies such as FAO, UNDP, UNICEF, and the UN Disaster Relief Coordination Office. The mission proposed two assistance programs: a food project valued at 2.5 million USD and a financial project worth 1.5 million USD. However, while UN aid could not arrive until March or April 1975, local supplies of sugar, milk, maize, and beans were already depleted by the turn of the year. Consequently, the High Commissioner traveled to Lisbon to request immediate support. The Portuguese charity organization promptly sent 10 tons of milk and food for children, along with 19 tons of clothing, while the military government dispatched 600 tons of maize, 600 tons of sugar, and 150 tons of milk (Klíma, 2008). During this period, sugar became a scarce commodity that had to be imported. Development plans nonetheless anticipated renewed sugar production, leading to the construction of a sugar mill on the island of Santo Antão. These efforts coincided with Cape Verde's declaration of independence from Portugal on 5 July 1975. At that time, statistics indicated that the country could produce only about 20% of the food required to sustain its population (Klíma, 2008).



2: *Sugarcane production in the Cape Verde Islands, 1961–2023*

Author's own elaboration based on Repotlinker (2025) and Our World in Data (2025)

Cape Verde was subsequently recognized by the international community as one of the most successful African states in terms of political, economic, and social development. Nevertheless, the country continued to face macroeconomic challenges, rapid demographic growth, and insufficient domestic food production (Monteiro *et al.*, 2020).

Another tragedy that significantly affected agriculture in the Cape Verde Islands was the eruption of the volcano on the island of Fogo in 1995, as well as a cholera epidemic that claimed more than 200 lives (Klíma, 2008). Sugarcane, cultivated in Cape Verde since colonial times, has retained its status as a traditional crop and continues to play an important role in the national economy, contributing not only to local livelihoods but also to the production of molasses, alcohol, and other derivatives vital for both domestic consumption and export. Long-term analyses indicate a rising trend in sugarcane production in Cape Verde, as illustrated in Fig. 2, reflecting a combination of more favorable climatic conditions, modernization of agricultural practices, and increasing demand for sugarcane-based products.

Sugarcane represents a major agricultural crop on the island of Santo Antão, where it occupies 82 % of the limited arable land. This not only underscores its central role in the local economy but also highlights the heavy dependence of regional agriculture on this crop. In 2020, Santo Antão recorded a record harvest of 22,940 tons of sugarcane, largely due to favorable rainfall following a prolonged period of drought (Lundy *et al.*, 2024). Production levels remained stable in the following years, with projections for 2025 and 2026 indicating a moderate decline to approximately 18,810 tons of sugarcane (Lundy *et al.*, 2024).

Sugarcane and *Grogue*: Tradition and Economic Significance in Cape Verde

Sugarcane is essential for the production of the traditional Cape Verdean rum known as *grogue*. This distilled beverage also played an important role in promoting education in the Cape Verde Islands when, in the mid-19th century, a “tax for the support of education” was imposed on this traditional spirit, particularly affecting the islands of Santiago, Santo Antão, and São Nicolau (Klíma, 2008). *Grogue* has become a significant symbol of Cape Verdean identity and a source of national pride, while also enjoying increasing international demand (Lundy *et al.*, 2024).

This distilled beverage is produced mainly in small family-owned distilleries using traditional methods. The individual stages of production are as follows:

- harvesting of sugarcane;
- pressing of the sugarcane (the fresh juice is referred to as *calda*);
- fermentation (in wooden or metal barrels);
- distillation (performed in copper stills known as *alembiques*);
- bottling and aging of the rum (the color and characteristic aroma of the spirit are considered essential).

Cape Verdean *grogue* occupies an important place in local culture, particularly during celebrations and social gatherings (Lundy *et al.*, 2024). This original and traditional rum is also one of the most characteristic tourist souvenirs. *Grogue* is often used as a base for the sweet liqueur known as *ponche*, which is blended with honey or fruit, most commonly lime.

A significant milestone was the adoption of Decree-Law No. 11/2015 by the Cape Verdean Parliament in 2015, introducing strict quality standards for *grogue*. This legislation stipulates that producers must either own sugarcane farms or have contractual agreements with local growers, thereby supporting sustainable

local production. The law emphasizes hygiene, safety, and quality in manufacturing processes while ensuring consumer protection and environmental responsibility.

The production of grogue is regarded as an important source of income for small-scale farmers and producers, although it faces several challenges. These include shortages of sugarcane during dry periods and competition from industrially produced alcoholic beverages. Consequently, Cape Verde has invested in projects aimed at improving irrigation and promoting sustainable agricultural practices, which could strengthen both sugarcane cultivation and the development of the domestic rum industry. On the island of Santo Antão alone, approximately two million liters of grogue are produced annually, representing an economic value of between 7 and 40 million USD. This production constitutes a substantial contribution to the local GDP and supports employment in agriculture, processing, and distribution (Lundy *et al.*, 2024).

Emerging Trends in Agriculture, Sugar Production, and Tourism

As previously noted, the Cape Verde Islands frequently face prolonged droughts that significantly affect agricultural production and contribute to soil degradation. A key challenge lies in the scarcity of water, which limits the potential for irrigated agriculture. Nevertheless, in recent years several strategies have proven effective, including the construction of small dams, the introduction of drip irrigation systems, and other measures aimed at improving water management. These efforts not only mitigate the impacts of drought but also enhance crop yields and promote diversification of agricultural production. In addition to sugarcane, other crops such as bananas, papaya, and vegetables are cultivated on irrigated land, showing an upward trend in production. These crops contribute to improving food security and reducing dependence on food imports.

The crucial task remains the optimization of available water resources and the implementation of efficient irrigation technologies. Collaboration among government institutions, researchers, and local farmers can foster a sustainable agricultural system that is resilient to climate change and contributes to the social and economic development of Cape Verde (Monteiro *et al.*, 2020).

In recent years, the main trend has been investment in irrigation systems, dams, wells, and rainwater harvesting, all of which are essential to overcoming the seasonal dependence on rainfall (Lundy *et al.*, 2024). The introduction of modern technologies—such as drip irrigation, soil erosion control, and hydroponic systems—represents a pathway toward sustainable agriculture. The development of hydroponics and the cultivation of new vegetable varieties open opportunities not only for increasing food self-sufficiency but also for expanding the availability of fresh produce on the domestic market. These initiatives further support agricultural diversification and enhance the sector's contribution to the national GDP. Between 2008 and 2018 alone, the Cape Verdean government invested approximately €398 million in agricultural infrastructure, aiming to transform traditional agriculture into a more technologically advanced and resilient system (Fortes and Correia, 2020).

With regard to sugarcane, emphasis should be placed on improving cultivation technologies and processing capacities. The modernization of the sugar industry, including the utilization of by-products—such as molasses for further processing or for biogas production—could further increase the value and sustainability of this sector (Monteiro *et al.*, 2020; Fortes and Correia, 2020). However, domestic sugar production in Cape Verde does not meet national demand, resulting in substantial sugar imports from Brazil, Portugal, and France.

The development of regional economies through tourism is also strongly influenced by the political situation of the destination. Cape Verde is considered one of the most politically stable countries in West Africa, characterized by a democratic system of governance and comparatively low crime rates relative to neighboring states. This political stability positively shapes the perception of the country as a safe tourist destination, thereby fostering interest among foreign investors and tour operators. As a result, the islands have witnessed significant growth in infrastructure development, hotel construction, and service quality—particularly on the islands of Sal and Boa Vista, which remain the most popular among international visitors.

The development of tourism in the Cape Verde Islands presents significant economic opportunities while simultaneously creating new pressures on natural resources, particularly water and soil. The growing demand for water in hotel resorts, golf courses, and other tourist facilities can reduce its availability for agriculture, which already depends heavily on seasonal rainfall. This conflict between the service sector and agriculture is especially evident on the islands of Sal and Boa Vista, where the rapid expansion of tourism has exceeded the carrying capacity of local ecosystems. Sustainable water management, wastewater recycling, and the promotion of environmentally responsible tourism have therefore become key elements of regional policy and planning (Monteiro *et al.*, 2020).

At the same time, synergistic links between agriculture and tourism have begun to emerge. Agricultural products, including sugarcane and the grogue spirit, are increasingly incorporated into the tourism offer, contributing to the promotion of Cape Verdean culture and gastronomy. The development of so-called agritourism allows farmers to diversify their income sources while increasing tourists' awareness of traditional production practices. The establishment of small farm museums, tasting events, and guided

visits to grogue distilleries supports local economies and strengthens the relationship between visitors and the regional environment. This form of integration between tourism and agriculture represents a potential pathway toward sustainable island development, combining economic growth with the preservation of both cultural and natural heritage.

Conclusion

The Cape Verde Islands represent a distinctive example of adaptation to adverse climatic conditions, particularly prolonged drought and limited water resources, which profoundly influence the structure and productivity of local agriculture. The production of sugarcane and the traditional spirit grogue remains one of the key economic sectors that interlinks the archipelago's history, cultural heritage, and economy. This sector also has a significant social dimension, as it provides an important source of livelihood for rural populations and contributes to the preservation of traditional production methods and local identity.

Although sugarcane cultivation faces numerous challenges, including cyclical water shortages, soil degradation, and competition from industrially produced alcoholic beverages, modern irrigation systems, technological innovation, and sustainable practices offer promising prospects for its long-term stabilization and development. In the future, the expansion of drip irrigation, the utilization of rainwater, and investments in the modernization of the processing industry could significantly enhance the efficiency of both cultivation and processing. At the same time, strengthening the export of traditional Cape Verdean grogue to international markets could further increase the economic significance of this sector and support rural development.

The integration of innovative technologies and environmentally friendly approaches into agricultural practice represents a vital step toward strengthening resilience to climate change and ensuring the long-term sustainability of Cape Verdean agriculture. The combination of tradition and innovation can serve as an inspiring model of developmental agriculture for Cape Verde, one that combines economic growth with environmental protection and the preservation of cultural identity (Fortes, Correia, 2020). The development of tourism provides additional opportunities to connect agricultural production with cultural heritage. Grogue, a symbol of Cape Verdean tradition and pride, is becoming not only an attractive export product but also a core element of experiential tourism that introduces visitors to the islands' history, craftsmanship, and way of life. Linking grogue production with cultural festivals, tasting events, and visits to traditional distilleries enhances the authenticity of the tourist experience and supports regional economic diversification. This sustainable development model, integrating agriculture, culture, and tourism, offers Cape Verde an important pathway to preserve its cultural values while promoting modern, environmentally responsible economic growth.

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