

Imperfection of strategies and economic impact of the cocoa sector: A case study in the context of Ecuador

Imperfección de estrategias y el impacto económico del sector cacaotero: Un estudio de caso en el contexto del Ecuador

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ABSTRACT:

The production of cocoa in Ecuador presents inconvenient of participation of all the sectors. There is no equity in the market share among them, so small farmers do not have the same opportunity as the others. The aim of this work is to identify the causes that affect the production and trade of cocoa in small farms at Mariscal Sucre and Roberto Astudillo Parishes of Milagro town, Ecuador. This research used updated bibliography and also observation, quantitative and deductive methods. Furthermore, it applied a questionnaire to one hundred families of small cocoa farmers through a fieldwork where two variables were the subjects of the study, a) lack of strategy and b) repercussion in the cocoa sector. The results of this work showed that 66% of small farmers have a precarious family economy; 77% distrust of cocoa farmer associations and 81% are willing to participate in training courses to learn how to grow their products.

Keywords: d

RESUMEN:

La producción de cacao en Ecuador presenta inconvenientes de participación de todos los sectores. No hay equidad en el mercado entre ellos, por lo que los pequeños agricultores no tienen la misma oportunidad que los demás. El objetivo de este trabajo es identificar las causas que afectan la producción y comercialización del cacao de las pequeñas fincas ubicadas en las parroquias Mariscal Sucre y Roberto Astudillo del cantón Milagro, Ecuador. Esta investigación utilizó bibliografía actualizada, sumado a los métodos de la observación, cuantitativo y deductivo. Además, se aplicó un cuestionario a cien familias de pequeños productores de cacao a través de un trabajo de campo donde se abordaron dos variables, a) falta de estrategia y b) repercusión en el sector cacaotero. Los resultados muestran que el 66% de los pequeños productores tienen una economía familiar precaria; 77% desconfían de las asociaciones de productores de cacao y el 81% están dispuestos a participar en cursos de capacitación para aprender a cultivar sus productos.

Palabras clave: aplicación; cacao; imperfección; sector; estrategias

1. Introduction

Cocoa is a tropical fruit considered as one of the products of greater export of Ecuador due to its aroma. In 2010, the cocoa sector had an 11% part in exports and it was necessary to boost productivity for the benefit of the agricultural sector because part of the sustainability taking into consideration that at present the cultivation of this plant is considered as Entrepreneurship in rural areas. (PRO-ECUADOR, 2013)

One of the attributes of the excellent quality of cacao in Ecuador is its inclusive and associative form of production, so there are more than 100,000 families producing it.

According to what is mentioned by the Prefecture of Guayas, the cacao is the symbol of nobility and economic prosperity, which has identified our fertile land since before it was a republic. In Mariscal Sucre and Roberto Astudillo parishes, medium-sized farms whose area ranges from 10 to 50 hectares, which cover more than 3500 hectares in total, considering about 64% of the farms that are dedicated to the production of cocoa (Guayas, 2016)

The large farms of more than 50 hectares occupy 1185 hectares, 22% of the total agricultural of Mariscal Sucre to the small farms of less than 10 has that are scattered in the whole territory correspond 764 has the 14% of the land with agroproductive activities (Romero, Fernández & Macías, 2016).

In Ecuador, cocoa cultivation has been commonly identified in the different plantations since colonial times, and it is currently estimated that there are around 500,000 hectares of land where cocoa is grown on approximately 100,000 farms. However, this product is not well paid on small farms because of the abuse they acquire from the buyer, since the price of the cocoa product is paid below 50% of the real, which affects their family economy.

The small farmers located in Mariscal Sucre and Marcelino Maridueña parishes when selling their products do not get

the reasonable price from the buyers of this area of Milagro, significantly harming small farmers who do not have any recourse to live.

Although there are different associations or organizations such as Pro-Ecuador, Ane-cacao, Con-cacao, Corporación Fortaleza del Valle, among others, related to the purchase of cocoa, small cacao farmers are not considered to be associated with them, only who have medium and large estates are allowed. Therefore, they do not have options that favour receiving the reasonable payment for the sale of their products, which causes displeasure and dissatisfaction because this affects their interests, such as: a) acquisition of chemicals to combat pests, b) acquisition of seeds to advance their crops, c) money needed to support their families. On the other hand, not belonging to an association prevents them from having benefits such as guidance for the correct cultivation of products, credit opportunities that allow them to advance with their production, among others.

This research aims to help improve social and family economic status of small farmers located in Mariscal Sucre and Roberto Astudillo parishes of Milagro, Ecuador, so the proposal that is to promote the creation of an "Association to small farms" that through its laws and regulations such as: the Constitution of the Republic of Ecuador, Ministry of Agriculture, Livestock, Aquaculture, and Fisheries (MAGAP for its acronym in Spanish), Ministry of Industries and Productivity and Plan of Good Living, Objective 10 of "To promote the transformation of the productive matrix", they can improve their quality of life, receiving a reasonable price for their products, growing in knowledge to apply new cultivation techniques that serve to optimize their crops.

2. Methodology

In this research were considered 100 families owning small farms in Mariscal Sucre and Roberto Astudillo parishes in Milagro, Ecuador, dedicated to the cultivation of national cacao,. Therefore, several methods were used, such as: direct observation, deductive, direct, empirical and quantitative method. Among the techniques for collecting information, an informative survey was applied based on 10 questions related to the lack of strategies and the causes that are affecting the economy of the 100 families that live of the cocoa product.

A non-probabilistic sample was taken using the quantitative and qualitative methods added to that of the observation, which was indispensable to obtain the results and thus precede to the analysis. From 155 families who owned the small farms of Mariscal Sucre and Roberto Astudillo parishes, 100 families were selected.

3. Results

3.1 Main factors which affect the economy of the cocoa sector Mariscal Sucre and Roberto Astudillo parishes.

According to data recorded by the National Institute of Statistics and Censuses (INEC for its acronym in Spanish) and the Survey of Surface and Agricultural Production (ESPAC for its acronym in Spanish), the production of hectares of cocoa in Mariscal Sucre and Roberto Astudillo parishes are divided into small producers which are those with up to 10 hectares, medium producers with between 10 and 50 hectares, and large producers that exceed 50 hectares (MAGAP, 2007).

However, families owning small and medium-sized farms dedicated to the cultivation of the National Cocoa do not receive financial support from the Central Government or the relevant agencies due to several problems, including:

- They are not associated with government agencies, so they do not receive any kind of advice to help them to increase their crops and make a profit from them.
- Their work creates low income, affecting the lack of education of families, who choose to send their children to different schools in the locality with great difficulty due to they do not have the sufficient economic resources putting at risk their loved ones because of many times they must walk to distant places to their home.
- Families generate much expenditure in their daily living and have much need of government guidance to improve their income.
- They do not have economic resources to fumigate their plantations, which are affected by the "willow and broom pest", the main disease that attacks the cacao.

These factors are affecting many farmers who have chosen to sell their land because they prefer to receive the money to engage in another activity that allows them to live better and in this way to help their families. However, it is not the correct thing since all his life he has fought to maintain his earth and to produce them. It is unfortunate to observe how many peasants put their properties on sale on pages like: <https://www.google.com.ec/#q=olx.milagro>, <http://casas.mitula.ec/casas/fincas-milagro>, among others, so, the Ministry of Agriculture, Livestock, Aquaculture and Fisheries of Ecuador must give greater attention to this fundamental sector in the country's economy.

According to SENPLADES, until 2009, the cultivation of Cacao reached 2018 hectares and according to the International Cocoa Organization, Ecuador ranks fourth in the production and export worldwide of Aroma Fine Cacao, covering 60% of the world production, considering some factors that benefit that such as: social and environmental responsibility, leadership, ethical conduct, knowledge and preparation for cultivation, which has allowed this cocoa sector in the majority to be satisfied and motivated to continue with this agricultural activity (SENPLADES, 2013).

Though, this body is giving greater attention to owners of large farms, which affects other peasants who have their land with crops that they can not maintain for lack of government advice and assistance (Espinosa, 2015).

The Ministry of Agriculture, Livestock, Aquaculture and Fisheries of Ecuador promotes a project to reactivate Aroma Fine Cocoa; however this does not cover all families working in this activity.

On the other hand, there are problems of advice and planning for those who devote their time to this work; nonetheless, many families do not know how to control the money obtained from the sale of cocoa, which leads to problems investing in their plantation (MAGAP, 2012).

Although there are currently regulations for the cultivation and production of the National Cocoa in Ecuador, the

conditions of the cocoa farmer are established according to strategies with business and commercial vision that help the farmers to form the great value chain that points to the sustained and sustainable approach that follows a production process from the beginning, that is, from the harvest to its industrialization (Chiriboga Vega, 2015).

Though, the cocoa farmers who live in Mariscal Sucre and Roberto Astudillo Parishes, obtaining the economic resources are not manageable, that is, they do not have a training and awareness program that may be the way to improve the acquisition of the economic resources that benefit the peasant families in these places (Sánchez, Castellanos & Domínguez, 2008).

3.2. National Association of Cocoa Exporters - Ecuador (ANECACAO)

The country's cocoa sector is represented by the ANECACAO Association, charged with overseeing the interests of cocoa producers and exporters. This body works together with governmental entities that favor the development and use of this product.

For Ecuador, it has great alternatives to expand markets, since Ecuadorian cacao is recognized worldwide and is considered one of the best in the world, due to its quality and productive sustainability (Sánchez et al, 2013).

According to ANECACAO, in 2015, the export of cocoa affected a sharp fall of 42% during March and April 2015. However, from May 2015 there was an irregular behaviour in the export volume, showing an average of 1.4 tons per month (Moncayo, 2016)

However, our country has a growing cocoa production with a registered and unsurpassed feature, however due to climate changes; harvests recorded a substantial reduction of 30,000 MT in 2015 (Moncayo, 2016).

3.3. Aroma Fine Cocoa

Cocoa is native to America and was found in Ecuador in the 17th century, with Christopher Columbus being the first European to discover it when arriving at what is now Nicaragua, in Central America. Ecuador is a country that has proven to have a high global level in the cultivation of domestic cacao because it produces the best raw material, without the use of chemicals for its production, maintaining a short fermentation with a good aroma and delicious taste. This product is identified with the classification of Fine Cacao of Aroma.

According to statistical data, the largest production of cocoa is in the provinces of Los Ríos, Manabí and Guayas, presenting a national or fine variety of aroma, which is well received in the international market due to its excellent aroma, flavor and quality (Flores González, 2007).

Ecuador is a competitive country in relation to Aroma Fine Cocoa followed by Venezuela, Panama and Mexico, which are countries that have their share in the world market of this product, considering that of the total of the Ecuadorian export is estimated that 75% is Fine aroma Fine Cocoa while 25% belongs to other varieties like the CCN51 (García, Perdomo & Ortiz, 2014).

3.4. Pests that damage cocoa production

According to data obtained from the Ministry of Agriculture, Livestock, Aquaculture and Fisheries MAGAP, the state estimates that the proliferations of willow and broom pest represent a risk for about 170 thousand hectares, hurting a third of the farmers local. In Ecuador, there are approximately 500 thousand hectares destined to the cultivation of cacao, and this activity agglomerates about 100 thousand producers (MAGAP, 2007).

In addition, producers are cultivating grain varieties with a higher rate of yield, although this is not as profitable as "fine aroma" or "cacao up" cocoa, in order to continue increasing production at the national level, thus protecting to the economic part of families. However, this strategy does not apply to small farm owners, causing the disincentive to continue with such production (Hemisferios, 2016).

3.5. Organizations of the cocoa sector of Ecuador

Despite the existence of several organizations related to the production of Ecuadorian cacao, these sectors do not provide the pertinent support to all sectors, in this case, small landowners, that is, small cacao farmers (Maridueña & Astudillo, 2016).

This work takes in evidence the cultures of Mariscal Sucre and Roberto Astudillo parishes, belonging to the Milagro canton, places where these groups of cacaoteros have not been considered that have smaller land and therefore the production is smaller in comparison with the big farmers of the zone (León, Calderón & Mayorga, 2016).

It is to highlight the existence of organisms such as:

- National Association of Cocoa Exporters [ANECACAO]
- Association of Producers of Aroma Fine Cocoa "[APROCAFA]
- Corporation of Organizations of National Fine Cocoa of Ecuador [CONCACAO]
- National Union of Organizations of Cacaoteros of Ecuador [UNOCACE]
- Federation of Cacao Producers of Ecuador [FEDECADE]
- Corporation of Cacao Agroindustriales of Ecuador [CORPCACAO]
- National Cocoa Association [ASOCACAO]

3.6. Decreased cocoa of small cacao trees

Cacao plantations are frequently infected by insects belonging to the family Saturdinae and Megalopigidae that attack the CCN 51 and National materials, discouraging the ability to transform chlorophyll through the leaves, avoiding a good production of cocoa (Alcaldía de Milagro, 2014).

There are several reasons why the production of Ecuadorian cocoa from the small farms of the Mariscal Sucre and Marcelino Maridueña parishes begins to decline. These include:

- Lack of financial resources to:
- Acquire the chemicals they require to eliminate the effect of common pests such as the "willow and broom pest", which infect the cocoa plant (Arévalo et al, 2016).
- Buy selected seed to increase production.
- Rent machinery to remove their lands, doing this work manually, which affects their production.
- Lack of government support in credit matters.
- No technical advice for the cultivation, harvesting or marketing the product.

As long as there is no governmental attention that significantly contributes to the benefit of small cacao farmers in different sectors of the country, the owners of these lands will continue to be impoverished and lose all control of what little they have. In a social inclusion must encompass all areas of the community to be equitable (MAGAP, 2007) .

3.7. Cacao prices down to the sector in Ecuador

The international price of cocoa per tonne fell from 3,400 to 1,900 dollars in recent months. This product represents the fourth most important item of the exportable supply and, considering that of the 500,000 hectares planted in the country, 90% is in the hands of small producers, and then the situation requires urgent measures.

This sector has been facing a global crisis since August 2016 due to an excess in global output and declining consumption. At least, the two main producing countries of the world had a surplus of 300,000 tonnes of cocoa between 2016 and 2017, due to the excellent weather conditions in these countries. Ecuador was not far behind in the increase of its production. In 2000, it rose 100,000 tonnes of cocoa and in 2015, it rose 250,000 tonnes.

In 2016, Ecuador exported about 223,000 tons of cocoa beans, 25,000 tons of semi-finished products and 1,700 tons of finished products, according to figures from the National Association of Cocoa Exporters (Anecacao).

Unlike the prices that are paid at the moment, between \$ 40 and \$ 50 per quintal, the producers of the program receive up to \$ 85; but it is still low compared to the one paid in mid-2016 that was \$ 135 to \$ 140.

The farmers in Los Ríos province stopped planting cacao for guanabana because they could not cover their production costs at current prices.

The export of cocoa would drop about 80 thousand tons and would be stationed in a similar one to that of last year. It proposes to create a public-private agenda, to position cocoa as the best in the world, to encourage and multiply company programs with farmers that allow them to improve their techniques.

The fall in international cocoa prices worries the producers of this fruit, the third item in non-oil exports of the country. The cocoa sector fears that this situation will continue because some 500,000 families depend on the cocoa agro-industry in Ecuador.

For Andres Perez, a cocoa farmer, neither the recent rains nor the plagues have been as damaging as the collapse in product prices. According to Perez, the value of the yard was reduced from \$ 140 to \$ 70.

For the president of the National Association of Cocoa Exporters, Juan Pablo Zúñiga, the fall in prices of cocoa is due to a global overproduction generated by Ivory Coast and Ghana; and the reduction of chocolate consumption in Europe.

A difference of more than \$ 1,000 that, multiplied by the 280,000 tons per year produced by Ecuador, projects an impact of about \$ 280 million by the end of the year.

3.8. Field information

This research considered the gender of the owners of small farms and this was how it was registered 86 male people are owners of these lands and 14 people belong to the female sex.

In another aspect, it was verified the age of the farmers to analyse have love to the crop or if they are people who have acquired these lands due to other circumstances. Statistical data established that 56% of people fluctuated between 18 and 25 years. That is, most of them turn out to be young owners who want to get ahead and therefore feel limited in their work interests. In the same way, the dimension of each farm was verified, the same one that reflected the 74% of the respondents possess a dimension of 5 hectares.

To obtain the field information a simple random sample was applied through a survey formed of 10 questions formulated to the small farmers of Mariscal Sucre and Roberto Astudillo parishes, which was received on October 22, 2016.

The analysis of the results of the survey applied to the people involved to this research is given below, which was developed through tables and graphs that allowed reflecting the subject situation of study by means of descriptive statistics. Here the most relevant results are presented.

In question 1, it can be seen that 67% of the people sow national cocoa, that is to say, there are a large number of families that work with this product, but they have as their support the continuity of the same because they do not have a They do not have any organization that can provide them with the financial help to get ahead in production.

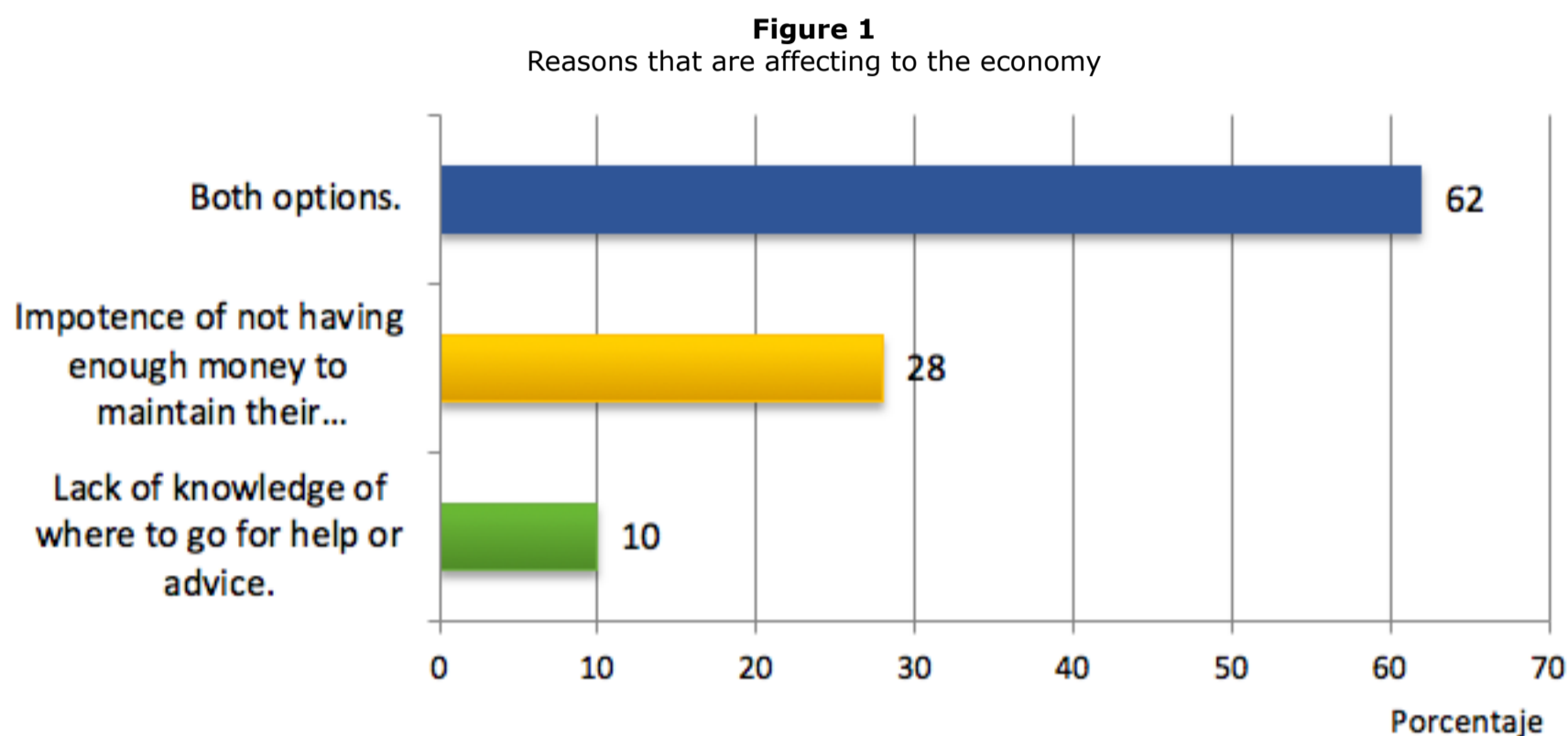
In question 2, referring to the economy of the owners of the farms surveyed, only 10% said they found themselves very well, however, 59% answered that they have a regular economic situation which indicates that they have great bankruptcy in the administrative part that does not allow them to advance in improving and increasing their agricultural production.

Table 1
The economy at present time

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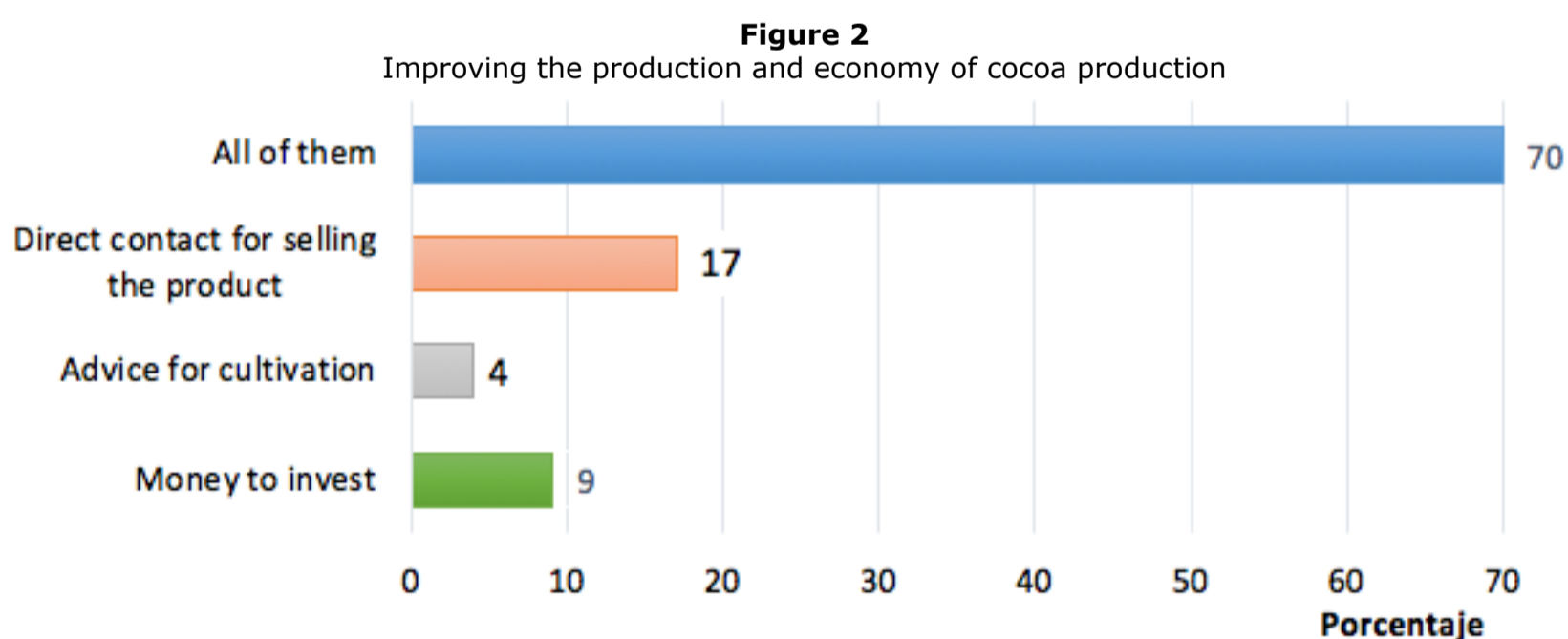
Options	People	Percentage
Very Good	10	10%
Good	24	24%
Regular	59	59%
Bad	7	7%
Total	100	100%

In question 3, 62% of farm owners stated that the causes that are affecting their economy are: ignorance or advice and the impotence of not having enough money to maintain their agricultural production. This highlights the need to pay attention to this retail sector forgotten by the authorities and representatives of the cacao producers at the country level.



In question 4, related to Government agency collaborates with the cocoa sector of Ecuador, 59% of the owners of farms indicated that they do not know of the existence of any governmental organization that collaborates directly with the country's cocoa sector and 41% mentioned that if they identify it, in any case, if they know of their existence, do not know how to do in order to have access to some kind of benefit.

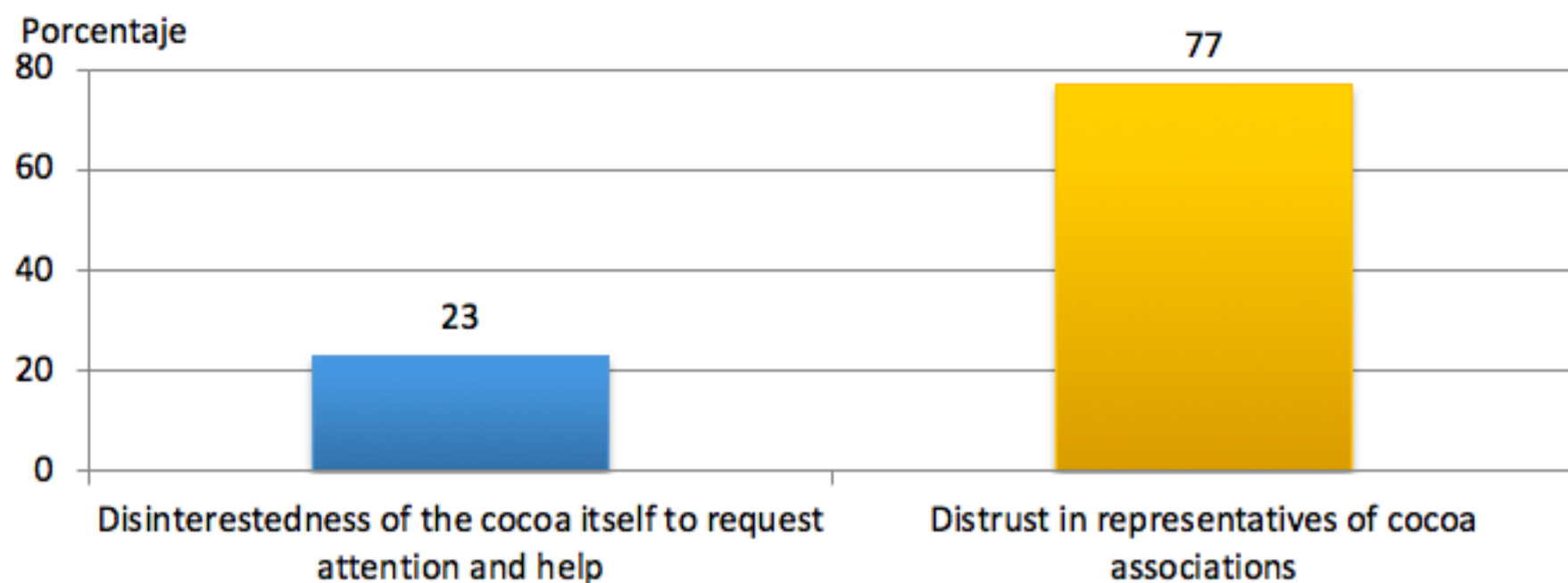
In question 5, concerning the type of assistance required by farmers to improve production, 70% said they need to have cash to invest and simultaneously have the respective advice for cultivation that has directly the contact of the sale of the product. This result evidences the need of a support guide that allows being the support of the cacaoters retailers to continue with the agricultural production



Concerning question 7, based on the previous question, 93% of respondents stated that they actually requested funding or advice from financial or advisory bodies, without a positive response that would help them alleviate their condition, deteriorating their situation. To continue in the cultivation of the product. This makes it possible to point out that the organisms that should provide this type of assistance are only targeting the medium and large cocoa farmers, thus undermining the social inclusion that is contemplated in the Good Living Plan of Ecuador Program.

In question 8, concerning factors that affect the attention of the sectional agencies for the cocoa sector retail groups in the parishes of Mariscal Sucre and Roberto Astudillo, 77% of those involved mentioned that they are very distrustful of the representatives of the different organizations or associations of the cocoa sector. Likewise, 23% of them indicated that they felt a personal lack of interest in seeking the care or advice of organizations that they orient. This result shows that this cocoa sector does not have the pertinent help to improve its agricultural production.

Figure 3
Aspects which affect to the economy of the cocoa production



It makes possible to point out that the organisms that should provide this type of assistance are targeting only the medium and large cocoa farmers, thus undermining the social inclusion that is included in the Good Living Plan of Ecuador Program.

4. Conclusions

The results obtained in this work show that after having verified the need that the owners of small farms have in relation to maintaining their active economy in order to be able to have a better life system, it is established that there is indeed the predisposition of those involved so that this change is established and this provides an effective and active social inclusion in favour of the community.

On the other hand, it is verified that if cocoa retailers do not receive the fair payment for the sale of cocoa, they will not be able to buy fertilizers for their production, nor can they acquire seeds to grow, nor will they have recourse to the rental of machinery to work the land and is related in the article *Diagnosis of the Productive Chain of Cacao in Ecuador*, issued by the Economic Commission for Latin America and the Caribbean, which mentions the importance of creating specific lines for small producers of cacao in order to reduce the space of the intermediaries and so they can sell their product at the fair price (CEPAL, 2011).

Likewise; Government aid should be maintained in all groups of peasants engaged in agricultural production, otherwise they will not be able to count on credits.

In addition, the results of the research demonstrate the importance of applying certain changes within the social inclusion in the *Political Constitution of Ecuador*. However, there are several strategies that can be created to benefit small cacao farmers in Mariscal Sucre and Roberto Astudillo parishes, Ecuador, among which are:

- Establish direct credit lines that contemplate low interest to benefit this people.
- Develop a method to replace cocoa plantations that can not be rehabilitated to be zoned in another sector so that small producers continue their activity.
- Establish an organization that is prepared to give seminars to these farmers with current crop strategies to improve their production.
- Implement tax incentives so that small landowners can feel motivated to continue their production.
- Establish a geographic zoning adjusted to the land of small cacao trees to receive due attention from organizations as a basic contribution to their production.

It is utmost importance that the Ministry of Agriculture and Livestock Aquaculture and Fisheries manage the due importance so that it benefits this retail sector so that they allow to generate the economic reactivation of this group of people, allowing them to live with dignity.

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