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Análisis competitivo de la actividad productiva de la malanga: un enfoque basado en la teoría de Michael Porter

Competitive analysis of the taro productive activity: an approach based on the Michael Porter´s theory

Análise competitiva da atividade produtiva da malanga: uma abordagem baseada na teoria de Michael Porter

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Resumen

Esta investigación tuvo como objetivo desarrollar un análisis competitivo de la actividad productiva de la malanga o *Colocasia esculenta*, a través de la teoría de Michael Porter, para conocer su situación estratégica y competitiva desde la perspectiva del agricultor mexicano debido a que en la revisión literaria no se encontró ningún análisis similar en esta actividad productiva. La metodología radicó en un estudio cualitativo con alcance exploratorio. La manera como se diseñó esta indagación se resume en cuatro pasos metodológicos con un enfoque basado en la teoría de Porter. El primer paso consistió en la recolección de información proveniente de fuentes secundarias, especialmente de un proyecto de investigación realizado en Veracruz, Tabasco y Oaxaca en 2016. Asimismo, se empleó información estadística de diversas bases de datos (como SIAP, USDA y STATCAN), a la cual se le dio un tratamiento y clasificación de acuerdo con las cinco fuerzas competitivas (segundo paso), diamante (tercer paso) y posicionamiento de Porter (cuarto paso). El análisis competitivo basado en la mencionada teoría fue desarrollado por un equipo multidisciplinario de investigadores para enriquecer y retroalimentar el estudio, de modo que se pudieran obtener resultados específicos de la actividad productiva. En las cinco fuerzas competitivas se encontró que la malanga mexicana se cultiva para ser exportada casi en su totalidad a Canadá y a Estados Unidos, por lo que sus principales competidores son productores y exportadores de otros países. La amenaza de nuevos participantes y el poder de los compradores son elevados, por lo que existe la posibilidad de que la malanga mexicana sea sustituida por la de otros países, especialmente cuando la competencia se basa en precios bajos. Por esa razón, la rivalidad entre los competidores existentes es alta. Los determinantes del diamante de Porter muestran que existen oportunidades y retos tanto en el mercado nacional como en el extranjero, pero bajo condiciones de incertidumbre debido, principalmente, a que será modificado el Tratado de Libre Comercio de América del Norte, lo cual afectaría al sector agrícola en general. Para finalizar se señala un posicionamiento circunstancial no definido. Las conclusiones indican que esta actividad productiva tiene un potencial para contribuir a la economía y a la creación de empleos. Actualmente, no se posee una estrategia genérica establecida, pero involuntariamente esta actividad compite con precios bajos sin ninguna diferenciación. La situación competitiva se percibe vulnerable de acuerdo con el análisis realizado, por lo que es vital que se logre cooperación,

formalización y vinculación entre los actores tanto de forma horizontal como de manera vertical, para lo cual se requiere la participación del gobierno, las instituciones académicas y de investigación, así como otras organizaciones que se encuentran en la región para poder competir globalmente.

Palabras clave: estrategias, productores, sector agroalimentario, taro.

Abstract

This research aimed to develop a competitive analysis of the productive activity of taro or *Colocasia esculenta* through Michael Porter's theory to know its strategic and competitive situation from a Mexican farmer's perspective. This is because throughout the literary review, we did not find any analysis related to this activity. The methodology was based on a qualitative study with exploratory scope. The way this study was designed is summarized in four methodological steps with an approach based on Porter's theory. The first step was the collection of information from secondary sources. The main source of information comes from a research project carried out in Veracruz, Tabasco and Oaxaca during 2016, as well as statistical information from various databases such as SIAP, USDA and STATCAN. All this information was given a treatment and classification according to the five competitive forces (second step), diamond (third step) and positioning of Porter (fourth step). The competitive analysis based on the aforementioned theory was carried out by a multidisciplinary team of researchers to enrich and feedback the study, obtaining specific results of the productive activity. In the five competitive forces is found that the Mexican taro is grown to be exported almost entirely to Canada and the United States of America (USA), so its main competitors are producers and exporters from other countries. The threat of new participants and the power of the buyers is high, with the possibility the Mexican taro is replaced by another from another country, especially when the competition is based on low prices. For that reason and for other factors the rivalry between existing competitors is high. The determinants of Porter Diamond show that there are opportunities and challenges both in the domestic market and abroad, but under conditions of uncertainty. Mainly because the NAFTA (North American Free Trade Agreement) will be modified, which would affect the agricultural sector in general. Finally,

a non-defined situational positioning is indicated. The conclusions indicate that this productive activity has the potential to contribute to the economy and job creation. Currently, there is no established generic strategy, but involuntarily this activity competes with low prices without any differentiation. The competitive situation is perceived as vulnerable according to the performed analysis. Therefore, it is vital that cooperation, formalization and linkage between stakeholders be achieved horizontally and vertically. Adding a synergy with the government, academic and research institutions as well as other organizations in the region to compete globally.

Keywords: Strategies, producers, agro-food sector, taro.

Resumo

Esta pesquisa teve como objetivo desenvolver uma análise competitiva da atividade produtiva de taro ou Colocasia esculenta, através da teoria de Michael Porter, para atender a sua situação estratégica e competitiva a partir da perspectiva de agricultores mexicanos porque na revisão da literatura não Nenhuma análise semelhante foi encontrada nesta atividade produtiva. A metodologia foi baseada em um estudo qualitativo com escopo exploratório. A maneira em que esta pesquisa foi projetada é resumida em quatro etapas metodológicas com uma abordagem baseada na teoria de Porter. O primeiro passo foi a recolha de informações a partir de fontes secundárias, especialmente de uma investigação conduzida em Vera, Tabasco e Oaxaca em 2016.Asimismo, informação estatística de vários bancos de dados (como PAIS, USDA e STATCAN) foi usada, que recebeu tratamento e classificação de acordo com as cinco forças competitivas (segunda etapa), diamante (terceira etapa) e posicionamento de Porter (quarta etapa). A análise competitiva baseada na teoria supracitada foi desenvolvida por uma equipe multidisciplinar de pesquisadores para enriquecer e subsidiar o estudo, para que resultados específicos da atividade produtiva pudessem ser obtidos. Nas cinco forças competitivas descobriram que o taro mexicano é cultivado para ser exportado quase inteiramente para o Canadá e os Estados Unidos, portanto, seus principais concorrentes são produtores e exportadores de outros países. A ameaça de novos participantes e o poder dos compradores são altos, então existe a possibilidade de que o taro mexicano seja substituído por outros países, especialmente quando a competição é baseada em preços baixos. Por essa razão, a rivalidade entre os concorrentes

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existentes é alta. Os determinantes do diamante de Porter mostram que existem oportunidades e desafios tanto no mercado interno quanto no exterior, mas sob condições de incerteza, principalmente devido à modificação do Acordo de Livre Comércio da América do Norte, que afetaria o setor. agrícolas em geral. Finalmente, um posicionamento situacional não definido é indicado. As conclusões indicam que essa atividade produtiva tem potencial para contribuir para a economia e para a geração de empregos. Atualmente, não existe uma estratégia genérica estabelecida, mas involuntariamente esta atividade compete com preços baixos, sem qualquer diferenciação. A situação concorrencial é percebido vulneráveis de acordo com a análise, por isso é vital que a cooperação, formalizando e ligação entre os intervenientes tanto horizontalmente quanto verticalmente, para os quais é necessário o envolvimento do governo a ser alcançado, as instituições acadêmicos e de pesquisa, bem como outras organizações que estão na região para competir globalmente.

Palavras-chave: estratégias, produtores, setor agroalimentar, taro.

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Introduction

The knowledge of an industry or productive activity in the globalized world is of vital importance to compete in the markets with which the companies interact, so they must formulate competitive strategies that allow them to link them with their environment. However, to understand both the context and the competence of the companies, it is necessary to evaluate the "industry", the basic unit of analysis that takes a set of rival organizations that compete with each other (Porter, 2015).

However, in the specific case of the Mexican agri-food sector there are few structural analyzes that focus on competitiveness. One of the documents that offers a general idea of the Mexican agri-food sector is the Official Gazette of the Federation (Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food [Sagarpa], 2013). In the diagnostic section there is a stagnation in productivity, competitiveness and profitability, which means that most of the rural economic units are subsistence and self-consumption, which also indicates a high rate of rural poverty.

This document, however, can not be used to group all agricultural products, since each industry has particular characteristics (Porter, 2015). In this case, no reference is made to a specific industry, but to the productive activity of taro or Colocasia esculenta, on which a literary revision was made in which no structural or competitive analysis was made in Mexico, although some general data - such as the value of production in Mexican pesos, the prices per ton and the volume of production harvested in tons- indicate that between 2010 and 2015 there has been great variability in the productive activity of this product (Look at annex 1). This literary void, consequently, has served to pose as objective a competitive analysis of the productive activity of the taro through Porter's theory, so that one can know the strategic and competitive situation of this item from the perspective of the farmer Mexican.

As this is one of the first studies focused on the productive activity of Mexican malanga, not enough specialized literature or sufficient information has been found. Therefore, we have chosen to develop a qualitative research process in which an initial hypothesis has not been established to be statistically proven (Hernández, Fernández y Baptista, 2014).

This is possible because there are different ways of structurally examining the productive activity of the taro. A structural analysis, for example, can be carried out using the theory of Encaoua and Jacquemin (1980), which focuses mainly on the type of demand, the differentiation of products and, mainly, the degree of concentration. Likewise, Scherer and Ross (1990) show that a broader study can be made taking into account aspects such as differentiation, barriers to entry, cost structure, vertical integration, the conglomerate structure, as well as the number of sellers and buyers On the other hand, Bueno (1996) tries to update the structural analysis basing it primarily on current competition, potential competition and negotiation with frontier agents. However, and in spite of this variety, in this research the theory of the competitive advantage of the nations of Porter (1990) has been chosen due to the importance it has recently had in involving a large number of countries, industries and researchers, which use this methodology with the intention of comparing and arriving at more concrete results.

Theoretical framework

Definition of strategy

Currently, there are several definitions of strategy, one of which is offered by Hofer and Schendel, (1978), who consider it as "a fundamental pattern of deployments of current and planned resources and environmental interactions that indicates how the organization will achieve its objectives" (p.14) This type of classical conceptions, however, have been changing over the years due to the questionings generated by several experts, which has caused a loss in its theoretical rise. One of the most important critics has been Mintzberg (1994), who affirms that several theories linked to the strategy are very far from reality.

Despite this, in recent years, strategic theoretical currents have once again attracted attention with the theory of competitive advantage of the nations of Porter (1996). According to this author, the strategy has more to do with the "strategic positioning that tries to achieve a sustainable competitive advantage, preserving what is distinctive of a company. It means doing activities different from those of their rivals, or carrying out similar activities in different ways "(p.60). According to this

conception, the strategy relies on unique activities, that is, selecting what should not be done and creating an alignment, coupling and adjustment between the activities of the company (Porter, 1996).

The theory of the competitive advantage of the nations of Michael Porter

The theory of the competitive advantage of the nations of Porter is of great amplitude. For that reason, in this study only its five competitive forces, diamond and positioning are referenced. Porter's five forces that shape the strategy comprise the competitive forces and their underlying causes, which reveal the root of the industry's current profitability while providing a frame of reference to anticipate and influence competition over time (Porter , 2008). The five forces proposed by Porter (2008) are the following:

1. New entrants: They are the new threatening participants in an industry; They bring new capacity and desire to get involved in the market by putting pressure especially on prices and costs to compete.
2. Negotiating power of suppliers: They can capture more value for themselves by charging higher prices, which limits quality, services or changing costs for industry participants.
3. Power negotiating buyers: Buyers have more power when they can lower the prices of the sector, demanding better quality or greater service.
4. Threat of substitutes: These perform a function identical or similar to that of the product of an industry, but in a different way. Therefore, sometimes the threat of a substitute product is not so visible or direct when a substitute occupies a place in the industry.
5. Rivalry among existing competitors: This takes many familiar forms, including discounts on prices, new improvements in the product, advertising campaigns and improvements in service. Therefore, the rivalry is greater if the competitors are numerous, if the growth of the industry is slow and if the companies can not adequately interpret the signals of others due to lack of familiarity with the opponents, focus and objectives.

As for Porter's diamond, it creates the national environment in which organizations are born and learn to compete by setting the best opportunities to achieve international success through their determinants (Porter, 1990). The determinants of Porter's diamond (1990) are the following:

1. Factor conditions: These are production factors necessary to compete in a sector.
2. Conditions of the demand: It refers to the demand of the products or services of the sector.
3. Related and auxiliary sectors: They focus on the existence of suppliers and related sectors that are internationally competitive.
4. Strategy, structure and rivalry of the companies: They are the existing conditions in the country that govern the way of creation, organization and management of the companies, considering the nature of the internal competition. In addition to these four determinants there are two more complements.
5. Government: This contemplates certain actions that can positively or negatively influence each of the four determinants.
6. Chance: This involves casual events that are difficult to control and plan.

On the other hand, Porter's positioning helps analyze the industry or sector in a summarized and strategic way. According to this author (2015), there are two basic types of generic strategies in the positioning within the industry that companies can possess: cost leadership and differentiation. These, when combined with the scope of a company's operations, provoke the third generic strategy, which is the approach in a segment. Basically, the first is related to low costs and economies of scale; the second with being unique in some need of value for clients, and the latter is directed to a specific segment or group of market segments. From the above, it can be said that it is very complicated, although not impossible, to be both low cost and differentiation.

Methodology

In this work, the qualitative and exploratory study was used because the research topic was in an initial period in terms of the description of the characteristics and the facts (Hernández, Fernández and Baptista, 2014, Martínez, 2006). This method, in addition, admits subjectivity, explicitness, openness and flexibility, since no attempt is made to generalize the results to know the phenomenon of study for its qualities (Hernández, Fernández and Baptista, 2014). On the other hand, and to use several sources of evidence, this research was also supported, although to a lesser extent, in the case study methodology published by Yin (1994). The way in which this work was designed is summarized in four methodological steps with an approach based on Porter's theory.

The first step was the collection of information from secondary sources. The main source was collected during 2016 with the research project "Taking advantage of genetic diversity and development of sustainable production technology: benefit and postharvest handling of malanga" (Asiain et al., 2017). This was a search for documentary information, and then contacted by telephone and in a personal way to the heads of DDR (Rural Development District), Caders (Support Centers for Rural Development), as well as educational institutions superior and research, and to the directors of agricultural promotion or sustainable rural development of the municipalities; this in order to find the places where the Mexican malanga was produced, since this information was not known with certainty. The results showed that the places where this item was produced were the states of Veracruz, Tabasco and Oaxaca, so they became the study regions of the current investigation.

In that project by Asiain et al. (2017) a database was obtained from a chain or snowball sampling (not probabilistic) applied to 64 producers of the mentioned states. This information was complemented by visits to collection centers and packaging companies, where interviews were held with businessmen who exported and producers.

As the current study is one of the first efforts with this approach, and when there was scarce information, we opted for a qualitative research with an exploratory scope. Therefore, all the information collected in this project was used for this study as a secondary source and statistical

information was also integrated from various databases, such as SIAP (Agri-Food and Fisheries Information Service), USDA (United States Department of Agriculture) and STATCAN (Statistics Canada). Then, the data collected were given a treatment and a classification according to the steps that will be explained later (2, 3 and 4), that is, according to the five competitive forces, diamond and positioning of Porter.

The competitive analysis based on Porter's theory was carried out by the authors of this research, who formed a multidisciplinary team to enrich and provide feedback to the study. The research lines of these authors are the following: agribusiness, management of organizations, strategic competitiveness, mathematical modeling, technology transfer and rural innovation processes, rural development, logistics, agro-food supply chains, small and medium enterprises (SMEs) and supply chain management.

In the second step, the analysis of the five competitive forces of Porter (2008) was developed for this productive activity, which is based on the following five elements:

> a) Identify the participants, and segment them within groups; b) Evaluate the underlying factors of each competitive force to determine which forces are weak or strong, and why; c) Determine the general structure of the industry; d) Analyze the recent changes and probable future changes in each force, both positive and negative; e) Identify aspects of the structure that could be influenced by competitors, new operators, or by your organization (p.92).

Once this was done, each element and each competitive force was assessed qualitatively in a high, neutral and low manner.

The third step was based on stages 1 and 2. In this, the diamond based on Porter (1990) was determined, for which each element was explained and evaluated qualitatively in a positive, negative and neutral manner.

Finally, in the fourth step, the generic strategy to which this activity was directed was determined based on the positioning of Porter (2015) and fed back by the previous steps.

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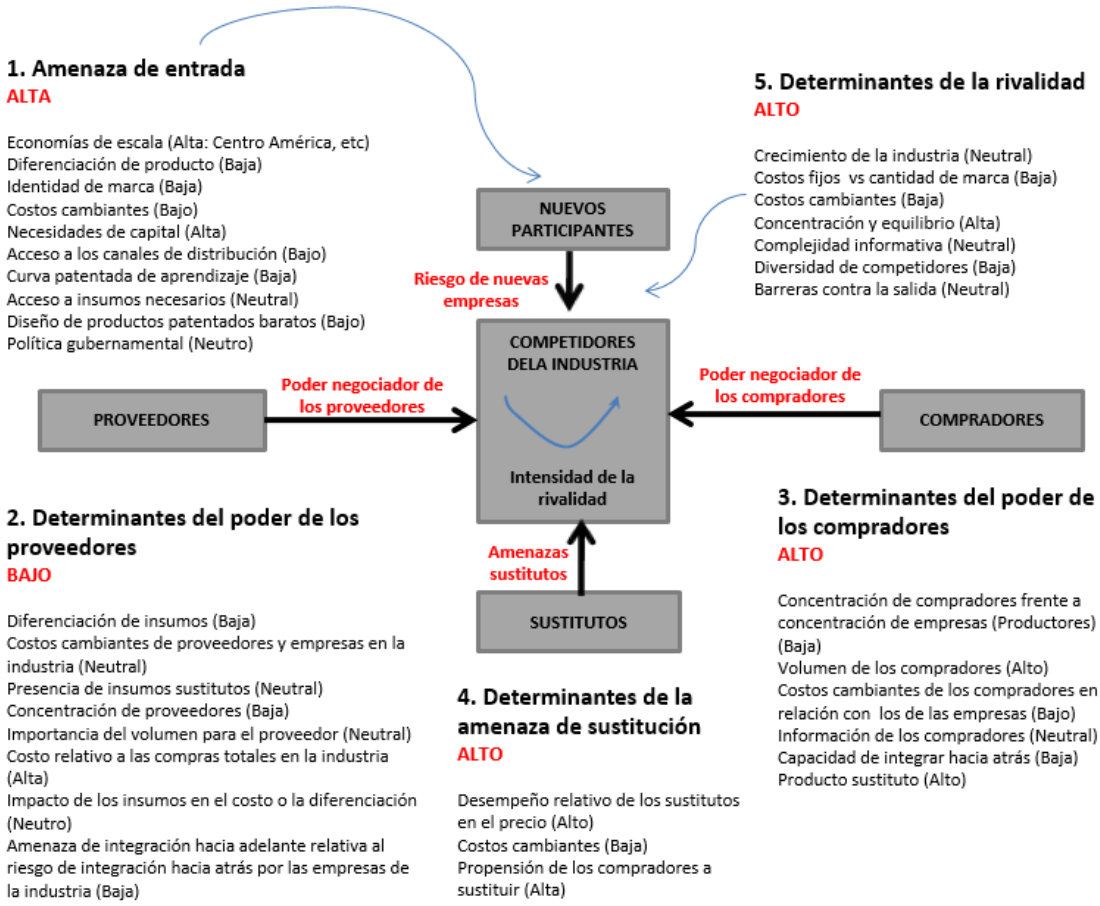
Results and Discussion

The five competitive forces in the productive activity of the malanga

In this section, the five competitive forces of Porter are applied to arrive at an analysis of the productive activity of the taro. Figure 1 shows the five Porter forces.

Figura 1. Las cinco fuerzas competitivas en la actividad productiva de la malanga



Fuente: Elaboración propia a partir del estudio cualitativo basado en Porter (2008)

Threat of new participants (high)

The purpose of Mexican malanga production is to be cultivated for export almost entirely to Canada and the United States (USA). Currently, this Mexican sector has emerged as a challenger to international producers, mainly since 2012, when the first import records appear in Canada and the US. UU (STATCAN, 2017; USDA, 2017). The main threat in both the Canadian and US markets for Mexican taro producers is that originating in other countries.

In Canada, the importation of Mexican taro in 2016 ranked second according to its monetary value, with 32.8% of the total value imported (15 060 167 pesos), which is equivalent to 44.6% of the total amount imported (1 112 398 kg) . The first place was China, with 42.3% in monetary value (19 430 039 pesos), which is equivalent to 41.4% in quantity (1 031 907 kg). The third place was Jamaica, with 8.6% of the monetary value (3 955 472 pesos) and 3.5% (87 962 kg) in quantity (see Annex 2).

In the USA In the US, the market share of imported malanga by Mexico is lower, since in 2016 it occupied the sixth place, with 1.7% in total monetary value (1 863 624 pesos) and 3.3% of the total amount (199 751 kg) (Annex 3). The main origins of imported malanga in the USA UU in 2016 were Honduras, with 48.7% of the monetary value (52 846 330 pesos) and with 38.4% in quantity (2 289 530 kg)[1]; Nicaragua with 38.8% of the total monetary value (42 126 525 pesos) and with 44.2% in quantity (2 638 618 kg), and Costa Rica with 4.4% of the monetary value (4 739 317 pesos), which is equivalent to 5.1% in quantity (305 775 kg) (see Annex 3). The above provides an overview of the incorporation of new participants that can be presented in different years.

From the perspective of the farmer, it can be inferred that there is no optimal use in economies of scale, so the threat from other international producers could be high when the market is more saturated, which can be reflected especially in a competition of costs and low prices.

[1] Cabe señalar que Honduras no había exportado malanga a EE. UU. en los años 2012, 2013, 2014 y 2015 (USDA, 2017).

The malanga, being sold mostly without any added value, is perceived as a product without differentiation and without brand identity. In addition, as is common in the agri-food sector, there are capital needs and access to formal distribution channels. Most of the products are absorbed by balers and national intermediaries.

On the other hand, government policies are perceived as neutral, and although according to the Official Gazette of the Federation, the agrifood sector is a priority in the government's agenda (Sagarpa, 2013), no drastic changes are perceived.

Therefore, the threat of new participants in the productive activity of the taro for its export to the Canadian and US market can be conceived as high, although by its incorporation into the export market the Mexican sector is perceived as a challenger against other countries that already did so previously.

The power of suppliers (under)

The main suppliers for the production of taro are inputs and services. In the first are suppliers of seeds, fertilizers, pesticides, herbicides, fungicides, among others. In the second, there are various services (eg, technical assistance) that support the farmer in his work.

The most important supplier is the one of inputs, which presents a low differentiation. This is because there are not so many companies to sell them, although there are more options to replace the products. Input costs change according to market prices, so they have an average impact on the cost of taro, depending on the quantities used. The sales volume for the supplier is important, but it does not represent a threat in its profitability.

Considering all of the above, it can be said that the negotiating power of the supplier is weak, since this does not represent a threat to influence to a greater extent or absorb the link in the farmer's supply chain.

The power of buyers (high)

The negotiating power of the buyers of the malanga sector is high, since they pay the price as best suits them, according to the market situation. In addition, the concentration of buyers is lower than that of farmers, who buy mostly by volume. Domestic buyers are identified as stockholders (48%), supply center (2%), collection center (6%), coyotes or intermediaries (14%), final consumers (16%), other producers (2%) and the rest of the respondents did not answer (13%) (Asiain et al., 2017).

The majority of national taro buyers do not have formal relations with farmers, so they substitute the product for others when they get a better price. In this regard, it is important to note that Mexican buyers of malanga also experience a similar situation when they export the product to Canada and the US. UU., Since this can be substituted by those from other countries. Therefore, the power of buyers can be categorized as high to negotiate with farmers, and there is a low capacity for collaboration with them.

The threat of substitutes (high)

The products that could replace the taro in the national market - and mainly abroad - could come from countries that offer the product with a differentiation or with lower prices. Among the international competitors would be their current and main adversaries; in Canada, for example, they could be China, Jamaica, Costa Rica and India (see Annex 2), while in the USA. UU they would be Honduras, Nicaragua, Costa Rica, China and islands such as Fiji and Tonga (see Annex 3). If the competition is based on low prices, there is a high probability that buyers and consumers will replace the taro.

Rivalry among existing competitors (high)

The rivalry among farmers at the national level is high, since there is a high concentration in the geographical areas of Veracruz, Tabasco and Oaxaca. However, the main rivalry is found in the agricultural products of other countries, which compete mainly for the international market with low prices, since there are no significant differences between the products.

The growth of this productive activity is slow, so the rivalry and other factors (culture, education, etc.) could manifest themselves in a lack of horizontal cooperation as well as in their supply chains. In this way, there is a pronounced rivalry on the part of farmers, especially when there is an overproduction or when new international competitors are incorporated to export taro to the US. UU and to Canada, which is taken advantage of by international buyers.

The diamond of Porter in the productive activity of the malanga

Porter's diamond is applied in the taro sector to more comprehensively understand the conditions of supply, demand, strategy, structure, rivalry and existing coincidences, as well as the role that the government has. Figure 2 shows the diamond and then explains each element from a positive, negative and neutral perspective.

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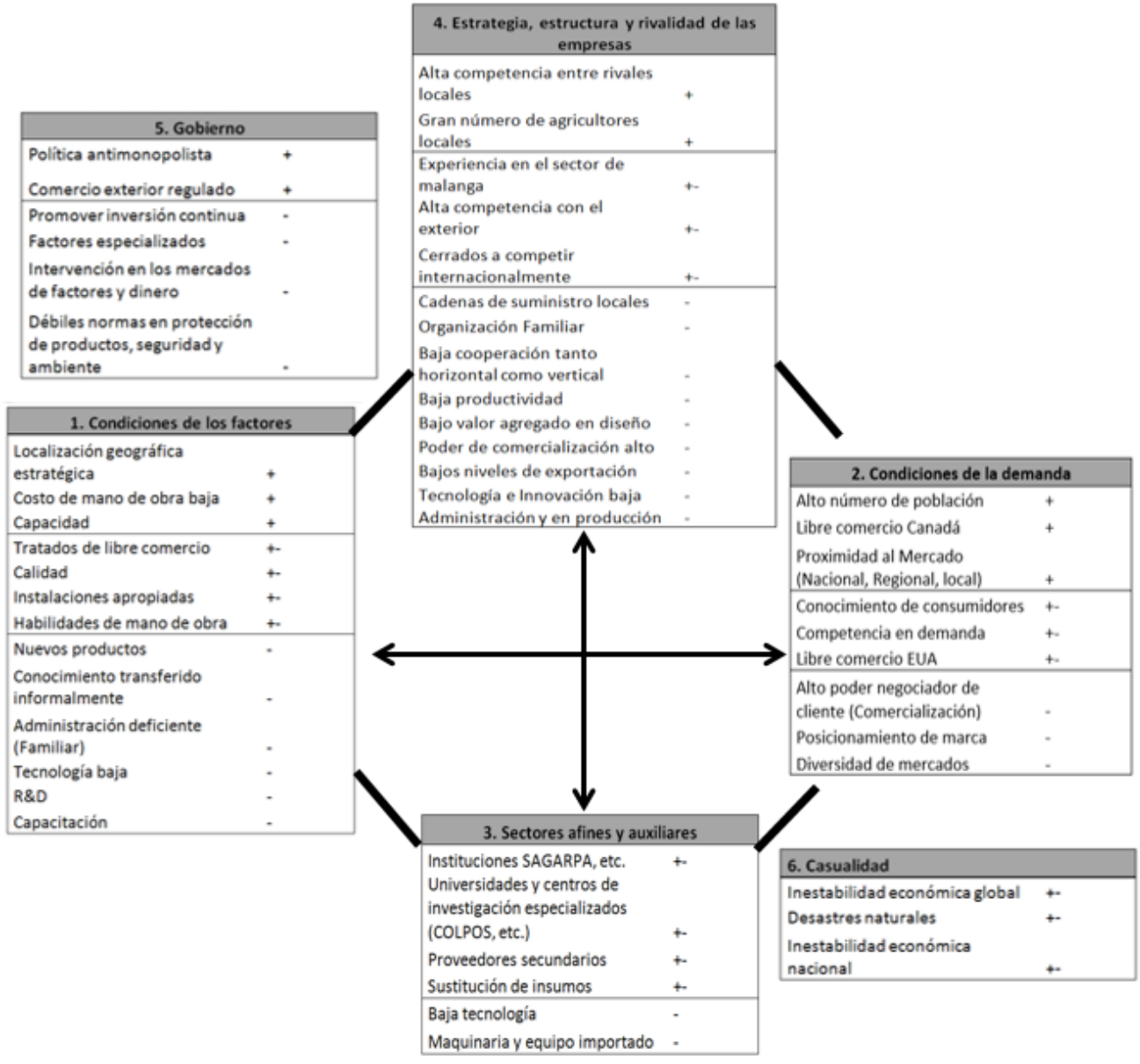
Figura 2. Diamante de Porter en la actividad productiva de la malanga



Fuente: Elaboración propia a partir del estudio cualitativo basado en Porter (1990)

Conditions of the factors

Some of the conditions that favor this sector are the following: strategic geographic location, the capacity to produce taro and the low cost of labor. The strategic geographic location is a strong point, since there are natural lands available for the cultivation of malanga, which in several cases can not be used to grow other products (Olguín-Palacios and Álvarez-Ávila, 2011). In relation to the low cost of labor, this is a point in favor if compared to other countries where that work is better paid.

The free trade agreements, on the other hand, are perceived in a neutral manner, since currently the world economy is going through several political changes, as evidenced in the US. UU, which affects the agricultural sector of countries like Mexico. However, it should be noted the importance that Mexico has along with Canada for EE. UU in terms of agricultural products, since they are its two main suppliers (USDA, 2016).

Other neutral points that can be found are the quality, which does not have a great difference with the competition. Also, because these crops are planted in the open field, the facilities do not have a high impact on the crop. In addition, and although labor skills are important, at the moment they do not make a significant difference in agriculture.

Regarding the weak points, the following can be mentioned: poor administration, lack of updating of technologies, knowledge transferred informally, low training, little development of new products, lack of research and low development. Specifically, and according to Asiain et al., (2017), it can be said that 66% of the surveyed producers do not plan to purchase inputs according to demand, while 67% do not plan for human, material and financial resources. depending on the demand. In fact, 86% of the production estimate is made according to farmers' experience. Based on these percentages, it can be assured that there is no correct planning.

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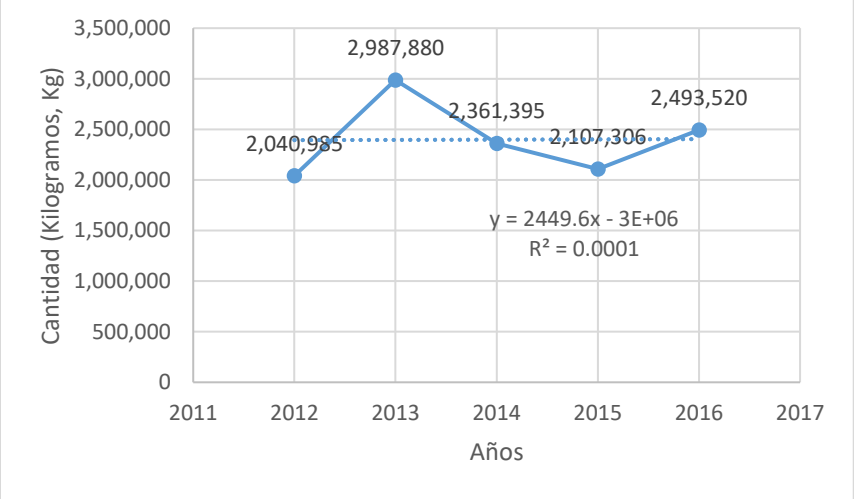
Conditions of demand

The proximity of local, regional and foreign markets represents an opportunity for growth for productive activity. The conditions of the demand first fall on the export of taro to Canada and the USA. UU The import figures of malanga in Canada from several countries indicate a positive trend both in quantity and in monetary value between the years 2012 and 2016 (figure 3 and 4).

Figura 3. Importación mundial de malanga en Canadá por cantidades entre 2012 y 2016



Fuente: Elaboración propia a partir de STATCAN (2017)

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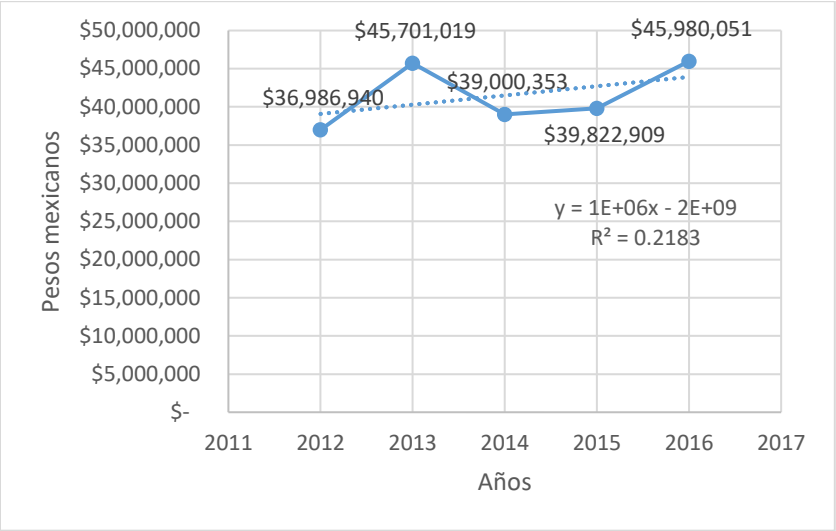
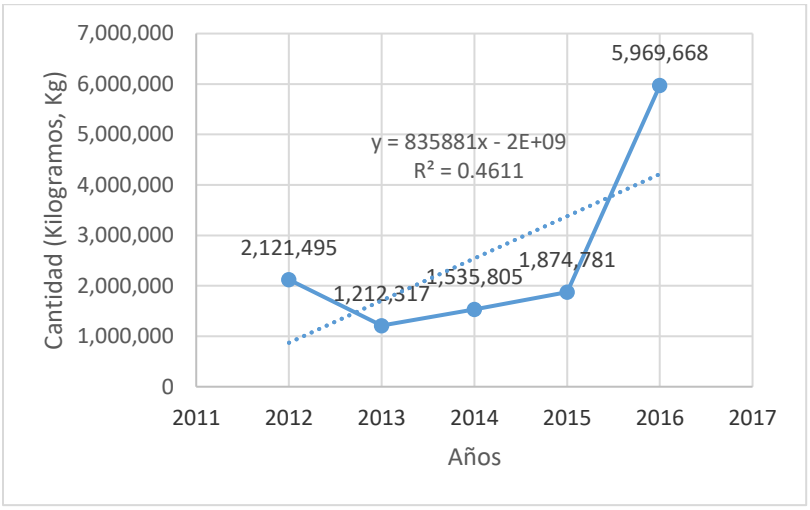
Figura 4. Importación mundial de malanga en Canadá por valor entre 2012 y 2016



Fuente: Elaboración propia a partir de STATCAN (2017)

In the USA On the other hand, there is a positive trend in the global importation of taro, both in quantities and in monetary value between 2012 and 2016 (figures 5 and 6).

Figura 5. Importación mundial de malanga en EE. UU. por cantidades entre 2012 y 2016



Fuente: Elaboración propia a partir de USDA (2017)

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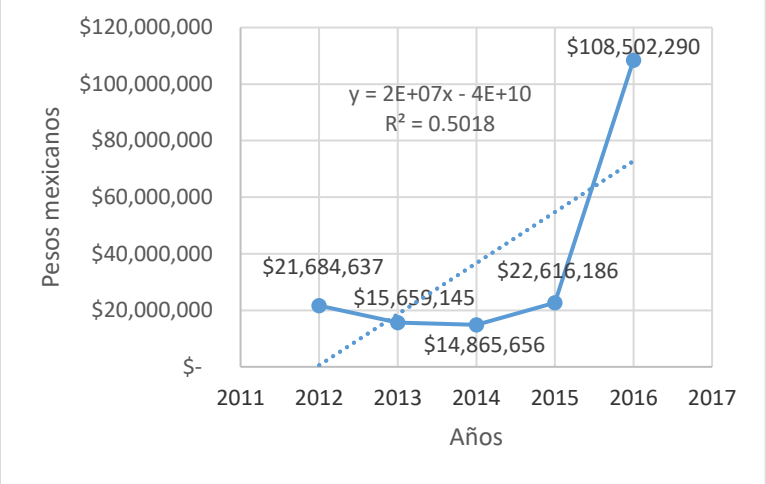
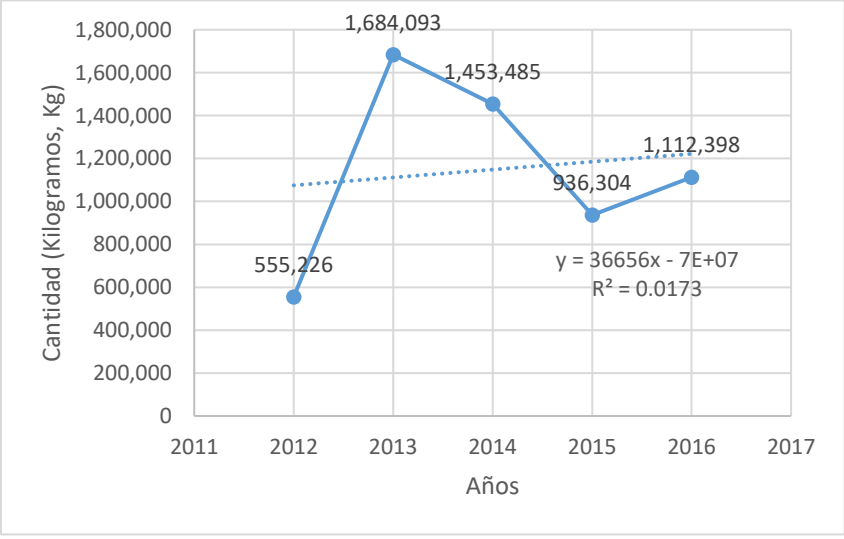
Figura 6. Importación mundial de malanga en EE. UU. por valor entre 2012 y 2016



Fuente: Elaboración propia a partir de USDA (2017)

In the same years, the export figures of malanga from Mexico to Canada indicate mathematically that there is a positive trend in export quantities, although there is also a negative trend in monetary value (figures 7 and 8).

Figura 7. Exportaciones de malanga de México a Canadá por cantidades entre 2012 y 2016



Fuente: Elaboración propia a partir de STATCAN (2017)

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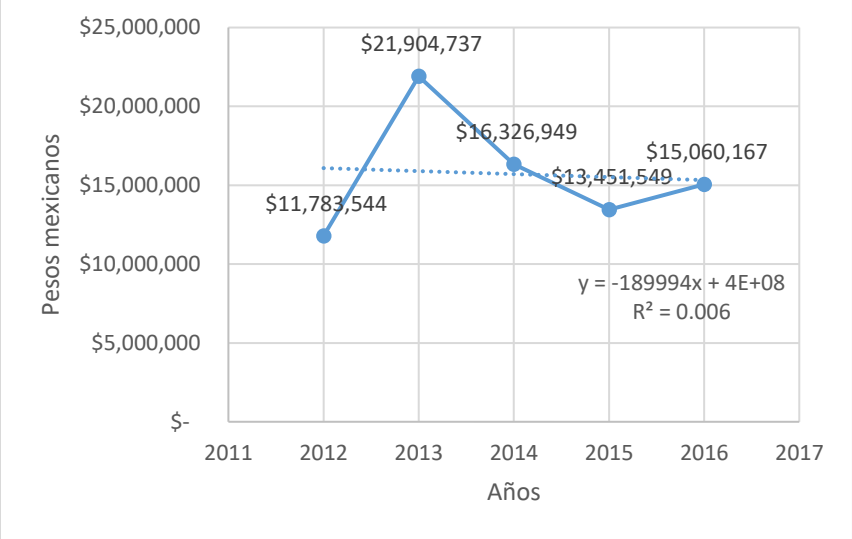
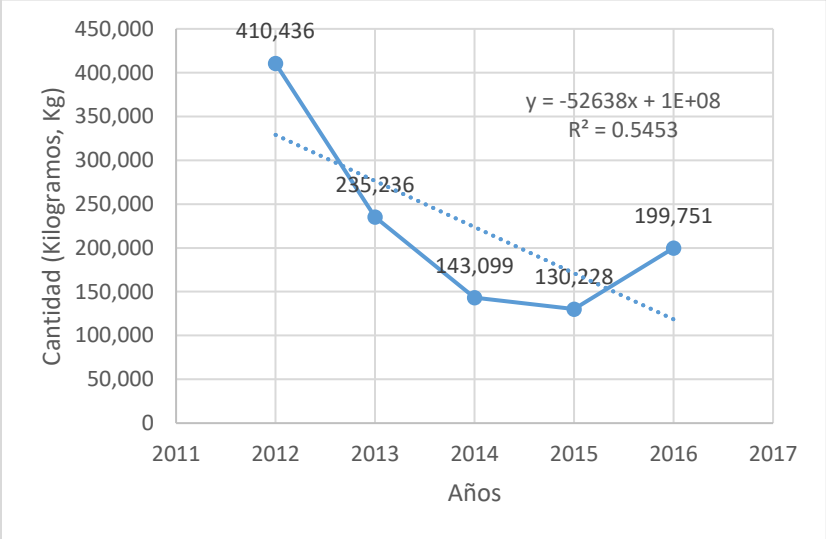
Figura 8. Exportaciones de malanga de México a Canadá por valor entre 2012 y 2016



Fuente: Elaboración propia a partir de STATCAN (2017)

This situation is more critical in exports from Mexico to the US. UU., Since both in quantities and in monetary value the trends are negative (figures 9 and 10).

Figura 9. Exportaciones de malanga de México a EE. UU. por cantidades entre 2012 y 2016



Fuente: Elaboración propia a partir de USDA (2017)

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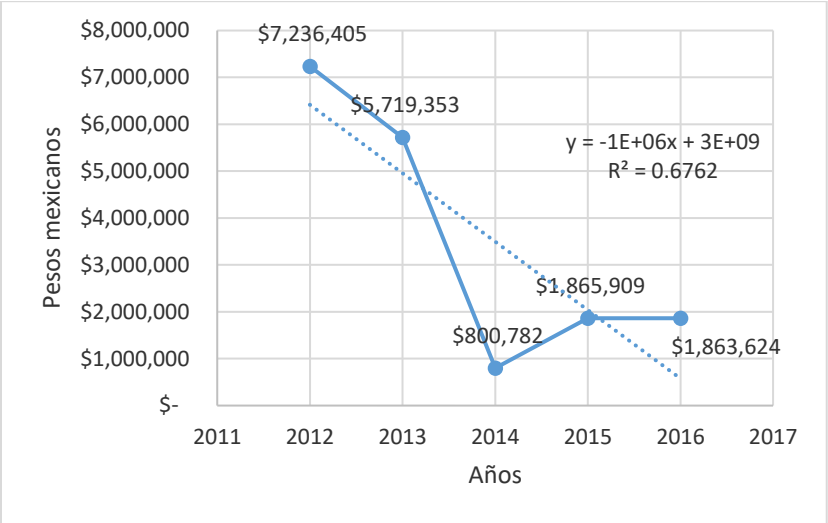
Figura 10. Exportaciones de malanga de México a EE. UU. por valor entre 2012 y 2016



Fuente: Elaboración propia a partir de USDA (2017)

On the other hand, in the national market there is the possibility of incursion to a greater extent, since there is a large number of the economically active population (51 859 895 people), which is equivalent to 42.1% of the total population (Instituto Nacional de Statistics and Geography [Inegi], 2017). This data is only taken as a general reference because there are no specific consumption figures for the taro in Mexico.

On the other hand, free trade, especially with Canada, can be seen as a positive point, although at present there is uncertainty about the updating of the treaties. For its part, free trade with EE. UU It can generate opportunities, but also uncertainty, which is why this element is valued neutrally within the conditions of demand in Porter's diamond.

Also, because it is a novel product in the domestic market, malanga is little known by Mexican consumers, although it is grown to export mainly to Canada and the US. UU., Which should not be interpreted as an impediment to boost its growth in the national market, because there is a latent possibility for its expansion and exploitation. This, therefore, can also be considered as a neutral point.

On the other hand, one of the negative factors is the high negotiating power of the client within the conditions of the demand, which harms the malanga farmers. Nationally, this high negotiating power of the client happens with the packing houses and intermediaries, while on an international way it is specified with the foreign wholesalers that have the option of acquiring the taro from other origins. Added to this is almost zero brand positioning, as well as the scarce diversity of markets, since taro is mostly exported to Canada and the US. UU

Related and auxiliary sectors

The main institution that supports this sector is the Sagarpa, although this is not enough, because there are no drastic changes to benefit the farmers. There are also universities and research centers that provide general support to the agricultural sectors, but in the same way these are limited. In fact, one of the research centers that stands out most for its direct and close contact with the productive activity of the malanga is the Colegio de Postgraduados (Colpos).

On the other hand, the secondary suppliers used by the malanga farmers can be classified as neutral, since they are also used for other types of crops, so there are several alternatives for substitution of inputs.

The negative points, as in several agricultural sectors in Mexico, are the lack of technology and the shortage of machinery and equipment. For example, 78% of farmers do not have any type of agricultural machine or equipment, while 22% usually only have one vehicle (Asiain et al., 2017).

Strategy, structure and rivalry of companies

The malanga farmers tend to promote a high rivalry to sell their product. This apparently causes that horizontal cooperation is not the most suitable, so that mutual benefits can not be achieved. For example, 69% of the producers who arrive to transport the taro do not use the full capacity of the cargo vehicle, while only 14% use the maximum capacity (Asiain et al., 2017). These percentages allow us to infer that partnerships are not sought to share the capacity of vehicles with other farmers. In addition, since farmers are concentrated in certain benign geographic areas

for the planting of taro, it sometimes causes overproduction and a price war between them, which benefits the buyers.

Unfortunately, there are several negative points in this section of the diamond, one of which is evident in the low horizontal and vertical cooperation in local supply chains. This is coupled with low productivity, low technology and poor administration. The latter is reflected in the lack of planning in human resources, in the purchase of inputs, materials and finances, as well as inadequate stock control (Asiain et al., 2017). To this must be added the scarce added value of the product, which strengthens the power of the buyers against the farmer.

Government

Theoretically, regulated foreign trade is dismal for industries in general. However, in this section it is located as a favorable point because Mexico is one of the countries with the most commercial treaties in the world, so it is one of those that most allow the free market. For its part, the antitrust policy in the sector can also be classified as a beneficial variable for farmers. Nonetheless, it is worth noting that Calderón (2014) has documented that the North American Free Trade Agreement (NAFTA) has been detrimental to some Mexican exporters of the agricultural sector, which must compete with more countries. In addition, this author highlights that there is currently a food dependency of Mexico with EE. UU., Which has increased even more since the signing of NAFTA.

Likewise, there are several points that affect the productive activity of the malanga, among which there is an insufficient promotion of continuous investment by the government, which only materializes in some support programs for the peasants. In addition to this, it should be mentioned that the investment by the farmer also tends to be very low. With regard to the intervention of the State in the markets of factors and money, it is still presented in the face of global economic imbalances, but it is becoming less common, while the norms for the protection of products, safety and the environment are still in force. an incipient stage for its application.

Chance or chance

The malanga farmers are exposed to the random events. First of all, there is the national economic fluctuation that could arise for various reasons. Second, farmers could be affected by global instability, especially by imbalances from the US. UU Finally, natural disasters are other aspects that come from chance and that can cause losses in the crops of the malanga.

Positioning of the productive activity of the malanga

As discussed in the preceding pages, it can be noted that this productive activity targets circumstantially compete with a leadership strategy to export low-cost taro Canada and EE. UU In both markets consumers tend to look for low prices, so farmers need to establish a well-structured before the market is saturated to reduce costs, so that it can compete with low-priced alternative. Therefore, the first choice would be to continue with the strategy of leadership in low costs, following the foundations of Porter (1996), that is, seeking to maintain as much as possible the strategy established over several periods.

A second alternative could be to evolve to a differentiated positioning that adds value to the taro according to the needs that are presented in the national or foreign market. For this, the bases of Gunther (2013) can be followed, which determine that the strategy must be changed when the advantage is at risk, otherwise failure could arise. According to this second option, there are some taro producers that are beginning to add value to the item, for example, through fritangas. Also, there are balers who are looking for a way to transform this product, although we still do not have a concrete result. In both cases, these efforts are directed towards the local and national market, where taro is not well known or consumed. This means that there is a niche market that could be exploited.

Conclusions

With this research, it has been tried to analyze the strategic and competitive situation of the productive activity of the malanga, for which Porter's theory has been used, from the perspective of the farmer. The results allow to deduce, according to the positioning matrix of this author, that currently there is no generic strategy established by the producers. In fact, the main alternative used is cost leadership, which means that they are competing internationally with low prices.

According to the analysis of Porter's five forces and diamond, the competitive situation is perceived as vulnerable. This is because the taro is replaced by another when a competitor with lower prices emerges in the foreign market, which can cause the Mexican farmers to buy the taro at lower prices, and even run the risk of not recovering the price. investment. Therefore this product is cultivated more as an opportunity, this means that it enters the market without a broad vision, remaining under a high negotiating power of the national buyer and mainly abroad. Therefore, if farmers want to continue with this strategy, they should reduce costs and work more with economies of scale. Despite this, there are actors who lean without planning for a strategy of differentiation or segment approach, although these are almost nil.

Finally, and independently of the generic positioning strategies that farmers follow, it is vital that the malanga producers and the actors involved in this activity achieve cooperation and formalization, both horizontally and vertically. In this way, synergy could also occur with governmental, academic, research and other institutions that are located in the region. Thus, it could compete globally, since this is a sector with potential to contribute to the development of the economy and jobs for the benefit of the region and, therefore, the country.

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Anexos

Anexo 1. Volumen, precio y valor de la malanga en México entre 2010 y 2015

Año	Volumen de producción[2] (kilogramos)	Tasa de crecimiento % del volumen	Precio[3] (pesos x 1000 kilogramos)	Tasa de crecimiento % de precio	Valor[4] (pesos corrientes nacionales)	Tasa de crecimiento % de valor
2010	9 725 000		$13 000		$ 35 774 025	
2011	14 320 000	47.3 %	$13 500	3.8 %	$ 41 890 000	17.1 %
2012	20 170 000	40.9 %	$28 579	111.7 %	$ 162 834 920	288.7 %
2013	13 960 000	-30.8 %	$21 500	-24.8 %	$ 82 375 000	-49.4 %
2014	8 881 000	-36.4 %	$29 320	36.4 %	$ 53 187 350	-35.4 %
2015	16 552 000	86.4 %	$15 800	-46.1 %	$ 66 364 000	24.8 %

Fuente: Elaboración propia a partir de SIAP (2017)

[2] Volumen de producción: Volumen de producción de la superficie cosechada cuya unidad de medida son las toneladas (1 tonelada = 1000 kg) (SIAP, 2017).
[3] Precio: Precio medio rural, la unidad de medida son pesos mexicanos por tonelada (SIAP, 2017).
[4] Valor: Valor expresado en pesos corrientes nacionales (SIAP, 2017).

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Anexo 2. Los 10 países que importan más malanga en Canadá, por cantidad y valor económico[5]

		2015				2016			
Rank	País	Valor (pesos mexicanos)[6]	Participación % en valor	Cantidad (kg)	Participación % en cantidad	Valor (pesos mexicanos)	Participación % en valor	Cantidad (kg)	Participación % en cantidad
Total	Total Mundial	$ 39 822 909	100.0 %	2 107 306	100.0 %	$ 45 980 051	100.0 %	2 493 520	100.0 %
1	China	$ 1 722 588	44.8 %	916 678	43.5 %	$ 19 430 039	42.3 %	1 031 907	41.4 %
2	**México**	**$ 13 451 549**	**33.8 %**	**936 304**	**44.4 %**	**$ 15 060 167**	**32.8 %**	**1 112 398**	**44.6 %**
3	Jamaica	$ 3 364 121	8.4 %	76 378	3.6 %	$ 3 955 472	8.6 %	87 962	3.5 %
4	Costa Rica	$ 1 616 662	4.1 %	68 290	3.2 %	$ 2 593 513	5.6 %	104 061	4.2 %
5	India	$ 836 703	2.1 %	18 386	0.9 %	$ 1 554 280	3.4 %	28 086	1.1 %
6	Estados Unidos	$ 1 187 314	3.0 %	37 234	1.8 %	$ 864 758	1.9 %	31 387	1.3 %
7	Taiwán	$ 123 681	0.3 %	3709	0.2 %	$ 73 281	0.2 %	1198	0.05 %
8	Ghana	$ 5 597	0.0 %	532	0.0 %	$ 1 151 046	2.5 %	51 729	2.1 %
9	Egipto	$ 221 094	0.6 %	6452	0.3 %	$ 289 720	0.6 %	8673	0.3 %
10	Bangladesh	$ -	0.0 %	0	0.0 %	$ 25 003	0.1 %	768	0.03 %

Fuente: Elaboración propia a partir de STATCAN (2017)

[5] Nota: De acuerdo con los registros encontrados en Canadá, el tipo de malanga importada está clasificada con el n.° 71440 (taro frescos /refrigerados / congelados / secos, incluso cortados en rodajas o en *pellets*) (STATCAN, 2017).
[6] Tipo de cambio: $1 dólar canadiense equivale a $14.0627 pesos mexicanos del día 08 de julio de 2017 (Banxico, 2017).

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Anexo 3. Los 10 países que importan más malanga en los Estados Unidos de América, por cantidad y valor económico[7]

		2015				2016			
Rank	País	Valor (pesos mexicanos)[8]	Participación % en valor	Cantidad (kg)	Participación % en cantidad	Valor (pesos mexicanos)	Participación % en valor	Cantidad (kg)	Participación % en cantidad
	Total Mundial	$ 22 616 186	100.0 %	1 874 781	100.0 %	$ 108 502 290	100.0 %	5 969 668	100.0 %
1	Honduras	$ -	0.0 %	0	0.0 %	$ 52 846 330	48.7 %	2 289 530	38.4 %
2	Nicaragua	$ 9 757 347	43.1 %	822 863	43.9 %	$ 42 126 525	38.8 %	2 638 618	44.2 %
3	Costa Rica	$ 5 045 238	22.3 %	246 652	13.2 %	$ 4 739 317	4.4 %	305 775	5.1 %
4	China	$ 4 787 568	21.2 %	633 732	33.8 %	$ 2 699 270	2.5 %	393 148	6.6 %
5	Otros: Islas del pacifico.	$ 270 912	1.2 %	8908	0.5 %	$ 2 429 083	2.2 %	79 942	1.3 %
	Fiyi (!)	$ 270 912	1.2 %	8908	0.5 %	$ 2 429 083	2.2 %	79 942	1.3 %
	Tonga (!)	$ -	0.0 %	0	0.0 %	$ -	0.0 %	0	0.0 %
6	**México**	**$ 1 865 909**	**8.3 %**	**130 228**	**6.9 %**	**$ 1 863 624**	**1.7 %**	**199 751**	**3.3 %**
7	República Dominicana	$ 193 239	0.9 %	9308	0.5 %	$ 1 034 508	1.0 %	38 705	0.6 %
8	Jamaica	$ 491 306	2.2 %	11 635	0.6 %	$ 326 473	0.3 %	7312	0.1 %
9	Ecuador	$ -	0.0 %	0	0.0 %	$ 281 469	0.3 %	6858	0.1 %
10	Egipto	$ 118 487	0.5 %	8710	0.5 %	$ 68 023	0.1 %	5000	0.1 %

Fuente: Elaboración propia a partir de USDA (2017)

[7] Nota: Se hace referencia al tipo de malanga importada con el n.° 7144010 en los EE. UU. con las siguientes características: taro fresco o refrigerado, incluso cortado en rodajas o en forma de *pellets*.
[8] Tipo de cambio: $1 dólar americano equivale a $18.1394 pesos mexicanos del día 08 de julio de 2017 (Banxico, 2017).

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