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Strategies for the Optimization of Planted Area and to Increase Production of Avocado in Michoacán

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Abstract

This research aims to analyze how the increased use of the area planted with Hass Avocado from Michoacán state as a strategy will help catch up in production from the point of view based on resources. The basic question that will help us solve the problem is how to harness the avocado sector resources for greater production? Analytical method was used based on existing information to achieve the research objectives. The fundamental theory applied to the object of study is based on resources and capabilities. The main conclusion is that the more efficient avocado harvested area will get more production.

Keywords: Achievement, resources, area harvested

Introduction

Mexico is a country that enjoys privileges for agribusiness in general because its geographical location and climatic diversity coupled with vast territory. The production of fruits and vegetables has been increasing in recent decades acquiring comparative advantages in relation to the rest of the world being the avocado one of the major competing products worldwide. Avocado is one of many products that Mexico exports to the world for its increasing demand in recent decades. Nutritional properties are rough, providing a source of folic acid, vitamins E, C, B6, potassium and magnesium also contains proteins with an amino acid as name glutathione which serves as antioxidant. The fat avocado, far from being harmful, is monounsaturated, helping heart health and cholesterol level increases in blood. The avocado provides energy, fiber, carbohydrates, calcium, sodium, and many other nutrients USDA (2004).

In the past decade, the avocado production has increased in general terms in Mexico where Michoacán maintains permanent leadership, providing in 2008 for 88% of the total national production, which exceeded the 1.12 million tons. According to SAGARPA (2013), the surface with high-medium potential for growing avocados in Michoacán is over 380,000 hectares, only low of Jalisco that exceeds 504,000 hectares. However if it is taken into account the high potential that Michoacán has, it is the state with

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greater opportunities for planting avocado with more than 28,000 hectares and Jalisco is just over 3,900 hectares.

Today Mexico is the world leader in avocado production, participating with 28% of total area for planting, and figures as the leading exporter in the world with 40%. In addition to the per capita consumption of 10kg per year, Mexico is reaching the position in the place of honor in this area. However, yields per hectare are unexpected compared to other countries. Before Mexico who sows 10.1 tonnes per hectare, it is found Dominican Republic who sows 19.3 tons per hectare, Colombia with 16.5 Ton. / Ha and Brazil with 12.9 Ton / Ha (table 1). This opens up opportunities for Mexico in search of strategies to optimize capacity and gain ground on planted in avocado production to remain as the world leader.

Currently, Mexico is the country with per-capita consumption highest in the world with nearly 10 kilograms per year. This leads to strong domestic demand that has to be covered for more than 115 million people. In the state of Michoacán is grown Hass avocado species originally coming from the United States in the decade of the forties? However it has been rooted so that it is an important source of job creation, in addition to the essential part of internationalization of the country's economy.

In the last decades as part of globalization in all sectors, it has greater diversity of products consumed worldwide regardless whether the country produces or not. The case of Mexican avocados, a product that is no longer considered an exotic fruit and each day has been integrated more frequently in the diet of different cultures around the world (Téliz and Mora, 2007). The avocado is present in various types of dishes such as salads, stews various soups, desserts, drinks and desserts including, not only in México but in other parts of the world.

Besides its unique flavor, properties that have this fruit for human health are big. For example, reduces bad cholesterol, reduces the risk of developing atherosclerosis and cardiovascular deficiencies, It helps to prevent breast, prostate and colon besides to help decrease the formation of cataracts and eye disorders due to its high content of lutein. It also has folic acid which helps liver detoxification and antioxidant, among other benefits.

Not only are the benefits of avocado present for their nutritional value or for its unique taste. From the avocado also can be obtained various consumer products that open up business opportunities that have already begun to exploit and where Mexico could be a great competitor for all the aforementioned. Some avocado products are: Soaps, oils, hair treatments, moisturizers and others, plus the avocado tree wood are of good quality.

The cultivation of avocado also benefits economically many rural and semi-urban areas of many of the states of the Republic. For example, in the state of Michoacán and because the ease of planting, it is very common for there to have own consumption because countless houses or even orchards, have one or several avocado trees and sometimes sell them at home or in the local markets.

Table 1: Global yield of avocado per country, 1996-2009 (tons per hectare)

Country	1996	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	TMCA (%) 96-09
Dominican Rep	10.0	13.4	12.8	38.9	41.6	31.9	22.3	30.3	26.3	18.7	19.3	5.2
Brazil	7.5	11.0	12.6	15.1	14.8	14.3	13.3	15.3	11.7	11.4	12.9	4.3
Colombia	6.1	6.8	13.0	14.1	15.6	14.3	14.7	15.7	15.8	15.6	16.5	8.0
Indonesia	12.0	10.0	9,9	10.2	10.5	10.7	10.7	10.9	10.3	10.0	9,8	1.6%
México	9.3	9.6	10.0	9.6	9.5	9.9	9.9	10.8	10.4	9.8	10.1	0.6
Chile	6.5	8.2	7.7	6.8	7.8	5.9	10.4	8.5	6.5	3.9	10.0	3.4
United States	4.0	4.6	4.9	6.0	5.9	6.7	6.0	7.7	9.7	9.8	9.8	7.2
World total	7.55	8.0	8.4	8.6	8.9	8.8	9.0	9.1	8.6	8.1	8.7	0.6

Source: Secretaría de Economía (2012).

As can be seen, avocado produces multiple benefits and different sectors of society in addition to help the economy in the agricultural sector for being one of the main products that Mexico exports to the world not to mention that it is a low impact activity for the ecological environment.

Table 2: Nutrients of the avocado

Nutrients	Units	Value per 100g of edible portion
Water	g	73.23
Energy	Kcal	160
Protein	g	2
Total fat	g	14.66
Fatty acids, total monounsaturated	g	9.799
Fatty acids, total poliunsaturated	g	1.816
Colesterol	g	0
Total carbohidrats	g	8.53
Fiber, total dietetic	g	6.7
Calcio, Ca	mg	12
Magnesio Mg	mg	28
Fósforo, P	mg	59
Potasio, K	mg	485
Sodio, Na	mg	7
Vitamin C, total ascorbic acid	mg	10
Vitamina E, alfa-tocoferol	mg	2.07
Niacina	mg	1.738
Phantotenic acid	mg	1.389
Vitamina B-6	mg	0.257
Folic acid	mcg	81

Source: aguacatesdemichoacan

Background of the problem

Avocado is of Mexican and Central American origin. It occurs in about fifty countries within which highlights Mexico with 32% of total global production representing more than one million two hundred thousand tons, much higher than the 328 000 tons produced by Chile, 269 000 tons produced by United States, 258 thousand tons produced by Colombia, the 184 thousand tons of the Dominican Republic and 139 000 tons produced by Brazil, which are the main producers of so-called "green gold". The main world producers of avocado are shown in Table 3.

In Mexico the production of this fruit was performed in 28 states, making to see the importance for national food and rooting. The state of Michoacán is the largest producer followed by Nayarit, Puebla, Morelos, Mexico, Jalisco, Sinaloa, Yucatán, Veracruz and Oaxaca (ASEEAM, 1998).

Michoacán is the largest producer of avocados in Mexico with about 950 000 tonnes by 2010 reaching with this nearly 86% of the total produced nationwide.

In the following table 4 it can be seen how domestic production is distributed according to the Secretaría de Economía (2012).

Table 4: National production of avocado by state

Location	Plantings (Ha)	Havested area (Ha)	Production (Tons)	Yield (Ton/Ha)	PMR (S/Ton)	Value produced (Thousands of pesos	% production	% accummulated production
Michoacán	107,058	103,303	950,942	9.2	13,293	12,640,768	85.9%	85.9%
Jalisco	8,468	4,226	29,987	7.1	12,364	370,754	2.7%	88.6%
Morelos	3,348	2,999	26,860	9.0	11,451	307,573	2.4%	91.0%
Nayarit	2,708	2,696	25,843	9.6	6,893	178,129	2.3%	93.4%
Estado de México	3,615	2,156	21,328	9.9	14,529	309,868	1.9%	95.3%
Guerrero	2,391	1,896	12,334	6.5	6,472	79,831	1.1%	96.4%
Yucatán	489	467	10,418	22.3	4,650	48,449	0.9%	97.3%
Rest of states	6,246	5,650	29,423	7.6	7,703	230,385	2.7%	100.0%
Total	134,322	123,393	1,107,135	9.0	12,795	14,165,758	100%	

Source: Secretaría de Economía (2012)

As it can be seen in table 5, the state of Michoacán has a yield of 9.2 tonnes per hectare harvested; however, states as Nayarit, Mexico and Yucatan mainly have better yields with 9.6, 9.9 and 22.3 tonnes per hectare respectively.

In the state of Michoacán avocado production is distributed in the avocado range of 42 municipalities ranging from 100 acres to more than 23,000 hectares of area sown but only Uruapan, Tancítaro, Peribán Tacámbaro, Salvador Escalante and Ario represent almost 80% of total production in the state (Guillén, Lara & Gutierrez, 2007).

Definition of the problem

Given the climatic characteristics and the conditions that make the state of Michoacán a favorable place for planting avocado, plus the experience of producers already have in harvesting and domestic and international marketing, this results in searching opportunity areas where it can be optimized the area planted for maximum benefit not only for producers and marketers, but also to benefiting the people who are part of the value chain and help the economic stability of the state and the country.

Despite the potential of the state of Michoacán in avocado planting and avocado production, it has not achieved the level others have achieved nationally in tons per hectare yield states such as Yucatan, Mexico, Nayarit and Quintana Roo, to name a few. At international level and countries such as Dominican Republic, Colombia and Brazil, which outperform the world's largest producer showing a weakness, can affect the entry of other markets and not making the most expected.

Based on the data already mentioned this research aims to generate strategies for the optimization of the area planted avocado in tons per hectare in the state of Michoacán and this poses the following question:

Is it possible to increase the production to optimize avocado plantings in the state of Michoacán, Mexico?

Justification

Based on the positioning features that has the state of Michoacán in planting and production of avocado participating not only in the local context but as a leading producer and global marketer with more than 121 000 harvested hectares representing 28% of the global harvested area but with an Average Annual Growth rate of 2.3% well below the 6.3% of Chile and Colombia with 4.5% until 2009 according to the Ministry of Economy (Secretaría de Economía). However, these countries even with TMCA higher than Mexico in short, only 12% of the global harvested area is less than half of what is harvested in Mexico.

Despite this clear advantage it has with the rest of the world, Mexico should not outweigh the rapid growth that some countries have had in planting, harvesting and production of avocado. However, Mexico should strengthen its position and seek appropriate strategies to increase yields in tons of avocado per hectare to grow further adapting to the demands of the international market and not lose the quota it has taken years to earn.

Theoretical assumption

The optimization of the amount of avocado planted in the state of Michoacán has a positive impact on the production of avocado.

Conceptual framework

The avocado industry of Mexico based on its own resources as it is the total area for seed and plantation of the avocado will allow having certain competitive capabilities and increased production.

The resource-based theory and skills basically placing the company as a set of resources and factors are based on the transient competitive advantages and thus justify the strategies that will govern the company. According to Fernández and Suárez (1996), each firm is heterogeneous because it has different resource endowments, it is a product of its history, luck and past decisions, on which transient competitive advantage, and you can keep that heterogeneity along time passes, i.e., competitive advantage can be sustained, which will provide a long term income.

For Penrose (1959) the company is viewed as a collection of productive resources that determine the dimension which can reach. Andrews (1977) tells us that the elements that contribute to the growth of the firm are the services that those resources provide, or the use that is done. Wernerfelt (1984) conceives those resources as tangible and intangible assets that relate to the business of semi-permanent form, as with marking, own technological knowledge, machinery, efficient procedures or capital. Andrews (1977) conceptualizes distinctive competence as business that an organization does especially well, stating further that the effort to create a competition that is truly different, may be the key to business success.

In this context, the strategy is the ability to use the distinctive competence as a way to get an advantage over nearby competitors. Wilson, Thomson and Cook (1997) established five forces to drive the changes that are needed in the area of perishable agricultural products:

A. The greatest market power sector of retail sales;
B. The advantages of being producers-distributors throughout the year;
C. The demand for product marketing;
D. The development of biological technology;
E. Vertical coordination of the producers with distributors.

Together these five forces make agricultural food production systems to be more involved in agribusiness, operating through networks among agents who, based on their articulation can achieve high levels of competitiveness and increase or at least maintain market presence (Friedland, 1991; Gereffi 1994; Padberg 1997).

Contextual framework

All municipalities in the state of Michoacán with the higher capacity of seeded and planted avocado is located in the main producing area also called "green gold" worldwide. This area collects all climatic and geographic features for the avocado crop which is made almost spontaneously and with many likely probabilities to have good crops.

Uruapan, Tancítaro, Peribán Tacámbaro, Salvador Escalante and Ario de Rosales are the major avocado producers of the State of Michoacán producing around 80% of total production in the State (Gómez, 2008).

Figure 1 shows that the stretch of municipalities with the highest avocado production in the State of Michoacán with 88% of the national total volume. The stretch is found on the so called "neo-volcanic axis" which meets the characteristic area needed for planting and harvesting the fruit. Mexico has this advantage that should be exploited to stay competitive in the national and international market.

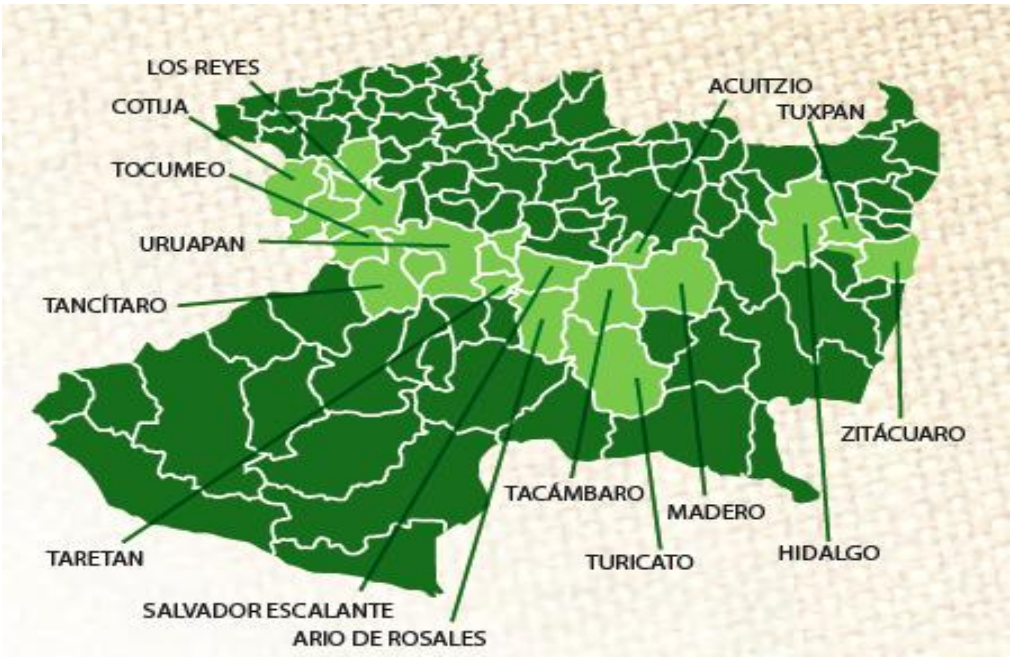

Figure 1: Major avocado producer in municipalities in Michoacán

Research methods

This research was conducted using the qualitative method, by reviewing the existing literature such as the SAGARPA databases, the Ministry of Economy and studies that address various issues related with the agroindistry and in particular with planting, harvesting, production and marketing of avocado from Michoacán Mexico in order to describe the phenomenon of the present study.

SWOT Analysis avocado sector

Strengths: optimal environmental aspects for the planting and cultivation of avocado, experience in production processes and technological processes suitable for most producers.

Opportunities: High demand for the product, positioning in national and international markets, extensive areas for planting.

Weaknesses: Stagnation in the use of technology for planting, reduced exports, small yield in the planted capacity compared to other entities.

Threats: Faster growth of other entities in the relationship tonnes per hectare, decreased exports.

Analysis of results

Mexico currently has an average production of 9.98 tons of avocado per hectare. If its yield grew only 2%, production would increase by approximately 20%. This amounts to almost 243,000 tons of avocado. That is more than it produces Colombia being the fifth place worldwide in the production of avocado.

Conclusions and recommendations

In the agricultural sector, globalization has influenced organizations that seek changes in producer decisions and need

to give more importance to technological development either by external or internal factors.

Mexico should take advantage of being the largest producer, consumer per-capita and exporter and is also the country with more avocado plantings worldwide.

If efficiency is achieved in the ratio of tons per hectare, a minor change has a major impact on the amount of avocados produced.

This would generate a greater market share and therefore the possibility of offering more products globally.

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