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Latin America's Superfood Economy: Producing and Marketing Açaí, Chia Seeds, and Maca Root

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Introduction

The terms "superfood" and "functional food" are often used interchangeably to market foods with high nutritional content to health-conscious consumers, but there is a distinction. While there is no scientific definition for superfoods, marketers rely on their high nutritional content to promote them as beneficial for human health. In contrast, functional foods are foods with health benefits that have been proven through medical research. Thus, only certain foods can be called functional foods, and these claims must comply with the regulations of the countries in which they are being marketed (Biswas, 2020). This article focuses on three prominent examples of superfoods—açaí, chia seeds, and maca root—which have seen a rapid increase in interest from consumers in the United States and other major markets across the globe over the past decade. We explore their history, their nutritional value, drivers of global demand, the role of producer nations, and growth and size of the global markets.

Açaí

Background

Açaí is a dark-purple fruit with yellow flesh and an earthy, chocolate-like taste that is native to the Brazilian Amazon River delta (Colapinto, 2011). While açaí is commonly referred to as the "açaí berry," the fruit is botanically classified as a drupe (Jennings, 2017). Açaí has high levels of antioxidants, over 3 times that of blueberries. For this reason, açaí is believed to help prevent many diseases (Jennings, 2017; Picincu, 2019; Venosta, 2019). The literature suggests that açaí fruit juice can be used as an energy drink with low carbohydrate content (de Lima Yamaguchi et al., 2015). Most of its nutritional content is found in the flesh and skin, which constitute only about 20% of the fruit (Picincu, 2019). In addition, the açaí fruit has a high lipid content, making it a good source for natural oils for use in the pharmaceutical and cosmetic industries (de Lima Yamaguchi et al., 2015). In the Amazonian communities of Brazil, açaí is a major component of the diet and is consumed after the fresh fruit has been turned into pulp (Colapinto, 2011). In other markets across the world, açaí is used in a variety of foods and beverages, particularly those marketed to health and sustainability-minded consumers. In addition, açaí is often utilized as a nutritional supplement (Market Data Forecast, 2019).

Production

Brazil is the world's largest supplier of açaí, representing about 85% of the global supply (Walker, 2018). In 2016, over 1.1 million metric tons (MMT) were produced in Brazil, 98.3% of which were generated by the state of Pará (IBGE, 2017). Increasing global demand has led Brazilian suppliers to ramp up production in recent years. By 2018, Brazil's production had risen to 1.5 MMT (Alves, 2019). However, the rapid increase of international demand outpaced the increase in supply, causing açaí prices to soar in Amazonian communities, depriving local consumers of their native fruit (Brasileiro, 2009).

Açaí farming is perceived as a lucrative endeavor in Latin American countries and has led to a production boom. Local organizations and government agencies have initiated programs to educate local Amazon açaí harvesters on efficient cultivation practices, sustainability management, and development of new product ideas for açaí berries (Nature Conservancy, 2020). This has also motivated the creation of new açaí cultivars to improve fruit yield (Michail, 2019). These local efforts are seen as an effective way to reduce deforestation of the Amazon by shifting the local economy's interest away from timber and beef production (Trevisani and Pearson, 2019).

Other countries such as Colombia, Guyana, Bolivia, Ecuador, Venezuela, and Trinidad produce modest amounts of açaí (Pimentel, 2020). In Colombia, after a decades-long civil war concluded with a peace

agreement in 2016, açaí farming was promoted by the Colombian government to stimulate economic development by improving income for local farmers in the rural southern regions. In addition, the government hoped that the switch to açaí production would help conserve the Amazon rainforest because açaí farming was seen as a sustainable alternative to coca production (University of Notre Dame, 2019; Montenegro, 2020).

Marketing

Açaí was heavily marketed in major Brazilian cities during the 1980s and 1990s. Açaí's low level of sugar allowed private-sector companies to successfully advertise açaí to athletes and health-oriented consumers (Colapinto, 2011). In the United States and other developed regions, açaí was also advertised as a nutritional product that provides health benefits (such as aiding heart health). The Asia-Pacific region, which includes emerging markets such as China and India, is considered a key potential açaí market due to its increasing purchasing power and large populations. The demand in this area is fueled by pharmaceutical, cosmetic, and nutritional supplement products with açaí as an ingredient (Market Data Forecast, 2019).

Although açaí is categorized as a superfood and is widely perceived by consumers to have health benefits, there is still debate among academic researchers with regards to its contribution to human nutrition and health (Llorent-Martínez et al., 2013; de Lima Yamaguchi et al., 2015). In 2013, the U.S. Federal Trade Commission charged multiple Internet vendors with a penalty of $1.6 million due to false marketing about açaí's weight-loss benefits (Federal Trade Commission, 2013). Despite this, açaí sales continued to grow. The global açaí market was estimated at about $720 million in 2019 and is forecasted to grow to over $2 billion by 2026, with an expected annual growth rate between 11% and 12.7% (Market Data Forecast, 2019).

Chia Seeds

Background

Chia seeds, derived from the chia plant, originated in northern Guatemala and southern Mexico and were used by the ancient Aztecs and Mayans (De Falco, Amato, and Lanzotti, 2017). This superfood regained popularity during the 1990s, when chia seeds were advertised as a nutritional food by a team of North and South American scientists working together in Argentina to produce them commercially (Coates and Ayerza, 1998). Current literature shows that chia has high levels of fiber, antioxidants, and healthy fatty acids (e.g., omega-3 and omega-6), all of which have been linked to benefit human health. Still, more research is needed before these health benefits are widely accepted (Grancieri, Martino, and Gonzalez de Mejia, 2019; University of Florida Health, 2020). Nowadays, chia seeds are used as an ingredient in many products, including oatmeal, smoothies, yogurt, pudding, pancakes, muffins, and bread (Gunnars, 2018; Wilson, 2018; University of Florida Health, 2020).

Production

South America alone produces approximately 80% of the world's chia seed supply (Businesswire, 2020). The top chia seed producers are Paraguay, Bolivia, and Argentina (SIMSA Export, 2020). Bolivia's fertile land and good weather conditions allowed the nation to increase its market share in the chia market in response to the demand-induced rise in prices (Beaumont and Michael, 2016; SIMSA Export, 2020). In Paraguay, the Chaco region is the major location of chia seed production (Delphi Organic, 2020). In recent years, Mexico has increased chia production and has started exporting to the U.S. market (Mordor Intelligence, 2020). Beyond Latin America, African nations (including Kenya, Tanzania, and Uganda) and Australia have also expanded production of chia seeds (Dumas, 2015; CBI, 2019).

Marketing

Consumers with a strong preference for nutritional products constitute the target market segment for chia seeds (Mordor Intelligence, 2020). Initially, sales were directed to specialized health-food stores, but with the rise in popularity, chia seed retail has expanded to grocery stores as well. Similar to the case of açaí, chia seeds are used as an ingredient in sport nutritional products (Strom, 2012; CBI, 2019). The advertised nutritional benefits previously described have led celebrities and fashion models to promote chia seeds by including them in their diets (Fletcher, 2014). Marketing of chia seeds has proven to be successful in the U.S. market, as reflected by the increase in consumer awareness. Between 2010 and 2014, the number of U.S. consumers who indicated that they have heard of chia as a food item increased from 27% to 37% (Businesswire, 2020).

In terms of trade and demand, Germany is the main chia market, with overall consumption of more than 5,000 metric tons in 2018, particularly driven by Germany's vegan consumers and elderly population, representing almost half of the European chia imports, mainly from Paraguay, Bolivia, and Mexico (Businesswire, 2020). Other notable importers are the Netherlands, the United Kingdom, Spain, Italy, and Poland (CBI, 2019).

Consumers in the United Kingdom use chia seeds as an ingredient in pre-prepared meal products. In Italy, chia is being adopted as an ingredient in pizza, albeit slowly, as Italian consumers have a preference for the use of local ingredients in their food products. In Poland, chia seeds are perceived as a luxury ingredient, thus limiting their market expansion to a small proportion of middle- and high-income households. Other European nations, such as France, are not currently consuming chia as much as their neighbors (CBI, 2019). Outside of Europe, demand for chia seeds is expected to rise in places like India,

Brazil, and Chile. The Asia-Pacific region is the largest potential market due to the increase demand trend for superfoods. Globally, demand for chia seeds is expected to grow at an average annual rate of 5.8% over the next 5 years (Mordor Intelligence, 2020).

Maca Root

Background

Maca—a native Peruvian plant in the same family as broccoli and kale—grows best at high elevations in the Andean region (León, 1964). In particular, its roots have been consumed for centuries, first used in the traditional "Pachamanca" meal in the Inca empire era (León, 1964). Maca root has several varieties, with yellow maca being predominant in the market, while other varieties, like red and black maca, are rarer (Johannes, 2014; Transparency Market Research, 2020). Overall, maca root has high levels of vitamins, unsaturated fatty acids, and minerals (Wang et al., 2007). This superfood is often marketed as being able to provide health benefits such as (i) reducing prostate problems and stress; (ii) improving physical energy, fertility, and memory; and (iii) helping manage menopause symptoms (Wang et al., 2007; Johannes, 2014). A review of scientific studies by Wang et al. (2007) provides some evidence for these claims. Maca root can be found as an ingredient in a wide range of foods, such as baked goods, smoothies, and energy bars (Palsdottir, 2016). To a lesser degree, it is utilized in skincare products in the belief that it protects against ultraviolet rays (Palsdottir, 2016; Zielinski, 2018).

Production

During the late 1980s, maca production was scarce and limited to Peru, with no more than 50 hectares grown in the Central region. Therefore, the plant was considered an endangered species (Hermann and Bernet, 2009; Neuman, 2014). In the 1990s, the Peruvian government encouraged maca farming, which motivated land expansion and increased production to more than 6,000 hectares of harvested area by 2012 (Neuman, 2014). Maca has also been introduced in Asia in recent decades, particularly in western China, which possesses areas with high altitudes and a cold and humid climate (Chen, Li, and Fan, 2017).

A major challenge of growing maca is that the plant absorbs almost all nutrients in the soil in just 2 years of production. Afterward, land must lay fallow for 10–15 years, causing Peruvian farmers to constantly look for alternative land (Neuman, 2014). However, the rapidly growing demand is leading some farmers to decrease the fallow period to less than 5 years (Hermann and Bernet, 2009). Fertilizers are typically not used in maca farming, as they have potential to damage the root. Further, the cold climate produced by the high elevation of the Andes region reduces the need for insecticides (Maher and Kozak, 2014).

In the early 2000s, in response to concerns about biopiracy and to recognize and protect maca as an endemic plant, the Peruvian Congress created the National Commission for the Prevention of Biopiracy. This governmental organization has the goal to review any unauthorized patent on maca and other plants (Ruiz and Vernooy, 2012). Another action the Peruvian government has undertaken to combat biopiracy was ratifying the Nagoya Protocol with other nations, which specifies that countries profiting from a resource should establish benefit-sharing mechanisms with the countries where the resource in question originated (Collyns, 2015). In addition, Peru has imposed strict export regulations that aim to keep unprocessed maca from being taken out of the country without paying the appropriate taxes (Maher and Kozak, 2014).

Marketing

Maca has been marketed in the United States in powder or liquid form, both of which can be added to foods and drinks. During 2013–2014, Chinese consumer demand started to rise significantly. As reported by the Peru's Ministry of Foreign Trade and Tourism, China's exports increased from $540,000 in 2013 to $6 million in 2014. For the United States, the export value relatively decreased for the same period, from $6.8 million in 2013 to $5.5 million in September 2014 (Maher and Kozak, 2014).

During the first half of 2010, the maca market initially represented a source of income for the communities in central Peru. However, increased trade led to a surge in prices and product shortages, making maca unaffordable to locals (Neuman, 2014; Collyns, 2015). Consequently, many trade contracts between Peru and importing countries were cancelled (Maher and Kozak, 2014). Nevertheless, with increasing maca production in China in recent years, commodity prices have tumbled and the market boom has come to an end. As a result, maca farming in Peru is no longer as profitable as it used to be.

Currently, the American continent represents about 42% of the global maca consumption. Going forward, maca production faces a slow but stable upward trend, with a projected annual revenue growth of 1% from 2017 to 2023. As of 2017, the global market for maca extract was estimated to generate $56 million in revenue and is expected to grow to $59 million by 2023 (SBWire, 2018).

Conclusion

The proliferation of the three superfoods (açaí, chia seeds, and maca root) in global markets has encouraged a boom for Latin American producers and exporters. As consumers in the United States and other large developed countries have become more health conscious, effective marketing of these superfoods has led to sharp increases in demand and large price premiums. Despite a lack of empirical evidence to

support many of the health benefits these superfoods are touted for, consumer perception has seldom wavered. Consumers rely on the three superfoods not only for general wellness but also to treat a number of medical conditions such as heart disease, obesity, and infertility. While this presents a tremendous opportunity for Latin American farmers, they also face increasing competition from other countries encroaching into these markets. Whether Latin American countries are able to retain their competitive advantage in the production of açaí, chia seeds, and maca root depends on a number of macroeconomic factors such as mutually beneficial trade agreements, support from governments, well-functioning supply chains, and economic stability.

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