La certificación orgánica de la agricultura como estrategia de combate a la pobreza: un estudio en la región Totonaca del Estado de Veracruz[1]

The organic certification of agriculture as a strategy to combat poverty: a study in the Totonac region of the State of Veracruz

A certificação orgânica da agricultura como uma estratégia para combater a pobreza: um estudo na região de Totonac do Estado de Veracruz

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Resumen

La presente investigación proporciona información sobre los elementos necesarios para implementar la certificación de la agricultura orgánica en los municipios de Veracruz que se encuentran en la región Totonaca. Para ello se tomó una muestra de 79 agricultores mediante un muestreo bola de nieve, debido a que no se cuenta con un padrón de productores orgánicos. Se diseñó un cuestionario con el objetivo de conocer los niveles de desarrollo de la agricultura orgánica y los retos para obtener la certificación, esto con miras a identificar políticas públicas para el desarrollo. Para el análisis de los datos se usaron distribuciones de frecuencias y para probar diferencias entre productores certificados y no certificados se usaron métodos no paramétricos de comparación de poblaciones con la

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prueba de chi-cuadrada. Los resultados muestran que productores certificados tienen mayores beneficios frente a los no certificados. El financiamiento, los apoyos públicos y la elección del sello representan las principales limitantes para poder certificarse.

Palabras clave: competitividad, políticas agrícolas, pruebas chi-cuadrada.

Abstract

This research provides information on the necessary elements to implement the certification of organic agriculture in the municipalities of Veracruz in the Totonaca region. This took a sample of 79 farmers by sampling snow ball, since you do not have a register of organic producers. We designed a questionnaire in order to know the levels of development of the organic agriculture and the challenges for certification, this with the aim of identifying public policies for development. Frequency distributions were used for data analysis and non-parametric methods of comparison of populations with the chi-square test were used to test differences between certified and non-certified producers. The results show that certified producers have greater benefits than the non-certified ones. Funding, public support and the choice of the seal represent major constraints to achieve certification.

Key words: competitiveness, agricultural policies, chi-square test.

Resumo

Esta pesquisa fornece informações sobre os elementos necessários para implementar a certificação de agricultura orgânica nos municípios de Veracruz encontrados na região de Totonac. Para isso, uma amostra de 79 agricultores foi feita por uma amostragem bola de neve porque eles não têm um padrão de produtores orgânicos. um questionário, a fim de conhecer os níveis de desenvolvimento da agricultura biológica e os desafios para a certificação foi concebido, isto a fim de identificar as políticas públicas para o desenvolvimento. Para a análise das distribuições de freqüência de dados e foram usados para testar diferenças entre os métodos certificados e não certificados produtores não paramétricos para comparar populações com o teste do qui-quadrado foram utilizados. Os resultados mostram que os produtores certificados têm maiores benefícios em comparação

aos não certificados. Financiamento, o apoio público e escolha de selo representam os principais constrangimentos a ser certificado.

Palavras-chave: competitividade, políticas agrícolas, testes de qui-quadrado.

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Introduction

This research is in the sense of identify if organic certification helps to improve the income of farmers, as well as locate related items to accredit organic certification by the producers of the Totonac region of the State of Veracruz; in order to find possible elements that guide the creation of public policy and improve existing ones. In this way, promote the certification process and improve the economic conditions of the rural population.

In particular, search instruments which combat poverty and improve the conditions of production in rural areas, has led to the actors involved and Governments in particular to put their interest in organic agriculture. The State of Veracruz, stands out among the entities of the country that are privileged by the practice of organic activity; Veracruz one of the States with greater conditions of poverty and low income, the percentage of people in poverty during the year 2012 represented 52.6% and increased by 58% by 2014 (CONEVAL, 2016). The population with income below the line of minimum welfare for 2012 was also 24% increasing to 29.2% by 2014 (CONEVAL, 2016). Similarly the percentage of participation of the economically active population occupied in the primary sector has been plummeting for years, in 1990 represented the 39.36%, 2015 it accounted for only 24%, this is reflected in its scarce contribution of the 4.82% to the State's economy.

In this sense, the conditions of poverty and the low level of competitiveness in the production system of the Veracruz field are inexcusable discussion topics. In the search for

alternatives that allow to mitigate these conditions of poverty and low competitiveness there are those who put their trust on organic agriculture as a tool that improves the living conditions of the sector. There are some definitions that highlight their features and benefits as the one given by the CODEX (2012) it says that "organic agriculture is a holistic system of production management that promotes and enhances agroecosystem health, and in particular biodiversity, biological cycles, and soil biological activity" (p.2).

In this sense, organic agriculture is seen as an instrument to combat the conditions of poverty of producers, since it has many positive characteristics to adopt as a means of production, and to improve the economic conditions of producers, A number of studies have shown their positive impact on the environment, on sustainable development, on consumer health and on poverty reduction, among others (Lotter 2003, Badgley and Perfecto 2007, Scialabba and Müller, 2010, Beuchelt and Zeller, 2011, Seufert, Ramankutty and Foley, 2012, Schwentesius, 2012). At the same time, it represents a low-cost production method where producers can operate by lowering their costs as well as negative environmental effects (Laurin, Llosá, Gonzálvez, Porcuna, and Capa, 2006). Given the above, organic agriculture becomes an attractive means of production to improve the conditions in different spaces, which will impact on the socioeconomic conditions of the rural population.

At the same time, the need arises to identify activities that generate competitive advantages to organic agriculture, in order to increase its competitiveness to be participants of the benefits generated by the market and to guarantee its future development. In this sense, organic certification is a process that gives added value to the product, achieving a difference from the conventional, which results in both price and quality advantages (Chavarri, 2010). Also, it adds a set of advantages as a result of accreditation among which stand out: identify and differentiate the product; Give credibility to the process by guaranteeing a certification body independent of the economic interests involved; Create added value at all levels of a given production chain; Be better known; Win the trust of consumers; Benefit from a collective promotion (Pons, Sivardière, Oyarzun and Tartanac, 2002).

In this regard, producers who have a certification that guarantees quality in the processes and the product will be within the market dynamics and can improve their economic condition. It will also allow them to access a greater number of local and foreign markets, getting involved in the process of exporting in a competitive way. It should be noted that producers who have an opportunity to access organic export markets have been found to have a surplus (Scialabba and Hattam, 2010), which in some situations causes a significant economic improvement; It also represents a healthy form of participation in foreign trade and sustained economic improvement.

On the other hand, world organic market prices are on average 2.4 times higher than their conventional counterparts, as well as more stable (Lord and Tangtrongjita, 2010). Thus certified organic agriculture can represent an attractive instrument of economic improvement for producers in both foreign and local markets.

Considering that "public policies are the set of objectives, decisions and actions carried out by a government to solve the problems that at one moment the citizens and the government itself consider as priorities" (Tamayo 1997: 281) The State can encourage the productive sectors by implementing specific public policies with the aim of impacting on rural development.

This research was conducted in order to find differences between organic producers who have certification and those who do not, to demonstrate that the certification of their agricultural products will bring them greater economic benefits. In addition, the results found serve as a reference for the development of public policies aimed at obtaining certification.

Materials and methods

In the development of the present investigation a limited existence of statistical data from official sources was identified, as well as its updating. The lack of an updated register or register of organic producers certified as non-certified in the State of Veracruz, coupled with a limitation of economic resources for the development of the research, it was considered prudent to implement non-probabilistic sampling using the ball Snow, using the

criterion of being an organic agricultural producer and belonging to the municipality under study.

To obtain the information, a questionnaire was designed and applied with the objective of knowing the current conditions of organic agriculture and the challenges to obtain certification in the municipalities, with a view to identifying public policies for their development and improving the conditions of poverty from the sector. For the design of the questionnaire interviews with certified specialists and organic producers were not certified and certified.

The interview consists of 52 questions, open and closed questions were used; Was structured as follows: characteristics of producers, factors of perception and information, sources of financing, technical elements and government support. The reagents are directed to obtain information regarding organic certification directly and indirectly. The number of producers interviewed was 79, most of whom belong to the Kaná Association and the Local Organic Producers Group of Poza Rica. Of these, 63 are not certified and 16 are certified.

For the application of the questionnaire an agenda of visits to organic producers was built, it was applied in 15 municipalities belonging to the Totonaca region of the State of Veracruz: Cazones de Herrera, Coahuitlán, Coatzintla, Coxquihui, Coyutla, Chumatlán, Espinal, Filomeno Mata, Gutiérrez Zamora, Mecatlán, Papantla, Poza Rica of Hidalgo, Tecolutla, Tihuatlán and Zozocolco of Hidalgo. The information was analyzed and systematized for the interpretation of the results.

In the analysis of results, frequency tables were used to obtain the main characteristics of the producers and the main products they plant. Likewise, to test differences between certified and non-certified producers, the chi-square test was performed. Data analysis was performed using the SPSS statistical package.

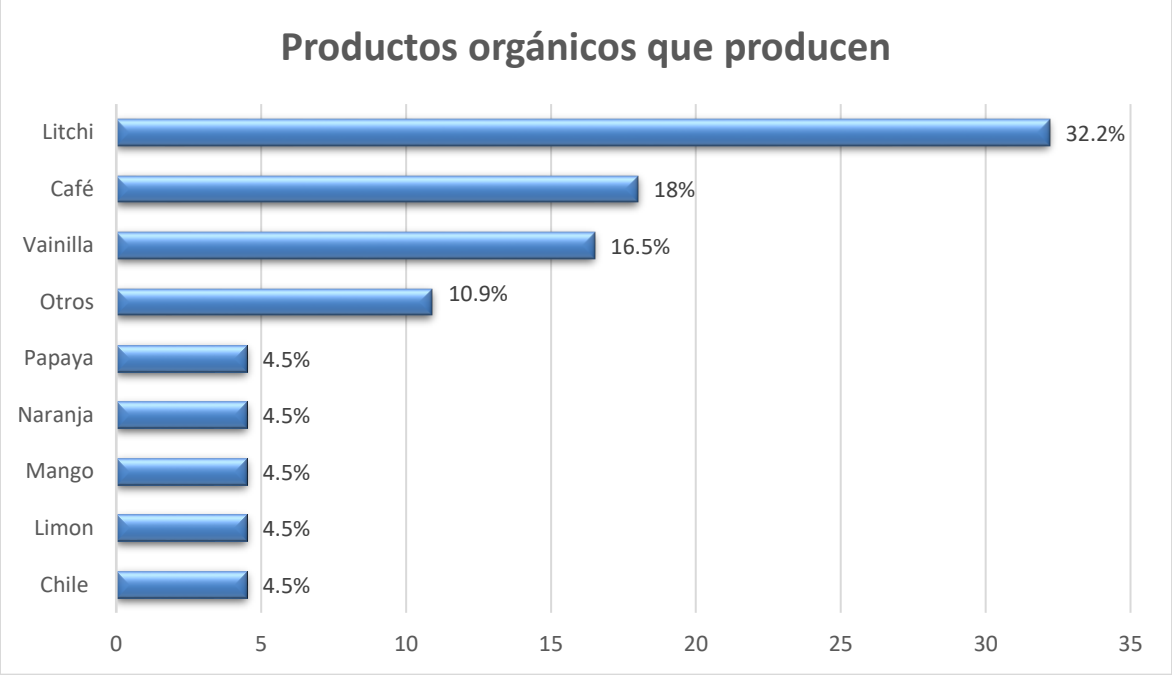
Results

The process of organic certification is one of the goals currently sought by producers in this sector, however, there are different elements that make it difficult to accredit certification to most producers. The results obtained in the research are presented below:

Organic certification benefits and costs in the municipalities of the Totonac region

The Totonaca region is made up of 15 municipalities and has high levels of marginalization and poverty, 10 of them marginalized; They also have an agricultural vocation; Only the municipality of Poza Rica presented a low level of marginalization, however, the oil crisis that the region presents threatens to destabilize its economy. In the region, a great potential of organic agriculture was identified, since there is a varied set of products, which are produced in an organic way, including 89% of producers expressed the ability to produce high quality products. However, most do not have a certification that formally accredits them before the market as organic.

Figure 1. Organic products produced by the sample participating in the study



Source: own elaboration with data of the questionnaire

Figure 1 shows that the lichi crop stands out among the producers as the one with the highest production (32.2%), followed by coffee (18%) and vanilla (16.5%); These products are most often exported. It is also observed that 10.9% corresponds to other products that had a frequency of less than 3, among them the cucumber, pineapple, mint, ginger, tangerine, nopal, macadamia, pepper and beans. It should be noted that these products show strong demand in international markets, mainly the United States and Europe; Specifically the organic market grew by an average 7.6%, consumers in the European Union spent 23.9 million euros on organic food (Fibl, 2016), similarly according to the Nutrition Business Journal the organic market in the United States was estimated At $ 35 billion in 2014 (Greene, 2012). This is why a high-growth market is being seen where producers in the Totonac region can find a development opportunity. On the other hand, the results show that 85% of the producers believe that if it obtains certification its economic benefits will be greater. In this sense, it was asked what was the reason to produce organically and 48% mentioned that it did so to obtain greater economic benefits, only 8% said that it was for environmental reasons and 3% for cultural reasons.

In addition, the perception of producers seems to be reaffirmed with the results of the analysis, since it was found that 63% of them stated that their economic benefits are greater with organic production than when they had conventional production, which is congruent with Some studies (Damiani, 2003, FAO, 2016), where the positive effect in its economy is validated. However, in asking the same question to the certificates, they stated that they have improved their economic benefits even more by adopting the certification, which ratifies the hypothesis presented here resulting in an improvement in their competitiveness and income.

On the other hand, some studies also show that the adoption of organic agriculture allows to reduce the dependence of expensive inputs, mainly of fertilizers (Rosset, 1998; Rodríguez, 1999; Cabanillas, Ledesma and Stobbia, 2009); As the consumption of this type of inputs decreases, the margin of profit in certain cases can increase. In this sense, for the case of the Totonaca region producers, 85% of the producers said that the adoption of organic agriculture has allowed them to reduce dependence on expensive inputs such as fertilizers. On the other hand, 5 out of 10 said that at the beginning of the certification

process increased their demand for inputs of organic use, of which there is little supply in the region; Which makes their purchase more expensive since they have to look for them outside the municipalities.

Another benefit that is identified from organic agriculture, and which has been demonstrated in several studies (FAO, 2016, Gómez-Cruz, Schwentesius, Ortigoza and Gómez-Tovar, 2010, Jacobsen and Sherwood, 2002, Cáceres, 2002) is that it uses more labor than conventional agriculture; This result is congruent with those obtained in the present investigation, since 78% of the producers showed an increase in labor, of which 33% said they were of indigenous origin, which leads to a positive result in terms of the creation of sources Employment and improvements in the economic conditions of the rural population.

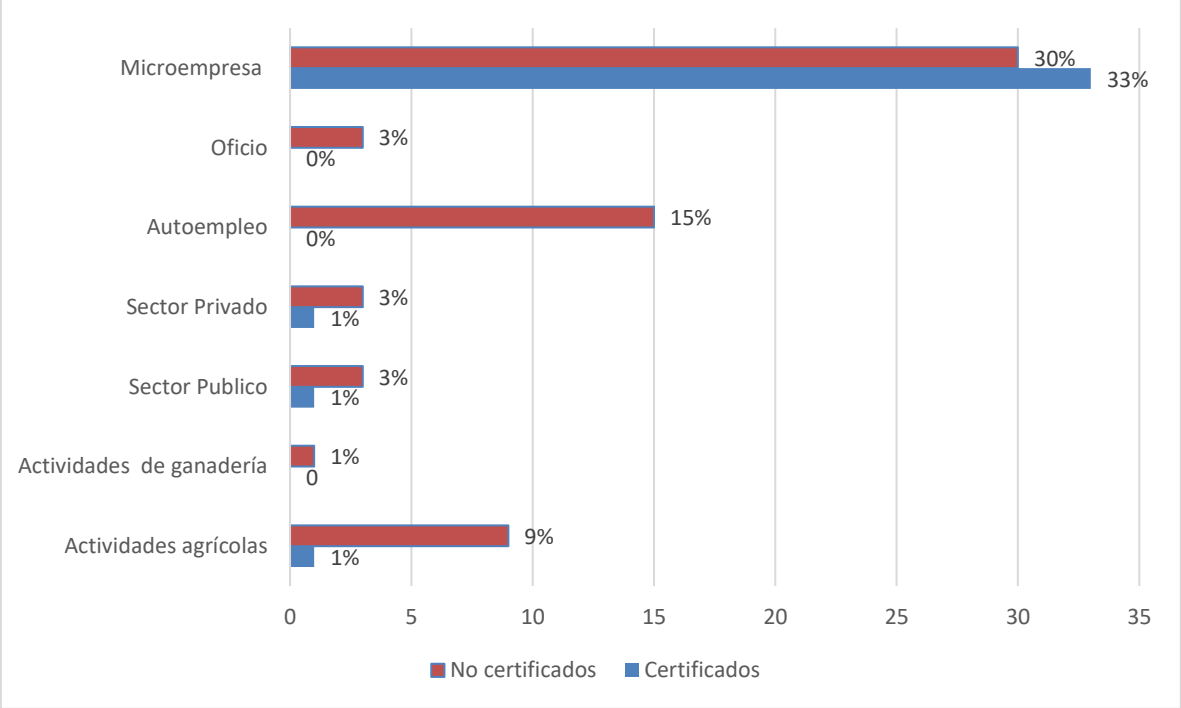
In addition to the above, the results of the present investigation show that during the certification process and when obtaining it, the use of labor is further increased. In this sense, it was found that the producers that are already certified said that they gradually increased the use of labor from 1 to 4 people, generating in this way a greater number of jobs in the municipalities.

Although an increase in labor use was identified by organic production and an additional increase by the certification process, it should be noted that 60% of producers mentioned that the highest cost in organic production is labor; In the same way, the already certified showed the same result, followed by the inputs (39%), and that there are few suppliers of this type of inputs in the region, which increases their costs of production.

There are clear benefits in the economies of organic producers in the region, however, the activity has not been able to represent its main source of income, especially for those who are not certified. Figure 3 shows that certified farmers have the microenterprise of organic products as their main source of income. On the other hand, non-certified people use various economic activities to complement their income, among which are microenterprise (30%), self-employment (15%) and agricultural activities (9%), unrelated to organic production . It was identified that for certified producers the activity that represents their

main source of income is the production of organic crops, resulting in greater economic benefits resulting from certification.

Figure 2. Main source of income between certified and non-certified producers



Source: own elaboration with data of the questionnaire

Figure 2 shows that the income of both types of producers depends on the microenterprise with 30% and 33%, respectively. Perhaps an increase in the profitability of the sector can improve the economic conditions of the producers, however, can only be done by increasing the use of elements such as investment in physical capital and technical assistance, productive credits, using information and marketing networks (Bardhan, 1996; Köbrich et al., 2004). These elements of competitiveness of the sector were identified as scarce in the producers of the Totonaca region.

On the other hand, some research has shown that in organic markets there is an over-pricing of products (Scialabba and Hattam, 2010). In the present investigation no evidence was found in favor, since the organic producers stated that they do not obtain a premium over their products (70%). However, 4 out of 10 producers find that market price performance is stable, providing certainty and laying the groundwork for a safer income stream.

Certification barriers in the municipalities of the Totonac region

There are several barriers to organic producers in Mexico and in particular those in the Totonaca region. When producers decide to access certification to increase their competitiveness and improve their economic condition, key elements have been identified that have hampered this process.

In this sense, when asked the producers why they did not certify, 6 out of 10 mentioned that it was due to lack of economic resources and 4 out of 10 said that because they did not know the sector. They also mentioned that the main problems they perceive not to certify are lack of financial resources (52%), not knowing who to sell the product to (24%) or who do not receive government support (10%).

In addition, a set of factors were analyzed on an individual basis as they largely limit producers' certification; On the one hand is the lack of financing in the municipalities of the region both to acquire certification for the first time and to pay for future recertifications. There is a need for resources, because most of the time the producer does not have sufficient resources due to his poverty condition and low income level. However, there are alternatives such as FIRA credits, which also provide support for business training, technical assistance, consulting, technology transfer and skills development, in order to improve the competitiveness and sustainability of rural enterprises and producers, As well as financial intermediaries (FIRA, 2016). However, 47% said they did not know the FIRA credits.

Second, government support stood out as a factor that producers perceive as vitally important in order to be certified. In the results of the investigation, 81% of the producers stressed that they did not receive any support from the government for their productive activity. On the other hand, only 12% mentioned having a subsidy for the transition from conventional to organic agriculture or some of the existing support for certification. In this sense it is pertinent to point out that although there are various public supports for organic agriculture aimed at encouraging various aspects for the development of the sector, which include support for conversion, formulation of the organic plan, support for the acquisition

of organic inputs (SAGARPA , 2016), until the support to implement the certification, which is our point of study, was found that the majority of the noncertified producers are not aware of the support (53%). At the same time, certified producers who stated that they were aware of government support, also mentioned that they had been used to achieve certification.

Thirdly, the producers stated that they did not adopt organic certification, since 53% of producers do not know if there is a local organic market that is willing to pay the price that the product acquires by paying certification costs. Given the above, 30% of certified producers mentioned that they prefer to export or self-consuming, since they use an intermediary (60%) and most of the time they refuse to pay the product as organic, offering the producer the same Price than that of a conventional product; On the other hand, the same intermediary expresses having no place to market it.

In addition to this, a link was identified with research centers, specifically in the area of business or incubators, that allow producers to identify possible local or export markets in which demand for their production is depleted. In addition, 48% do not know any local association that foments the organic agriculture.

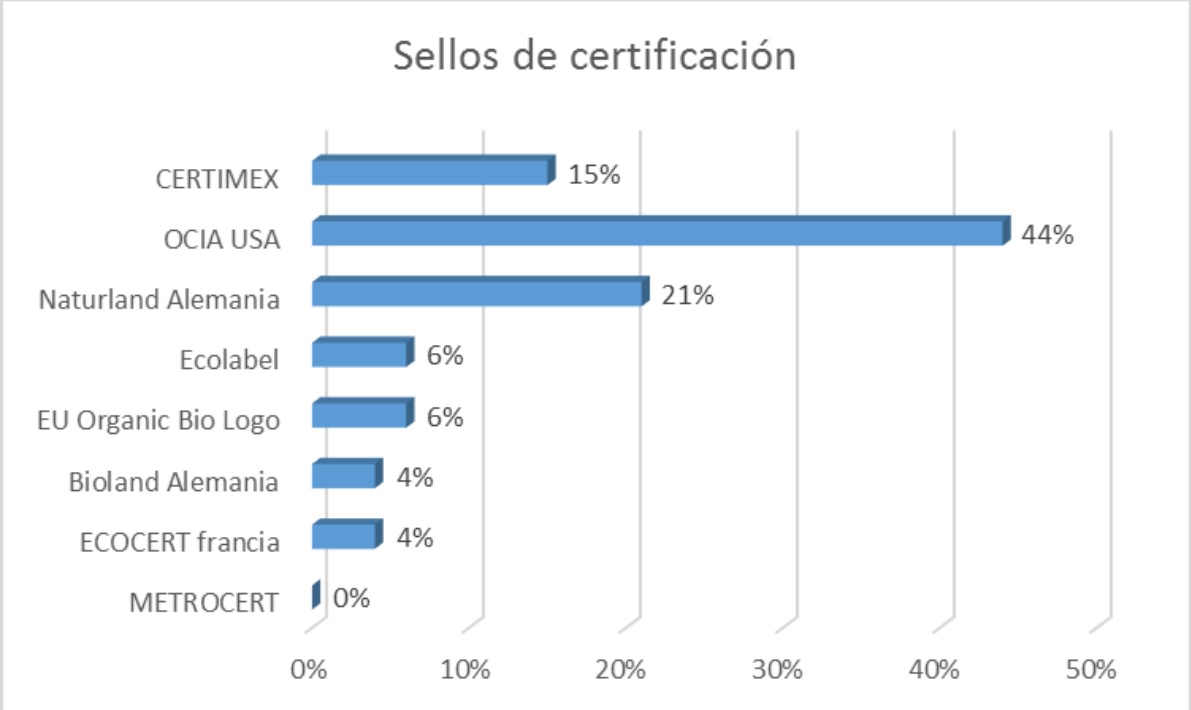
Fourth, to identify some aspects related to the choice of an organic certificate that allows them to accredit and improve their income level; In this line, it was found that 55% of the producers mentioned that they do know the different certifiers, as well as the costs and certification requirements. However, they mentioned that the step that they consider more complicated is to select the certifier (78%), since they do not know which one offers them greater benefits, together with the fact that they do not know where they can export their products. This result reinforces the need to establish research centers for the development of businesses that give them the orientation of the market where the profitability is greater as well as the choice of their certification of greater benefit depending on their products.

It should be noted that research and technological innovation have a strategic economic value and are fundamental for the integral development of the organic sector. Only 48% mentioned having links with research centers that are oriented to technical or biological

analysis, but there are no specific research centers oriented to the business side that can contribute to the marketing problem.

However, the present study showed that almost half (44%) of the producers indicated that the seal that best suits them is OCIA USA (figure 2), however, there is a need to orient producers to cover markets that are Extremely attractive for exporting these products, as well as the search for local markets that improve the producer's income; An example of this is the case of lychee, vanilla and improved pepper, which are highly demanded by European markets. It should be noted that the municipalities in the region are potentially producers of these three products. Producers who are certified included in the study stated mostly have the German certification.

Figure 3. Certification stamps that producers believe are most convenient.



Source: own elaboration with data of the questionnaire

Finally, to determine if there are differences between certified and non-certified producers, chi-square tests were performed to test these differences. The results are shown in Table 1.

Table I. Chi-square test to test differences between certified and non-certified farmers.

Variable	Valor p
Cuenta con algún tipo de apoyo gubernamental	0.050
Tiene acceso a algún tipo de crédito	0.030
Existe alguna asociación local que fomente la agricultura orgánica	0.000
Conoce organizaciones que respaldan la agricultura orgánica	0.000
Tomó o recibió capacitación antes de producir de manera orgánica	0.050
Cuenta con algún vínculo de investigación o asesoría para certificarse	0.030
El precio que obtiene por sus productos es superior a los productos con certificado	0.004
Conoce algún mercado orgánico local que demande productos con certificación	0.003
Donde comercializa los productos	0.008
Tiene problemas con el suministro de agua	0.050
Cuenta con seguro agrícola	0.030
Tiene sistema de riego	0.050
Principal fuente de ingreso	0.006
Conoce la ley de apoyo para la agricultura orgánica	0.000

Source: own elaboration with data of the questionnaire

Table 1 shows that there are significant differences between certified and non-certified producers, since those that are certified obtain greater benefits in terms of types of support, access to credit, information on organizations that support organic agriculture both local and Internationally, they are offered training to produce organically, they have research links to improve their production, their prices are higher than conventional products, they know the local market, they know where to market their products, they do not have problems with water supply , Have agricultural insurance, have irrigation systems, know the law and their main source of income is agriculture (Table 1).

The results show that the organic certification of agriculture does add a competitive advantage to the producers of the Totonaca region, as well as an improvement in income levels.

Conclusions

The following is a set of general conclusions that derive from the results obtained; First, the objective of the present investigation was to analyze the impact of organic certification on the improvement of the income of the producers in the Totonaca region of the State of Veracruz; Second, to identify the factors that have limited their adoption among non-certified producers.

In this sense, the results showed that certified producers obtain higher incomes; In addition, certified producers showed greater benefits than those not certified in terms of access to credit, access to government support and technical advice. The theoretical elements of certification appear to be met, the analysis shows considerable differences in access to benefits between the two types of producers, so the above validates the hypothesis. It was concluded that organic certification did improve the income of the agricultural producers of the municipalities under study.

Clearly, certification represents an instrument that places a high value on organic agriculture, which in most cases transformed the situation of the producer into a sustainable activity with better economic possibilities.

On the other hand, a set of limiting factors to achieve certification was identified, but the ones that stood out among the majority of the producers in the Totonaca region were: financing, government support and the choice of the most convenient certification.

Given the above, we must work to implement certification through the determination of strategy and actions to achieve this competitiveness instrument, with the aim of making it an element that will give organic agriculture an added value in its competitiveness and That is a means of detonating improvement. The above will depend largely on the public policies that are developed for this purpose. In this regard, it is essential to continue developing the policy of supporting organic agriculture, guiding producers to the direct provision of credit

and subsidies to private credit; As well as the financing of research in different lines, such as the financing of recertifications, among other essential factors.

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