


# Competitive Analysis

## Avocado Hass, Cacao, Dairy, Mango, Palm Oil

Research Report for IDH – the sustainable trade  
initiative

Amsterdam Research Project  
Colombia 2019





**Written by:**  
**Sietse van den Elzen**  
**Emma Pier**  
**Christiaan Pleijsier**  
**Alexandra Virnot**

**Supervised by:**  
**Marc Bahlmann**  
**Peter Peverelli**

## Disclaimer

The research information provided in this report is directed and intended for distribution to IDH - the sustainable trade initiative, hereafter referred to as IDH.

All information contained in this report is obtained from sources believed to be accurate and reliable. However, because of the possibility of material, interpretation, and analysis errors, as well as other factors, the analysis and recommendations provided, expressed or implied, are not to be inferred as to the accuracy, timelines, or completeness. The Stichting Vesvu Studiereizen, which organizes the Amsterdam Research Project, the Faculty of Economics and Business Administration, Study Association Aureus, its researchers and its accompanied staff will not be liable or be responsible for any loss or damage caused by using any of the provided information. Any person or entity that uses the information obtained from this report does so with this understanding and acceptance.

The research information contained in this report may not be reproduced or transmitted in any form without prior written consent of Stichting Vesvu Studiereizen.

Amsterdam Research Project  
t.a.v. Stichting Vesvu Studiereizen  
De Boelelaan 1105  
1081 HV Amsterdam  
The Netherlands  
T: +31 (0)20 598 6136  
E: [info@arp-vu.com](mailto:info@arp-vu.com)  
W: [www.amsterdamresearchproject.com](http://www.amsterdamresearchproject.com)

# 1. Preface

The Amsterdam Research Project, hereafter ARP, is an international consultancy project organized by the Faculty of Economics & Business Administration of the Vrije University Amsterdam. Since 1999, ARP shows extensive expertise in business consultancy and research in foreign countries. The project focuses on Dutch companies or organisations wanting to expand their business to upcoming economies and provides strategic and tailor-made solutions for organizations of all sizes. In April and May 2019, a group of 20 Master students visited Colombia for their field research.

This report has been written for IDH in correspondence to the assignment provided by Ted van der Put, IDH Executive Advisor. During five weeks in Colombia, four students conducted field research and examined five different commodities that are part of the AgroColombia Partnership: Avocado Hass, Cacao, Dairy, Mango, and Palm oil. The entire field research was conducted in Colombia, mainly in the city of Bogota, Medellin, Cartagena and Santa Marta. Next to the field research in April and May, the team worked for almost a year in total to realize this project and spent several of those months preparing and finalizing the research for IDH. We would like to thank IDH and especially Ted van der Put, Miguel Pinedo, Dannely Carvajal Martinez, Adriana Mejia Cuarta and Angela Betancourth for giving us the opportunity to conduct research on their behalf and for the trust in our skills and capabilities. Furthermore, we would also like to thank our academic supervisors Peter Peverelli and Marc Bahlmann for their support during the entire process, including desk research, field research, and the processing of our findings.

Sietse van den Elzen, Emma Pier, Christiaan Pleijsier & Alexandra Virnot



## 2.Executive Summary

This report provides an overview of the Colombian competitiveness with regards to Avocado, Cacao, Dairy, Mango and Palm Oil. For each of these commodities there are some overarching problems that these industries are facing. These are issues related to infrastructure, land, labour, exchange rate and deforestation. There are specific problems per commodity. A brief outline is given.

### **Avocado**

There is a huge opportunity for Colombia in the world of avocado to produce avocados in a full year harvest cycle. The biggest hurdle is the compliance with international quality standards. That is because there are dry matter issues in the production of avocado due to the tropical climate. Various interviews highlight the importance of reputation on the international agricultural market and Colombia cannot afford to obtain a bad reputation. However, there are companies who know how to deal with the tropical climate and can consistently produce high quality avocados. IDH can unite these companies, agronomists and other experts, use their best practices to help small growers to improve the quality of the Colombian avocado. Improving communication between Hass avocado parties will help small growers. They can learn a lot from the knowledge of large enterprises such as Cartama as they are struggling with problems that these companies found solutions for.

### **Dairy**

The dairy sector in Colombia is currently facing three main challenges related to knowledge transfer, associativity and entrepreneurship, and dairy policy development. Firstly, regarding knowledge transfer, the sector requires to increase the number of technical professionals and high-quality education programs that respond to the knowledge and expertise needs of the milk producing business activity. Secondly, to tackle the issues of associativity, producers need to organize themselves into producer associations and processing cooperatives. Lastly, efficient dairy policy development will increase the sector's currently low competitiveness. Free Trade Agreements impose threats to Colombia. In order to fully benefit from Free Trade Agreements, it is crucial for Colombia to increase competitiveness face to dairy competitor countries, develop the measurement systems that determine its levels of safety and food security, and make sure its milk fulfils such destination regions' requirements.

### **Cacao**

To be able to grow the cacao sector in Colombia, four challenges must be overcome related to the image of Colombian cacao, the cadmium level present in Colombia, the productivity of cacao plantations and Ecuador as a competitor producing country. Firstly, farmers, exporters and other organizations have to work together to create a positive

image for the Colombian cacao. This image must involve all the different aspects of the cacao industry: labour, quality of life of people involved, growing methods, transportation and above all, the taste of the final product. Secondly, the cadmium level of the Colombian cacao is something that must not be underestimated. IDH and other organizations must closely monitor the evolution of this process. When adjustments can be made to lower levels of cadmium or to negotiate with the EU, these organizations must be ready to act and get the entire industry into motion. Thirdly, productivity must be optimized. The national average yield is low and is mainly associated with the fact that 45% of the plantations are in a state of advanced or even unproductive aging. Finally, international companies have a high interest in buying their cacao in Ecuador rather than in Colombia because of the fine flavour segment. On one hand, Ecuador is producing more fine flavour cacao. On the other hand, Ecuador exports 80% of the produced cacao since they do not have any processing companies. This is a huge contrast to Colombia, where there are many processing companies, high national consumption and less fine flavour production.

### **Mango**

Four issues are impeding the growth and quality of the mango sector in Colombia. Firstly, the government does not focus on mango, therefore investment for production, education and training are lacking. This is needed to make sure that farmers trust in the mango as an export product and that the quality and quantity is going to grow. Secondly, there is a need to encourage (new) farmers to start cultivating mango. At the moment there are only few (around five) large, professional producers. Thirdly, the entire sector needs to improve post-harvest quality (e.g. thermal-treatment). When this is done, the quality of the mango is improved and the prices on the international market will be more beneficial. Lastly, at the moment there is the opportunity to organise the mango sector right from the start (with best practices from other industries as change is still relatively easy now). When the right people are involved, this can be done and it can be transformed to a profitable sector.

### **Palm oil**

The land ownership law that regulates the amounts of hectares that farmers can own is restraining foreign direct investment making economies of scale hard to realise. In the past, money was not invested in the Palm Oil industry as was concluded that palm oil cannot be profitable enough in Colombia. Enabling more lands for Palm oil growers or helping these farmers with other ways to cut costs will help producers to sell at more competitive prices towards the international price that is set in Malaysia and remain profitable. Palm oil cultivation has deployed around Colombia in two ways: 1) Replacing other crops mainly life stock and 2) Becoming the alternative legal economic option in areas planted with coca, Palm oil has helped the fight against illicit crops and has provided a change in the source of income in many regions.



Furthermore, Colombia is an odd country with respect to the palm oil industry: it produces, exports, and imports palm oil. Encouraging national companies to buy Colombian palm oil will help the industry. When the Colombian producers sell Palm Oil in the domestic market, the margins are higher as the cost price is lower since there are no outland transportation costs and the selling price is the same internationally as domestically.



# Table of Contents

<b>1. Preface .....</b>	<b>5</b>
<b>2. Executive Summary.....</b>	<b>7</b>
<b>3. Introduction.....</b>	<b>14</b>
<b>4. Country wide agricultural bottlenecks .....</b>	<b>15</b>
<b>5. The Seven Dimensions of Culture.....</b>	<b>18</b>
<b>6. Hass Avocado.....</b>	<b>25</b>
Outline per party .....	25
Introduction .....	26
Colombian Competitiveness .....	28
Opportunities .....	28
Challenges .....	29
Competing countries.....	30
Different Regions .....	31
Colombian Exports.....	33
Possible Solutions for Hass Avocado .....	34
Data Avocado .....	34
<b>7. Cacao.....</b>	<b>37</b>
Outline per party .....	37
Introduction .....	38
Competitiveness & Opportunities.....	39
Challenges .....	43
Possible solutions .....	¡Error! Marcador no definido.
Exports .....	44
Imports.....	¡Error! Marcador no definido.
Differences between regions.....	46
Competing countries.....	47
Pricing .....	47
Trends .....	48
Multi Stakeholder Commitments.....	49
Data Cacao .....	50
<b>8. Dairy.....</b>	<b>52</b>

Outline per Party .....	52
Introduction .....	53
Policy and national framework.....	53
Regional Differences .....	56
Prices.....	58
Competitiveness .....	59
Challenges .....	59
Multi Stakeholder Commitments.....	60
Future of the industry .....	¡Error! Marcador no definido.
Data Dairy .....	63
<b>9. Mango.....</b>	<b>65</b>
Outline per Party .....	65
Introduction .....	66
Exports .....	67
Challenges .....	69
Opportunities .....	69
Competitiveness .....	¡Error! Marcador no definido.
Competing countries.....	71
Multi Stakeholder Commitment .....	73
Data Mango.....	73
<b>10. Palm Oil .....</b>	<b>76</b>
Outline per Party .....	76
Introduction .....	77
Palm Oil Production .....	79
Competitiveness .....	80
Exports .....	80
Challenges .....	82
Opportunities .....	84
Data Palm Oil.....	85



## 3. Introduction

### Background

IDH congregates companies, CSOs, governments and other public-private partnerships. The goal of these partnerships is to drive the joint design, co-funding and prototyping of new economically viable approaches to realise green and inclusive growth at scale in commodity sectors and sourcing areas. IDH believes that agricultural production must be sustainable across entire regions, or landscapes. A landscape is a geographical region influenced by distinct ecological, historical, economic and socio-cultural processes and activities. In Colombia, IDH focuses on five different commodities that are part of the AgroColombia Partnership: Avocado Hass, Cacao, Dairy, Mango, and Palm oil.

### Objective of the study

The objective of the study is to collect, analyse and verify with local stakeholders:

- Macroeconomic data and information regarding the trade opportunities and competitive position, against other country origins', for the commodities within the scope of the AgroColombia Partnership.
- Regional policy differences

For each of the five commodities the report aims to highlight key trends, challenges, opportunities and actionable insights regarding the Colombian agricultural industry.

### Approach and methodology

The study has been conducted by a team of four researchers of the Amsterdam Research Project from the Vrije University Amsterdam, the Netherlands. The data, knowledge and insights are gathered through interviews of commodity specific and industry specific stakeholders in Colombia. In total, 35 interviews were conducted including farmers, commodity traders, branch organisations, government parties, research institutes, representatives of IDH and the Dutch Embassy.

Conclusions and observations have been drawn from three parties. Namely, public parties, private producers and private exporters. On the other hand, the ARP team, as independent neutral outsiders, have analysed the insights of the above-mentioned interviews and combined them with data from recent reports.

## 4. Country wide agricultural bottlenecks

This section exposes the largest Colombian agricultural challenges. Most of the mentioned bottlenecks are challenges that apply to various Colombian commodities. Also, subsequent sections in the report will highlight commodity-specific challenges.

### **Infrastructure**

Colombia's geography and demographics present major challenges to its transportation and trade. In 2011, it cost Bogota \$2,270 to export one shipping container to Europe, compared to a cost of \$795 in Chile and \$860 in Peru. Colombia's major economic centres are divided by three major mountain ranges: The Cordillera Oriental, the Cordillera Central and the Cordillera Occidental. Dense rain forests also split the country diagonally, making half of its territory difficult to develop. Together, these mountains and rainforests have historically posed a problem for consolidating and integrating Colombia's national economy. This also leads to regional imbalances and difficulty for the rural population to develop their productive potential (Stratfor Worldview, 2012).

Additionally, the main economic and population hubs in the country — Bogotá, Medellín, Cali, Cartagena and Barranquilla — contain more than 60 percent of the population and 44 percent of non-mining economic activity. These hubs are located in disparate regions throughout the country; Bogota is high within the Cordillera Oriental, Medellin is within the Cordillera Central and Cali is in between the central and the Cordillera occidental. With weak transportation networks connecting these cities to each other and to the exterior, logistical costs account for 18 percent of total business costs in Colombia — 4 percentage points higher than the Central American average. Additionally, the average distance from Colombia's three major cities to maritime ports is roughly 260 kilometres, compared to the average of approximately 75 kilometres in Chile and Brazil. While distance is not the primary factor driving up transportation costs, it nonetheless underlines the challenges Colombia faces in becoming more cost competitive (Stratfor Worldview, 2012).

### **Land**

The price for land in Colombia is high, especially when you compare it with surrounding countries. The same quality of land destined for agricultural activities in Ecuador or Peru is less expensive than in Colombia. Clearly, the price depends per specific area but in general, the prices are higher. Moreover, there are a lot of issues with land titles and land ownership. Due to the conflicts that have taken place in Colombia for a long time, people have lost their lands. Nowadays, buying land is risky as the chance remains that Colombians are going to reclaim their previously owned land. Finally, there is a law that limits the amount of land someone can own in some regions. It depends on the location, but some department has their own restrictions on how many hectares a person or entity

can own. This is a barrier for companies wanting to establish economies of scale in Colombia. Therefore, these companies are not willing to investment in the country and foreign direct investment is relatively low.

### **Labour**

First it is important to mention that the five focus commodities are all harvested by hand. Although, in the dairy sector there are huge opportunities to change from manual to automatic processes. The main problems associated with labour can be defined in availability and cost. Historically, the minimum wage in Colombia has been high compared to neighbouring countries. This makes it hard for these commodities to be competitive in this domain. Also, in some post conflict areas such as in the Macarena area, there is not enough labour present to meet the demands. Then, this labour needs to be imported which makes it even more expensive.

### **Exchange rate problems**

The exchange rate was overvalued for a long time. This happened because of a phenomenon that is called the 'Dutch disease'. The oil and mining industries became very important and Colombia was relying a lot on the income streams from these industries. The currency appreciated because of the flourishing minerals. Therefore, other sectors became less competitive due to the strong exchange rate. Currently, the exchange rate is quite competitive, but this has delayed foreign direct investment in Colombia for a long time.

### **Deforestation**

In Colombia, primary forest loss increased 9 percent between 2017 and 2018, continuing a dramatic upward trend since 2016. Ironically, this loss was related to the peace process, as areas in the Amazon previously occupied by the Armed Revolutionary Forces of Colombia (FARC) have opened up to development. Tinigua National Park has been an unfortunate casualty of the rampant forest clearing, experiencing around 12,000 hectares of forest loss in 2018, 6 percent of its total forest area (World Resource Institute, 2019).

### **Informal Economy**

There is a large informal economy, which remains vast even though it has been decreasing over the last six years. There are varying reports on the size of the informal economy, but in 2012 it was estimated to be somewhere between 40 percent and 49 percent of GDP depending on the method of calculation. In the third quarter of 2017, the rate of informal employment in Colombia was estimated at 48 percent in the 13 largest cities and metropolitan areas by the national statistics department. However, reports from trade unions claim that the rate of informality in Colombia is as high as 62 percent when including data from rural and decentral territories (DANE, 2017). These numbers are even



worse in the agriculture sector that reaches in some cases 90 percent of informal employment for the dairy industry in Colombia. The percentage of informality is by its nature not recorded officially but from the various interviews this level of informality seems to represent consensus. However, the industry of Palm Oil is better organized and 82 percent of the workers in the sector are formally employed.

## 5. The Seven Dimensions of Culture

### **Understanding and Managing Cultural Differences between the Netherlands and Colombia**

The Seven Dimensions of Culture were identified by management consultants Fons Trompenaars and Charles Hampden-Turner, and the model was published in their 1997 book, 'Riding the Waves of Culture'. Trompenaars and Hampden-Turner developed the model after spending 10 years researching the preferences and values of people in dozens of cultures around the world. As part of this, they sent questionnaires to more than 46,000 managers in 40 countries. They found that people from different cultures are not just randomly different from one another; they differ in very specific, even predictable, ways. This is because each culture has its own way of thinking, its own values and beliefs, and different preferences placed on a variety of different factors. Trompenaars and Hampden-Turner concluded that what distinguishes people from one culture compared with another is where these preferences fall in one of the following seven dimensions.

#### **Universalism versus particularism**

In the first dimension, the division of the two countries is not extremely adverse. However, according to Trompenaars (2018) the Netherlands is defined as a Universalists country while Colombia is characterized as Particularistic. Within Universalist countries, there is a focus on laws, values and obligations that are defined as the standard in the country. The fair development of these aspects is important for how "fair" people believe they are treated. Difficult situations are looked at with a general approach substantiated by these objective laws. The people who are involved do not play an important role. In a particularise country, the relationships between people create and dictate the rules that are lived by in that country. Therefore, the approach to situations can be influenced by the people who are involved.

The Netherlands and Colombia are not opposites in this regard but do have different views on this dimension. Therefore, it is important for Dutch managers to take preparation measures to overcome these differences. For business managers that are resided in the Netherlands it means that the new Colombian business connections will be more people orientated. Therefore, a well-prepared manager from the Netherlands doing business in Colombia should have looked at the following aspects.

- Social behaviour: Focus and create extra time for developing and maintaining social relationships
- Meeting: An agenda for a meeting is not the standard and could be altered before or during the meeting.

- Management: Take an informal approach to systems and procedures that is focused on relationships
- Negotiations: Agreements are based on trust instead of rules and can also be completed verbally

### **Individualism versus communitarianism**

In the second dimension, the Netherlands and Colombia differ a lot. According to Trompenaars (2018), the Netherlands are oriented towards Individualism whereas Colombia is characterised as Communitarian country. The way that people relate to other people is often conflicted with one's personal interests and the interests of the group he or she belongs to. Do people convey themselves as to what they want individually, or do they act accordingly to group goals and objectives. Depending on the particular culture of a person, either individualism or communitarian is the initial reaction of a person's thought process although both aspects might be taken into consideration (Trompenaars, 1996). The Netherlands scores very highly towards individuals. That means that Dutch people tend to focus on the well-being of individual units. On the contrary, Colombia tends to score more towards communitarian than individualism. That means that focus on the group processes, involving colleagues until consensus is reached. It is important to reconcile these differences in order to affirm successful collaboration between peoples from different countries. It is not easy for this dimension, but not impossible either.

A way for an international manager to do this is by finding for individuals' fulfilment as a service to the group while encouraging individual freedom and responsibilities. Meanwhile, together with the group, formulate clear group goals together with the individuals and make sure they are thoroughly consulted and included in the development process (Trompenaars, 1996). For Dutch managers that will do business in Colombia, it is especially important to bear the following factors in mind:

- Social behaviour: Make sure to take time for consultations. People want to have the consent of everyone so that the entire team agrees. This process should not be rushed.
- Meetings: Colombians in general put a lot of emphasis in their lives on belonging to groups and families. This also translates to the work environment in order to do successful business, one needs to build strong relationships and have the right networks.
- Management: In order to secure successful teamwork, an investment should be made in order to build relationships. A practical implication of this is that the construction of a team takes more time than in the Netherlands because more time is taken for getting to know each other. Also, Colombians value relationships so much that this might be placed before achieving results. Incompetence is therefore at times tolerated and others will try to make up for it.

- Negotiations: Connections are used in order to gain power. family plays an important role in this, and often family connections are used in order to get the job done. Also, whenever meetings end, it is insulting to leave immediately. This will come across as if you value other things as more important. this can easily be overcome by informing the participants of the meeting by telling how much time you have (Trompenaars, 2018).

### **Specific versus diffuse**

In this third dimension, the Netherlands and Colombia have a considerable gap between them. According to Trompenaars (2018), the Netherlands has a strong specific culture while Colombia has a diffuse culture. In a specific country, there is a clear line between world life and personal life. Moreover, people tend to be as specific and direct as possible in order to make their point across. Therefore, social relationships do not have a big influence on work life. In a diffuse culture however, there is an overlap between work and personal life. People are more high- context in communication and tend to be indirect while getting their point across. The relationships that are developed in a work atmosphere take time to be maintained there and on a social level. This is a key aspect of completing business objectives and teamwork.

For a manager from a specific county, such as the Netherlands, it is very important to consider how to bridge the gap with the Colombian diffuse culture. A well-prepared manager from the Netherlands should look at the following aspects when beginning to do business in Colombia:

- Social behaviour: Be aware that social and work life are intertwined. Therefore, developing and maintaining social contacts is a continuous process.
- Meetings: Punctuality is considered as a secondary virtue and meetings can take more time than expected.
- Management: A clear description of roles is very important for efficiency and a boss needs to invest more time to manage his/ her subordinates.
- Negotiations: Non-verbal communication is just as important as verbal communication and relationships extend beyond the negotiation table.

### **Neutral versus emotional**

In the fourth dimension, the two countries are very different. In Colombia, people have a high tendency to display emotions whereas in the Netherlands, people have a high tendency to conceal their emotions (Trompenaars, 2018). This dimension is about whether reason or emotion dominates in the general approach of persons. Which of the two dominates in a general approach of a person depends upon whether someone is affective or neutral. A particular approach generally creates a similar response (Trompenaars, 1996). The degree to which emotions are shown is largely determined by a culture of a country. In some cultures, it is common to freely express emotions. In these

cultures, people always use various channels to show emotions. This is contrary to cultures in which emotions are more reserved. Individuals try to control emotions and are reluctant to show feelings.

For Dutch business managers, this means that they will interact with employees in Colombia that more easily show emotions and thoughts. They will experience that emotions will be continuously on display and body language and facial expressions are important to take into consideration. For optimal preparations, the Dutch manager should take into consideration the following aspects:

- Social behaviour: Discover who is working on which project and the effort individuals have made. It will help you to secure and to flourish your position.
- Meetings: Accept and embrace that there is little personal space. This is a sign of friendship and should also not be confused with romantic intimacy.
- Management: It might come across as contradictory, but negative feedback should not be expressed openly. This should be done very carefully and without other members being present. One should take into consideration loss-of-face.
- Negotiations: The Latin temperament should not be confused with anger. This is often an expression of passion and commitment, not of conflict. Also, negotiations are seen more as a “game” rather than a very serious conversation. Do not restrain to have fun while negotiating (Trompenaars, 2018).

### **Achievement versus ascription**

In the fifth dimension, the Netherlands and Colombia again differ. Colombia is balancing in the middle between the extremes and the Netherlands there is a high adoption of achievement orientation (Trompenaars, 2018). In some cultures, and societies, status is given to people as a result of what people do, their achievements, and in some cultures, status is given depending on who people are, the ascription. Achievement orientation justifies that hierarchical structures are created based on what people have done and achieved. More senior people have done more, are more skilled and therefore benefit the organization more. In ascribed societies, hierarchies are defined based on the power individuals have to get things done. This can either translate into people that have more power over people or through people. Ascribed status is given on other factors that achievements, such as age, gender, class, education or other factors.

People from the Netherlands are more achievement oriented than people from Colombia. Therefore, it should be considered that there is in Colombia more respect for power and superiors. There will be use of official titles, most senior people will be male, and background should indicate status. For business managers from the Netherlands, when doing business in Colombia, the following aspects should be considered in order to reconcile the habits on this dimension.

- **Social behaviour:** Teams should be created on the basis of their influence, gender, age and status. Next to that, use a personal title that reflects personal status in the company.
- **Meetings:** Greet participants in meetings chronologically according to status, so begin with executives and senior managers. Also use official titles and call seniors' "doctor" as a sign of respect. Furthermore, make eye contact at all times in order to gain trust.
- **Management:** Take special attention to the boss. His opinion and decisions should not be challenged openly, he has a lot of power and follow his instructions. Also, the boss will seek for support in private situations and disagreements are in informal and in an indirect manner.
- **Negotiations:** Realize that decisions are made at the top of companies. Next to that, power is not always distributed equally and there are some key decision makers distributed through the company. Therefore, focus on gaining power and status in order to get your ideas across (Trompenaars, 2018).

### **Sequential time versus synchronous time**

In the sixth dimension of Trompenaars (2018), the Netherlands and Colombia are right across from each other. The Netherlands has a stronger connection with Sequential time while Colombia is located on the Synchronous part of the scale. With countries that use Sequential time, there is a high focus on planning, punctuality and keeping to the schedule. "Time is money" and "always move forward" are phrases that suit well in this type of environment. In Synchronous time, past, future and present are always intertwined. People are committed to several projects at once and the planning is very flexible. For Dutch managers moving to Colombia, it is very important to look at the aspects of Synchronous time for the differences in their decision making.

- **Social Behaviour:** Discuss the main points of outcome instead of focusing on all the details. Do not leave out past decisions or the history of the company when brainstorming for new ideas.
- **Meetings:** The people involved in the meeting are more important than the time schedule. Rushing a meeting creates the feeling that you are not interested in a long-term relationship. Be flexible in how you approach work and allow others to do the same.
- **Negotiations:** It is important to invest time in the negotiation process, focusing on past and present before the focus can be put on the future.

### **Internal direction versus outer direction**

The Netherlands and Colombia have a similar position on the seventh-dimension scale. In regards of internal vs external control, both countries position themselves as internal control countries. The countries who value internal control believe that people determine their own success factors. Moreover, every person has control over their own lives, skill

development and learning curve. The countries that identify with external control, believe that the environment plays an important role when completing objectives. In a work environment they focus on how actions are perceived by others and avoid conflict where possible.

The Colombian culture has a focus on internal control, similar to the Dutch culture. This is the only dimension of Trompenaars (2018) his 7 dimensions where both countries are aligned on the same side. The Dutch managers moving to Colombian do not have to bridge the gap related to this dimension but should focus on the other differences that are portrayed in this document.





## 6. Hass Avocado

### Outline per party

#### Public Authorities

Public authority parties in Colombia that engage with the cultivation of Hass avocado were concerned primarily regarding three aspects. First, there is a need for more education and training on farms nationwide. Amongst the farmers, there is a lack of knowledge on the proper cultivation of the crop. Second, there is room for improvement with regards to the professionalisation in the industry in terms of avocado tree races and fighting insects that attack specifically avocados. Last, World Avocado Congress will be hosted in Colombia next September. Not only to increase the collaboration between avocado producing countries, but also to increase the competitive position of Colombia. One concern of the public authorities is that environmental activists are misinformed about the quality of Colombian avocado, the World Avocado Congress is an opportunity to reshape the image of the sector.

#### Producers

The producers of avocado see other constraints. Due to the tropical climate in Colombia, there are difficulties with reaching quality consistency amongst avocado's in one harvest. That is because avocados from the same tree have different percentages of dry matter. Namely, there are quality problems in the production that cause an inconsistency in the percentage of dry matter, causing different levels in ripeness of avocados at the export destination. Next to that, there are weather issues that the farmers are dealing with. Currently there is no irrigation required for the cultivation of Hass avocado in the country. However, in the future this might change due to climate change. Also, irrigation might be required if the crop will be harvested all year through to compensate for the drought during the Niña or to compensate for the heat on lower altitudes. Moreover, hailstorms are another weather issue that farmers are dealing with. One big storm can destroy an entire harvest, causing severe problems for producers. Proper insurance possibilities for such events are currently lacking according to avocado producers.

#### Exporters

Exporters explain the complexity of the Hass avocado. One problem is that due to the increase of popularity of the crop worldwide, certain countries suddenly enter the international avocado market with large quantities. This causes a drop in the price which is problematic for exporters because their cost price is relatively higher compared to other countries (e.g. Mexico, South Africa, Peru) as a result of high inland transportation and outland transportation costs. Another problem that they are facing is the difficulties to fill one entire container with the avocados from one grower. Import countries increasingly require this as they demand traceability of their products. This is difficult as some growers

are not able to fill one container, which is withholding them from exporting their products. Lastly, Colombian Hass avocado is currently mainly exported to Europe (90 percent). Exporters are examining the possibility to open other markets but are finding difficulties. The US is one of the most promising markets and it was opened a year ago. However, the first exports to the country were sold for extremely low prices which damaged the reputation for Colombian exporters in the US. Moreover, the Asian market can be opened but first marketing investments are required to educate Asians how to consume avocado so that the Asian consumption will increase.

## **ARP**

We have already seen that reputation is an important factor on the international agricultural market and Colombia cannot afford to obtain a bad reputation. However, there are companies who know how to deal with the tropical climate and can produce high quality avocados consistently. IDH can unite these companies, agronomists and other experts, to use their best practices to help small growers to improve the quality of the Colombian Hass avocado. Improving communication between Hass avocado parties will help small growers. They can learn a lot from the knowledge of large enterprises such as Cartama as they are struggling with problems that these companies found solutions for. The lack of communication between countries that take part in the international market is disadvantageous for all parties.

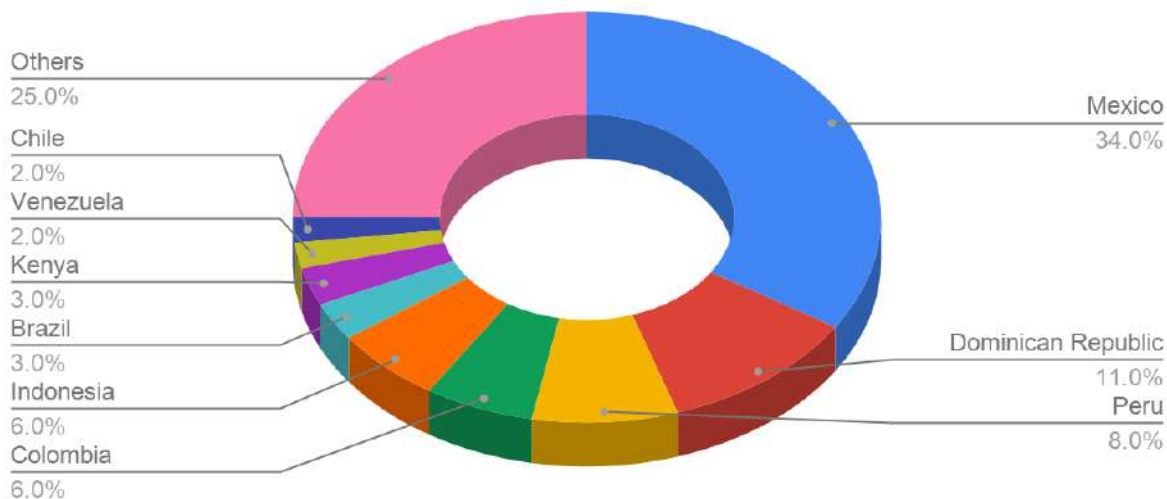
## **Introduction**

Colombia is gearing up to host the world's premier avocado industry event this year, the World Avocado Congress, which will take place in Medellin from Sept. 23 – 27, 2019. The 2019 instalment of the event, which is hosted by an avocado-growing country every four years, will cover a range of topics including phytosanitary issues, genetic resources, and growing practices. The Colombian avocado industry has exploded onto the global stage over recent years, registering rapid growth and an average annual increase in planted hectareage of more than 10 percent. Meanwhile, Colombian avocado exports grew by approximately 51 percent in 2017 every year. Avocado is definitely the green gold of the Colombian economy.

## **Producing countries**

Worldwide the production of avocado is booming. In 2017 the total production was 6.05 million tons. Compared to 2016, this was a growth of 5.4%. Every year the production has been increasing. The largest producer is Mexico with about 2 million tons, second largest Dominican Republic with approximately 700.000 tons, and Peru with nearly 500.000 tons of annual avocado production (Procolombia, 2018).

*Figure 1: World's Leading Hass Avocado Producers*

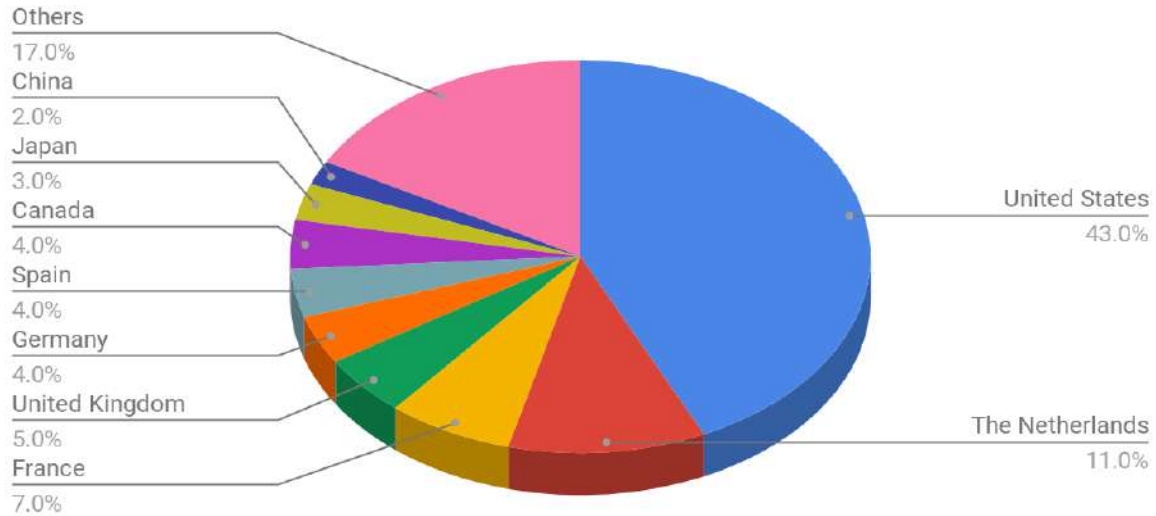


Colombia is the fourth largest producer of avocado worldwide. In Colombia produces various types of avocado. The Hass avocado type has been identified as the most promising type for exports. In 2017, the production of Hass avocado was 376.000 tons, producing ten tons per hectare, which was a growth of 12.6% compared to 2016 (Procolombia, 2018). The cultivation of Hass avocado started approximately ten years ago in Colombia. Since then, the production of Hass avocado has increased every year. The main players in the Hass avocado industry in Colombia are Westfalia, Cartama, Frutales de Lajas, GreenWest, and FrutyGreen. The umbrella organisation for these companies, and in general for Hass avocado in Colombia, is CorpoHass. The organisation represents over 60 producers in the country. They are supported in their ambition to increase exports by the organisation (CorpoHass, 2019). Moreover, the Hass avocado industry is aided by Agrosavia, the research institute for various commodities in the country under the responsibility of the Ministry of Agriculture and Rural Development. Amongst others, they are researching the various fungi's, selecting various rootstocks, and educating farmers in the country. Next to that, the production of the avocado crop is associated with several certifications: GlobalGap, ICA, Rainforest, GRASP, SMETTA, BPA, and BASC (Agrosavia, 2019; Cartama, 2019).

### Imports countries of Hass avocado

Worldwide, the top importers of avocado are the United States with 43%, the Netherlands with 11%, France with 7%, United Kingdom with 4%, Germany with 4%, Spain with 4% and others.

*Figure 2: Worldwide import of Hass Avocado*



## Colombian Competitiveness

There are four main differentiations of Hass avocado that can distinguish Colombia from other countries worldwide.

- 1. All-year-round production:** Due to the climate and height differences in the country, Colombia has the opportunity to have a year round production of Hass Avocado. Currently there are two main harvest seasons. The first is from October to February, in this period 30% is harvested. And the second is from June to September, in this period 70% is harvested. If all possible locations for growth will be exploited, there is a possibility to harvest the crop in all windows in the year.
- 2. Perfect location:** Colombia has access to the Pacific ocean and Caribbean sea which is beneficial for the export of the commodity. The Atlantic Ocean is used for export to Europe and the East Coast of the U.S.A. through the ports of Santa Marta, Barranquilla and Cartagena. And, the Pacific Ocean can be used for export to the West Coast of the U.S.A. and to Asia through the ports of Buenaventura and Tumaco.
- 3. Natural irrigation:** For the plantation of Hass avocado in Colombia, there is no irrigation required. This is due to the tropical climate in the country which ensures that the trees get enough water all-year through.

## Opportunities

Currently, there are five main opportunities that can help to elevate the Hass avocado industry in Colombia.

- 1. Domestic consumption:** There is a potential to increase the domestic consumption. Colombians eat varieties of avocado that are much bigger and softer from texture than the Hass avocado. That is mainly because these avocados are the crop that

has been cultivated in the country for a longer period of time and people are used to consume the bigger avocado variety (CorpoHass, 2019).

**2. U.S.A. market:** The successful opening of the U.S.A. market by improving the image of Colombian Hass avocado. The actual opening of the market was a year ago. However, the first exports were through very low export prices. Therefore, those low prices are the first impression from U.S.A. market of Colombian avocado. That is why the exporters are facing difficulties to get a good price for their fruit boxes (Westfalia, 2019).

**3. Interest of Colombian farmers:** An additional notable opportunity is the growing interest in Hass avocado production amongst Colombian farmers. An increasing number of growers are interested in cultivating the “green gold”. It has been identified by the government as the peace crop. That is because it can be yielded on areas where previously coca plantations were. Cultivators are motivated by the government, CorpoHass, and communities to grow the legal alternative. In addition to that, the coffee production has been stagnant in the last few years. That is why farmers are looking for more profitable alternatives. And since avocado can be grown in the locations where previously coffee was produced, more growers are replacing their crop for Hass avocado (CorpoHass, 2019).

**4. Land availability:** Colombia has the capacity to substantially increase the commercial cultivation of Hass avocado. In total, there are 584 thousand hectares that have the very good circumstances to grow avocado. This number is calculated by considering all relevant aspects that are required for proper cultivation of the crop. Next to these optimal conditions, there are also locations that have a medium of low aptitude. These are locations that have the possibility to grow Hass avocado but are also areas with some limitations. The regions with the best conditions and the most suitable hectares of land are known at the UPRA: Antioquia: 715.557 hae Cauca: 475.453 ha, Boyacá: 368.743 ha, Santander: 348.921 ha, Cundinamarca: 302.464 ha (Agrosavia, 2019).

**5. World Avocado Congress:** The most important avocado congress is being held in September 2019 in Medellín, Colombia. This event, the World Avocado Congress, offers a great opportunity to demonstrate the progress Colombia has made with regards to Hass avocado to all relevant parties in the industry. Also, it is an opportunity to improve relations with investors.

## Challenges

The cultivation of the Hass avocado crop is associated with various challenges. The main challenges are related to the tropical climate, education, knowledge, a gap in investment, and there are some other challenges that the industry is facing.

The climate in Colombia causes cultivation difficulties because it causes plagues and pests. There are efforts to control them by using pesticides. However, not too many

chemicals can be used because that is prohibited by the certifications that the growers have to adhere to. Also, the tropical climate causes quality difficulties. That is because from the outside of the fruit the level of dry matter cannot be determined. The dry matter should have a minimum of 23% in order to be of good quality. However, avocados from the same tree can have different levels of dry matter due to the tropical climate. Therefore, it causes inconsistency in quality when the freight arrives at the export destination, even though from the outside all avocado's looked the same at the producer in Colombia. Variations in quality are being minimized by use of infrared machines or by the cheaper option - microwaves. These can determine the dry matter of each individual avocado. However, this is always determined by the use of sample avocado's as it is very labour intensive to check each individual avocado by infrared machine. Also, by microwave it is impossible to check all products as the fruit needs to be cut and put in the microwave to discover the percentage (Frutales Las Lajas, 2019; Hass Colombia, 2019).

Second, there is a large gap of knowledge, education, and money for investments along the Hass Avocado supply chain in Colombia. The problem is that from all growers, the vast majority are smallholders. These smallholders are the ones mostly suffering from this gap. In the past Hass avocados were exported with very bad quality. This has caused that Hass avocado from Colombia is suffering from a bad reputation, even though large producers are exporting avocados with good and consistent quality. Moreover, knowledge and money is needed in order to be able to fight the fungi, mosquito plagues and pests efficiently. Smallholders face difficulties to do so efficiently as pesticides can be very expensive. Next to that, farms can be either small, medium or large. Therefore, not all farmers are able to fill one entire container with their avocado's. However, import companies prefer containers from one grower so that they have traceability of the products. Additionally, after harvesting the avocado, the crop needs to be cooled at approximately 5 degrees Celsius. This requires cold chain facilities at the grower, packer, inland transportation, and by ship. That is why the transportation costs are relatively high. These circumstances are costly:

- a. Inland transportation at 1.000 US dollar for six tons of avocado;
- b. Outland transportation at an additional 1.000 US dollar for six tons of avocado (Procolombia, 2019; FrutyGreen, 2019; Frutales Las Lajas, 2019).

**3. Other challenges:** Last, there are some other problems that the industry is facing. Namely, the roads are of low quality which is why transportation costs are high; there is a dependence on the EU market as 96% of the production is exported to Europe; at the ports the containers are inspected for drugs which costs time and money; and farmers have difficulties with receiving proper certifications (CorpoHass, 2019; Cartama, 2019).

## Competing countries

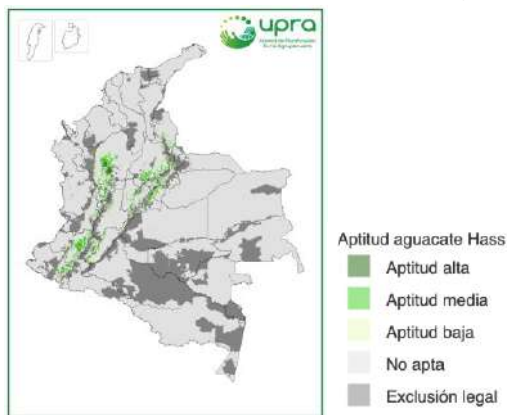
Colombia is the sixth largest Hass Avocado production in the world. The top three producing countries are Mexico, Chile and the U.S.A. Colombia has to pay close attention to these large-scale producing countries. Next to that, there are three other countries for Colombia to be aware of.

1. **Peru** entered the market last year (2018) and is producing large amounts of avocado. A result for Colombia was that from June to August, there were that many more Avocado's in the market that the price dropped significantly, causing a loss to most producers and export companies in the country.
2. **Kenya** is the country that is most similar to Colombia in terms of a similar production climate. Specifically, Kenya is also on the equator, it has various heights, and climates in the country. That is why it has the possibility to have all year production as well.
3. **Chile** is one of the biggest competitors of Colombia. However, Colombia has a significant advantage which is the shorter outland transportation period. Namely, from the port, in Colombia it takes 13 days to go to Europe, however from the Chilean port is takes up to 26 days (CorpoHass, 2019; Pre-Columbian, 2019).

## Different Regions

Throughout the country, Hass avocado is produced. Cultivation is possible from 800 to 1400 metres above sea level. The five promising production areas are Tolima, Caldas, Antioquia, Quindío, Valle del Cauca, and Risaralda (CorpoHass, 2019). The cultivation of avocado can be done in high, medium and low aptitudes. The conditions for the aptitude are assessed from a physical, socio-economic and socio-eco-systemic point of view. The indication for high aptitude: an area with the best conditions; medium aptitude: area with moderated limitations; and low aptitude: areas with strong limitations. These could be altered by the use of large investments or the development of new technologies (UPRA, 2018).

Map 1: Map of Aptitudes per Region (UPRA, 2019)



## Harvest

Colombia has the opportunity to harvest avocado during all months of the year due to the different production zones and altitudes. However, it is not yet making optimum use of this opportunity. For an overview of the harvest calendar per department, refer to table 3. Hass avocado is primarily harvested from October to January. The dark grey boxes are the harvest periods, these are demonstrated per department (CorpoHass, 2019).

Table 3: Harvest Calendar per Department (SIOC, 2018)

Department	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Antioquia												
Caldas												
Cauca												
Risaralda												
Quindío												
Tolima												
Valle del Cauca												

	Harvest period
--	----------------

Underneath, the harvest calendar of competing countries is shown. The presence in the international market per country is indicated by colour. The darker grey the colour, the higher the presence in the international market.

Table 4: Harvest Calendar Competing Countries (SIOC, 2018)

Country / Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mexico												
Chile												
Peru												
South Africa												
Spain												



USA (California)												
Colombia												

**Legend**

	High presence in the market
	Medium presence in the market
	Low presence in the market

**Colombian Exports**

Ten years after the initial production of Hass avocado in Colombia, the industry has taken shape. Some export facts:

- 97% of total production exported;
- 70% exported to The Netherlands;
- 90% of export comes from CorpoHass members;
- 4th largest avocado producer (6% of total world production);
- 15500 hectares of avocado (Corpohass, 2019).

Colombian export of Hass avocado to the rest of the world had a total value of \$ 62.732.101 in 2018. The top export destinations are the Netherlands (47%), United Kingdom (20%), and Spain (19%). An overview of the export data can be found in Figure 4 and Table 5 (DANE, 2018).

*Figure 4: Colombian Hass avocado exports 2018*

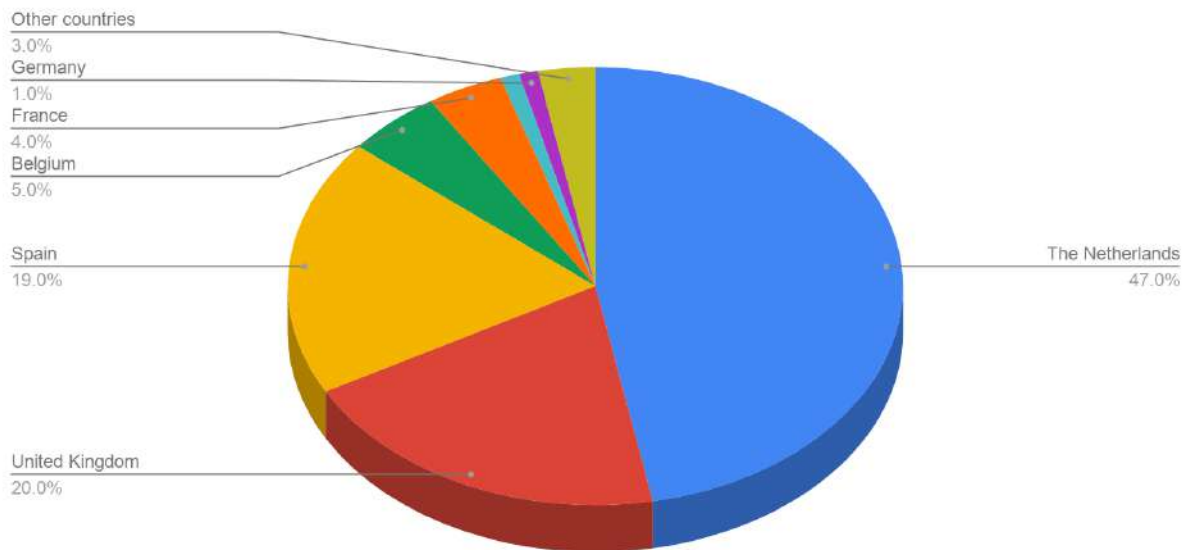


Table 5: Colombian Hass avocado exports 2018 (DANE, 2018)

Destination	The Netherlands	U.K.	Spain	Belgium	France	USA	Germany	Other	Total
%	47%	20%	19%	5%	4%	1%	1%	3%	100%
Total USD	\$ 29.655.014	\$ 12.492.697	\$ 11.626.834	\$ 3.237.698	\$ 2.493.223	\$ 660.118	\$ 422.575	\$ 2.143.938	\$ 62.732.101

Several markets are enabled for the export of Hass avocado from Colombia. These are Hong Kong, Peru, Argentina, Panama, Costa Rica, United Arab Emirates, Canada, Bahrain, European Union, England, United States, Singapore, Switzerland (ICA, 2018). Additionally, Colombia is working on getting access to the markets of Mexico, Chile, South Korea, Japan and China (Procolombia, 2019).

**Suggestions for Hass Avocado**

- Investment in infrared machines to aid with identification of dry matter;
- Education to small growers;
- Improving traceability;
- Marketing efforts to improve image;
- Improve price image U.S.A.;
- Opening of Asian market (transport via Pacific Ocean);
- Year-round production (competitiveness);
- Improve access to certification processes.

**Data Avocado**

**Reports**

- Procolombia Avocado Report (2017). *Avocado in Colombia*
- Ministry of Agriculture (2018) - *Cadena de aguacate Indicadores e Instrumentos*

**Interviews**

- Wolf & Wolf - Bogota, April 3, 2019, personal interview
- Frutales las lajas s.a. - Bogota, April 4, 2019, personal interview
- CorpoHass - Medellin, April 8, 2019, personal interview
- Frutygreen - Medellin region, April 9, 2019, personal interview
- Cartama - Medellin region, April 9, 2019, personal interview
- Westfalia - Medellin region, April 9, 2019, personal interview

- Greenwest - Medellin region, April 9, 2019, personal interview
- Hass Colombia - Medellin region, April 12, 2019, personal interview
- Agrosavia - Centro de Investigación La Selva - Medellin region, April 12, 2019, personal interview



## 7.Cacao

### Outline per party

#### Public Authorities

Public authorities still struggle to help farmers grow legal crops such as cacao plantation. In 2017, around 171,000 hectares (423,000 acres) was used to grow coca – an increase of 25,000 hectares (17%) from 2016, according to the UN's Office on Drugs and Crime (UNODC). However, on January 2016, USDA and USAID executed a participating agency program agreement (PAPA) titled Cacao for Peace. The overall objective of the project is to improve the cacao value chain in Colombia by strengthening key agricultural institutions in the public and private sectors through cooperative research, technical assistance, and extension education.

The ministry of agriculture stated that the domestic prices are approximately 9-16 percent lower than the international market price. This incentivises cacao producers of fine flavour cacao (versus mainstream cacao segment) to try and sell their product on the international marketplace.

#### Producers

The main concern for FedeCacao, main producer association of cacao in Colombia, is the cadmium restrictions on cacao imports imposed by the European Union. This regulation of 2014 just went into effect in January 2019 and many years of denial of this planned EU rule by producers has delayed solutions. FedeCacao is working together with researchers and large cacao producers to figure out whether this cadmium problem can be solved. The cadmium is present everywhere in the Colombian soil in different levels. Moreover, FedeCacao claims that one of the problems of the industry is that there are many small growers that cannot maintain a consistent supply of cacao in terms of quality and quantity.

Producers are facing other troubles. One of the newest struggles that the industry is facing, is deforestation. This is a new problem in the Amazon area. The big issue around deforestation is land grabbing and the plantation of illegal crops. This is due to the fact that there is peace now. Before, that did happen less because of the ongoing war people did not go into the Amazon. Another issue is that producers do not have high yields on their fields. The average yield of Colombian fine flavour cacao is between 400 and 600 kilos per hectare. In Ecuador this is around 2,5 and 3,0 tonnes per hectare. Also, these farmers do not plant their trees dense enough which is why the yields are low. On average, one farmer has 600 trees planted per hectare, this can grow to 1,200 trees per hectare. This, in combination with the fact that the farms are much smaller in Colombia

makes it hard for them to compete with the quantities of other South American markets. Additionally, the cacao producers in Colombia are mostly small, poor farmers with a low level of technology usage. These are mostly situated in post-conflict areas. In these areas distrust is another decisive factor. Farmers do not trust each other due to the conflict. Although this is gradually changing, people work less together than in other countries such as Ecuador for example. There is also a need for more industrialisation. Cloning was given as an example. When cacao plants are cloned, they do not have to pollinate themselves improving efficiency.

### **Exporters**

For processed cacao, the cadmium situation is not an issue. It is only the case for dark chocolate. Therefore, exporters of processed cacao are not worried that their products will be stopped at European customs. This could be a solution to the cadmium problem that Colombia might face in the near future. Various exporters stated that they are not facing big quality differences between countries. The difference is just in the taste of the chocolate. The difference is in the type of cacao. Therefore, there is not a country that has the 'best' cacao, it is just different per country. Consequently, the cacao sector must market their cacao and make sure that people in Europe, Asia and the US prefer their cacao over African cacao.

### **ARP**

To be able to increase the cacao sector in Colombia, two barriers must be overcome. Firstly, farmers, exporters the government (ProColombia) and other organisations have to work together to create a positive image about the Colombian cacao fine flavour. This image must involve all the different aspects of the cacao industry: labour, quality of life for employers, growing methods, transportation and above all, the taste of the final product.

Secondly, the cadmium level of the Colombian cacao is something that must not be underestimated. Existing leading and aligned initiatives like CIAT and other organizations must closely monitor the evolution of this process. When adjustments can be made to lower levels of cadmium or to negotiate with the EU, these organizations must be ready to act and get the entire industry into motion.

## **Introduction**

The cacao sector is a promising one. It is expected that by 2020 there will be a cacao deficit of around 1,000,000 tons (MARS Incorporated, 2012). Colombia has a strategic geographic position because it is a tropical country located in an equatorial area, its national territory benefits from permanent sunlight all year round. The government has clearly expressed their ambitions when they launched the 'peace crop' movement.

Farmers are encouraged to start cultivating cacao. The role of cacao as a post conflict peace crop is given by the national government, however, there is no real plan to make sure that this ambition comes to a successful end. IDH has already determined that a balance must be found between quality and productivity improvement.

### **Total area, production and yield**

From 2014 to 2018, the area sown in cacao crops in Colombia has grown by 9.6% and production increased by 19%. By 2018, the area was increased by 645 hectares planted, for a rate of 0.4% over the previous year, but its production decreased by 6%. The decrease in production in 2018 was the product of the climatic conditions of intense rains presented at the beginning of the year, which negatively affected the flowers of the cacao tree (Ministry of Agriculture and Rural Development and Fedecacao, 2018).

*Table 7: Colombian Cacao production*

	2014	2015	2016	2017	2018
<b>Cultivated area (ha)</b>	160277	165006	173208	175430	176075
<b>Harvest area (ha)</b>	113648	127437	126189	134522	132249
<b>Production (ton)</b>	47732	54798	56785	60535	56867
<b>Yield (ton/ha)</b>	0.42	0.43	0.45	0.45	0.43

## **Competitiveness & Opportunities**

### **The international consumer is more willing to pay more for Fine Flavour chocolate**

- Colombia has optimal agro-ecological conditions and excellent genetic materials for cacao production, providing attractive properties of flavour and aroma for the international market.
- According to the International Cacao Organization (ICCO), the Colombian cacao used for exports, received a distinction for its “flavour and aroma,” attributes guaranteed in only 5% of the beans commercialized worldwide.
- In addition to cacao beans, Colombia has a supply of exports with intermediate products such as cacao paste, chocolate liquor, cacao butter or oil, and cacao powder, which are in high demand in the global food and cosmetics industries.

### **The multiple awards received in the last few years confirm the quality of Colombian cacao**

- ICCO (International Cacao Organization) recognizes 23 countries as fine and flavour cacao exporters. Colombian cacao was declared as one of them with more than 95% of total exports of the country classified as fine and flavour cocoa. The category covers only 5% of beans traded worldwide. (International Cacao Organization ICCO, 2011). Ecuador, Colombia, Peru and Venezuela produce 70% of the world's fine or flavor cacao. Of this, Ecuador has 402,434 hectares, Colombia has 151,926 hectares, Peru has 97,658 hectares, and Venezuela has 59,757 hectares. (FAO, 2013 - \* MinAgricultura 2013).
- Colombian cacao has received recognition at important international events such as the "Salon du Chocolat" in Paris.
- Also, Colombian cacao has been awarded three times at the International Cacao Awards being recognized as "Cacao of excellence" in 2010, 2011 and 2015.

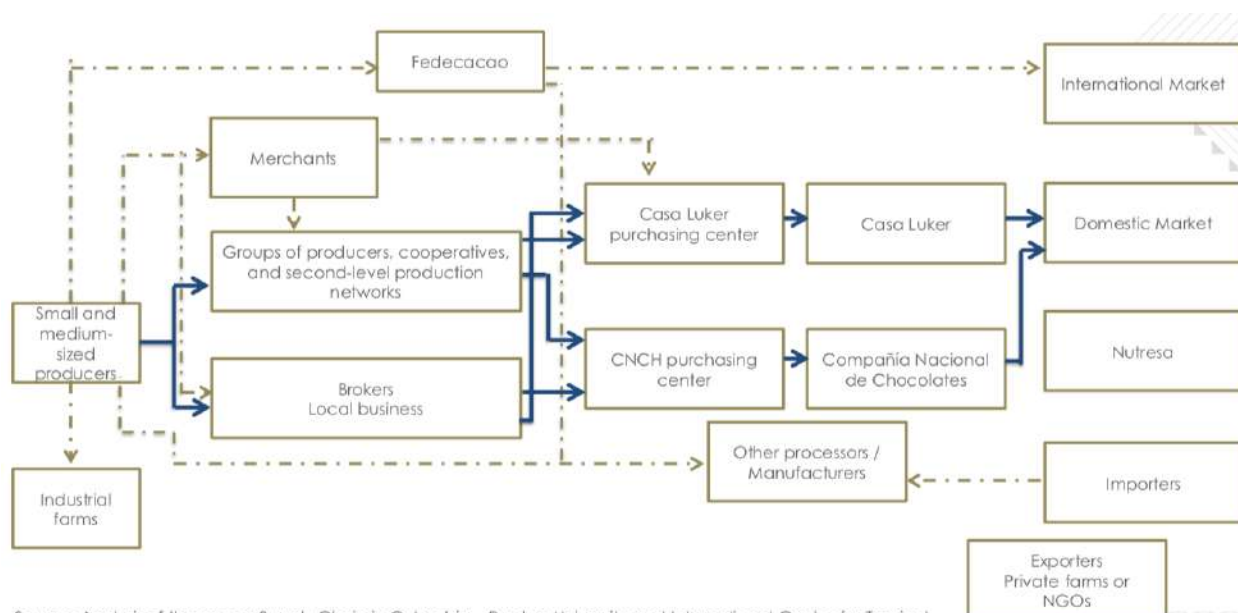
### **Colombian cacao has growth opportunities as a strategic peace crop**

- The Colombian Government has made cacao the "crop for peace" for being one of the crops with the greatest possibility to substitute illegal crops.
- Under the slogan, "Aromas de Paz de Colombia para el Mundo (Aroma of Peace from Colombia to the World)," the cacao association and the Government seek to promote this crop, highlighting its potential to contribute to the growth of the country's economy.
- Furthermore, the Rural Agricultural Planning Unit (UPRA, for the Spanish original) has identified 4.7 millions of hectares with a high aptitude for cacao crops, some of that area corresponds with the most affected by the conflict zones.

**Cacao's productive chain in Colombia involves public and private actors that assure the quality of Cacao** (Source: Analysis of the cacao Supply Chain in Colombia – Purdue University and International Center for Tropical Agriculture (CIAT) – 2017)

*Figure 6: Colombian Cacao Supply chain*





Source: Analysis of the cocoa Supply Chain in Colombia – Purdue University and International Center for Tropical Agriculture (CIAT) – 2017

Note: Fedecacao is not only a federation of cacao producers, it is also a big exporter.

**Cacao is one of the products prioritized by “Plan Colombia Siembra” (Source: Ministry of Agriculture. Figures in hectares)**

Table 8: New cacao production zones

Promotion of exports	2016	2017	2018
<b>Cacao</b>	<b>15000</b>	<b>20000</b>	<b>25000</b>
Palm oil	68384	67565	64051
Fruit trees	18747	19734	20004

### Supports, incentives and financing

During the years 2014 - 2018, the Ministry of Agriculture and Rural Development has been supporting the sector through productive projects with the contribution of resources of USD\$ 95,227 million, benefiting about 32,000 cacao-producing families. Likewise, it has been supported by the Incentive to the Rural Capitalization - ICR for about \$ 95,000 million, through the placement of credits and financing in programs of new sowing, renovation of aged cacao plantations and improvement of infrastructure for post-harvest management, among others.

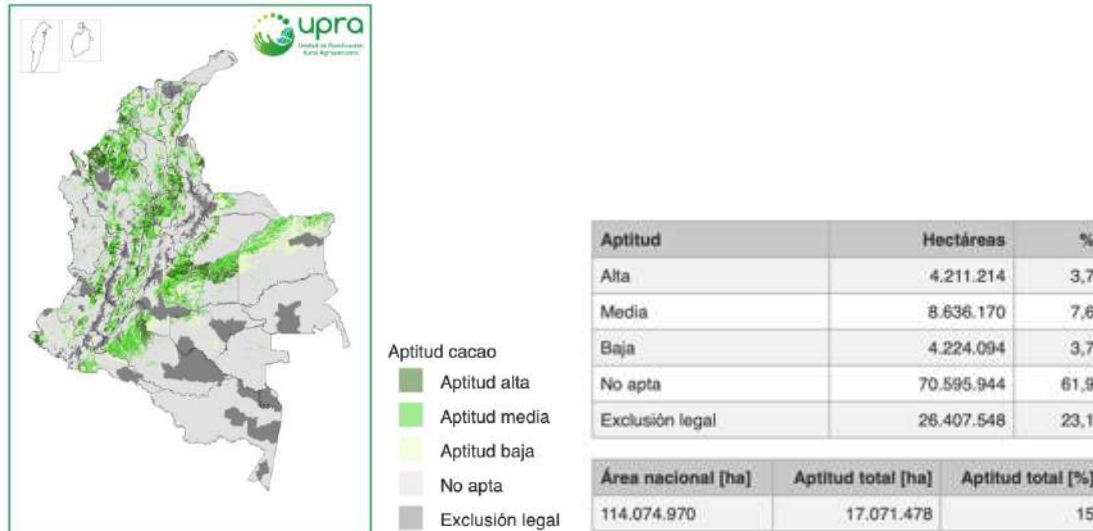
### Programs

- Supportive Productive Projects: Cacao renewal - New plantings - Productive Alliances - Marketing support - Nutrition plan and Post-harvest - Science and Technology

- Credit and Financing: Incentive to Rural Capitalization - Special Credit Line

**The UPRA has identified more than 4 million hectares with high aptitude for cacao growing in Colombia**

Map 2: Map of Aptitudes per Region (UPRA, 2019).



### María del Campo, Colombian cacao brand

- With the goal of promoting Colombian cacao domestically and internationally, the Colombian Federation of Cacao Growers created the María del Campo brand, an image that will represent worldwide the 35.000 cacao families in the country.
- The image is created as a tribute to the women who work with perseverance in the farms throughout the different stages of the productive process of cacao, ensuring the quality of Colombian cacao.

**The high consumption of cacao and its by-products have generated the need to import the product in order to satisfy the local demand**

Table 8: Domestic consumption 2016 (Fedecacao – 2017)

Unlike many other countries presently producing cacao, modern day Colombian cacao production is primarily focused on meeting domestic demand rooted deeply in the historical traditions of drinking chocolate. This means that Colombia, unlike most other cacao origins, can effectively target both the domestic and international market with increased production volumes while prices will continue to track international market values.

<b>National production (Tons)</b>	<b>54.798</b>
-----------------------------------	---------------

Cacao imports in beans (ton)	5.891
By-product imports - beans (ton)	2.587
Completed imports - beans (ton)	8.292
<b>Total imports (ton)</b>	<b>16.77</b>

Cacao exports in beans (ton)	13.744
By-product exports - beans (ton)	6.504
Completed exports - beans (ton)	4.052
<b>Total exports (ton)</b>	<b>24.3</b>

<b>Internal demand</b>	<b>71.568</b>
------------------------	---------------

<b>External demand</b>	<b>24.3</b>
------------------------	-------------

Internal consumption = (national production + imports) - exports = 47.268

## Challenges

### Problems & Possible solution in the Cacao sector (source: MADR)

1. Decrease in production: In 2018, production fell by 6%, from 60,535 to 56,867 tons, mainly due to heavy rains at the beginning of the year, which affected production in the first half.
2. Productivity: The national average yield is low and is mainly associated with the fact that 45% of the plantations are in a state of advanced or even unproductive aging, which is exacerbated by the presence of phytosanitary problems, by the low culture and access to rural extension tools that allow the adoption of adequate technology for the cultivation of cacao
3. International Trade: The imminent implementation of regulations by the European Union and other countries processing the grain with respect to the maximum levels of cadmium in foods derived from cacao, today represents a threat to the production chain, a situation that limits access to these international markets.
4. Post-harvest: Currently, the cacao subsector is characterized by the fact that 95% of its productive social base is classified as small producers, consequently, there is a

heterogeneity in the implementation of the work of post-harvest cacao bean. Added to this situation is the deficient infrastructure (fermenter and dryer box) and training to producers, to take advantage of the country's high potential in the production of fine cacao of flavour and aroma, as our grain is recognized worldwide.

5. According to FedeCacao (Yardley Gomez), 98% of the Cacao produced in Colombia is for local consumption.

6. Another big problem is the cadmium in the Colombian soil. Santander is the most important province for the Colombian Cacao production. Here, the cadmium level is the highest. This is main challenge as the EU regulation on Cadmium levels on food exports is now put into effect.

## **Suggestions**

- **Reduce cadmium:** It is necessary to strengthen the studies that are currently being carried out on cadmium in cacao both in zoning and in mitigation and remediation, in order to develop methodologies, technologies and more solid recommendations to reduce and / or eliminate the problem of cadmium contamination and maintain access to the market for producers, while safeguarding the safety of consumers.
- **Technology Transfer:** Implementation of technological packages according to each one of the regions, where cacao plantation renewal programs are involved, accompanied by Technology Transfer where adequate technical assistance is carried out, covering both technicians and producers.

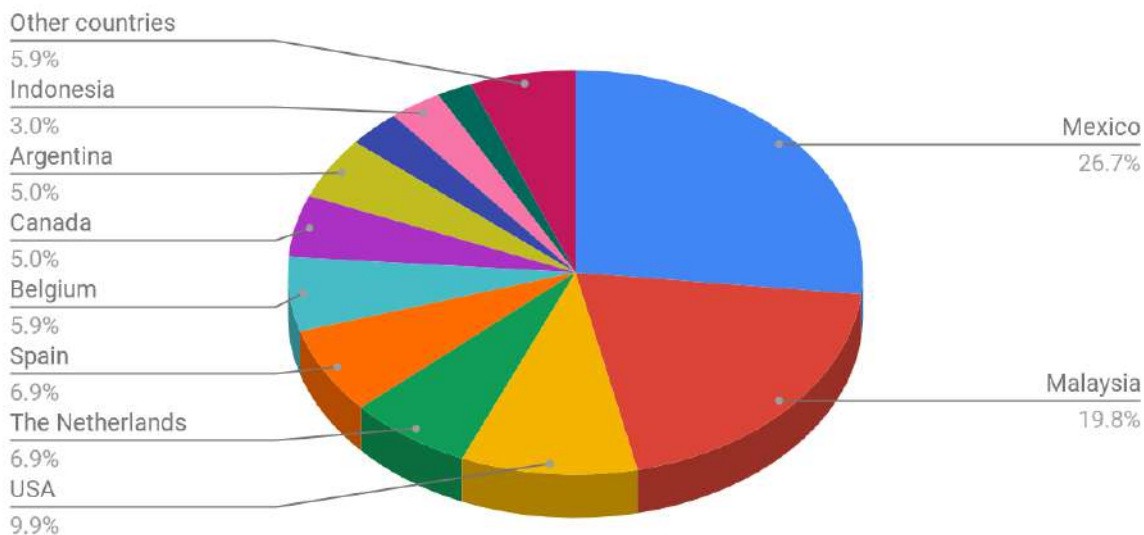
## **Exports**

The main destination country of exports during the year 2018 was Mexico, with a contribution in the market of 28% and reaching the 1,974 tons sent. The main export destination countries in 2018 were in their order; Mexico, Malaysia, Canada, Spain, Belgium and the Netherlands, which together account for more than 80% of total cacao exports in Colombia. Colombia in 2018 exported cacao to 23 countries in the world.

Figure 7: International Exports destination of Colombian Caca

International Exports Cacao 2018

Source: Dane, 2018

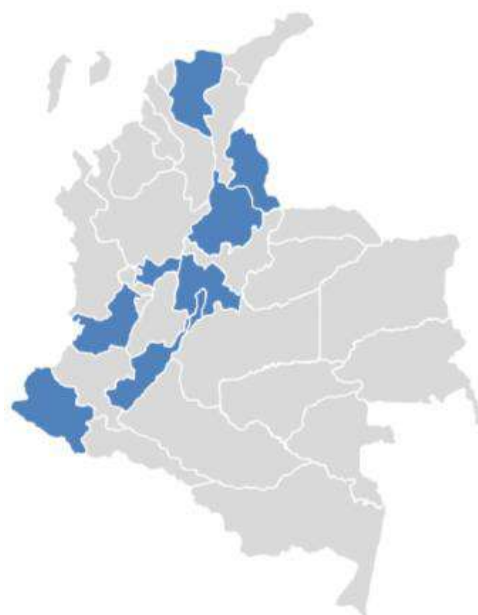


Main cacao exports Departments (USD) 2017

Santander, Huila and Bogotá accounted for 79% of Colombian exports of cacao beans (DANE, 2017)

Table 9: Cacao production per department

Region	2017	Share %
Santander	11.139.926	40,7%
Huila	6.098.887	22,3%
Bogotá	4.351.179	15,9%
Caldas	2.392.642	8,7%
Magdalena	782.07	2,9%
Cundinamarca	658.321	2,4%
Otros	1.965.266	7,2%
<b>Total</b>	<b>27.388.290</b>	<b>100%</b>

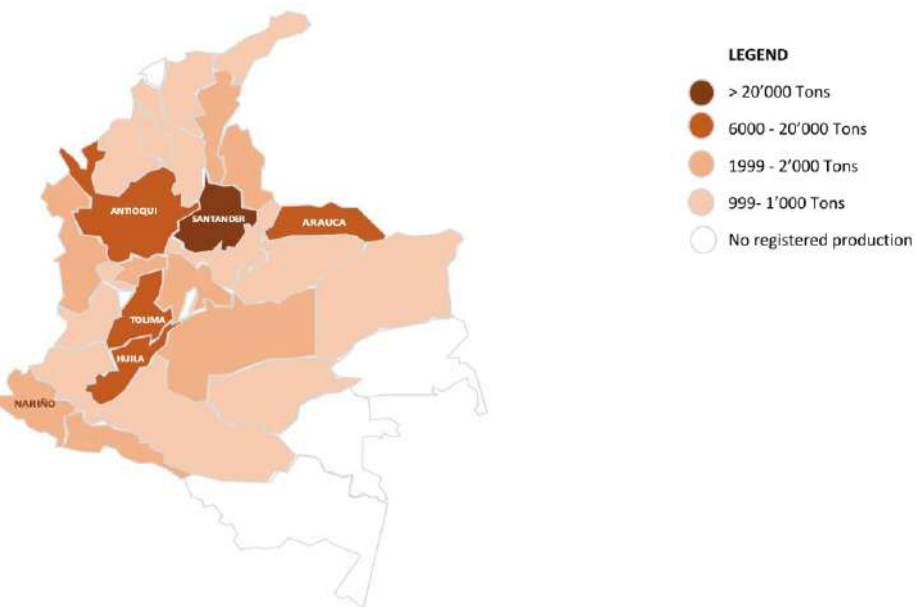


## Differences between regions

### Total area, production and yield per department

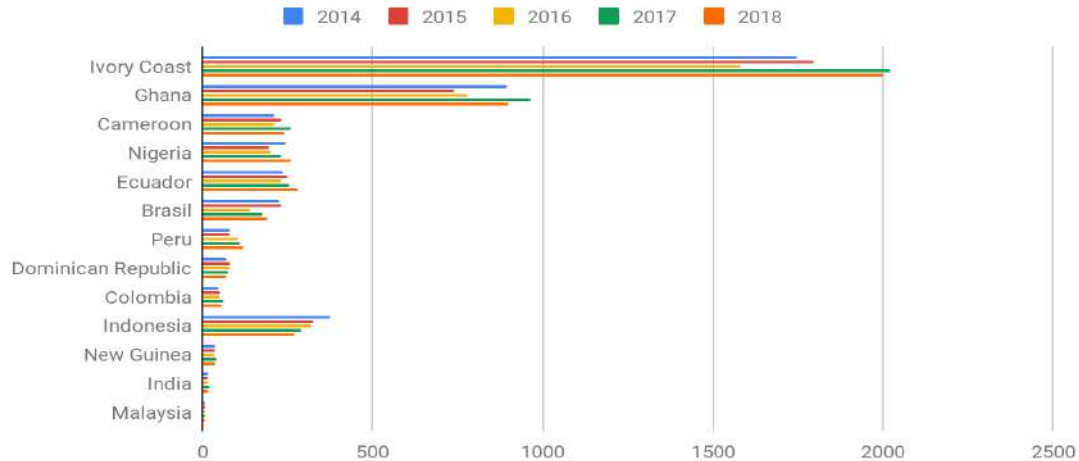
In 27 departments, cacao production is registered in 2018, involving about 37.000 families. The department of Santander is the main producer of cacao nationwide, with a 39% share of total production, followed by Antioquia with a 9% share and Arauca, Huila and Tolima with 8% each. The department with the highest yield is Arauca, with 660 kilos per ton. In the departments of Santander, Antioquia, Arauca, Huila and Tolima, 70% of cacao production in Colombia is concentrated.

Figure 10: Cacao Producing Areas (Fedecacao, 2018)



## Competing countries

Figure 11: Total production competing countries



## Pricing

The cacao market in Colombia is an international price taker. The reference is the New York Stock Exchange. The prices of cacao in this stock market have been falling steadily since January 2016, which has an effect on the same behaviour of the national price. During the year 2017 it showed a stable trend and from March 2018 it presented a price recovery until the month of May. For the year 2019 a stable trend in prices is observed.

Figure 12: Average domestic price and average international price



Fuente: ICCO, Industria Nacional, Fedecacao, Exportadores

## 2018: Cacao exports decrease

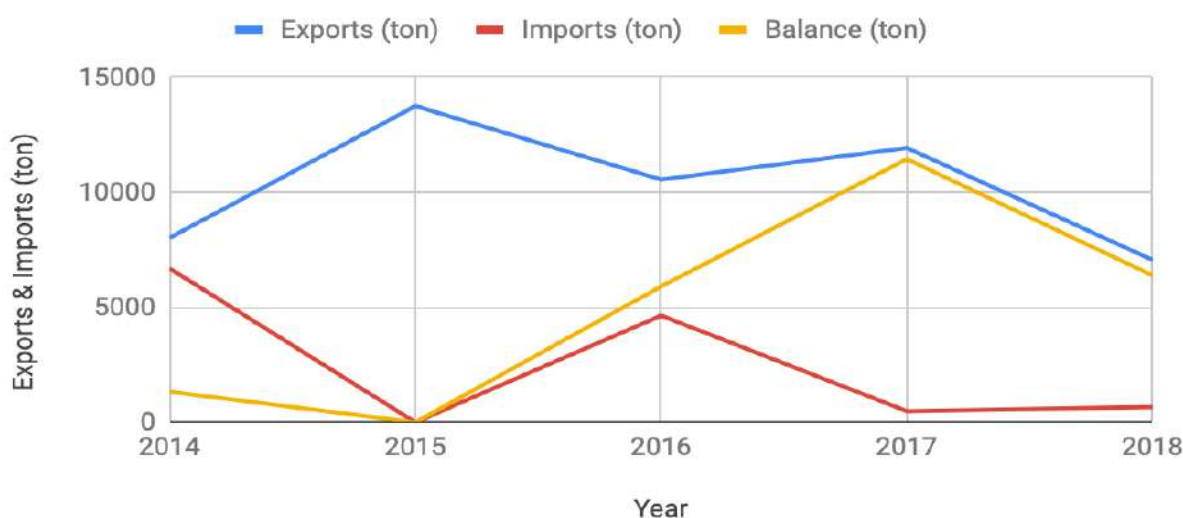
For the year 2018 there was a decrease in exports of cacao of 41%, compared to those registered in 2017. The main causes are due to:

- Decrease in the national cacao production year 2018
- High volatility of the international price of cacao (New York Stock Exchange)

Figure 13: Export, imports and balance

## Exports, Imports and Balance

Source: MADR & Quintero Hermanos SICEX (2018)



## Trends

**Certified cacao has become more popular in recent years due to concern for sustainability and child labour.**

- 93% of the world's cacao production concentrates in 10 countries.
- The International Cacao Organization (ICCO) estimates that hardly 6% (300 thousand tons) of the world production is certified.
- Consumer preference for responsibly grown cacao has grown considerably, as the concern for sustainability is more important for the consumers.
- The four main certifications required by the international market for cacao are: Fairtrade, Rainforest Alliance, UTZ and Organic.

**The cacao and chocolate markets in Europe are growing in refinement and consumption (CBI – 2017)**



- The growing demand of special chocolate can be found in traditional consumer countries like Belgium, France, Germany, Italy, Switzerland and the United Kingdom.
- There is growing interest of the consumers for single-origin chocolate. This is linked to the attention given to production areas, as well as the history of producers and their communities. The consumer is focused on flavour, quality and diversity of origin.
- The micro-batch market also attracts a growing interest to the segment of high-quality chocolate. Small volumes of high-quality cacao are used in special editions and for the high-end markets in Europe, which is a very small portion of the market. These products reach very high prices, which is a limiting factor to expand the consumer base.
- Online sales have become more important as a distribution channel for the consumer, and an increase is expected in the next years. Online stores are linked to social networks, such as Facebook and Instagram, which serve as tools to attract the consumer's attention and increase online sales.

## **Multi Stakeholder Commitments**

### **Major Cacao, Chocolate and Confectionery Companies in Colombia**

Agrotropical Colombia S.A.S.: Project in which 430 CCN-51 cacao plants have been planted in Cesar, with an interest in finding a strategic partner and investor with which they can develop an agro-industrial project jointly, integrating cacao production moving forward, and with which they can develop products from cacao that are differentiated from the national supply currently offered based on this product.

Nutresa: Venture capital fund "Cacao for the Future". Opportunity for investment due to the attractive economic, tax and social advantages. The fund is socially linked to small producers and has the support of the recognized company Compañía Nacional de Chocolates. The fund invests directly in cacao cultivations, in coordination with small and medium-sized Colombian farmers.

Casa Luker: Through Granja Luker, the company has been devoted to researching and studying issues like diseases that limit cacao production in Colombia, planting distances, hybrid improvements, varieties and clones. They transfer technology at all levels to technicians, students and farmers, and generate hybrid materials and plants for propagation for the different productive zones of the country.

### **Support entities**

Productive Transformation Program: Seeks to develop world-class sectors via the formulation and execution of sectoral business plans that favour economic growth and strengthen the national productive apparatus via public-private alliances.

Ministry of Agriculture and Rural Development: leading entity in the formulation, management and coordination of policies for agriculture, fisheries, forestry and rural social development, which promotes harmonization with macroeconomic policy and an execution that is decentralized, cooperative and participative.

ProColombia: entity in charge of promoting investment, exports, and tourism in Colombia.

## Data Cacao

### Reports

- Abbott, P. C., Benjamin, T. J., Burniske, G. R., Croft, M. M., Fenton, M., Kelly, C. R., ... & Rodriguez Camayo, F. (2018). *An analysis of the supply chain of cacao in Colombia*.
- Gobierno de Colombia and Minagricultura (2018). *CADENA DE CACAO Indicadores e Instrumentos*.
- Muñoz Angulo, M. A. (2019). *Comportamiento del mercado del cacao en Colombia, Ecuador y Perú del año 2007 al 2018 y sus futuros* (Bachelor's thesis, Fundación Universidad de América).
- Ferrazzo, A. (2017). *Sustainable Production of Agri-food Commodities: Exploring the relationship between service delivery and farmers performance in the Colombian cacao sector* (Master's thesis).
- Murillo, L. G., Lopez, E. B., Zuluaga Cardona, J. G., Restrepo, C. R., Pinedo, M., & Steer, A. (2018). *Cacao, Forests and Peace Initiative in Colombia Joint Framework for Action*. Bogotá, Colombia.
- ProColombia Report (2014). *The world invest in Colombia. Investment in cacao, chocolate and the confectionary industry*.
- Procolombia Cacao Report (2019). *A strategic ally in the Agribusiness sector*.
- Ministerio de Agricultura y Desarrollo Rural (2019), *Cadena de cacao. Dirección de Cadenas Agrícolas y Forestales*.

### Interviews

- Fedecacao - (Bogota, April 4, 2019), Personal interview
- Gironés - (Bogota, April 4, 2019), Personal interview
- Nikadicacao - (Bogota, April 4, 2019), Personal interview
- Compañía Nacional de Chocolates - (Medellin, April 10, 2019), Personal interview
- Ministry of Agriculture - (April 10, 2019), Skype interview



## 8. Dairy

### Outline per Party

#### Public Authorities

For public authorities the cattle farming sector and therefore the dairy sector is the sector with the lowest entry barrier for agricultural development. However, there is a need for education and training on farms in order to improve quality. Good dairy production practices, trainings and consultancies aimed to improve the phytosanitary situation in the country are required. Also, in terms of distribution & commercialisation, companies must develop systems to measure compliance to EU standards. Moreover, they must support a transition to increase quality and compliance of high-quality standards to comply with EU phytosanitary standards. Nevertheless, the huge tension and political risk between Free Trade Agreements and increasing price competitiveness of local dairy production cannot be ignored.

#### Producers

Producers need to organise themselves into producers' associations and processing cooperatives - a group of producers create a cooperative in order to collect milk and produce dairy products. Currently, there are several overlapping associations such as Fedegan, Asoleche and Analac, however only a small amount of producers is associated. Geographically, many areas in Colombia show climatic conditions that are ideal for milk production. Therefore, milk production is widespread throughout Colombia.

#### Exporters

In terms of market growth, the country's low-income population is increasing consumption of pasteurized milk and dairy products thanks to increasing acquisition power. Alqueria argues that companies involved in the distribution and commercialization should support the development of promotion and education campaigns and projects to increase milk and dairy products consumption in middle- and low-income market. The sector requires to increase the number of technical professionals and high-quality education programs that respond to the knowledge and expertise needs of the milk producing business activity.

#### ARP

The Colombian dairy sector can be described by large extension of land, low milk productivity, large informality in commercialisation and capable but little innovative processing industry. Most of the challenges that have been identified in the current Colombian dairy sector are related to knowledge transfer, associativity and entrepreneurship, price competitiveness and dairy policy development. To our perception, there are currently three main issues in the dairy industry. First, the

government and Colombia's dairy sector should increase focus on dairy policy implementation to increase the sectors' currently low competitiveness. Investments in the execution of this policy come from the Colombian government together with the European Union. Second, in order to fully benefit from Free Trade Agreements, and to protect itself from external risks impacting dairy exports, it is crucial for to Colombia to increase competitiveness face to dairy competitor countries, develop the measurement systems that determine its levels of phytosanitary and food security, and make sure its milk fulfils such destination regions' requirements. Last, the sector requires to increase the number of technical professionals and high-quality education programs that respond to the knowledge and expertise needs of the milk producing business activity.

## **Introduction**

Having an extension of about 1.142.000 square kilometres - or 28 times the size of the Netherlands and an amount of milk producing cows that is about 8 times fold the number of Dutch ones, Colombia produces about half the amount of milk that the Netherlands does. Still, with a yearly production of 7,094 million litres in 2017, Colombia is the fourth largest producer of milk in Latin America, surpassed only by Brazil, Mexico and Argentina. Milk productivity varies significantly in different regions from the country, ranging from around 15 litres per milk per day in the most productive regions, to around 4 litres in the least productive ones. The dairy value chain in the country comprises mainly production of raw milk, pasteurization and production of sour milk and cheese. The dairy sector has an important participation in the country's economy, accounting for 9.1 percent of agricultural GDP. Finally, the Colombian dairy sector generates around 736,000 jobs in milk production and more than 19,300 in the dairy processing industry.

## **Policy and national framework**

Low milk productivity and external economic and climatic factors largely account for one of the most important challenges the Colombian dairy factor faces today: low international competitiveness. Various free trade agreements with the United States and the European Union among others, put significant pressure on a Colombian milk production sector that is not yet prepared to compete internationally, or to take advantage of these new markets. The low competitiveness of the sector - reflected in the relatively high production costs and therefore commercialization prices - has given place to milk smuggling, worsening the situation. As a result of this, milk producers – and producers of other agricultural products – have organized strikes and made clear demands to the government for structural changes. In addition to this, climatic disturbances have caused large losses and a significant reduction of the milk producing capacities of farms.

## **A distorted, residual, volatile and concentrated international market**

1. Subsidized dairy sector: The world dairy market is heavily distorted due to the overproduction of developed countries with a strongly subsidized dairy sector. The surplus production and its subsequent distribution on the international market at prices inferior to its production costs yields serious circumstances. Indeed, it creates unfair competition which causes a displacement of domestic markets and strongly affects producers and consumers in developing countries, thereby endangering the sustainability of those countries' dairy sector.
2. Informal market: Another feature is its residual character since less than 6 % of the world milk production enters into the international trade circuit. In developing countries, the internal consumption, processing and direct selling by the producers themselves weighs heavily. An estimated 80 % of the total milk consumption and trade takes place outside the formal market.
3. Concentration of the dairy industry: Only three countries (USA, New Zealand and Australia) and the EU are in charge of 70 % of the total world exports of milk. The sector is controlled by very few international corporations, one of which controls nearly 35 % of the total world trade (Fonterra from New Zealand). A consequence of this high concentration is that any adjustment applied on domestic markets and state interference in these countries significantly affects international prices, causing an extreme volatility of the milk prices on the international market. This chaotic fluctuation affects small and medium- sized producers from North and South and forces them into a vulnerable position.

In this context, it is worth mentioning that on the one hand the involvement of developing countries in the international dairy products trade is indeed growing, but nevertheless remains marginal (17 %). On the other, the increase in import rates is exclusively due to the demand of developing countries.

### **EU Trade Agreements with Colombia: shifting the internal market**

As far as Colombia is concerned, the Agreement with the EU in 2010 includes dairy products import quotas from the EU, which will enter Colombia without tariffs: 4.500 MT of milk powder, 2.500 MT of buttermilk; 2.300 MT of cheese and 1.100 MT of infant milk formula (The Big cheese report, 2010). These numbers will increase gradually and steadily at an annual rate of 10%. A 17-yearlong safeguard has been stipulated, which will operate if the number of imported goods surpasses 20% of the yearly quotas agreed. Nevertheless, a gradual liberalization of EU dairy products imports was agreed over 15 years (RVO, 2017).

The import quotas of milk and dairy products will provoke a shift in the internal market, entailing a drop in the purchase price for local farmers. The terms agreed on the dairy

sector in the frame of the agreements negotiated between the EU and Central America, Colombia and Peru:

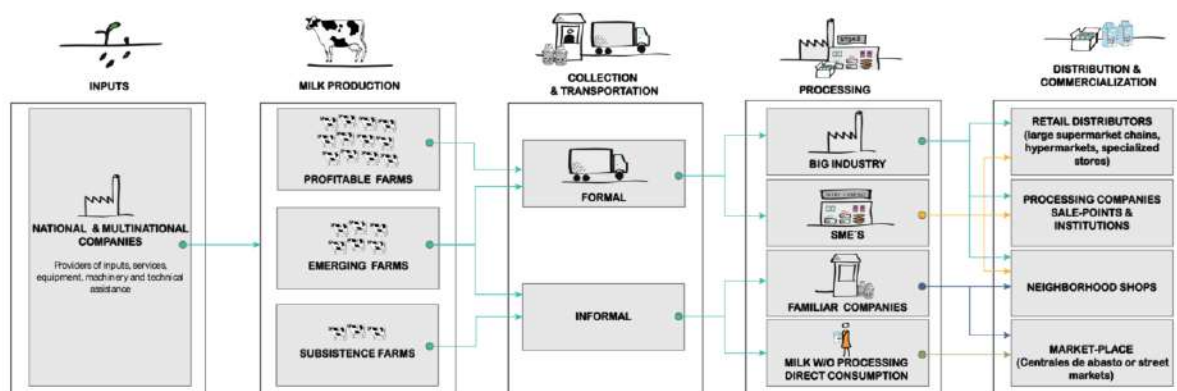
Do not account for the asymmetry between the dairy products sectors of the EU and those of Colombia, Peru and Central America in terms of subsidies, production capacity and competition in the international market. According to FEDEGAN, the Free Trade Agreement with the EU will jeopardize 400.000 Colombian families living on dairy production. According to Jorge Hernán Uribe, manager of the National Association of Milk Producers (Analac), “the problem is not of compensations but of prices: while we produce at a cost above 36-dollar cents, the EU, due to the subsidies, produces at 27-dollar cents”. The impossibility to compete in fair conditions with the subsidized European dairy products (in terms of quality– price relation) will increase the sector’s vulnerability in both countries and compromise their development possibilities. To cite one example: the quota of mature cheese from the EU that will be imported to Colombia accounts for 50% of the country’s cheese market.

### **Consequences of Free Trade Agreements for the Colombian dairy sector**

The EU trade agreements massively favour the European milk sector, which is highly subsidized, giving it new exporting possibilities, whereas the Central American, Colombian and Peruvian opportunities to partake in the European market are nearly non-existent, which is a blatant indication of the inequity of the agreement. Furthermore, the agreements can compromise the possibilities of production, sustainability and growing rate of the Central American, Colombian and Peruvian milk sector, being a threat to food security and sovereignty for these countries and to an important number of producers, especially family farms.

In addition, the agreements between the EU and Colombia will probably constitute a low-price fixing factor for small-scale milk producers on part of the milk oligopolies. Furthermore, Free Trade Agreements will affect the possibilities of industrial development reached so far in Central America, Peru and Colombia to elaborate dairy products with more added value (e.g. matured cheeses) since those will be protected by European geographical indications. Also, Free Trade Agreements will considerably reduce the policy instruments for the governments of Colombia, Peru and Central America to develop sovereign agrarian policies. Even though tariffs do not per se guarantee the development of the sector, they nevertheless are an important tool for protecting the internal market from unfair competition on the part of the wealthier producers like the EU.

Figure 14: The Colombian Dairy Value Chain (RVO, compiled by Business Bridge, 2015)



### Inputs and services for milk production

Main inputs for milk production in Colombia mainly consist on pasture seeds, fertilizers, herbicides, fungicides, feed supplements, sperm, medicines and vaccinations, machinery and equipment for milk production, and ingredients and equipment for dairy processing. These supplies largely compose the structure for milk production costs. (Corporación Colombia Internacional (Cci), "Caracterización De La Comercialización De Cuatro Cuencas Lecheras," Bogotá, 2013). The further away the farms are located, the highest the concentrate feed costs for them. The Colombian concentrate feed market is stable and mature, with traditional, relatively dominant producers that make the market rather closed to new entrants. This kind of product is mostly produced nationally with mainly imported raw materials such as maize, oilseeds and cereals. Contrarily to other countries as the Netherlands, Argentina or New Zealand, Colombian milk livestock has a large dependence on concentrate feed. Antioquia seems to have the best levels of pasture feed and genetics, since costs allocated to the latter are the lowest. In these aspects, this region can be seen as the benchmark to which other milk producing regions can be brought to. At the same time, Antioquia can be the region where most advanced projects can be implemented for these subjects (RVO, 2015).

## Regional Differences

### Climate

Fresh milk in Colombia is produced in 22 out of the 32 Colombian provinces. These milk producing regions have altitudes ranging from sea level until 3000 meters above sea level. In the low altitude milksheds (Dry Caribbean, Humid Caribbean and Orinoco), climate is typically tropical with temperatures between 25 and 35 degrees Celsius, while in the other regions temperatures range between 14 and 18 degrees Celsius. These different characteristics influence the milk production. Another factor affecting milk production is the seasonality. This refers to rainfall and dry seasons that vary per



milkshed. In the Dry and Humid Caribbean, the dry season (known as summer in Colombia) goes from December to March - April approximately, while in the Central, South and Coffee Axis this season starts in June - July and goes until October approximately. Rain occurs throughout the rest of the year, becoming more intense and frequent in certain periods (known as winter in Colombia) that also vary per region.

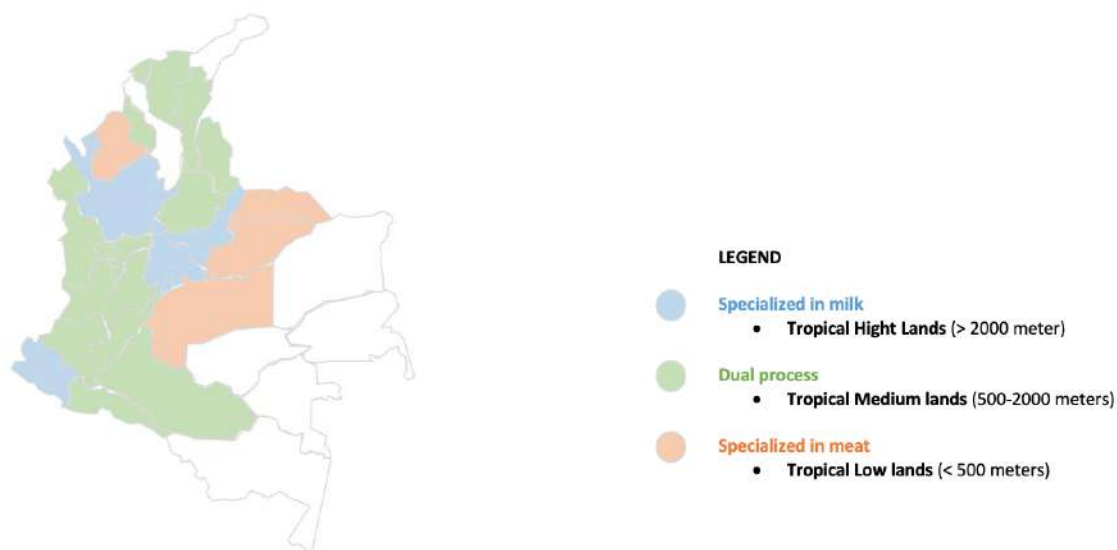
*Table 11: Milk production per department in 2017 (Source: MADR)*

Department	Production (liters)	Productivity (lt/cow/day)
Antioquia	1,341,182,025	4.5
Boyaca	423,441,359	3.3
Caldas	231,063,674	5.3
Caqueta	280,044,933	2.2
Cesar	323,758,928	2.0
Cordoba	481,469,961	2.1
Cundinamarca	1,056,642,556	6.3
Magdalena	331,940,215	1.9
Meta	285,272,824	1.8
Nariño	289,349,465	4.7
Santander	228,406,214	1.8
Sucre	220,269,952	1.8

### **Milk production systems**

There are in the country two types of production systems, the specialized and the dual dairy systems. The specialized dairy system is exclusively dedicated to milk production while in the dual purpose system is possible to produce milk or meat. Difference in regions is due to different climates, ecosystems and different cows. (Interview with Alejandro Montoya Alvarez, Head of purchases raw material Grupo Nutresa). The image below shows the 22 Colombian provinces where milk is produced, and the main production system used in those regions.

Map 3: Milk production systems



## Prices

The prices per litre of milk also differ per region. This is due to the difference in protein level, the quality of the milk, and bacteria that the milk contains. ICA sets the prices per region. However, these prices are not always followed by the business because negotiations also take place. In terms of price, informally sold milk is paid at lower prices than the ones indicated by the MADR's regulation and imposed on the formal market. Higher prices of formal (pasteurized) milk in relation to informal (raw) milk are related to travel costs on unpaved roads and profit margin from the industry, the middle-man and supermarkets commissions.

Raw milk price in Colombia is regulated by MADR. (Ministerio de Agricultura y Desarrollo Rural, Resolución número 17 DE 2012, 2012). The price system is based on:

- a base price per liter: 797 COP (approximately €0,27).
- plus bonuses/discounts for hygienic qualities
- plus bonus for compositional and sanitary qualities
- plus bonus for cooling the raw milk between 0 and 6 degrees Celsius
- minus transportation costs (optional)

### The informal market

Informality varies at the regional level and it is more predominant in remote rural areas with small milk producers (having 8 to 10 cows), rather than medium and large ones. In these areas, populations show mainly low income and high unemployment rates, and there is deficient transportation and electrification infrastructure. Informality in raw milk is also related to difficulties in social infrastructure, problems of public order and the presence of armed groups.

## Competitiveness

According to the Ministry of Agriculture and Rural Development, Colombian milk is recognized for its quality, since it has higher protein and fat levels than important producing countries such as New Zealand, Germany, Switzerland, Canada and the United States. Moreover, Colombia has a population of 44 million people and a per capita consumption of 143 litres, three times the average of developed countries (44 litres / inhabitant) (Fedegán, 2015). Although Colombian domestic dairy consumption is relatively high, competitiveness of the sector is extensively low.

## Challenges

The following challenges have been identified in the dairy sector in Colombia in the production, collection & transportation and in the processing and distribution & commercialization phase.

### Milk production

- Knowledge: Many small farms that are not (highly) productive and there is often a lack of adequate technologies for production. The seasonality of milk supply is often mismanaged with oversupply during the rainy seasons and undersupply in the dry season. Lastly, there is an excessive use of imported supplements which lead to higher production costs.
- Quality: Deficient sanitation in stables and lack of good milk practices.
- Entrepreneurship: Lack of entrepreneurship skills and lack of planning & long-term vision
- Environmental: Inefficient or not adequate use of soil, lack of preparation for weather changes, destruction of surplus of production
- Legislation: Raw price milk determined by government, pricing system perceived as non-transparent, cheaper imports are smuggling

### Collection & Transportation

- Knowledge: No traceability systems for milk, low hygienic quality & deficient conservation of milk and poor logistics and road infrastructure
- Quality: Milk testing done by purchasing company (to verify), lack of lab network to report transparently
- Associativity: Individualistic mentality, weak cooperation within the chain value, poor communication between processors and small / medium farmers
- Legislation: Payment system is regulated by government, informality of the sector

## Processing

- **Associativity:** SMEs lack of long-term relationship with milk producers leading to an uncertainty in milk supply & quality
- **Environmental:** lack of residual water treatment, seldom initiatives for renewable energy

## Distribution & Commercialization

- **Quality:** No compliance to EU phytosanitary standards
- **Market:** Price war, Free Trade Agreement deregulating tariffs brings serious competition from cheaper imported products. Also, No clear identification of international demand, SMEs lack niche markets focus and/or specialization to compete with added value, SMEs not competitive face to imported dairy products

## **Multi Stakeholder Commitments**

Government and sector organizations acknowledge the challenges and the need to support the sector's development in the current circumstances.

## **Companies**

About 200 companies make up the business fabric of the dairy sector in Colombia. The leading companies in the sector (representing roughly 20% of the market: like Alpina, Alquería, Colanta, Nestlé) show strong commitment to a sustainable development of their sector.

## **Main dairy companies in Colombia**



### LEGEND

#### CARIBBEAN REGION

- **Atlántico:** Cooperativa de Productores de Leche del Atlántico Ltda. y Cooperativa Industrial Lechera de Colombia.
- **Cesar:** Freskaleche S.A.
- **Magdalena:** Alquería
- **Córdoba:** Colanta.

#### COFFEE-GROWING REGION

- **Antioquia:** Colanta Ltda. - PCA Productora and Comercializadora de Alimentos S.A. Alpina, Alquería, Parmalat.
- **Caldas:** Central Lechera de Manizales S.A., Alpina.
- **Risaralda:** Parmalat. Quindío: Colanta Ltda.

#### ANDEAN REGION

- **Bogotá:** Alpina - Productos Alimenticios S.A. - Procesadora de Leches S.A. - Dairy Partners Américas Manufacturing Colombia Ltda., Parmalat Colombia Ltda. - Helados Modernos de Colombia S.A. - Industria Colombiana de Lácteos INCOLACTEOS Ltda., Productos Lácteos Robin Hood S.A.
- **Cundinamarca:** Colanta Ltda. - Algarra S.A., Danone - Alquería S.A. - Productos Lácteos El Recreo S.A.
- **Santander:** Freskaleche S.A.

#### PACIFIC REGION

- **Valle del Cauca:** Parmalat.
- **Cauca:** Parmalat - Alpina.

## Support entities

ProColombia identified in recent report about the dairy sector (2018) the following strategic business partners for the dairy sector.

1. Ministry of Agriculture and Rural Development: formulates, coordinates and evaluates policies that promote the competitive, equitable and sustainable development of rural development processes. [www.minagricultura.gov.co](http://www.minagricultura.gov.co)
2. Ministry of Commerce, Industry and Tourism: supports the business activity, producer of goods, services and technology, as well as the tourism management of the regions of the country to improve their competitiveness and sustainability and encourage the generation of greater added value. [www.mincit.gov.co/](http://www.mincit.gov.co/)
3. Productive Transformation Program: offers technical assistance, intervention and support to companies to adopt international methodologies for productive improvement, specialized training programs in partnership with companies and educational institutions, guidance and financing to obtain certification as a requisite for entry to international markets, among others. [www.ptp.com.co](http://www.ptp.com.co)
4. Asoleche: is a non-profit organization, whose mission is to facilitate the road to the competitiveness of the milk processing industries, promoting the improvement, efficiency, effectiveness and effectiveness of each of the processes of these companies, and building excellent relationships with suppliers, distribution and sales channels, consumers and the State. [www.asoleche.org](http://www.asoleche.org)
5. National Dairy Council: seeks to advise and guide the government in the design of sectoral policy, to identify and arrange appropriate solutions to the various problems that affect its performance and to coordinate at the national level all the activities that promote its integral and equitable development. It is made up of Analac, Fedegán, Asoleche, Fedecooleche, Andi, Ministry of Agriculture and Rural Development, Ministry of Health and Social Protection, and Ministry of Commerce, Industry and Tourism. [www.cnl.org.co/](http://www.cnl.org.co/)
6. Analac: Its mission is to unite and represent the milk producers of the country through the support, promotion and defense of their interests, contributing to the sustainability and improvement of their quality of life. [www.analac.org](http://www.analac.org)
7. Fedecooleche: Its purpose is the representation and defense of dairy production, industrialization and marketing at the national level, especially dairy cooperatives and related organizations or complementary to the processes they develop, and the promotion of the integration of their associated entities. [www.fedecooleche.com](http://www.fedecooleche.com)
8. ICA: advises on the formulation, preparation and execution of policies, plans, programs, projects, measures and procedures to protect the health of plants, protect the rights of breeders of new plant varieties, verify the quality of production, marketing and safe use of seeds and agricultural inputs.
9. Fedegán: is a non-profit private organization who works for the Colombian livestock interest. Fedegán leads and groups, as affiliates, the regional and local

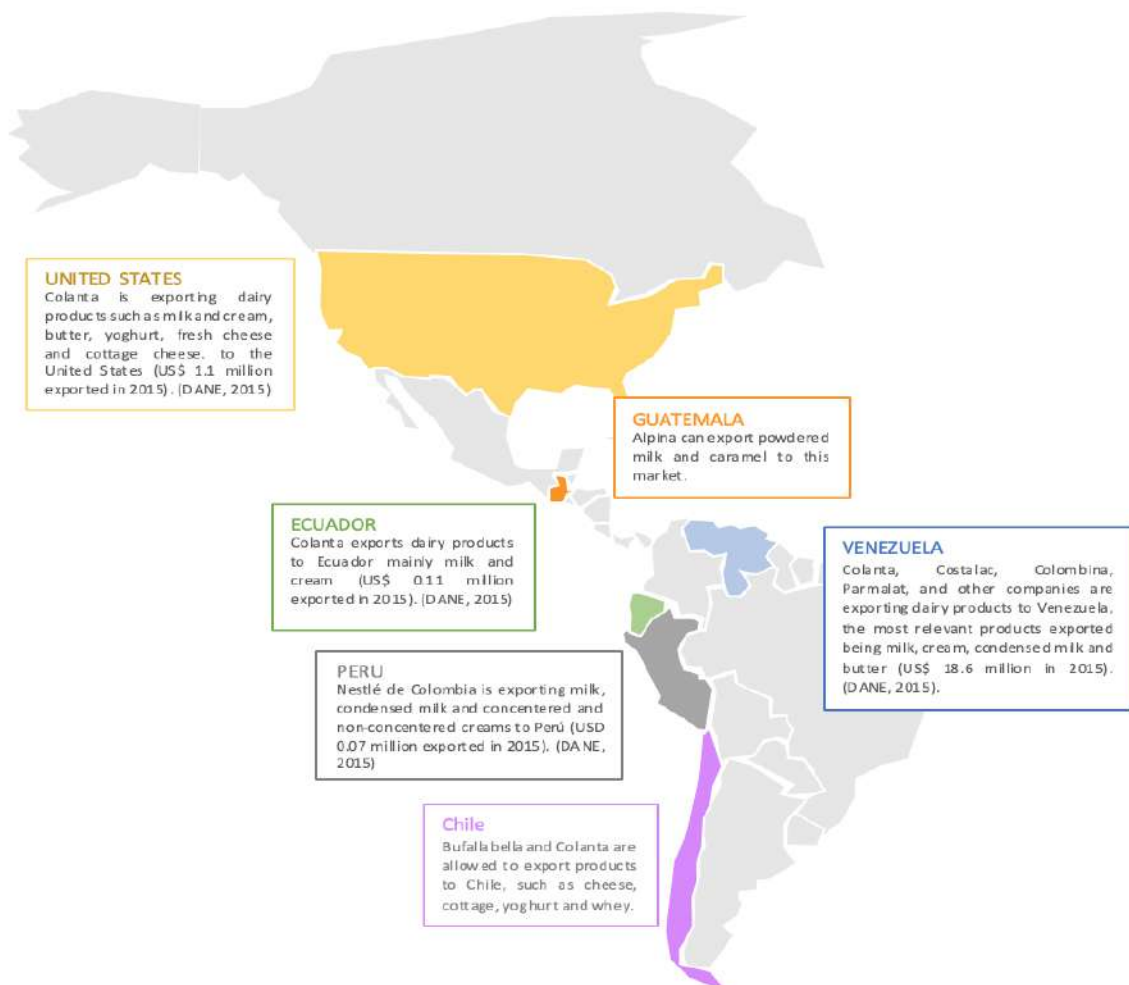
livestock organizations in order to promote the development of the livestock sector in Colombia.

### Exports and the use of free trade agreements

In 2015 Venezuela was the main importer of Colombian dairy products, with an 80.2% (USD 18.7 million), followed by United States 13.6% (USD 3.2 million).

- Countries such as México and Ecuador imported small quantities of Colombian dairy products, USD 0,7 million and USD 0.5 million, respectively (DANE-2015).
- In 2015 the main dairy products exported by Colombia were cheeses, cottage cheese, condensed milk and butter (DANE-2015).
- Germany, China, Italy, Netherlands, France, and the United Kingdom were the greatest importers of dairy products worldwide in 2015. It is important to point out that these countries have free trade agreements with Colombia (Trade Map-2015).

Map 4: Potential export destinations



## **Data Dairy**

### **Reports**

- ProColombia Report (2016). *The world invest in Colombia. Investment in the dairy sector.*
- RVO. 2015. *Mooooi dairy opportunities for Colombia-Dutch collaboration.* The Hague, Netherlands.
- ProColombia Report (2018). *ProColombia strategic partner for the dairy sector.*
- Gobierno de Colombia and Minagricultura (2018). *Sector Lácteo Colombiano*

### **Interviews**

- Alqueria (Bogota, May 7, 2019)
- Colachera (April 30, 2019)
- Servicios Nutresa (Medellin, April 11, 2019)
- Milk producer and processor (Cartagena, April 9, 2019)





## 9. Mango

### Outline per Party

#### Public

Public parties mention how investments are required to overcome problems with insects and improve post-harvest processes. Also, the Ministry of Agriculture and Rural Development stated in December 2018 that they are developing protocols to access the US market by using infrared and radiation processes to eradicate diseases in cooperation with ICA.

#### Producers

Producers experience lower yields due sanitary issues. This is a result of mangoes falling on the ground and that are not removed fast enough attracting mosquitoes and flies to the mango trees. Also, producers state that the government does not prioritise the mango sector. That is why farmers are not encouraged to cultivate mango.

#### Exporters

Exporting of mango is troubled by the illegal dumping of Ecuadorian mango exporters. It is flooding the Colombian market and decreasing domestic prices. Moreover, only a very small part of the total mango production is exported. This is mainly as a result of low quality caused by insects that affect the fruit, insufficient post-harvest processes, and high FOB prices as a result of high inland transport costs.

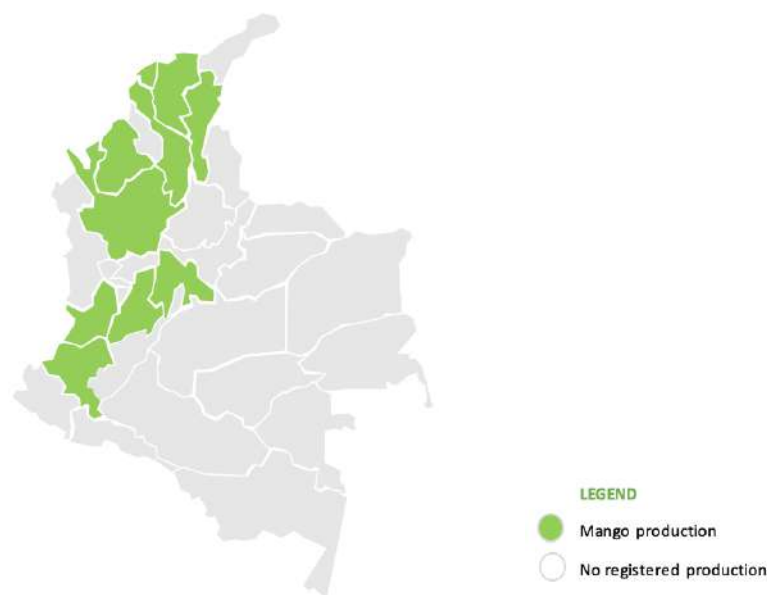
#### ARP

Four issues are impeding the growth and quality of the mango sector in Colombia. Firstly, the government does not focus on mango, therefore investment for production, education and training are lacking. This is needed to make sure that farmers trust in the mango as an export product and that the quality and quantity is going to grow. Secondly, there is a need to encourage new farmers to start cultivating mango. At the moment there are only few (around five) large scale producers. Thirdly, the sector as a whole need to improve post-harvest quality improvement (e.g. thermal-treatment). When this is done, the quality of the mango is improved and the prices on the international market will be more beneficial. Lastly, at the moment there is the opportunity to organise the mango sector right from the start with best practices from other industries as change is still relatively easy now. When the right people are involved, this can be done, and it can be transformed to a highly professional, profitable sector.

## Introduction

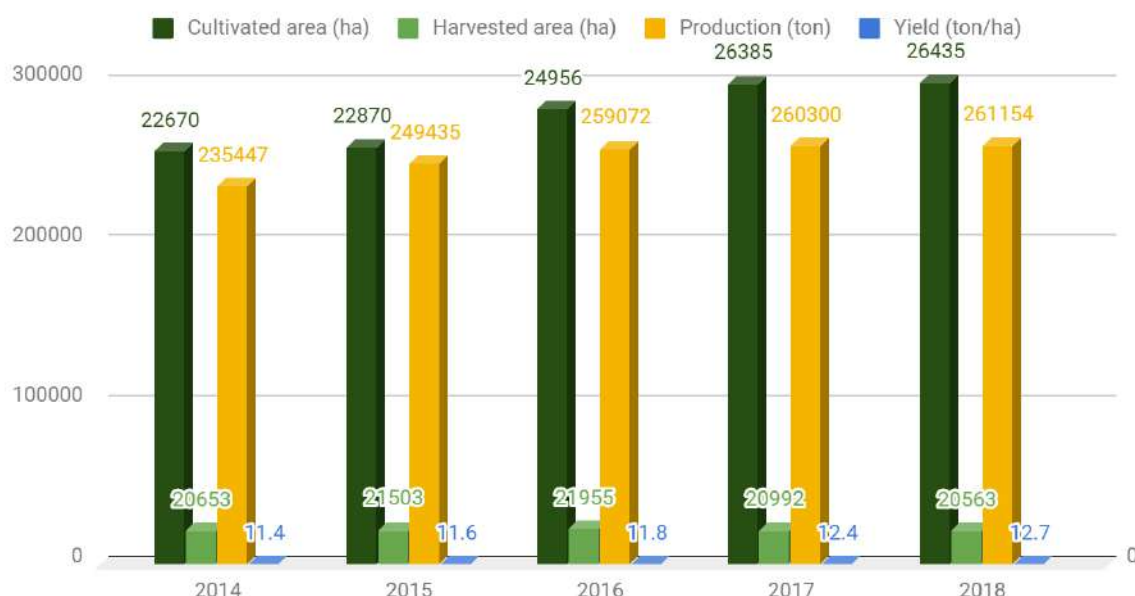
Mango trees can be found anywhere and in any garden in Colombia. However, the Colombian commercial mango production can be grouped into four different regions: Zona Centro, Zona Costa Caribe, Zona occidente, and Zona Pacifico. Zona Centro consists of Cundinamarca and Tolima, Zona Costa Caribe consists of Atlántico, Cesar and Magdalena, Zona Occidente includes Antioquia and Córdoba, and Zona Pacifico contains Cauca and Valle del Cauce. In 2018 Cundinamarca, Tolima and Magdalena accounted for 68% of the total mango production. Colombia is considered one of few countries where mango is produced during all months of the year, and flowering or harvest seasons can occur from one to three times per year depending on the region and the variety. The main varieties that are produced in Colombia are Tommy Atkins, Keitt, Kent, Mango de Azúcar, and Hilacha.

*Map 5: Mango productions zones in 2018*



Mango is a highly appreciated fruit in Colombia. It is one of the most important fruit crops, being the third highest in production and consumption after citrus and bananas. In 2018 the cultivated area of mango in Colombia was 26,435 hectares. From 2014 to 2018 a production increase of 11% can be observed. In 2014 the mango production was 235,447 metric tons, whereas in 2018 the total production accounted for 261,154 metric tons. Also, the yield has increased from 11.4 to 12.7 tons per hectare.

Figure 16: Mango production



## Harvest

The harvest season is highly dependent on the variety and the regional climatic conditions in Colombia. The main fruit harvest period in the Magdalena valley is April to July and in November to February. In the Colombian Caribbean, Zona Costa Caribe, upper Magdalena and Huila states fruit harvest starts from May to June and the second harvest period is from November to January. Areas with single annual fruit harvests, typically occurring from May to June, include the states of Bolívar, Córdoba, Sucre, and Meta and from May to July in the state of Cesar. In Santander mangoes can be harvested from November to January.

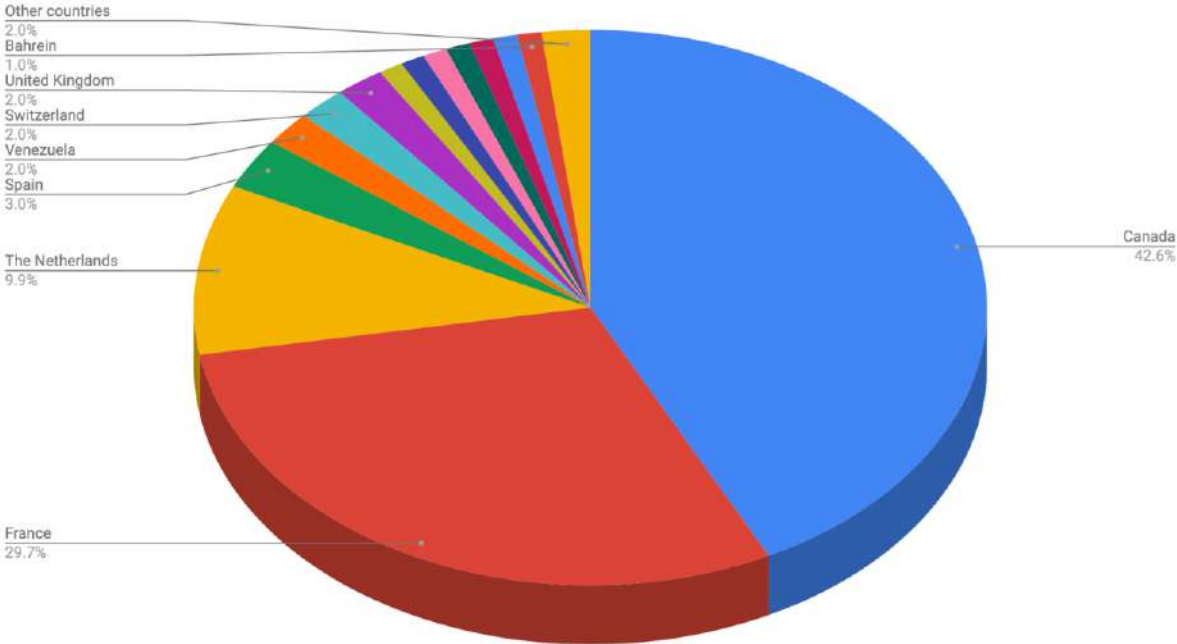
Harvest is mostly done manually using nets on picking poles to prevent fruit damage from hitting the ground. Fruit is then selected to remove damaged or diseased mangoes. Plastic and wood containers are used for packing. Storage conditions vary among varieties. For example, Mango de Azúcar can be stored at 7 to 9 degrees Celsius and 85 to 90% RH for three weeks, whereas it is better to store Tommy Atkins, Keitt and Kent for two to three weeks at 12 degrees Celsius and 85 to 90% RH.

## Exports

Most mango is sold in the domestic market and only a small portion is exported. In 2018 Colombia exported 3.8 million USD FOB, which included mangoes, mangosteen and guaves. 43% went to Canada, 30% had the destination France and 10% was exported to the Netherlands. According to DIAN, the total export of fresh mangoes increased with

685% from 2014 to 2017. In 2018 the FOB USD per tonnes for fresh mangoes was \$3,650.

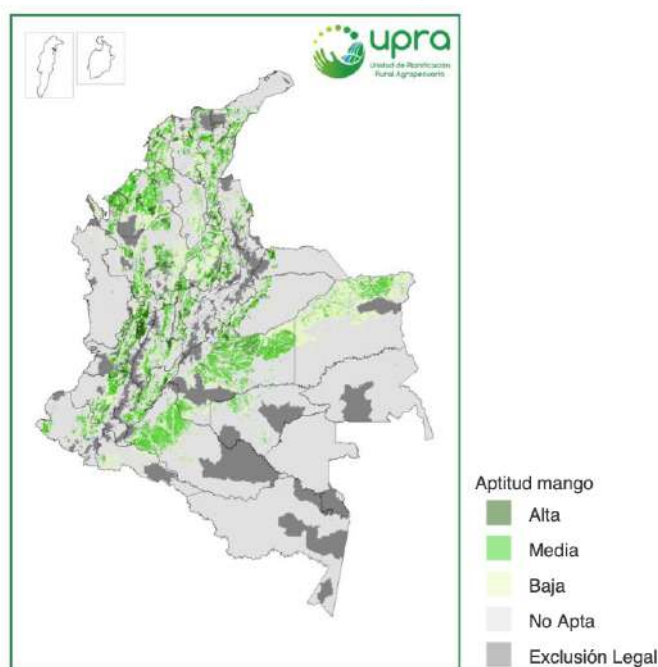
Figure 17: International exports of mango



**Policy and national framework**

The Colombian government has no clear “mango sector plan or strategy”. According to several stakeholders the government currently does not focus on the mango sector, whereas the ministry of agriculture states that they do focus on opening new markets, educating farmers and providing them with new tools and techniques. On a policy level there seems to be no consensus or alignment on the international market segment. Post-harvest quality improvement and general farmer education seems to be vital to boost mango exports.

Map 6: Suitable area for Mango (UPRA, Planificación nacional, 2019)



## Challenges

Besides the previously mentioned country wide challenges, the Colombian mango sector currently faces several other challenges. Relatively few plant diseases affect mango in Colombia. These include anthracnose, mildew or *erysiphe cichoracearum*, black mildew, branch dieback and tip dieback. Mosquito or fly plagues are a challenge for Colombian farmers. Bernal et al. (2009) reviewed the most common insects that impact mango in Colombia. Among these are about 180 fruit fly species from 13 families. These flies usually lay their eggs in rotten unharvested mangoes lying just underneath mango trees. A possible solution for problems with flies is using goats to get rid of rotten unharvested mangoes. However, since you can find mango trees anywhere and in any garden in Colombia, it is a significant challenge to eradicate all rotten unharvested mangoes laying around. Another challenge is illegal mango dumping from Ecuador. The domestic mango consumption in Ecuador is relatively low. Therefore, Ecuador has relatively high mango exports. Currently, some mango exporters from Ecuador engage in illegal mango dumping practices in the Colombian market. The Colombian government is at the moment not acting properly to solve this problem.

## Opportunities

### Harvest season

First of all, due to differences in height and climatic conditions in Colombia, the harvest window of the country is relatively large. As mentioned above, mangoes can be harvested

in two seasons within one year. The first season ranges from April to July and the second season from November to February.

### Education

There is still a lot to gain in terms of educations for farmers. Good farming practices and post-harvest practices will increase output and reduce the waste of mangoes. Moreover, education about ways to handle waste mangoes has a positive effect on fruit fly reduction. One aspect of education might be the post-harvest hot-water treatment process that is used in other mango exporting countries.

### Increasing demand

Another opportunity is the fact that mangoes remain a popular fruit worldwide. Over the past ten years, the market has grown by 5% annually. Approximately, 1.8 million tonnes of mangoes were traded worldwide in 2017. Hence, stable supply of mangoes will continuously be needed.

### Competitiveness

According to Tridge, the wholesale price of mangoes in Colombia is \$1.34 per kg. The price presented by Tridge is updated regularly from local sources. The average FOB price of mangoes, mangosteen and guavas in Colombia is \$2.79 per kg according to FAO. This data is derived using HS Code 080450. For comparison, the same code is used to determine average FOB prices of competing countries. As reported by AGRONET, the average FOB price of mango is even higher. In 2018 the average FOB price was \$3650 per ton, which is equal to \$3.65 per kg. When comparing these prices to price levels of competing countries the conclusion can be drawn that price competitiveness of the mango sector in Colombia is fairly low.

Figure 18: Average FOB price mango and Average FOB price processed mango



## Average FOB Price Processed Mango

Source: AGRONET, DIAN (2018)



## Competing countries

The most important competing countries in the region are Ecuador, Mexico, Peru and Brazil. A brief overview of these mango producing countries is given.

### Ecuador

The mango season in Ecuador starts mid-September with an early Ataulfo variety, followed by the varieties Tommy Atkins, Kent and Keitt till the end of the year. At the same time Mexico and Peru are also in the market, however there are some opportunity windows for Ecuador. For example, Ecuador supplies Ataulfos when Mexico cannot. According to the Mango Ecuador Foundation mangoes from Ecuador are mainly exported to the USA, which receives up to 70-75% of the country's exporting product. After that, the European market imports around 20% of the exported mangoes. The rest of the production is sent to Mexico, Chile, New Zealand and some other countries. The harvest season in Ecuador starts around the mid of October and continues until the end of January or early February. Ecuador has five treatment and packing plants which provide service to the national exporters besides exporting themselves. These five plants have an installed capacity for Hot Water Treatment of 800 tonnes per day, a storage capacity of more than 400,000 boxes, and provide work for approximately 1500 people during the harvest season. In Ecuador mangoes are mainly cultivated in the provinces of Guayas, with an approximate surface of 7700 hectares. 6500 hectares in Guayas are dedicated to export. According to Tridge, the real-time wholesale price of mango in Ecuador is \$0.60 per kg.

## **Mexico**

Mexico is the global leader in exporting mangoes to the world. Mexican mango exports in 2017 reached a record level of 422,000 tons, demonstrating a rising trend with annual growth of 11.25% over the last five years. Production mainly takes place in southern Mexico. At present, Mexico exports around 21% of its total production of mangoes, meaning that its installed capacity can be further leveraged to reach consumers from all around the world. The season for large-scale production and export runs from March to September and coincides with a period of relative scarcity in the market for mangoes, particularly in the case of the Kent variety in Europe. According to Tridge the wholesale price of mango in Mexico is \$0.5 per kg. FAO reports that the average FOB price of mangoes, mangosteen and guavas per kg is \$1.11 in Mexico.

## **Peru**

In Peru the majority of the crops are grown in the Piura region, which accounts for 75% of the production. The regions of Lambayeque (15%) and Ancash (10%) are the two other most important growing areas. The trade association, APEM, points to increasing the yield as the main challenge for growers. The goal is to improve the current production figures, which amount to approximately 315,000 tonnes grown on 28,000 hectares. Concerning export, there is also an ambition to grow. The Asian market is appealing. South Korea, Japan and China are already open to Peruvian mangoes, but the transit time to these markets by ship is too long to be able to export large volumes. In November 2018, Peru had stopped exporting due to strikes. The growers had stopped working for 48 hours because of the low mango prices. Last harvest season Peru exported approximately 20% less than the year before. According to Tridge, the real-time wholesale price of mango in Peru is \$0.50 per kg. The average FOB price in Peru of mangoes, mangosteen and guavas is \$1.65 per kg as reported by FAO.

## **Brazil**

Concerning Brazil, the international market is good for mango growers in the regions of São Francisco Valley and the north of Minas Gerais, which are the most important regions for mango exports. Between January and November 2017, 163,900 tonnes were exported, which is 16% more than in the same period of 2016. According to Tridge, the production volume of mangoes, mangosteens and guavas is 1.5 million tons in Brazil. 10.8% of the total production volume is exported. The most important market is Europe, which mainly demands Palmer, Keitt and Kent varieties. The US is the most important market for Tommy Atkins. In 2016, Brazil exported to South Korea for the first time. According to FAO, the average FOB price of Brazilian mangoes, mangosteen, and guavas is \$1.70.



## **Multi Stakeholder Commitment**

According to the head of trade of Frutime S.A.S. and one of the largest mango producers in Colombia (approximately 2000 cultivated hectares) the government currently has no focus on the mango sector. However, the Ministry of Agriculture and Rural Development stated in December 2018 that they are developing protocols to access the American market by using infrared and radiation processes to eradicate diseases in cooperation with ICA. Alignment of and cooperation between stakeholders is lacking in the Colombian mango sector.

### **Companies**

Colombia has approximately 17500 mango farmers. Many farmers are smallholders and there are currently only 3 or 4 large scale mango farms. Furthermore, Colombia currently has 33 pulping companies, which transform mangoes into preserved and dehydrated mango. The challenge for pulping companies is to become certified to take advantage of opportunities abroad. Currently, exports of processed mangoes are higher than exports of fresh mangoes. However, international prices of processed mangoes are significantly lower than international prices of fresh mangoes.

### **Support entities**

The following strategic business partners for the mango sector are

1. Fedemango: Approximately 2500 farmers are part of Fedemango. This means only
2. 14% of all mango farmers are part of Fedemango. Fedemango is currently not supported by the government and is actively looking for resources.
3. Ministry of Agriculture and Rural Development: According to Fedemango's CEO in 2017, Mario Fernández, the support from the Ministry has been fundamental, especially in technical assistance that have benefited more than 4 thousand producers with technological packages. However, according to Fabio Herrera the current government is not focused on mango.
4. Asohofrucol: Represents the interest of Colombia's fruit and vegetable producers and encourage the productive and competitive improvement of their agribusiness, contribution to the country's integral rural development.

## **Data Mango**

### **Reports**

- Procolombia Mango Report (2017). Mango in Colombia
- Ministry of Agriculture (2018) - Cadena de mango Indicadores e Instrumentos
- F. Ramírez and T.L. Davenport (2012) - Mangoes in Colombia

### **Interviews**

- Wolf & Wolf - Bogota, April 3, 2019
- Frutales las lajas s.a. - Bogota, April 4, 2019
- Frutime SAS - Bogota, April 4, 2019
- Mango Grower - Montelíbano, April 15, 2019



# 10. Palm Oil

## Outline per Party

### Public

The public parties in the sector mentioned that the main problem in the industry is the reputation damage of palm oil worldwide. This is caused by the deforestation scandals that are taking place in Indonesia and Malaysia. However, in the case of Colombia there is that the country is close to no deforestation linked to the cultivation of Palm Oil. Overall, the public authorities claim that the sector is well-organised and there are not many serious problems. They do recognise the fairly low selling prices.

### Producers

There are several issues that producers are struggling with. Primarily, the business is increasingly less profitable for producers in the country. The price of Palm Oil is set worldwide, and this price is decreasing. Also, competition in the international market is increasing. That is why producers need to sell for lower prices, while fighting more competition. They are trying to maintain profitability by cutting costs everywhere they can and to increase efficiency to the best of their ability. For example, they are trying to find ways to increase the harvest of palm oil per square meter as in Guatemala they reach 8.4 tons per hectare while on average they now harvest 3.2 tons per hectare. Moreover, in order to be competitive, a high level of production is required (lower average costs). However, since there is a law restricting farmers from having large plots of land. There is a maximum number of hectares that a farmer can own, this differs per region. In the regions where palm oil can be best cultivated, this number is relatively low. Lastly, producers of palm oil have to choose between producing palm oil in the Llanos region, where you have to cross three mountain ranges to bring the oil to the ports or produce it in the northern regions where diseases are much more common. This is a tough decision considering that it both results in higher average costs than the competitors on the international market. Producers are longing for cheaper inland transportation and in general a more efficient infrastructure and logistics to become more competitive on the international market.

### Exporters

For Colombian exporters the sustainability story is a unique selling point. Maybe Europe wants to pay a premium for sustainable palm oil. The problem is that the main consumers (India and China) are not willing to pay one single dollar extra for sustainable palm oil. Therefore, it is hard for Colombian exporters to compete with companies from Indonesia or Malaysia as they are producing much more and can offer better prices. Average price in Colombia for a ton of crude palm oil is \$700, while in Indonesia it is \$550. Additionally, exporters are struggling with the association of palm oil with deforestation while in

Colombia this is not the case. Exporters have also expressed their concern about the position that the public authorities are taking. The exporters say that the claim that there is no deforestation involved when producing palm oil may not be entirely true. Especially not when the production is going to grow. For the quantities to rise, the palm oil sector with the support of the Colombian environmental and agricultural authorities, has done a mapping to secure the growth and will also secure Colombia's commitment to ZERO deforestation.

## **ARP**

The Land ownership law that regulates the amounts of hectares that farmers can own is restraining foreign direct investment making economies of scale hard to realise. In the past, money was not invested in the Palm Oil industry as was concluded that palm oil cannot be profitable enough in Colombia. Enabling more lands for Palm oil growers or helping these farmers with other ways to cut costs will help producers to sell at more competitive prices towards the international price that is set in Malaysia and still be profitable. Palm oil cultivation has deployed around Colombia in two ways: 1) Replacing other crops mainly with life stock and 2) Becoming the alternative legal economic option in areas planted with coca, Palm oil has helped the fight against illicit crops and has provided a change in the source of income in many regions. Furthermore, Colombia is an odd country with respect to the palm oil industry: it produces, exports, and imports palm oil. Encouraging national companies to buy Colombian palm oil will help the industry. When the Colombian producers sell Palm Oil in the domestic market, the margins are higher as the cost price is lower since there are no outland transportation costs and the selling price is the same internationally as domestically.

## **Introduction**

Palm oil has been cultivated in Colombia for approximately 20 years. The crop is not related to deforestation in contrast to palm oil productions in Myanmar and Indonesia. Nevertheless, Colombian palm oil is suffering from the bad image of the commodity worldwide. It is an odd sector in the country as Colombia produces, imports and exports palm oil. The crop is cultivated roughly in four areas in the country. From largest to smallest production area: the east, north, middle, and south-west area. The areas where it is produced:

Map 7: palm oil production zones

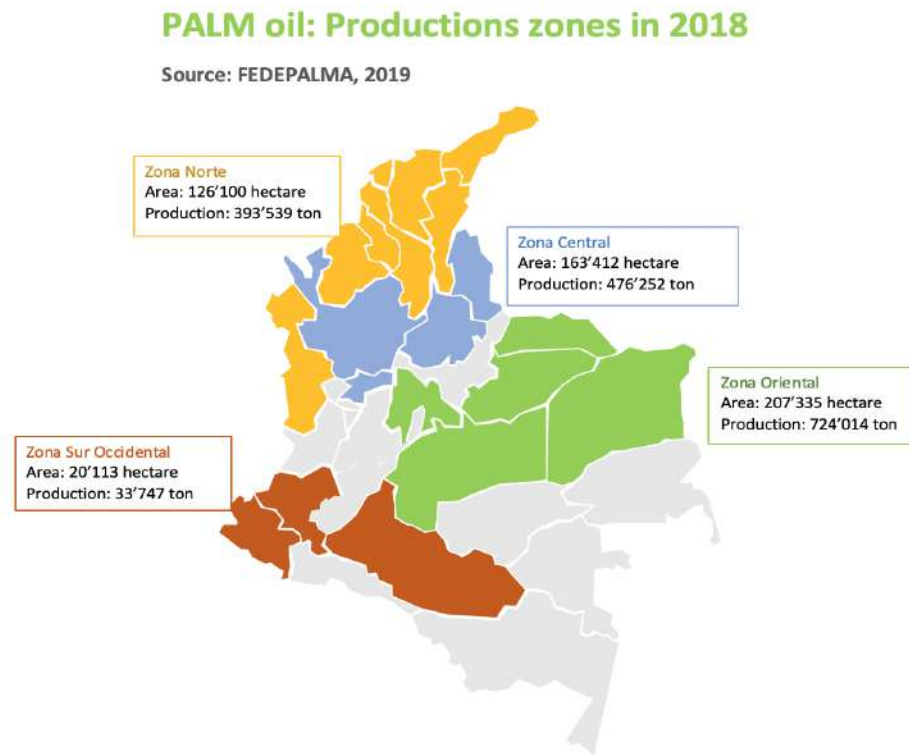
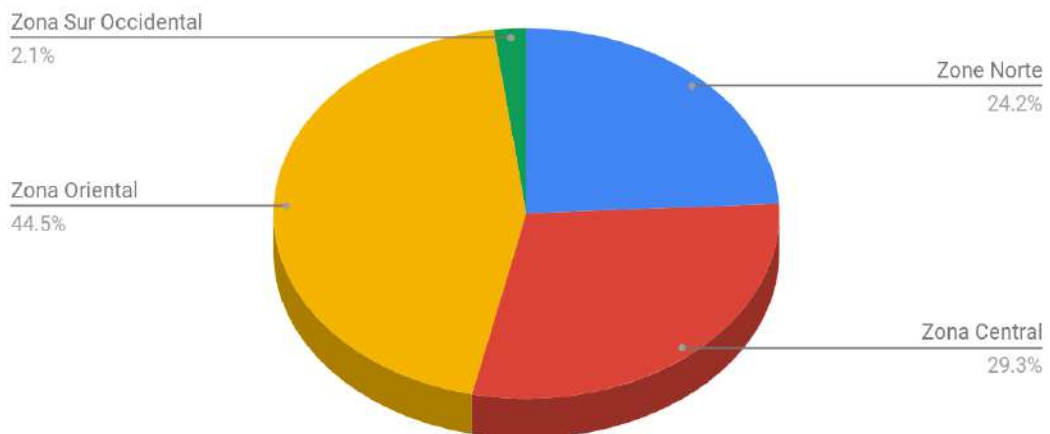


Figure 20: palm oil production zones

### Palm Oil Production Zones in 2018

Source: Fedepalma (2019)



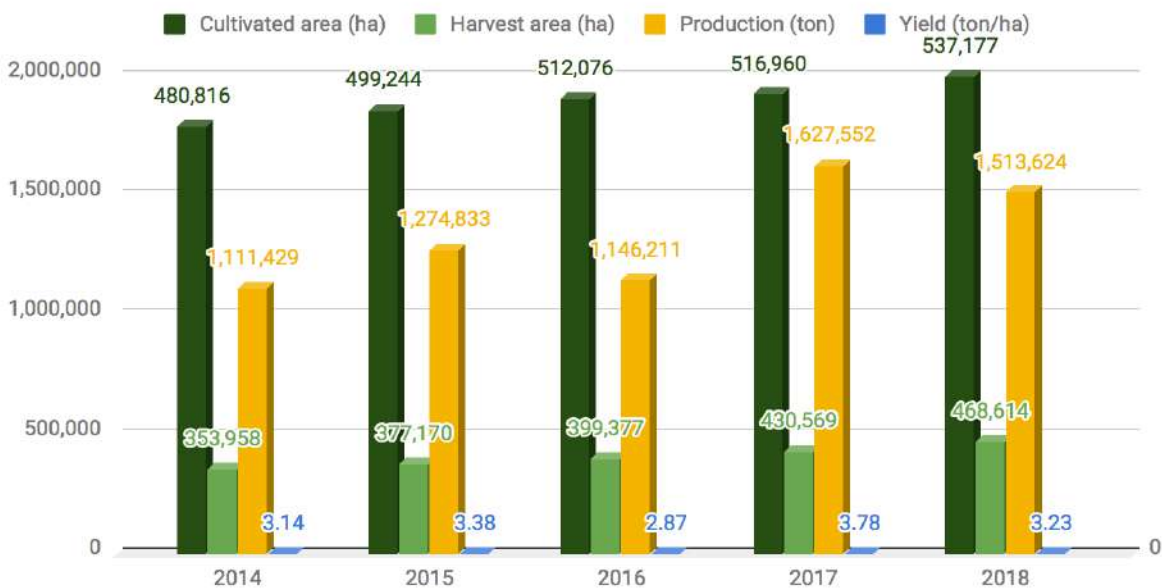
## Palm Oil Production

Palm Oil is considered as a good, reliable, long term crop in Colombia. However, because the yields can take a while before it is profitable, it is not an industry for everybody. Small sized enterprises are not too eager starting a palm oil plantation. In 2018 the cultivated area of palm oil in Colombia was 537,177 hectares. From 2014 to 2018 a production increase of 12,5% can be observed. In 2014 the palm oil production was 1,111,429 metric tons, whereas in 2018 the total production accounted for 1,513,624 metric tons. Also, the yield has increased from 3,14 to 3,23 tons per hectare.

Figure 21: palm oil area, production and yield

### Palm Oil: Area, Production & Yield

Source: FedePalma, MADR



The lifetime of a palm tree is around 25 years. After around 3 to 4 years months, the tree starts to give the first fruit. It consists of a big fruit that had little nuts inside. The quality of the palm oil is the same everywhere in the world. Although the harvest season is dependent on the climatic behaviour, it takes around 22 - 25 weeks to harvest. One of the farmers we spoke (Fabian Urbina), has around 370 hectares. From these 370 hectares, he manages to harvest around 5.000 tons of fruit every year. Palm oil is the most rewarding method for producing oil, it gives you the most litres of oil per hectare. Most land is used by smallholders (70%). There are processing plants throughout Colombia that buys the fruit from the smallholders and then the fruit is being processed.

## Competitiveness

The palm oil sector is a relatively new sector in the agricultural landscape of Colombia. This both has its advantages and disadvantages. Fedepalma, the federal organization that oversees the entire sector is well organized and structured to help the sector flourish. In total, there are 6000 producers, 2000 of them are members of the organization. These members pay a fee to be part of Fedepalma. This fee is established.

The distribution of the domestic consumption versus the export is changing. In 2014, the domestic consumption was around 70%. In 2018, the domestic consumption was around 45%. This is positive for the competitive position in this sector, since quantities are important when selling palm oil. The table below shows the amount of palm oil produced by Colombia and their main competitors. According to Fedepalma, Colombia produces 2% of the total output in the world.

Table 12: palm oil production in metric tons

	Production in metric tons
Country	2019
Indonesia	3,60,00,000
Malaysia	2,10,00,000
Thailand	22,00,000
Colombia	13,20,000
Nigeria	9,70,000
Papua New Guinea	500,000
Honduras	460,000
Guatemala	448,000
Brazil	370,000
World	58,800,000

All the people that we have spoken told us that one of the main issues for export was that the quantities that Colombia is producing are not competitive compared to for example Indonesia and Malaysia. However, we do see that Colombia is the seventh exporter in the world. Therefore, we can conclude that they are doing better than a lot of other countries. The countries that Colombia is exporting to is visualized in the pie chart below.

## Exports

The countries that Colombia is exporting to is visualized in the pie chart below. In the pie chart it can be seen that the biggest part is going to the Netherlands, followed by Brazil



and Spain. Most of the palm oil is going to Europe or South America. The revenues from export amount up to 11% of the total agricultural GDP. Colombia is the biggest producer of palm oil in South America. To be able to understand where the production come from, you need to know the companies that produce/export the most palm oil. Therefore, to give a clear overview, the table below gives a clear overview of the companies involved, the area that they are active in and the amount of dollars and market share that they possess.

Figure 22: International exports palm oil

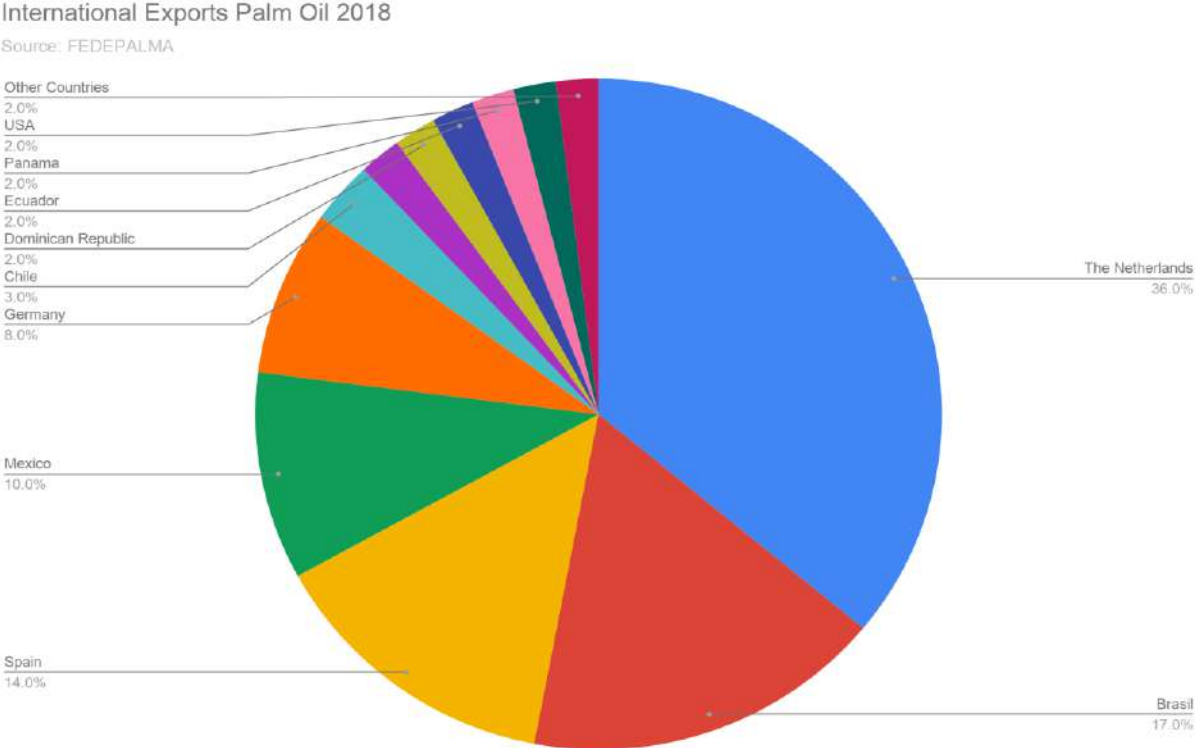


Table 12: Production per department

Rank	Company	Department	million USD 2018	%
1	Biocosta	Magdalena	196.8	37%
2	Acepalma	Bogota D.C.	177.1	33.3%
3	Cargill	Cundinamarca	56.6	10.7%
4	Tequendama	Magdalena	24.1	4.5%
5	Mira	Valle del Cauca	19.7	3.7%
6	Indutrade	Atlantico	18.2	3.4%
7	Team Foods	Bogota D.C.	12	2.3%
8	Gracetales	Atlántico	10.7	2.0%
9	Macroexport Gutierrez	Nte de Santander	6.5	1.2%
10	Atlantic Global Trading	Bogota D.C.	4.1	0.77%
11	Grasco	Bogota D.C.	1.9	0.36%
12	Gradesa	Magdalena	0.91	0.17%
13	Empaquetadora del Norte	Nte de Santander	0.62	0.12%
14	Famar	Magdalena	0.59	0.11%
15	Salamanca Oleaginosas	Valle del Cauca	0.51	0.07%
16	Extractora Maria La Baja	Bolívar	0.37	0.04%
17	Oleoflores	Atlántico	0.22	0.02%
18	Bioplanta Palmera	Antioquia	0.13	0.02%
19	Prodmercar	Nte de Santander	0.1	0.02%
	Others		0.2	0.04%
	Total		531.4	100%

## Challenges

### Informal labour vs formal labour

The palm oil industry creates 72000 direct employment and 177.000 total employment. The average salary in this industry is 1.5 times higher than in Colombia on average. With 82.4% of formal employment, the palm oil industry is the very formal compared to the agriculture sector in general (more than 90% of the agriculture sector is informal), moreover 63% of workers with a contract over one year. Nevertheless, formal employment remains a challenge within the small holders due to additional production cost (Fedepalma, 2019).

### Quantity

The key challenge for this sector is that the producers cannot get competitive prices for their crude palm oil. One of the key challenges is the fact that the output of the Colombian crude palm oil is not big enough. Therefore, it is hard for producers to compete with countries like Indonesia.

### **Ecuadorian Imports**

The Ecuadorian palm oil sector is not organized and united like the Colombian sector is. The production sites are poorly managed, and the knowledge is low. However, because of the low wages, the production cost is lower than in Colombia. Additionally, the taxes, price regulations and tariffs are also lower in Ecuador, therefore they have a better position when they enter the Colombian market. Since a couple of years Ecuadorian farmers try to illegally export their palm oil into Colombia, this could be due to the higher palm oil price in Colombia. Colombia produces enough palm oil, so they do not need to import the Ecuadorian oil. It also hinders the certification process because the Ecuadorian palm oil is of less quality and good production practices cannot be guaranteed.

### **Phytosanitary issues**

The sector has slowed down due to phytosanitary problems, especially in the north, due to diseases such as Chlorotic Leaf that can destroy several hectares. This issue is mostly seen in the northern production areas. The diseases differ per region. One example is the Bud Rot (Pudriciono de Cogollo). This is more common in the wet and tropical climate (Zone Norte & Zone central). In the Sud Oriental, there is a rise in the disease called Lethal Wilt. The impact for the small producers is bigger since they are affected directly, and they have no credits to recover from the diseases. So far, the government does not help in eradicating diseases. However, there are plans that they are going to help with sick plants and Cenipalma, the research centre from Fedepalma has ongoing investigations to find specialized solutions adapted per region

### **Weather**

The palm tree needs a lot of water for efficient palm oil production. In some areas, water shortage can go on for more than six months, in others, it is not raining sufficiently. The phenomenon 'Nino' instigates a dry period. This is a challenge that is not really easy to solve, however, new producers must carefully consider which area could be useful and which one is not suitable.

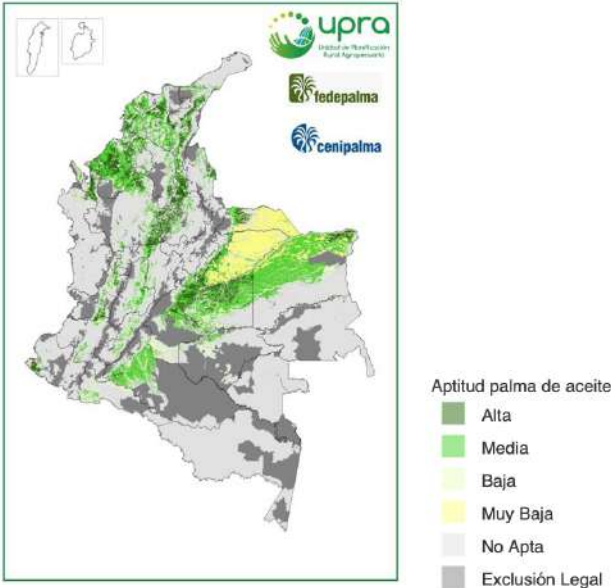
### **Land regulation**

As mentioned before, there are heavy regulations on land purchase. The price for land in Colombia is high, especially when you compare it with surrounding countries. The same quality of land in Ecuador or Peru is much lower than in Colombia. Obviously, the price depends per specific area but in general, the prices are higher. Moreover, there are a lot of conflicts due to land titles and land ownership. As a result of the conflicts that have taken place in Colombia for a long time, people have lost their lands. Nowadays, you put yourself in a risky position when you buy land because there is always the chance that Colombians are going to reclaim the land ownership titles.

Finally, there is a law that limits the amount of land someone can own. It depends on the location, but every department (region) has their own restrictions on how many hectares a person can own. This is a huge barrier for big companies to establish large farms in Colombia and therefore, these companies are not willing to make the investment in Colombia because they want to create economies of scale and that is not possible in Colombia. This problem is very applicable to the palm oil sector and it is known that some companies wanted to start up business in Colombia but because of these issues, it did not happen.

### Opportunities

Map 8: Area suitable for oil palm cultivation (UPRA, 2019)



### Education

Another opportunity is that there is still a lot to gain when farmers are educated in good practices. Not only will the output increase, it will also help to let farmers grow their business into a sustainable, high quality exporting company. Becoming this is a great opportunity for all the farmers in Colombia since there is a very high potential for exporting palm oil. The demand is high and the supply of (sustainable, good) palm oil is quite low. The table below clearly shows the increase of the world consumption of palm oil.

Table 13: World Consumption

Year	2014	2015	2016	2017	2018
World consumption (million tons)	58.44	59.74	61.89	66.18	70.74

## **Improve bad image surrounding palm oil**

One of the biggest opportunities for IDH to improve the Palm Oil sector would be changing the image that it has in the rest of the world. Often (mainly because of Malaysia and Indonesia), palm oil production goes hand in hand with deforestation and other bad, non-sustainable practices. However, in Colombia, this is not the case. The Colombian palm oil is produced without deforestation and the farmers are using sustainable practices. This should be communicated to the rest of the world because it will give multiple good results. Firstly, people will understand that palm oil is not necessarily a 'bad product', but that there is also sustainable, 'good' palm oil. Secondly, this will help retailers in other parts of the world to stop selling the bad palm oil and to start importing the Colombian sustainable palm oil. However, to seize this opportunity, Colombia must upscale their total production.

## **Support entities**

The following strategic business partners for the palm oil sector are:

1. Fedepalma: Approximately, there is a total of around 6000 producers, 2000 of them are part of Fedepalma. This means only 33% of all palm oil farmers are part of Fedepalma. Fedepalma is supported by the government and is actively looking for resources.
2. Cenipalma: Created by Fedepalma. Through four different locations, Cenipalma runs all the research and development in order to strengthen the palm oil sector of Colombia.
3. Ministry of Agriculture and Rural Development: This institute is important to every agricultural sector. When the ministry is focusing on the particular commodity, it can be seen that the productivity and quality of the sector rises.

## **Data Palm Oil**

### **Interviews**

- Fabian Urbina - Santa Marta, April 24, 2019
- Fedepalma - Bogota, May 3, 2019
- Indu Trade - Bogota, May 4, 2019
- Ministry of Agriculture - Cartagena, April 30, 2019
- Nutresa - Medellin, April 11
- Extractora El Roble Agrícola S.A - Cartagena, April 26