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PRACTICALITY ANALYSIS FOR THE EXPORT OF LUPINE PRODUCTS OF ECUADORIAN ORIGIN AS A SUPERFOOD TO GERMANY, U.S.A. AND SOUTH KOREA

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Cuenca – Ecuador
2024

DEDICATION

To God and my parents who have always intended the best for me. To my future doctors and to all the teachers who have imparted their knowledge throughout all my years of education.

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ABSTRACT

This study is based on the international demand of superfoods and the necessity of Ecuador´s agri-food sector to boost its economy through the export of its products. This work has the objective to analyze the practicality of exporting goods derived from Ecuadorian lupine (chocho, tarwi, altramuz) as a superfood to Germany, the United States of America, and South Korea as possible markets. For the “Selection of foreign markets” and “Entry form strategies” the book International Marketing by Olegario Llamazares-García was taken as a methodological basis adaptation. Among the main discovery was the selection of the ideal market, United States, in a way that an opportunity is offered for Ecuadorian producers to export their products with greater viability. Finally, it was concluded that the correct analysis of a country as a potential market is necessary for the adequate use of the resources of Ecuadorian producers of lupine derivatives.

Keywords: Ecuador, Germany, international marketing, lupine derivatives, market research, South Korea, United States of America.

ANÁLISIS DE FACTIBILIDAD PARA LA EXPORTACIÓN DE LOS PRODUCTOS DERIVADOS DEL LUPINO DE ORIGEN ECUATORIANO COMO UN SUPERALIMENTO HACIA ALEMANIA, EE. UU. Y COREA DEL SUR

RESUMEN

El presente estudio se basa en la demanda internacional de los superalimentos o *superfoods* y la necesidad del sector agroalimentario del Ecuador en impulsar su economía mediante la exportación de sus productos. Este trabajo tiene por objetivo analizar la factibilidad de exportación de los productos derivados del lupino (chocho, tarwi, altramuz) ecuatoriano como un superalimento hacia Alemania, Estados Unidos y Corea del Sur. Para la propuesta de “Selección de mercados exteriores” y “Estrategias de forma de entrada” se tomará como base de adaptación metodológica el libro *Marketing Internacional* de Llamazares-García. Entre el principal hallazgo se encontró la selección del mercado ideal, Estados Unidos, ofreciendo una oportunidad para los productores ecuatorianos para una exportación de sus productos con mayor viabilidad. Finalmente, se concluyó que el análisis correcto de un país como mercado potencial resulta necesario para el aprovechamiento adecuado de los recursos de los productores ecuatorianos de derivados del lupino.

Palabras clave: Alemania, Corea del Sur, derivados del lupino, Ecuador, Estados Unidos, investigación de mercado, marketing internacional.

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PRACTICALITY ANALYSIS FOR THE EXPORT OF LUPINE PRODUCTS OF ECUADORIAN ORIGIN AS A SUPERFOOD TO GERMANY, THE U.S.A. AND SOUTH KOREA

Introduction

The motivation for this research lies in thinking about the social and economic well-being of Ecuadorian families. Ecuador is a country with abundant natural resources whose use, especially for export, means an increase in the economic development of the country and, therefore, of its inhabitants. Therefore, the export of lupine is considered a product of excellent nutritional value, easy to grow and of great international interest because it is considered a superfood.

The needs faced by Ecuadorian producers in general and by lupine (chocho, tarwi, altramuz) producers have led to a search for solutions. In Ecuador, according to INEC data, "in the rural sector, 46 out of every 100 people live in poverty" (González, 2023). The International Fund for Agricultural Development (2020) mentions the importance of taking advantage of Ecuador's territory, providing more support for entrepreneurship and marketing with added value for rural transformation. On the other hand, by promoting Ecuadorian entrepreneurship, especially in the agricultural sectors through exports, those who require alternatives in their daily diet, either to improve their health through a superfood, or for reasons of intolerance to traditional products or vegan preferences, benefit. The growing consumption of superfoods is due to the dynamism of the market, meaning, the evolution of consumer behavior and the interest in maintaining healthy (Encalada et al., 2021). In addition, Encalada et al. conclude that there are potential markets for the export of superfoods, particularly in European countries (2021).

Ecuador also has a superfoods cluster that includes turmeric, blueberries, lupine, sweet potato, quinine, chia, quinoa, amaranth, miracle fruit and cricket protein (Zambrano, 2023). Likewise, according to an interview with Martín Acosta, CEO of KIWA Natural Life and manager of the Ecuador superfoods cluster, who developed the selection of this cluster, he states that chocho flour in Italy or Australia represents a protein level of 14%, in Peru 30% and in Ecuador between 48% and 52% (LaHora, 2023). From this information, it can be deduced that there is a great opportunity for Ecuadorian agricultural producers of lupine and companies that produce derivatives in foreign markets due to the nutritional source of the product, which at the same time would strengthen their economic growth.

The following work has the research line of the school of International Studies of the Universidad del Azuay: 5304.04 Foreign trade, focused on a study of international marketing. It answers the question which of the three potential markets: Germany, the United States or South Korea, represents a more attractive market for the export of Ecuadorian lupine and its derivatives as a superfood? A mixed methodology is used with primary and secondary data with interviews with businessmen and the Association of Quinoa Producers of Carchi. Data previously elaborated on the web pages of accredited organizations are also analyzed. For the methodological basis, the book International Marketing by Olegario Llamazares was adapted. The current production of lupine or chocho in Ecuador is investigated and the three countries selected as the ideal market are analyzed based on a matrix of selection criteria. Finally, once the target market has been identified, a possible form of entry for the products is presented. In order to meet the objectives mentioned above, four chapters are presented: the theoretical framework, analysis of lupine products, methodological development, the form of entry, results, conclusions and recommendations.

CHAPTER 1

THEORETICAL FRAMEWORK

1.1 International Marketing

In order to approach the following research, it is necessary to cover certain concepts that are presented as a fundamental basis and that will later help in the development of this study. With respect to international marketing, some extensive definitions are presented that will allow us to move towards the investigation correctly. As a first concept, international marketing is,

> an academic and professional discipline whose purpose is to answer three basic questions that a company asks itself when it decides to expand into foreign markets: which are the countries that offer the greatest potential, what forms of entry are available to reach international customers, and how to adapt the offer to the tastes and needs of each country? In this sense, international marketing is an extension of marketing, but with techniques and strategies based on the differences that exist in international markets (Llamazares, 2016, p.6).

In the publication Fundamentals of International Marketing by Marlen Redondo et al. in 2019, the author states that international marketing

> is the commercial marketing actions and strategies that are applied in an environment or market different from our own. We interact with cultures and realities outside our usual environment, which force us to pay special attention to countless factors that are key to the introduction of a product in the market (p.18).

An additional concept is provided in *Comercio y Marketing Internacional* [Commerce and International Marketing] written by Alejandro Lerma y Enrique Márquez (2020),

> International marketing is the set of knowledge whose purpose is to promote and facilitate the processes of exchange of goods, services, ideas and values between suppliers and demanders of two or more countries, in order to satisfy the needs and desires of customers and consumers. At the same time, the suppliers (companies, institutions or individuals) achieve their purposes regarding income,

profit, service, help or proselytism, which are the reasons for their actions and existence (p.5).

The book International Marketing presents a definition of international marketing as, "the performance of business activities designed to plan, price, promote and direct the flow of a company’s goods and services to consumers or users in more than one country for profit" (Cateora, et al., 2019, p.637). Lastly, Elio Heinz, considers that international marketing “is the technique of business management, through which the company aims to make a profit, taking advantage of the opportunities offered by foreign markets and facing international competition” (n.d., p.5).

In this way, it is summarized that international marketing is a series of actions or strategies within the business activities that a company takes, based on obtaining a profit, to introduce a good, service or idea to foreign markets considering the external factors in such a way that it satisfies the consumer's needs and faces international competition. International marketing is a tool that allows the entrepreneur or businessman to make appropriate decisions based on the external target market through a series of techniques provided by marketing.

1.2 Types of international marketing

Elio Heinz also makes a differentiation within international marketing, explaining three types of marketing. First, there is export marketing which consists of sending products abroad with the concept "what is good for us is good for the whole world" in such a way that there is an ethnocentric vision with a local priority (Heinz, n/d). Secondly, there is multinational marketing, which approaches each country with the motto "where you go, do as you see," that is, a polycentric vision with different products according to each market (Heinz, n.d.). And, finally, global marketing in which all countries are considered with the reasoning that "deep down we are all the same," thus obtaining a geocentric vision in which the world is a market (Heinz, n/d). Based on these clarifications, it can be understood that there is no single established strategy to internationalize a product.

To emphasize the possible orientations that international marketing can take, it is necessary to highlight the work by Pervez Ghauri and Philip Cateora of 2009, who indicate that there are three orientations: 1) orientation to the extension of the domestic market 2) orientation to the multidomestic market and 3) orientation to global marketing. Their definitions are similar to the concepts provided by Elio Heinz. First, it states that "firms can be classified as having an ethnocentric, polycentric, regiocentric or geocentric (EPRG) orientation depending on the international engagement of the firm" (Ghauri & Cateora, 2009, p.1/20). Domestic market extension orientation is the pursuit of sales of its domestic products to foreign markets as a secondary activity or as an extension of the domestic process with the motive of getting rid of excess domestic production (Ghauri & Cateora, 2009). Multidomestic market orientation indicates that national markets differ, and success requires an individual plan, meaning different strategies for each country (Ghauri & Cateora, 2009). Finally, global marketing orientation refers to a global company whose market is the world. The company "attempts to standardize as much effort as is practical on a worldwide basis" and "some decisions are considered applicable worldwide, while others require consideration of local influences" (Ghauri & Cateora, 2009, p. 1/23).

Based on the definitions given by Elio Heinz and Ghauri & Cateora, it can be identified that the orientation to the extension of the internal market is the same as the concept of export marketing; the orientation to the multidomestic market is compared to multinational marketing; and the orientation to global marketing remains the same. Each approach represents a step in the company's development towards internalization and considers two fundamental criteria: the product or service and the external market, defining what changes will be made if necessary. It is important to recognize that international marketing proposes more than a single path, which allows choosing and adapting the situation of the company or the product to be exported in such a way that it is favorable.

Additionally, in International Marketing written by Warren Keegan and Mark Green, management orientations are addressed with the EPRG model mentioned above. The ethnocentric orientation "results in a standardized or extension model of marketing that is based on the premise that products can be sold anywhere without adaptation." (Keegan & Green, 2009, p.19) Thus, this view fits with Ghauri & Cateora's export marketing or Heinz's domestic market extension orientation. Next, the polycentric orientation, "gives birth to a localized or adaptive model that assumes that products must adapt in response to different market conditions" and the regiocentric orientation in which "a region becomes the relevant geographic unit, the goal of management is to develop an integrated regional strategy." (Keegan & Green, 2009, p.21) We can note that these two orientations are assimilated into multidomestic market or multinational marketing. Finally, "a geocentric orientation considers the whole world as a potential market and strives to develop integrated international strategies," (Keegan & Green, 2009, p.22) without a doubt the author references a global marketing.

In short, the conceptualization of the paths to follow in cross-border marketing depends on each author, but for the purpose of this study, we will recognize the development of international marketing either with an unmodified product, with modifications according to each market, or in a standardized manner throughout the world.

1.3 Market research

The book International Marketing states that marketing research is "the collection, recording, and analysis of data to provide information useful in decision making" and in turn, international marketing research adds "(1) the need to communicate information across national boundaries and (2) the challenge of applying established marketing techniques in different foreign market environments (Cateora et al., 2019, pp.637- 638). It is thus important to rely on structured studies to make an adequate decision when expanding into foreign markets. For Amanda Vargas (2017), market research is,

> a powerful tool that provides answers on the problems that are occurring in the market, playing an essential role in the field of foreign trade, as it is the basis on which the company can establish appropriate strategies and make the right decisions regarding the placement of products and services offered in the market for customers (p.10).

On the other hand, it is also recognized that "through market research, the collection and analysis of qualitative and quantitative information will be carried out" and that it has three main functions: descriptive, diagnostic and predictive" (Vargas, 2017, p.11). Meanwhile, the definition proposed by Kotler and Armstrong (2013, p.10) is considered “Marketing research is the systematic design, collection, analysis and reporting of data relevant to a specific marketing situation faced by an organization.” For Veronica Rosendo in *Investigación de mercados: Aplicación al marketing estratégico empresarial* [Marketing Research: Application to Strategic Business Marketing], marketing research is "the formal communication link between the organization and its environment" and thanks to this research "the organization collects and interprets data from the environment for use in the development, implementation and monitoring of the company's marketing plans (strategic and operational)” (2018, pp.22-23).

Market research is considered a primary tool whose purpose is to obtain the best results in a market through the collection and interpretation of quantitative and qualitative data. The information obtained will allow the organization to develop the most appropriate marketing strategies for the environment, always focusing on consumer needs and the factors that influence their behavior.

Within this order of ideas, international research is composed of primary research, whose data will be obtained for specific purposes, and secondary research in which already available data is obtained that therefore small companies can afford (Acosta, 2017). Furthermore, “international marketing research can be described as an important piece used to recognize what probability a certain product has in an established market. With the study it requires, the old method of trial and error is avoided ...” (Acosta, 2017, p.33). Likewise, global market research is defined by Keegan and Green as “data collection and analysis for specific projects globally or in one or more markets outside the country of origin.” (2009, p.605) The authors emphasize that the challenge lies in recognizing and responding to cultural, linguistic, economic, political, religious, historical, and market differences (Keegan & Green, 2009). In other words, international or global market research adds the cross-border factors that a company must consider when conducting a study to determine which strategies or techniques it should follow in its internationalization plan.

1.4 Basic concepts of international trade

In addition, a direct export is “the type of export in which a company sells to a customer in another country” and an indirect export is “the type of export in which a company sells to a buyer (an importer or distributor) in the country of origin; the buyer in turn exports the product” (Cateora et al., 2019, pp. 635, 637). Moreover, a direct export is one that sells directly from the source market to the destination market either through its own sales team, with large retailers or through the Internet, while indirect export is carried out through an intermediary who resells to retailers or to the end customer (Llamazares, 2016). The essential difference between direct and indirect exports lies in the control that is given to the product for its final delivery.

On the contrary, a tariff barrier is the “fee or tax that countries impose on imported goods, often to protect the market from intrusion by foreign countries.” (Cateora et al., 2019, p.641) The World Trade Organization states that, “Customs duties applied on imports of goods are called tariffs. Tariffs give domestically produced goods a price advantage over similar imported goods and are a source of revenue for governments” (OMC, n.d.).

Non-tariff barriers are “restrictions, other than tariffs, placed by countries on imported products; they may include quality standards, health and sanitary regulations, quotas, embargoes, boycotts and anti-dumping penalties.” (Cateora et al., 2019, p.639) According to the The World Trade Organization and the United Nations there is a distinction,

> Non-tariff measures are policy measures, other than ordinary customs tariffs, that can potentially have an economic impact on international trade in goods by changing the quantities traded or prices or both. Non-tariff measures include a broader set than non-tariff barriers. In addition, the term "non-tariff barriers" is commonly used to describe discriminatory (protectionist) measures, whereas non-tariff measures do not necessarily reduce trade and welfare. (Disdier & Fugazza, 2020, p.13)

It is important to note that there are certain trade restrictions that must be considered when exporting a product. Whether it is a direct or indirect export there will be additional charges applied to the goods, which an importer will take into consideration when purchasing a product.

It is necessary to understand some macroeconomic concepts that will allow us to see the economic growth of the country, such as the Gross Domestic Product (GDP). GDP is an indicator that represents the potential of the country-market that is defined as the total value of goods and services produced in the territory of a country in a given period either quarterly or annually, and whose growth demonstrates a market development as opposed to a low growth or economic stagnation (Lerma & Márquez, 2020). In such a way it is understood that generally, economic growth is “an increase in national production resulting in an increase in average gross domestic product per capita (GDP) or gross national income (GNI)” (Cateora et al., 2019, P. 636). The difference of the two is reflected in that gross domestic product “is the total market value of final goods and services produced within a country's borders; it is a measure of economic output" while gross national income "is composed of GDP plus income generated from non-resident sources"(Keegan & Green, 2009, p.42). Real GDP on the other hand, is that which is obtained at constant prices, i.e.," GDP estimates at constant prices are obtained by expressing the value of all goods and services produced in a given year, expressed in terms of a base period" and "is measured in growth rates with respect to the previous year" (OECD, 2019).

On the other hand, we have the Purchasing Power Parity (PPP) per capita, which is the income level of each country expressed in US dollars that includes the wealth of a country, the price level and the evolution of the exchange rate of its currency. It represents the purchasing power of the inhabitants of a country (Llamazares, 2016). Purchasing power parity exchange rates are multilateral price indexes that measure, for the different components of GDP, the amount of local currency needed to buy the same real amount in that country relative to a standard value country, which is usually the United States. These indexes are used for economic growth studies, particularly through the Penn World Table and the World Development Indicators, by the World Bank to construct measures of global poverty and by the European Union to redistribute resources (Deaton, 2015). Purchasing power parity is measured in terms of national currency per US dollar and is the type of currency conversion that attempts to equalize the purchasing power of different currencies, eliminating differences in price levels between countries using a basket of final expenditure goods and services (OECD, 2024). The World Bank uses the International Comparison Program (ICP) to estimate and publish PPPs of world economies, explaining PPP as follows: between two countries (A and B) PPP measures how much currency of country A is required to purchase a basket of goods and services in country A, comparing it to the amount of currency of country B required to purchase a similar basket of goods and services in country B. The cost of a basket is converted to a common currency, thus equalizing the purchasing power of the currencies (ICP, 2017).

It is relevant to find the volume of imports through the tariff code of each product and analyze its growth over the last three years by calculating the average annual growth.

If this exceeds 10%, it indicates a country that is importing more and more, and if it is below 3% or there is a drop-in imports, the market may not be in great demand. Another essential criteria to determine the market potential is to know the exports of the product from the country of origin to the selected country, analyzing the volume and growth in the last three years (Llamazares, 2016).

Among some of the criteria for accessibility and risk are commercial risks and transparency and corruption. International commercial risks are assessed by means of the country-risk classification carried out by COFACE. There are 7 risk levels (A1, A2, A3, A4, B, C and D), in which A1 indicates that a country is very solvent, A4 that the risk is assumable and D indicates that there is a high level of political and economic risk possibly affecting payments. Commercial risks refer to delayed payments, default risk, exchange rate risk, nationalization, confiscation, profit repatriation regulations and the existence of investment protection agreements (Llamazares, 2016).

Another indispensable element to consider a country as a potential export market is how easy it is to do business there. A series of criteria are considered through the World Bank's Doing Business publication that compares 190 countries. There are 10 main categories, and each has sub-indicators. Regarding to the classification or ranking obtained, the closer it is to 1, the more it indicates that business regulations favor the openness of companies and results from the average of the scores obtained in the 10 indicators (World Bank, 2019b). For its part, the ease of doing business score varies between 0 and 100, with 0 being a low performance and 100 being the best performance. The score "captures the distance between each economy analyzed by Doing Business since 2005 and the best performer in each of the indicators that make up the score" (World Bank, 2019a).

Finally, the transparency of information and corruption in each country is analyzed. This indicator is evaluated by means of the corruption perception index through the organization Transparency International, which considers 180 countries. The classification varies in relation to the other countries while the score is the perceived level of corruption in the public sector where 0 is equivalent to very corrupt and 100 to a very clean country. The indicator is made through 13 surveys collected from a series of accredited institutions such as the World Bank and the World Economic Forum (Transparency International, 2021).

1.5 Primary export channels

Trading companies are “commercial entities that accumulate, transport and distribute products from many countries;” a joint venture is “an association of two or more companies that join forces to create an independent legal entity.” (Cateora et al., 2019, pp. 638,641) Olegario Llamazares informs that trading companies “are import-export companies specialized in difficult to access or high-risk markets that know the needs and purchasing capacity of potential customers” (2016, p.81). The author also mentions that these companies “are specialists that cover all export and import operations" and "work mainly in sectors with high production volumes such as raw materials, manufactured products, metals, chemicals, generic pharmaceuticals, etc." (Llamazares, n.d., p.1)

Regarding a joint venture, it is mentioned that “it is a company created by two companies from different countries that become partners for the joint development of an activity. They are usually companies that belong to the same sector, although their activities are complementary.” (Llamazares, 2016, p.85) It is also noted that a joint venture is known as a mutual company that "differs from an export in which the company joins with a partner in the host country to sell or market abroad (Kotler y Armstrong, 2013, p.465).

Lastly, we have a piggyback, which is an agreement that "consists of the use by a company that wants to enter a foreign market of the distribution network of another company already established in that market." (Llamazares, 2016, p. 84) It is also stated that it is known as a cooperative exporter, "an export organization of a manufacturing company that maintains other independent manufacturers to sell its products in foreign markets." (Keegan & Green, 2009, p. 274).

Therefore, a company has several options when expanding internationally and it is up to the entrepreneur to choose the option that benefits the company the most. Joint ventures, piggyback and trading companies are three primary ways to enter a market. It should be noted that there are also other foreign marketing channels such as licensing, franchising, a distributor, a commercial agent, a commercial subsidiary, or a production subsidiary.

1.6 Superfood

Undoubtedly, it is important to define what a superfood is. In the literature there is no standardized or legal criterion that defines the term; however, there are some definitions presented. Merriam Webster's dictionary defines it as “a food such as salmon, broccoli or blueberries rich in compounds such as antioxidants, fiber or fatty acids that are considered beneficial to a person's health.” (Merriam-Webster, n.d.) Harvard T.H. Chan School of Public Health (2018) states that even though there is not a standardized definition of superfood, some products acquire this status when they are high on certain desirable nutrients in addition to being linked to disease prevention or health benefits above their nutritional value. On the same note, both the Cambridge Dictionary (n.d.) and the Royal Spanish Academy Association (2023) agree that superfoods are beneficial for people’s health due to their additional nutritional value. According to Oxford In Food and Fitness: A Dictionary of Diet and Exercise written by Michael Kent, a superfood is a marketing term that promotes foods with supposed health benefits. This definition is not official, and in the European Union, scientific backing is required to package foods with the term superfood (Kent, 2016). In addition to dictionary definitions, Bender (2014) states that a superfood is food that stands out for its ability to improve health and immune function due to its abundance of vitamins, minerals, fiber, antioxidants and omega-3 fatty acids.In his book, Nutrition A Very Short Introduction. he adds that superfoods are “ordinary foods, especially rich in nutrients or antioxidants and other potentially protective compounds, including polyunsaturated fatty acids and dietary fiber.” (Bender, 2014, abstract section) The book *¿Qué sabemos de? Los Superalimentos* [What do we know of? Superfoods] by Jara Pérez Jiménez assumes that these superfoods are “foods with a generally exotic origin that were not part of our regular diet until a few years ago but have been promoted in recent times due to their apparently very powerful [and] miraculous health effects.” (Pérez, 2021, preface section, para. 3) It should be noted that in the definitions provided by Pérez, in his year of publication, he mentions that in the dictionary of the Spanish language RAE, the term superfoods is not included, while in the present research, a definition has been obtained from the RAE. The article, *Superalimentos: Fundamentação Científica* [Superfoods: Scientific fundament] written by Ortelam, A, et al. (2022) considers that they are generally foods with large amounts of specific nutrients such as antioxidants, vitamins and minerals whose “bioactives act as potential agents to prevent and complement treatments for chronic diseases such as metabolic syndrome, diabetes, hypertension, inflammation, autoimmune diseases and others." (p.1128) Finally, the article What Is a Superfood Anyway? Six Key Ingredients for Making a Food "Super "considers that there are 217 superfoods and 71 are associated with conditions that optimize health and prevent possible diseases (Butterworth et al., 2020).

We can conclude then that food is considered as a superfood when it provides high nutritional values to the organism and contributes positively to health. Within the definitions given, it can be established that a superfood will generally be rich in antioxidants, dietary fiber and fatty acids in such a way that it benefits people’s health. On the other hand, a preventive value against diseases is contributed to these foods thanks to their high nutritional content. It is important to mention that some authors question the superfood as a simple marketing term that may lack scientific basis. However, it can be generalized that these foods are not very common in the daily diet, and above all, they awaken a great interest linked to health. Thanks to this boom and interest, regardless of their definition or scientific certainty, the distinction of which foods are categorized as superfoods is critical in taking advantage of their current and potential production within each territory.

CHAPTER 2

Lupine production analysis

2.1 Lupine description

While in Ecuador, lupine is known as chocho, in other countries it may be called tarwi or altramuz. Nevertheless, the scientific name of this variation is *Lupinus mutabilis.* The lupine belongs to the legume family and subfamily Papilonoideae, which is cultivated in several countries. In America it ranges from Argentina to Alaska and in this continent alone there are more than 100 species of tarwi. There are some variations of lupine other than *Lupinus mutabilis*, but *Lupinus luteus, Lupinus albus and Lupinus angustifolius* are the most common. The species are divided into two groups either "old world" belonging to the European and East and North African regions consisting of 12-13 lupine species that are annual, herbaceous and large-seeded; or "new world" species with approximately 280 out of 300 of the species that are annual and herbaceous perennials, including some shrubs (Bangar et al., 2021).Lupinus albus or white lupin; Lupinus angustifolius or narrow-leaved lupin, also known as Australian sweet or blue lupin; Lupinus luteus or yellow lupin and Lupinus mutabilis or Andean or bitter lupine are produced on a commercial scale for food, while other species can be used as green manure, ornamentally, fodder, as well as to stabilize soil. A high alkaloid content means a bitter legume and a low content indicates a sweet legume (Bangar et al., 2021). Undoubtedly, chocho can be found in various parts of the world, with multiple presentations thanks to the large number of species that exist and modifications that have been made to obtain a sweeter product.

Its variation depends on the region to which it belongs, and both its plant characteristics and its internal composition will present slight differences. Due to family farmers this seed has been able to be preserved over time. Since before the arrival of the Spanish colonizers, lupine was part of the indigenous gastronomy (FAO, 2016). *Lupinus mutabilis Sweet* has greenish yellow to dark green leaves, with bluish, purple or white flowers with a sheath between 5-15 cm. The stem ranges from 1-2 ½ m between dark green and chestnut. iIts root can go up to 3 m deep, and its fruit varies in shape with white, yellow, ocher, brown, chestnut, gray, brown and combined color that is covered by a membrane (Repo and Solórzano, 2020).

Some of the benefits of this large-flowered legume is that it has a high tolerance to arid soils, droughts and low temperatures. Also, it is efficient in fixing atmospheric nitrogen, standing out as a green fertilizer of excellence (FAO, 2016). It can fix up to 400 kg of nitrogen per hectare. Among its characteristics, it stands out being suitable for marginal lands, resistant to high salinity, acidity and water stress, and tolerant to frost and drought. Additionally, it defends other nearby crops from pests (Repos and Solórzano, 2020). Moreover, it has medicinal qualities such as the reduction of muscle pain and the elimination of external parasites in animals. It prevents constipation, lowers cholesterol, reduces blood pressure and lowers glucose levels in patients with type II diabetes mellitus (FAO, 2016). Thanks to the minerals found in lupine, it increases energy, stimulates gastrointestinal hormones, helps in the production of hemoglobin and calcium from the shell strengthens the growth of bones and teeth (INIAP, 2018). Lupine-enhanced food is said to increase satiety, reduce energy intake, lower blood pressure, blood glucose and cholesterol levels, i.e., it helps to combat obesity, enhances bowel movement, maintains healthy cholesterol levels, delays the onset and development of macular disease, and exhibits Bowman-Birk serine proteinase inhibitor (Bangar et al., 2021).

The National Institute of Agricultural Research (INIAP) has developed two varieties of chocho a) INIAP-450 Andino and b) INIAP-450 Guaranguito. The first variation, INIAP-450 Andino, grows in the provinces of Pichincha, Cotopaxi and Chimborazo, at 2800 to 3500 meters above sea level, and a temperature of 7 to 14º C with an average yield of 1398 kg/ha of dry grain (INIAP, n.d.-b). On the other hand, INIAP-451 Guaranguito grows in the province of Bolivar, from 2200 to 3600 meters above sea level, and a temperature of 7 to 14º C, with an average yield of 1398 kg/ha of dry grain (INIAP, n.d.). In addition, the first variation is recommended for sowing from December to March; and the second variation, in medium grounds, from January; while in low grounds, from mid-March to mid-April. It is established that in general, the lupine grows between 2800 to 3600 masl, and adapts itself to dry climates. Its fruit is a pod of 5 to 12 cm, which may contain 3 to 8 grains with a color from white to black according to its variety (INIAP, 2018).

2.1.1 Nutritional data

For the Food and Agriculture Organization of the United Nations (FAO) the nutritional content of lupine consists of protein (53%), fiber (13%), calcium (0.37%), iron (61 ppm), zinc

(92 ppm) and fat (21.9%) (FAO, 2016). On the other hand, the National Institute of Agricultural Research indicates that lupine contains calcium (0.48%), phosphorus (0.43%), iron (78.45 ppm) and is high in linoleic acid (INIAP, 2018). Similarly, it is mentioned that the chocho INIAP 451, also known by the scientific name of *Lupinus mutabilis Sweet*, is composed of protein (42.7%), fiber (9.4%), fat (26.7%), calcium (0.11%), iron (53 ppm) and zinc (39 ppm) (INIAP, n.d.-c). On the other hand, it is noted that the average composition in grams per 100 grams of tarwi is 40 grams of protein, 20 grams of fat, 15 grams of dietary fiber and 70 grams of carbohydrates (Repo and Solórzano, 2020). In addition, its protein is lysine and arginine; it contains vitamin E; omega 3-6-9; calcium, iron, magnesium, zinc, dietary fiber, flavonoids and phytosterols (Repo and Solorzano, 2020). Lupin has the highest protein and dietary fiber content among legumes, beans, lentils, and peas and a relatively low but high-quality amount of oil (Bangar et al., 2021). The nutritional composition of lupine depends on the type of seed, but generally includes the following: protein (40%-53%), fiber (9%-15%), calcium (0.11%-0.48%), iron (53 ppm-61 ppm), zinc (39 ppm-92ppm), fat (15.8%-26.7%) and phosphorus (0.43%).

2.2 Internal Production

Despite the productive capacity of chocho throughout the Ecuadorian highlands, this legume is harvested mainly in the northern highlands of Ecuador. The *Instituto Nacional de Investigaciones Agropecuarias* [National Institute of Agricultural Research] points out Chimborazo, Pichincha, Cotopaxi, Carchi and Imbabura as the main provinces where chocho is grown, with Chimborazo and Cotopaxi accounting for more than 70% of production (INIAP, 2016). More precisely, its concentration is in Palmira and Riobamba in Chimborazo; Juan Montalvo and Alaquez in Cotopaxi; Cayambe in Pichincha; Guaranda in Bolivar; Cotacachi in Imbabura; Quero in Tungurahua; and Bolivar in Carchi. Chimborazo produces approximately 800 hectares, making it the largest lupine producer in the province, followed by Cotopaxi and Tungurahua with approximately 350 hectares. Finally, processing occurs in Otavalo, Imbabura; Ambato, Tungurahua; Saquisili, Cotopaxi; and Riobamba (Desarrollo de Ministerio Agrario y Riego Perú, 2021).

Table 1 shows the areas of potential production and commercialization of lupine through the *Ministerio de Agricultura, Ganadería, Acuacultura y Pesca* [Ministry of

Agriculture, Livestock, Aquaculture and Fisheries], which presents an economic agro-ecological zoning for the cultivation of chocho in Ecuador (2014):

Table 1

Potential lupine production and commercial areas

	Province	Cities
High potentiality	Pichincha	Cayambe, Pedro Moncayo y Quito
	Imbabura	Otavalo y Antonio Ante
	Tungurahua	Santiago de Píllaro, Mocha, Tisaleo y Quero
	Cotopaxi	Pujilí y Latacunga
	Chimborazo	Riobamba, Alausí, Chambo, Guamote y Guano
	Cañar	Azogues, Biblián y Cañar
Medium potentiality	Cotopaxi	Salcedo, Saquisilí y Sigchos
	Chimborazo	Colta
	Pichincha	Mejía
	Carchi	Tulcán, Montufar, Espejo, San Pedro de Huaca y Mira
	Imbabura	San Miguel de Urcuquí
	Azuay	Oña
	Loja	Loja, Catamayo, Gonzanamá, Espíndola y Quilanga
Low potentiality	Loja	Saraguro, Catamayo y Paltas
	Azuay	Cuenca, Sigsig, Paute, Girón y Nabón
	Pichincha	Rumiñahui y Mejía
	Chimborazo	Chunchi

Note: Based in Ministerio de Agricultura, Ganadería, Acuacultura y Pesca, 2014, *Zonificacion Agroecologica Economica del cultivo de Chocho en el Ecuador Continental 2014*.https://fliphtml5.com/ijia/ligk/Zonificacion_Agroecologica_Economica_del_cultivo_de_Chocho_en_el_Ecuador_Continental_2014/

According to INEC, in 2022, only in the highlands region there was lupine production with 4,124 ha planted, 3,462 ha harvested, a production of 2,576 MT and sales of 2,232 MT. The provinces with the highest production in descending order were Cotopaxi with 1,129 MT, Chimborazo with 902 MT and Bolivar 288 MT **(Appendix A).** In 2016, it is reported that the *Asociación de Granjeros Integrales y Turismo Rocío Arco*s sold a quintal of chocho at $115 (US dollars) (Ministerio de Agricultura y Ganadería, 2016). Through an approach to traders of the Austro, it was commented that it is more favorable to buy directly from the markets in the north of the country. In recent years, from the markets of Salcedo, in times of crisis, you can get a quintal of lupine for $140. From Ambato you can usually get $150 per quintal, but it can vary from $130 in low season to $230 in high season. Likewise, Alimentos Lojanito reports that chocho from the cities of Latacunga and Ibarra is currently available for $120 per quintal but can vary from $80 to $150 depending on the season. National consumption of chocho is reported to be 4kg/year per capita, surpassing Bolivia's per capita consumption of 0.2 kg/year and Peru's

0.5 kg/year (Ministerio de Desarrollo de Ministerio Agrario y Riego, 2021). Despite this statement, legume consumption is concentrated only in some parts of Ecuador and corresponds to individual taste.

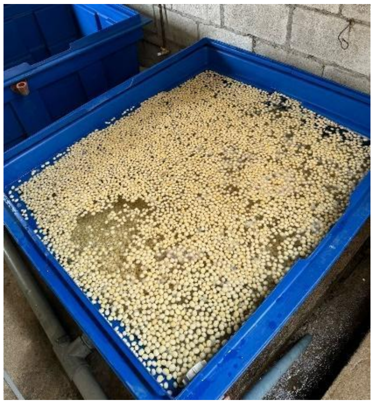
2.2.1 Cultivation and harvesting process

To start with the cultivation process, 3-4 grains are located in the holes of the soil. The amount of grains is to prevent some aggressors such as worms. The only precaution to be taken is to make sure that the plant does not break, and after a month, soil can be put around it in order to harden the plant (hilling). After about 6 or 7 months, the bluish purple and white flowers appear and then the pods come out. This legume has up to 3 harvests as it matures and, at the end of the harvest, the whole bush is pulled up. It is usually sown in May, which means that, by November, the flowers are already in bloom, and in March, the crop yields. The pods are taken and beaten on the ground so that the fruit comes out and then the grain is cleaned. It does not require tillage and is grown on land from 2800 to 3500 meters above sea level, with low rainfall. It usually has a crop cycle of 180 to 240 days (FAO, 2016). It is important to note that the time of cultivation and harvesting process depends on the climatic floor.

2.2.2 De-watering or de-bittering process

The de-bittering process, also known as de-watering, is essential for the consumption of lupin or chocho. As a result of this process, the characteristic bitterness of this legume, due to the presence of alkaloids, is removed. The process consists of letting the chocho rest in water for about 8 days, with a constant change of water (twice a day). In addition to removing the bitterness from the grain, the chocho is expanded in such a way that it is almost ready for direct consumption. Figure 1 shows chocho in the de-watering o de-bittering process.

Figure 1
De-bittering process



2.3 Advances in lupine evolution or current status

Despite the national consumption of lupine it does not reach high levels of production as other products of the internal and exportable offer of Ecuador. Undoubtedly, there is the potential for production by farmers and the international demand for more varied and nutritious food that drives the corresponding cultivation and transformation of lupine into a processed product. Therefore, there has been some research by the public and private sector resulting in advances related to chocho.

On the website of the National Institute of Agricultural Research of Ecuador you can find 44 articles related to chocho. In the year 2014, research from the Santa Catalina Experimental Station is highlighted, as is the Seminar "Potential of Andean grains in the National Development, its nutraceutical and biopharmaceutical richness" and the presentation of technological alternatives in Andean grains: amaranth, quinoa and chocho. In 2015, there was training on the management of chocho INIAP and the project "Valorization and use of chocho, quinoa and amaranth." In 2016, INIAP's research on chocho, quinoa and amaranth were recognized with the "Matilde Hidalgo Award." Additionally, there was an International Symposium of Legumes and the Regional Symposium of Chocho. Furthermore, in 2018, INIAP provided training on the agroindustrial value of chocho and conducted research on it as a natural food rich in protein, which is grown in several provinces of the Ecuadorian Sierra; while technicians from the INIAP's Legumes and Andean Grains Program accompanied chocho producers from Peru on a technical visit (INIAP, n.d.-d).

In this order of ideas, the Ministry of Agriculture and Livestock has 115 articles related to lupine. In 2016, the government of Ecuador began to promote scientific research on chocho. By 2018, producers in the Sierra were taught how to add value to chocho. In 2021, producers in Pichincha received registered lupine seed and learned how to improve its cultivation. As a result, chocho cultivation was promoted on 95 hectares for the following year. In 2022, in Chimborazo, the Technical Committee for the cultivation of chocho was implemented to strengthen its production chain. Most recently, in 2023, more than 250 chocho producers in Chimborazo have benefited from subsidized phytosanitary packages from the Ministry of Agriculture and Livestock (Ministerio de Agricultura y Ganadería, 2024).

2.4 Lupine derived products

In Ecuador, lupine is traditionally consumed after being de-bittered. It is typically served in a broth with roasted corn and onions with tomato, in a dish known as cevichocho. However, lupine is a legume that can be used in different ways. According to the National Institute of Agricultural Research, there is a technological offer of *lupinus mutabilis*: short pasta noodles, flour, protein isolate, crispy chocho, milk drink, vegetable chocho meat, yogurt, freeze-dried chocho, powdered chocho, and dehydrated chocho (INIAP, n.d.-a). INIAP also establishes oils and cookies as chocho production alternatives (INIAP, 2018). Several lupine-derived products can currently be found on the website of the Ministry of Production, Foreign Trade, Investment and Fisheries in the multisectorial catalog , such as 1) lupine fingers by LenVegé and 2) lupine flour by Alimentos Andinos Jaram. Also noteworthy is the LUPWI brand of the company Alimentarte, which produces a vegetable drink based on chocho. Its products include Lupwi de mora, Lupwi de maracuya, Lupwi chocholate, Lupwi chocolate tetra, Lupwi barista tetra and precooked and pulverized lupine. All these products contain protein and are easily digestible, low in calories, vegan, lactose free, gluten free, no added sugar and GMO free (LUPWI, 2021b). Also, they are distributed in some cities in Ecuador thanks to certain supermarkets such as Supermaxi, but there is also the option of home delivery in the cities of Quito, Guayaquil, and Manta or online purchase throughout Ecuador. This brand obtains its raw material from 250 families in 14 communities in the Ecuadorian highlands (LUPWI, 2021a). Finally, the Chochos

Salaito company presents a recipe for making chocho and fine herbs cheese (Nutriproductos, 2022).

Figure 2 indicates the typical use of chocho in Ecuador.

Figure 2
Cevichocho

Figures 3-9 indicate lupine products found in supermarkets in the city of Cuenca, Ecuador.

Figure 3
Grain format

Figure 4
Hot sauce with chochos

Figure 5
Plant based meat

Figure 6
Chocho snacks

Figure 7
Chocho flour

Figure 8
Chocho humus

Figure 9
Chocho protein

List of eight lupine-derived products found in current Ecuadorian production (2024):

1. Chocho flour
2. Vegetable drink

3. Plant-based meat
4. Chocho snacks
5. Hot sauce with chochos
6. Chocho Humus
7. Chocho protein
8. Chocho cookies

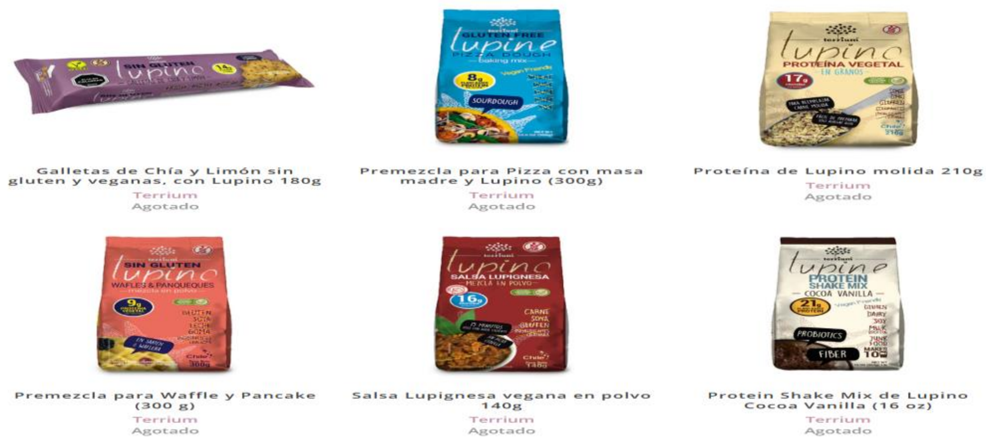
It is relevant to mention that there is external and alternative production that uses lupin in other presentations. One interesting form is an oil based on *lupinus albus* for cosmetic use. Also, some research is exploring lupin as an energy alternative to produce biodiesel. The Chilean brand Terrium offers some of the products mentioned above and also with a lupine base: premix for muffins, pasta, a variety of cookies, premix for pizza, premix for waffles and pancakes, powdered vegan lupine sauce, powdered lupine drink, premix for cookies, flour mix, peanut and cocoa cream or hazelnuts with lupine protein (Terrium, n.d.).The Peruvian recipe book by Ripo and Solórzano contains some interesting preparations of tarwi or lupin. Some of them are creams, tarwi and cochayuyo soup, tarwi tortilla chips, humitas, puree, tarwi hot sauce, tarwi cake with mushroom stew, brownie, tarwi and aguaymanto cake (Ripo and Solórzano, 2020). Certainly, there are several ways to convert lupin grain into a finished product that makes it posiible to reach a wider market.

Some of the products listed above are illustrated in Figure 10-12.

Figure 10
Lupine oil

Source: RestorativeBotanics. (2024). *Aceite de semilla de lupino prensado en frío sin refinar.* [Picture]. Etsy. https://www.etsy.com/es/listing/1249640998/aceite-de-semilla-de-lupino-prensado-en

Figure 11
Terrium Products



Source: Terrium.(2024). *Todos los producto* [Picture]. Terrium. https://terrium.cl/collections/todos-los-productos/lupino?page=1&sort_by=manual

Figure 12
Tarwi tortilla chips

Source: Agois, J. (2020). *Tortillas fritas de tarwi.* [Picture]. Fábrica de contenidos. https://www.fdcontenidos.com/granos-andinos

2.4 Exports and Imports

The tariff code that is mostly and commonly used worldwide is HS 121490 which indicates dry grain, more specifically swedes, mangolds, fodder roots, hay, Lucerne “alfalfa”, clover, sainfoin, forage kale, lupines, vetches and similar forage products, whether or not in the form of pellets (excl. lucerne “alfalfa” meal and pellets). For the year 2008, the *Oficina de Estudios y Políticas Agrarias -Odepa* [Office of Agrarian Studies and Policies] indicates that in the last ten years Australia contributed around 85% of the world's lupin production, followed by the European Union as a whole and to a lesser extent Belarus, Chile and Russia (Banfi, 2008). It has been verified through the online platform Tridge, which is responsible for providing data, information, knowledge, analysis and reliable networks to make global trade a reality, that until 2022, Australia continues as the largest producer in the world followed by Poland, Russia, Morocco, Germany, Chile, Peru, South Africa, Greece and France (Tridge, 2023c). On the other hand, and for the purposes of a more precise study, the tariff code recommended by the Ministry of Production, Foreign Trade, Investment and Fisheries, SA 071390 - dried legumes, shelled legumes, whether or not peeled or split (excl. peas, chickpeas, beans, lentils, broad beans, broad beans and pigeon peas) was used for the analysis.

2.4.1 Imports

It is essential to emphasize that consumer demand for local consumption of chocho has led to the importation by Ecuador from Peru, however, Ecuador has promoted the cultivation and production of this legume due to the high costs that arise. Thus, Ecuador is Peru's main export destination with a value of around 86% in 2020 and only 6% of exports go to Spain and the United States (Ministry of Agrarian Development and Irrigation, 2021). The largest importer of lupin for forage purposes in 2022 was China, followed in descending order by Japan, South Korea, the United States, Switzerland, the Netherlands, Germany, Canada, France and Belgium (Tridge, 2023b). For its part, tariff heading 071390 indicates that the largest importers of lupine in 2022 were China, Pakistan, the United Arab Emirates, Saudi Arabia and the United States (Trade map, 2024b).

2.4.2 Exports

Exports worldwide are diversified in several countries around the world. Among the 10 exporting countries worldwide for the year 2022 are the United States, Australia, Spain, Canada, Italy, Romania, France, the Netherlands, and Germany (Tridge, 2023a). It should be noted that although Australia is the world's largest supplier of lupine, it is not the largest exporter, being that, the United States, who is also the third largest importer of lupin in the world for HS 121490. In 2022, in the trade flow for lupine, the United States exported mainly to China, Japan, South Korea, and Saudi Arabia; Australia to Japan and South Korea; Spain to the United Arab Emirates and China; Canada to the United States; and Italy to United Arab Emirates (Tridge, 2023a). Considering that these data belong to the common tariff line for lupine, it is important to inquire about heading 071390, which indicates that the largest exporters of lupine in 2022 were Mozambique, India, Myanmar, the United Kingdom, and Ethiopia (Trade map, 2024a).

CHAPTER 3

METHODOLOGY

The methodology used was mixed with primary and secondary data, addressing an analysis of existing data and in-depth interviews. In addition, the book International Marketing written by Olegario Llamazares-García in 2016 was used as a basis for adaptation. Specifically, it focused on chapter three with a prior selection of foreign markets, based on the number of countries with favorable geographical areas and an alternative concentration. The criteria for selecting target countries were developed, emphasizing that the information must be relevant, accessible, objective, homogeneous and up-to-date. The criteria analyzed are the following: economic growth of the country, purchasing power per capita, volume of imports, growth of imports, exports from the country of the company and criteria to assess accessibility and risk: tariff barriers, non-tariff barriers, commercial risks, ease of doing business, transparency and corruption. Also, geographical distance, cultural proximity, rule of law, commercial relations between countries and market size were also included. To define the target country, a country selection matrix was used in which four weighting coefficients are established (Llamazares, 2016). Lastly, chapter four was developed: Forms of entry into foreign markets. This section includes the alternative form of entry: indirect export through a distributor/importer/wholesaler and direct export via internet.

3.1 Interviews conducted

Some interviews were conducted in order to gain a deeper understanding of the process of growing, harvesting, processing and commercialization of lupin in Ecuador. The interviews were conducted with representatives of lupine producers and lupine flour companies. Information was obtained about the raw material, the existing and future technological offer, as well as the approach to foreign markets and the possibility of exporting.

3.1.1 Producers

An interview was conducted with Eng. Juan Carlos Orbe, representative of the grain processing plant in Carchi composed of the Association of Quinoa Producers of Carchi and FEGRANDINOS. Here, some grains such as quinoa, barley, chocho, peas, wheat, lentils and oats are cleaned, dried and selected. The normal process that the grains follow is pre-cleaning, selection, and drying.

When referring to chocho, Orbe indicates that the grains have a high protein value of 50-52% and have been consumed since the Incas. The harvesting process is long, taking 7-8 months, and is not very profitable, which usually discourages farmers to produce it. During the cycle, there are about three fumigations, one weeding and one hilling. It is planted during the rainy months of October, November and December so that it bears fruit in the summer. The only risk that stands out are the rains because the product can rot. A great discouragement for planting chocho, apart from not having a fixed price, is how laborious it is because not all grains mature equally, resulting in 2-3 harvests. The price depends on the planting done and sometimes, it is imported from Peru. It is mostly sold to fresh product traders because there is no direct purchase from a company. The processor has not exported lupine. In addition, he believes that exporting would be profitable only considering the farmer's profitability, since the quintal can be as low as $60 in a bad year. **(Appendix B)**

3.1.2 Entrepreneurs

First, an interview was conducted to the representative of the company Alimentos Andinos Jaram, Freddy Montaña. The company has been producing lupin flour since 2016, but still doesn’t export the product. In addition to lupin flour, the company produces quinoa, maca, amaranth, maca and quinoa flour, and a super 7 formula were seven individually commercialized superfoods are mixed in one. The company has a direct relationship with farmers in the high Andean areas of Ecuador, giving technical advice on planting and establishing requirements to obtain quality raw materials. Raw material is constantly obtained thanks to the different climatic soils that Ecuador has. Sacks of lupine are priced between $110 and $150, obtained mainly from the provinces of Chimborazo and Tungurahua.

Regarding the company's business model, it has been very well accepted at a national level, with lupin flour being one of its star products. The product is distributed through health food stores and supermarkets in the provinces of Guayas, Azuay, Cañar, Loja, Morona Santiago, Orellana and Napo with future view to the province of Pichincha. The company considers that the cultivation is quite sustainable since it is a production of millennial times. However, the biggest difficulty they have encountered is the lack of support from the government.

With the expectation of exporting to the United States, the company is already registered with the FDA since this market is considered good due to the vegetarian and vegan community that demands protein. On the other hand, Montaña considers Germany to be an even more interesting market since there are several deficiencies in the European community such as gluten intolerance. South Korea, on the other hand, is also considered a good export market with high quality standards. (**Appendix C)**

Finally, an interview was conducted to the representative of the company Grandes Foods, Eng. Jorge Barba. The company offers the following products: Nutri vegan protein, Chocho Choco, Chocho Tosty and chocho Picante since 2000. The company has focused on research to provide a product beyond traditional consumption, that is, in a fresh state such as cevichocho, in which the legume has 60% water and 40% nutrients, when in reality over 50% protein can be obtained with 9 amino acids and a high content of calcium and iron. They are currently developing new products such as unflavored protein, strawberry-flavored protein, chocolate, cappuccino, an instant drink, energy bars, and cereals. In addition to being vegan, gluten-free, GMO-free, soy-free and lactose-free, they have several certificates that ensure their quality such as HACCP and the safety of the company through BASC certification. They are in the process of becoming FSSC 22000 certified and Kosher certified.

Eng. Barba considers the raw material chain to be a key point for its business since lupine is only produced once a year. That is, they are provisioned a year in advance, from October to December, buying quintals from $100, $115 and $120. Consequently, they maintain a good relationship with producers, ensuring good agricultural and environmental practices, eliminating intermediaries. The company´s suppliers are in order of importance located in the provinces of Chimborazo, Bolívar, Tungurahua and Cotopaxi. Private enterprise, government and farmers have worked together to promote the planting of chocho by guaranteeing raw materials and profitability for farmers.

In the same way, it was commented that the business mode is made up of 90% export and 10% for the local market, highlighting that export is profitable. At the moment, the company exports to the United States, especially to California, to large supermarket chains specializing in high-end food and nutrition such as Whole Foods and some high-end restaurants. For exporting, the company mainly complies with the documents required by the FDA. At national level, they have received support from institutions such as Pro Ecuador and the Ecuadorian Federation of Exporters.

Eng. Barba believes that the export of lupin and its by-products has a lot of potential. They mentioned that in some international fairs there is a lot of interest in the product as it is a source of protein with 50% compared to soy 35% and lentils with 30%, thus leading the superfoods in protein content. For example, one tablespoon of powder is equivalent to 3-4 tablespoons of grains. On the other hand, there is potential and curiosity in the pharmaceutical industry since several studies have shown that it regulates blood sugar content, helping people who are in the early stages of diabetes.

Based on an approach of the company to potential customers, at the Anuga fair in Germany, Barba considers that this country can be a good market if the product becomes a trend in the European Union and after some approaches. Now, with South Korea, Grandes Foods has had approaches and concerns about the product because it is a high source of protein. However, the biggest difficulty in reaching the European and Asian markets lies in people learning more about the product and its benefits. **(Appendix D)**

3.2 Selection of foreign markets

The market selection process is critical to a successful international marketing plan. In this process, the alternative of concentration or diversification is considered, which will allow the appropriate use of the company's resources. The strategy of concentration in 3 geographical areas and one country for each area has been chosen. Geographical areas outside Ecuador have been selected, considering Western Europe and the Organization for Economic Cooperation and Development (OECD) with large markets and Asia with medium markets, considering above all the economic growth of the countries. As a result, the following countries are obtained: the United States, Germany and South Korea.

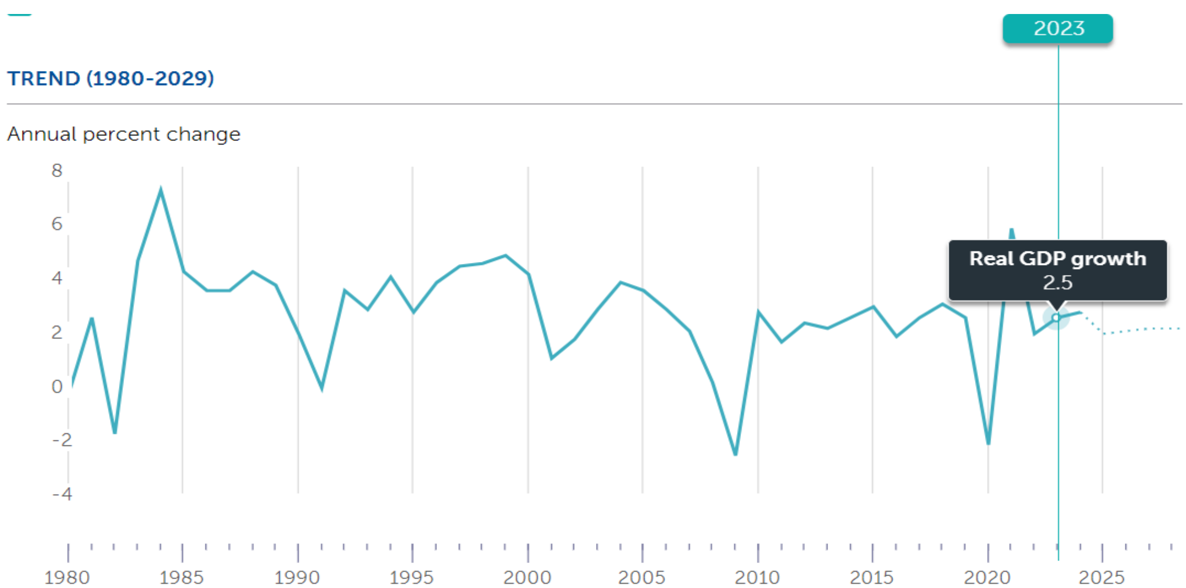
3.2.1 United States

The United States is a reference country at an international level because it is considered a world power and is part of the Group of 8. Its capital is Washington D.C. and the country is located in North America, limited by Canada to the north and Mexico to the south. The geographical distance from the U.S. to Ecuador is 4688 km. As far as to 2022, The United States had a population of 333,287,557 (Banco Mundial, 2024). The United States has 20 free trade agreements with some countries; among them, Australia, Chile, Colombia, Costa Rica, Guatemala, Israel, Mexico, Nicaragua, Panama, and Peru (United States Trade Representative, 2024). In addition to its economic and political influence, it also makes a considerable contribution to current trends in the international market. Despite being one of the countries with the highest obesity rates and fast food chains, its current trends have changed significantly. Current tendencies show that 61% of Americans are trying to eat healthier, looking for quality food identified as natural or organic, plant-based and considered sustainable (GWI, 2021). So far, a free trade agreement between Ecuador and the United States has not been finalized; however, the United States was Ecuador's main trading partner in 2022 (Trade Map, 2024d). Regarding cultural similarity based on 5 Hofstede criteria (power distance, individualism, motivation towards achievement and success, avoidance of uncertainty and long-term orientation) there is a difference of only 2 points meaning that Ecuador and the United States are very similar culturally (The Culture Factor, 2024). Finally, the United States ranked 26th in the rule of law for the year 2023 (World Justice Project, 2024).

3.2.1.1 Economic growth of the country

The country's economic growth is a fundamental indicator that exporters must consider when deciding to expand their market internationally. The United States is a country that has a broad economic value and this is demonstrated by its real Gross Domestic Product in the year 2023 of 22,376,907 billion dollars chained to 2017, seasonally adjusted annual rate (FRED, 2024a). According to the World Economic Outlook presented by the International Monetary Fund in January 2024, the United States has a real GDP projection of 2.1% per year for this year and a real GDP projection of 1.7% for 2025 (IMF, 2024d). However, the country's economic growth can truly be evidenced by the annual percentage change in real GDP growth. For the year 2023, the United States ended with a growth rate of 2.5%. In previous years, the following rates were recorded: 2022 (1.9%), 2021 (5.8%), 2020 (-2.2%), 2019 (2.5%) and 2018 (3%) (IMF, 2024c). A growing and sustained demand presents GDP growth above 5%, indicating that economic growth in recent years has been quite stagnant. Figure 13 shows annual U.S. GDP growth from 1980 to 2023 with future projections.

Figure 13
Annual U.S. Real GDP Growth



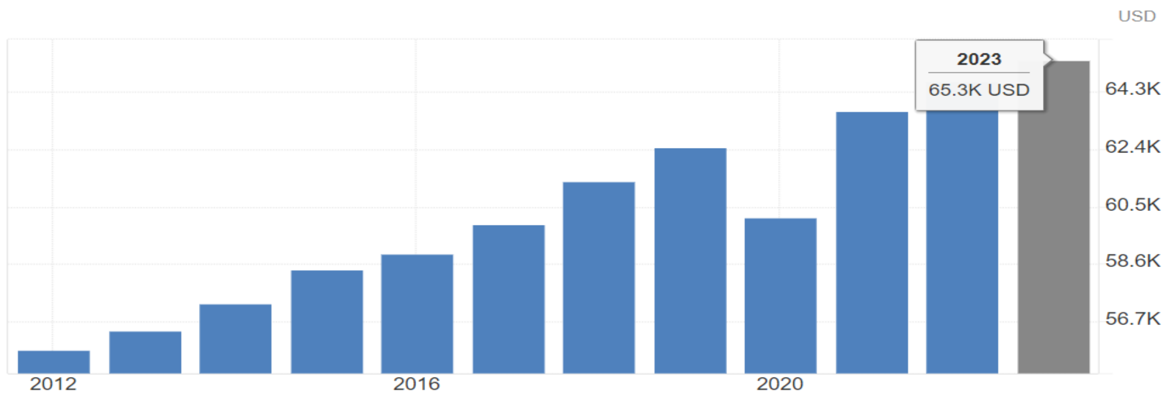
Source: Based on International Monetary Fund, 2024, *Real GDP Growth*, https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/USA

3.2.1.2 Purchasing power per capita

The Gross Domestic Product per capita of the United States was last recorded at 64,623.13 US dollars in 2022 and around 65,3 thousand US dollars, adjusted for purchasing power parity (PPP) at constant 2017 international dollar prices, equivalent to 364% of the global average (TradingEconomics, 2024c). In addition, the average GDP per capita in PPP was US$52,472.93 from 1990 to 2022, with a low of US$39,871.34 in 1991. GDP per capita PPP for the year 2024 is expected to be 66,045.00 US dollars (TradingEconomics, 2024c). Figure 14 indicates U.S. GDP per capita in PPP from 2012 to 2023.

Figure 14

U.S. GDP per capita in PPP



Source: Based on TradingEconomics, 2024, *United States DGP per capita PPP*, https://tradingeconomics.com/united-states/gdp-per-capita-ppp

3.2.1.3 Volume of imports

The total imports made by the United States for tariff code 071390 in the year 2023 were $18,106,465 and in the year 2022 $11,265,851. Its largest trading partners in 2022 were India ($9,648,504), Nicaragua ($450,040), Nigeria ($360,976), Myanmar ($277,272) and Canada ($238,814) (UN Comtrade, 2024a). Table 2 indicates the 12 countries with the highest trade value that exported to the United States in 2022.

Table 2

Exporting countries of HS 071390 to United States year 2022

Exporting Country	USD Trade Value
India	$9,648,504
Nicaragua	$450,040
Nigeria	$360,976
Myanmar	$277,272
Canada	$238,814
Argentina	$72,515
Thailand	$36,093
Spain	$24,670
United Kingdom	$22,545
Australia	$22,154
Lebanon	$20,624
United Arab Emirates	$20,574

Source: Based on el UN Comtrade Database, 2024, *Trade Data*, *https://comtradeplus.un.org/TradeFlow?Frequency=A&Flows=M&CommodityCodes=071390&Partners=all&Reporters=842&period=2022&AggregateBy=none&BreakdownMode=plus*

3.2.1.4 Import growth

Imports made in 2021 for tariff code 071390 were $6,288,224 mainly from India ($4,300,939), Argentina ($649,656), Nicaragua ($431,236), Nigeria ($298,297) and Canada ($264,333). In 2020, the total imports were $7,466,428 from the following countries: India ($4,745,819), Nigeria ($544,446), Argentina ($425,318), Canada ($382,833) and Belize ($376,032) (UN Comtrade, 2024a). The growth between 2020 and 2021 was -15%. The growth between 2021 and 2022 was 79%. The average annual growth for the years 2020, 2021 and 2023 was 22.8%.

3.2.1.5 Exports from the company's country

Ecuador exported $52,696 to the United States in 2022, $38,343 in 2021 and $30,170 in 2020 under tariff code 071390 (UN Comtrade, 2024c). The predominant export merchandise from Ecuador to the United States in 2022 in 6 HS digits was: 270900 crude petroleum oils or bituminous mineral oils ($4,448,507), 030617 frozen shrimp and prawns, etc. ($1,509,669), 271019 medium oils and preparations, of petroleum or bituminous mineral, which do not contain biodiesel, n.e.s ($556,999), 080390 fresh or dried bananas ($485,094) and 710812 gold ($339,745) (Trade Map, 2024b). On the other hand, the total export value of Ecuador to the United States in 2020 was $4,786,401,668; while in 2021, it was $6,402,858,058, and in 2022 it was $9,803,760,036 (UN Comtrade, 2024f).

3.2.1.6 Tariff barriers

A very important criteria is the tariff imposed on the products at the time of entering another country. To consider the U.S. customs tariff, the national tariff line code 07139081 was used, which indicates that the most-favored-nation tariff is 1.29% AVE (ad valorem equivalent) or 1.5 cents/kg during the months of September through April. The national tariff line code 07139061, considers imports during the months of May-August with a most-favored-nation tariff of 0.68% AVE or 0.8 cents/kg. However, in both cases, the preferential tariff is 0% thanks to the unilateral U.S. agreement for developing countries (GSP) (International Trade Center, 2024b).

3.2.1.7 Non-tariff barriers

Non-tariff barriers include the political intervention of each country. Thus, since January 1, 2023, the U.S. jurisdiction has implemented 555 interventions, which is the highest state intervention of any country (Global Trade Alert, 2024). The total regulatory requirements constitute 51 measures (International Trade Center, 2024b). On the other hand, it is considered that there are 21 domestic requirements (from Ecuador), 31 product requirements, 5 market conditions and 26 pre-shipment and inspection measures to import with the tariff code 071390 (Global Trade Helpdesk, 2024a).

3.2.1. 8 Business risks

The U.S. country risk assessment is A2, which means that it is quite manageable in terms of the overall risk of default of companies and has a business climate assessment of A1, indicating high solvency in the business environment. Its strengths are having a flexible labour market and full employment as a goal. In addition, the country has the dollar predominantly and 70% of the public debt is in the hands of residents. It also has favorable corporate taxes, is rich in resources such as oil, gas, agriculture, and minerals, and is a leader in research and innovation (Coface, 2024). However, it has some disadvantages such as low participation in the labour market, high household debt, polarized political landscape, a declining fertility rate, outdated infrastructure, economic, territorial and racial inequalities, and a trade conflict and technological competition with China (Coface, 2024).

3.2.1.9 Ease of doing business

According to the latest 2020 update, the U.S. ranked 6 and scored 84.l for ease of doing business, which looked at New York City and Los Angeles. The top scores were obtaining credit, trading across borders, and starting a business. Table 3 was prepared to visualize the ease of business that the United States had in 2020.

Table 3

Ease of doing business in the United States

	2020 Ranking	Score 2020	Score 2019
Starting a Business	55	91.6	91.2
Construction Permit Handling	24	80.0	79.9
Obtaining electricity	64	82.2	82.1
Property Registration	39	76.9	76.9
Obtaining Credit	4	95.0	95.0
Protection of Minority Investors	36	71.6	71.6
Paying Taxes	25	86.8	84.1
Cross-border trade	39	92.0	92.0
Contract Compliance	17	73.4	72.0
Insolvency resolution	2	90.5	90.9

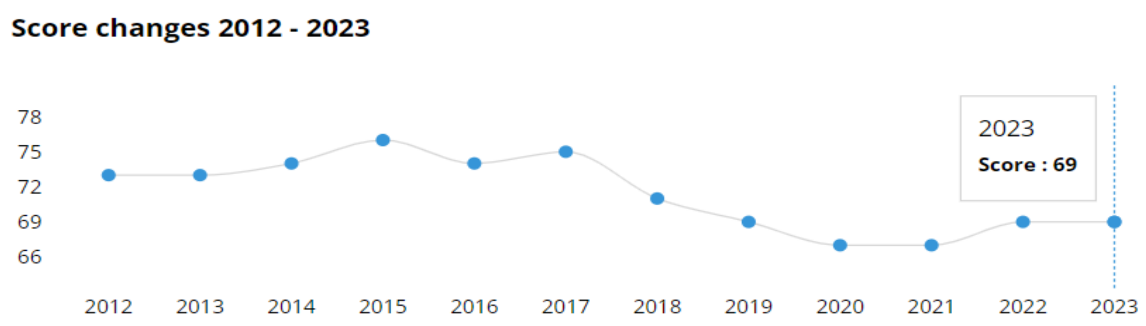
Source: Based on the World Bank, 2020, *Doing Business United States*, https://archive.doingbusiness.org/es/data/exploreeconomies/united-states

3.2.1.10 Transparency and corruption

In 2023, for the corruption perceptions index, a ranking of 24/180 and a score of 69/100 were reported for the United States. Since 2012, the score has decreased from 73 to 69, with an average of 71.42. Its maximum score was in 2015 with 76 and its minimum score in 2020 and 2021 with 67. It is also below Austria, France, Seychelles and the United Kingdom (ranking 20), on a par with Barbados, and above Bhutan and the United Arab Emirates (ranking 26) (Transparency International, 2024b). Figure 15 shows the changes in the U.S. corruption perception index score from 2012 to 2023.

Figure 15

Changes in the U.S. Corruption Perceptions Index Score



Source: Based on Transparency International, 2024, Corruption perceptions index, *https://www.transparency.org/en/cpi/2023/index/usa*

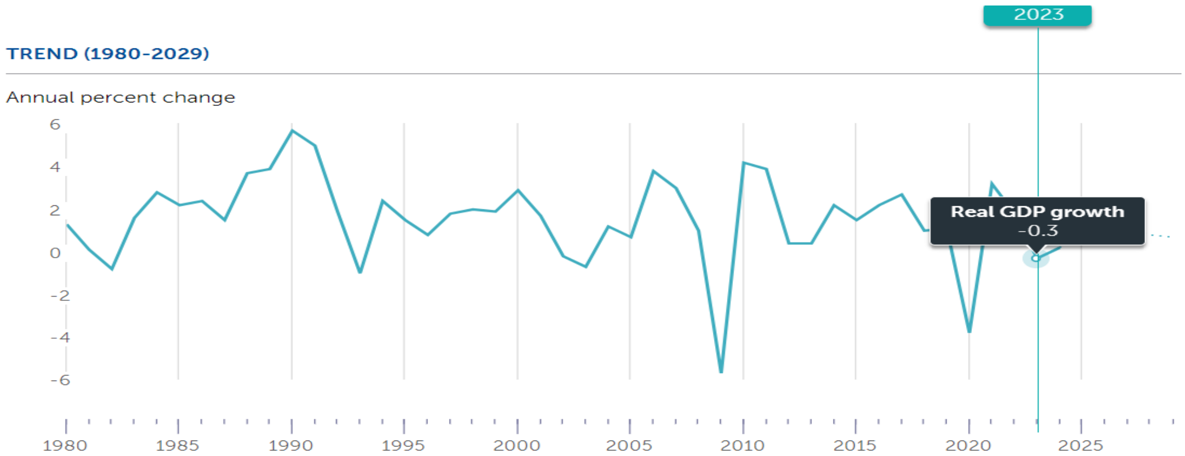
3.2.2 Germany

Germany is one of the 27 countries that belong to the European Union and is also part of the Group of 8. Its capital is Berlin. The country is in the center of Europe, surrounded by nine countries. As part of the European Union, Germany has 36 free trade agreements in force and with provisional application (BMKW, 2024). The geographical distance to Ecuador is 10,065 km with a population of 83,797,985 million in the year 2022 (Banco Mundial, 2024). The current food trend leans towards healthier options, taking into consideration sustainability and organic crops sold through food retailers and stores specialized in healthy food. Some people prefer a vegetarian or vegan option resulting in an increase in these types of restaurants (Statista, 2024). Thanks to the Andean Community, Ecuador has a trade agreement with the European Union with provisional application since 2017 (BMKW, 2024). In 2022, Germany was Ecuador's 14th trading partner (Trade Map, 2024d). Regarding cultural similarity based on 5 Hofstede criteria (power distance, individualism, motivation towards achievement and success, avoidance of uncertainty and long-term orientation), a difference of 46 points is found (The Culture Factor, 2024). When there is a greater cultural similarity conducting negotiations becomes easier for all parts interested. Finally, Germany ranked 5th in the rule of law for the year 2023 (World Justice Project, 2024).

3.2.2.1 Economic growth of the country

Germany's real gross domestic product in 2023 was €752,182.1 million chained to 2010, seasonally adjusted (FRED, 2024b). According to the World Economic Outlook presented by the International Monetary Fund in January 2024, Germany has a real GDP projection of 0.5% per year for this year and a real GDP projection of 1.6% for 2025 (IMF, 2024d). The annual real GDP growth rate for Germany stood at -0.3% for the year 2023. Its growth in a 5-year sequence has been as follows: 2022 (1.8%), 2021 (3.2%), 2020 (-3.8%), 2019 (1.1%) and 2018 (1%) (IMF, 2024a). Figure 16 shows Germany's annual GDP growth from 1980 to 2023 with future projections.

Figure 16
Germany's annual real GDP growth

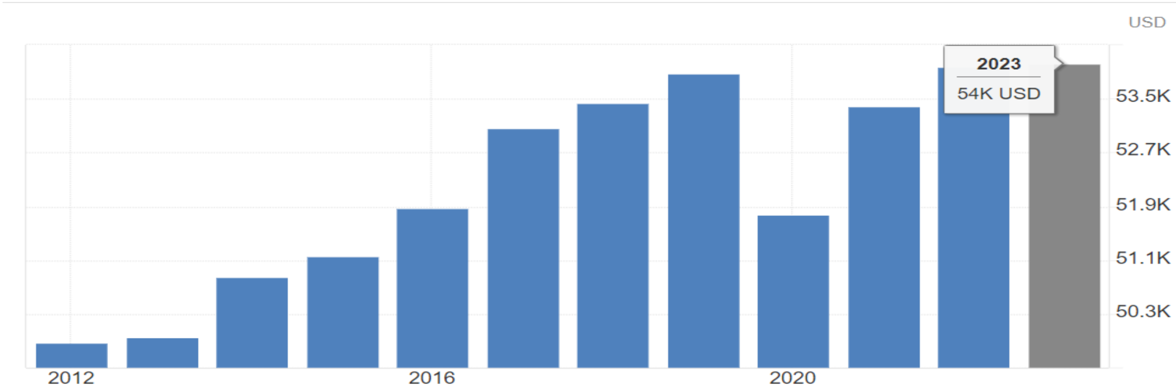


Source: Based on International Monetary Fund, 2024, *Real GDP Growth*, https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/DEU

3.2.2.2 Purchasing power parity per capita

Germany's GDP per capita was in 2022 53,969.63 US dollars and in 2023 around 54 thousand US dollars adjusted for purchasing power parity (PPP) at constant 2017 international dollar prices and is equivalent to 304% of the world average. In addition, the average GDP per capita in PPP was US$45,718.02 from 1990 to 2022, with a low of US$36,699.48 in 1990. By 2024, GDP per capita PPP is projected to be US$54,078.00 (TradingEconomics, 2024a). Figure 17 indicates Germany's GDP per capita in PPP from 2012 to 2023.

Figure 17
Germany's GDP per capita in PPA



Source: Based on TradingEconomics, 2024, *Germany DGP per capita PPP,* https://tradingeconomics.com/germany/gdp-per-capita-ppp

3.2.2.3 Volume of imports

The total imports made by Germany for tariff code 071390 in the year 2023 were $5,220,941 and in the year 2022 $3,888,395. Its largest trading partners in 2022 were Italy ($1,340,045), Czech Republic ($781,775), Poland ($407,947), Lithuania ($195,485) and the Netherlands ($138,435) (UN Comtrade, 2024g). Table 4 shows the 12 countries with the highest trade value that exported to Germany in 2022.

Table 4
Exporting countries HS 071390 to Germany year 2022

Exporting Country	USD Trade Value
Italy	$1,340,045
Czech Republic	$781,775
Poland	$407,947
Lithuania	$195,485
Netherlands	$138,435
Egypt	$131,719
France	$111,146
Argentina	$102,040
Spain	$87,808
India	$76,891
Hungary	$62,752
China	$58,612

Source: Bases on the UN Comtrade Database, 2024, *Trade Data, https://comtradeplus.un.org/TradeFlow?Frequency=A&Flows=M&CommodityCodes=071390&Partners=all&Reporters=276&period=2022&AggregateBy=none&BreakdownMode=plus*

3.2.2.4 Import growth

Imports made in 2021 for tariff code 071390 were $4,261,410 mainly from Italy ($1,983,008), Czech Republic ($643,543), Poland ($636,251), Spain ($199,102) and Lithuania ($195,651). In the year 2020 the total imports were $2,842,078 from, Italy ($1,248,276), Poland ($510,766), France ($202,018), Lithuania ($162,292) and Czech Republic ($114,882). The growth between these two years was 49.9%. The growth between 2021 and 2022 was -8.7%. The average annual growth for the years 2020, 2021 and 2023 was 16.9%.

3.2.2.5 Exports from the company's country

There was only and export in 2012 of $2,228 and in 2020 of $50 from Ecuador to Germany under tariff heading 071390 (UN Comtrade, 2024b). The predominant export merchandise from Ecuador to Germany in the year 2022 in HS 6 digits was: 080390 fresh or dried bananas ($96,771), 261690 minerals of the metals prices and their concentrates ($62,382), 180100 cocoa beans, whole or broken, raw or roasted ($40,813), 210111 extracts, essence and concentrates of coffee ($32,310) and 160414 preparations and preserves of tuna, whole or chunky stripe and bonito ($31,332) (Trade Map, 2024a). On the other hand, the total export value of Ecuador to Germany in 2020 was $398,928,032, in 2021 it was $363,544,492 and in 2022 it was $340,405,738 (UN Comtrade, 2024d).

3.2.2.6 Tariff barriers

In the analysis of import duties to Germany from Ecuador, the national tariff line code 07390090 was used. It indicates that the most-favored-nation tariffs applied are 3.20%. Thanks to the CAN-EU free trade agreement, a preferential tariff of 0% is applied (International Trade Center, 2024c).

3.2.2.7 Non-tariff barriers

The number of policy interventions by Germany affecting trade was 292 since January 2023, close to the medium number of interventions (Global Trade Alert, 2024). Regulatory requirements constitute a total of 35 measures (International Trade Center, 2024c). In the same way, 21 domestic requirements, 11 product requirements, 9 market conditions and 17 pre-shipment and inspection measures are identified (Global Trade Helpdesk, 2024b).

3.2.2.8 Business Risks

Germany has a country risk assessment of A3 and a business climate assessment of A1, which tells us that the country is very solvent in terms of payments. The strengths that stand out are a strong industrial base (23% of GDP in 2022), low structural unemployment, well-developed apprenticeship system, importance of family-owned exporting SMEs, a consensus-oriented policy, and an institutional system that promotes representativeness (Coface, 2024). On the contrary, among its weaknesses are the decrease in the active population from 2020 onwards, strong dependence on international energy imports and the economy on foreign trade, the prominence of the automotive and mechanical industries, particularly in exports, and capacity limitations, insufficient investment and risk capital limit productivity growth (Coface, 2024).

3.2.2.9 Ease of doing business

In Germany, the ranking according to Doing *Business* 2020 was 22 with a score of 79.7 overall. Remembering that the closer to 1 the classification is, the easier it is to do business with the economy and the closer to 100 its score is, the better performance is indicated. Between 2019 and 2020 there were no major variations in the categories. Germany stands out in energy procurement with a ranking of 5 and in insolvency resolution with a ranking of 4, despite having dropped 0.3 percentage points since 2019. The lowest rankings are in business opening (125) and property registration (76). On the other hand, it scored high in cross-border trade with 91.8 and medium in minority investor protection with 62.0. Table 5 shows the ease of doing business in Germany in 2020.

Table 5

Ease of doing business in Germany

	2020 Ranking	Score 2020	Score 2019
Starting a Business	125	83.7	83.6
Building Permit Handling	30	78.2	78.2
Obtaining electricity	5	98.8	98.8
Property Registration	76	66.6	66.5
Obtaining Credit	48	70.0	70.0
Protection of Minority Investors	61	62.0	62.0
Paying Taxes	46	82.2	82.1
Cross-border trade	42	91.8	91.8
Contract Compliance	13	74.1	70.4
Insolvency resolution	4	89.8	90.1

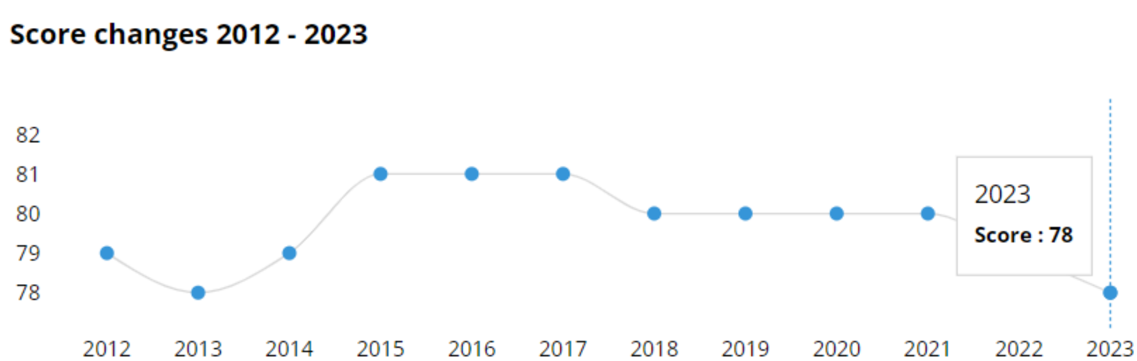
Source: Based on the World Bank, 2020, *Doing Business Germany*, https://archive.doingbusiness.org/es/data/exploreeconomies/germany

3.2.2.10 Transparency and corruption

For Germany, the corruption perception index according to Transparency International in 2023 was 9 in ranking and 78 in score, decreasing one point compared to 2022. Since 2012 the average score is 79.66, with the maximum of 81 for three consecutive years 2015, 2016 and 2017 and with a minimum of 78 in 2013 and 2023. Germany is below the Netherlands (ranking 8), on par with Luxembourg and above Ireland (ranking 11) (Transparency International, 2024a). Figure 18 shows the changes in Germany's corruption perception index score from 2012 to 2023.

Figure 18

Changes in Germany's Corruption Perceptions Index score



Source: Based on Transparency International, 2024, *Corruption perceptions index* https://www.transparency.org/en/cpi/2023/index/deu

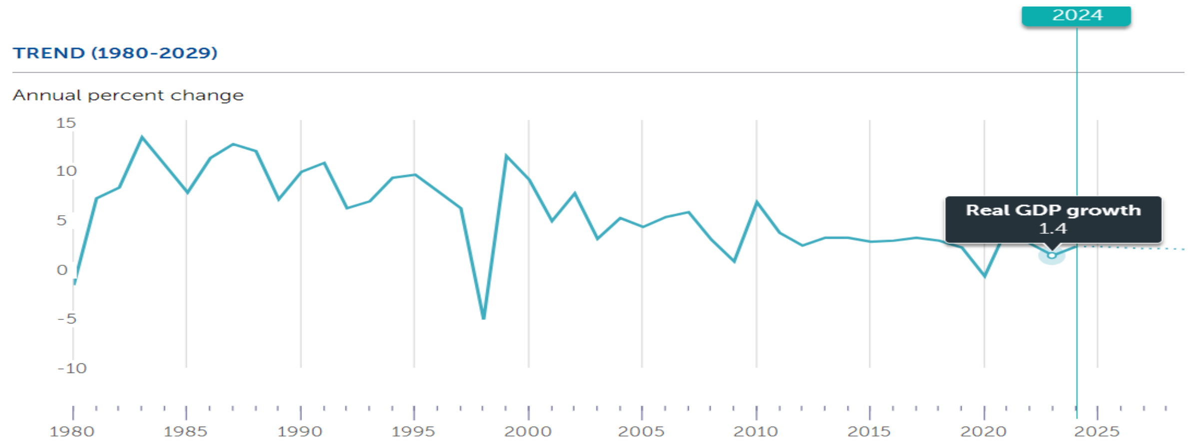
3.2.3 South Korea

South Korea is part of East Asia and is bordered to the north by North Korea and is surrounded by the Yellow Sea, East China Sea and Sea of Japan. Its capital is Seoul. The currency used in South Korean is the won. South Korea has 22 free trade agreements with countries and integration groups (Ministry of Trade, Industry and Energy, 2024).The geographical distance to Ecuador is 15,369 km with a population of 51,628,117 million in the year 2022 (World Bank, 2024). In October 2023, the pre-signing of the Strategic Economic Cooperation Agreement between South Korea and Ecuador was celebrated (MPCEIP, 2023). In 2022, South Korea was Ecuador's 24th largest trading partner in its exports (Trade Map, 2024d). Regarding cultural similarity based on 5 Hofstede criteria (power distance, individualism, motivation towards achievement and success, avoidance of uncertainty and long-term orientation), an expected difference of 72 points is found (The Culture Factor, 2024). Finally, South Korea ranked 19th in the rule of law for the year 2023 (World Justice Project, 2024).

3.2.3.1 Economic growth of the country

South Korea presented a gross domestic product of 498,782,800 in its national currency, seasonally adjusted for the period of the year 2023 (FRED, 2024c). For the same year, 2023, South Korea culminated with a growth rate of 1.4% in its real GDP. Previously, it obtained the following growth rates 2.9% (2018), 2.2% (2019), -0.7% (2020), 4.3% (2021), 2.6 (2022) (IMF, 2024b). The forecast for the real GDP growth rate for the years 2024 and 2025 is 2.2% and 2.3% respectively (IMF, 2024b). Figure 19 shows South Korea's annual GDP growth from 1980 to 2023 with future projections.

Figure 19
South Korea's annual real GDP growth

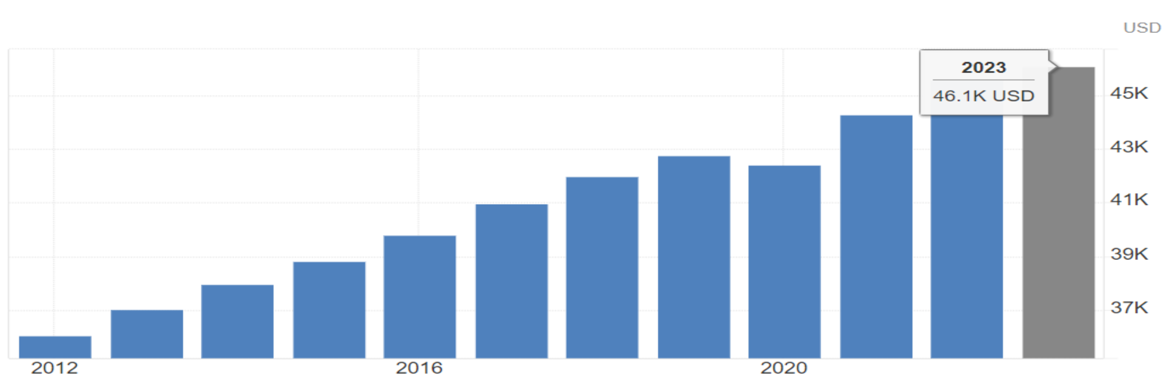


Source: Based on International Monetary Fund, 2024, *Real GDP Growth* https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/KOR

3.2.3.2 Purchasing power parity

South Korea had a GDP per capita in 2022 of 45,560.13 US dollars, adjusted for purchasing power parity (PPP) at constant 2017 international dollar prices, equivalent to 205% of the world average. Likewise, the average GDP per capita in PPP was US$29,394.03 from 1990 to 2022, with a low of US$12,656.40 in 1990. By 2024, GDP per capita PPP is projected to be US$46,562.00 (TradingEconomics, 2024b). Figure 20 indicates South Korea's GDP per capita in PPP from 2012 to 2023.

Figure 20
South Korea's GDP per capita in PPP



Source: Based onn TradingEconomics, 2024, *South Korea DGP per capita PPP*, https://tradingeconomics.com/south-korea/gdp-per-capita-ppp

3.2.3.3 Volume of imports

The total imports made by South Korea for tariff code 071390 in the year 2022 was $34,419. Its largest trading partners in 2022 were China ($22,557), Indonesia ($8,739), Vietnam ($1,335), the United States ($836) and the Netherlands ($528) (UN Comtrade, 2024h). Table 6 indicates the 12 countries with the highest trade value that have exported to South Korea in 2022.

Table 6
Exporting Countries HS 071390 to South Korea year 2022

Exporting Country	USD Trade Value
China	$22,557
Indonesia	$8,739
Vietnam	$1,335
United States	$836
Netherlands	$528
Japan	$162
France	$101
Nigeria	$88
Italy	$37
Thailand	$24
Australia	$9
India	$2

Source: Based on the UN Comtrade Database, 2024, *Trade Data*, https://comtradeplus.un.org/TradeFlow?Frequency=A&Flows=M&CommodityCodes=071390&Partners=all&Reporters=410&period=2023&AggregateBy=none&BreakdownMode=plus

3.2.3.4 Import growth

Imports made in 2021 by South Korea for tariff code 071390 were $110,711 mainly from Indonesia ($55,341), China ($30,900), Myanmar ($18,894), Nepal ($4,386) and the United States ($338). In the year 2020 the total imports were $54,059 from, Myanmar ($28,148), China ($16,131), Indonesia ($8,921), United States ($757) and India ($52). The growth between these two years was 105%. The growth between 2021 and 2022 was -68.9%. The average annual growth for the years 2020, 2021 and 2023 was -20.2%.

3.2.3.5 Exports from the company's country

There are no registered data for the export of HS 071390 from Ecuador to South Korea. The predominant export merchandise from Ecuador to South Korea in the year 2022 in HS 6 digits was: 210900 crude petroleum oils or bituminous mineral oils ($107,518), 030617 frozen shrimp and prawns etc. ($64,165), 740500 waste and scrap, copper etc. ($20,032), 080390 fresh or dried bananas ($7,278) and 760200 aluminum waste and scrap etc. ($1,148) (Trade Map, 2024c). On the other hand, the total export value of Ecuador to Germany in 2020 was $84,790,547, in 2021 it was $206,037,154 and in 2022 it was $205,295,108 (UN Comtrade, 2024e).

3.2.3.6 Tariff barriers

The Republic of Korea has 27% most-favoured-nation import duties for the product's national tariff line code 071390 and does not have a preferential tariff rate (International Trade Center, 2024a). Despite this, it is important to mention that Ecuador and South Korea pre-signed the Strategic Economic Cooperation Agreement in 2023, which promotes the reduction of tariff rates.

3.2.3.7 Non-tariff barriers

The first tariff barrier, political intervention, since January 1, 2023 implemented by South Korea is very low compared to the rest of the countries analyzed, with only 104 interventions (Global Trade Alert, 2024). Regulatory requirements constitute a total of 50 measures (International Trade Center, 2024a). Finally, there are 21 domestic requirements, 9 product requirements, 6 market conditions, and 35 pre-shipment and inspection measures that need to be considered when exporting the product of tariff code 071390 (Global Trade Helpdesk, 2024c).

3.2.3.8 Business Risks

As the United States, South Korea has a country risk assessment of A2 and a business climate assessment of A1 indicating a favorable business risk. In addition, some of the strengths are having a diversified industrial base, being a leader in high-end electronics, high public and private spending on R+D, a good educational system and diversified FDI in Asia (Coface, 2024). However, South Korea has some weaknesses such as competition from China (steel, construction, shipbuilding, electronics, automotive, household appliances), a high level of household debt, an ageing population, high youth unemployment, a net importer of raw materials, over-representation of chaebols in the economy and geopolitical tensions with North Korea (Coface, 2024).

3.2.3.9 Ease of doing business

In South Korea, its ranking according to Doing Business 2020 was 5 with a score of 84.0 overall. Between 2019 and 2020, the only categories that varied were tax payments with an increase of 0.5 percentage points and insolvency resolution with a decrease of 0.1 percentage points. South Korea scored high rankings in obtaining electricity (2) and fulfilling contracts (2), with its worst ranking being obtaining credit (67). On the other hand, it obtained a high score in obtaining electricity with 99.9, in opening a business with 93.4 and cross-border trade with 92.5. Table 7 shows the ease of doing business in South Korea in 2020.

Table 7
Ease of doing business in South Korea

	2020 Ranking	Score 2020	Score 2019
Starting a Business	33	93.4	93.4
Construction Permit	12	84.4	84.4
Obtaining electricity	2	99.9	99.9
Property Registration	40	76.3	76.3
Obtaining Credit	67	65.0	65.0
Protection of Minority Investors	25	74.0	74.0
Paying Taxes	21	87.4	86.9
Cross-border trade	36	92.5	92.5
Contract Compliance	2	84.1	84.1
Insolvency resolution	11	82.9	83.0

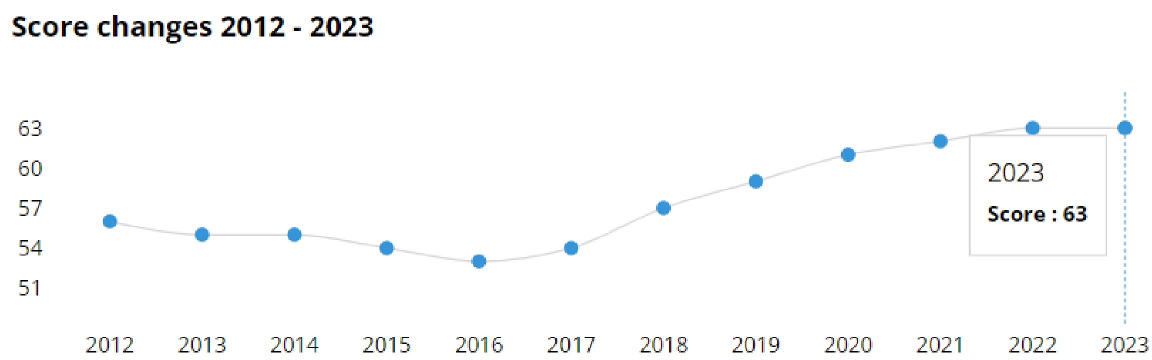
Source: Based on the World Bank, 2020, *Doing Business Republic of Korea*, https://archive.doingbusiness.org/es/data/exploreeconomies/korea

3.2.3.10 Transparency and corruption

The Corruption Perceptions Index in South Korea in 2023 obtained a ranking of 32/180 and a score of 63/100, unchanged from 2022. The trend towards transparency in this country is positive since in 2012 South Korea had a score of 56 and in 2023 it reached 63. The average index over the 12 years is 57.66 with a low of 53 in 2016 and a high of 63 in 2022 and 2023. South Korea ranks below the Bahamas and Cape Verde (ranking 30) and above Israel (ranking

33) (Transparency International, 2024c). Figure 21 shows the changes in South Korea's corruption perception index score from 2012 to 2023.

Figure 21
Changes in South Korea's Corruption Perceptions Index Score



Source: Based on Transparency International, 2024, Corruption perceptions index *https://www.transparency.org/en/cpi/2023/index/kor*

3.3 Country Selection Matrix

The country selection matrix considers 15 relevant criteria when analyzing a country as a potential market. These criteria are both the potential of the market and the accessibility and risk. Each criterion is given a weighting coefficient from 0 to 3, with 0 being a criterion that does not apply, 1 a less important criterion, 2 an important criterion and 3 a very important criterion. Subsequently, a score is given from 1 to 5, with 1 being very unfavorable conditions, 2 unfavorable conditions, 3 neutral conditions, 4 favorable conditions and 5 very favorable conditions, considering a prior comparison between countries for awarding the score. This value is multiplied by the coefficient and all the values obtained from this result per country are added together to obtain the total. A higher value indicates that the country has more advantage in criteria. It is important to mention that for a more product-specific analysis, each company should substitute the corresponding tariff item in the criteria of import volume, import growth, export from the company's country and tariff barriers. Table 8 shows the elaboration of the selection matrix among the three countries analyzed.

Table 8
Country selection matrix

Coeficiente	**Criterio**	**Estados Unidos**		**Alemania**		**Corea del Sur**	
2	Country´s economic growth	3	6	2	4	4	8
2	Purchasing power per capita	5	10	4	8	3	6
3	Import volume	5	15	3	9	2	6
3	Import growth	5	15	4	12	1	3
1	Export from the company´s country	5	5	4	4	3	3
3	Tariff barriers	5	15	5	15	1	3
1	Non-tariff barriers	2	2	4	4	5	5
3	Business Risks	4	12	3	9	4	12
2	Ease of doing business	4	8	2	4	5	10
2	Transparency and corruption	4	8	5	10	3	6
3	Geographical proximity	5	15	4	12	3	9
2	Cultural proximity	5	10	4	8	3	6
3	Market size	5	15	4	12	3	9
2	Legal certainty	2	4	5	10	3	6
2	Relations between Ecuador and the country	4	8	5	10	3	6
	TOTAL	148		131		98	

CHAPTER 4
FORM OF ENTRY

4.1 Internal and external factors

The country selected to develop an entry form is the United States, which scored higher than Germany and South Korea. To make the entry form it is important to consider the internal and external variables of each company. The internal variables to consider are available resources, objectives, type of product/service and international experience. On the other hand, the external variables consider commercial risk, market characteristics, competition and barriers and incentives. For the following analysis, the company is generalized as an MSME, meaning, micro, small and medium-sized enterprises.

MSMEs usually have limited financial resources of their own, resulting in the need for external financing and usually opt for indirect exports. Thanks to the credits granted by different public and private institutions, the expansion and development of the company is facilitated. Some banks and corporations such as BanEcuador, Banco de Guayaquil, Banco de Pichincha, Banco del Pacífico, Banco Solidario, Alianza del Valle, Cooprogreso, Juventud Ecuatoriana Progresista offer SME credit with variable requirements and rates. It is worth noting that BanEcuador offers the lowest credit line but obtaining it has proven to be quite complex. In Ecuador there are established ceilings for interest rates; according to the Banco Central del Ecuador for January 2024 the benchmark effective lending rate for productive SMEs was 11.09% and the maximum effective lending rate for productive SMEs was 11.51%. The maximum effective lending interest rates in the following months were February -11.61%, March -11.81%, April -11.89% and May -12.11% (JPRF, 2024). The types of credit granted in the country include productive credit, ordinary commercial credit, priority commercial credit, ordinary consumer credit, priority consumer credit, educational credit, public housing credit, real estate credit, microcredit and public investment credit (BCE, 2015). Finally, there are other forms of financing such as equity funds, crowfunding and crowlending, incubators, angel investors and grant programs.

The primary objective of the companies is considered the positioning in foreign markets allowing the necessary initial recognition that motivates the growing demand for the product. To achieve this objective, it is important to adapt the merchandise to the needs of the market in such a way that the products are visible in large commercial chains and specialized retail stores, but also show a significant presence online. Regarding the type of product, we have a consumer good, which needs more intermediaries unlike other types of products that require direct sales or after-sales service. Although the United States is a well-known market for Ecuador, it is not a well-known market for products derived from chocho or lupine, so it is necessary to choose forms of entry with less commitment and risk.

Export business risk to the United States is the first external variable to consider. As mentioned in the selection criteria, the country has a very low A1 business risk. However, the U.S. market is quite diversified in terms of consumption habits, but it is reported that 61% of the population is looking for healthier alternatives. The purchase of these products is largely made through supermarkets and to a lesser extent in farmers' markets or convenience stores. For this reason, it is important to consider large supermarket chains and those specializing in healthy and organic food. It is necessary to be aware of the states most interested in healthy eating such as Colorado, Arizona, Utah, Texas, New York, Massachusetts, Florida, Nevada, California and Virginia. In contrast, the study conducted by Great Green Wall Health showed that the states least interested in healthy eating were Mississippi, West Virginia and Alaska (Meza, 2023).

Regarding the way of buying, most people still prefer conventional supermarkets. However, there is a growth in online sales, often without the need for traditional intermediaries. Regardless of the means of sale, knowledge of the English language is essential to be able to negotiate successfully either with end customers or intermediaries. The United States has more than 20 ports through which goods can enter, among its major ports are the port of Los Angeles, California (one of the largest), port of New Jersey and New York, port of Long Beach, California, port of Savannah, port of Houston, port of Virginia, port of Northwest Seaport Alliance, port of Charleston, port of Oakland and the port of Miami (Ahmed, 2023). Making a brief comparison, shipping product to states such as California, New York, Virginia, Texas, Florida and Massachusetts (Boston port) means a reduction in costs due to the direct connection of ports.

Regarding competition, it is important to consider that there is direct competition, that is, competition that offers our product with some differences, and indirect competition that offers products that cover the same need. In this case, the superfood and health food market is quite wide. Indirect competition products are several, for example açai powder, sweet potato, quinoa and chia. Recognizing and developing the marketing mix (product, price, place and promotion) provides the company with a solid basis for internalization. It is recommended that the company obtain a competitive advantage, for example in price or differentiation. In addition, there are some strategies to stand out in supermarkets, such as knowing where the product will be displayed, focusing on the packaging with current trends in graphic design or the decision to display the product or not, highlighting sustainability and other possible attributes such as gluten-free, organic, etc., listing the benefits or telling the company's story. Table 9 lists both general and specialized supermarkets in order to recognize potential customers.

Table 9

General Supermarkets and Specialized Supermakerts

General Supermarkets	Specialized Supermarkets
Costco	Whole Foods Market
Walmart	Sprouts Farmes Market
Sam´s Club	Trader Joe´s
Aldi	The Vitamin Shoppe
Kroger	Earth Fare
Shop Rite	Natural Grocers by Vitamin Cottage
Lidl	Wegmans
Publix	Raley´s
Albertsons	H-E-B
	HyVee
	Thrive Market

As for direct competition, there are some products found in U.S. supermarkets. Some pages such as Whole Foods Market cannot be accessed directly from Ecuador, but the Google search engine highlights: Carrington's Ground Lupin, Brami Lupini Garlic & Rosemary, Brami Lupini Sea Salt & Vinegar and Regenerative Organic Lupini Beans. No lupine product information is obtained for The Vitamin Shoppe, Raley's, HEB, Eart Far, but HyVee features the Brami brand which produces lupine snacks. Bella brand lupine beans are available at Costco and Cento brand at ShopRite. Walmart offers a wide variety of Carrington and Brami brand lupine grains and snacks. Amazon online store is where you can find a wide variety of lupine products from ice cream to lupine-based egg mix.

Figures 22-26 show some lupine products found at Kroger.

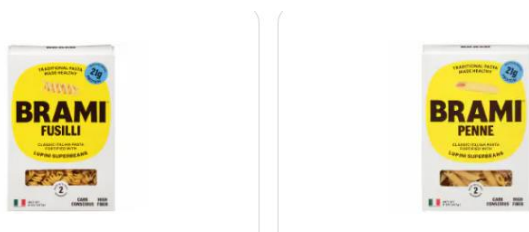
Figure 22
Lenny & Larry's Chocolate Chip Cookie

Source: Kroger. (2024). *Lenny & Larry's Chocolate Chip Keto Cookie.* [Picture]. Kroger. https://www.kroger.com/p/lenny-larry-s-chocolate-chip-keto-cookie-/0078769251100

Figure 23
Wicked Kitchen Plant Based Vanilla Ice Dream

Source: Kroger. (2024). Wicked Kitchen Plant Based Vanilla Ice Dream. [Picture]. Kroger.https://www.kroger.com/p/wicked-kitchen-plant-based-vanilla-ice-dream/0085002369064

Figure 24
Brami Lupini Snack Pasta Semolina lupini Fusilli y Brammi Lupini Snack Pasta Semolina Lupini Penne



Source: Kroger. (2024). *Brami Lupini Snack Pasta Semolina lupini Fusilli y Brammi Lupini Snack Pasta Semolina Lupini Penne* [Picture]. Kroger.https://www.kroger.com/search?query=lupin&searchType=default_search

Figure 25

Wholesome Harvest Plant Protein Multi-Grain Bread with Lupin Flour

Source: Kroger. (2024). *Wholesome Harvest Plant Protein Multi-Grain Bread with Lupin Flour.* [Picture]. Kroger. https://www.kroger.com/p/wholesome-harvest-plant-protein-multi-grain-bread-with-lupin-flour/0003967785211

Figure 26

Cento Lupini Beans

Source: Kroger. (2024). *Cento Lupini Beans.* [Picture]. Kroger. https://www.kroger.com/p/cento-lupini-beans/0007079680006

Figure 27 shows lupine products found at Traders Joe´s.

Figure 27

Simply Eggless Plant Based Egg

Source: Trader Joe's. (2024). *Simply Eggless Plant Based Egg.* [Picture]. Trader Joe's. https://www.traderjoes.com/home/products/pdp/simply-eggless-plant-based-egg-074840

Figures 28-32 show lupine products found at Sprouts.

Figure 28

Brami Lupini Snack with Sea Salt

Source: Sprouts. (2024). *Cento Lupini Beans.* [Picture]. Sprouts. https://shop.sprouts.com/product/78388/brami-lupini-snack-with-sea-salt

Figure 29

Brami Italian Snacking Lupini Beans

Source: Sprouts. (2024). *Brami Italian Snacking Lupini Beans.* [Picture]. Sprouts. https://shop.sprouts.com/product/73057?retailer_id=279

Figure 30

Lupii Rotini Mighty Lupini Bean Pasta

Source: Sprouts. (2024). *Lupii Rotini Mighty Lupini Bean Pasta*. [Picture]. Sprouts. https://shop.sprouts.com/product/82902?retailer_id=279

Figure 31

Lupii Elbows Mighty Lupini Bean pasta

Source: Sprouts. (2024). *Lupii Elbows Mighty Lupini Bean pasta*. [Picture]. Sprouts. https://shop.sprouts.com/product/82858/lupii-elbows-mighty-lupini-bean-pasta

Figure 32
Brami Semolina Lupini Pasta Fusili

Source: Sprouts. (2024). *Brami Semolina Lupini Pasta Fusili.* [Picture]. Sprouts.https://shop.sprouts.com/product/68858/brami-semolina-lupini-pasta-fusilli

According to the advances found in the pages of the Ministry of Agriculture and Livestock and the National Institute of Agricultural Research of Ecuador, research on chocho and its technological offer has been promoted, but it is the private sector that promotes exports the most. On the other hand, there is no tariff barrier for heading 071390, but there is a series of documents required for export to the United States.

4.2 Alternatives of entry form

There are some entry alternatives such as direct export, indirect export, cooperation agreements and implementation. Each alternative has its disadvantages and advantages that directly affect the commercialization results when entering foreign markets. Most of the companies producing lupine derivatives have a slight presence at the national level, indicating that they are still in the initial or growth phases, thus excluding cooperation and implementation agreements. Cooperative agreements have some benefits such as sharing risks and responsibilities but also require a higher degree of entrepreneurship with the possibility of merger or absorption. An establishment indicates previous experience in several markets, creating permanence through establishments. Both direct and indirect exports are considered the most advantageous alternatives.

However, indirect exports are more important because the intermediaries have their own pre-established networks and oversee international management, such as identifying clients, negotiating, storing and distributing the products. On the other hand, in direct exports, the company is in charge of the entire commercial process, eliminating intermediaries and offering a less expensive product to the end customer. Smaller companies with less innovation and labor efficiency are often indicators of indirect exporting (Cieślik & Michałek, 2018). Similarly, some determinants between direct and indirect exports include recognizing the knowledge and technology capacity to which one has access, as well as production costs and access to capital (Hessels & Terjesen, 2010). Finally, uncertainty is a key factor for indirect exporting whether in areas such as crime, transportation infrastructure problems and the legal system against large, more productive, foreign-owned, more export-intensive companies that opt for a direct mode of exporting (Johannsen y Martínez-Zarzoso, 2014). Some of the benefits offered by intermediaries or an indirect export involve assuming the risk of the operations and reducing search costs. Additionally, no previous experience is required, and the company has its own employees, a high degree of commitment, participates in the promotion and knows well how to negotiate with the final customer, facilitating sales. Unlike an indirect export, direct export offers greater control of the process and final negotiation, more market information is acquired, profits increase and there is greater promotional control.

The best route to take for companies that are just starting to venture into the international market, want to reduce risks, and have limited resources is indirect exporting. Specifically, an indirect export through distributors who sell local and imported products to retailers, retail stores, restaurants, etc. To select a good distributor, it is important to know the objective, distribution structure and sales targets. The objective is that the company wants to position the product in a high segment, with a mixed distribution structure between large chains and specialized stores. In addition, a selective point of sale that meets certain requirements is sought so that the end consumer has the interest and ability to purchase the products offered. In order to analyze some distributors, those that preferably have a wide coverage and distribute healthier, natural and quality products were looked for.

Distributors were found to include KeHe, UNFI, Ace Natural, Sysco, Buffalo Market, McLane, Earl's Organic Produce, Freshpoint and Harvest Food Distributors. Buffalo Market's retail partners include Walmart, Costco, Grocery Outlet and Sam's Club, to whom it distributes throughout the week and helps promote the brand. UNFI, on the other hand, has been active since 1976 with the slogan *Better Food. Better Future. Better for All*. with 58 distribution centers, it also offers professional services, category management, merchandising, marketing, mobile ordering, delivery alerts, international trade, distribution and military sales. KeHe distributes to more than 20,000 grocery and supermarket retail chains, natural products retail chains, independent food retailers, independent natural products retailers, online retailers, e-commerce merchants and dropshippers, alternative channel retailers, retailers and pharmacies, convenience stores and food service providers. Sysco is one of the largest distributors in the United States and also distributes globally. Earl's Organic Produce buys from local and South American farmers offering 475 seasonal products. Freshpoint is a division of Sysco specializing in natural fruit and vegetables. Harvest Food Distributors offers a wide variety of products and has about 6,000 customers (Buffalo Market, 2022). McLane supplies convenience stores, discount retailers, wholesale clubs, pharmacies, etc. and some of its suppliers are Hershey, Kellogg's and General Mills. Finally, Ace Natural has more than 20 years of experience and has several certificates that guarantee the quality of the products and service it offers.

Furthermore, direct export through the Internet is considered as an alternative. A brief analysis of U.S. supermarkets indicates that they make their purchases directly and even have their own warehouses, replacing intermediaries. Under this premise and considering modern trends, it is efficient and advantageous for companies exporting lupine products to make their sales through the Internet. It facilitates the connection to potential customers beyond the U.S. market. In addition, greater visibility is achieved by not being subject to strategic selection on supermarket shelves. There are some free and paid mechanisms in the search engines that make it possible to give priority visibility to the product. Moreover, customer convenience is key in an online strategy. In addition, thanks to this direct purchase, loyalty and product improvement can be achieved based on feedback from comments. Payments are much more direct, as are the sale and supply of goods. A considerable disadvantage is the necessary competitiveness against several brands. Amazon is one of the most important online marketplaces in the United States thanks to its reliability and geographic spread. A search on this marketplace yields countless lupine products from many parts of the world. There are other online marketplaces such as Walmart Marketplace, Kroger and Thrive Marketplace that, unlike Amazon, offer specialized sales in the food industry.

4.3 Results

Lupin production occurs in some parts of the world and there are more than 300 species with different characteristics in their presentation and alkaloid content, so it is necessary to carry out a process of de-bittering. In Ecuador it is planted in the northern highlands of the country that has some climatic levels, which affect the planting season that takes about a year. It has several health benefits such as lowering blood pressure, glucose and cholesterol, plus it helps with energy and constipation, so it is considered a superfood. It mainly has protein (40%-53%), fiber (9%-15%), calcium (0.11%-0.48%), iron (53 ppm-61 ppm), zinc (39 ppm-92 ppm), fats (15.8%-26.7%) and phosphorus (0.43%). It is produced in the provinces of Chimborazo, Pichincha, Cotopaxi, Carchi, Imbabura, Tungurahua and Bolivar. However, in 2022, its highest production was in Cotopaxi, Chimborazo and Bolívar with a harvest of 3,462 ha, production of 2,576 MT and sales of 2,232 MT according to INEC. An agro-ecological economic zoning study showed that it can occur in other provinces such as Cañar, Loja and Azuay. The price per quintal can vary colossally according to season and zone from $60 to $230 but is usually around $120. Public institutions such as the National Institute of Agricultural Research of Ecuador and the Ministry of Agriculture and Livestock present several articles related to the benefits, importance, technological offerings, symposiums and promotion of the cultivation of chocho from 2014 to 2023. Although lupine or chocho is traditionally consumed as a broth or chocho ceviche, a wide range of products derived from lupine were found in Ecuador: chocho flour, vegetable drink, vegetable meat, chocho snacks, chili with chocho, chocho hummus, chocho protein and chocho cookies. In addition, there are other offers that are not yet produced in Ecuador such as lupine oil, chocho-based ice cream, chocho-based liquid egg or premixes for pizza, waffle, pancake, etc. In other words, there is an advanced technological offer and even more abroad, but the domestic raw material harvest is quite scarce.

The world's largest lupin producer is Australia with about 85% according to the Office of Agricultural Research and Policy in 2008 and according to Tridge the country continues to be one of the largest producers followed by Poland, Russia, Morocco, Germany, Chile, Peru, South Africa, Greece and France. Based on tariff item 121490, which indicates lupine for fodder, the largest importers of lupine in 2022 were China, Japan, South Korea, the United States, Switzerland, the Netherlands, Germany, Canada, France and Belgium, and the largest exporters were the United States, Australia, Spain, Canada, Italy, Romania, France, the Netherlands and Germany, according to Tridge. On the other hand, tariff item 071390, which indicates lupin for consumption, presents in 2022 China, Pakistan, United Arab Emirates, Saudi Arabia and the United States as the main importers and Mozambique, India, Myanmar, United Kingdom and Ethiopia as the main exporters of lupin according to Trade Map. These data indicate that China is the largest importer of lupin either for consumption or fodder and that the United States exports lupin but also imports it, as do France, the Netherlands and Germany. It is important to note that around 86% of Peru's exportable supply of lupin goes to Ecuador.

Eng. Juan Orbe, representative of the Association of Quinoa Producers of Carchi and FEGRANDINOS, states that chocho has a high protein content of 50-52%, but that the harvesting process is long and not very profitable for farmers. He also indicates that planting is laborious because it takes 2 to 3 harvests but does not present much risk. Also, sales are mainly to fresh product traders and are not sold for export or to derivative companies. Eng. Orbe also indicates that sometimes lupine is imported from Peru. In retrospect, cultivation is negative because of its low profitability and the lack of agreements with companies or consumers.

Alimentos Andinos Jaram produces flour from some grains and legumes, such as chocho flour. It obtains a constant supply of lupine from Chimborazo and Tungurahua at prices between $110 and $150 per quintal, always maintaining advisory relationships with farmers to obtain quality material. Its business is solely national, and it is present in 7 provinces of Ecuador. Its representative, Montaña, believes that the three countries analyzed are a good export option, but it is in the process of exporting to the United States. He also highlights the lack of government support as a difficulty for the internalization of their products.

Grandes Foods offers snacks and chocho flour and is expanding its offerings with energy bars and lupine cereals. It also has a direct relationship with farmers without intermediaries, but its representative, Eng. Barba, emphasizes that the company needs to source a year in advance. Grandes Foods sources from Chimborazo, Bolívar, Tungurahua and Cotopaxi at prices of $100, $115 and $120 per quintal. Unlike Alimentos Andinos Jaram, the company exports 90% of its products to the United States to specialized chains such as Whole Foods and some high-end restaurants. The company has relied on private and public organizations. Thanks to its international experience in trade fairs, he considers that Germany would be a good market provided that the product becomes a trend in the European Union and that for South Korea the greatest difficulty would be to communicate the protein benefit of the product to the end consumer. All the interviews carried out highlight chocho for its protein content.

Analyzing the three countries with the selection criteria, it was found that the United States is the best market for exporting. In second place is Germany with a difference of 17 points, which is little compared to South Korea and the United States with 50 points. The United States stood out as a potential market in the following criteria: purchasing power per capita, import volume, import growth, export from the company's country, tariff barriers, geographic proximity, cultural proximity and market size. Germany stood out in tariff barriers, transparency and corruption, legal security and Ecuador-country relations. Finally, South Korea is favorable in economic growth of the country, non-tariff barriers and ease of doing business.

The best form of entry based on internal and external variables is indirect through distributors, but also direct through the internet with the consideration that most supermarkets obtain their products directly and it corresponds to the current digitalized era that offers greater opportunities. Considering the major U.S. ports and cities with greater concern for a healthier diet, the states of California, New York, Virginia, Texas, Florida and Massachusetts are ideal. Specialty stores such as Kroger, Sprouts and Trader Joe's are preferable. It was found that there is currently competition in the market, especially from the Brami brand. However, some of the distributors that can be used are KeHe, Sysco, UNFI, McLane and Buffalo Market. Finally, there is the possibility of online sales through Amazon, Walmart Marketplace, Kroger or Thrive Marketplace.

4.4 Conclusions

To conclude, the current production of lupine or chocho in Ecuador is quite scarce in terms of planting and harvesting of the legume; however, the companies have enough raw material, either from Ecuador or imported, to produce their derivative products. Based on the interviews conducted, the reason for this is the lack of incentive for farmers to harvest and obtain a good profitability. If national lupine production is to be promoted, it is important that companies make agreements with farmers. In addition, it is important to emphasize that farmers are often unaware of the possible alternative uses for lupine, as well as the international interest in superfoods and the possibility of exporting.

There are several products in the current domestic market that do not have much presence and only a few companies are currently exporting their offer. For this reason, it is important to focus marketing on the promotion of chocho derivatives to boost their consumption and consequent export. Similarly, its protein value should be highlighted, indicating that it can enter foreign markets under the category of superfood and promoting its qualities such as glucose-free, lactose-free, organic, vegan, etc. In addition, it has several health benefits that are attractive for consumption. Lupin is a legume with great export potential for the international market, even more than the domestic market. There are some countries that export and import lupin indicating that they do not have enough domestic production to supply their customers but the demand for these products.

Based on the interviews, all countries are favorable for export because of the interest in high protein superfoods. It is important that public institutions continue to promote the planting of chocho, but also that there is greater support for small entrepreneurs. In addition, supply is constant for one company and not for another, which indicates poor distribution and a lack of commercial relationships between potential suppliers and buyers. The initial market to which the companies gravitate is the United States, either because of proximity or because of the size of the market, which in the end is the most opportune.

Based on the selection criteria, the United States is the most favorable country for the export of lupin and its derivatives. It is essential to clarify that Germany and consequently most of the countries of the European Union are a viable entry or second option. Nevertheless, for a company that is just starting to expand and wishes to have certainty of profitability and an open market, the United States should be the first export option. South Korea has very few positive criteria; therefore, if the strategic economic cooperation agreement were to be signed, it would not be as viable due to characteristics such as geographical distance, cultural differences, etc. Considering the growing companies, it is better to take less risks and access markets through intermediaries or distributors, without leaving aside the possibility of expanding through the Internet. This gives you more opportunities in the foreign market. In the same way, it is necessary to opt for specialized markets in the form of entry. Although the legume is harvested in many parts of the world, only a few countries take advantage of its potential supply, which means that there is an open market for competition. Likewise, in the U.S. market there is no boom in lupine products, but there is an established brand (Brami) in some supermarkets. This is beneficial for exporters since there is room for competition and at the same time external brands have opened the way for recognition of the lupine products themselves.

4.5 Recommendations

Finally, it is recommended that this work serve as a guide for MSMEs in Ecuador seeking to enter foreign markets and obtain profitability, since a comparison of three potential markets is made and ways of entering the most viable market are sought. On the other hand, it is recommended that lupine associations and/or producers increase their production under the possibility of establishing permanent relationships with emerging chocho derivative companies. Also, both the export of lupin as a grain and the direct development of a technological offer is considered important following an increase in production. It has been shown that there is currently a wide variety of chocho products available in Ecuador, but it is recommended that this supply be expanded. In addition, there is potential for planting lupin in the southern highlands in provinces such as Cañar, Loja and Azuay. Considering China as one of the largest importers of chocho and the China-Ecuador free trade agreement, it would be intriguing to consider this country as a possible market. In short, the entry into foreign markets should consider offering the products in high-end restaurants. Additionally, it is suggested to introduce the products under the trade name of lupin or lupini instead of the instant translation of lupine. It is also important for companies to seek support from public and private institutions. For future research, the focus should be on promotion or communication campaigns for lupine products. Ultimately, it is recommended to recognize and value that the Ecuadorian land offers an exuberant amount of raw material, which can be exploited and transformed into an infinity of products highly appreciated in foreign markets.

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APPENDIX

Appendix A

Production of chocho INEC 2022

Región y Provincia	SUPERFICIE (Ha)		PRODUCCIÓN (Tm)	VENTAS (Tm)
	Sembrada	Cosechada		
TOTAL NACIONAL	**4,124**	**3,462**	**2,576**	**2,232**
REGIÓN SIERRA	4,124	3,462	2,576	2,232
REGIÓN COSTA				
REGIÓN AMAZÓNICA				
REGIÓN SIERRA				
AZUAY	25	25	5	
BOLÍVAR	179	179	288	270
CAÑAR				
CARCHI	107	107	25	19
COTOPAXI	1,979	1,430	1,119	943
CHIMBORAZO	1,449	1,345	902	773
IMBABURA	281	273	129	120
LOJA				
PICHINCHA	47	47	47	47
TUNGURAHUA	57	57	63	61
SANTO DOMINGO DE LOS TSÁCHILAS				
REGIÓN COSTA				

EL ORO				
ESMERALDAS				
GUAYAS				
LOS RÍOS				
MANABÍ				
SANTA ELENA				
REGIÓN AMAZÓNICA				
MORONA SANTIAGO				
NAPO				
ORELLANA				
PASTAZA				
SUCUMBÍOS				
ZAMORA CHINCHIPE				

FUENTE: ESPAC – 2022
NOTA TÉCNICA: El cultivo registrado en la presente tabla no es de publicación, la información se obtiene a través de una encuesta por muestreo, razón por la cual, los errores asociados a las estimaciones de los productos no publicados por la ESPAC pueden ser altos y algunos van perdiendo su nivel de representatividad, por lo que se recomienda manejar la información provista con mucha prudencia.

Appendix B

Interview and Letter of Responsibility 1

Entrevista #1
Planta Procesadora de Granos de Carchi
FEGRANDINOS y Asociación de Productores de Quinua de Carchi
Ing. Juan Orbe

1. ¿Cuál es el proceso que se realiza?
Llega el producto ahí fresco en una zaranda luego se le hace el secado. El secado demora dependiendo del grado de humedad que está el producto, entre más o menos 6-8 hasta 10-12 hrs. Entonces luego dependiendo del producto en las condiciones que viene y queda porque hay productos que póngase la

cebada viene con cebadilla o avena negra que le dicen toca hacer otro proceso. Al lado hay otro galpón que es de la federación. La federación constituye 5 asociaciones que son tres de Carchi y dos de Imbabura. En este tenemos otras zarandas igual de pre-limpieza, una mesa de simétrica, la mesa de simétrica qué quiere decir que le selecciona por peso a los grados. Hay una despedradora que saca las piedras. Luego de esto pasa un selector óptico, del sector óptico se le saca los granos de otro color o así como la quinua es blanca solo se le programa para que saque los granos negros porque a veces viene con nabo y el nabo es negro. Igualmente en el chocho, el chocho lo que se le pasa la primera zaranda en el galpón que es de la federación se le pasa la zaranda de pre-limpieza, la mesa de simétrica y ahí ya salen todos los más chupados los que están como vanos toda la basura ya sale y luego éste se le pasa directamente al selector óptico. En el selector óptico se le saca, bueno dependiendo la época, si le coge época lluviosa le salen manchados un poquito negros así pues ahí le vas a sacar. Entonces cuando no le coge la lluvia en la temporada de cosecha entonces ahí le sale bueno y casi la mayor parte sale solo buena. Si le fueran a hacer algún tipo de proceso estaban creo que sacando la para hacer leche materna creo que estaban haciendo entonces ahí no creo que habría problema (grano negro).

2. ¿Qué conoce usted acerca del chocho?

A ver los usos principalmente que tomar en cuenta que tiene un alto grado nutricional que no se lo compara con ningún otro producto casi porque está en el 50 52% me parece de proteínas es un alto contenido proteínico por eso es que se lo utilizaba desde los incas lo utilizaban este producto el chocho para su alimentación diaria se lo consumía. Aquí lo que es en el país lo que más se lo consume es en fresco, se lo cocina, se lo des amarga y se lo consume. Entonces por eso que también le complementaron la dieta con el tostado porque e chocho solo no tiene un aminoácido que la tiene el tostado pues por eso lo complementaron y cuando se use se sirve un chocho con unos tostados es con alto valor nutricional. De ahí de lo que se sabe que lo que en otros países estaban haciendo un poco de suplementos alimenticios

3. ¿Cómo es el proceso de cosecha y cuánto tiempo demora?

Bueno desde que usted lo siembra o más o menos demora de 7 a 8 meses, es un poquito medio largo por eso que es un poquito más restringido a la hacienda la gente no lo quiere sembrar por lo que es un poco muy largo el ciclo. La otra que no es bonito la comercialización porque siempre el agricultor lo que quiere es vender su producto rápido y recuperar su inversión y tener su utilidad. Por eso es un poquito medio complicado la siembra, no quiere no más el agricultor sembrar. El agricultor siembra siempre y cuando ya tiene un precio fijo, un precio estable, más que todo por las labores culturales que toca hacer. Entonces como le dije desde que se siembra se demora entre 7 y 8 meses hasta que usted lo coseché y

4. ¿Cuáles son los meses ideales para la siembra?

La siembra tiene que hacer bueno dependiendo acá en la zona nuestra como la época lluviosa comienza desde octubre noviembre diciembre. Entonces la siembra en las primeras lluvias que hay no entonces se proyecta para que salga la cosecha al momento que estará verano que comienza Julio y agosto. Se proyecta así para que no haya inconvenientes en el verano cuando ya está listo para que no les coja la lluvia y no se dañen no haya problemas de pudrición de grano. Entonces usted lo siembra de ahí tiene que hacer durante el ciclo unas 3 fumigaciones, una des hierba y un aporque.

5. ¿Cuáles son los riesgos en la cosecha de la leguminosa?

Los riesgos que le caigan las lluvias y se pueda dañar y se empieza a pudrir. las lluvias cuando recién se lo siembra a los 8 días hay que fumigar, porque puede haber problemas de germinación hasta incluso el 0%.

6. ¿Cuánto produce al año (hectáreas) y cuál es el costo de producción?

El costo de producción no sabría porque como ya no hemos sembrado nosotros. Acá en Carchi que estará unas 20-30 ha no se siembra a lo mucho, la gente no siembra como le digo porque no tiene un mercado fijo y un precio constante. Porque al haber un precio constante la gente se incentivaría más a sembrar este producto, más por el hecho que es un poquito laborioso la cosecha. La gente a veces no lo quiere sembrar porque usted tiene que pensar que no madura todo igual porque a veces está una parte ya está seco y todavía en la parte alta está aflorando. Toca a veces hasta 2-3 cosechas.

7. Quienes son sus compradores y a que precios se venden según su categoría?

Ahorita más o menos varía, el precio varía de acuerdo, hay años en los que se siembran más o a veces viene producto peruano. creo que viene un poco de producto. Por ahorita estaba 120- 130 el quintal este año. La mayoría lo lleva para revender para los que hacen consumo fresco, no se tiene una empresa que este comprando directamente si lo habría fuera mucho mejor para que la gente se incentive y se vende directamente

7. ¿Conoce de alguna asociación de chocho?

No, la verdad no.

8. ¿Tal vez han exportado el chocho?

No, no se ha sabido pues.

9. Usted creería que la exportación sería rentable?

Todo dependería del precio, si hubiera un buen precio, viendo ahorita cómo están los costos de producción y si así hubiera la rentabilidad para el agricultor, si fuera bueno.

10. ¿Ha notado que habido un crecimiento o decrecimiento en la producción del chocho?

Más bien de decrecimiento por la falta de compra y un precio fijo.

A un precio que sea rentable para el agricultor, porque cuando baja hasta 60$ ya no es tan rentable.

¿Qué tan sostenible considera usted la producción de chocho?

Bueno si le tomamos el punto que si el agricultor no va a utilizar nada no va a invertir y sea sólo la siembra y quiere cosechar sí va a haber un desgaste del suelo no pero siempre hay que tomar en cuenta que una agricultura buena y siempre hay que reponer al suelo no solo sacar sacar sacar sino que también devolver.

¿Considera algunos de estos 3 países: Estados Unidos, Alemania o Corea del Sur un buen país para exportar el chocho?

Tal vez sí haciéndolo conocerla, aunque sí tal vez Estados Unidos. Haciendo conocer o sea el valor proteico que viene no, el valor nutricional que tiene entonces ahí se puede abrir puertas desde un mercado con el exterior.

Bolívar, 6 de mayo del 2024

CARTA DE RESPONSABILIDAD

Yo, Juan Carlos Orbe Jiménez, con CI 1002540332 representante de Asociación de Productores de Quinua del Carchi, ubicada en el Cantón Bolívar de la provincia del Carchi, autorizo el uso de la información brindada en la entrevista realizada por parte de la estudiante de la Universidad del Azuay, Evelyn Estefania Espinoza Avila, con cédula de identidad 0105851927, con fines especificamente académicos e investigativos para la realización de su tesis de grado titulada "Análisis de factibilidad para la exportación de los productos derivados del lupino de origen ecuatoriano como un superalimento hacia Alemania, EE.UU. y Corea del Sur".

....

Nombre: Juan Carlos Orbe

CI: 1002540332

Appendix C

Interview and Letter of Responsibility 2

Entrevista #2
Alimentos Andinos Jaram
Freddy Montaña

1. ¿Cuál ha sido su experiencia en la transformación del chocho? ¿Desde qué año produce?

Buenos días, mi nombre es Freddy Montaña, yo me dedico a la producción de valor agregado al chocho. Vale recalcar que nosotros vamos desde la producción, desde la siembra en asociación con agricultores de las zonas altoandinas del Ecuador. Ellos nos venden la materia prima, siembran más bien bajo nuestra asesoría técnica y bajo nuestro requerimiento no para tener una materia pima de calidad. Y nosotros acá le transformamos en una harina instantánea. Eso aproximadamente lo estamos haciendo desde el 2016 hasta la fecha. Este la experiencia nuestra con el chocho ha sido muy buena ha tenido muy buena aceptación a nivel nacional, es uno de los productos estrella que tenemos. Se comercializa a través de tiendas naturistas y supermercados.

2. ¿Qué productos produce y ha considerado expandir su oferta?

Si, nosotros producimos lo que bueno eh para valga la redundancia la harina de chocho, quinua, harina de quinua, harina de maca, amaranto instantáneo pulverizado y de ahí hemos elaborado algunas fórmulas como es un súper 7 donde van todos estos súper alimentos y también una maca y quinua. Hoy en día también estamos incorporando lo que sería la soya y tenemos una fórmula especial también que es con maca y quinua.

3. ¿Qué tan fácil es para usted conseguir la materia prima y cuánto le cuesta?

Este la materia prima es constante como lo repito tenemos asociación con productores no tenemos ningún problema en la adquisición de la materia prima. El precio es fluctuante está siempre entre 110 y 150 USD el saco. En este caso, en nuestro país tenemos varios pisos climáticos por eso nosotros nos hemos asegurado directamente con los agricultores para hacer siembras en diferentes fechas y no tener el problema de faltante de materia prima.

4. ¿De qué provincias consigue la materia prima?

Principalmente del Chimborazo y provincia de Tungurahua.

5. ¿La demanda local es importante para su giro de negocio?

Si, es muy importante el mercado nacional. Nos hemos enfocado a eso hasta poder conseguir estos clientes realmente interesados o que nos puedan comprar en el exterior. Hemos mandado muestras a Estados Unidos, hemos hecho también la tramitología para registrarnos en la FDA y tenemos este ya el registro de la FDA, esperamos pronto poder conseguir clientes del extranjero.

6. ¿A nivel nacional sabe en qué provincias o qué ciudades se encuentra su producto?

Claro que sí, estamos en la provincia del Guayas, Azuay, Cañar, Loja, Morona Santiago, Orellana y pues en Napo también. Estamos tratando de expandir lo que sería la provincia de Pichincha.

7. ¿Qué tan sostenible considera usted que es la producción del chocho?

Es sostenible, es sostenible en el tiempo es una producción ancestral que se lo viene haciendo ya desde tiempos milenarios pienso acá en el país y pues creemos que va a seguir aumentando la producción. Con el trabajo que venimos haciendo no solamente yo en mi empresa sino que hay algunas otras empresas también que están entrando a este rubro.

8. ¿Ha participado en algunas ferias? ¿En cuáles?

Si he participado en ferias nacionales nada más. Por el momento estamos tratando de este año o el próximo participar en alguna feria internacional. Por ejemplo acá en Cuenca recientemente participamos en la feria Amor por Cuenca este 12 de abril participamos en tres lugares.

9. ¿Qué potencial ve usted en la exportación del chocho y sus productos derivados?

Muchísimo potencial, muchísimo potencial es una proteína extraordinaria, libre de transgénicos sobre todo y tiene muy buena aceptación por nacionales y extranjeros.

10. ¿Considera que Estados Unidos es un buen mercado para exportar el chocho? ¿Por qué?

Por supuesto, en Estados Unidos existe una comunidad vegetariana vegana que demanda mucho este tipo de proteínas.

11. ¿Considera que Alemania es un buen mercado para exportar el chocho? ¿Por qué?

Por supuesto, mucho mejor que Estados Unidos porque el extranjero tiene algunas deficiencias. Es intolerante al gluten y ellos están buscando reemplazar un producto altamente proteico libre de gluten. Y al ser libre de gluten, libre de transgénicos y si es posible en el futuro podamos sacar la certificación orgánica será mucho mejor aceptado en la comunidad europea.

12. ¿Considera que Corea del Sur es un buen mercado para exportar el chocho? ¿Por qué?

Si si, por supuesto también es un es un mercado potencial que obviamente es más difícil se podría decir porque sus estándares de calidad son bastante altos. Bueno tanto como para Europa y Corea del Sur.

13. ¿Qué dificultades ha encontrado en el camino?

Pues las mayores dificultades es la falta de apoyo estatal. O sea nosotros trabajamos solos se podría decir no hemos tenido créditos que realmente nos apoyen o que esté nos den un aliento para emprender lo hemos descubierto solos y solos estamos marchando.

Cuenca, 17 de abril 2024

Yo, Freddy Montano, representante de Alimentos Andinos JARAM, autorizo el uso de la información brindada en la entrevista realizada por parte de la estudiante de la Universidad del Azuay, Evelyn Estefania Espinoza Avila, con cédula de identidad 0105851927, con fines específicamente académicos e investigativos para la realización de su tesis de grado titulada "Análisis de factibilidad para la exportación de los productos derivados del lupino de origen ecuatoriano como un superalimento hacia Alemania, EE.UU. y Corea del Sur".

CI 0104126214

Appendix D

Interview and Letter of Responsibility 3

Entrevista #3
Grandes Food
Ing. Jorge Barba

1. ¿Cuál ha sido su experiencia en la transformación del chocho?

A ver para nosotros ha sido importante la investigación, debido a que en nuestro país únicamente el consumo del chocho se ve reflejado a lo que es el consumo de la leguminosa porque el chocho es una leguminosa en estado fresco no. O sea es el típico chocho que usted lo ve blanco y se lo come en la calle con tostado o en un cevichocho. Entonces ese es el común denominador que la gente lo conoce y lo consume en el país, pero para nosotros ha sido importante poder investigar más y saber que en realidad lo pueden consumir y ya en manera de un concentrado porque en sí un grano de chocho contiene un 60% de agua y 40% digamos de nutrientes entonces al nosotros ya consumir una harina ya no estamos consumiendo agua sino netamente ya estamos consumiendo lo que queremos que nos aporte no. En este caso el chocho nos aporta de proteína es el super food con mayor contenido de proteína estamos hablando sobre el 50%. También contiene 9 de los 9 aminoácidos tiene alto contenido de calcio y hierro. Entonces como digo al consumirlo tanto en polvo como en snacks deshidratados que también nosotros tenemos y comercializamos, es justamente dar un mayor aporte a lo que es la nutrición y darle un nuevo concepto a lo que es el consumo.

2. ¿Ha considerado también expandir su oferta en cuanto a producir otros productos derivados del chocho?

Si nosotros tenemos un departamento con el cual estamos desarrollando algunas ideas tanto en las proteínas sin sabor hemos hecho también proteína con diferentes sabores por ejemplo de fresa, chocolate, vainilla, capuchino. Entonces es para hacer una bebida instantánea en la mañana usted abre el sobre lo coloca sobre agua sobre leche y usted ya tiene un batido de alto contenido de proteína. También hemos desarrollado bebida a base de chocho, también barras energéticas con chocho como principal fuente de proteína. También hemos trabajado en algo de cereales para el consumo en la mañana con leche similar a lo que sería un conflix. Entonces sí tenemos algunas ideas algunos desarrollos que están pendientes

3. ¿Cuáles son los certificados o reconocimientos actuales que tiene en sus productos de chocho?

Claro nosotros para garantizar el tema de la calidad y principalmente para que nuestros clientes estén igual tranquilos sepan que nosotros cumplimos con todos los estándares tenemos certificaciones en el tema alimentario como HACCP justamente es el análisis y control de puntos críticos. también tenemos certificaciones como Vegano un producto vegano un producto libre de gluten, gluten free también un producto que es libre de transgénicos tengo esta certificación también y como somos exportadores también nosotros nos cuidamos la espalda con la certificación BASC que principalmente eso es para tener un negocio seguro y evitar que nos contaminen de droga los contenedores .Entonces manejamos esas certificaciones y también estamos en proceso implementando nuevas certificaciones más altas internacionales, como es FSSC 22000. para un producto un cliente nos solicitó que saquemos la certificación kosher que es también importante para los mercados entonces en realidad nosotros tenemos la capacidad y la versatilidad de poder certificar todo lo que nos pida los clientes.

4. ¿Qué tan fácil es para usted conseguir la materia prima y cuánto le cuesta?

La cadena digamos de abastecimientos es un punto crítico en este negocio porque chocho se lo produce solo una vez al año entonces sí es que usted va a producir necesita aprovisionarse el año anterior de lo que es esta materia prima. Más o menos los meses de cosecha van desde octubre hasta diciembre entonces si usted tiene proyectado un mercado para unas ventas para el siguiente año usted tiene que comprar en esos 3 meses para que usted pueda provisionar. Y si en realidad el precio del quintal es variable, ha habido años en los cuales se ha comprado el quintal en 100 USD. este año estuvo más altos se compró en 115 120 USD la materia prima

5. ¿Cómo es la relación con los productores de chocho? ¿Quiénes son?
Sí tenemos muy buena relación porque nosotros tenemos un técnico en campo el cual está siempre asesorando lo que son temas de buenas prácticas agrícolas y también buenas prácticas ambientales que eso es lo que nosotros nos interesa que los productores siembren y produzcan este chocho que nosotros les vamos a comprar y que estos vengan en buenas condiciones. Entonces tenemos buenas relaciones con ellos siempre estamos en contacto estamos en contacto con nuestros técnicos y al final nosotros compramos la producción de esta manera eliminamos lo que son los intermediarios. hacemos una compra directa para los agricultores con los cuales ellos se ven beneficiados. Nosotros compramos a 3 o 4 provincias del Ecuador. En orden de importancia o volumen hablamos de Chimborazo, Bolívar, Tungurahua y Cotopaxi son provincias con bastantes hectáreas de producción que nosotros estamos comprando.
6. ¿La demanda local es importante para su giro de negocio?
La verdad es que no es por el momento no es tan grande la demanda local. Puedo hablar que actualmente estamos con un 90-10, 90% de exportación y 10% para mercado local.
7. ¿A qué países exporta actualmente y por qué? ¿A dónde desearía expandirse?
Actualmente estamos exportando hacia Estados Unidos, es nuestro único cliente en el exterior, por el momento. Siempre nosotros queremos ampliar nuestra oferta, estuvimos participando hace 3 semanas la feria alimentaria más importante que es en Barcelona estuvimos ahí con el pabellón de Fedexpor, 15 empresas ecuatorianas entonces ahí nosotros estuvimos dando a conocer el producto a base de chocho.
8. ¿Qué potencial ve usted en la exportación del chocho y sus productos derivados?
Bastante potencial, fue una buena vitrina que tuvimos en la feria en Barcelona hace 3 semanas porque actualmente la gente está buscando fuentes de alto contenido de proteína. entonces varias empresas por allá que se encargan de formular alimentos nos vieron a nosotros como una fuente importante en el aporte de proteína versus otras fuentes. hablemos de la soya tiene un 35% de proteína el chocho tiene 50%. Entonces desde ahí vamos con el tema de contenido de proteína, igual para que tenga una idea, la lenteja que es otra fuente de proteína para las personas que son veganas, vegetarianas, encuentran un 30% de proteína entonces como digo versus el chocho. El chocho es el super food que está encabezando el contenido de proteína. Y también se acercaron gente relacionada a la industria farmacéutica porque ya saben, hay bastantes estudios que se ha demostrado que el consumo regular de chocho regula el contenido de azúcar en la sangre entonces eso es un boom es algo muy importante para las personas que están en grados iniciales de diabetes, les ayuda a controlar el azúcar entonces ya se está poco a poco en el mundo se están dando a conocer más beneficios del chocho, pero como digo nuestra oferta no es un chocho fresco, el chocho que usted se lo come en la calle, si no estamos hablando de algo concentrado, algo que ya está en otro nivel no. Usted se coma una cucharada del polvo de chocho de proteína equivalente a que usted se esté comiendo unas 3-4 cucharadas del chocho fresco. que lo que usted se está comiendo es agua netamente se está comiendo más agua que el alimento entonces al eliminar ya el agua usted está comiendo algo concentrado
9. ¿Qué tan sostenible considera usted que la producción del chocho?
Nosotros nos estamos encargando a nivel local de que este cultivo sea algo ya sostenible porque a nosotros tener mayor demanda a nosotros de abrir más mercados estamos dando la oportunidad a más agricultores a que se unan a esta cadena. entonces ya ellos se han visto beneficiados directamente de lo que es venderle a un exportador su materia prima y dejar de pagar a intermediarios que son los que principalmente les afectan a ellos. Entonces se ve bastante bueno el panorama para que sigan creciendo nosotros como digo incentivamos hablamos de un peso justo por un precio justo. Entonces hemos también participado con el gobierno, se pudo entre lo

que es la empresa privada, gobierno y agricultores un kit, que el gobierno les pueda entregar un kit para que siembren chocho de una hectárea entonces eso a ellos le va a ayudar totalmente a subir los rendimientos de lo que es el cultivo. Entonces al ver ellos que ya no van a cultivar solo 10 quintales sino lo que eran 10 quintales ahora se les va a convertir en 20 quintales, 25 quintales ellos van a ver que totalmente es más rentable ahora sembrar chocho y de esa manera nosotros también garantizar materia prima para nuevos mercados que estamos queriendo incursionar no.

10. ¿Considera que Alemania es un buen mercado para exportar el chocho? ¿Por qué?

Yo creo que sí es que se van haciendo acercamientos puede ser un importante mercado porque en sí todo lo que es la unión europea al enterarse o al ver que ya siendo tendencia un producto ahí pueden expandirse ellos también. Entonces hemos participado en años anteriores en la feria más importante de Alemania que es Anugar. Es la feria más importante de allá de alimentos, pero en realidad no ha habido ese cliente de Alemania que esté en este momento interesado o estemos exportando con ellos no. Entonces si es que se da el caso se consigue allí algún acercamiento con algún mercado potencial de Alemania entonces nosotros estaríamos gustosos también de poder ofrecer el producto para allá.

11. ¿Considera que Corea del Sur es un buen mercado para exportar el chocho? ¿Por qué?

Considero que sí, tenemos cada vez más preguntas, nos están haciendo llegar requerimientos de Corea. Entiendo que entiendo que allá ya suena el tema. Normalmente en Europa y bueno en Estados Unidos igual lo conocen como lupini, si usted lo busca como chocho es algo más local acá ya entonces si usted lo busca como lupini y lo puede comprar a nivel más global, pero Corea sí nos ha hecho algunas preguntas algunos acercamientos. Entiendo que les llegó alguna información y están ellos buscando esta fuente de proteína por allá también. Se considera un mercado interesante que está sonando por allá ese tema.

12. ¿En dónde se encuentran sus productos en el exterior?

Sí en realidad nuestro cliente de Estados Unidos tiene posicionado en las cadenas grandes especializadas en temas de alimento y nutrición. por ejemplo está en Whole Foods, están en restaurantes o en cadenas también de alta gama, alta categoría en Estados Unidos el producto.

13. ¿Con qué reglamentación de importación en el exterior se encontraron?

bueno nosotros como exportamos los Estados Unidos nosotros nos regimos a los documentos y la información que nos pide la FDA que principalmente es para para Estados Unidos. Entonces enviamos nuestros contenedores nuestros embarques en base a lo que allá pueden solicitar la FDA para la liberación del producto.

14. ¿Sabe a qué parte de los Estados Unidos llega al producto?

Puede llegar a diferentes partes pero entre las principales está llegando a California.

15. ¿Qué tan rentable considera que es la exportación del producto?

Obviamente como todo negocio usted tiene que analizar si es que si es que cumple los márgenes que usted espera de rentabilidad. En un negocio creo que nadie h exporta para perder no, entonces como todo negocio uno se tiene que proyectar, ver un margen requerido que sea atractivo para su empresa y también que esté dentro de lo que puede generar una demanda porque si usted puede poner un precio inalcanzable créame que ni siquiera lo van a tomar en cuenta o no lo van a comprar entonces siempre tiene que estar alineado el tema de la rentabilidad con todos sus procesos, con el mercado, qué es lo que piden qué es lo que están pagando. entonces si hablamos de una exportación es porque existe una rentabilidad que es lo que espera toda empresa al hacer cualquier negocio

16. ¿Qué dificultades ha encontrado en el camino?

Por lo pronto como digo es que se vaya conociendo más los beneficios, que se pueda trascender un poco más en el tema de Europa y Asia los beneficio. He tenido reuniones con gente de Japón con gente de China y me dicen es demasiado interesante tu producto, pero como puedo introducir acá en mi país o cómo hago que la gente se entere y lo pueda consumir. Entonces ese es como que el desafío, la barrera, sabemos que tenemos un producto ganador sabemos que tenemos una fuente de proteína sabemos que tenemos un producto que en realidad era considerado como el alimento de los dioses en el pasado no esto lo consumían los incas. entonces ellos ya sabían realidad de las propiedades que tenía en este caso el chocho

17. ¿En qué instituciones públicas o privadas se han apoyado en el proceso de exportación?

Pues más que para el proceso de exportación nosotros tenemos buenas relaciones con obviamente con lo que es Pro Ecuador, el ministerio de la producción, tenemos buenas relaciones con lo que es Fedexpor porque es la federación ecuatoriana de exportadores creo que con ellos todo lo que ha sido el tema comercial uno puede apoyarse en estos aspectos.

Nindalgo
EXCELENCIA E INNOVACIÓN

Quito, 11 de abril de 2024

Yo, Ing. Jorge Barba, representante de la empresa Nindalgo, autorizo el uso de la información brindada en la entrevista realizada por parte de la estudiante de la Universidad del Azuay, Evelyn Estefania Espinoza Ávila, con cédula de identidad 0105851927, con fines específicamente académicos e investigativos para la realización de su tesis de grado titulada "Análisis de factibilidad para la exportación de los productos derivados del lupino de origen ecuatoriano como un superalimento hacia Alemania, EE.UU. y Corea del Sur".

Firmado electrónicamente por:
JORGE LUIS BARBA SANCHEZ

Ing. Jorge Barba
Gerente General
Nindalgo S.A.