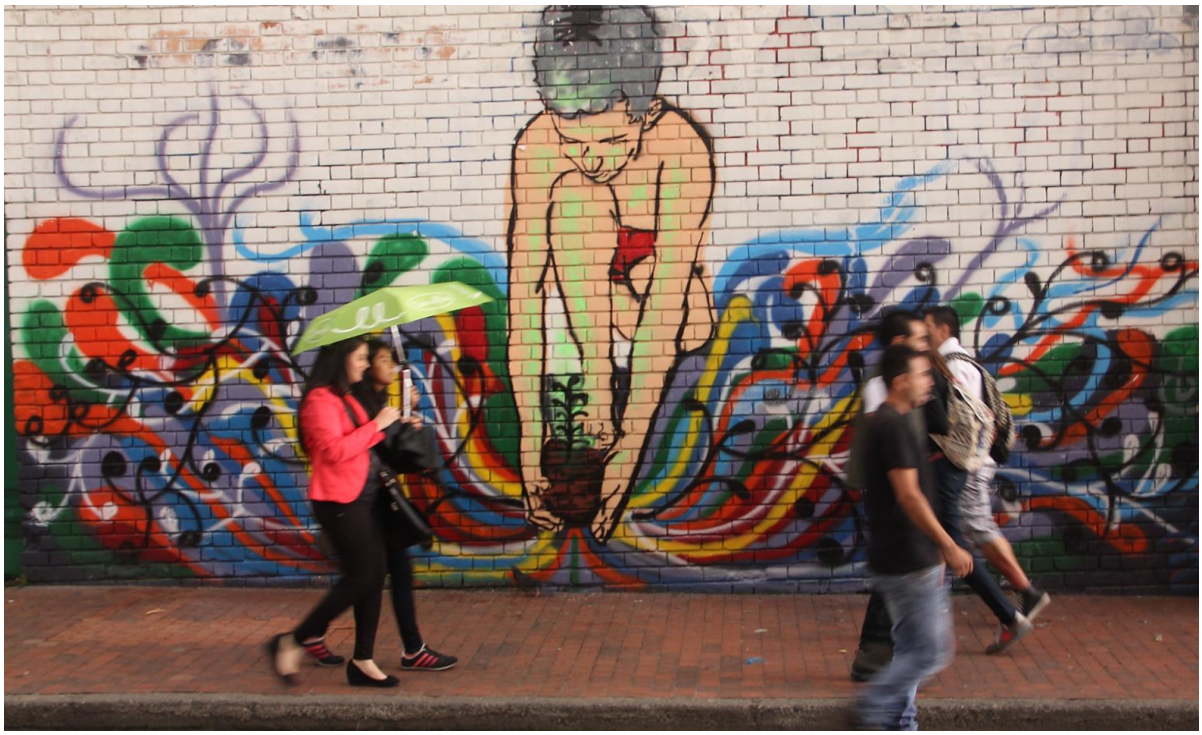
2015

CAND.MERC.SCM / MASTER THESIS



# Sustainable Supply Chains in Social Businesses

## A CASE STUDY ON ORGANIC FARMING IN COLOMBIA

LUIS GUILLEMO MORENO CORTES

**HAND-IN**: 27-10-2015 **SUPERVISOR**: BRITTA GAMMELGAARD

**NUMBER OF CHARACTERS**: 132350

COPENHAGEN BUSINESS SCHOOL, 2015

CBS
COPENHAGEN
BUSINESS SCHOOL
HANDELSHØJSKOLEN

# Contents

**Table of Figures**

*To Sophia…*
*You are the light in my darkest moments,*
*The biggest inspiration,*
*The infinite love…*

*Thank you my little princess!*

## Abstract

The inequality result from the aggressive capitalist behaviour from some corporations have had a excruciating effect in small communities and the environment. This motivated the author to participate in groups and activities that help alleviating inequality around the world.

This thesis research analyses the characteristics surrounding a Sustainable Social Business Model, the components and the feasibility for establishing the model. The case study that has been chosen for this research is the case of organic farmers in the municipality of Guasca in the region of Cundinamarca in Colombia and the interaction of the possible effects of the interaction with social programs. This cooperation is a triangulation of efforts between Finca Mahindra (farm), CRAN (institution of social aid) and Borderless Community (non-profitable organization).

Through the thesis, the author reviews the Supply Chain Map of these farms as independent businesses and in cooperation with each other, in order to locate the waste in the processes, increase effectiveness, and propose the optimal Distribution Network for the products. In addition, there is an analysis of the Social Business Model and its relation with sustainability and the conditions that need to be met in order to establish a Sustainable Social Business.

The case study can be described as an ethnographic study case with an abductive approach based on system combing. The research was conducted by interviewing different stakeholder of the supply chain of organic and non-organic products in Colombia. Supported by an extended theory research and analysis in Copenhagen.


## Introduction

The combination of operations between independent businesses represent a potential cost reduction in all the industry sectors. The collaboration and merge processes by themselves represent a challenge; and once we add sustainability in the equation, it becomes even more interesting. In the past years the creation of theory created behind the concept of Social Business and the sustainability have created a valuable option to alleviate poverty, inequality while reducing the environmental impact of humans in the planet.

Through this research, the author intents to look at elements that can help achieving a lean and sustainable supply chain that supports the creation of a Social Businesses in rural areas in Colombia and areas with similar conditions.

The current world food chain conditions, are not sustainable; the use of fertilizers and pesticides with high content of chemicals, the consumption of these chemicals by the humans, the impact of

monocultures, the long transportation distances for the products, the control of the market prices by corporations, the social and economic impact result of the ownership/patents in the seeds. These are just some of the effects of the current food chain. The search for profit at all cost has a very high price, a price that we are starting to pay in the climate change and the destruction of the environment. Since our natural resources are limited, sustainability is the only way forward.

## Background

Globally, between a third and a half of all food produced for human consumption is lost or wasted, amounting to around 1.3 billion tons per year. According to a recent study released by the UK-based Institution of Medical Engineers, this figure increases to up to half of all food purchased in Europe and the United States being thrown away without being consumed. The defining element of the problem is that food wastage occurs at all steps along the food supply chain, with the majority of food wastage in developing nations occurring during the production phase; conversely, in developed nations, an average of around 100 kg of food per person is wasted in the consumption phase. In Figure 1, an overview is provided of the sources of waste in the agricultural value chain. Food waste and food loss are not a new phenomenon. However, they have been lacking a proper definition.

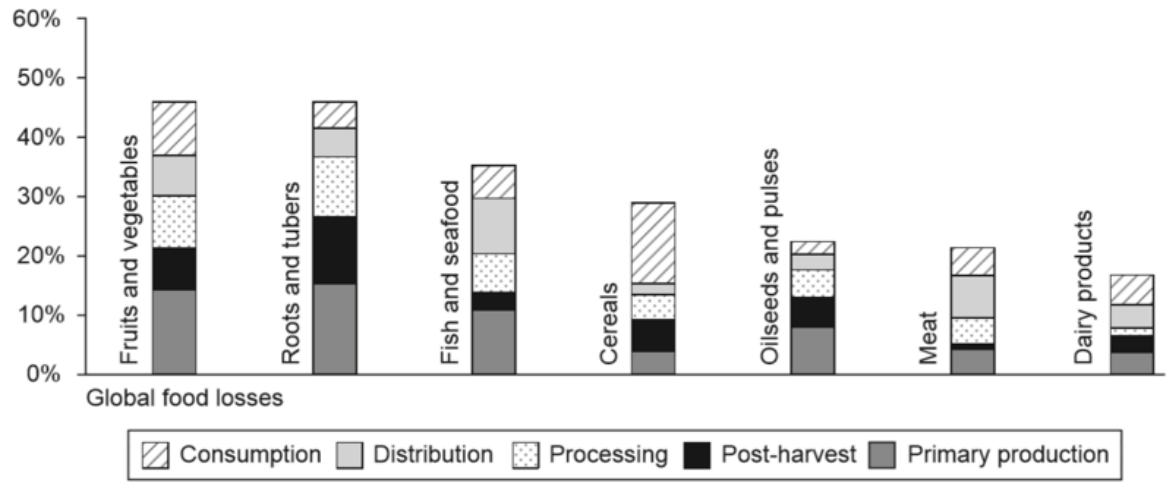



*Figure 1 Distribution of waste across the agricultural value chain (Source: FAO)*

(Nijs, 2014)

A study conducted by the Swedish Institute for Food and Biotechnology (SIK) on behalf of the Food and Agriculture Organization of the United Nations (FAO), "Global Food Losses and Food Waste," draws the distinction between food loss and food waste and provides a definition. According to the SIK, the definitions are as follows:

Food loss measures the decrease in edible food mass (excluding inedible parts and seed) “throughout the part of the supply chain that specifically leads to edible food for human consumption,” that is, loss at the production, consumption, postharvest, and processing stages. This definition of loss includes biomass originally meant for human consumption but eventually used for some other purpose, such as fuel or animal feed. Food waste is food loss occurring during the retail and final consumption stages due to the behaviour of retailers and consumers – that is, the throwing away of food.

The root causes of food wastage differ significantly between developing and developed countries. Broadly speaking, the causes can be split into three distinct categories:

Production – “from the farm to the factory,” it is at this step in the supply chain that the majority of food loss occurs due to either inadequate or inappropriate agricultural processes, usually in developing countries. Processing – from the factory to the end retailer, a large element of this stage in the developed world is the overuse of and reliance on excessive packaging. Retail – the guilt of the developed world, where we are responsible for as much food wastage as the developing world is for food loss.

Covering such issues as sell-by or use-by dates, rejection of produce on aesthetic basis, or simply buying more food than we’re prepared to eat, this is the easiest end of the problem to resolve. (Nijs, 2014)

| Food waste and loss per person per year (kg) | Total | At the production and retail stages | By consumers |
|---|---|---|---|
| Europe | 280 | 190 | 90 |
| North America and Oceania | 295 | 185 | 110 |
| Industrialized Asia | 240 | 160 | 80 |
| Sub-Saharan Africa | 160 | 155 | 5 |
| North Africa, West and Central Asia | 215 | 180 | 35 |
| South and Southeast Asia | 125 | 110 | 15 |
| Latin America | 225 | 220 | 25 |

*Figure 2 Food Loss per continent*

(Nijs, 2014)

As shown in Figure 2, the most of the food waste and loss allocated in the production and retail stages is staggering. In addition, the pollution of our environment linked to the production of agricultural

products is alarming. According to leafcertified.org, these are some of the problems associated to conventional / non-organic agriculture[1]:

- Agriculture is the largest single non-point source of water pollutants including sediments, salts, fertilizers (nitrates and phosphorus), pesticides, and manures. Pesticides from every chemical class have been detected in groundwater and are commonly found in groundwater beneath agricultural areas; they are widespread in the nation's surface waters. Eutrophication and "dead zones" due to nutrient runoff affect many rivers, lakes, and oceans. Reduced water quality impacts agricultural production, drinking water supplies, and fishery production.
- Water scarcity in many places is due to overuse of surface and ground water for irrigation with little concern for the natural cycle that maintains stable water availability.
- Other environmental ills include over 400 insects and mite pests and more than 70 fungal pathogens that have become resistant to one or more pesticides; stresses on pollinator and other beneficial species through pesticide use; loss of wetlands and wildlife habitat; and reduced genetic diversity due to reliance on genetic uniformity in most crops and livestock breeds.
- Agriculture's link to global climate change is just beginning to be appreciated. Destruction of tropical forests and other native vegetation for agricultural production has a role in elevated levels of carbon dioxide and other greenhouse gases.

The correct management of the supply chain and the addition to sustainability to the chain can help reduce the waste and the environmental impact of the foodchain.

"The supply chain emerged because it provides potential solutions to the problems of duplication and responsiveness. The concept of the supply chain is not new. It has embraced a concept to direct, extended coordination of the operations across the entire supply process, replacing both the market and hierarchy as the means to manage the flow process".

Given the complexity of chain system, it is common that their activities are not performed efficiently, which compromises the agents to provide for He continues and unified manner the necessary means to generate proposals for improvement, can foster productivity chain as the main mechanism of its competitiveness. The complexity of the chain can be sometimes the result of international operations, when certain products are demanded in regions where they cannot be produced the supply chain extends in a global way.

[1] http://leafcertified.org/the-apparel-industry/faqs/problems-associated-with-conventional-farming

The impact of globalization has required great efforts on the agents in terms of integration and collaboration. This, in turn, has pointed develop new concepts within which include the value chain and supply chain; these are presented as one of the current paradigms of competitiveness (Johnson, Wood, Wardlow and Murphy, 1999), to be reduced possibilities for improving production systems associated to an agent. Its innovative aspect is manifested in its application, in a high apparent success return on investment apparent as a result of a reduction of between 5% and 20% of the costs (Shapiro, 2001). Investments in the development of supply chain information systems, involve combining with mathematic optimization models, which are developed to suit customer requirements.

The impact that the globalization has had in the different parts of the Supply Chain of all agricultural products in Colombia, has pushed all these parts to integrate and work together, in order to create a new supply chain and a new value chain. These are the areas where the business has been investing the efforts of improvement to keep with the international competition; as an example, we can say that innovation has helped to a cost reduction of the supply chain in the case of the coffee of somewhere between 5-20%. The inefficiencies have big impact in the economies of large supermarket chains and world traders, but it is on the small stakeholders in the chain where the consequences of the inefficiencies have the highest impact. It is in the life standards of the farmers and small merchants that the effects are palpable. This problematic took the writer and a group of professionals to think in ways that we could help making a difference in the life of these farmers.

## Borderless Community.org

During summer 2014 I was discussing with a friend of mine, the conditions surrounding the somehow “new trending” term of Social Business; as we were trying to understand whether this was a business model that could be followed by anyone or not. Moreover, if it was, how could we put in in practice so we could start spreading the benefits of this model in communities around the world?

At that moment, we decided to create a group that will turn into an organization that can help people around the world. There are 5 members in the Borderless Community team, with different backgrounds.

In the following weeks, we were obsessed with the idea, the discussion started taking form, and we decided to move forward creating a project. As the next step, we decided to narrow down the project to a place and a social problem to focus on. As we are both from Latin America (Mexico and Colombia) we thought that we could find something in this region. Following some of the ideas for a social business and comparing them to our experiences and contacts in both of our countries, we decided to start the project in Colombia and focus the efforts of the project into two social groups, farmers and orphans.

The first group includes two kinds of farmers, organic and non-organic. These groups face similar problems into some extent, because the current situation for the supply chains of fruits and vegetables in Colombia is full of companies and persons working as intermediaries. Currently, the problems that the farmers face are mainly on the distribution, pricing, search of new customers, training and financing.

Although the project will include the group of non-organic producers in the future, this group will not be included in this study; but it is important to mention some facts around their situation that can help understanding the general situation of the farmers in the region. There are many supply chains for the distribution of organic and non-organic vegetables and fruits in Colombia, and most of them involve the unnecessary addition of intermediaries between the production and the sale of the products, this is reflected on the price that the farmers receive for their crops and the final price for the customers. Unity between the farmers will usually transform in benefits on these areas.

Nowadays, there are many farming associations for different products, and even though some of these associations are very well organized, they will always be depending on financing from outside sources. These sources are mainly governmental which processes are full of burocracy and it can take up to 3 years to get a project approved, and international NGOs. In the end, this model is not sustainable, which is a shame, because some of them take the role of sales representatives, educators and financers for the farmers.

The situation of the organic farmers differs from the non-organic farmers; mainly because their production is more sustainable, but they still depend on governmental financing to get projects that include access to water and other services.

It is important acknowledge that the challenges that both kinds of farmers face are not only the production, distribution and sales of their products, but also socio-political conflicts that the county faces with the guerrilla movements around the country. Due to the armed conflict in the country up to 2014 it was calculated that close to 5.7 million Colombians have been displaced from their homes[2], and close to 6million hectares of agricultural land have been left behind since the beginning of the conflict[3].

The second group includes orphans linked to the armed conflict; this means kids, which were kidnapped by the guerrilla and force into fight with the group and kids that joined the guerrilla voluntarily due to rejection from their own families. These kids have been “rescued” by the Colombian

[2] AlJazeera, May 18th, 2014 http://dialogo-americas.com/es/articles/rmisa/features/regional_news/2013/11/05/desplazados-colombia
[3] Diálogo, revista militar digital, November 5th, 2013

Army and placed into orphanages that help them to find a way to integrate themselves once again into the Colombian society. The reason why most of the social workers that try to help these kids use the term “rescue” as a false word, is because the majority of these kids have spent most of their lives as part of the guerrilla group and did not wanted to abandon the group. For them the guerrilla is the only social group that has given them anything close to a sense of belonging, life purpose and security, and in their eyes, they were not rescued, but separated from the closest thing to a family they have ever known.

When the team came back from Colombia, after many interviews with people in all the arts of the chain involved in the production of agricultural products, we decided to keep working together, to create a sustainable way of living that can benefit economically and environmentally these communities and social groups. It was then that Borderless Community was born.

The idea behind the organization is to create social businesses and programs that can aid environmental issues and social groups with inequality of possibilities. With the mission of making all the acquired knowledge available to everyone, that wants it.

The organization will only be the base, but the programs, projects and social businesses will be created in partnership with the locals of the communities where we will be offering our help, such as Finca Mahindra, where we had the opportunity to see and interact with the production of organic crops.

### Finca Mahindra

This research based the analysis in the operations in Finca Maihindra and the organic farms close by the same region. Finca Mahindra is an organic farm that started operations 3 years ago, Carlos Alberto Bejarano is the founder and manager of the farm, he started operation by growing and selling just to family members and with very few products. Nowadays the farm has several kinds of crops, the sales are done through their website www.fincamahindra.com, by phone and email. And even though their operations are still in small scale, the engineering background that Carlos has, it have influenced the way that the farm is managed. Compare to regular farmers, they keep track on the detailed cost of his operations. In addition, they are part of the association of organic farmers in the region (AGREGUA Asosiación de Granjeros Ecológicos de Guasca), they believe that the union of operations between the farmers and the share of information between them could make a difference in the organic farming of the region.

## Problem discussion

Organic producers: According to (Nijs, 2014) “Organic agriculture is a production management system that aims to promote and enhance ecosystem health, including biological cycles and the biological

activity of soil. It is based on minimizing the use of external inputs and represents a deliberate attempt to make the best use of local natural resources. Methods are selected to minimize pollution of air, soil, and water. Organic agriculture comprises a range of land, plant, and animal management procedures, circumscribed by a set of rules and limits that are usually enforced by inspection and certification schemes. Synthetic pesticides, mineral fertilizers, synthetic preservatives, pharmaceuticals, genetically modified organisms (GMOs), sewage sludge, and irradiation are prohibited in all organic standards".

The challenges for organic producers in the specific case of Colombia are different that the challenges that organic farmers face in the developed countries like Denmark, their main channel of distribution is the direct sale through farmers markets, phone sales and email orders. These producers main issues are cost of distribution, man hours used for the growth, search of new customers and organization between producers.

The culture of consuming local organic products is a new trend in the Colombian market. So far, there are very few retail shops distributing exclusively organic products; the ones that exist offer very few vegetables and fruits and instead they offer a long line of imported transformed organic products (teas, pastries, creams, jams, marmalades, etc.). This is not helping much to increase the awareness among the population on the amount of small local producers that already exist and the benefits of consuming organic products. A regular producer of organic products does not spend time in marketing, so their promotion is mainly by word of mouth and participation on farming fairs around the country. During an interview with the manager of Finca Mahindra (Bejarano C. A., 2014), he points out that the collaboration between the farms is key and that the most expensive part of his operations are the distribution and logistics. Because they do not have the correct vehicles for the distribution of the products and everyone works independently.

These farmers will distribute their products through sales at the local market place and have programmed deliveries once or twice a week to the customers in the closest cities. Because this is a common procedure among these producers, it is logistically inefficient due to the clear opportunity to have a collaborative distribution. Another issue that they face is the high price, the amount of work-hours required for the processes plus the size of the production, are the main reasons that keep the prices up, which so far leads them to sale exclusively to high end customers.

Establishing a social business, will required the creation of a new and different supply chain, one supply chain that will not only be efficient and lean, but also sustainable and most importantly socially and environmentally responsible.

According to (Pratt, 2015) there are five main issues developed from the food chains, the environment, the fate of small farmers, food quality, the rise of corporate power throughout the chains and the direction of global trade relations. These issues should also be taken in consideration when creating a Social Business and therefore will be discussed in this study. The social benefits that the model to be discussed will have are also linked to the cooperation that we will have with CRAN.

The idea behind working with CRAN in the program of reintegration of the kids linked to the armed conflicts is to give them a chance to go back to similar activities to the ones that they were doing before their interaction with the guerrilla by introducing them to the organic agriculture and the benefits that this brings to their communities. Nowadays, these kids stay in the orphanage and/or with foster famiies until they are eighteen years old, after that, the institutions have no means to follow with their integration. What we are proposing is to give these kids the chance to see a new path to keep their lives out of violence. Based on the interview with Maria Valoyes, head of the program "Atención especializada a niños, niñas y jovenes desvinculados al conflict armado" (Specialized attention to kids and youth unlinked to the armed conflict) at Centro para el Reintegro y Atención del Niño (CRAN)[4]. We can say that adaptation of the kids into the society is the extremely difficult, for different factors, mainly psychologic and environmental factors.

One of the reasons why we embraced the idea of cooperation with this institution, is the change of opportunities in their environment for these kids, the majority of them were born in rural communities where agriculture is the primordial family activity. And once they turn eighteen, they are force not only to keep trying to integrate themselves into society and find a job, but they also have to do it in the city, which can be hard to adapt even for people without similar backgrounds (Valoyes, 2014). Here is where we can see the added value that could bring to their lives, by offering them the opportunity to learn more about agriculture, and perhaps find one work alternative that doesn't have to include living in a city.

The work that these kids will do in the organic farms, could come in handy for the producers, which could potentially find in these kids future partners that can help growing the production and spread the word on the benefits that organic farming has in the environment.

Furthermore, for institutions like CRAN, having a feedback on the lives of these kids after they have left the institution, could potentially help them developing new programs or improve the existing ones by receiving information on the needs and the challenges that the kids face once they are on their own.

[4] Centro para el Reintegro y Atención del Niño http://en.cran.org.co/

## Research Question

How to improve the supply chain of organic products in the region of Cundinamarca, Colombia in a socially responsible way?

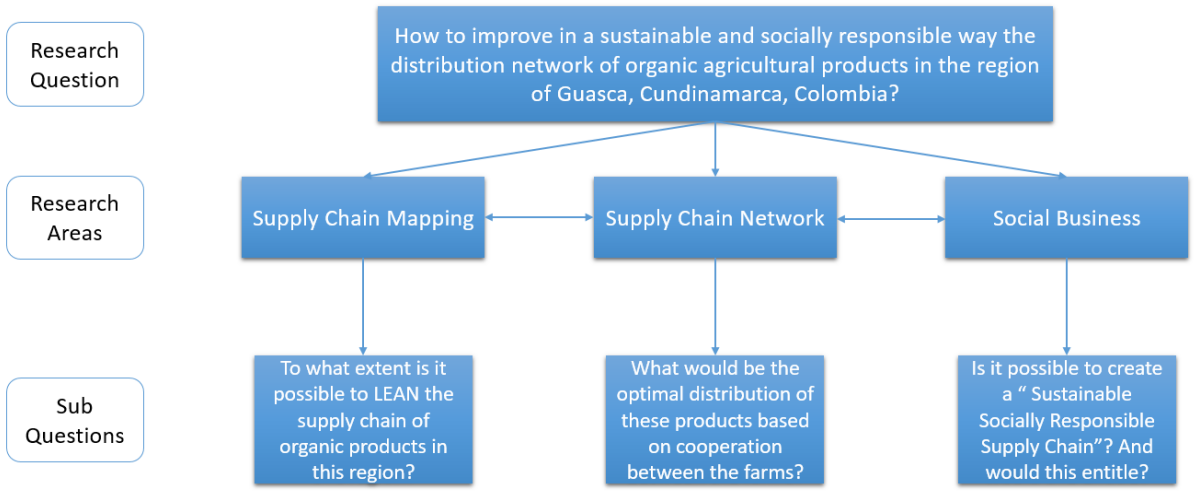



*Figure 3 Research design table*

## Purpose

This thesis is the first step in research on the creation of a "Sustainable and Socially Responsible Supply Chain". In this process, the reader will understand the current situation of the supply chains for organic agricultural products in the region of Cundinamarca (Guasca), Colombia. This study will propose the use of certain supply chain tools that could potentially help creating a more efficient process, by reducing waste through cooperation and improving the distribution network.

Is in the interest of this study to remark considerably the social factors surrounding the stakeholders in the chain, as well as the environmental impact of the supply chain in the communities.

## Limitations

The thesis is limited to the municipality of Guasca, located in the Region of Cundinamarca in the outskirts of Bogota. The information that was possible to access during the two weeks visit is mainly in one of the producers of the area. *Finca Mahindra*[5], is one of the organic producers in the region that has grown the most in the past five years, this thanks to the work of the manager of the farm Carlos Alberto Bejarano, who is always looking for new organic growing technics, as well as innovative ways to distribute and sale their products.

[5] Finca Mahindra, http://www.fincamahindra.com/

Since the collection of information is limited to details of one operation, plus indirect information of the operations in the neighbour farms, the study will consider similar operations in all the small farms of the region. The idea with the study is to stablish the possibility of cooperation between at least two farms, and if possible escalate the benefits to more farms in the region, the country and the continent.

# Methodology

## Stakeholders

The different institutions, organizations, groups and persons that have an interest, a stake in this master thesis is to be considered a stakeholder. Identifying the different stakeholder gives the reader a good overview of the different interest in the master thesis. The stakeholders identified in our master thesis are

- Copenhagen Business School (institution and supervisor).
- Social Business Start-up.
- Organic Farmers in the area surrounding Bogota.
- Organic Food Industry.
- The author.

These stakeholders have direct or indirect involvement in the thesis.

## Researcher Bias

The writer of this thesis is an entrepreneur, student and part of Borderless Community, which goal is to transform this project into a social business. The idea behind this research is to analyse the current situation of the supply chain for organic products, from farmers growing on the surroundings of Bogota and propose a sustainable supply chain model and an efficient distribution network that will be part of a Social Business Model.

The participation of the writer in the actual project, allows the access to information already acquired by the Social Business Start-up, and because the information needs to be assed and evaluated as objectively as possible, the risk of bias is considered low.

The interviews were made by more than one person (including the writer) each time, this also with the idea of reducing the risk of bias and include different perspectives into the interviews.

## Research Design

The original idea behind the research was to use the data to establish a business case around the market places in Bogota and the supply chain for organic and non-organic producers. However, as the information was collected, the idea starting to evolve into the current research, which will lead us to

the creation of a social business with a sustainable and socially responsible supply chain. The research started with interviews in Bogota to different stakeholders of the current supply chain, then move to producers in Huila and finally in Guasca. The steps that followed included matching theory to the current situation as well as follow up communication with some interviewees.

### Research Methodology

As pointed out by (Bell & Wilmott, 2014), research methodology is more than a collection of methods (e.g. surveys, interviews) as it attributes a scientific status to the formulation and application of those methods. They describe the methodology as something that lends credibility to methods when researchers, who are accredited by the award of research degrees and associated badges of scientific recognition, deem those methods to have been appropriately developed and applied.

## Qualitative Studies and Data Collection

### Case Study

The case study method has not always been recognized as a proper scientific method, although it provides unique means of developing theory by utilizing in-depth insights of empirical phenomena and their contexts (Dubois & Gadde, 2002).

It is a valuable research tool, which greatest strength is that it measures and records the behaviour of the people involved in the phenomenon studied. In the case study, method data can be obtained from a variety sources, both qualitative and quantitative; that is, documents, records files, direct interviews, direct observation, observing participants and facilities or physical objects (Chetty, 1996). Moreover, Yin (1994, cited in Chetty (1996) argues that the case study method was an essential form of research social and business management sciences as well as in the areas of education, youth policy and development of childhood studies and management thinking.

According to (Sharan S, 2009) the case study is an in-depth description and analysis of a bounded system, and that part of the confusion surrounding case studies is that the process conducting it is conflated with both the unit of study (the case) and the product of this type of investigation.

In case studies, the richness of the phenomenon and the extensiveness of the real life context requires the investigators to cope with a technically distinctive situation: There will be more variables of interest than data points (Yin, 2009). For the study case of this research, the data points were taken to the ones available and the ones that could be covered without having to be at the place where the study case develops. Multiple sources of data are used in the study in order to triangulate in a sense the data points and converge them into the study case with the time, place and stakeholders that are of interest to this study.

For the purpose of this thesis research, the case study help delimitating and analysing the possibilities of the particular case of the farmers in the region of Guasca, which will help us to find the way to create a business model that can be replicable in other regions with similar conditions.

## Qualitative Method

This case study is a qualitative research established around the issued in the supply chain of organic products in Guasca. The data collected for this study was mainly qualitative, due to focus given to the social aspect of the study.

The qualitative research complexity relays in the interpretation of the data (interviews and surveys for example) compare to the quantitative research, which relays in measurements of amounts frequencies and intensities. Qualitative research seeks to draw out and elucidate concerns and categories that are meaningful to participants and not just the researcher (Bell & Wilmott, 2014).

There is an important factor in the existence of all businesses, making a side the basic assumption that the business relays in getting the correct product or service to the correct place and time. It is important to take in consideration the social side of the business and the ways that this influence the environment surrounding the stakeholders. This kind of information is not possible to extract by quantitative methods, due to the complexity of interpretation of the human interactions. (Bell & Wilmott, 2014) refer to it by saying that "The domain of business and management comprises social practices that, in principle, are amenable to study by qualitative researchers and much can therefore be learned from qualitative researchers working in other fields".

The understanding of the businesses in general should not relay only in quantitative methods. It is important to point out that the businesses relay in the people and the communities that allow them to have their operations. Under the current economic system, which puts at the top of the value pyramid the maximization of profit over the life standards of people, the environment and/or the quality of the products. Unfortunately, the qualitative studies are not seen as a valuable source of information for some businesses, because most of the time the understanding of the consequences of creating products, as fast a possible, and as cheap and disposable as possible, makes it a time consuming process, which is not attractive to most of the businesses.

## Data Collection

The process followed for the data collection, began by making a pre-study, which proportioned the bases for choosing the key parts of the supply chain that needed to be analysed, as well as helping with the design of the interviews.

Because the research approach is abductive using system combining, the data collection process had to be focused in understanding the environment and the conditions on where the processes happened, we have to be concerned with the particularities of the specific situation that we wanted to analyse (Kovács & Spens, 2005). Once we had a better understanding of the situation, I could confront the empirical data against the case information, the theory and the framework, in order to adjust the different elements throughout the research (Dubois & Gadde, 2002).

To support this methodology a rigorous search through different libraries and databases was necessary. An extensive database of the relevant literature was developed through initial searches on specific terminology. As literature was discovered containing information relevant to the research, the references were examined and added to the literature database.

### Challenges during Data Collection

During the collection of the data, we faced the following challenges:

- *Small window for collection data*: The limited time for data collection in the field had an effect in the analysis, because due to long distance and life conditions of most of the interviewees, it was almost impossible to collect extra data after the visit to Colombia.
- *Data Sharing*: Interviewees were in general quite accessible to share the information about their operational processes. The real challenge was to find farmers with actual quantitative data of their operations, and the only farmer that had this information, was not keen in sharing it.
- *Limitation of the data*: The idea for the project started in a complete different direction that what it ended up being. As a result, interviews and theoretical data collection that were not 100% percent focus in the study case when collected. The positive side of these is that it help painting a better picture of the food chains in Colombia.

### Pre-study

The pre-study was a short process, where the team look into the general aspects of the problematic surrounding the social groups that we wanted to help and the processes that connect the different stakeholders. We started by pointing out the participation of the stakeholders, followed by broad analysis of the potential parts of the process where we could find issues. Already at that point, we brainstormed possible solutions and the first draft of the business idea was created.

We proceeded to gather information about social businesses in the region, as well as macroeconomic facts about the country and the region. We began to plan the visit to Colombia and the parts of country where we could have more access to information. Then we listed the key stakeholders that we needed to interview during our visit, and thanks to the contacts of the members in the team that are originally

from Colombia we could list some potential interviewees. After that, we made a plan to find the different stakeholders that we could not make contact with at the first, and assigned tasks to contact them between the member of the team.

The “pre-understanding” of the situation helped to design the interviews and the path that the research will follow.

## Interviews

The interview is one of the preferable methods for the studies of social processes, and in particular micro-sociological analyses of ongoing systems (Laslett & Rapoport, 1975). The use of the interviews in this research has two purposes, the understanding of the situation by first hand actors and the validation of the research.

During the visit to Colombia in November 2014, we interviewed ten stakeholders in the current supply chain of organic and non-organic agricultural products in Colombia. Without “theorizing the interview”, according to (Pawson, 1996) there are two kinds of interviews, structured and unstructured. Where the first one the subject's ideas and the subject matter of Investigation are one and the same thing and the rationale is to provide a simple, neutral stimulus in order to tap the true “responses” or true “values” of individual subjects. The usage of an identical stimulus with all respondents is said to allow for proper comparison to be made across the entire field of potential viewpoints. Critics of such an approach stress that the researcher's conceptual system is imposed entirely on the flow of information. The subject's response is limited entirely to a set of operational fragments. Set questions and predetermined response categories offer little opportunity to question, or even understand the researcher's chosen theoretical framework.

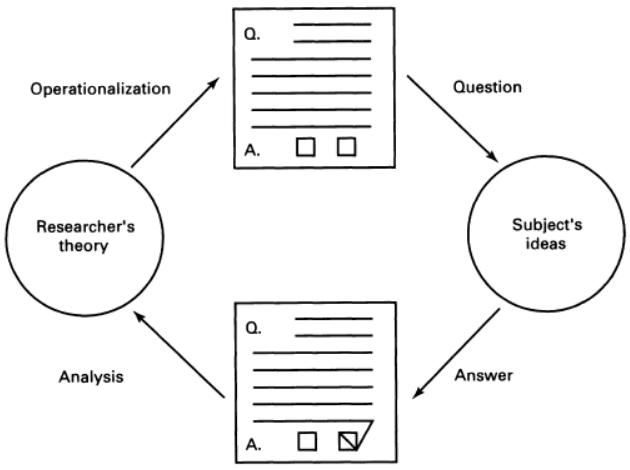



*Figure 4 Structured interview*

(Pawson, 1996)

The second one refers to the flow of information in the unstructured (qualitative) interview. The subject's ideas and the subject matter of investigation are one and the same thing. Data collection has the task of creating a conversation as letting in which the information provided is faithful to the frame of reference of the respondent. The investigator offers minimal steerage of the research topic within broad areas of discussion as they seem appropriate to each respondent. Critics of such an approach stress that the information collected in such a situation is diverse and discursive and thus hard to compare from respondent to respondent. Researchers are accused of selecting from this massive flow of information and thus fitting together small fragments of the respondent's utterances into their own preferred explanatory framework.

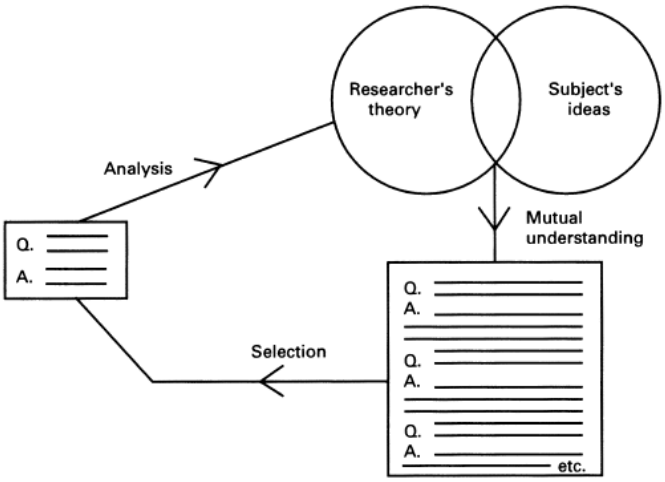



*Figure 5 Unstructured Interview*

(Pawson, 1996)

Taking in consideration these two kinds of approaches to the interview process, we could say that the interviews we did for this research follow an unstructured approach. The reasons for this is that we believed that the interviews with the stakeholders should be more like an open conversation; another reason was that we considered that the optimal place where the interview should be done, was at the premises of the interviewees workplace, this helped us to make the interviewees feel comfortable and facilitated the communication. Interviewing at a familiar location for the respondents would according to Jacobsen (2003) reduce the 'context-effect', the possibility by the respondent to generate a strange answer.

## Interviews Summary

Hereby the summary of the interviews that we hold for this research:

| List of Interviews | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Interviewee | Activity | Organization | Type | Interviewer | Place | Date | Duration | Language |
| Carlos Alberto Bejarano | Manager | Finca Mahindra | Organic | José T. Moron Villareal<br>Adriana C. Villada Ramírez<br>Luis G. Moreno | Guasca, Cundinamarca, Colombia | 23/11/2014 | 54min | English<br>Spanish |
| Carolina Bejarano | Manager | Finca Mahindra | Organic | José T. Moron Villareal<br>Adriana C. Villada Ramírez<br>Luis G. Moreno | Bogota, Colombia | 18/11/2014 | 21min | Spanish |
| Maria Valoyes | Director of Social Program | CRAN | Social | José T. Moron Villareal<br>Luis G. Moreno | Bogota, Colombia | 22/11/2014 | 23min | Spanish |
| José González | Farmer | Relocated Farmer | Non-organic | José T. Moron Villareal<br>Adriana C. Villada Ramírez<br>Luis G. Moreno | El Huila, Colombia | 19/11/2014 | 24min | Spanish |
| William Ramírez | Farmer | Independent | Non-organic | José T. Moron Villareal<br>Adriana C. Villada Ramírez<br>Luis G. Moreno | El Huila, Colombia | 19/11/2014 | 40min | Spanish |
| Miltón Ramírez | PR | Association of farmers | Non-organic | José T. Moron Villareal<br>Adriana C. Villada Ramírez<br>Luis G. Moreno | El Huila, Colombia | 20/11/2014 | 50min | Spanish |
| Javier Solar | Manager | Codabas | Non-organic | José T. Moron Villareal<br>Luis G. Moreno | Bogota, Colombia | 14/11/2014 | 48min | Spanish |
| Patricia Silva | Merchant | Codabas | Non-organic | José T. Moron Villareal<br>Luis G. Moreno | Bogota, Colombia | 14/11/2014 | 21min | Spanish |
| Luis Eduardo Cardozo | Merchant | Codabas | Non-organic | José T. Moron Villareal<br>Luis G. Moreno | Bogota, Colombia | 14/11/2014 | 10min | Spanish |
| Enrique Vargas | Merchant | Codabas | Non-organic | José T. Moron Villareal<br>Luis G. Moreno | Bogota, Colombia | 14/11/2014 | 48min | Spanish |

*Figure 6 interviews Summary*

For summaries or abstracts for these interviews please refer to the appendix.

# Data Analysis

## Ethnographic Studies in Business

This thesis is focused in a specific problematic around a group of people in the agricultural sector of Colombia; the way that the research has been done includes the observation, and participation of the researchers in the stakeholder's activities in order to comprehend and analyse the current situation.

The term ethnography refers to the process of accomplishing the fieldwork and deriving cultural interpretations from it. It refers to describing 'the worlds' of those who are studied through writing. Hence ethnography is about understanding cultures, and the ethnographic method is about creating understanding, which positions the ethnographer as a learner of the culture through the eyes and ears of the natives (Berglund & Wigren, 2014). According to (Moore, 2011) ethnography can be roughly defined as experimental data collection, with the researchers themselves, through their own experiences, the primary tool for gathering information, tempered with adherence to standards of observation and scientific methods. This technique therefor can, arguably fit with the case study approach by generating case material for exploration, if this is the researcher's aim. Ethnography is typically related to the study of fieldwork of one particular place, organization or people, applying a holistic worldview of "getting it together" by observing, talking to the "inhabitants" and writing about it (Berglund & Wigren, 2014).

An holistic view can be obtained from the integration of two or more perspectives on the same society in a single ethnography, in order to gain an holistic view of the situation (Moore, 2011). Since part of the subject of this thesis is to establish the current state of the supply chain, on this assumption we can say that the ethnographic study of the stakeholders in the different parts of the supply chain will provide us with an holistic view of the current situation. As define by (Moore, 2011) the holistic perspective as one that combines the perspective of multiple groups within the social unit under study, and/or which takes a longitudinal approach to the subject. To consider many perspectives in the supply chain will help clarifying the reasons for inefficiencies in it. Therefore, it was essential for the research to understand the individual components and the interaction between them in order to formulate the leanest possible supply chain to the case study.

Some of the major obstacles to the ethnographic research are the amount of time required, issues of access and the training needed for the participation of the researcher. We mitigated these obstacles by focusing the attention to small organizations and by focusing into the areas that the interviewees pointed as the conflict areas and not every single procedure to detail. By proceeding this way, we managed to reduce the research time to the time that we had available, although we are aware that further research will be necessary if we want to create a more generic business model, which could be friendly to adaptation for producers in the same region or even in other regions of the globe.

### Systematic Combining

From the start, there were continuous changes in the project; this dynamic of going back and forth between the empirical data and the theory is the same that characterizes the System Combining approach. During this process the analysis of the issues are re-adjusted when they are confronted with the empirical data (Dubois & Gadde, 2002).

The process followed by this approach in to the case study, allows the researcher to have an in-depth understanding of the problematic, and adjust the theory as the study progresses.

As mentioned by (Dubois & Gadde, 2002), the approach follows two inside processes: 1) Matching reality with theory and 2) direction and redirection. Moreover, as they describe the approach is composed by the following elements:

- **Matching**: This process is described as a non-linear path independent process, because it is about going back and forth between framework, data sources, and analysis. Furthermore, there are no obvious patterns when going through this process, also because there is not only one way to do the matching.

- **Direction and redirection**: Addressing several different sources will help revealing different aspects to the researcher, and the shifting between the analysis and interpretation may result in redirection of the study. Two kinds of information are identified in this process, “active” and “passive”, where the passive is the info that the researcher is looking to find and active information relates to discovery; it is noted that the more passive the interviewer acts the more active information it will be able to access and vice versa.
- **The boundaries in the empirical world**: Studies focused on processes have to come to an end, whereas the processes in the real world continue. This makes the conclusions a function of the time at which the study was conducted. The way boundaries are expanded is of major importance because it determines what will be found. Therefore, the main issue is to choose among the multitude of dimensions available for expansion in order to make the most out of the case. In one way, the extension of the boundary can be seen as the ‘sampling’ problem in case studies.
- **The role of the framework**: The analytical framework is of great importance in the systematic combining process. (Miles & Huberman, 1994) distinguish between two types of frameworks. One is classified as tight and pre-structured — the other as loose and emergent. Each has its pros and cons, according to the authors. Too much prior structuring of the study might ‘‘blind the researcher to important features in the case or cause misreading of local informants’ perceptions’’ (ibid., p. 16). On the other hand, they fear that a framework that is too loose might lead to ‘‘indiscriminate data collection and data overload’’ (ibid., p. 17). The two types of frameworks fit the distinction between deductive and inductive approaches very well. In systematic combining, the evolving framework is a cornerstone.
- **The evolving case**: One important consequence of systematic combining is that the case evolving during a study can be regarded as a ‘tool’, as well as a ‘product’. The design of a case study, thus, becomes a matter of how to sharpen this ‘tool’ since this will be decisive of the final case, which is a ‘product’ that cannot be planned in advance. It is of great importance to the combining process to make the evolving case a platform for discussions with other researchers. As a ‘tool’ for this purpose, the empirical language should be maintained. The theoretical language should be reserved for the end product. Otherwise, the readers will be constrained in terms of their potential contributions to further systematic combining during the research process. In addition, reinterpretations will be harder for the researcher to make
- **The role of theory**: For generation of theory, such as systematic combining, literature plays quite a different role. The researcher’s objective is to discover new things — other variables and other relationships. Even during this process, the researcher must consider phenomena

in the light of a theoretical framework. The researcher should not be unnecessarily constrained by having to adhere to previously developed theory. Theory is important, but it is developed over time. The question of whether one should start with 'received theory', which has been debated by inductionists and deductionists, is not an issue with which systematic combining is concerned.

## Abductive approach

The abductive approach to the case was the logical approach to use from the beginning; the team was keen on a hands-on approach to the situation. Since the finality of the research is the creation of a social business, based on a social/environmental problem, it was of high importance to understand to personal level the necessities of the stakeholders and the issues that they face on a daily bases. We needed to interpret and re-contextualize individual phenomena within a contextual framework, and try to understand the situation from a new conceptual framework (Kovács & Spens, 2005). Although according to (Jacobsen, 2002) it is impossible for a researcher to be naive and do a research with a fully open mind, I think that the variety of perspectives from the team members help to pursue more critical and open minded solutions to the study case issues.

This approach gives us the chance to have a new insight to the issues of our attention, and the intention behind this is that the understanding of the situation will lead us to the plausible solutions, as (Andreewsky & Bourcier , 2000) abduction can lead to "suggesting" general rules.

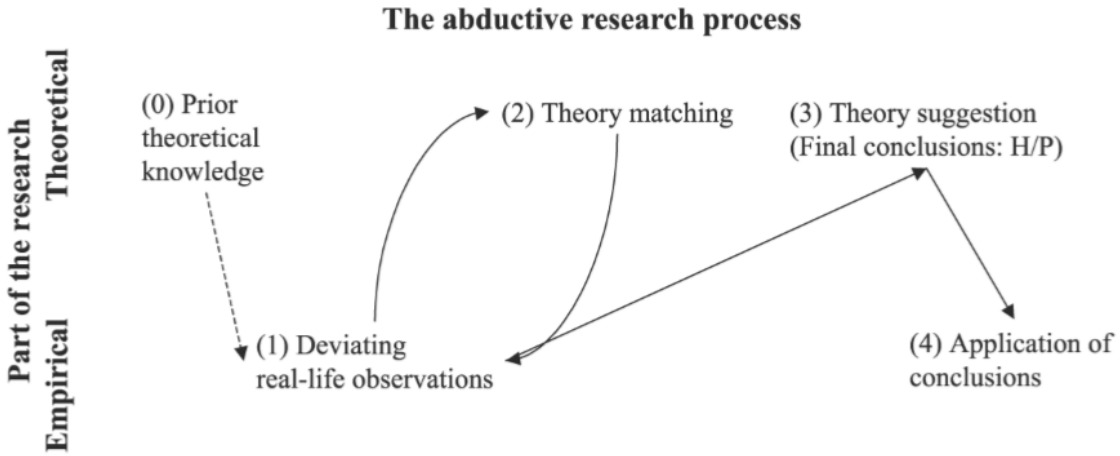



*Figure 7 The abductive research process*

(Kovács & Spens, 2005)

The abductive process has a distinctive strategy to find the answers to the questions of the research, and the way these questions are answered

| Abductive | |
|---|---|
| Aim | To describe and understand social life in terms of social actors' motives and accounts |
| From | Discover everyday lay concepts, meanings and motives |
| | Produce a technical account from lay accounts/generate ideal types |
| To | Develop a theory and test it iteratively/ develop an interpretation or construct and test a theory/social scientific accounts/ideal types |

*Figure 8 Description of abductive approach*

(Blaikie, 2000)

The analysis as discussed before, it´s done by interaction and the understanding of the elements interacting in the environment that the researcher is analyzing.

The elements of analysis, election of the literature, and readjusting parallel with the fieldwork, and presenting the typologies to the actors, is a very similar process in "Systematic combining" (Dubois & Gadde, 2002).

The methodology followed in this study, is based on the study case of the organic farmers in the region of Cundinamarca in Colombia. The study can be described as an ethnographic study case with an abductive approach based on system combing.

# Theoretical Framework

## Mapping the Supply Chain

The mapping of the supply chain for the organic products in this study will give a holistic view of process and provide a snapshot of the current situation. This will be the first step in the analysis of the study case. The study will then take part to propose a strategy for the supply chain.

Process mapping is a visualization of a process, by using different symbols to represent the processes and interactions; we can portrait the complete supply chain in order to identify the parts of the chain that we want to improve. The holistic representation of the chain can be helpful in the development and implementation of business strategies. According to Stefano Biazzo "Process mapping consist of constructing a model that shows the relationships between the activities, people, data, and objects involved in the production of a specified output" (BiazzoP, 2002). We can add to this description "Process mapping is a systematic approach for documenting processes and their related cycle times. Mapping facilitates the analysis of operations from the highest-level processes down to specific

procedures. By depicting operations in graphical form and across functional lines, we can visually identify control breakdowns and inefficiencies, including bottlenecks and unproductive utilization of resources. The map which can be customized to show appropriate detail, reveal the link between processes, heightening management's understanding of interrelationships." (Jacka, 1999).

The impact of this tool when is correctly implemented, can reach every part of the supply chain, on one hand the management can use it to develop and implement the correct strategy for the business, as well as identify potential future problems. On the other hand, it allows to all stakeholders a visualization of their part in the chain, this has numerous benefits, such as:

- Understanding of the previous steps to their part of the chain
- Understanding of the principals of their jobs and how their activities affect the next steps in the chain.
- The visualization and understanding of the chain will have an impact on the creation of new approaches and ideas for the improvement of the chain.
- The map will help to facilitate the redesign of the chain strategy.
- The process of constructing the map can help to the common understanding of it.
- The mapping can help designing monitoring processes.
- The map could be used as a tool to communicate information to the parts of the supply chain.
- It facilitates the understanding of the chain for new stakeholders entering the process.

"One reason why process mapping methods are so widespread today is that it has been widely recognised that such model can offer useful, and relatively inexpensive, descriptions which can help towards improving and re-designing business processes" (BiazzoP, 2002).

"A supply chain map is a representation of the linkages and members of a supply chian along with some information about the overall nature of the entire map. A strategic supply chain map is distinguish by it's direct tie-in to the corporate strategy. Supply chain maps come in a number of shapes and styles. The maps can depict organizations, flows, facilities, and/or processes". (Cooper, 2003)

The information is usually obtain by observation of the processes and by interviewing the actors in the processes. The description of the processes are put on a visual map during the interviews in order to reconstruct the processes in a simple and clear map. There are different techniques for the process mapping, as well as different kinds of symbols and maps, since the maps are always customized for each and specific business, industry, process, etc; there are no generic ways to do the process mapping. Most of the "business process improvement" methods include process mapping.

Cooper and Gardner make a distinction between strategic supply chain mapping (SSCM) and process mapping (PM), where SSCM seem to look more into an overall low detail mapping and PM goes down to every detail of the processes, and the reason for these is that SSCM is focused more into the strategy of the overall outcome.

**DISTINGUISHING STRATEGIC SUPPLY CHAIN MAPPING AND PROCESS MAPPING**

| | Supply Chain Mapping | Process Mapping |
|---|---|---|
| Orientation | External | Internal (typically) |
| Level of Detail | Low to moderate | High |
| Purpose | Strategic | Tactical |

*Figure 9 Distinguishing Strategic supply chian mapping and process mapping*

(Cooper, 2003)

As we can see in the above table, the three distinctive areas that makes the difference between these two kinds of mapping are the following:

- *Orientation*: This can be defined as the focus of the mapping procedure, which on the SSCM is on the goods, money and information flow upstream and downstream, as for PM the focus is into a single operation or system in the company. “A business can be viewed as a collection of interconnected processes” (Schroeder, 2000)
- *Level of detail*: In the case of SSCM, the focus is on high-level measurements such as volume, cost, or lead-time, and for PM the process tends to be broken down into activities and steps.
- *Purpose*: PM is focus in the tactical aspect as SSCM is focus into ensuring that the current supply chain is aligned with the strategy of the business.

There is certain information and attributes that should be included in the mapping of the supply chain. “When developing the a mapping approach, understanding the targeted domain of supply chain map geometries, perspectives and implementation issues is important” (Cooper, 2003)

Another approach to the supply chain mapping could be the sociotechnical analysis; this analysis provides the relevant information for strategic decision making on the development of technology, but it also considers the social environment of the worker in the analysis, which is not a common factor during the mapping of processes or supply chain strategies.

The sociotechnical approach to the analysis of a work system consists of two parallel studies. One aims to scrutinise “variances” – the conditions that could go awry and undermine the conversion process

and focuses on the technical system. The other seeks to gather information required in order to design and set up jobs in such a way as to encourage worker participation and commitment (BiazzoP, 2002).

In the specific case of the supply chain of Colombian agricultural products, this kind of analysis could contribute to give a deeper understanding of the social aspect in the current situation; even though this analysis was designed for perhaps more technical of technologically advance supply chains. The principals of it can be used to get a better understanding of the issues around the supply chain of agricultural products in Colombia.

Some of the risks linked to the mapping are mainly orientated to the share of information, so where is the company publishing the map? Because of the information that could be contained in these maps (depending on the purpose of course). However, it can contain strategies or detail of the operations, or information on costs, that some suppliers could share with the direct competition of the company, so when the mapping is done, the company needs to be clear on who can access this kind of data.

One of the key considerations is how the map will be used in conjunction to the firms strategic planning and supply chain strategic planning (Robert S, 2000).

There are different approaches to integrating supply chain mapping with strategic planning. One approach is to integrate mapping into the strategic planning process. Another is to perform them separately. Mapping could be the central part of the environmental scan. The “what is” map is constructed or consulted during this phase of planning as part of performance evaluation. If the firm starts with a clean sheet for considering what the corporation should be in the future, then the map construction may follow after the corporate strategy is determined and the supply chain approach is decided (Cooper, 2003).

### LEAN

LEAN thinking is a philosophy, which aims to identify and reduce waste and excess during the production and distribution of products, particular innovations can be attributed originally to Taiichi Ohno who developed the concept for the assembly of cars in the TOYOTA factories in Japan. Nowadays LEAN has evolve into all sorts of industries and it has been applied to almost all areas in the modern businesses; the main reason for this is that the reduction of waste and excess usually transforms directly into cost reduction, and the improvement of efficiency and productivity. The LEAN philosophy is a way of thinking that focusses on the value, and in order to achieve the creation of value and the reduction of cost, it uses different tools, such as Just in Time (JIT), Total Quality Management (TQM), Value Chains, Six sigma, Statistical Process Control (SPC), Kanban, and any more.

One of the advantages of introducing this philosophy into this study, is the increment in the efficiency of the processes, as a result of the elimination of waste. As mention before the high prices of the organic products are one of the main issues stopping the producers for reaching new markets. If the cost can be cut down by making the distribution processes leaner, this could have a notable impact in the sales of the products.

Lean Thinking concept as defined in (Sanchez C, Sanches C, & Patiño H, 2012):

1. Value: Defined from the point of view of the customer and not from inside the supplier. In other words dene what is valuable for the customer and what is not.
2. Value Stream: Dene the sequence of steps from raw material to the customer. It could be defined for the enterprise or its supply chain.
3. Flow: Make the value ow. Keep moving the value and avoid batches and queue, or at least reduce it. But always it is necessary to remember the objective: ow one by one.
4. Pull: Only produce when it is needed and have a short-term response to the customer. At the macro level being prepared for fluctuations in demand, and at micro level maintaining the flow operative at the rhythm of the demand.
5. Perfection: It does not mean only defect free, it means also delivering exactly what the customer wants, when they wants and at a fair cost with minimum waste.

Innovations, resulting from a scarcity of resources and intense domestic competition in the Japanese market for automobiles, included the just-in-time (JIT) production system, the Kanban method of pull production, respect for employees and high levels of employee problem-solving/automated mistake proofing. This lean operations management design approach focused on the elimination of waste and excess from the tactical product flows at Toyota (the Toyota “seven wastes”) and represented an alternative model to that of capital-intense mass production (with its large batch sizes, dedicated assets and “hidden wastes”). For a full account of these systems, methods, processes and techniques see Monden (1983). (e.g. Shingo, 1981; Schonberger, 1982; Hall, 1983; Monden, 1983; Sandras, 1989).

In the following table lists some of the results from development of LEAN during its first years of existence.

| Principals of "Lean" Management |
|---|
| **Production (Toyota Model)** |
| JIT "small-lot" production |
| Minimal in-process inventories |
| Geographic concentration of assembly and parts production |
| Manual demand-pull with kanban cards |
| Production leveling |
| Rapid setup |
| Machinery and line rationalization |
| Work standardization |
| Foolproof automation devices |
| Multiskilled workers |
| High levels of subcontracting |
| Selective use of automation |
| Continuous incremental process improvement |
| **Product Development Honda (Honda Model)** |
| Rapid model replacement |
| Frequent model-line expansion |
| Overlapping and compressed development phases |
| High levels of supplier engenieering |
| "Heavyweight" project managers |
| Design team and manager continuity |
| Strict engineering schedules and work discipline |
| Good communication mechanisims and skills |
| Multiskilled engineers and desgn teams |
| Skillfull use of computer-aided design tools |
| Continuous incremental product improvements |

*Figure 10 Principals of LEAN management*

(Cususmano, 1998)

Still, the interest taken in lean by the western manufacturing community was limited until the performance gaps between Toyota and other carmakers were highlighted by the book The Machine that Changed the World, which also coined the term “lean production” (or “lean manufacturing”) (Womacketal.,1990).

The exploration of the enterprise model, the infrastructure and practices that support lean production, promoted explicitly a thesis of “transference” and the ability of non-automotive and non-Japanese emulation based upon the premise that manufacturing problems and technologies were “universal problems” facing management (Womack et al., 1990).

A critical point in the lean thinking is the focus on value. Often however, value creation is seen as equal to cost reduction. This represents a common yet critical shortcoming of the understanding of lean. Therefore, let us examine the relationship between customer value and cost in detail. In 1996, Womack and Jones crystallised value as the first principle of lean thinking (Womack and Jones, 1996).

As such, lean had moved away from a merely “shop-floor-focus” on waste and cost reduction, to an approach that contingently sought to enhance value (or perceived value) to customers by adding product or service features and/or removing wasteful activities. This was a key development, as value was linked to customer requirements, and no longer was simply define through its opposite, waste,

on the shop-floor. This migration from a mere waste reduction focus to a customer value focus opens essentially a second avenue of value creation:

- Value is created if internal waste is reduced, as the wasteful activities and the associated costs are reduced, increasing the overall value proposition for the customer.
- Value is also increased, if additional features or services are offered, which are valued by the customer. This could entail a shorter delivery cycle or smaller delivery batches, which might not add additional cost, yet add customer value.

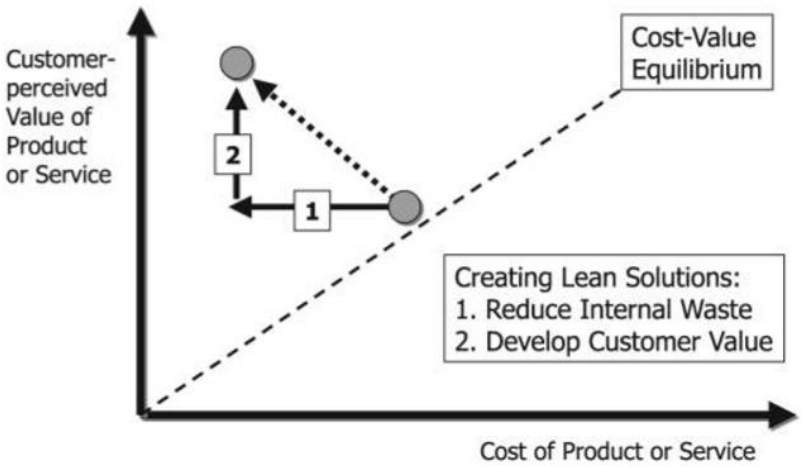



*Figure 11 Cost Value Equilibrium*

(Hines , Holweg , & Rich, 2004)

According to (Hines , Holweg , & Rich, 2004) the evolution of lean can be pointed to the following facts:

- Lean exists at two levels: strategic and operational. The customer-centred strategic thinking applies everywhere, the shop-floor tools do not. This has led frequently to confusion, or led to misunderstanding as to where to apply lean. We therefore encourage the use of lean production for the shop-floor tools following Toyota's example, and lean thinking for the strategic value chain dimension[5].
- The second fact is that lean has evolved, which often is not acknowledged in the criticism. The shop-floor tools have largely been imitation of Toyota, nevertheless lean has evolved on the basis of its five principles, and long gone beyond a mere factory shop-floor application.
- Organisations that miss the strategic aspect (value creation, and understanding customer value) and assume that quality, cost and delivery equal customer value (a common mistake in

shop-floor myopic implementations), only address the cost axis (c.f. Figure 11). This has lead to point optimisation in the supply chain. A particular example here is the "island optimisation" of vehicle assembly plant, yet a sub-optimisation of their complete supply chain (Holweg and Pil, 2001; Holweg, 2003).

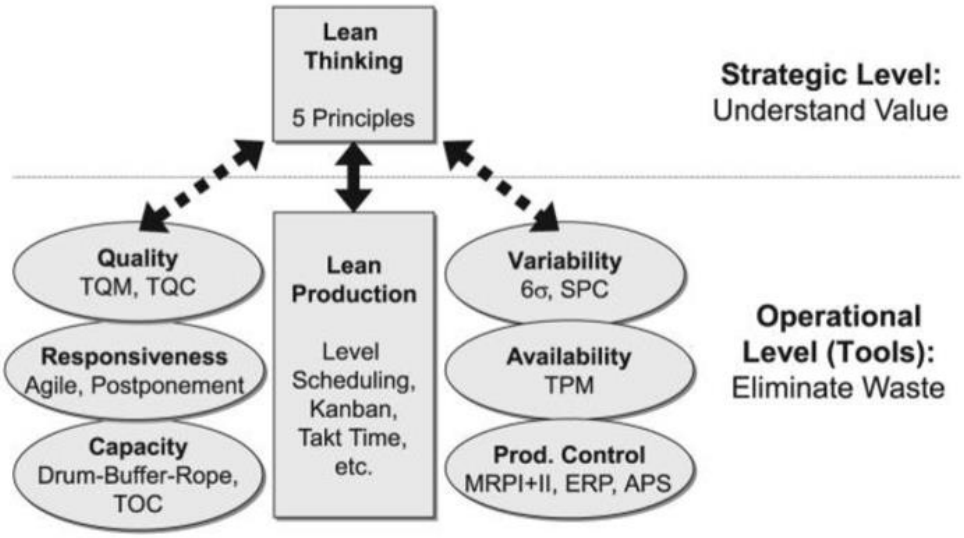



*Figure 12 Strategic and Operational leves in LEAN*

(Hines , Holweg , & Rich, 2004)

The distinction of lean thinking at the strategic level and lean production at the operational level is crucial to understanding lean as a whole in order to apply the right tools and strategies to provide customer value (Hines , Holweg , & Rich, 2004). The adaptation of these tools to the different areas of the businesses and to the different kind of businesses needs to be very accurate, this means that the use of these tools its completely customized to the particular business that decides to apply them.

### JIT

"Just in Time" is a manufacturing system that procures the minimization of the stock of components or materials needed in a production process, the aim is to have cero inventory by delivering the components or materials at the exact time when they are needed. This tool was use as the base for the development of the LEAN philosophy.

The introduction of JIT to the distribution of the organic products could potentially help to reduce inventories and make the products available for different distribution channels reducing the amount of product that goes to waste, due to slow response to demand.

According to Toyota there are 7 types of waste (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007):

- Waste from overproduction
- Waste of waiting time
- Transportation waste
- Inventory waste
- Processing waste
- Waste of motion
- Waste of product defect

JIT production coordinates the movement of parts through the production system and the supply chain to meet customer meets. The use of kanban is to signal the preceding process that more parts are needed. The basic idea behind JIT is to produce goods when they are needed (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007).

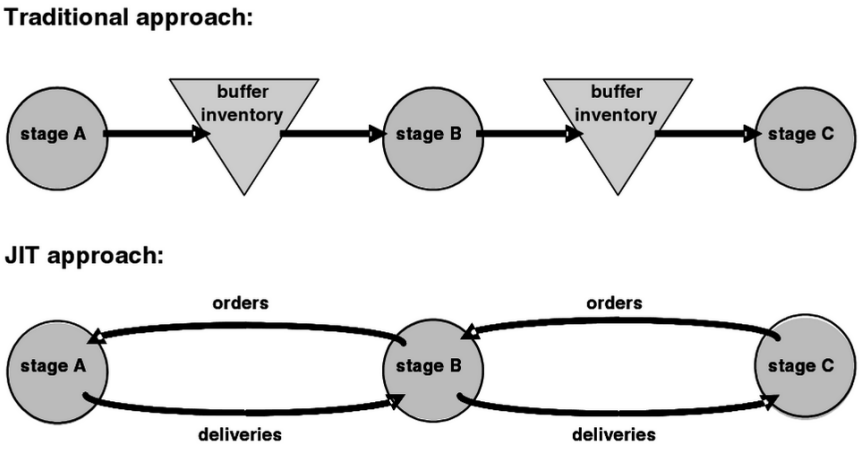



*Figure 13 JIT model*

(Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007)

Intelligent use of JIT requires buffer inventory to account for delays, although not in the quantities required before JIT. From the standpoint of total supply chain costs, it also requires supplier development to improve production processes. The principal value of JIT is more than just to reduce inventory. Inventory hides problems. Taking inventory away exposes problems so they can be solved. Applying JIT throughout the supply chain would reduce inventory for the entire pipeline. Buffering, however, has advantages where demand or supply conditions are unstable (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007).

### TQM

Is a system approach, which aims to have all the elements of the organization working together to continuously increase the quality of the products or services that are offered by the organization. In

order to achieve this TQM will rely on other tools like LEAN manufacturing, ISO certifications and Six Sigma.

In order to compete with the big players in the market it is crucial that the processes contain a high standard of quality in all aspects of the business. In general, this system was designed as an integrated, customer-focused approach to improve the quality of an organization's processes, products, and services (J.W. Jr & J.R., 1994).

TQM programs have four main elements (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007):

- Leadership
- Employee involvement
- Product and process excellence
- Customer focus

Challenges of TQM Implementation Properly implemented TQM systems have improved organizational performance of many firms in the form of fewer defects, lower inventory levels, reduced lead-times, higher flexibility, and increased employee satisfaction (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007). However, the implementation itself can be very challenging. In a study of American companies, Salegna and Fazel (2000) identified the following obstacles when implementing the TQM:

- Lack of a company-wide definition of quality
- Lack of a formalized strategic plan for change
- Lack of a customer focus Poor inter-organizational communication
- Lack of real employee empowerment
- Lack of employee trust in senior management
- View of quality programs as a quick fix
- Drive for short-term financial results Politics and turf issues
- Lack of strong motivation
- Lack of time to devote to quality initiatives Lack of leadership

*ISO Standards*: The International Standard Organization most known standards are ISO 9000 and ISO 14000. These series of standards certify that the company meets the industries standards, so the customer can trust the products offered by the companies that have been certified have certain standard of quality.

*Six Sigma*: This defect manager tool, was developed by Motorola, and the purpose of it is to reduce to zero the number of defects by measuring the products during their manufacturing process in terms of defects per million opportunities.

Six Sigma is built on statistic al processes control techniques, which can be extremely complex. Currently Six Sigma has been improved to include other business functions of the firm, such as product development, finance, human resources, and services (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007).

### Value Chain

These are the chain of activities or processes that add value to the final product or service, including the after purchase services. The value chain is used to locate the activities that are adding value to the final product and eliminate the non-adding value activities, although is important to remark that is the final customer who decides what is that gives value to a product.

The value chain concept developed by Michael Porter (1986) provides a way to classify the processes of a company into two groups: primary processes and support processes. In the group of primary processes are processes inward logistics, operations, logistics out, marketing and after-sales service. In the support group, we can find processes supporting administration, management of technology, human resource management and procurement and acquisition management. The value is added to the extent that each production process becomes more productive. That is, the value is the sum of the perceived benefits the customer receives minus the costs perceived by the customer when acquiring and using a product or service.

For example, marketing activities that give status to the product could be consider as adding value by the customers, even though there is not real value added into the properties of the final product.

Porter (1985) developed the value chain concept; his goal was to describe the sequence of value-adding activities for product flow within the firm:

1. Inbound logistics
2. Operations
3. Outbound logistics
4. Sales and Marketing
5. Service

He also envisioned a value system where individual firms and their activities are linked to become a larger chain. This opens possibilities for reconfiguring the value chain for greater efficiency through

eliminating redundant activities or shifting activities between stages (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007).

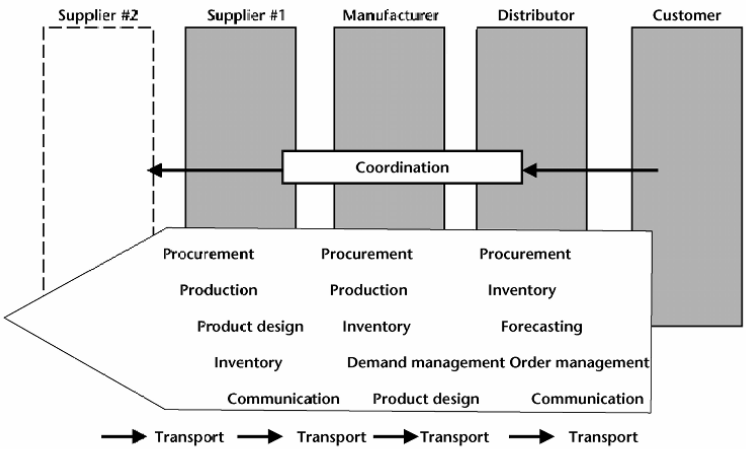



*Figure 14 Value System*

(Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007)

## Distribution Networks

Distribution is one of the key elements in this study, the correct planning and execution of it can potentially make a difference on the full operations for the organic producers. The study will point out some potential solutions to the distribution, based on the organization of the supply chain.

Distribution is the step that allows the products and services to reach the end customer. According with (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007), distribution is the final stage of supply chain management, as successful distribution makes the final products and services available to the ultimate customer. Distribution is the integral part of the marketing mix, built upon two major processes: sales and physical distribution.

Another description by (Chopra & Meindl, 2010), ia the one where distribution refers to the steps taken to move and store a product from the supplier stage to a customer stage in the supply chain. Distribution occurs between every pair of stages in the supply chain. Raw materials and components are moved from suppliers to manufacturers, whereas finished products are moved from the manufacturer to the end consumer. Distribution is a key driver of the overall profitability of a firm because it affects both the supply chain cost and the customer value directly.

It is possible for the supply chain to achieve the desired combination of cost and responsiveness, if the distribution network is designed properly. It is important to remark that even if it is possible to name

the most common distribution networks used right now, in the practice, depending on the product and market, there most likely be a degree of customization of the distribution network, in order to cover the needs of the specific products and services offered to the customers.

Based on the firm's industry, one of six distinct distribution network designs may be used to move products from factory to customer. These designs are classified as follows (Chopra & Meindl, 2010):

1. **Manufacturer storage with direct shipping**: In this option, product is shipped directly from the manufacturer to the end customer, bypassing the retailer (who takes the order and initiates the delivery request). This option is also referred to as drop-shipping . The retailer carries no inventory. Information flows from the customer, via the retailer, to the manufacturer, and product is shipped directly from the manufacturer to customers.

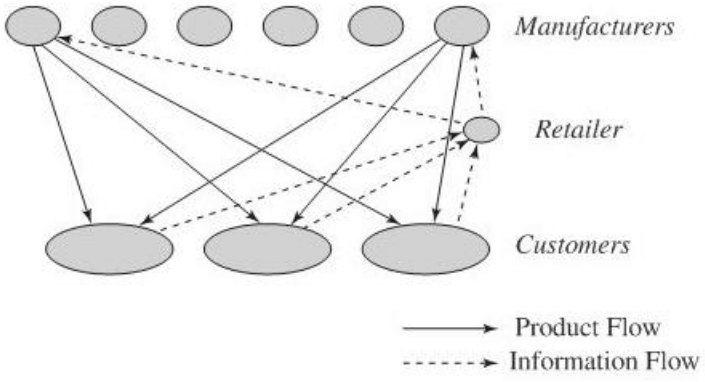



*Figure 15 Manufacturer storage with direct shipping*

2. **Manufacturer storage with direct shipping and in-transit merge**: This option combines pieces of the order coming from different locations so that the customer gets a single delivery.

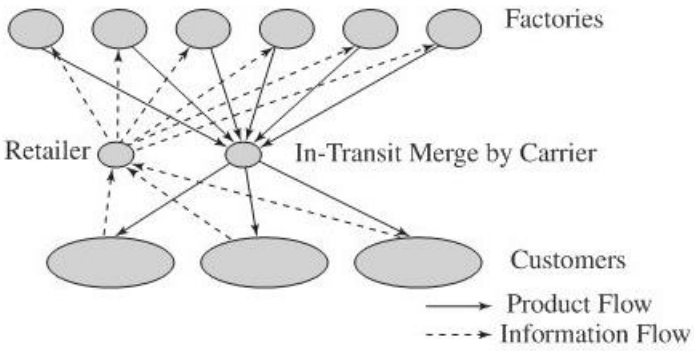



*Figure 16 Manufacturer storage with direct shipping and in-transit merge*

3. **Distributor storage with carrier delivery**: Under this option, inventory is not held by manufacturers at the factories but is held by distributors/retailers in intermediate warehouses, and package carriers are used to transport products from the intermediate location to the final customer.

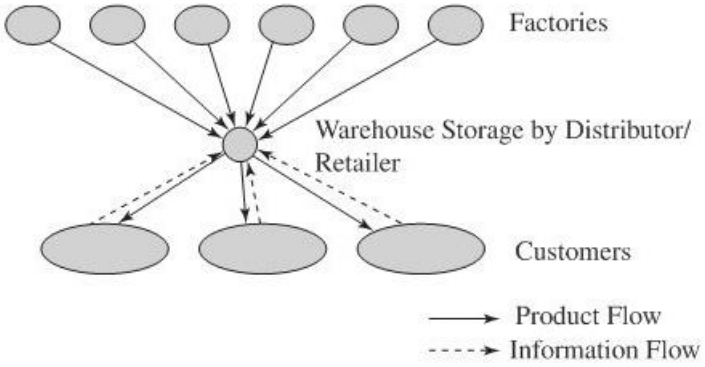



*Figure 17 Distributor storage with carrier delivery*

4. **Distributor storage with last-mile delivery**: This option refers to the distributor/retailer delivering the product to the customer's home instead of using a package carrier. Unlike package carrier delivery, last-mile delivery requires the distributor warehouse to be much closer to the customer. Given the limited radius that can be served with last-mile delivery, more warehouses are required compared to when package delivery is used.

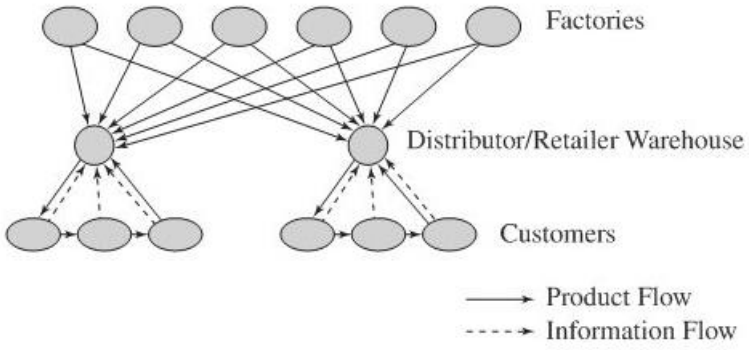



*Figure 18 Distributor storage with last-mile delivery*

5. **Manufacturer/distributor storage with customer pickup**: In this approach, inventory is stored at the manufacturer or distributor warehouse, but customers place their orders online or on the phone and then travel to designated pickup points to collect their merchandise. Orders are shipped from the storage site to the pickup points as needed.

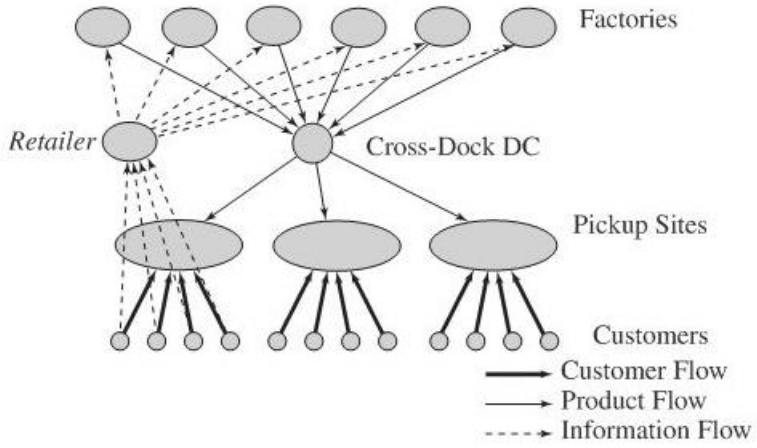



*Figure 19 Manufacturer/distributor storage with customer pickup*

6. **Retail storage with customer pickup**: In this option, often viewed as the most traditional type of supply chain, inventory is stored locally at retail stores. Customers walk into the retail store or place an order online or by phone and pick it up at the retail store.

When designing a distribution Network it is important to take in consideration diverse factors, according to (Chopra & Meindl, 2010), these measurements include the following:

- *Response time*: Response time is the amount of time it takes for a customer to receive an order.
- *Product Variety*: It refers to the number of different products/configurations that are offered by the distribution network.
- *Product availability*: This term refers the probability of having a product in stock when a customer order arrives.
- *Customer experience*: Customer experience includes the ease with which customers can place and receive orders and the extent to which this experience is customized. It also includes purely experiential aspects, such as the possibility of getting a cup of coffee and the value that the sales staff provides.
- *Time to market*: It refers to the time it takes to bring a new product to the market.
- *Order visibility*: The ability of customers to track their orders from placement to delivery.
- *Returnability*: the ease with which a customer can return unsatisfactory merchandise and the ability of the network to handle such returns.

According to (Skjøtt-Larsen, B. Schary, H. Mikkola, & Kotzab, 2007), distribution plays an essential role in the supply chain. Beyond its functional role of product delivery, it makes the supply chain sensitive to the market. If the customer drives the supply chain, distribution translates it into effective product demand, sometimes through forecasts and at other times through direct orders. One of the major

changes taking place is the entry of real-time orders directly into the production schedule. Some ordering systems permit and even encourage choices in product features and options that customize production. Another is the coordination of production with demand to reduce inventory requirements. A third is increasing flexibility to take on new products and replace the old. A fourth is a change in the institutions themselves, as the role of intermediaries is changing and especially retailing is under a permanent change.

### Centre of Gravity

This model is use in order to find the optimal location (distance-cost wise) for the establishment of a distribution centre. It is important for the producers to find the correct place for the operations of distributions, in order to optimize the efficiency of the supply chain.

According to (Chopra & Meindl, 2010) a manager identifies potential locations in each region where the company has decided to locate a plant. As a preliminary step, the manager needs to identify the geographic location where potential sites may be considered. Gravity location models can be useful when identifying suitable geographic locations within a region. Gravity models are used to find locations that minimize the cost of transporting raw materials from suppliers and finished goods to the markets to the markets served.

For logistics, a centre of gravity problem is usually defined as selecting the location of a facility so that the weighted-average distance to all the demand points is minimized. A centre of gravity problem suggests that facilities are located at the centre (the “centre of gravity”) of a collection of demand points (or in some instances, form firms with many suppliers, at the centre of the supply points) (Bendul, 2013).

### Social Business

The final step in the project propose by Borderless Community is to establishing a social business, all initial steps when creating the supply chain have to be aligned with the end purpose. Therefore, all the processes in the supply chain should aim to create a sustainable supply chain that supports the business model. One of the goals that this study has is to create the bases for a larger investigation regarding the level on what the supply chain can be socially and environmentally responsible in all aspects surrounding it. The Social Business is one of the most notorious options to start developing this research, because the bases for the creation of itself is to aid a social and/or environmental issue.

This business alternative was created by Muhammad Yunus after the foundation of Grameen Bank in 1976, the concept consist in the use of the business methods for the improving of the life conditions of people in poverty and the environment, the purpose is to create a self-sustaining company that can

offer services or goods. One of the key points is that the business model should include the repayment of the money invested to the investors, but without any earnings or interest, not even depreciation, once the money has been repaid the profit generated by the company will be used to grow the business and replicate the formula to help more people.

As described by (Grove & Berg, 2014), social business focuses on using business methods and practices to achieve positive social change. Described by some as “enlightened capitalism,” social businesses promote social objectives as primary, while also making a profit. The difference is that, in a social business, management and investors do not receive a share of the profits (though investors get their money back). Profits are re-invested to expand the company and its positive social impact. Stakeholders receive a dividend on their investment in the form of social change. This volume explores the ideation, practice, and evaluation of the concept of social business.

The “Social business” model, as described by the Nobel Prize winner Muhammad Yunus, has Seven Principles (Yunus, Building Social Business: The New Kind of Capitalism That Serves Humanity's Most Pressing Needs, 2010):

1. Business objective will be to overcome poverty, or one or more problems (such as education, health, technology access, and environment) which threaten people and society; not profit maximization.
2. Financial and economic sustainability.
3. Investors get back only their investment. No dividend is given beyond the return of the original investment.
4. When investment amount is paid back, profit stays with the company for expansion and improvement.
5. The company will be environmentally conscious.
6. Workforce gets market wage with better working conditions.
7. Do it with joy!

When we look at a social business from an organizational point of view it works exactly as a profit-maximizing business, because it looking into creating value and a profit out of the services or products, a profit that will help society and no one else.


*Figure 20 Social business vs Profit maximizing business and not-for-profit organizations*

(Yunus, Moingeon, & Lehmann-Ortega, Building Social Business Models: Lessons from the Grameen Experience, 2010)

## Business Model

According to (Yunus, Moingeon, & Lehmann-Ortega, Building Social Business Models: Lessons from the Grameen Experience, 2010), the business model components are three elements are usually distinguished: the product/service proposed to customers, the way the company is organized so as to deliver this product and service to its customers, and the revenue model.

- A value proposition, that is, the answer to the question: 'Who are our customers and what do we offer to them that they value?'
- A value constellation, that is, the answer to the question: 'How do we deliver this offer to our customers?' This involves not only the company's own value chain but also its value network with its suppliers and partners.

These two components need to fit together like pieces of a puzzle in order to generate:

- A positive profit equation, which is the financial translation of the other two, and includes how value is captured from the revenues generated through the value proposition, and how costs are structured and capital employed in the value constellation.

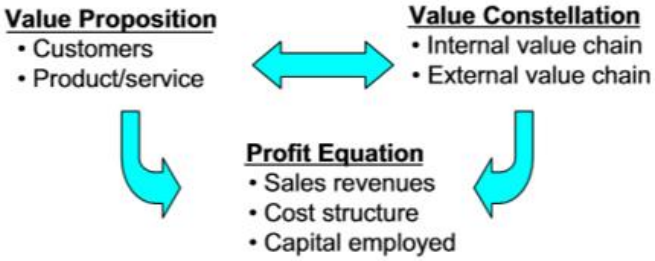



*Figure 21 The three components of a conventional business model*

(Yunus, Moingeon, & Lehmann-Ortega, Building Social Business Models: Lessons from the Grameen Experience, 2010)

There is a fourth component to the Social Business model, this is the social profit equation, and the component is added to the model, the model looks as it follows:

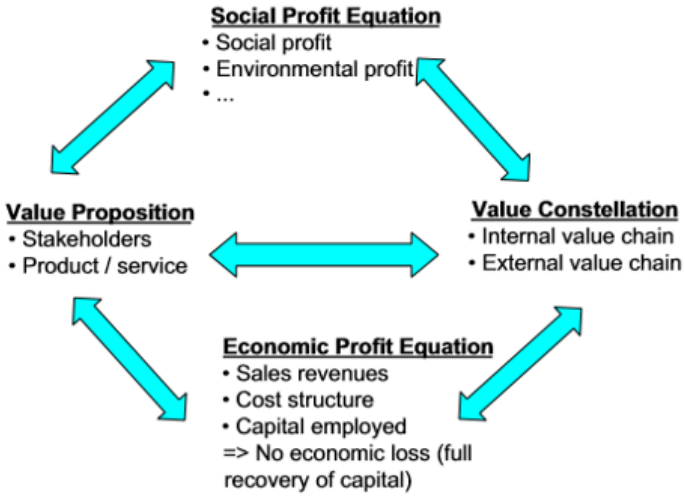



*Figure 22 The four components of a social business model*

(Yunus, Moingeon, & Lehmann-Ortega, Building Social Business Models: Lessons from the Grameen Experience, 2010)

The way that the business is created, has differences and similarities between the conventional business and the social business, some of them are mentioned by (Yunus, Moingeon, & Lehmann-Ortega, Building Social Business Models: Lessons from the Grameen Experience, 2010):

Five lessons in building social businesses

*Similarities with conventional business model innovation*

1. Challenging conventional wisdom and basic assumptions.
2. Finding complementary partners.
3. Undertaking a continuous experimentation process.

*Specificities of social business models*

4. Favouring social profit-oriented shareholders.
5. Clearly specifying the social profit objective.

The supply chain inside this business model has to be sustainable, once the components have been set up as it is shown on the previous diagram; it is important to establish the factors that need to be consider when creating a Sustainable Supply Chain.

According to (Carter & Rogers, 2008), the most well-adopted and most often quoted definition of sustainability is that of the Brundtland Commission (World Commission on Environment and Development, 1987, p. 8): “development that meets the needs of the present without compromising the ability of future generations to meet their needs.”

In their article, they establish the use of “The Bottom Triple Line” as a form to understand a what a Sustainable Supply Chain should consider. The main three components for a sustainable supply chain are social, environmental and economic performance. Four facets support these components: risk management, transparency, strategy and culture.

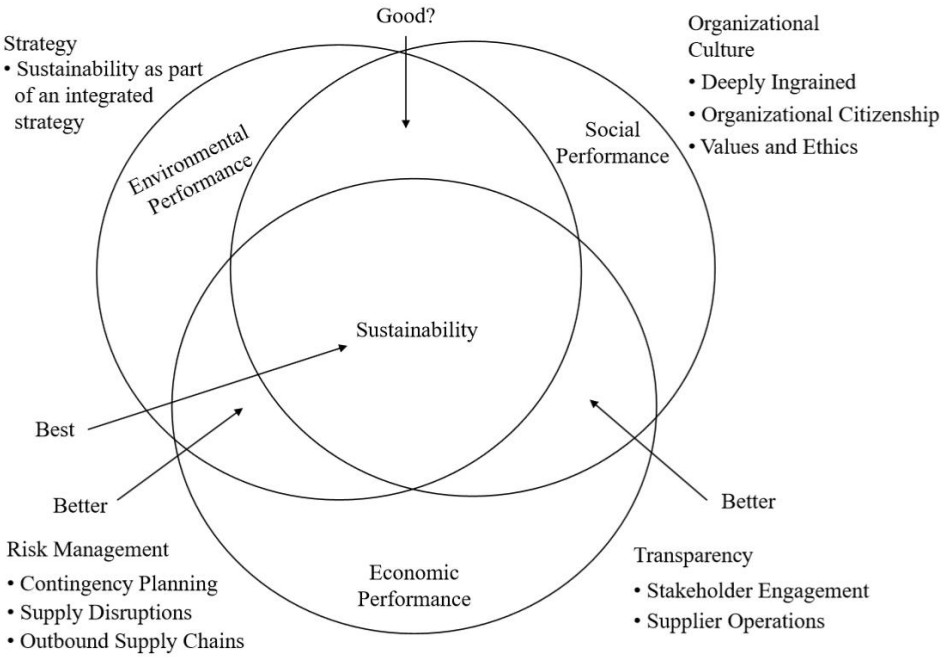



*Figure 23 The bottom triple line*

Supporting Facets

**Strategy and culture**: Sustainability has to be part of the corporate strategy. The mind-set of the organization has to be aligned with the strategy, to create a culture of sustainability. According to the authors of the article, there is a significant relationship between environmentally and socially responsible purchasing activities and an organizational culture which considers the welfare of others and which is fair and supportive.

**Risk management**: The management should not only focus in the short-term financial results, bt also consider the risks associated to the long-term operations, such as harm resulting from their operation (environmental waste, work and public safety, scarcity of natural resources). Supply chain risk

management can occur through contingency planning and by building more resilient and agile supply chains.

**Transparecy**: This facet refers to the importance of avoiding corporate secrecy, and actively engaging stakeholders and using their feedback and input to both secure buy-in and improve supply chain processes.

## CRS and Business Entrepreneurship

One of the issues that the social business model faces is the confusion of the term with other forms of business focused in the social perspective. Therefore, it is important to establish these differences. It is possible to identify many differences between Social business, CSR and Social Entrepreneurship, but one of the key differences for a Social Business is that compared to the CSR or Social Entrepreneurship, its core purpose of existence is the aid of society. Therefore, it means that in times when the economic situation becomes tight, the social business will not face the dilemma of helping society or helping the shareholders maximizing their earnings (which is the core reason for the existence of the conventional business), or in the case of charity organizations, simply run out of donation. The definition of these terms will help to support the analysis of the in regards of the motivation to create of a Social Business.

### *CSR*

The term "Corporate Social Responsibility", was the result of years and years when the corporations were involved in social and environmental scandals. This does not mean that it has stopped, but the big companies and corporations now use CSR as a way to create policies that can regulate their behaviour, and improve their image.

According to (Jutterström & Norberg, 2013) CSR can be described as a contemporary concept with a particular content, expressed in numerous sets of guidelines, principles, codes and so on. CSR is here defined as the company's integrated responsibility for three areas: environment, working conditions and human rights. The CSR concept builds on a more fundamental and timeless issue: the role of business in society.

The use of the CSR concept in companies has increased dramatically in the first decade of the 2000s. In 2007, for example, 97 per cent of the 150 largest companies in the European Union presented a CSR commitment on their website. The corresponding figure for Sweden's 100 biggest companies was 75 per cent (Borglund et al. 2009). Large corporations in particular are expected to work with CSR, and most of them also claim that they do (Jutterström & Norberg, 2013).

### *Social Enrepreneurship*

The term Social Entrepreneurship (SE) has been used in many different context, from ventures with a social focus; but funded by private shareholders to non-profitable organizations. The term SE has been used to describe primarily three kinds of structures (Mair, Robinson, & Hockerts, 2006):

- A specific ownership structure: Cooperatives and other mutually owned organizations (such as producer or consumer cooperatives) ae often refer to as social enterprises,
- Fundraising ventures: subsidiaries of non-profit organizations, whose only purpose is to raise funds for the principal charitable objective.
- Social purpose business ventures: a final variety of social enterprise refers to for-profit business (such as the case of many fair trade companies).

The description given by (Foryt, 2002), SE is broad term that does not have a widely accepted precise definition. In practice, it is issued to describe everything from revolutionary leaders in third world countries who are not at all involved in business to first world businessmen and women who strat a socially responsible business in their home country. Thus Mahatma Gandhi and Ben Cohen of Ben and Jerry's could be thrown into the same category.

As we can see in the below table, (Mair, Robinson, & Hockerts, 2006) introduce three sources of social entrepreneurial opportunities:

| Opportunity | Main actors | Economic value proposition | Social value proposition |
|---|---|---|---|
| Activism | Activists | Provides moral legitimization to the social enterprise<br>Communication and distribution through activist networks | Social concerns championed by the activist group |
| Self-help | Beneficiaries | Cheap labor and marketing<br>Cheap and patient capital<br>Loyal and patient clients | Social needs or concerns of main beneficiaries of the social enterprise |
| Philanthropy | Donors | Charitable grants and donations<br>Business development advice<br>Networking with other social entrepreneurs | Social issues defined by the donor |

*Figure 24 Sources of social entrepreneurial opportunities*

(Mair, Robinson, & Hockerts, 2006)

# Analysis

This part of the study the parts described in theoretical framework will be applied to the study case in order to propose plausible solutions to improve the supply chain of organic products in the region of Cundinamarca in Colombia.

## Mapping the organic supply chain in Colombia

The mapping of the supply chain has the purpose of giving a snapshot on the holistic view of the chain under the current conditions. The operations in this study case could be consider simple, and the processes are very straightforward. The number of personnel necessary to carry the operation is not very numerous, but there is a potential of cost reducing when the operation is combine with multiple producers.

The information for the mapping of the supply chain has been taking form the interviews hold in Colombia. (Bejarano C. A., 2014)& (Bejarano C. , 2014)

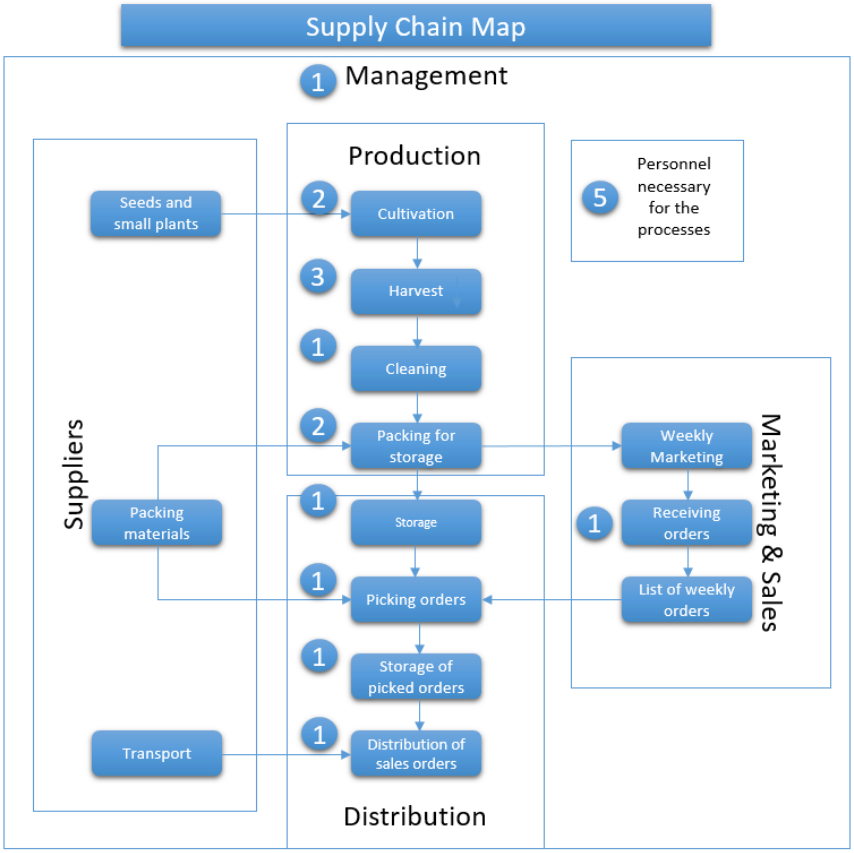



*Figure 25 Organic producers Supply Chain Map*

The number of people needed to execute the processes in the diagram is five, because the processes don't need to be executed at the same time and the maximum number of people needed at the same time is five. This measurement can also be considered in work hours in order to define the cost and

perhaps use the information to make a cost based analysis in the activities on each one of the processes.

**Cultivation**: There are two different options to start this process, in the first option is to buy the seeds and start the germination in the farm; this option is not the germination process for some of the products can be complicated and it requires a lot of work hours. The second and most common, is to buy the small plants directly from suppliers, which includes germinating farms, investigation institutes and universities. Then the process of growing starts, this process includes watering, using natural fertilizers and plague control with natural products. It is important to remark that this step in the future should only include the reuse of the seeds, in order to secure that the products are 100% organic.

**Harvest**: Once the products have reach maturity the personnel starts the recollection of the crops, this step requires multiple walks along the fields, to ensure that all the crops are being collected. This step requires many working hours, that are reflected in the final cost of the products.

**Cleaning**: After the crops have been collected, they are passed through a cleaning process that includes immersing them in water for a short period.

**Packing for storage**: The crops are put into big sacks and boxes, depending of the kind of crop.

**Storage**: After that, they are move to the storage area in the farm where the products will wait for picking.

**Picking Orders**: The list of the sales orders is printed and the personnel picks and packs the orders and move them into the dispatching area.

**Storage of picked orders**: There is a n assign area for the finished orders where they await to be loaded in to the delivery truck.

**Distribution of sales orders**: The orders are load into the truck to be delivered. The products are delivered once a week, the customers are located in the north east of Bogota. All the distribution has to be done in one day, and unfortunately, the traffic conditions do not allow deliveries to more sections of the city. The handling of the organic products requires a more care than the regular products, the process of rotting tents to be faster in organics products, because of the lack of chemicals.

**Weekly Marketing**: This step includes the promotion of the products among customers and potential customers. The newsteller is sent out once a week to inform the customers and potential customers regarding the products that will be available for delivery the week after.

**Receiving Orders**: The orders come in via the website www.fincamahindra.com, via telephone and through emails.

**List of weekly orders**: The orders are collected and consolidated into a spreadsheet; this sheet is then used to pick the orders.

**Suppliers**: The supplies needed for the operations are packing materials such as sacks bags and boxes, seeds, plants, organic fertilizers and sometimes transportation, although the deliveries are 80% of the time done by the personnel in the farm.

The purpose of the mapping is to create a strategy that can increase the efficiency of the supply chain, therefore is done with an external orientation and a low level of detail into each one of the processes (Cooper, 2003).

The picture that we can take from the map of the current supply chain represent a simple supply chain, we can perceive that the processes are not overlapping between them when we look at the parts separately (production, marketing and distribution). Looking at the supply chain it is difficult to point the parts where the LEAN philosophy could clearly cut waste. The value chain for the organic farmers in this study case looks as it follows:

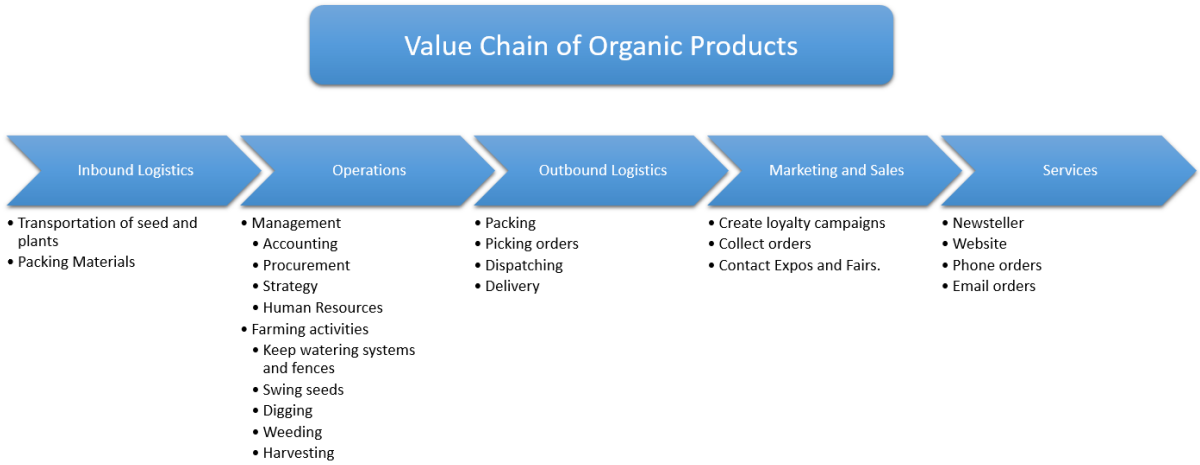



*Figure 26 Value Chain of Organic Products*

The plan in the long term is to add more farms into the operations, and it is then that the elimination of waste becomes clear. When we consider that the personnel necessary to carry the operations is the same in all the farms, we can improve the efficiency by using the same personnel in all the farms. This strategy will not be leading into the cut of personnel, but into the increment of personnel available to expand the operations. According to (Bejarano C. A., 2014), the usage of the certified organic land in the region is of only 40%, so this extra resources of personnel could help with the expansion of the operations, and the increment of the production. The administrative process will be

also included in this consolidation of activities, creating a more detail focus of the activities and therefore, a better performance in the multiple tasks that need to be carry out.

When we combine the processes in three farms, we can see the change in the number of resources needed these processes.

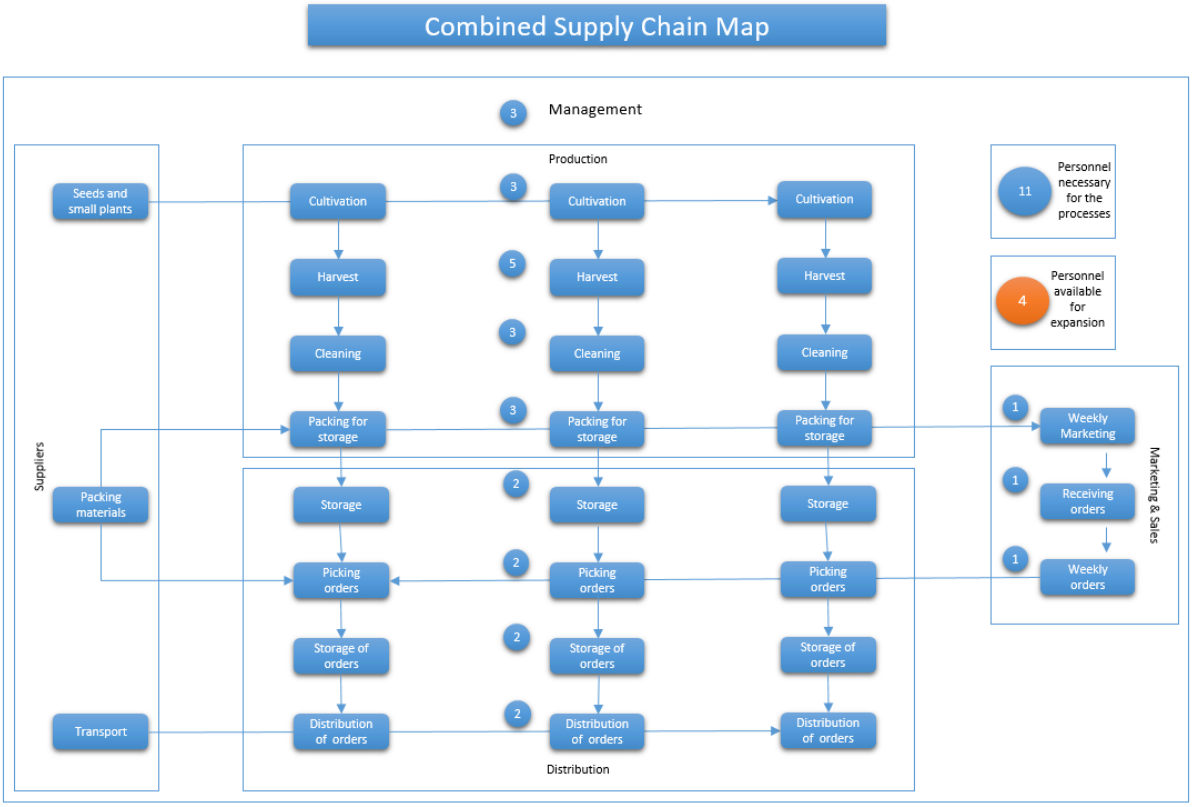



*Figure 27 Combine Supply Chain Map*

The following points indicate how the supply chain becomes leaner:

- Reduction of the personnel necessary to carry operations.
- Better price on the supplies due to the bigger volume to be purchased.
- Possibility to increase production due to the extra personal available.
- Improvement of the management task due to the distribution of tasks.
- Leaner distribution.
- Cost reduction in distribution operations.
- Reduction of the environmental impact of transportation.
- Sharing of information in multiple areas: management, marketing growing techniques, etc.
- Improvement of the quality in the service and products.
- Reduction of the final price due to the higher volume produce and cost reduction.

Moreover, the cooperation with CRAN is plan to work on a program that will work, by bringing the kids once a week, probably on day in the weekend, so they can learn the processes, the benefits of the organic agriculture and the culture surrounding organic products. The program is planned as a workshop where the children will be involved in the processes and be responsible for some of them. As a form of giving back, the farm will provide these children with products from the farm to take home. This cooperation will bring extra benefits for both parties:

**Farm**

- Extra work hours available to a lower cost.
- Use of the over production for a good cause.
- Extra hands available in the busiest days of the week. (deliveries are done Mondays)
- Branding the farms as socially responsible.
- Potential future workers.

**Children in the Social Inclusion Program**

- The children will learn new abilities that will create options in the future.
- Sense of belonging to a group other than the armed group.
- Potential future employment.
- They learn to love and respect the environment; this has a huge impact decreasing their violent behaviour.
- Break out the weekly routine of school and the orphanage.
- The kids will get confidence by learning responsibility.
- Helping coping with emotional traumas.

**CRAN**

- This activity allows the institution to provide the kids with more activities in their schedule.
- Provides them with a secure environment where the children can interact with people outside the institution.
- There is a potential opportunity of employment for the young men and women, after they become adults.
- If the young men and women decide to pursue a career with the organic farms, the possibility of a follow up on the lives of these young men and women for CRAN could be a possibility. This information could help them change or develop new approaches on the reintegration of the new comers.

JIT plays an important role in the supply chain, the time from when the crops are harvested to when they have to be deliver plays a crucial role. According to (Condratchi, 2014) the increased variety of goods, the just-in time delivery system, low load rate, specialization and centralization of production systems globalization of marketing and seasonal variations are among the main challenges of logistics system which may lead to the necessity of developing effective logistics in the sector.

The perishing of the crops pushes the operations to have a high degree of control. In addition, the vehicles that are used for the deliveries do not have cooling systems; this also requires that the delivery routes are carefully planned and traffic conditions are taken in consideration.

Waste of crops in most of the farms does not exist; all leftovers are used in one or another form, as fertilizers, to feed farm animals, for consumption of the families that grow the crops, etc. But there from the business side this is big loss, because of the cost that is involved in the grow of that crop and the potential profit loss that it represents. As mention by Carlos during our interview, most of the farmers do not look at it like this, so they fail to see the real loss, and most importantly the personal effort put into the full production of that crop, to not fullfill its purpose. The decision becomes then what of the option sis going to help me to mitigate the loss in a better way. Based in that point the option of trading the overproduction for the help

The JIT systems require a small buffer in order to respond to last minute and special orders. The flow of information between the sales and the picking of the orders is short; as a result, the flow can work efficiently. In addition, there is a proposal to sale prepack goods instead of selling them per pound, this would help to reduce the reaction time when picking the regular and last minute orders.

The organic farming has a particular characteristic; the commitment that the persons have towards the culture around the organic farming. This culture is rich in love for the environment and the society, and people can perceive this in the quality of the products and the personalized attention that the farmers give to their customers. This is an important point when we think about the integration of TQM programs into the farming processes.

At all levels, information flow and management of produce is essential to maintain the food quality throughout the chain (Condratchi, 2014).

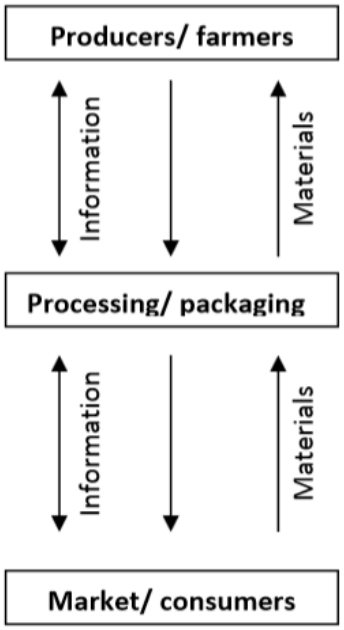



*Figure 28 Food Chain flow*

The mayor obstacles in the implementation of these programs are linked to the lack of commitment, interest and understanding of quality. These obstacles are almost inexistent in the in the new generations of organic farmers. The simple base of their own business is the balance that the humans should have with their surroundings not the profitability of their products. As mentioned by (Bejarano C. A., 2014) the resistance to change the activities in the farms towards a more administrative behaviour is present in the farmers that have been in the business for a longer period. Furthermore, the size of the organization even when combined between three farms is very small, this is an advantage for the implementation and monitoring of new quality programs along the all the parts of the business.

It is important to point out some plausible barriers to overcome when the supply chain strategy is implemented and the program of cooperation with CRAN starts, and these are the following points:

- Agreement over the prices for the products between the farmers.
- Detail plan of resources in a daily basis. (Who and what is going where and when?)
- Yearly based production plan. (How´s harvesting what and when?)
- Establishment of procurement guides and rules.
- Creation of a standard operations manual.
- Creation of a quality department.
- Detail plan for the visits of the children, to maximize the available time for both parties.

As it is for most of the companies, the success of the strategy will relay primarily in the cooperation and the will to embrace change inside their organizations.

## Building the Network

The current distribution network for the organic farms in the region is almost the same, with the only variant that some of them not only sale through websites, email and telephone orders, they also participate in farmers markets some weekends.

According to (Condratchi, 2014) the constraints in the Agrifood chain require the development of innovative logistics system. These systems need to take into consideration, road and traffic conditions, climate, transport time and distance, and queuing at delivery points to: -strengthen the economic competitiveness of stakeholders in the food supply chain; -maintain quality or adding value of food and improve animal welfare; -attenuate environmental impact.

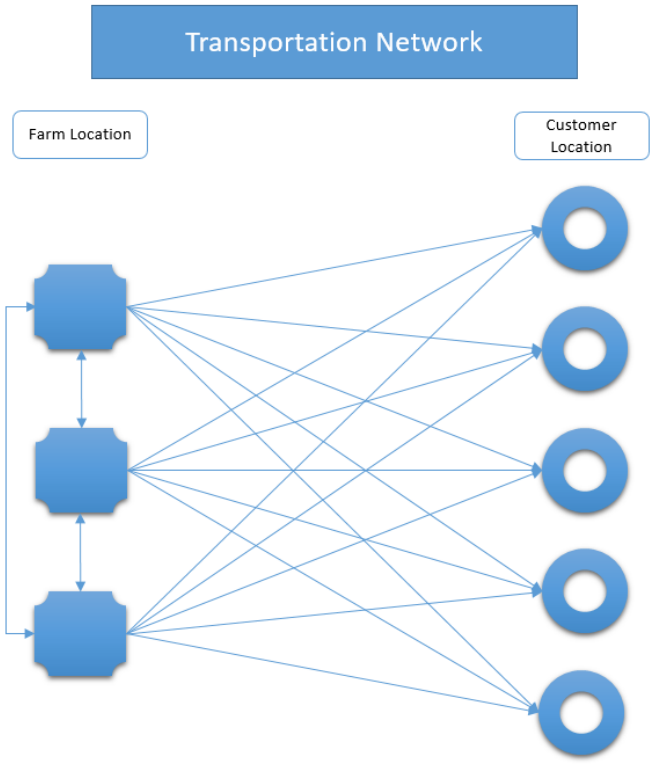



*Figure 29 Transportation Network*

The above diagram represents the current situation of the transportation network for the farms in the region of Guasca, Cundinamarca. The customer locations in the diagram represent not customers, but locations in the city of Bogota. The arrows between the farm locations represent the flow of products between the farms; this flow happens sometimes, when a producer do not has enough products to cover their orders and buys them from another producer to cope with the sales orders.

This distribution network is very simple, and the individual producer can argue inside their independent operations in could not be easier, because there are no middle steps, the producer delivers directly to the customer and/or brings the products to the POS (Farmers market). Once again,

the picture is different when we look at the distribution as a collect of the farms in the region; the potential for cost reduction becomes clear by adding a simple factor as a common distribution route, and there could be numerous options for the distribution. Based on the information acquired during the interviews, we could consider the possibilities for a distribution centre, with different set ups.

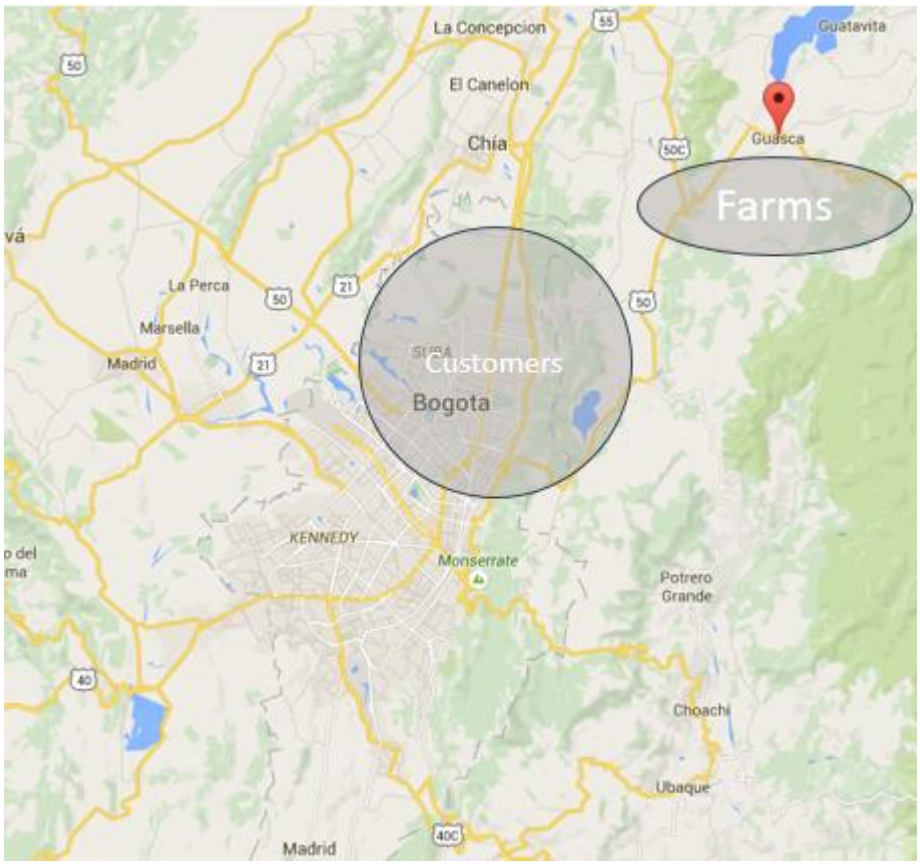



*Figure 30 Location of farms and customers*

On the above map, we can appreciate the areas where the producers and the customers are located. We can see that the distance from one to another is not very long (avg. 43km), but the traffic conditions make it almost impossible to expand deliveries down to the south west of the city, with the current vehicles of transportation. The delivery takes place on Mondays, and lack of cooling vehicles makes it almost impossible to keep the products fresh when the drives are for long periods. The temperature in the city and the country does not varies much due to the closeness to the equator; in average, the temperature stays around 15°C all year around with a max of 20°C to and a minimum of 7°C, both in rare through the year.

Based on the conditions of the current transportation network and the possibility of the combination of operations between the farms, the option of consolidating the distribution operations should be beneficial for all the participants. The creation of a distribution centre would allow a leaner and more

effective distribution of the products, by cutting the multiple delivery runs from each one of the farms into the delivery areas and changing it into one run from one place to all delivery locations.

In order to establish the best option for the Distribution Centre (DC) we need to find the best location for it. Using the gravity centre model we can determine the best geographic point to establish the DC, taking in consideration the distance to Bogota from the farms and the number of customers from each farm.

**Center of Gravity**

| Farm | Latitude | Longitude | Customers | Approx Dist to Bogota (Km) |
|---|---|---|---|---|
| Finca Mahindra | -21.2 | 143.7 | 65 | 38 |
| Farm 2 | -18.4 | 142.4 | 35 | 42 |
| Farm 3 | -19.3 | 148.3 | 50 | 51 |
| **Geographic Center:** | -19.9 | 144.9 | Weighted Average Distance | 43 |


*Figure 31 Cenre of Gravity*

*Disclaimer: All three locations are approximate, because they are all in not official roads, so there is no number and sometimes no street name.*

The results of the model show the location for the centre of gravity to be in at the centre of the town Guasca. The distance between the farms and the gravity centre differs due to the number of customers that each farm has. The model locates the centre closer to the farm with the most

customers and the one with the shortest distance to the customers in order to facilitate the transportation of the products.

Based in the information acquired and analysed so far, the writer proposes two plausible set ups for the distribution network, each one of them with variants in the internal operations based on the levels of cooperation that farmers want to perform.

The first set up includes the creation of a DC at the centre of gravity suggested in by the model. This DC could have the following three options according to the level of cooperation that the farmers are willing to share and cooperate.

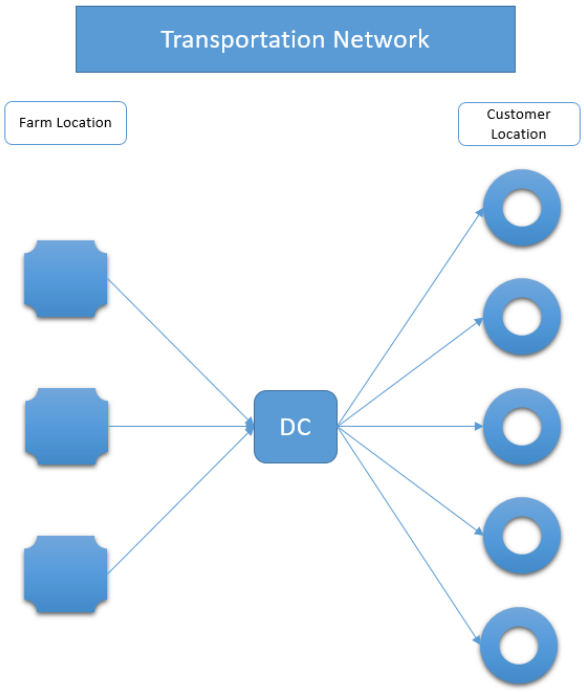



*Figure 32 Traspotation network 2*

The first option has a low level of integration of the processes; this option will keep most of the operations located at the farm. The farms would keep working as independent business units and only share the transportation network. On this option, the impact in the cost reduction is very low.

| Option 1 | Activity Location | |
|---|---|---|
| | DC | Farm |
| Storage | | X |
| Picking sales orders | | X |
| Dispatch orders | | X |
| Storage of picked orders | X | |
| Weekly Marketing | | X |
| Receiving Orders | | X |
| List of Weekly orders | | X |
| Distribution | X | |

*Figure 33 Integration low*

The second option has a medium level of integration of the processes; on this option, the operations are located in a share set up, where the distribution activities are located at the DC and the marketing activities at the farm. In this option, the farms could also keep their status as independent business units. On this option the impact in the cost reduction is high due to the sharing of the storage and distribution cost.

| Option 2 | Activity Location | |
|---|---|---|
| | DC | Farm |
| Storage | X | |
| Picking sales orders | X | |
| Dispatch orders | X | |
| Storage of picked orders | X | |
| Weekly Marketing | | X |
| Receiving Orders | | X |
| List of Weekly orders | | X |
| Distribution | X | |

*Figure 34 Integration medium*

The third option represents a complete integration of the distribution and marketing activities, all operations are located at the DC. On this option, the cost reduction on the distribution and marketing is the highest from the three options presented. The farms could still hold their status as independent business units, although the integration of most of the activities could suggest, that the full integration of operations would be the best option.

| Option 3 | Activity Location | |
|---|---|---|
| | DC | Farm |
| Storage | X | |
| Picking sales orders | X | |
| Dispatch orders | X | |
| Storage of picked orders | X | |
| Weekly Marketing | X | |
| Receiving Orders | X | |
| List of Weekly orders | X | |
| Distribution | X | |

*Figure 35 Full integration*

In all three options, the management of the farms will have to share activities to assure the operations at the DC are as affective as possible. Furthermore, there is an extra point to discuss, and that is whether the DC should act as an independent business unit.

On one hand, the DC could represent a separate business, which simply gives a distribution service to the farms, operates independently and has the potential to become a trader or an association. There are different agricultural associations in Colombia, and they all help the farmers in different ways, including the commercialization of their products, training, financing and the search for new customers in the national and international markets, among other things (Ramirez, 2014).

On the other hand, if the farms decide to cooperate in all their activities they will open the opportunity to become one business.

The second set up is a variant from the first one, with the unique difference that instead of having to finance the construction of a DC, the facilities of one of the farms could be used as the DC. Considering that Finca Mahindra is the closest to the location of the centre of gravity that would be the logic option to establish the DC. This option will allow the farmers a faster set up process, without having to invest much in the project. The three options according to the level of cooperation would apply with the same effect in this set up.

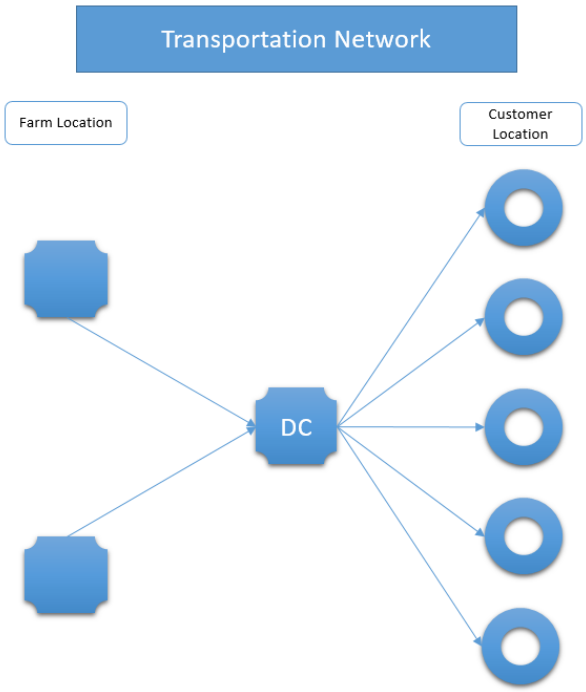



*Figure 36 Transportation Network 3*

Moreover, the set ups and options presented here, should not be seen as options that should be taken on instead of the other, all of them could be seen as an strategy to reach the full integration of the farms as one business.

| Integration of Farms into one Business | |
|---|---|
| **Step 1** | Establishmet of the DC in Finca Mahindra + Option 1 |
| **Step 2** | Establishmet of the DC in the centre of gravity suggested by the model + Option 1 |
| **Step 3** | Change cooperation level to Option 2. |
| **Step 4** | Full integration of the farms. (Option 3) |

*Figure 37 Integration plan*

This full integration of the business will open the option to create a Social Business.

## A Socially Responsible Supply Chain

This analysis will start by defining the term “Socially Responsible”.

Socially: Society - the body of human beings generally, associated or viewed as members of a community.[6]

Responsible: answerable or accountable, as for something within one's power, control, or management (often followed by to or for).[7]

When we put them together to the term "Socially Responsible Supply Chain", we could define it as a supply chain that is accountable for the management of the things that are in its power to control in the society/community. A supply chain that is responsible for the impact that it has in society. There is not much literature on the subject specifically spelled as it is use in this research, but taking in consideration that social businesses are committed to the society and the environment, they look like the right place to look for the definition.

In order to establish the reasons for choosing a Social Business as the option to use for the business model to the organic farmers study case, we will look first at why the option of a regular business with a strong CRS was disregard.

In recent years, there has been a lot of focus in CSR around the globe. Although these policies are made to keep the actions of a company under certain constraint, to act in a way that benefits or do not harm the communities where they operate; most of the time these policies are used just as propaganda, to create a friendly image of the companies. Sometimes these companies give arguments that make them look like their commitment if entirely with society and not with their final purpose, which is creating profit at all means possible. Looking at (Ken , 2002), we can see an example of the arguments to create the image of a socially responsible company. In this article, the author talks about the conduct standards, the support to developing countries and how socially responsible Exxon Mobil is in the communities, where they operate. In this article, the author expresses the following statement:

"Well-run companies are far more socially responsible than is usually conceded by critics—simply when they fulfill their basic function."

He argues that the success of corporations has a parallel relation to the benefits that this corporation will bring to the society and their investors. This statement is based in economic factors, assuming that the better than a corporation handles their economy, these benefits will translate into economic benefits to the community. That is a reasonable point to some extent, but far from an argument that

[6] http://dictionary.reference.com/browse/society?s=t
[7] http://dictionary.reference.com/browse/responsible

would label the company as socially responsible. The numerous environmental disasters related to Exxon (Alaska and Gulf of Mexico, among others)[8] [9], give a very different image of the level of responsibility that the corporation has with the community. The argument about accidents being part of the regular operation of any company could be valid, if the consequences of these mistakes where not so devastating that 25 years later there are still many environmental sequels to it, moreover, if they were not repeated. In this example, we can see that the company way the company creates the argument to label themselves as socially responsible is based in economic factors, but the welfare of a community is not one sided, corporations cannot be giving with one hand while they destroy the other. It is important to remark that anything that impact the flora and fauna of the environment, goes against society, simply because society cannot exist in a broken environment.

According to (Yunus, Building Social Business: The New Kind of Capitalism That Serves Humanity's Most Pressing Needs, 2010), the biggest flaw in our existing theory of capitalism lies in tits misrepresentation of human nature. In the present interpretation of capitalism, human beings engage in business are portrayed as one-dimensional beings whose only mission is to maximize profit. Humans supposedly pursue this economic goal in a single-minded fashion. This is a badly distortion picture of a human being. The essential fact about humans is that they are multidimensial beings. Their happiness from many sources, not just from making money. Yet economist have built their whole theory of business on the assumption that human beings do nothing in their economic lives besides pursue selfish interest. Theory concludes that the optimal result for society will occur when each individual's search for selfish benefit is given free rein. This interpretation of human beings denies any role to other aspects of life-political, social, emotional, spiritual, environmental, and so on.

The article by Bergström and Diedrich (2011) empirically investigate the dynamics surrounding CRS, in this article they present the tendency from the corporations to exercise social responsibility from the perspective of the stakeholder. In their own words, "Stakeholder theory thus focuses on how corporations achieve CSR by identifying and responding to the specific demands of stakeholders (Mitchell et al. 1997; Basu and Palazzo 2008). It gives managers the responsibility for reconciling divergent interests by making strategic decisions and allocating strategic resources in a manner that is most consistent with the claims of other stakeholder groups (Hill and Jones 1992). In other words, stakeholder theory tends to assume that companies collect the views of the stakeholders and adjust their actions according to these views, or, alternatively, that the company should be aware in advance

[8] Exxon Valdez oil spill http://www.eoearth.org/view/article/152720/
[9] Exxon oil spill Gulf of Mexico http://www.mnn.com/earth-matters/wilderness-resources/stories/the-13-largest-oil-spills-in-history

of the stakeholders' views and avoid actions that would harm their interests" (Bergström & Diedrich, 2011).

Corporations adapt their CSR actions to what the stakeholders are expecting from them and create policies that correspond to these expectations, in order to create the desired image.

The end purpose for this argument is to demonstrate how restricted CSR is in relation to a Social Business. The limitation one the social responsibility that the corporations are willing to have are related first, to the commitment to maximize the profit to the shareholders (any action stopping or working against this will be dismiss) and secondly, to the nature of the business. In the example given, we can see that even if Exxon was willing to create the most efficient and secure pipelines to avoid environmental disasters in the future, the pure nature of the business is not socially responsible. Because their business model is based on a environmentally limited and therefore not sustainable resource energy as fossil fuels are, which involve too high environmental risk during their extraction and transportation, consequently, so they cannot be a socially responsible company.

From the writer's point of view the key relays in the motivation; the motivation for the existence of CSR in most of the cases is the creation of policies that could potentially benefit the business because of their actions in the community, so the end purpose is always the business not the community.

For the organic farmers project the option of using Social Entrepreneurship (SE) was considered. Although Social Entrepreneurship is trying to solve social or environmental problems by applying innovation, it is different from a Social Business. For start, SE can be non-profit or for-profit; these models are possible in SE because the financing of the project could be through donations or by building a for-profit business. In the last one, there are shareholders that will take a profit out of a business that was created around a social or environmental problem (Yunus, Building Social Business: The New Kind of Capitalism That Serves Humanity's Most Pressing Needs, 2010). This option was disregard, because was either unsustainable or people that already has money, will end up profiting from the cause that we are trying to aid.

Because we want the commitment with the community to be the highest priority in the solution of the problem, it was decided to work on the issues by creating a social business. The concept of "Social Business" developed by Muhammad Yunus (Yunus, Building Social Business: The New Kind of Capitalism That Serves Humanity's Most Pressing Needs, 2010) (Yunus, Moingeon, & Lehmann-Ortega,

Building Social Business Models: Lessons from the Grameen Experience, 2010). This concept represents from the writer's point of view one of the best options to fight the inequality of the capitalist system; while committing the start-up to be environmentally friendly. It could be the first place where we could start developing truly socially responsible supply chains.

The business model that is proposed around this study case looks as it follows:

<table>
<tr><th colspan="5">Organic Farmers Business Model Canvas</th></tr>
<tr><th>Key Partners</th><th>Key Activities</th><th>Value Proposition</th><th>Customer Relationships</th><th>Customer Segments</th></tr>
<tr><td rowspan="2">Organic Farm associations<br>Organic Farms Expos and Fairs<br>Packing materials suppliers<br>Universities<br>Germinating farms<br>Farmers markets<br>Social aid institutions<br>Environmental institutions</td><td>Organic production of fruits and vegetables<br>Participation in farers markets<br>Marketing and sales<br>Distribution<br>Direct Sales</td><td rowspan="2">Live healthier by consuming organic products<br>Promote consumption of local producers<br>Promote help to local social<br>Sustainable food production<br>Home delivery of organic</td><td>Weekly communication of product available<br>Face to face communication though farmers markets<br>Loyalty programs<br>Mouth to mouth referral</td><td rowspan="2">Families with medium high purchase power<br>Restaurants<br>Hospitality sector</td></tr>
<tr><td>Key Resources<br>Organic Farms<br>Storage facilities<br>Cooling vehicles<br>Website</td><td>Channels<br>B2C<br>Email newstellers<br>Email, telephone and website<br>Farmers markets<br>Farmers Expos and Fairs</td></tr>
<tr><th colspan="3">Cost Structure</th><th colspan="2">Revenue Streams</th></tr>
<tr><td colspan="3">Marketing<br>Transportation<br>Work hours<br>Storage Facilities<br>Packing Materials<br>Seeds and plants</td><td colspan="2">Product sales<br>Government and International aid (for the start up period)</td></tr>
</table>

*Figure 38 Organic Farmers Business Model Canvas*

This business model canvas provide us with a general view of the key components in the business. This canvas would vary depending on the number of farms added and the resources available, meaning that the increase on production for example, would open more customers segments and channels, all components are link with each other, so the canvas only represents the current situation and it will have to be updated as the business develops.

This business model follows the seven principals created by Muhammad Yunus to receive the label of Social Business.

1. **Business objective**: Promote the development of organic farmers and institution for aid.
2. **Financial and economic sustainability**: The proposed business model includes economic independence in the long run and sustainability.

3. **Initial investment**: The initial investment could potentially come from governmental institutions, so transparency is key in the use of resources, but not necessary needs to be returned.
4. **Use of profit**: The profit will be reinvested in the growth of the business and the replication of it to more regions in the country.
5. **Environmentally conscious**: The production of organic products, not only is environmental friendly, but it also contributes to studies in the sustainability of the use of the land.
6. **Workforce conditions**: They will get market wage with better working conditions. It is important to mention that the kids participating on the activities of the farm will only help in activities that comply with international rules of child labour.
7. **Do it with joy**: The commitment and motivation of the participants in the project covers this point entirely.

From this point, the building of the model has the first steps, but it is important to analyse the core of the business model, establish its sustainability as a social business. Although the canvas is a good tool to get a snapchat of the operations, the business model as it was described previously in the theoretical framework, should be composed by specific components in order to ensure that it covers all aspects in to establish a Sustainable Supply Chain in the Social Business Model.

When we look at the components of Social Business Model and the Sustainable Supply Chain, we can get a better idea of the factors that need to interact in order to create a sustainable business model.

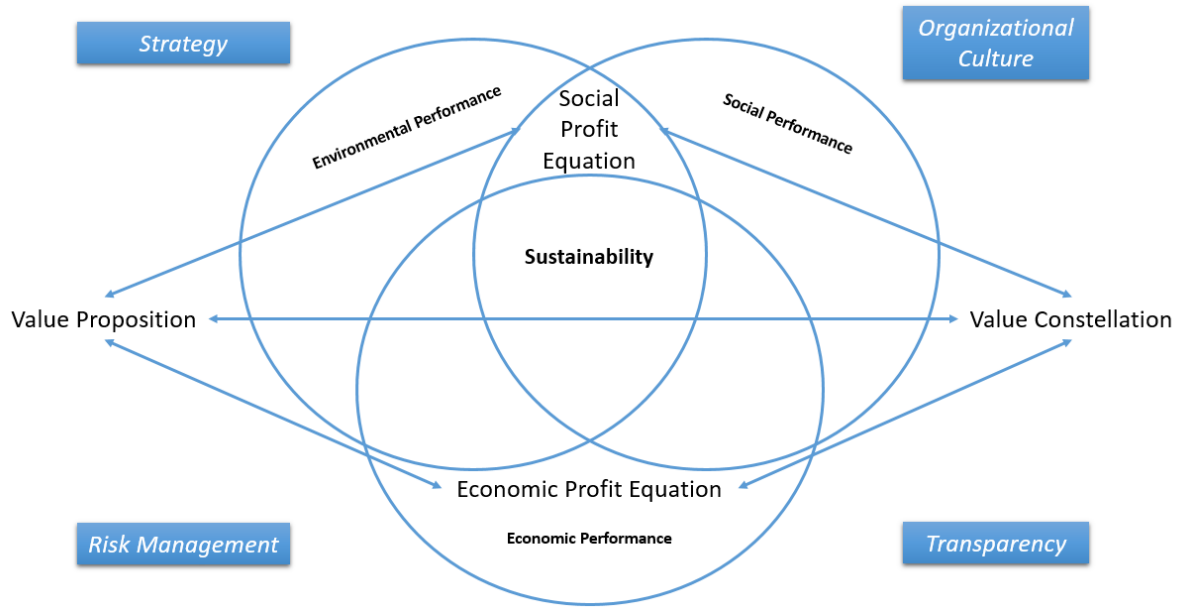



*Figure 39 Sustainable Social Business Model*

This “Sustainable Social Business Model” combines both above-mentioned models; it graphically locates the components of both models within the same space. This model represents the compatibility that both models have. We can see that sustainability can be achieve by using the elements described by (Yunus, Moingeon, & Lehmann-Ortega, Building Social Business Models: Lessons from the Grameen Experience, 2010).

The business model can be followed as described before and by taking in consideration the support facets proposed by the bottom triple line, we ensure the construction of a sustainable supply chain. When we look at the Social Business Plan for the organic producers through the glass of this model, we can confirm that the business plan that has been proposed follows all the aspects in question. This picture will give us the bases for the establishment of the social business in Guasca, and farms with similar conditions could replicate the model, this is open for farms in the region and the country.

## Social Value

The benefits of the cooperation between Finca Mahindra and CRAN could be very significant for the children in the social inclusion program. Even if the kids have not belong to families whose livelihood depended on agriculture, the construction of this knowledge in the common group and recognition of their input that the kids give to the activities, helps them to understand theta their ideas are valuable. When the kids are giving something to the group, this helps to switch the position of the mental perspective of the kid from someone that is just receiving (victim), to someone that can give something. This empowers the self-confidence of the kids, and helps them to change from a passive social position to an active position. The participation in the program gives them the chance that realize that their acts and thoughts are important and can make a difference; furthermore, the responsibility that they experience helps them to realize that they matter as persons. (Valoyes, 2014)

These responsibilities in the end will help them to understand the responsibilities they have towards society. Moreover, they also have opportunity to mimic the knowledge that they acquire on the program and replicate it in their own businesses or as part of another business. Essentially, the experiences that they can acquire during the participation in the program can help them in many aspects of their adult life. (Valoyes, 2014)

# Conclusion

The purpose of this study has been to answer:

How to improve in a sustainable and socially responsible way, the distribution network of organic agricultural products in the municipality of Guasca, Colombia?

## To what extent is it possible to lean the supply chain of products in the region?

Through this research, it was possible to create a simple and clear idea of the processes that take place in the organic farms in Guasca. As a result, we can see that the supply chain in organic farms lacks complexity, the processes inside the farm do not overlap, this means that the possibility of cutting waste should be analysed inside processes and narrow it down to the analysis of the activities inside the processes, creating a process mapping. We can see that the use of resources is optimal, due to the reduce availability of them.

After the mapping the supply chain of multiple farms combined, the result was promising, we can see that the number of resources available increases, for example in the production area; since one of the key problem expressed by Carlos Bejarano, was the lack of human power to expand the production, this could potentially help them to solve the problem. In addition, the assignation of the tasks among the Management and the Marketing and Sales areas, could potentially increase the efficiency, as the personnel no longer have to do many task at the same time, and they can focussed in making less task but in a higher volume. This will help them specializing in their assign activities and have a better focus on them.

Within the study and the observation of the supply chain and production processes, we can identify the ability of the farmers to eliminate the waste of food, by recycling all types of products that come as result of the production.

## What would be the optimal distribution of these products based on cooperation between the farms?

After the examination of the current transportation network and the conditions that limit it. We can see that the problem relays in the condition of the vehicles and the non-cooperation between the farms. The inefficiencies relay in the multiple runs to the city as independent businesses. Therefor the establishment of a “Distribution storage with carrier delivery” type of network. This means that the storage and distribution activities will be handled at the DC.

The unification of the operation will bring reduction of cost and environmental impact. By combining operations, the cost of the supplies will reduce due to the purchasing of higher volumes. The

transportation cost will reduce, thanks to the unification of distribution routes to the same areas of the city. The quality of the products will improve, because of the motivation to assure a regular quality of the products offered.

The establishment of a distribution centre will help improving the logistics operations. This option will involve finding financial resources, which could be acquired either independently as a group; or through AGREGUA from the Colombian government or financial institutions. Alternatively, the option of establishing the DC in the farm closest to the centre of gravity, could allow them to start with the operations with a minimal cost compare to the other option.

The highest cost reduction and efficiency comes from the full merge of the distribution network between the farms.

## Is it possible to create a "Sustainable Socially Responsible Supply Chain"? Moreover, what would this entitle?

After the analysis of the factors in the case study and the literature around Social Businesses and Sustainable Supply Chains, we can conclude that the combination is not only possible, but also essential that sustainability and social responsibility coexist in the supply chain of Social Businesses, as the components from both support each other. The key fact that differentiates this kind of supply chain from the rest is the addition of the social and environmental equation, which is an essential value for long-term sustainability (or just sustainability).

To be able to establish a "sustainable socially responsible supply chain" the components of a social business have to present as the base of the business model (economic and social profit equations plus value proposition and vale constellation). The performance of these components have to be measured in an economic, environmental and social form. While the structure of the business model should be supported by a congruent Strategy, Transparency, Risk Management and Organizational Culture. When these factors are present, we can say that based on the theory analysed the result should be Social Business with a Sustainable Supply Chain (Sustainable Social Business). Since this is a model, the application of it has no restrictions in terms of the kind of business that it could be applied to.

## The key is cooperation

I could not remark more the importance of cooperation for the success of the propositions made by this study. This research shows the capabilities for a more efficient and leaner supply chain when cooperation is available. In the practice, the cultural and social factors play a very big role, and changing mind-sets is still one of the biggest challenges in all kinds of areas and businesses. The natural

resistance of the human beings to step out of their conform zone, could be perhaps mitigated by creating change in a gradual way.

The benefits that the organic producers in Guasca will have as a result a full cooperation are beyond cost cutting and efficiency. The share of knowledge could be the biggest achievement.

The cooperation between CRAN and the farmers has a much deeper impact, giving the opportunity to these kids to be able to develop skills that can help them reintegrating in the Colombian society, is one the best social impact that this cooperation could have.

## Further Research

Many studies could support this research. The following list is done in order of priority:

- Results of the actual application of the Business Model and the supply chain proposed in this research.
- Process mapping in all the farms of AGREGUA
- Supply Chain Mapping in organic farms around Colombia.
- Supply Chain Mapping of organic farms in developed countries.
- Application of the Sustainable Social Business Model in in different kinds of social businesses, to measure the level of adaptability.

## Final Comments

The way I see it the current worldwide situation logistically speaking is not looking at the problem with the correct perspective, logistic networks are being developed in order to fit, longer and more complex supply chains. The reason for this is that the products and services are offered all around the world; globalization, supported by the internet have allowed businesses to expand so rapidly that corporations don't take the time to think about the consequences of transporting products for long distances. Some will argue that the comparative advantage of each country will always push the trade into longer distances, and it is true that the countries should produce or take advantage of the resources in their lands and the abilities of their citizens. However, the perspective should be different, we should be aiming for local production and local services, we are living in 2015 and conditions are much different from 200 years ago when the people first talked about comparative advantage. Under the current economic conditions, as mentioned by (Kilmister & Garza, 2002)“good business is theft”, the win-win situations are almost non-existent when the system in based in profiting out scarcity.

We could start by changing the small things, by taking advantage of the technology that we have available right now, and I am not referring to something complicated. It is mainly the sharing of

information, but with the support and promotion of the governments. As an example we can say that the abilities that one country has in comparison with another could and should be share to minimize the impact in the environment, like new discoveries in how to grow better and faster organic crops, international research to produce locally as many products as possible, regardless of the climatic conditions (hydroponic farming for example). In the service sectors there is also room for the first steps, how to improve governmental services for example, it is well known that the main reason for the corruption to exist is the implementation of inefficient public services, why not help countries to re-design their public services? One more example are the educational systems, share information about how to train people more efficiently, the internet gives us the opportunity to share and learn from every single part of this planet, why not to take advantage of it in a way that does not impact our environment and society in a negative way.

Supply chains will have to get smarter in a local sustainable way, and I know that this sounds very socialistic or utopic. Nevertheless, the truth is that the humanity is growing in a massive way compare to the past centuries, thanks to the medical advances; so why not instead of trying to make a few regions produce for the whole world a few products or services, we try to adapt the techniques and services to our region. The way I see it, whether we like it or not resources in this planet are limited and transportation is not going to solve that, developing efficient local supply chains could.

# Bibliography


Andreewsky , E., & Bourcier , D. (2000). Abduction in lenguage interpretation and law making. *Kybernetes, 29*(7/8), 836-845.

Bejarano, C. (2014, November 19). Supply Chain of Organic Products in Finca Mahindra. (L. G. Moreno, & J. T. Morón Villareal, Interviewers)

Bejarano, C. A. (2014, November 23). Supply Chain of Organic Products in Finca Mahindra. (L. G. Moreno , & J. T. Moron Villareal, Interviewers)

Bell , E., & Wilmott, H. (2014). *Qualitative Research in Business and Management.* London: Sage.

Bendul, J. (2013, October 23). Supply Chain Network Design. *Supply Chain Decisions*. Copenhagen, Denmark: Jacobs University.

Berglund, K., & Wigren, C. (2014). Ethnographic approaches to entrepreneurship and small-business research: what lessons can we learn? In A. Carsrud, & M. Brännback (Eds.), *Handbook of research methods and applications in entrepreneurship and small business* (pp. 201-227). Chaltenham: Edward Elgar Pub. Ltd.

Bergström , O., & Diedrich, A. (2011). Exercising Social Responsibility in Downsizing: Enrolling and Mobilizing Actors at a Swedish High-Tech Company. *Organization Studies*, 897-919.

BiazzoP, S. (2002). Process mapping techniques and organizational analysis. *Business Process Management Journal*, 42-52.

Blaikie, N. (2000). *Designing Social Research: The logic of anticipation.* Cambridge: Polity.

Carter, C. R., & Rogers, D. S. (2008). A framework of sustainable supply chain management: moving toward new theory. *International Journal of Physical Distribution & Logistics Management* , 360-387.

Chopra, S., & Meindl, P. (2010). *Supply Chain Management Strategy, Planning, and Operation* (4th ed.). New Jersey: Pearson.

Condratchi, L. (2014). SUPPLY CHAINS IN AGRICULTURE AND FOOD PRODUCTION. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, 81-88.

Cooper, J. T. (2003). Strategic Supply Chain Mapping Approaches. *Journal of Business Logistics*, 37-64.

Cususmano, M. A. (1998). The Limits of "Lean". *Sloan Management Review*, 27-32.

Dubois, A., & Gadde, L.-E. (2002). Systematic combining: an abductive approach to the case research. *Journal of Business, 55*, 553-560.

E.L., E. F. (1978). Analytical model of sociotechnical systems. *Sociotechnical Systems: a source book*, 120-131.

Foryt, S. (2002). *Social Entrepreneurship in developing nations.* Fontainebleu: INSEAD.

Grove, A., & Berg, G. A. (2014). *Social Business: Theory, Practice, and Critical Perspectives.* California: California Institute for Social Business at California State University Channel Islands.

Hines , P., Holweg , M., & Rich, N. (2004). Learning to evolve. *International Journal of Operations & Production Management, 24*, 994 -1011.

J.W. Jr, D., & J.R., E. (1994). Management Theory and Total Quality: Improving research and practice through theory development. *Academy of Management Review, 19*, 392-418.

Jacka, P. J. (1999). Process Mapping. *Internal Auditor*, 60-64.

Jacobsen, D. I. (2002). *Vad, hur och varför? Om metodval i företagsekonomi och andra sanhällsvetenskapliga ämnen* (1st ed.). Malmö: Studentlitteratur.

Jutterström, M., & Norberg, P. (2013). *CSR as a management idea, ethics in action.* Cheltenham: Edward Elgar Publishing Limited.

Ken , C. P. (2002). Social Responsability. *Executive Excellence*, 12-13.

Kilmister, L., & Garza, J. (2002). *White Line Fever.* London: Simon and Schuster.

Kok Ong, B. (2012). Grounded Theory Method (GMT) and the Abductive Research Strategy (ARS): a critical analysis of their differences. *International Journal of Social Research Methodology, 15*(5), 417-432.

Kovács, G., & Spens, K. M. (2005). Abductive reasoing in logistics research. *International Journal of Physical Distribution and Logistics Management, 35*(2), 132-144.

Laslett, B., & Rapoport, R. (1975). Collaborative Interviewing and Interactive Research. *Journal of Marrige and Family, 37*(4), 968-977.

Mair, J., Robinson, J., & Hockerts, K. (2006). *Social Entrepreneurship.* Palgrave.

Miles, M., & Huberman, M. (1994). *Quantitative Data.* Thousand Oaks: Sage Publications.

Moore, F. (2011). On a clear day you can see forever: taking a holistic approach to ethnographic case studies in international business. In R. Piekkari, & C. Welch (Eds.), *Rethinking the Case Study in International Business and Management Research* (pp. 323-341). Cheltenham: Edward Elgar Publishing Limited.

Nijs, L. (2014). *The Handbook of Global Agricultural Markets.* Basingstoke, Hampshire: Palgrave Macmillan.

Pawson, R. (1996). Theorizing the interview. *The British Journal of Sociology, 47*(2), 295-314.

Pratt, J. (2015). Hidden Hands in the Market: Ethnographies of Trade, Ethical Consumption, and Corporate Social Responsability. *Emerald Insight*, 53-70.

Ramirez, M. (2014, November 16). Association of farmers in La Huila, Colombia. (L. G. Moreno , J. T. Morón Villareal, & A. C. Villada Ramirez, Interviewers)

Robert S, K. a. (2000). Having trouble with your strategy? Map it. *Harvard Business Review*, Vol. 78, No.5 pp. 167-176.

Sanchez C, G., Sanches C, J., & Patiño H, O. (2012). Kanban allocation in a serial supply chain. *Tecnura, 16*(32), 59-67.

Schroeder, R. G. (2000). *Operations Management: Contemporary Concepts and Cases.* Boston: McGraw-Hill.

Sharan S, M. (2009). *Qualitative research: a guide to design and implementation.* San Francisco: Wiley.

Skjøtt-Larsen, T., B. Schary, P., H. Mikkola, J., & Kotzab, H. (2007). *Managing the Global Supply Chain* (3rd ed.). Copenhagen: Liber, Copenhagen Business School Press.

T, E., & S.J., S. (2007). *Just-inTime, Lean Production, and Complementary Paradigms, in Handbook of Industrial Engineering: Technology and Operations Management.* Hoboken: John Wiley & Sons.

Valoyes, M. (2014, November 22). Specialized attention to kids and youth unlikend to the armed conflict. (L. G. Moreno, & J. T. Villareal, Interviewers)

Yin, R. (2009). *Case Study Research.* London: Sage.

Yunus, M. (2010). *Building Social Business: The New Kind of Capitalism That Serves Humanity's Most Pressing Needs.* New York: Public Affairs.

Yunus, M., Moingeon, B., & Lehmann-Ortega, L. (2010). Building Social Business Models: Lessons from the Grameen Experience. *Long Range Planning*, 308-325.

# Appendix

## Interview Summaries

### Carlos Alberto Bejarano – Manager at Finca Mahindra

November 23rd, 2014

Guasca, Cundinamarca, Colombia

1st audio file. Language: English

This interview was made in thee audio files, from the same day and place.

The interviewee describes the reason for the name Mahindra, which relates to the mother earth. Carlos talks about the story of the land, which in the past was full of violence, and the process that he had to go to, in order to clean the negative energy in the land. After he moves to the talk about the care of the water and the usage of the rain water and not depend only on the distribution of water from the government.

At the beginning, it was hard to break through the soil, because of the negative energy trapped in the land. They have rituals from the local indigenes to find the balance with the soil. They use compost also. He describes the learning curve that he had to go through at the beginning, and the importance of information sharing. As part of their plans in the farm, they are planning to write a book called "technological package" which will contain the information on processes including the spiritual rituals for the land.

2nd audio file. Language: Spanish

Carlos explains the story on how they started with the farm 2years before, they started with vegetables and berries, that where in the catalogue of association. In addition, started by producing very little and after a year they look at the sales information and reduce the number vegetables and fruits to the ones that sales the most, and also offering products from another farms, so they act like intermediary for products like eggs. He started monitoring and making production plans, based in the results that receive from the land. The seeds and the plants are bought; they do not get in the germination of the plants, because it is too difficult. He describes that at that moment there are no 100% organic seeds. In addition, the problem for this is that because farmers do not keep record of their productions, it is impossible to trace the seeds back. Therefore, the traceability is nil, and that is important to help locating problems in the development of the plants. However, he hopes that in the near future the rules for organic farming in Colombia will demand the use of only organic seeds.

He monitors the activities in the farm by using control sheets, where he inputs accounting and monitoring information, to use the data and follow up on production between seasons, and the facts that make differences between the seasons and years. He points out that the organic process is more like an investigation, because the processes are changed and adapted all the time.

He talks about the teaching process to the population, and the little that most of the kids know nowadays about the origin of the products and the process for growing them. He talks that it's complicated to have 100% organic products, because as long as the farms that are closed by use GMO' seed, they will pollute they organic plants by pollination. According to him, they are products where they can clean the quality of the seeds through many seasons, but all this work can go away as soon as the products are pollinated by the neighbour's GMO plants, or simply by the use of water that has passed by several farms before coming through their farm.

He points out the missing commitment of most of the farmers into the organic process. Moreover, the little benefits that they get from the government and the hard that it is to get credits from the banks. He mention that the banks will start taking in consideration the control in the process to authorize the credits.

He talks about the preference of the farmers in the region to produce milk over fruits and vegetables, due to the longer working hours required by the land. He moves on to talk about the increment in cost from regular farming vs organic farming. According to on study him and other farm, and they found out that the increment in cost in work hours is of around 40%, but the reduction on supplies needed for the production is of 40% which evens out. However, it requires following strictly organic process. According to him, it takes about three years to turn an organic farm sustainable. Because all the processes are manual and it takes long time to grow organic, it goes up to almost double production by using chemicals, and because of this, the land is severely affected.

Ye association is 10 years old, but it works for private purposes, and the main reason is that there is no real participation from all the members. In addition, the real benefit that they offer at that moment is the certification of organic products. Then he points out that there are member of the association whose have a lot of knowledge, and there should not be necessary to bring external people, but to cooperate between the existing members. Moreover, he mentions the problems around changing the mind set and the weight of cultural factors in the behind old practices.

Now, there are 6 active members in the association. Then we moved to talk about the marketing of the products. They promote by participating in Expos and Fairs, which now is also not really promoting the organic farmers from Colombia even though the fairs are in Colombia. He refers that out of 300 expositors, 90 where Colombians, and out of those 90 only 2 where producers and sellers of raw products, the rest where selling transformed products, like jams and the.

He mentions that the idea over there is that, in the future the developing countries will have to produce for all the developed countries, because the sol in the developed countries is already to used.

Carlos moves to talk about the quality of the products, and how some farmers look only after the economic benefit and not into the love for the organic production and the result from it.All the producers are 100% independent from each other. The contact with the customers is by email, telephone. And the deliveries are once a week. He mentions the difference between the prices of the organic products vs the non-organic, and the organic is much more expensive. The use of the over production in the farm, as fertilizers and food for the animals, is looked as a waste from he's point of view due to all the process already invested in the growth of that product.

The recycle of all kinds of weed helps with the reduction of cost, using them like fertilizers.

The challenges for the organic producers are the price for the start, but the problem is that they do not have a promotion bridge to the population. And there is documented problems with organic certifications that some has used and paid for and that turned out not to be organic. He believed that the most important certification is coming from the customers, and the feedback that they give them, together with the close relation that they have with them, which is more personal than what the customers will have in a supermarket. In order to reduce their cost, he is making an investigation together with a far in El Valle del Cauca, which produces mainly sugar cane and animal husbandry. And they found out that by mixing their activities they can reduce their cost. And also the importance of having processes that do not give results right away, but in the long run, like using compost to enrich the soil. The use of alternative ancient techniques like following the lunar cycles, and take advantage of alternative studies that have been developed already, where one can have calendar to plan all your

activities. The usage of the wind for the pollination for example. The importance of the knowledge of techniques like Alelopatia, which are techniques that farmers to avoid pests by planting vegetables which have pests that attack each other in order. The supplies that they use for the control of pests are not to kill the pest but to decrease their impact and population. According to him the Organic production is preventive not corrective, meaning that planning is key for the process. To have poli-cultivation, is very important for the organic farming.

As part of the study, they found the importance of the use of multiple plants.

He talks about the importance of having multiple crops in the same place in order to help with the pest control and the growth of the crops, since they can protect each other. They also use geometric designs for the sowing of the soil. This techniques help to the growth of the crops. The different types of trees have different purposes for the soil.

There are different institution that make studies about agriculture, but he believes that every farmer knows more about their land, than the generic information. He affirms that the best balance and mix would be to mix the ancient techniques with the modern technologies. He talks about alternative information, like the example of a calendar that was created by mixing the Mayan calendar with the activities in the farm, in order to tell farmers what to do every day to get the most out of the land.

The challenges for organic producers:

- Stop thinking only about profits
- That agriculture is not a business but a social development
- Remark the importance of quality food
- Experiment with more vegetables
- Teach the general population about the benefits of not putting g chemicals in their bodies.
- To increase the production

He made also a study, where he found that out the 100% of the certified territories only 40% are being used. They wanted to add more farms, but he stop this project on ground of, that the 6 existent producers should be able to increase their efficiency and produce more, before they include more farms.

The challenges at the start are to find the patience, and the will to do the work. He remarks the importance for the existence of love to the business, more than resources.

His plan in the end is not to bring the products to people in Bogota, but to get people out of the city and visiting the farm. So far, his profits are around 30%. He points out that the collaboration between the farms is key and that the most expensive part of his operations are the distribution and logistics. Because they do not have the correct vehicles and everyone works independently.

3rd audio file. Language: Spanish

If the farms associate, the cooperative will work as a quality control, the farmers will be selling their products to the cooperative, and the cooperative will pay for the products according to the quality. This would help to push the quality up, and there will be a better sharing of information in all the areas of the farm, he uses the example of a cooperative for milk producers.

## Carolina Bejarano – Manager at Finca Mahindra

November 18th, 2014

Bogota, Colombia

1st audio file. Language: Spanish

The interview starts by her commenting that it is a family business, she use to work in the making of documentaries about organic farms in South America. The organic farm basic principal is not to use chemical at no point during the process, now there are no 100% organic products in Colombia. The region of Guasca has develop the organic process for a long time. There is no so much information about the organic process available in the country.

The region where they are establish, the products that more grow, are vegetables, herbs and berries. They have a long time of growth, and the first years are not producing much. The quantities vary, but all of them produce little compare to non-organic production. The process inside the greenhouse is longer. The organic process requires to respect the natural cycle of the plant, the plant needs to grow and die in the same place, so the rotation of the plant is important. The nutrients of the plant will help to the growth of the next seasons. They also help the plant by fertilizing with natural juices, that they produce themselves or buy sometimes. The fertilizers are put in the watering system, because most of it consist in prepared liquid juices with nutrients.

The control of the pests is by Aelopatia, which helps farmers to control pest by planting different crops together where the pest of one repels the other one, or because the smell of one repels the other pests, without the use of any chemicals. Sometimes they also use herbs to repel the pest.

They are waiting for a certification, but they are not sure about it, because the certification is like a membership, and at the end the farms work only to pay the certification.

The price of the products is calculated by cost of work hours, but they also use the price index in the region to not be completely out of the price range.

The sales started by fairs, and by farmers markets, from there, they collected a data base from the persons that where interested in the products, and they started to collect orders and delivering once a week. Sometimes restaurants too. The delivery is charged extra, and the distribution is only on the north east of the city until the centre, because of traffic conditions and the delivery vehicle conditions.

Although there is an association, there is not a real cooperation, especially in the logistics side, the distribution is a big challenge. There is more cooperation on the production side, but the processes after the harvesting represent a big challenge.

The government does not give any incentives to the organic producers; now, it is only universities and research centres, as well as international research founds that show interest in the organic movement.

The biggest challenge for them is the post-harvesting processes, because it is hard to keep the products fresh if you do not have the proper facilities, and most importantly that this facilities and equipment is congruent with the environmentally friendly philosophy of the farm. This philosophy is also extended to the packing, because even though there are options to keep the products fresh without the need of refrigeration, the materials for this packing are highly polluting. Another challenge is the amount production, if they were capable of producing higher amounts they could potentially reduce the final price and open to new customers and markets.

2nd file. Language: Spanish

The importance of the shapes and the mix of the crops to avoid pests and get the most production out is key.

3rd file. Language: Spanish

When they have over production, sometimes they transform the products, and sell them as marmalades, jams, salsas, etc. If the products are not good to transform, they will use them as fertilizers.

It is very important for them to balance with the surrounding ecosystems, so they do not push entirely the bird population out or the insects, so there is an area with plants, where birds and insects can eat from them. She makes an analogy, where she places the life inside the farm is like the human body, everything can be used, and all parts of the system are important.

## Maria Valoyes – Director of Project Children linked from the Armed Conflict

November 22nd, 2014

Bogota, Colombia

1st audio file. Language: Spanish

The children that they work with are children that have been involved in armed groups sround the country. These kids where recovered by the militia and transfer to this institution. The institution helps these kids and place them in tutor families sometimes, and sometimes stay in the institution.

The kids are in between 12 to 18 years old, but some of them have already children, which are part of the program too. So sometimes, they have babies. The program has been working for about 10 years, the program in CRAM with the tutor families was created about 3 years ago.

The characteristics of these children have are:

- Coming from vulnerable places in the country.
- Fragile social skills
- Hard story of conflict
- They have been involved in murders
- Linked in the war
- Family difficulties
- Some of them have been pushed out by their own families
- The authority for them comes from the armed group
- The power they feel comes from carrying a gun

The challenges for the children to reintegrate in society:

- Access to education
- Find education not attractive
- The change in the environment from farm to city
- Acceptance from society, because of their past
- Recognise themselves as part of society
- Recognise themselves as members of a family
- Adapt to the new environment
- Allow these kids to see the options around them

- Discrimination in their own society

The kids at the age of 18 they have to be ready to become citizenship in the sense of been part of the society.

The process start by trying to make them fell part of society by integrating them into schools and families. In addition, later on they try to help them with the labour market when possible. The program cooperates with institutions in order to help these kids.

The option of offering them a labour, will help them a lot, but it is hard to find institution that want to cooperate due to the history of the kids. The society does not understand that after the events that these kids had to go through, they poses different abilities and react in different ways than people that have interact in society all the time.

The project with the farms will be a great opportunity to help them in the recognition of their own abilities. The link to a labour activity will help them to acquire different abilities, like discipline. It will represent a good chance for them to feel independent.

They attend 93 kids at the time, but they rotate all the time, these kids are coming from all regions in the country where there are armed conflicts. There are many institutions in the country that work with the same problems. The Instituto Colombiano de Bienestar Familiar (ICBF) is the governmental institution that coordinates the activities of all these institutions, and promotes the exchange of information between them.

In addition, one of the goals in the program is to help the children to find what they would like to do in the future.

There is big percentage of kids that do not return to their original towns, and end up going back to the violence of some sort, guerrillas, organized crime, etc.

### José – Relocated Non-organic farmer (Banana and Coffee)

November 19th, 2014

Huila, Colombia

Language: Spanish

- Seeding and weeding processes.
- Rotation of the land.
- Origin of the seeds.
- Cost of fertilizers and pesticides.
- Number of personnel necessary.
- Commercialization and setting of price.
- Challenges for the production.
- Governmental support and financing.
- Dependence on certified seeds.
- Missing watering systems in the area.
- Outbound logistics.
- All harvested products are sold.
- Profit margin 45% in the banana production.
- Differences in the growth between organic vs non-organic.
- Pest control based on chemicals.

- Process to apply for financing and governmental support, and conditions.
- Cooperation between farmers and distribution.
- Importance of a collection centre/distribution centre.
- Production quantities.
- Differences of producing different kinds of crops.

### William– Non-organic farmer (Passion fruit and Cacao)

November 19th, 2014

Huila, Colombia

Language: Spanish

- Seeding and weeding processes.
- Rotation of the land.
- Origin of the seeds.
- Number of people necessary for the caring.
- Rotation of the land.
- Cost of supplies.
- Certification of good practices.
- Commercialization of the products.
- Outbound logistics.
- Set-up of the final price.
- Climate and high condition are optimal for producing all year around.
- Benefits of membership in the associations and conditions of the cooperation.
- Cost of production.
- Daily processes.
- Challenges for the organic production.
- Use of pesticides and fertilizers.
- Organic products are not seen as profitable, and consider the organic production almost impossible.
- Conditions for credits from associations and banks.
- Use of loan sharks is very common among the farmers.
- Negotiation of prices with the intermediaries.
- Selling process.
- Trade-offs of direct sale vs sale to intermediaries.

### Milton Ramirez – PR at Fruticultores del Occidente del Huila (Association of producers of passion fruit and berries)

November 20th, 2014

Huila, Colombia

Language: Spanish

- History of the association.
- Main purpose is the commercialization of the products.

- The biggest challenge is to keep the cooperation between the farmers.
- Organization of the association.
- Issues surrounding the intermediaries.
- There is department in charge of the logistics and search of new customers.
- They have around 120 members.
- The association depends on the monthly payments of the members. (not sustainable)
- They create and present projects to the government to get financing.
- The bureaucracy in the government makes it hard for them to get financing (up to 3 years).
- The members are obligated to sell part of their crops to the association.
- Quality control.
- Distribution of the products national wide.
- Microcredits from the association to the farmers.
- The reason for the cooperation between the farmers is commercialization.
- Challenges for the farmers. (the cost of supplies)
- There is no information on the supplier of pesticides.
- Organizations outside the associations and farmers administrate the resources that the government gives to the development of the agriculture in Colombia. (they take 25% of the resources)
- Access to financing with banks and government.

## Management at Marketplace Codabastos

Javer Solar

Bogota, Colombia

November 14th, 2014

Language: Spanish

- Administration of the marketplace.
- Inbound and outbound logistics of the marketplace.
- Organization inside the marketplace.
- Management of the common areas for the merchants.
- Promotion of the marketplace.
- History of the establishment of the market place.
- Market segments of the market place
- Recycling of waste and donation to social institutions.
- Supplier's management.
- Product Quality
- Challenges in the home delivery.
- Use of bank credits and loan sharks from the merchants.
- Challenges on the day a day life for the merchants.
- Cooperation between the merchants.

## Merchant – Codabastos

Patricia Silva

Bogota, Colombia

November 14th, 2014

Language: Spanish

- Kind of products that they merchandise.
- Products from all the country.
- Daily activities.
- Inbound and outbound logistics.
- Waste management.
- Quality of the products.
- Origin of supplies.
- Communication with the suppliers.
- Organic and hydroponic products.
- Consumers do not buy products with bugs, which is the main challenge to sell organic products.
- Relations between the merchants.
- Financing for operations.
- Administration of the establishment.
- Home delivery using email, whatsapp and telephone.
- Consolidation of the home deliveries between the merchants in the marketplace.
- Personal attention.
- Availability of the products and origin.
- Contact with the administration of the market place.
- Price negotiation with the suppliers and benchmarking with the central market to establish price to the customer.

### Merchant – Codabastos

Luis Eduardo Cardozo

Bogota, Colombia

November 14th, 2014

Language: Spanish

- Waste management.
- Availability of the products and origin.
- Contact with the administration of the market place.
- Price negotiation with the suppliers and benchmarking with the central market to establish price to the customer.
- Waste management.
- Sales
- Organic commercialization is hard to handle, last less and the certifications are not available most of the time.
- No financing from the government
- Home delivery.
- Marketing.

- Relations between the merchants.
- Challenges for the merchants, promote the processed frozen fruits.
- 10-15% of profit margin.
- Quality control.
- Direct competition.

### Merchant – Codabastos

Enrique Vargas

Bogota, Colombia

November 14th, 2014

Language: Spanish

- Kind of products that they merchandise.
- Products from all the country.
- Daily activities.
- Market segments.
- Supplier's management.
- Price negotiation with the suppliers and benchmarking with the central market to establish price to the customer.
- Quality control.
- Sales around 1500-2000kg a day.
- Organic commercialization is hard to handle, last less and the certifications are not available most of the time.
- Missing understanding of the customers about the organic products.
- Financing for operations.
- Administration of the establishment.
- Loan sharks. Up to 20% if interest. Very common not only in the market places but in all businesses in Colombia.
- Challenges for the merchants, promote the processed frozen fruits.
- Sharing of information between merchants and producers is non-existent.
- Profit margin varies from product to products.
- Contact with the administration of the market place.
- Relations between the merchants.
- Publicity for the marketplace.

### Ivan - Intermediary / Transporter

Bogota, Colombia

November 24th, 2014

Language: Spanish

- Buy in all the areas around Bogota as far as 14hours away.
- Transportation of the products

- 20 tons a week.
- Distribution network.
- No product left behind.
- 15% of profit margin.
- Challenges for the distribution.
- Negotiation of price when contacting the farms.
- Majority of intermediaries work independent.
- Credits and loan sharks.
- Different distribution channels (supermarkets, small shops and marketplace).
- Use of distribution centre.
- Cost of operation.
- Daily activities.