Faculty of Economics
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Logistics-Oriented Free Trade Zones as National Competitive Advantage. Analysis of Dominican Republic case as platform for NGOs during Haiti earthquake

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To whom there was yesterday
And will be forever
To whom will be tomorrow
And there was always

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摘要

物流是未來管理的關鍵。隨著全球化和國際化的企業，物流似乎只有這樣，才能克服一切與他們的風險。市場正變得動態和物流是一個國家的國家發展的一個非常重要的課題。

全球化和國際化的新概念，但面對他們所使用的所有工具，沒有新的東西。免費港口或自由貿易區是過去的概念，但仍然採用了時下。

討論分為兩個主要部分。在第一個是所有經濟特區的用法背後的理論，發展整個國家經濟。這部分分為三章。第一個是所有的形式在歷史的開發區，保稅區為重點，說明。第二章是關於未來發展區的內陸港口。第三個是一個多米尼加共和國和其發展模式，根據經濟區的總體概述。

第二部分代表的做法，通過多米尼加的海地地震期間自由貿易區的作用的描述。這部分被劃分在其他三個篇章。拳頭一個是食品強化創新援助海地和自由貿易區的活動和物流的聯繫技術的一般概述。第二章介紹了海地地震，創造了多米尼加共和國在聯合國的物流集群。雖然最後一章是一個商業案例，描述如何，樂施會的工作為強化食品的供應，向海地孤兒院，多米尼加共和國作為協調和物流平台。

這項工作是一個 8 個月的經驗領域之間的聖多明各和港口太子港王子的後果，為了描述的非政府組織和多米尼加共和國的國家競爭優勢，為這種特殊情況下的物流的概念。

Abstract

Logistics is the key of the management of the future. With globalization and internationalization of firms, logistics appears the only way to overcome all the risks related to them. Markets are becoming dynamic and logistics is a very important topic for the national development of a country.

Globalization and internationalization are new concepts, but all the tools used to face them, are not something of new. Free Harbors or Free Trade Zones are concepts of the past but still used nowadays.

The discussion is divided in two main parts. In the first one there is all the theory behind the usage of economic zones to develop an entire country economy. This part is divided into three chapters. The first one is a description of all the forms of development zones used in the history, focusing on Free Trade Zones. The second chapter is about Port Hinterlands as development zones of the future. The third one is a general overview of the Dominican Republic and its development model based on economic zones.

The second part represents the practice through the description of the role of Dominican Free Trade Zones during the Haiti earthquake. This part is divided in other three chapters. The fist one is a general overview of food fortification technology as innovative aid to Haiti and its linkage with Free Trade Zones activities and logistics. The second chapter describes the creation of a logistics cluster in the Dominican Republic by United Nations, for the Haiti earthquake. While the last chapter is a business case, describing how Oxfam worked for the supply of fortified food to a Haitian orphanage, using the Dominican Republic as platform for coordination and logistics.

The work is consequence of a eight months experience on the field between Santo Domingo and Port-au-Prince, in order to describe the concept of Logistics for NGOs and the National Competitive Advantages of the Dominican Republic for this particular case.

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Glossary of Abbreviations and Acronyms

ASCM	Agreement of Subsidies or Countervailing Measures
BRICS	Brazil, Russia, India, China and South Africa
CAFTA	Central American Free Trade Agreement
CARICOM	Caribbean Community
CARIFORUM	Caribbean Forum
CEI	Centro de Exportación e Inversion
CEPI	Centro de Exportación y Promoción de las Inversiones
CEPZ	Cavite Export Processing Zone
CFS	Container Freight Stuffing
CNC	Consejo Nacional de Competitividad
CNNC	Comisión Nacional de Negocios Comerciales
CNZFE	Consejo Nacional de Zona Francas de Exportación
DR	Dominican Republic
EPA	European Partnership Agreement
EPZ	Export Processing Zone
ER	Early Recovery
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FEZ	Free Economic Zone
FTZ	Free Trade Zone
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GLCSC	Global Logistics Cluster Support Cell
GMO	Genetically Modified Organism
HQ	Headquarter
IBESR	Institut du Bien Etre Social et de Recherches
ICT	Information and Computer Technology
IFAD	International Fund for Agricultural Development

ILO	International Labor Organization
ILP	Integrated Logistics Park
INFOTEP	Instituto Nacional de Formación Técnico Profesional
IT	Information Technology
KW	Kilowatt
LP	Logistics Park
MINUSTAH	Missions des Nationes Unies pour Stabilisation en Haïti
MNE	Multinational Enterprise
MOC	Ministry of Commerce
MOT	Ministry of Tourism
NAFTA	North American Free Trade Agreement
NGO	No Governmental Organization
PAM	Programme Alimentaire Mondial
PAP	Port-au-Prince
PH	Port Hinterland
PRC	People's Republic of China
R&D	Research and Development
RD	República Dominicana
SCM	Supply Chain Management
SD	Santo Domingo
SEZ	Special Economic Zone
TRIMS	Trade Related to Investment Measures and Supporting
TRIPS	Trade Related to Intellectual Property and Supporting
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNICEF	United Nations Children's Fund
VAT	Value Added Tax
WB	World Bank
WFP	World Food Program
WTO	World Trade Organization
ZF	Zona Franca
ZFE	Zona Franca Especial

Chapter 1
Introduction

Because of Globalization trends, the dynamics of international business in the last decades are changing a lot. In particular, if in the past the internationalization of a business was something typical of a MNE, today the situation is completely changed. Also small and medium enterprises are facing the concept of internationalization, even if it is just for a step in the supply chain of the product.

The supply chain is the actual driver of internationalization. Deciding to produce some components of a product in an other country (defined host country) sometimes is better than produce it in a home country (as it is generally defined the headquarter).

On the other hand, sometimes appears better selling a product in a market more mature fore that particular product, and that can prefer that typology of good more than an other one.

Internationalization related to production and internationalization related to the customer are two faces of the same medal.

In all this context the role of logistics appears very important. Logistics is important to reduce the productive phase, cutting useless periods of time and reducing costs, increasing the productivity.

In order to achieve this it is important to use some tools, as for example the implementation of developing zones. Free Trade Zone is surely the greatest concept of development zone and it was used also during the Roman Empire to improve the commercialization with economical enemies such as India or Chinese Empire.

For a company, it is important to find a good location for decentralize the supply chain, and internationalize the business. One of the first driver to choose a country is surely the presence of these development zones.

An other important driver for choosing an area is surely the geographical location in relation with the business and the target market.

There is no a best practice for choosing a place to decentralize the business. But using a platform (how it is called the process of production and the export of the goods from a host country to the other markets) could be surely positive especially in some particular situations.

Why Logistics-Oriented Free Trade Zones?

The difference between Manufacturing-Oriented Free Trade Zones, and Logistics-Oriented Free Trade Zones, is certainly one of the most important point of our discussion, generally because if the first orientation regards just the production of a good, the second one is more related to all the steps within the supply chain.

Choosing Logistics-Oriented Free Trade Zones, it is possible to:

- Analyzing with a general eye all the steps in the business – There is not just the part of the production that has importance but also all the parts related to the relations with the customer or the sustainability of a business
- Observing different kinds of businesses – While Manufacturing-Oriented Free Trade Zones are just related to some mechanical businesses, such as the textile or the food industries, Logistics-Oriented Free Trade Zones give the possibility to analyze several innovative businesses, some of them related to the future of the economy directly (or also indirectly, through the linkage to some macroeconomic topics of general interest)
- Understanding the new dynamics of the future – According to a lot of experts, Manufacturing-Oriented Free Trade Zones are destined to die, giving space to logistics activities. Also in natural evolution processes for Free Trade Zone, the evidence shows that a Manufacturing-Oriented Free Trade Zones, during the years, tends to become a Logistics-Oriented one.

Logistics Industry is considered one of the most profitable businesses for the future, because every company in the next years will have to face with logistics problems and challenges. There are some countries naturally powerful in logistics activities, and others that are investing a lot to have a leadership position in the future.

Why the Dominican Republic?

In this discussion, we decided to choose a particular country to describe the idea of platform as a place for producing and exporting of goods to all the other markets. This country has a natural vocation for logistics activities but it is also investing a lot on logistics industry. The Dominican Republic was our choice for different reasons:

- An optimal geographical location for the new international economical dynamics – It represent a good hub for businesses among Europe, United States and South America (with emerging Brazil).
- An optimal economical environment – The presence of FTZs is surely an other important driver. Until ten years ago, most of the FTZs in the Dominican Republic were Manufacturing-Oriented. Today, most of them are Logistics-Oriented FTZs because the economic advantages of a manufacturing oriented activities are finished. The Dominican Republic is a developing country with great opportunities for its future economy.
- A particular event as driver of development for the logistics industry in the Dominican Republic – The Haiti earthquake of January 2010 in Port-au-Prince, showed Dominican power in terms of logistics activities. Even if it was a tragedy for Haiti, the Dominican Republic could have its first opportunity to become a platform in America for distribute aid in this case. Its system of transportation was improved a lot, as also a lot of companies started to focus on logistics activities, with strong advantages in

terms of network with European and American NGOs or affiliated company.

Studying the dynamics of the distribution of aid to Haiti, using the Dominican Republic as platform, is surely an interesting way to analyze and describe the strengths of Dominican logistics industry, but also its opportunities and spaces for improvements.

Why NGOs' activities?

As described above, the earthquake in Haiti was a catastrophic event that required the intervention of several companies from different countries. The natural position of the Dominican Republic in relation to Haiti, gave to the country a great opportunity of development of its logistics industry. In our discussion, NGO activities were chosen for different reasons:

- Timing in NGOs activities – For the first 3 (and then 6 months) there was an early recovery operation. For distributing aid in this phase the most important thing was the timing. For this reason, Dominican infrastructures were exploited at the maximum of their potential to provide aid to Haiti. For this reason, analyzing the activities of NGOs it is possible to understand all the potential of Dominican logistics industry.
- Presence of different kinds of activities – No-profit activities regard in general different typologies of industries. Food industry, textile industry, construction industry are the most common, but all of them are related to a same framework, represented by logistics industry. Also the final target is a common thing among all these industries, even if the operational target differs for the single institutions to be helped.
- Example of platform and experience – The platform role of the Dominican Republic for the emergency during Haiti earthquake could have a strong 'experience effect' for the Dominican Republic and its logistics industry. All the investments made by

the Government in the last year for new highways and infrastructure is certainly a prove of this.

During the Haiti emergence in 2010, it was the first time when the Dominican Republic was actually used as platform for the production and distribution of a so huge number of goods.

In the area, there are some other countries with more experience, such as Panama or Costa Rica. For this reason, the emergence in Haiti represents a good case to analyze in order to understand how the Dominican Republic could exploit its National Competitive Advantages.

World Food Program had a plan for using the Dominican Republic as platform for all the NGOs affiliated to FAO's plan.

In this discussion will be analyze as real case, the implementation of the World Food Program through the exploitation of Dominican infrastructure and through the utilization of FTZs and PHs for producing and import. As real case we have chosen Oxfam, as example of NGO operating the World Food Program.

Among all the activities we have chosen a real case about the distribution of food. As example the author will describe the supply process of food to a Haitian orphanage with a lot of problem of sustainability and the value chain of the aid, using as distributor NGO Oxfam.

This example appears very important to understand the actual advantages in terms of reduction of costs, using FTZs and the Dominican Republic as platform.

So, there are some question to give an answer:

- Are the Logistics-Oriented FTZs the future of the FTZs?
- Which is Dominican future in logistics industry?
- Was actually positive using the Dominican Republic as platform during Haiti earthquake?

The answers to these questions will be given in the conclusion in the Chapter 8, after all the discussion.

Part I

The Theory. Free Trade Zones for economic development: the role of Logistics Industry for economical growth in the Dominican Republic

Chapter 2

The concept of Free Trade Zone: historical background, goals and main features

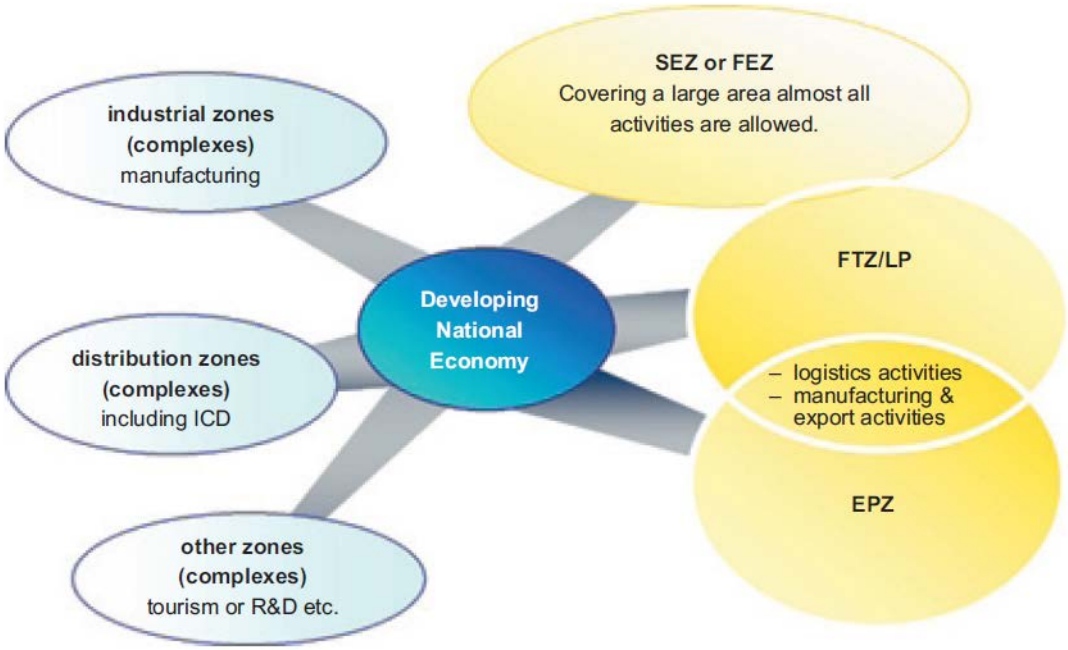
Free Trade Zones are the evolution of an important concept used for a lot of time in the history in order to develop the economy of a country. All over the time the terminology changed a lot. First there were just Free Harbors to represent this instrument. Then, real zones were created, called for a lot of time Free Trade Zones.

Generally to develop a national economy it is possible to recognize three different ideas of zones related to the target complexity, some words are also used for a geographical reason:

- Simple Forms of Zones – They are the Free Trade Zones focused just in a kind of business. They are called also complexes. These zones can be in three different ways:
  - Industrial Zones – Mainly focused on manufacturing
  - Distribution Zones – Focused on logistics activities
  - Other Zones – Focused in other activities such as Research & Development or Tourism industry
- Complex Forms of Zones – Mostly represented by Special Economic Zones, where there are different cluster with several industries and a strong state intervention.
- Mixed Forms of Zones – The real Free Trade Zones that are a *trait d'union* between Logistic Parks and Export Processing Zone, depending on which countries they are or where the government focalizes the investments

A way to see graphically what this classification represents is shown below in the Picture 2.1:

Picture 2.1 Several special zones as alternative policies for economic development



There is a strong evidence that if a country recurs to Free Trade Zones to develop its national economy or a local area economy there are good results, but there is a also a big literature describing its disadvantages.

This theory as background is basic to understand which the strengths and the weakness of this policy are. All along the history, FTZs helped a lot the development of the economy of a country, and nowadays, with all the different forms, continue to achieve this target. In particular, in the Dominican Republic case, FTZs are the most important driver of development.

2.1 Developing National Economy and Political Power: a historical background of Developing Zone concept

The development of a country means making a country richer but also with a better lifestyle. It is not just a development from an economical point of view. It has to be also social in order to be sustained by all the society.

This is the reason why during the history there were different efforts to achieve this objective. The government tried different ways all over the time. In the Ancient World, commerce was very important but the idea of space was definitely smaller. Also the idea of peace was different and this is the reason why the Roman Empire system broke down.

During the Middle Age, mankind lived the period of fear. Commerce in that time was dangerous and this was the reason why the idea of development just touched few lucky cities and areas.

Finally, in the Modern Age, thanks to Industrial Revolutions and the general evolution in technology and culture, it seems that mankind has fount a way to sustain the progress. The evolution made the world more complex and the result was the implementation of different ways to develop the economy of a nation. All these ways have the same root (they are always Developing Zones in this case), but features and objectives are different, for the past but also for a different geographical area.

2.1.1 Free Harbors in Ancient World, between Political and Economic hegemony during Roman Empire.

The first great form to develop national economy was the institution of free harbors. In particular the origins of this concept are not simply moved by an economical reason, in order to develop a national economy. In the past, political priorities moved country's strategic positions. Fighting against the economic interests of their competitors was often achieved through the development of free ports.

One of the first versions of a free port was the Roman Empire's ancient port of Delos. It was more than two thousands years ago, when the port was used as an economic weapon by the Romans against the nearby competitor port of Rhodes. The target of that competition was to move trades from an enemy city (in that case the Greek city of Rhodes) to Delos, through a reduction of taxes levied by Romans.[1]

[1] S.H. Mangi, Role of Free Economic Zones in the economy, Business Recorder, 2011

But some years ago, Romans started to understand the actual coordination power of free harbors. Roman power in its form of Empire was already created and the commerce with other far countries was becoming basic. In this historical context Romans had great opportunities to make business with Indians. For this reasons Romans decided to move the main trade activities with Indians, from the port of Alexandria, that continued to have just a national role, through a trade activity inside the Empire, to the port of Arsinoe (nowadays Suez, on Red Sea), that was created in the II century a.C. The experience of Arsinoe was so positive that in just two decades other two free harbors were created in Berenice and Myos Hormos (more in the south). The goods from the East African and Asian trade were landed at one of the three main Roman ports and Arsinoe became the storage of the Empire. The Romans started to build a canal from the Nile to connect the port of Arsinoe (the nearest to Nile, and in consequence to Mediterranean Sea).

This system among these three ports was the first form of logistic oriented FTZ. On the other side, India started to do the same creating three ports in Barigaza, Muziris and Arikamedu. In those years India and Roman Empires were leading world economy.

The development that had these two areas in Egypt and in India was so strong that these places became also cultural hubs. The respect of the religions, the birth of academies with different subjects, from commerce to philosophy. Considering the different situation Egypt is living now, it is certainly a demonstration of the great power of free harbors. The Roman-Persian war destroyed the dream.

2.1.2. Mercantilism in Medieval Period, Maritime Republics as defense to dangers of the commerce

During the Middle Ages, the situation completely changed. The period of pestilences and famines, with a strong power of religion, was also the period of the fear to trade. In these centuries the flourishing years of Ancient World commerce were completely forgotten and sometimes considered wrong

and sinful. Middle Ages was the period of Crusades, symbol of the hate between Christians and Muslims.

In all this historical context trading in the Mediterranean Sea was not easy, in particular for Saracen attacks made my pirates and corsairs. In X centuries some town of Italian peninsula started to create special governments in defense of their business and safety interests. These special little states were called Maritime Republics and they were Amalfi, Pisa, Venice and Genoa. One of these four cities continued in the centuries to cultivate its natural soul for commerce. It is the case of Venice.

Venice cannot be considered officially a free port but in its history, first like a Maritime Republic and than like an independent state called *Repubblica Serenissima*, had for a lot of centuries great fiscal advantages that favor its expansions, but actually they was also part of the reason of its decline.

Its strategic position at the head of the Adriatic made Venetian naval and commercial power almost invulnerable. With the elimination of pirates along the Dalmatian coast, the city became a flourishing trade center between Western Europe and the rest of the world (with great relations especially with Far East and Islamic World). In Venice one of the most important universities specialized in trade and Asian studies was created.

But its decline started when Venice became to important to be conquered by nearest countries. Turkish attacks, then Austrian domination with the terrible pestilence in XVII century (also described in the book Death in Venice by Thomas Mann), destroyed definitely the power of Venice. This is a typical example of how a free zone system is not for ever and it has to be sustained by all a set of policies.

2.1.3. Modern Age from Colonialism to first wave of Globalization, the birth of actual modern Free Harbors

In order to find the first real form of modern Free Harbor how it is considered today it needs to wait for first wave of Globalization, officially

considered in history as the period after the Colonialism, when actually the world was becoming bigger then the past.

In this context countries like England, France, Spain and Portugal started to implement a different idea of commerce. The other countries (officially not yet born – considering all the different states inside them) such as Germany and Italy, were out of Colonialism power, and they had to develop their economy in a different way. France could exploit a great part of Africa. Spain had the power in a great part of America. England had colonies all around the world (in particular India was a great affair). Portugal had his power in part of South America. These four countries could grow with a perpetuity caused by the immense richness in natural resources and raw materials of the colonies. The other state that did not participate to the Colonialism, had to purchase them. This is one of the reasons why the first Free Harbors in a modern consideration were Hamburg and Trieste.

The change in the barycentre of the world shifted the centre of the commerce from Mediterranean Sea to Atlantic Ocean. Hamburg became an important free port for this reason.

The modern idea of Free Harbor is very simple. It is a particular territory of a country where there are fiscal benefits, like not paying duties on imports of goods or the absence of taxes. But the new idea of Free Harbor, in its acceptation post-Mercantilism must respect two different points:

1. Free economy – In a Free Harbor it needs to take all the trade barriers away. But this process can happen automatically also in places that are not officially considered Free Harbors (an example can be the Maritime Republic).
2. Free politics – Free Harbor is not just the freedom to import and export free trade barriers goods, but also a no-military management of the business (in a Maritime Republic everything was managed by the Navy), in order to attract people from countries where they are persecuted or where the trade is not free. In a Free Harbor there is an automatic system of justice,

represented by common people who make the interests of merchants.

This is the reason why is very common to find Free Harbors in border areas (sometimes poorer) in order to develop the local economy and in consequence the national one.

This is the case of the free port of Trieste. It was founded in 1719 by the Austro Hungarian emperor Charles VI. Rapidly it became the Port of the Austro Hungarian Empire taking the place of Venice that faced its first phase of decline.

It is interesting discover how all the countries that could not rely upon the Colonialism started to implement free ports. In Italian Peninsula all the States with an access to the sea decided to implement a Free Harbor. For instance, Genoa became the free port of the Kingdom of Sardinia, Livorno became the free port of the Grand Duchy of Tuscany, Civitavecchia became the free port of the Papal State, Messina became the free port of the the Kingdom of Two Sicilies.

The idea of Free Harbor became the most successful form of *supra firm* coordination in order to develop the national economy. But through the end of Colonialism, something radically changed.

2.1.4 From Free Harbors to Free Trade Zones, adaptation to different contexts end evolution of terminology

Over the course of time the concept of Free Harbor has been dramatically transformed. In the last fifty years, Free Harbors changed a lot generally for two different reasons:

1. The beginning of the second wave of Globalization (after Colonialism period) and the relative exponential growth in world trade. An increasing of trades and commerce activities caused by the independence of different states that make business among them.

2. Great improvements in transport efficiency, in particular in the port sector. But also the invention of planes and relatively of the airports. Through airplanes, would became smaller. It was possible to cover great distances in little time. Something of this could not be imagined fifty years before.

Free Harbor were transformed in Free Trade Zones and these ones were adapted to the realities and local conditions of each region. The concept of this instrument is continuing to change and evolve over time but the target is the same. It is a commercial policy to develop the economy.

The last fifty years, there were Free Trade Zones in both developed and developing countries in order to promote export oriented FDI. But in 1970 only a few number of countries could have the money to invest and establish Free Trade Zones. At the end of the century there were about 850 zones operating both in developed and developing countries and the number is continuing to increase.

Moreover, there is a strong relation between the establishment of Free Zones and the export performance of the country, as shown the this Table 3.1:

Table 2.1 The evolution of Free Trade Zones over time (Kusago & Tzannots, 1998)

	1975	1986	1995	1997
Number of Countries with Free Zones	25	47	73	93
Number of Free Zones	79	176	500	N/A
Employment (millions)	0.8	1.9	N/A	4.5

This exponential growth in the usage of Free Trade Zones by governments is shown also by the evolution in terminology over the time. If until the 1970 the only words used to indicate a development area were Free Harbor (to indicate just a city), and Free Trade Zones (after the 19th century to indicate a whole area of a country), after the 70s it is possible to find different words that indicate an adaptation of the concept in terms of features to the different realities. This is shown in the Table 3.2:

Table 2.2 Evolution in terminology over time (based on Kusago & Tzannots, 1998)

Term	**Location and Year**
Free Harbour	All over the world (Until 1970)
Free Trade Zones	All over the world (Until 1970)
Industrial Free Zones	Ireland (1970)
Maquiladores	Mexico (1970)
Export Free Zones	Ireland (1975)
Duty Free Export Processing Zones	Republic of Korea (1975)
Export Processing Zones	Philippines (1977)
Special Economic Zones	China (1979)
Investment Promotion Zones	Sri Lanka (1981)
Free Zones	United Arab Emirates (1983)
Foreign Trade Zones	India (1983)
Free Export Zones	Republic of Korea (1985)

Nowadays the only terminology that may be used to describe a zone with fiscal advantage is Free Trade Zone. All the other forms in the list can be considered like different forms of Free Trade Zones, due to en evolution of the concept. All of them are Developing Zones, simply zones that are made by the governments in order to develop a local area or the entire country.

2.2 Simple forms to develop National Economy. Role of Complexes as initial way to implement a Free Trade Zone

In literature there are a lot of definitions for Free Trade Zones. These definitions generally explained the basic features of a Free Trade Zone (that can be simply written as FTZs:

- Fenced-in industrial estates specializing in manufacturing for export and offering their resident firms free-trade conditions and a liberal regulatory environment (definition made by World Bank in 1992).
- Industrial zones with special incentives set up to attract foreign investors, in which imported materials undergo some degree of processing before being re-exported (definition made by ILO in 1998).
- Clearly delimited and enclosed areas of a national customs territory, often at an advantageous geographical location with an infrastructure suited to the conduct of trade and industrial operations and subject to the principle of customs and fiscal segregation (definition made by Madani in 1999).
- A clearly delineated industrial estate which constitutes a free trade enclave in the customs and trade regime of a country, and where foreign manufacturing firms, mainly producing for export, benefit from a certain number of fiscal and financial incentives (definition made by Kusago & Tzannotos in 1998).

So, considering these definitions it is possible to extrapolate from them the real meaning of FTZ and the main and basic characteristics of these zones. These features are:

- Special and Higher Business Infrastructure: In a FTZs it is simple to find above quality infrastructure and services, compared to the standards of the host country. This happens because the investment by home countries are generally higher caused by the bigger opportunities a rich country has to invest.
- More Flexible Business Regulations: Thanks to FTZs everything is closer. Custom services are more flexible because there are less steps. Labour and other businesses where regulation is often very important are more flexible because there are less laws to respect. It is a system where the bad side of bureaucracy does

not exist. In these special areas there is generally a lighter regulation, that makes the system more dynamic.

- An Offshore Location: A FTZ is chosen in its position in order to find a place where there are advantages in terms of taxes or law cost of labour for manufacturing basis for instance. For these reasons the location are often offshore or tax havens.
- Focus on Export: Enterprises that are located in a FTZ are generally focused on foreign markets. They produce in the host country but their marketing efforts are abroad. So the export policies are very important to be considered.
- Attractive Incentive Packages: Very important for the FTZ-concept is the idea of incentive packages given to the foreign investor. It can be as an unlimited duty drawback or an exemption from import duties on raw materials or something like this. It can be also an exemption from the payment of sales tax on exported products or on all goods and services domestically purchased and used in their production. An other incentive package can be offered through tax holidays, rebates or reduced tax rates on incomes and profit of the company. This advantage in terms of tax can be implemented linking the tax rate to the performance and its relation to the exports.

The first way to implement a FTZ, and also the simplest, is the creation of complexes. A complex is easily defined as an area situated generally outside the city where there is a group of factories or businesses. The best practise to create a FTZ is starting from it.

It is possible to identify three different ideas of complexes. The choice among them depends on which is the objective of the FTZ and especially which the future scenarios are. Complexes can be divided in three typologies:

1. Industrial Zones (or Complexes)
2. Distribution Zones (or Complexes)
3. Other Zones (or Complexes) – Generally focused in some particular industries.

In all the theory of FTZs concept there is and will be always a strong diatribe between manufacturing and logistics targets, and this classification is clear analyzing the differences between Industrial and Distribution Zones.

An Industrial Zone is a platform dedicated to manufacturing firms. It is often situated close to an industrial cluster. In this zone domestic manufacturers and a few foreign investors meet and establish their business. It is very common that the home country investor establishes a more that one factories in this area in order to take advantage of relatively good supporting facilities for manufacturing.

When the FDI is going to become bigger, they naturally change in order to become a real FTZ like a foreign investment zone for manufacturing. This particular form of complex has the main objective the manufacturing and is not considered outside of customs territory. For this reason cannot be officially defined as a zone of free trade, like FTZ is thought.

In order to make an example of Industrial Zone and its relative evolution to FTZ it is interesting to describe the Irelands Shannon Free Zone case. As explained in the Table 2.2 Ireland was a pioneer in creating Industrial Zones in order to develop its economy.

Shannon is a small town situated in the West Coast of Ireland. United States and Canada started to invest creating an Industrial complex exploiting the low labour cost of Ireland and a lot of advantages in terms of know how. In Ireland the spoken language is English and they had a good experience in farming and production of meat. An other interesting industry was the textile for the huge presence of sheep and the manufacturing of wool.

In short, Northern American started to invest in Ireland in 1959 creating a simple Industrial Zone close the Shannon river, with less than 10 overseas companies. In Shannon at that time there were just farms and countryside. Since its establishment, over 110 overseas companies have chosen to invest in this area exploiting the above described advantages. In 1968 was legally moved to FTZ status with the definition of Industrial Free Zone.

Nowadays its official name is Irelands Shannon Free Zone, Business and Technology Park and it is a 243 hectare International Business Park

adjacent to Shannon International Airport. The activities changed a lot all over the time. Now Ireland is not yet focused mostly on manufacturing. Ireland is nowadays home to 8 of the top 10 global technology companies and 15 of the top 25 medical devices firms.

Manufacturing was not abandoned even if the strong competition by Asian countries has automatically changed the core business of the Zone.

The Distribution Zone idea is for some reasons a similar concept to Industrial ones. Also in this case the creation of a Zone represents the first step to a bigger project.

Distribution zones are usually dedicated to consolidation and distribution and located in strategic areas, in order to cover several domestic markets and to provide a simple transportation to seaports, airports and rail stations. Obviously it must also have advantages in terms of costs.

Usually a Distribution Zone has a different origin from the Industrial Zone. Distribution Zone is generally implemented by public investment and also the companies that want to create and exploit a particular area for its logistics advantages, must have the Government advice.

An other important feature of a Distribution Zone is the presence of Inland Container Deposits, that in the case of a free harbour for instance, are duty free areas. In this case, they are generally outside of customs territory.

An example of Distribution Complex could be find in Southern Italy, in the area around the port of Gioia Tauro. The port of Gioia Tauro was opened in 1994 and was built thanks to Government investments. It is perfectly situated in the middle of the Mediterranean Sea. For this reason in just 10 years it became the first port in Mediterranean Sea for container traffic.

During the 70s the project was to create also some strategic factories close to the port, like a steel and iron factory and some others chemical centres. The target was to implement a distribution zone in order to develop that region that was one of the poorest of Europe.

From a logistic point of view, it is easy to understand the reason of the failure. The location was optimal but the system of rail and wheel transportation was very problematic. Working the oil in a chemical factory in

the area, without having the opportunity to move it easily, was cause of the failure of the system.

This example is very interesting to understand that it is surely simpler dealing with an Industrial Zone than with a Distribution Zone. Logistics is a complex system and it requires a strong Government.

In the Dominican Republic, during the first period of implementation of FTZs' policy, Industrial Zones were largely preferred to Distribution Zone. Now, with the creation of Logistics Parks and Port Hinterlands, the idea of Distribution Zone is getting more important, and fundamental in some areas.

2.3 Complex forms to develop National Economy. The case of Special Economic Zones

A complex form can be defined like a composed way to develop a National Economy, made by different typologies of instruments. A Special Economic Zone (SEZ) is a generally a bigger concept and typically it regards larger areas. Known also like Free Economic Zones (FEZs), they accommodate all types of activities, including tourism and retail sales and permit people to reside on site (through the creation of hospitals and schools, too). It provides also a much broader set of incentives and benefits[2]:

- Global standard level of Labour regulation
- Allowance of repatriation
- Reduction of taxation for foreign investment

All these incentives are not controlled by the domestic regulation but they are under the control of special regulations designed by the Government for the local system. Within this type of zone almost all economic activities are allowed and the zone is not outside of customs territory. It is important to know the role of SEZ in this thesis because the Dominican Republic could find a lot of opportunities in implementation of this policy thanks to the large number of FTZs, in its territory.

[2] A.Aggarwal, Economic impacts of SEZs: Theoretical approaches and analysis of newly notified SEZs in India, MPRA, 2010

SEZ represents an evolution in the concept of FTZ and it is possible to find the first example in Chinese economy. People's Republic of China (PRC) introduced them in 1979. SEZ are an evolution of FTZ but also may be a driver of them. It is simple to find the creation of a FTZ (or other kinds of developing zones) after the establishment of the SEZ. During the 3rd Plenary Session of the 11th CPC Central Committee in 1978, PRC government decided to officially reform the national economy set up. China was for a lot of years of its history characterized by a lot of different clusters, sometimes concentrated in some areas. The Chinese system of economy was for a lot of time very evolved especially in terms of *intra firm* level of coordination. For this reason, in order to attract FDI PRC government decided to go against its Communist principles and creating something of revolutionary, opening Chinese economy to the world.

Picture 2.2 Map of SEZs in China

In few years Chinese government created different Special Economic Zones, situated in different areas of China. It started with Shenzhen, continuing with Zhuhai and Shantou in Guangdong Province, Xiamen in Fujian Province, and finally the island of Hainan that actually was an entire province. In 1980 the first one was created in Shenzhen, a fisherman village, and that portion of Guangdong Province was called 'Shenzhen Special Economic Zone'. The last one was created in Shanghai in 1990 and called Pudong New Zone.

In Chinese SEZs it is possible to claim 3 typical features as explained in the reform done by Deng Xiaoping, for the liberalization of Chinese economy in 1979. A SEZ must have these features:

- Special Tax incentives for Foreign Investments
- Greater independence on international trade activities
- Special economic principles (indicated in 4 points):
    1. Construction primarily made in order to attract and utilize foreign capitals
    2. In a SEZ Sino-Foreign joint ventures and partnerships (known in Chinese regulation as wholly foreign-owned enterprises), are preferred to other forms of companies
    3. Production must be primarily export-oriented
    4. Economic activities are primarily driven by market forces

From a political point of you SEZs were listed separately with different rules in terms of penalty and crimes.

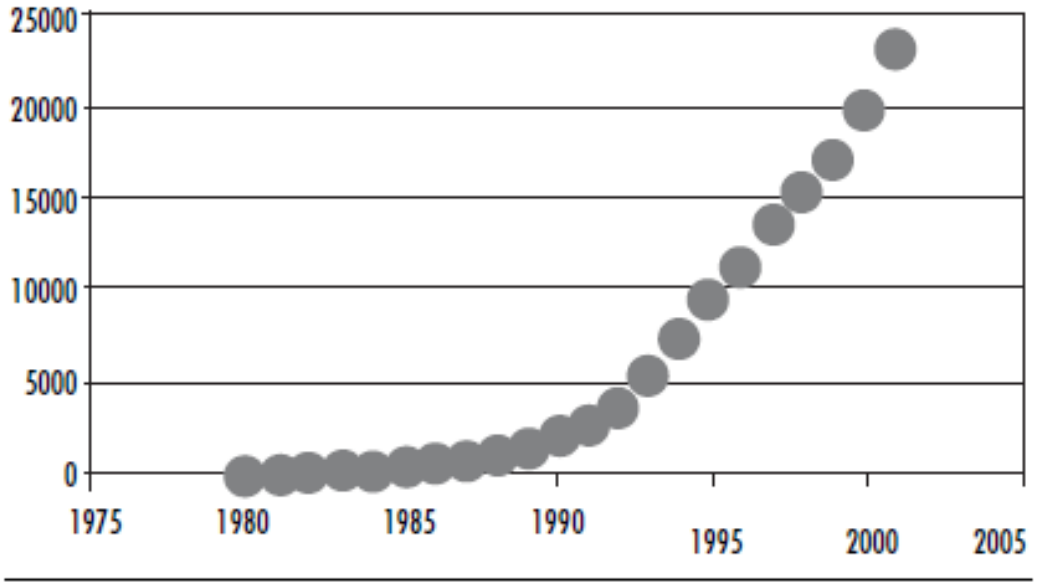
The history of success was great. Making the example of Shenzhen. From just a fishing village it became one of the most important industrial and financial centre of China.

In order to create all the system of a SEZ, before in Shenzhen area there were different clusters to coordinate in a *supra firm* level through a SEZ. Chinese clusters simply shift from the status of clusters to the status of industrial groups improving the coordination of the companies inside them.

In the case of Shenzhen three different industrial groups are nowadays established as consequence of coordination of similar clusters:

- Electrical and Electronics – Desktop Computers cluster, Color TV's cluster, Electrical Goods cluster
- Textiles – Weaving cluster, Knitting cluster, Towels cluster, Silk Manufacturing cluster.
- Metal and Machinery – Freezing Equipment Machinery cluster, Air Conditioning Equipment cluster, Metal Tools cluster, Aluminium Products cluster

Picture 2.3. Development of Shenzhen SEZs over the years (GDP growth mln Euro)



Source: *Shenzhen Statistics Yearbook 2002.*

All these different clusters are in focalized industrial groups and these focalized industrial groups are in the same economic zone. This is the main feature of SEZ in Chinese style.

After 30 years Shenzhen is the production and research base as well as the commodities trade center of high-tech products such as computer and software, communication equipment, audio and visual products, optical electromechanical products, biomedical products and medical equipment.

Moreover, electronics represents the most flourishing industry in particular for desktop computers; furniture, clock and watch, clothes, gold and jewelry, and printing and artistic gift manufacturers are in a leading position.

In addition to 6 SEZs, China continued to keep more that one hundred different structures of economic zones in order to develop the country. In China there are still 15 FTZs. These areas played an important role in Chinese economy development but actually they are still playing this role. First of all they can be considered like a 'window' in developing the foreign oriented economy, using foreign exchanges to achieve good levels of import and export of advanced technologies. Second, SEZs are a good system for accelerating inland economic development.

At the end, after 30 years of experience, it is possible to recognize the main effects of a SEZ. The main pros are:

- Technological innovation and spillovers between Chinese and Foreign firms
- Introducing competition thus fostering market economy
- Attracting FDIs also towards poorer areas
- Increasing in development programs
- Increasing in capital inflows

Among the main cons it is possible to see:

- 'Zone fever' effect, that represents the worst consequence of the Real Estate speculation
- Tax evasion in those zones
- Increasing in crimes due to the different regulation
- Less legal and social protection for workers
- Less development of zones not 'special'

So, there are not just positive effects even if the economical evidence of the great growth in this special areas is certainly great and clear.

Summing up, SEZs represent the most typical example of complex developing zone for a National Economy. This type of zone is like a microcosm of a country. What it is interesting to underline is that SEZ has not special focuses but it simply represents the evolution of an area established by

the government. In a lot of cases this area has already an *intra firm* coordination within clusters. But, if the cluster is a natural process, the SEZ is the consequence of the Government target to exploit as much as possible the power of the industrial clusters. In China there is the most explicative and successful example of it.

2.4 Free Trade Zones between Export Processing Zones and Logistic Parks: main goals and objectives

In order to understand the difference among the words it could be interesting to explain some definitions.

An Export Processing Zone (EPZ) is a zone focused on manufacturing and processing works for exports. It is considered as outside of customs territory with all the relative advantages. Typical industries in this type of zones are usually labour intensive and low skills industries, very common for manufacturing activities. Examples of products are garments, textiles, shoes, timber, plastics and electronic components. The main objective is exporting with lower costs than other zones.

In these areas, domestic sales are limited because the main objective is exporting and some of these areas, in order to incentivize more exports, have limits of sales in domestic markets. The most interesting thing to underline is that EPZs are in general small, on average two or three squares kilometres.

The first country where this terminology was used is Philippines with the creation of the EPZ of Cavite, and some years later in Bataam (the first city situated at the south of Manila, the second one at the north). In particular the project was made by the Government in 1977 for Cavite and in 1981 for Bataam. In order to see the first results it needs to wait until 1986, when the phase I of the Cavite Export Processing Zone (CEPZ) finished. At that time, 13 factories were operating and 7 factories were under construction. Until the 1989 other 63 foreign companies decided to relocate to the Zone, in order to exploit cost advantages of the area in terms of taxes and low cost of labour.

In 1991, more than 70% of companies in CEPZ were Korean and Japanese and by industry, high tech companies such as semiconductor manufacturers account for the largest percentage. CEPZ became a privileged area for exporting electronic devices and components made by Japanese and Korean MNEs, all around the world. All this with strong results for economy of Philippines.

EPZ represents manufacturing and export activities role of an economic zone. Logistics Parks (LP) represent the other role, regarding logistics activities.

A LP is a particular zone focused on international trade, especially on value-added logistic activities. LP is defined as the organization and management of logistics nodes through the economic development of natural logistics areas. The main target is to reduce logistics costs, improve logistics efficiency and improve service-related business circulation, processing, raw material procurement, in order to facilitate the contact with the customer. So, covering all the value chain and improving its timing and spacing.

In general, an LP can be considered like a city, where there is a centre for logistics activities, a distribution centre, transportation hub facilities, transportation Organization and Management centre and also a logistics information centre. It is like all the city is working for the same target, that is improving the value chain, making closer consumers, producers, management an all relative activities.

Japan was the first country to establish an LP. The first was close to Tokyo in 1965. The plan by the Government was to build a distribution centre of the city separated from the city centre. Adachi Osaka 4 Modern LP was created on an island close to the city, with several logistics activities inside. The Government implemented a lot of various and preferential policies to attract investments in order to achieve economies of scale. In this way an area of 223,000 square meters, became a transit for 49 transportation companies, establishing 1516 transit points throughout a lot of small towns in Japan.

Japan had in particular two benefits through this experience. First of all, the appreciation of land prices and second, on average a low warehouse rent, creating a virtuous circle to promote all the system.

So FTZs in all the world of definitions can be put between EPZs and LPs. EPZs represent the manufacturing and export activities, while LPs the logistics activities, so important nowadays. FTZ is the only general definition that can be actually used to describe all the world of development processes through implementation of economic zones.

2.5 Advantages and Disadvantages in implementation of Free Trade Zones

A FTZ cannot be used by the Governments like magic. There are positive and negative effects. Even if there is a great literature and a lot of cases of successful examples, there are also some failures.

FTZs can damage an economy but they can also create a good system that can be spread to all the country, generating positive externalities in different industries.

The most important thing to underline and consider is certainly the role of the Government. Even if the investment are private, Government has to consider all the risks and evaluate positive and negative consequences of them.

2.5.1 Arguments used Against FTZs

Considering the evidence, the trend and the history of FTZs all around the world, it is possible to recognize several negative aspects of the implementation in a country of a FTZ:

- The impact of FTZs on the local economy is limited – An example of this argument can be Manaus case. The Manaus FTZ was established in 1967 and it is mainly focused in manufacturing. It is situated in Manaus, the capital city of the Amazonas State, in northern Brazil. Manaus has the 4th highest

GDP in Brazil, but all the State is one of the poorest of the country (just 1.6 per cent of the total GDP of Brazil). FTZ of Manaus is the most successful in Brazil and one of the FTZs with the highest income in the world. But actually the effect on local region was very minimal for different reasons. All the region, in fact, is composed by countryside and even if it is a great source for raw materials, the level of infrastructure is very low, except for the area of the capital.

- FTZ cannot compensate for failed economic reform – Senegal case is very interesting. The Dakar FTZ (in form of EPZ) was established in 1974 but it did not achieved its goals in creating employment, foreign exchange or attracting FDI. After a lucky period until 1986 the situation totally changed in few years, even if there was a good political environment and advantageous financial incentives. The great reason for the failure was the lack of a good economy reform that generated low productivity by labour force, not good infrastructures and transportation costs that remained too high.

The main idea to respect is that a FTZ has not to be the first policy to develop the economy of a region. In order to create a successful FTZ it is fundamental a good economic reform and creating all the environment that can enable a good functioning of the entire country-system.

2.5.2 Arguments used in Favour of FTZs

Positive aspects, as described above, are surely a lot. In a lot of centuries, starting from the implementation of Free Harbours and continuing with SEZs, the results in economy developments were clear and very successful. The advantages can be in terms of:

1. Job Creation and Human Capital – FTZs create job even if not at a national level. In general, the rate of employment does not increase officially because in countries with FTZs there is also a

demographic growth that compensate the good effect of the FTZ. Human capital increases thanks to improvement in know-how caused by more linkages with developed and more skilled economical environments.

2. Export Performance – FTZs have an important role in improvement of export performance of the countries. The evidence shows that countries such as Chinese Province of Taiwan and Republic of Korea, for instance, have almost 100 per cent of manufactured exports. An other example is the Dominican Republic. It counts 80 per cent of all exports and almost 100 per cent of manufactured exports, thanks to FTZs.
3. Foreign Exchange – For poor countries, foreign exchange earnings are the most important target because they are a finance import and important to develop the national economy. For example in Mauritius export earnings from FTZs grow from 3 per cent of total export earnings in 1971 to 68.7 per cent in 1994.
4. Tax Revenue versus Tax Losses – It could seem that creating a zone with a reduction of taxes can implicate a loss for the country. But the advantages are equilibrated by creation of employment. So there are lower taxes, but more people that have to pay and this can attract investments, too.
5. Backward Linkages – The companies inside a FTZ can create linkages between themselves and the rest of the economy. These kinds of linkages can boost economy growth in the host country. But it is not always true. In order to achieve this advantage, companies have to be efficient in terms of goods, quality and all along the value chain. In Mexico, for instance, a lot of imports come from the United States, not generating growth in Mexico.
6. Technology Transfer – Even if a substantial percentage of production in FTZs requires low skills and low technology, there are some countries that could exploit linkages with more

evolved countries in terms of technology, enjoying great advantages, in terms of autonomy.

7. Upgrading of Physical Capital – Successful FTZs are those for which the Government invested a lot in order to create a good system of transportation and a well-integrated logistics environment. Without all this system provided by public or private investment, but generated by a Government plan, it is very difficult to have positive result in implementing a FTZ.

Summing up, after the description made during all the chapter, it is possible to identify two different kinds of FTZs on basis of their main targets:

1. Manufacturing Oriented FTZs
2. Logistics Oriented FTZs

The contribution of both of them in terms of development of a country and positive effects is almost the same (all the arguments in favour of FTZs described above). Logistics Oriented FTZs, in particular have to promote efficient logistics system by establishing or integrating logistics clusters around port or inland areas. This generates positive effects in terms of reduction of costs also at a national level, but anyways for all the seven points listed above.

In times of globalization, logistics areas can be very competitive and positive for the enhancement of import-export activities, but also for manufacturing.

Chapter 3

Free Trade Zones between Manufacturing and Logistics, the importance of Port Hinterlands

Until this page, one of the most important concepts underlined more than one time, was the double face of FTZs in front of Globalization dynamics. In particular on one side, the manufacturing activity of FTZs, more concentrated on exploiting advantages such as low cost labor. On the other side, the logistics activity of FTZs, more focused on exploiting the geographical advantages or infrastructure systems.

So for this reason it is possible to recognize two different orientations of FTZs, one is a traditional concept while the second one is the most recent and innovative idea of FTZ:

- Manufacturing-Oriented FTZs
- Logistics-Oriented FTZs

Actually, it is common to find mixed FTZs, in the sense that it is possible to find areas where there are concentrated both the activities. In general, in these areas there is also a harbor and for this reason these locations are called Port Hinterlands.

Port Hinterlands (PH) represent an evolution on FTZs, in terms of equilibrium between the two different orientations. PH concept can be considered one of the most innovative developing model. And generally, in Port Hinterlands surroundings it is created an Integrated Logistics Park (ILP), that is just a bit different from a simple LP.

PH and its relative ILP has clear functions inside it, with relative infrastructures and dynamics of management.

But not in all the situations the implementation of PH developing model and the creation of an ILP is optimal. There are situations where a

Logistics-Oriented FTZ does not generate advantages. It depends on industries, kinds of activities, know-how and human resources but also on macroeconomics variables.

In the complex, Logistics industry in times of Globalization is getting more and more important. An example of this it is not just the creation of special FTZs related to logistics, but also because there are some areas that are naturally becoming logistics clusters (clusters as explained in the first chapter is a natural process). There are places where all the companies are automatically starting to collaborate in order to manage the value chain, focusing on their businesses in a particular industry that is totally related to Logistics.

These clusters are commonly called Umbrella Clusters, because these areas have the natural attitude to gather goods or attract services and then redistribute them, acting like a hub.

This can surely represent a great national competitive advantage as in the case of the Dominican Republic.

3.1 Manufacturing-Oriented Free Trade Zones

Manufacturing-Oriented FTZs represent the traditional and old concept of a FTZ. Their main feature is that they are focused on labor intensive manufacturing processes of unskilled nature. In a FTZ like this it is common to find a problematic environment with poor labor rights, health issues, low wages and exploitation of weak labor force such us young people or female workers.

It is common to find these kinds of FTZs in developing countries that do not have a mature and modern business environment, where generally the human resources are unskilled, the education level is low (the main reason is often the education system). In these countries Manufacturing-Oriented FTZs represent a great opportunity to attract FDIs, exploiting local variables, in order to develop the whole country using FDIs and foreign participation like a resource for know-how and efficiency.

These kinds of FTZs are still in developed countries, too. In rich countries the working conditions are generally better thanks to trade unions interventions, but naturally their developing power is lower than in the other countries. So, it is possible to affirm that Manufacturing-Oriented FTZs can be considered like one of the strongest policies available for a country among its general economical policy.

Considering experience and evidence, the success of a FTZ is more likely for a developed country than for a developing one. But if it works, in a developing country the effect is higher for the whole country. The most important reason is that a country has to provide a stable environment for the investments, in order to attract unskilled labor force (useful for the short term), but also skilled labor force (more useful for the long term).

The kinds of business attracted in a Manufacturing-Oriented FTZs depend on the level of the factors provided such as skilled workers, domestic technology capacity or government efficiency. And considering that labor intensive businesses are not long term utilizable, it is better to concentrate also on high technology businesses, too. Also in this situation, the role of Government is basic.

There are countries such as Philippines that attracted just labor intensive businesses for a lot of time. Other countries such as Malaysia, attracted both labor intensive and high technology businesses, thanks to the Government interventions. For this reason Malaysia had more advantages and it could pass to the second step of FTZs, in an evolution of business and activities, like in Logistics-Oriented FTZs.

3.2 Logistics-Oriented Free Trade Zones

At the base of Logistics-Oriented FTZ concept, there is the role of Supply Chain Management (SCM). SCM represents all the management of the value chain of goods and services, all the system from a logistical point of view, too. In last decades, demand for SCM from MNEs increased a lot especially

for two important reasons like the advance of ICT and the evolution of transport technologies. The nature of this demand is related to information management and value added services. For instance:

- Light assembly and processing
- Procurement of raw materials and parts
- Consolidation
- Testing
- Packaging

All these activities, in times of Globalization, have to be managed trying to improve the service to the customer, the timing and the costs. In order to achieve this is important to consider all the supply chain trying to improve the timing and all the system in general. In times of Globalization, supply chain is strictly related to international transports nodes such as airports or seaports (with the creation for instance of PHs).

In a lot of countries the starting point of the constitution of a Logistics-Oriented FTZ is the Port, that focalizes all the most important policies of logistics. For this reason it is common to use the terminology of Port Hinterland. Logistics-Oriented FTZs are not Manufacturing-Oriented FTZs. Considering this table:

Table 3.1 Shares of business sectors in Manufacturing-Oriented FTZs and Logistics-Oriented FTZs (Little 2003 – For Singapore, Suframa 2005 – For Manaus)

Businesses	**FTZs in Singapore PH**	**FTZ in Manaus (Brazil)**
Number of Companies	289	557
Logistics	66%	21%
Manufacturing	23%	71%
Other	11%	8%

Manaus FTZs, in Brazil, is considered a manufacturing park, while in Singapore there are a lot of logistics parks. In all the total PH of Singapore about the 66% of the companies are related to logistics activities, while in

Manaus (even if there is a fluvial port), there is just the 21%. For this reason Singapore can be considered an explicative example of Logistics-Oriented FTZ while Manaus is a typical Manufacturing-Oriented one.

Manufacturing-Oriented FTZs and Logistics-Oriented FTZs are both considered as outside of customs territory and they are, at the same level, drivers of economic development.

The main recent trend is to create zones where there are synergies among seaports or airports and manufacturing and logistics zones. This represents the nature of a Port Hinterland but, with all thiese synergies inside them, it is possible to talk about ILPs (Integrated Logistics Parks), as centers of developing for a globalized economy in a very dynamic environment.

3.3 Port Hinterlands development model and implementation of Integrated Logistics Parks

Port Hinterland is one of the most important concept in transport geography. In economics it is considered a very successful development model. Literally, hinterlands are the part of the land close to a city and related to it. There are a lot of definitions for Port Hinterlands. Some of them could be:

- An area where a port has a monopolistic position (Fageda, 2005)
- Origin and destination area of a port, that is, the inner region provided by a port (Fageda, 2005)
- The land space over which a port sells its services and interacts with its clients (Strauss-Wieder, 2010)
- The market are served by a port and from where a port draws its cargo (Strauss-Wieder, 2010)
- Market reach of the port, that is, the areas from which cargo originates, as well as, the areas where cargo moving through the port is destined. Some ports will have hinterlands that extend across many states, while other ports will have smaller hinterlands (Strauss-Wieder, 2010)

In order to make a general definition, it is possible to affirm that a PH is the land located in the vicinity of a port such as immediately nearby or with the port boundary, and functioning interactively and closely with a port by providing various business activities, whether or not the hinterland is within the administrative jurisdiction of the port authority (Valentine & Park, 2005).

Nowadays, the PH development model is very common in both developed and developing country. The model is particularly composed by two important parts:

- Hub Ports – The harbor that is the actual center of the PH (sometimes they can be more than one)
- Logistics Centers – In general situated in the nearby hinterland and operating in different industries

Hub Ports can be considered the actual soul of the PH and in order to be successful all over the time they are more and more becoming costly. The success of a Hub Port passes through several features that a port must have.

Table 3.2 Drivers for the success of a Hub Port and its relative features (Based on Valentine & Park, 2005)

Drivers	**Features**
Location	Proximity to major world routes
Turnaround	Quick time
Services	Quality with efficiency and productivity
Costs	Low or at least reasonable
Capacity	Ability to accommodate super larger ships with deep water and advanced equipments
Network	Excellent and covering nearby ports
Activity	Existence of a logistic cluster supporting value-added logistics activities
Environment	No red tapes and no burdensome paper works
Technology	Advanced ICT
Infrastructure	Intermodal with access to rail, air and road distribution networks
Market	Local producing freight volume

Regarding the Logistics Centers, they can be FTZs but also international logistics zones and their main objective is to accommodate value-added logistics activities and to attract global logistics companies. And actually this happened for a lot of years. Many companies in the last decades, have experienced high cost savings through the exploitation of logistics centers.

Also in this case, these logistics centers, with the general concept of logistics-oriented zones, have the target to attract FDIs and create employment. But, in particular because of its logistics nature, a logistics-oriented zone has an other important objective: improving the value chain.

Logistics companies inside this centers develop the hub ports and they can create a circle of benefits very positive for the whole country. The advantages are clear in every function of the companies, from marketing (like common advertisement campaigns) to finance, with focused and shared investments. If these logistics centers have incentives similar to FTZs ones (or the same), it is possible to recognize the creation of a LP, and with the integration of a port, the LP can be defined Integrated Logistics Park (ILP).

In order to explain this process of evolution, there is a clear example of it in Europe. The Port of Rotterdam is one of the biggest of Europe and surely the most important in Northern Sea. But during 70s there was a decline in particular caused by the low-attractive nature of the area.

During the 80s EU and the local Dutch Government intervened creating the Distriparks, that can be described like a particular example of FTZ. The only difference between a traditional FTZ and a Distripark is that the last one is a Logistics-Oriented FTZ. Officially it is considered the first example of Logistics-Oriented FTZ all around the world, idealized by a Government.

Distriparks became in few years the value added in Port of Rotterdam activities, through the implementation of a ILP. Distriparks provide space for warehousing, facilities for storage and handling cargo but also a lot of other value added services, like for instance all the packaging phase, but also assembling and labeling phases.

3.4 Basic functions in a Port Hinterland

PHs can provide different services but in all the different kinds of hinterlands or harbors that there are in the world it is simple and natural to recognize some common functions, from a company point of view, in the PH's organizational chart. These functions are related to the services a PH generally provides. Among these the most important and common are:

- Container Freight Stuffing (CFS) function – The Container Freight Stuffing function consists in the creation of a warehouse where cargo is stuffed into and unstuffed from containers. The area where the warehouse is built is called Container Freight Station. Generally in this location there is also the packing and unpacking phase of the supply chain process.
- Storage function – The Storage function occurs in a place where cargo is stored before the cargo delivers to a final destination or delivery. The place for storage of cargo before it is carried to the port terminal for loading. From a technical point of view it generally includes also refrigerated warehouses.
- Consolidation and Distribution function – Consolidation and relative Distribution functions are very related each other. They occur in a location where cargo is consolidated and stored to be distributed to regional storage warehouses or other markets.
- Value Added Services function – This kinds of function represent actually a combination between logistics and industrial activities. Additional activities can be assembling for instance, or processing or labeling, before cargo is transported to inland areas or shipped for an other country.

It is very interesting to show how this functions are so common in all kinds of PHs. In particular the importance of each function in PH dynamics depends on different factors. There are ports that are more focused on containers activities and others on distribution. In the following table it is shown an interesting comparison.

Table 3.3 Shares of major functions of two examples of Port Hinterlands (Based on A.D. Little, 2003)

	Port Hinterland of Rotterdam Port	**Port Hinterland of Singapore Port**
Container Freight Stuffing Function	19%	28%
Storage Function	37%	40%
Consolidation and Distribution Function	33%	23%
Value Added Services	11%	9%

This two ports represent two different approaches that can be described for the implementation of a PH. Both of them are more concentrated on storage, that can be defined the most important function in all the PHs' targets. Value Added Services are peripheral activities. The great difference regards the other to functions.

It is possible to recognize two different orientations for PHs:

- Stuffing Orientation – Like in Singapore port, where the most important thing for the port is to concentrate it on Containers or Stuffing activities.
- Distribution Orientation – Like in Rotterdam port, where the most important activity is the one related to Distribution and this happens especially for geographical reasons.

It is crucial to not forget that even if there is a particular orientation for a PH, all the activities occur, because it is always a dynamic and connected system. PH is always a tool of coordination.

Picture 3.1 Delian International Logistics Park in China and its main functions (Based on Delian International LP official website)

3.5 Without-Logistics versus With-Logistics Free Trade Zones, advantages of Integrated Logistics Parks to reduce the VAT burden

Based on the functions of the PH described above, it is possible to claim that the preferential taxation and tariff system in Logistics-Oriented FTZs provide another valuable service (and advantage) for manufacturers.

One of the most important issues facing companies who export from a specific country is the concept of Value-Added Tax (VAT).

The VAT is a general, broadly based consumption tax assessed on the value added to goods and services. It applies more or less to all goods and services that are bought and sold for use or consumption. In terms of international balance, for export or services which are sold to customers abroad there is not VAT. On the other hand imports are taxed to keep the system fair for local producers so that they can compete on equal terms on the local market with suppliers situated outside the borders.[3]

VAT is a percentage and it depends on different areas of the world for its economical dynamics and nature. VAT has a crucial role for poor countries

[3] European Commission Definition

or developing countries even if it is not perceived as a good taxation. But it has effects just on consumption and not on saving, making the future generations protected from inequalities.

In this table some examples of percentages of VAT around the world. These are standards rates without reductions and it is interesting to understand how VAT can be a high cost for the international balance.

Table 3.4 VAT percentage around the world (World Bank, 2011)

Country	VAT
G7	
United States	Variable (0%-13%)
Japan	5%
Germany	19%
United Kingdom	20%
France	19.6%
Canada	Variable (0%-10%)
Italy	20%
BRICS	
Brazil	Variable (5%-25%)
Russia	18%
India	12.5%
China	17%
South Africa	14%
Other countries	
Argentina	21%
Australia	10%
Dominican Republic	16%
Indonesia	10%
Mexico	16%
Netherlands	19%
Saudi Arabia	0%
South Korea	10%
Spain	18% (5% in Canary Islands)
Turkey	18%

Without a FTZ, a company importing raw materials and processing them has to pay VAT. In general it is a burden for manufacturers. There are two different strategies to reduce this burden.

- Some companies export unassembled or incomplete products to third countries, and then import them again for secondary processing in order to reduce this tax burden.
- Many other companies manage the entire manufacturing process while keeping the cargo in bond by repeating exports and re-imports in some countries.

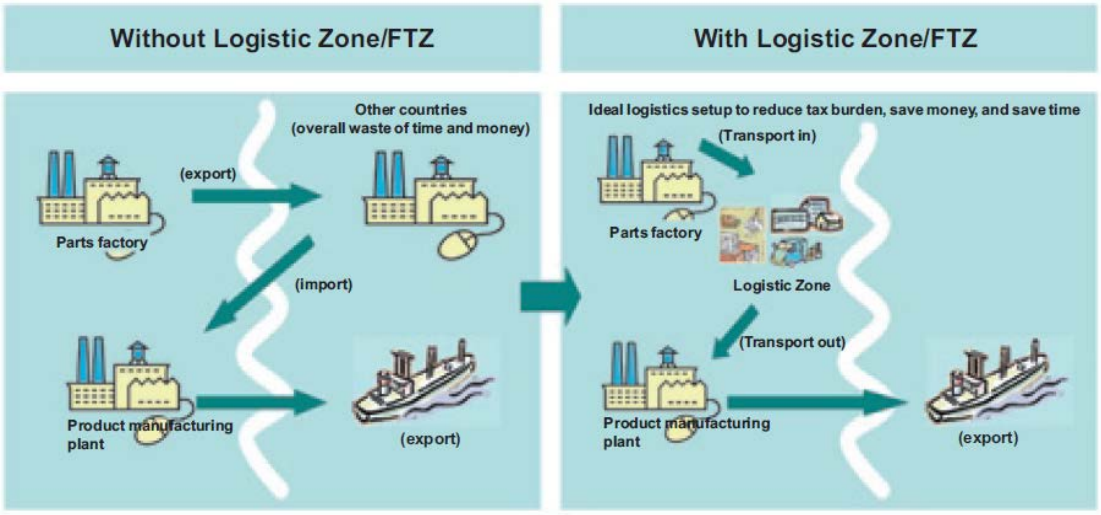
In this last case, the manufacturer has to also wait to start procedures for VAT refunds until the cargo is exported from the conventional warehouse.[4]

Considering the VAT problem, the biggest advantages of Logistics-Oriented FTZs is the presence of the LP. It allows exporters to have three great advantages:

1. Reducing the tax burden
2. Securing long-term storage of export cargo
3. Reducing the double movement of goods

The most positive effect is that thanks to the implementation of a LP, it is possible to secure long-term storage of export cargo and reduce the double movement of goods, at the same time.

Picture 3.2 The concept of Logistics-Oriented FTZ or Logistic Park (adapted by ESCAP secretariat from MOL Logistics (Japan) Co., Ltd.)



[4] V.Valentine – J.K.Park, Free Trade Zones and Port Inter-land Development, United Nations ESCAP – KMI, 2005 (ESCAP Secretariat)

Looking to the picture above can be shown two different scenarios in the case when there is a Logistic-Oriented FTZ and the other one where there is not this kind of FTZ (but in general there is the scenario of a simple Manufacturing-Oriented FTZ with its traditional concept). The concept is very similar to the two different choices a company can have to avoid or reduce the VAT, described above. But now, the topic is not just the VAT but all the dynamics of a FTZ system. In this two scenarios shown in the picture it is possible to see the overall role of the FTZ more clearly.

- Scenario 1 – A Manufacturing-Oriented FTZ that can be defined as a Without Logistic FTZ in the picture. In this scenario, the parts factory prefers exporting abroad in order to do not pay the VAT. Exporting means a waste of money and time because after that the part is imported again by the manufacturing plant and then exported again. In this case the advantages are in terms of know-how or quality, but rarely for costs, even if the VAT paid is lower.
- Scenario 2 – A Logistics-Oriented FTZ that can be defined as a With Logistics FTZ in the picture, it represents the scenario where there is the implementation of an ILP. The only difference with the Manufacturing-Oriented FTZ is the presence of a LP that allows to manage all the supply chain in the same area, reducing transportation costs. Everything remains in the same are for all the supply chain and the only movement of the good is the last export.

The general advantages in the implementation of a ILP can be summed up in three different terms:

- Reducing taxes (VAT is the most interesting effect but it is not the only one)
- Reducing overall costs (like transportation costs, but also in terms of taxes and positive spillovers)
- Reducing time (due to the proximity of all the activities of the supply chain)

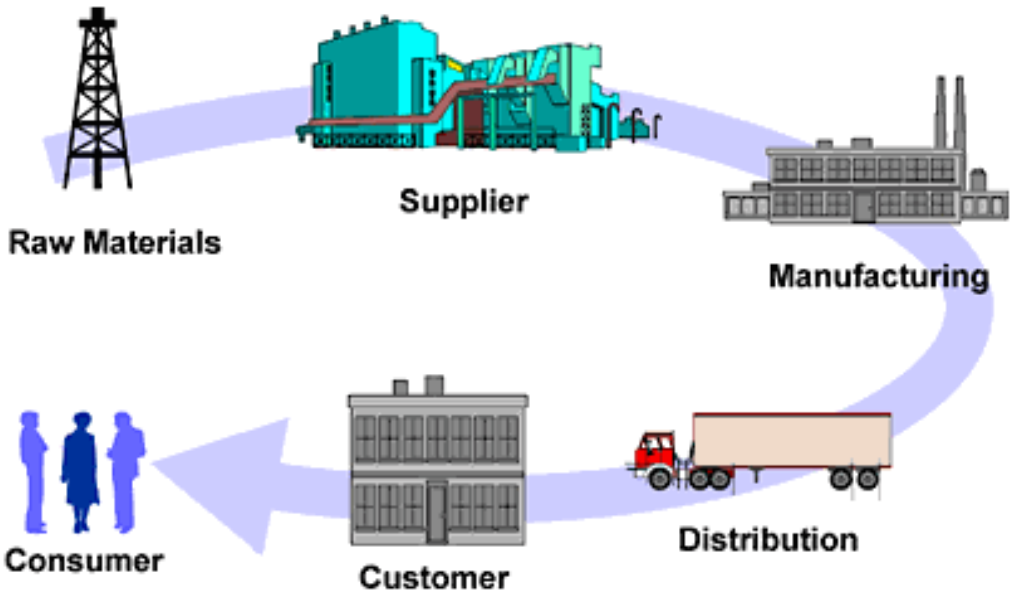
These are exactly the same advantages that a company can achieve with the second choice of using a LP in order to avoid decentralization of supply chain (or generally of production).

3.6 The opportunities of Logistic Industry. From the Supply Chain Management to the creation of Umbrella Clusters

So, at this point of the speech it is possible to affirm that a Logistics-Oriented FTZ is essentially a cluster of logistic related businesses (that can be simply defines like an 'Umbrella Cluster'). And this is the key concept.

But the starting point is an other concept known in literature as Supply Chain Management (SCM). SCM has different steps and describes all the management of a product or a service from its first phase to the last one:

Picture 4.3 General Supply Chain Management steps (Based on Copper, 2010)



They can be summed up in these phases even if all the entire process and the number of all the steps depends on the kind of product. So they can be adaptable to different typologies of products but also of services. An other driver for the change of the number of the different steps can be the

geography of the business so if it is an international business or a domestic one. These are the general steps:

- Procurement of Raw Materials
- Supplier
- Manufacturing
- Distribution
- Customer
- Final Consumer

All the different phases, and in particular the passage from one to the other has costs and risks to reduce and avoid. In particular describing the cost it is possible to identify two different typologies:

- Manufacturing Costs
- Logistics Costs

The first ones can be reduced thanks to the implementation of a Manufacturing-Oriented FTZ. These costs are:

- Material Costs
- Manufacturing Costs.

The second ones can be reduced through the implementation of Logistics-Oriented FTZs, LPs or ILPs. These costs are of three typologies:

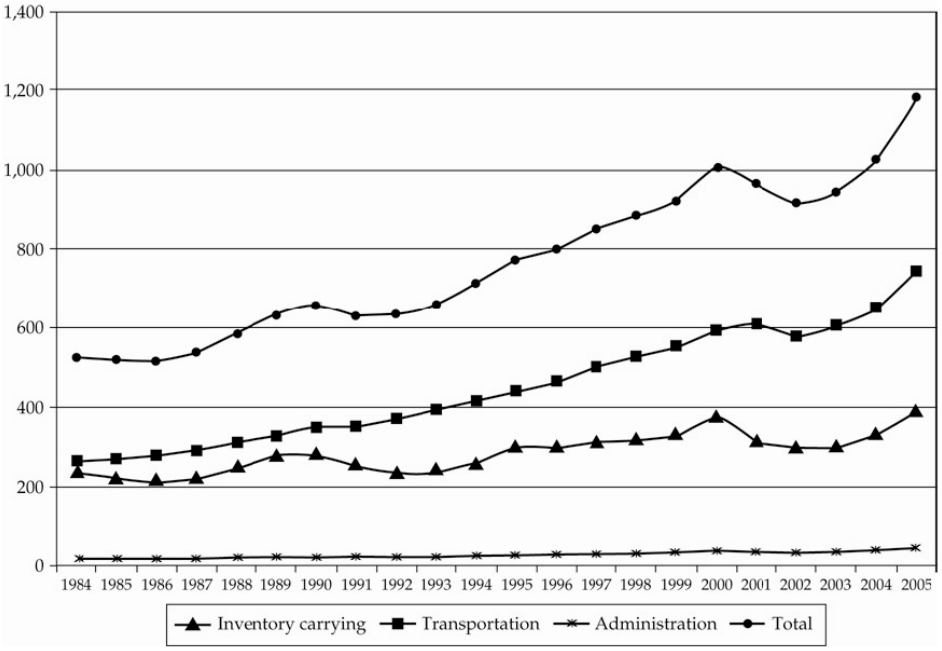
- Transportation Costs
- Inventories Costs
- Administration Costs

In order to understand how SCM is important for a company and relatively all the processes of Logistics, it could be interesting to make an example. According to a survey US companies spend more than $1 trillion in supply-related activities (around 10-15% of GDP). In particular the most remarkable costs are Transportation (for 58%), Inventory (for 38%) and Administration or Management (for 4%)[5].

In the next picture it is shown the American situation of logistics in the last 30 years with a strong evidence in Transportation and Inventory costs.

[5] D. Simchi-Levi, P. Kaminsky, E. Simchi-Levi, R. Shankar, 2008

Picture 3.4 Total U.S. Logistics Costs from 1984 to 2005



Source: D. Simchi-Levi, P. Kaminsky, E. Simchi-Levi, r. Shankar, Introduction to supply chain management, McGraw Hill, 2008

The central objective of SCM is to meet the requirements of end customers by supplying appropriate products and services when they are needed, at a competitive cost.

The supply chain has to achieve several performance objectives, in general six main concepts:

1. Quality – It consists in doing things rightly, providing error-free goods and services that are "fit for their purpose". The quality of a product or a service for the final customer is the result of the performances reached in every operation in the chain that supplied it. Errors in each stage of the chain can become multiplied in their effect on end-customer service.
2. Cost – The target is doing things at a competitive cost, producing goods and services at a cost that is appropriate for the market and that allows a return to the organization. It is also important to minimize transaction costs that characterize the supply chain. These costs may include the costs of findings appropriate suppliers, setting up contractual agreements, monitoring supply performance, transporting products between operations, holding inventories and so on.

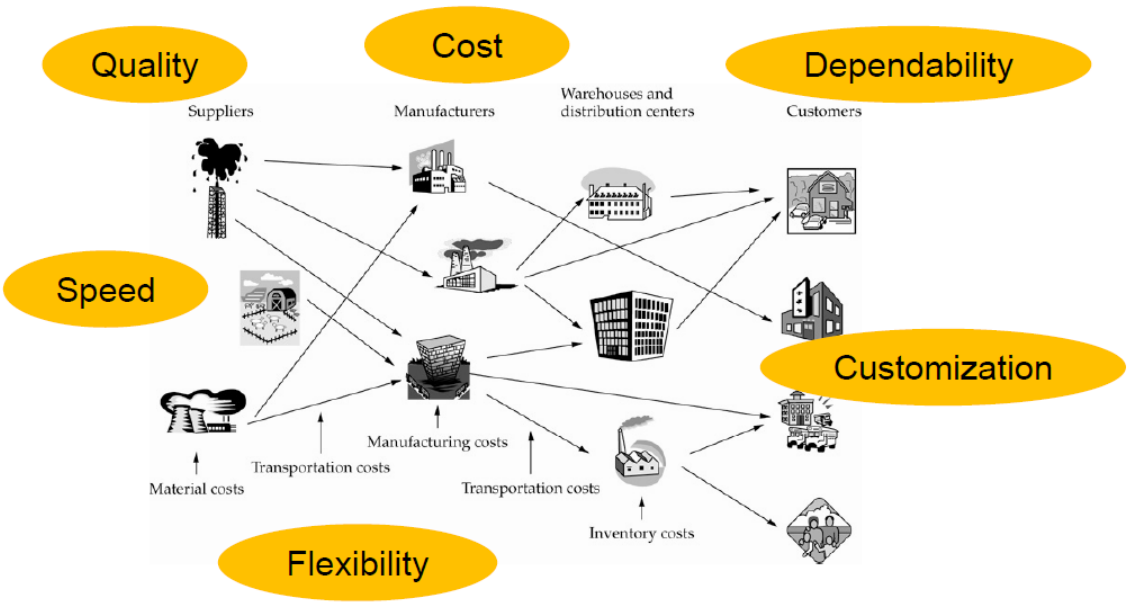
3. Speed – It is achieved doing things fast, minimizing the time between a customer asking for goods or services and the customer receiving them in full. There are two ways to reach fast the customer:
    - By over-stocking or over-resourcing within the supply chain. Large stocks of products or labour force may reduce customer waiting time virtually to zero.
    - By reducing the time taken for goods and services to move through the chain.

   Achieving a balance between speed by stocking or by reducing the lead times will depend on how the company, and the supply chain it is part of, is choosing to compete. Just to make an example a box of cereals spends on average 104 days to get from a factory to a supermarket. 15 days is the timing of a car to travel from the factory to the seller.
4. Dependability – It is shown doing things on time, keeping the delivery promises that have been made to customers. If the individual operations in a chain do not deliver as promised on time, there will be a tendency for customers to over-order, or order early, in order to provide some kind of insurance against late delivery. The same applies if there is uncertainty regarding the quantity of products or services delivered.
5. Flexibility – It refers in general to the mix one and in this case it is the capability of a process to produce, at reasonable costs, a wide range of different products or items in a period within a given range of products (fixed product portfolio). It can be singularly for:
    - Product: it refers to the capability of a process to introduce, at reasonable costs and timing, a new product within the product portfolio offered
    - Volume: it refers to the capability of a process to modify (increase/decrease) production volumes, at reasonable

costs and timing, in order to satisfy and fulfill market demand variations (in volume), caused by demand seasonality or uncertainty

6. Customization – It refers to the capability of the Operations to make customized products at reasonable costs and within a reasonable timing. From a theoretical point of view the company aims to satisfy each customer demand producing an "ad hoc" product. Customization can be basically achieved in two main ways:
    - The finished product is manufactured as a unique product respecting the customers' specifications (for instance stage costume, tailor-made suit or dress, wedding dress, fitted kitchen or bedroom)
    - The finished product can be obtained through the assembly of modular components (customized laptops, furniture, bundle of services) [6]

Picture 3.5 Supply Chain Management Performance Objectives (Zamboni, 2011)



[6] S.Zamboni, Global Operation and Supply Chain Management, 2011

But Logistics Industry is also a real opportunity for the entire country-system and it can be implemented using an interesting instrument, generally know as Logistics Cluster (or Umbrella Cluster).

Logistics Clusters are agglomeration of several firms and operations:

- Firms providing logistics services, such as transportation or warehousing companies
- Logistics operations of industrial firms, such as the distribution operations of retailers, manufacturers or distributors
- The operations of companies for whom logistics is a large part of their business.
- Firms that service logistics companies such as software providers or specialized law firms

Logistics clusters exhibit many of the same advantages of the classical industrial clusters, but there are also unique features:[7]

Table 3.5 Confront between Traditional Industrial Cluster and Logistics Cluster (Based on Sheffi, 2009)

Traditional Industrial Clusters	**Logistics Clusters**
• Increase in productivity • Human resources • Better communication • Trust among companies operating inside the cluster • Specialized labor • Knowledge creation through universities and cultural centers	• Economies of scope • Economies of density • Spill-over capacity for warehousing and transportation • Ability to deal to different providers • Various ranges of job profiles requested

[7] Y.Sheffi – Logistics-Intensive Clusters: Global Competitiveness and Regional Growth, MIT Publication, 2009

In general, from a country point of view, a Logistics Cluster uses some particular and typical tools to improve its own activities. There are generally two main columns:

- A Port (but it can be also an Airport to keep all the linkages with the system outside)
- A FTZ (in order to manage all the local activities having fiscal or generally monetary advantages)

With the usage of a Port and of FTZs to create a Logistics Cluster it is simple to understand that also the concept of PH is very important for the implementation of a Logistics Cluster.

Logistics Cluster regards mainly profit organization while for logistics clusters where companies manage aid for emergences or simply for NGOs activities is preferred the term Umbrella Cluster

Even if this difference does not appear clear even in literature, an example of this could be the Dominican Republic Logistics Cluster. It was for a lot of years considered a system of companies, linked to develop a poor region (West part of the Dominican Republic, to the border with Republic of Haiti) or to improve economic relations with the historical nearby enemy Haiti.

Nowadays, after the Haiti earthquake in January 2010, the Dominican Logistics Cluster can be defined an Umbrella Cluster, because most of the companies operating in it have as last objective solving Haiti emergence.

World Food Program (WFP), an institution linked to UN, with its headquarter in Rome, started to manage all the cluster exploiting the great fiscal advantages of the Dominican Republic, to help the activities of NGOs for transport of aid to Haiti.

Some NGOs based themselves in the Dominican Republic, using Dominican FTZs and PHs to import aid or product goods to move to Haiti. Other NGOs preferred not using the Umbrella Cluster, with different results.

Chapter 4

Dominican Republic's National Competitive Advantage. Zonas Francas and Logistics Industries

The Dominican Republic is the half part of the island of Hispaniola. In the eastern part of this island is situated the Dominican Republic, and before there was Spanish domination. In the western part of Hispaniola there is the Republic of Haiti, and before there was French domination. Even if the two countries share the same islands the two cultures are very different.

Also the economy is in condition completely different. The Dominican Republic has an economy more dynamic and in a developing phase, Haiti can be considered a poor country.

The Dominican Republic has an other geographical advantage. It is situated in the perfect centre of Caribbean area, in the middle between United States in the north and South America in the south. In the east, on the other part of Atlantic Ocean there is Europe.

This geographical advantage, as well as all the other fiscal, legal, social and political frameworks, contributed to let the Dominican Republic be a perfect hub for different kinds of activities. All the Caribbean region is actually considered like this by all the world. But the Dominican Republic is also the heart of this region, and also the richest economy of this area.

The Dominican Republic became a hub for manufacturing and import/export activities not just for its geographical position or for general political frameworks. The most important driver was the creation in its territory of FTZs. This could favor FDIs to the islands and also the transfer of know-how, useful for the future development of the economy.

But for its geographical position, FTZs in the Dominican Republic are more and more becoming Logistics-Oriented. Because of inflations and

relatively necessity of high salaries, labor cost is not low as in the past. For this reason the Dominican Republic is reinventing its nature.

From FTZs focalized on textile industries (a lot of MNEs used Dominican FTZs for production and export to United States - for proximity - instead of China, for instance) the nature of them is moving to Logistics-Oriented, exploiting the good Communication System and the optimal geographical area. In this way it was possible in the last years to play on the strengths of the country, minimizing the effects of the weaknesses.

For this reason Logistics Industry in the Dominican Republic case, is the natural evolution of FTZs sectors, that towed the growth of the island for so many years.

4.1 Caribbean Region as hub for manufacturing and import-export activities. The Dominican Republic as center of America

The consideration of Caribbean like an economical platform for enterprises is not something of new. During the history Caribbean area was considered very important by a lot of Western countries. War among French, Spanish and English or piracy are just some of the phenomena can explain the strategic importance of the area.

Nowadays Caribbean is the center of an other strategic game. Very close to United States, between North America and a lot of strong developing countries of South America, such as Brazil or Venezuela (that manage a lot of energy business all around the world).

The usage of Caribbean as platform is not new. Already Costa Rica was used by Intel as platform, and Panama is an important logistic hub for all the world. But in the insular parts the history was different. While countries such as Costa Rica or Panama are politically stable since a lot of decades, it is just ten years Caribbean islands are facing a real stability. A prove of this can be considered the low rate of emigration from Costa Rica or Panama, in comparison with other Latin American countries.

Caribbean Region consists of all the countries that are situated on Caribbean Sea. For this reason there are two kinds of countries:

- Islands: Bahamas, Cuba, Dominican Republic, Haiti, Jamaica, Antigua & Barbuda, Saint Kitts & Nevis, Dominica, Saint Lucia, Saint Vincent & Grenadines, Grenada, Barbados, Trinidad & Tobago (as independent countries) and other colonies.
- Continentals: Belize, Colombia, Costa Rica, Guatemala, Honduras, Mexico, Nicaragua, Panama, Venezuela (as independent countries) and other colonies.

So, from an economical point of view, Caribbean Region has inside different situations. The presence of developing countries and poor countries is generally a situation caused by the past domination (Spanish, French or English) or also by local history (such as Communist Revolution in Cuba).

In Continental part of Caribbean region there are countries such as Mexico, Colombia or Venezuela, that have a high GDP but lower results in term of GDP growth or dynamicity of economy. This because of the dimension of the country or for the population.

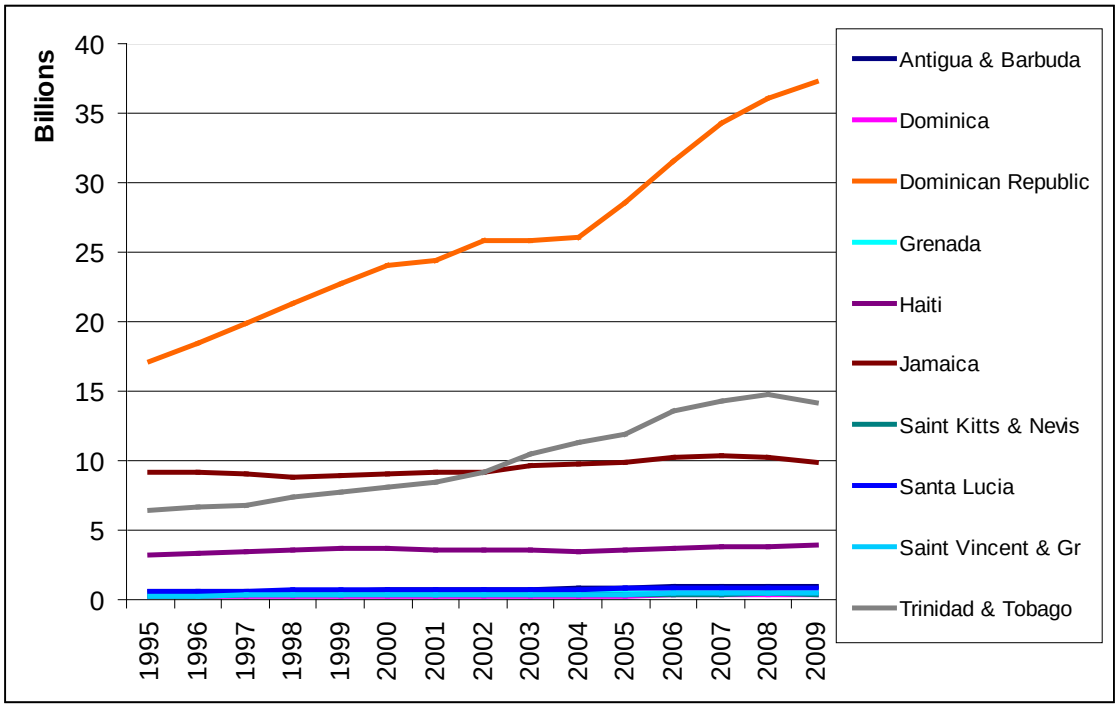
All the two kinds of countries could be perfect of developing themselves as a hub for manufacturing or logistics, becoming platforms for import and exports. It is obvious that there are some features that could be more adaptable to an objective of manufacturing. If in a country there is a low cost of labour it is simple to imagine an intensive technology target.

On the other hand, if a country is already in a developing phase, it would be better creating something of different, for instance, focalizing on logistics industry.

One of the most developed countries of the area, Costa Rica, after a period of economical policy related to manufacturing businesses, in the last years started to face a new phase, more related to services or new technologies in industries such as renewable energies or logistics.

In order to make a good comparison among the countries it is better to consider the Dominican Republic among its direct competitors in terms of comparison, that are the other islands of Caribbean region.

Picture 4.1 Comparison among GDPs (Constant 2000US$) on Caribbean island countries (World Bank, 2011)



As it is shown in the graph above there is just a country with a stable growth of GDP in the last fifteen years. The Dominican Republic represents the most stable country of all the region and for this reason is growing fast and stably. Other countries such as Trinidad & Tobago until the 2008 faced a minimal but stable growth. But as it shown in the graph, the crisis was stronger than in the Dominican Republic.

In a SWOT analysis for the entire country it is possible to recognize some interesting factors:

- Strengths: The Dominican Republic has a stable economic and political system. It has a lot of incentives in order to attract FDI. This mechanisms are essentially related to the implementation of FTZs. The Dominican Republic is the only insular Caribbean country that implemented these forms of coordination in its history. Other countries of the same region, such as Mexico, Costa Rica or Panama have dynamic economies as well.

- Weaknesses: The Dominican Republic is facing a great inflation period, with relative low satisfaction on politics among the people. Inflation is not related to an increasing of salaries. The purchasing power of consumers is decreasing and it could be a serious problem for future consumptions.
- Opportunities: In its history the Dominican Republic met great opportunities for its low labour cost and its general high skill labour force. In the past, it was the 'textile factory' of America, for all those companies that did not want to decentralize in China. Nowadays, logistics can be an opportunity. The Dominican Republic can become the 'hub of Atlantic'.
- Threats: A radical change in politics status probably could soon change the economical policies of the entire country. There is a great malcontent for the current political administration of President Fernandez and a victory of the communist Hipólito Mejía next year could change the process of liberalization of the country started in last years.

This brief analysis shows how much are the possibility for the future of the economy of the island. But Latin American countries are very instable in their culture, not just in politics but also for a social point of view.

Caribbean region is the heart of America and the Dominican Republic can be considered the heart of Caribbean region, and this is not just an analogy. It surely represents the strongest advantage of the country, the strongest key factor of its growth.

But the most remarkable thing is to find a way to exploit this natural advantage the country has. And the best way, it was surely coordination and FTZs implementation. But more than Manufacturing oriented FTZs the best way for the Dominican Republic to exploit its strategic position is the creation of Logistics-Oriented FTZs.

This requires a change in labour force, a strong political system of incentives and a good plan of development. The government and the institution for this have a basic role.

4.2 Zonas Francas in the Dominican Republic, their role for national development

The Dominican Republic is a developing country that is growing very fast. Considering the economical growing of all the countries in Caribbean area, the Dominican Republic is the most important economy. Considering all Latin America, the Dominican Republic has a very important role, in particular in a geographical point of view.

In last years, excluding the natural decreasing in GDP, caused by the global crisis, Dominican economy grew constantly for a lot of factors. The most important one among these determinants can be surely considered the dynamism of its economy.

A lot of FDIs are focusing on the island, attracted by favorable conditions in different fields regarding all the different variables of business success, such as the legal, the economical and the fiscal ones.

From a political point of view in the last two political administrations, Dominican Government adopted a lot of different policies direct to economical liberalization, through the privatization of many state-owned enterprises, improving the economical laws in a lot of different fields. For instance great importance had the new regulation on protection of industrial property, and all the agreements made through the participation to multilateral institutions related to WTO.

The Dominican Republic can be considered a perfect place for a foreign investors who is looking for business opportunities. It can be considered as a heaven. The Dominican Republic has a lot of strength as country-system:

- Political and Macroeconomic stability
- High skilled Labor Force
- Good system of Telecommunication
- Developed financial and insurance system
- Fiscal incentives
- Advantages for legal system

- High entrepreneurship of management
- Optimal system of Transportation
- Geographical Position
- Presence of FTZs

From a logistic point of view the last three points are the most important. First of all, there is a great transportation system in the Dominican Republic, with 12 international ports, 12 national and international airports, some of them strongly focused on international commerce.

An other interesting feature of the Dominican Republic is represented by all the bilateral and multilateral agreements in which it participates. For this, geographical position has a very important role. The position of the country provides access to different markets such as North America, Central America, South America and obviously Europe.

All these natural advantages in a positive social and political environment, create optimal conditions for the economical operator. The aim of the last years was the focus on the creation of a society favorable to commercialization of goods and services, so trying to improve the social status of Dominicans. Actually this target generated great social problems such as the high gap between rich and poor people and the high inflation rate there is now in the country. But this can be considered a normal negative externality in a fast economical growing of a developing country.[8]

FTZs were surely the most important determinant of Dominican growth and nowadays they can be considered one of the greatest strength of the economical system of the country.

The fist law regarding FTZs (in Spanish Zonas Francas – ZFs) in the Dominican Republic was promulgated in 1955. Through this Law was established a Comisión de Zonas Francas (Commission of ZFs) that was referred to the commercialization of imports and exports of some particular items. In 1956 the Law was completed promulgating the Law 432, adding other items the law of 1955. But it was just an experiment.

[8] G.Missale, Legal and Fiscal Guide to Investment in Dominican Republic, 2010

On the 23rd April 1969 ZFs were officially created in Dominican Republic through the Law 299. Through the classification 'A' of this Law, it is allowed the establishment of companies in ZFs with particular requirements and advantages in legal and fiscal frameworks. With this Law it is establish the exemption of 100% of the taxes on imports of raw materials and transportation goods, on yields and patents.

Starting from the promulgation of this Law, the ZFs industry begins. In the 1969 the first FZ was instituted in La Romana, in the east of the country. The name was 'Zona Franca Industrial de La Romana' and it was developed by the Gulf and Western America Corporation. After three years, in 1972 the 'Zona Franca Industrial de San Pedro de Macorís' was created. The first company signed in the first Dominican ZF was the Brideshore Limited, and it is still in operation in La Romana.

In order to promote the ZF industry, in 1990 the Congreso Naciónal promulgated an other Law about the ZFs. The Law 8-90 had an important objective. Until the 1990 every ZF in the Dominican Republic had its autonomy in implementing their normative in a lot of fields. This surely generated a great development of the industry, but on the other side a great illegality. The objective of this Law is to unify all the topics regarding the management, the organization, the incentives, the rights and the obligations of Industrial ZFs. In addition to this, the Law represents a strong driver to create new ZFs in the poorest areas of the country.

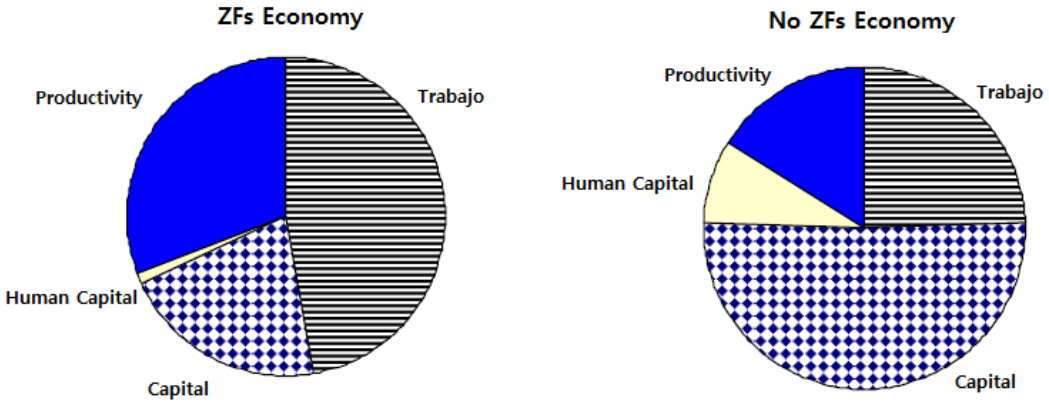
The new fiscal framework, that is the same that it is still used nowadays, is with more exemption. In particular has the exemption of 100% of taxes for:

- Taxes on Yields
- Taxes on Construction, Mortgage Registration, Transfer of Real Estate and Immovable Properties
- Taxes on Constitution of Enterprises or on the Increasing of Capital on them
- Municipal Taxes
- All the taxes on Imports
- All the taxes on Exports, with some exceptions

- Taxes on Patents
- Consular rights on all the imports to ZFs
- Taxes on Imports of goods for the improvement of condition of labor force
- Taxes on Means of Transportation or Load and Unload of goods, catching waste, transportation of workers.

ZFs sector collocated the Dominican Republic as one of the best places of Productivity and Work, not just in a Latin American level, but actually all around the world.

Picture 5.1 Comparison among Increasing Factors in Dominican Republic (World Bank, 2011)



The implementation of ZFs was surely an actual key success factor of the development of the Dominican Republic in the last years. Today in the Dominican Republic there are 48 parks, with 555 companies in operation, about 121,000 employers and exports for US$ 4,080.1 millions.

Naturally, the success passes through the employment. The labor forces in ZFs increases in 2010 of the 7.4% from the 2009, when there were 112,618 official employees inside the parks.

Moreover, an other important situation to consider is all the effect of ZFs on related companies or industries that are not officially inside the park but they are part of the supply chain. In this context, the effect on

employment of ZFs is surely very high and positive and can clearly influence all the economy, also in the industries not directly related to ZFs activities.

On the GDP of the country results are clear:

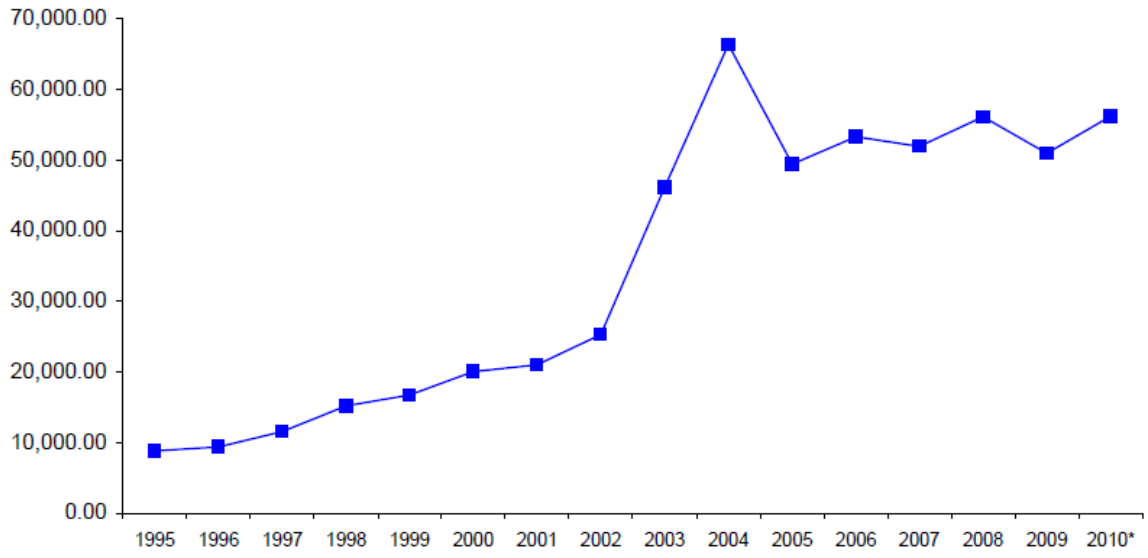
Table 4.1 Contribution of ZFs on Dominican GDP (CNZFE, 2010)

(En millones de RD$, valores corrientes)

Year	GDP	Zonas Francas	Contribution (%)
1995	211,024.60	8,765.20	4.2
1996	233,833.30	9,380.50	4.0
1997	274,423.90	11,510.80	4.2
1998	311,282.80	15,159.60	4.9
1999	343,745.30	16,728.80	4.9
2000	388,301.90	19,990.30	5.1
2001	415,520.90	21,026.40	5.1
2002	463,624.30	25,249.90	5.4
2003	617,988.90	46,076.50	7.5
2004	909,036.80	66,405.10	7.3
2005	1,020,002.00	49,395.80	4.8
2006	1,189,801.90	53,296.30	4.5
2007	1,364,210.30	51,917.00	3.8
2008	1,576,162.80	56,084.60	3.6
2009	1,678,762.60	50,939.10	3.0
2010*	1,901,896.70	56,179.40	3.0

* September

Picture 4.2 Trend of contribution over the time (CNZFE, 2010)



In the year 2010, it is possible to count in the Dominican Republic 48 Parks in operation, with an increasing of 2.1% in comparison with 2009. The main part of all the Parks are concentrated in the Northern part of the country

(about the 45.8%). In the area of the Capital, called Districto Nacional there is a good 25% while the other part is divided between the southern part (with a 18.8%) and the eastern part (with a 10.4%).

Picture 4.3 Location of ZFs in Dominican Republic

Considering an other interesting variable, the property, el 64.6% of the parks are private, the 29.2% are public, and the other 6.3% are managed by a mixed administration.

Regarding the enterprises, in 2010 it is possible to count 555 companies in operation, with 2 new entry in the last year. In 2009 in fact the companies were 553, with a small increasing of 0.4%. The 42.3% of the companies are situated in private parks, the 20.9% in the public ones, a 14.8% in parks with mixed administration and a strong 22% in special ZFs (specialized in some particular industries). The 47.9% of the companies are situated in the North, the 25.2% in the Districto Nacional and Santo Domingo, the 15.3% in the South and a 11.5% in the eastern part of the country.

Historically, ZFs in Dominican Republic were for a lot of time focalized on textile industry, as one of the best way to exploit the manufacturing nature of a developing zone. In 2010, especially after the crisis,

the things were different. Among the activities, it is possible to count a 29.2% for Services and Commercialization (where the final industry target is surely Tourism). Manufacturing has in the complex a 30.8% (about the 21.6% is still represented by textile, while there is a strong 9.2% for Tobacco and Derivates, that represents a typical product of the country). Agriculture and Food counts a 7.2%, while Pharmaceutical and Medicaments are increasing a lot in the last year for the Haiti earthquake to a 4.3%. The remaining 28.5% regards all the other activities with a strong focus on Logistics industry.

The most important thing to underline is that ZFs represent a mirror of all the national economy, considering that the most important industries in the Dominican Republic are Tourism, Agriculture, Textile and Logistics.

Most of investments come from United States with 221 companies and a participation of 39.82%. The Dominican Republic counts 203 companies and Canada, Korea, Netherlands, France, Spain, UK, Switzerland and Germany are the only countries counting more the 1% of participation.[9]

Table 4.2 Summing Up of Evolution of ZFs sector in Dominican Republic in the last 15 years with relative variables (CNZFE, 2010)

Year	Parks	Companies	Employees	Exports (Millions US$)	Currencies (Millions US$)	Average Weekly Wage (RD$)	
						Workers	Technicians
1995	33	469	165,571	2,907.40	509.00	539.96	1,095.89
1996	36	436	164,639	3,107.30	545.00	576.92	1,257.00
1997	40	446	182,174	3,596.40	701.00	634.27	1,441.12
1998	43	496	195,193	4,100.00	826.50	638.32	1,556.90
1999	44	484	189,458	4,331.50	887.30	701.21	1,587.22
2000	46	481	195,262	4,770.60	1,018.60	716.51	1,629.85
2001	51	512	175,078	4,481.60	977.90	775.49	1,662.93
2002	53	520	170,833	4,317.30	886.50	786.56	1,671.53
2003	54	531	173,367	4,406.76	810.84	961.34	2,010.79
2004	58	569	189,853	4,685.24	863.40	1,131.25	2,539.82
2005	57	556	154,781	4,749.65	1,005.43	1,347.09	2,702.67
2006	56	555	148,411	4,678.60	973.70	1,465.19	3,009.97
2007	53	526	128,002	4,525.22	1,010.90	1,480.37	3,127.22
2008	48	525	124,517	4,354.10	954.30	1,652.80	3,533.22
2009[1]	47	553	112,618	3,793.50	959.00	1,819.00	3,689.56
2010*	48	555	121,001	4,080.10	1,123.00	1,829.03	3,841.64
Increasing % 2009-2010	2.1	0.4	7.4	7.6	17.1	0.6	4.1

1 - Reviewed
* - Preliminar

[9] L.F.Durán, Informe Estadistico sobre el Sector de Zonas Francas en República Dominicana, Consejo Nacional de Zonas Francas de Exportación, 2010

Summing up, it is possible to claim that ZFs had a great role for national economy of the Dominican Republic. Even if there is a strong common idea among the experts that affirms FTZs is something that it is declining and it does not represent the future of a country, in last fifteen years in the Dominican Republic there was a great GDP growth, and all the most important variables in ZFs sector are significantly increasing. It is the case of export (7.5% in fifteen years), currencies (17.1%). There is still a lot to do for condition works, for example workers salaries increased just of 0.6%, and considering the great inflation there is in the country it is not a positive data.

But the usage of coordination tools, such as clusters or FTZs is something typical in Dominican economy.

4.3 Dominican economy. Four industries in a unique pattern.

According to data of Dominican Central Bank, the GDP of the Country increased of 7.8% in 2010. The growth was related to final consumption (increase of 7.6%) and investments (increase of 17.5%). Dominican economy went rapidly out the crisis.

Also pro-capita GDP increased of a 5.6% representing a general improvement in condition of life but inflation rate continues to be a great problem for the entire economy. The inflation rate in 2010 was 6.24%, one of the higher of the last years.

Main sectors of the country are:

- Textile (decrease of 2% in 2010)
- Agriculture (growth of 13.2% in 2010)
- Tourism (growth of 13.6% in 2010)
- Renewable Energies (growth of 5.3% in 2010)

The crisis has affected a lot all the mass-industries like textile for instance. But it did not touch a lot all the sectors in which the Dominican Republic has a natural competitive advantage. It is the case of agriculture (with the relative production of typical tropical products), of tourism (the

Dominican Republic has the higher rate of foreign tourists of all the Caribbean region) and of energy (with a strong focus on renewable energies as sustainability of environment).

All these sectors are strictly related to ZFs implementation. But actually they are pushed by all the coordination tools typically used by a country for developing the economy. Tourism is developed through clusters, Agriculture has special clusters in some areas of the country and manufacturing of final products in ZFs, Textile was totally developed through ZFs.

Regarding Renewable Energy, it represents a consequence of saturation of Construction investments. Renewable Energy sector needs a strong system of R&D. And in this case, the Dominican Republic has special ZFs totally related to R&D, but also industrial clusters.

4.3.1 Manufacturing Industry. Between Textile and Tobacco Derivates

The ZFs in the first part of Dominican economical history were Manufacturing-Oriented. The most important sectors of manufacturing were surely the textile one and the production of tobacco derivates (such as cigarettes or cigars). It is interesting to know how these two sectors are decreasing in the last years.

In 2000 the 73% of all the labor force in ZFs was employed in textiles activities and adding the sectors regarding shoes, tobacco or electronics, more than 90% of all the activities were related to manufacturing, with more than 80% of companies operating in this typology of activity.

In 2010, the labor force in textile activities was at 34.6%, and in total manufacturing activities counted about half part of the entire activities of ZFs in the Dominican Republic.

There are some particular reasons for this decrease:

- Costs of wages: The request for higher wages in the Dominican Republic during the last ten years is related to the great inflation of the country. And this factor is not competitive considering other countries manufacturing oriented like China.

- Strategies of Diversification: Most of the textile manufacturing activities in the Dominican Republic is related to cotton. This lack of diversification is caused by natural limits but also by different objectives that ZFs fount, such as the logistics.
- Strong Competition: The only real advantage in manufacturing of textile in the Dominican Republic is represented by the location and by the general higher quality of the product (in comparison with the Chinese ones)

All these reasons generated a decrease in strength of this sectors during all the last years, but as explained before, the Dominican Republic has natural advantages like its geographical proximity to the United States. An example of this could be companies like American Apparel, that decentralize part of its supply chain in the Dominican Republic, or also Mango, that produces its items for American market in the island.[10]

This sector is called 'fast-fashion', and textile sector in the Dominican Republic was for a lot of years related to this.

Table 4.3 Evolution on employment in ZFs for manufacturing (CNZFE, 2010)

Industry	**% of employees 2000**	**% of employees 2010**
Textile & Shoes	73.2%	41.3%
Tobacco & Derivates	17.4%	16.3%
Others Manufactures	7.2%	3.1%
Services (included Logistics)	2.2%	39.3%

But manufacturing is not just textile. If textile sector was for a lot of years, the most important part of all the manufacturing activities in the Dominican Republic inside the ZFs, there is an other sector that is the only one is resisting. It is the tobacco and derivates one that represents actually a typical business and maybe for this reason has natural competitive advantages.

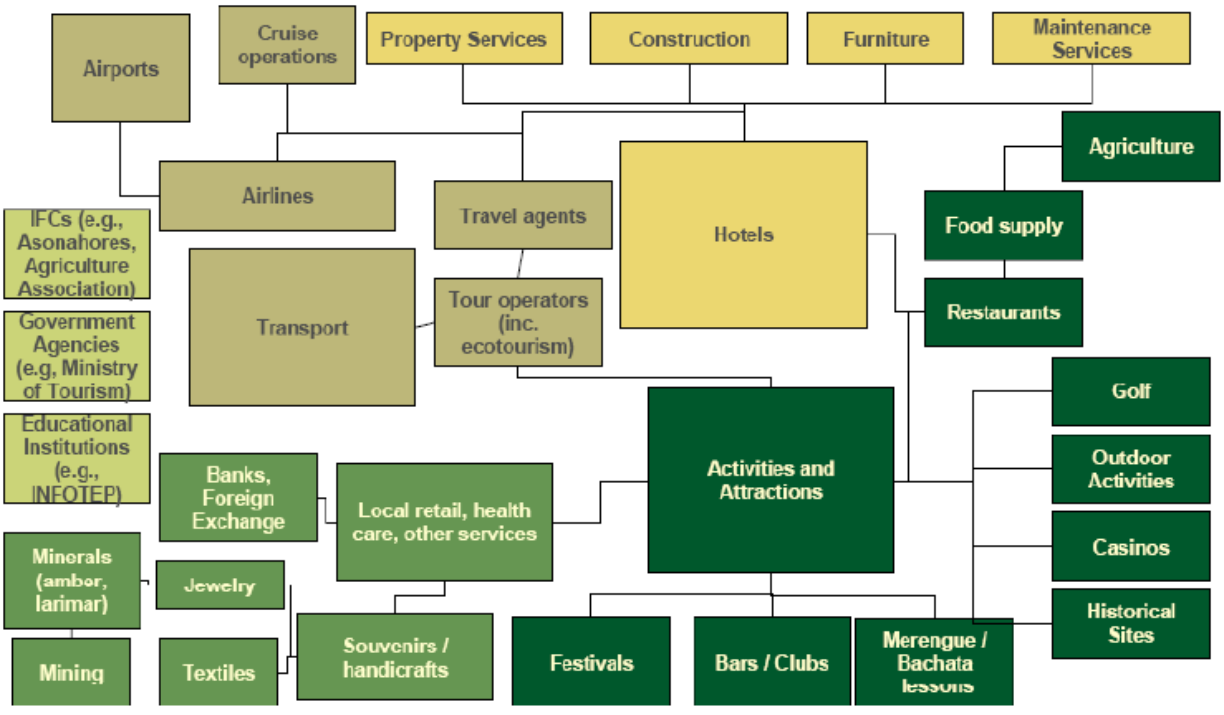
[10] D.T. Mathews, Zonas Francas de la República Dominicana. ¿Sobrevivirán a la liberalización del Comercio del Vestido?, Revista Mexicana del Caribe, 2002

In 2010 all the labor force employed in tobacco industry inside ZFs was at 16.2%. In 2000 it was counted a 17.4%. The decrease was minimal considering the terrible fall in percentage of labor force working in textile industry. The Dominican Republic for tobacco has just a great competitor in the area, Cuba. But political situation is completely different and the usage of ZFs was surely a key factor of success.

4.3.2 Tourism Industry. Clusters structure and Haitian Labor Force

Tourism in the Dominican Republic is very important for the entire economy, and it has a lot of influence in different sectors, from transportation, communication, to agricultural production, construction, water and energy consumption. Other contribution to the economy are given to foreign exchange inflows, job creation and FDI. In all this context is normal to claim that also ZFs activities are part of the entire system, and driver of the great success of this sector in the Dominican Republic.

Picture 4.4 The typical example of industries in a Tourism cluster (MOC, Dominican Tourism, 2004)



The nature of tourism industry is the creation of clusters where different companies, operating in several activities, collaborate to the result of the entire geographical cluster.

The Dominican Republic can be defined as a low-cost, high volume destination and this in particular thanks to the implementation of particular clusters and location brands.

Officially the Ministry of Tourism of the Dominican Republic recognizes 5 official clusters:

1. Santo Domingo Tourism Cluster
2. Punta Cana & Bavaro Tourism Cluster
3. La Romana Tourism Cluster
4. Samaná & Las Terrenas Tourism Cluster
5. Puerto Plata Tourism Cluster

These clusters are example of how it is important logistics. In fact of all them has an airport (like in a logistic cluster), and all the steps of the entire supply chain of the sector. This experience for the Dominican Republic is prove how the country could become in the future a hub, also for other activities, and can develop its logistics industry.[11]

An other important point to highlight is the usage of the labor force in resorts for instance, or generally in Dominican tourism clusters. According to the Ministry of Tourism in 2010, 27.5% of employees in tourism industry was Haitian. Haitians, especially after the earthquake represent a resource for Dominican economy. They represent low-cost labor force, but also high-skilled, considering they are French-speakers but they can generally speak a good English and Spanish as well.

4.3.3 Agricultural and Food Industry. A source of aid for NGOs

According to the CNZFE, in 2010 the 16.8% of the businesses in Dominican ZFs were related to agriculture, food or tobacco with about 20%

[11] B.Barrera, P.Gjurcilova, S.Rabinowitz, H.Suemori, Tourism in the Dominican Republic, MOC Project Paper, 2007

of employment in ZFs for this sector. For the entire country, Agriculture is part of the history and also part of the present. In the Dominican Republic in fact there are just 2 metropolitan areas. One is Santo Domingo, the Capital. The other one is the economical center of the country, Santiago, in the north. All the remaining part of the country is represented by fields.

In all the territory there are different official clusters:

- Cluster of Dominican Mango
- Conjunto Productivo of Avocado
- Conjunto Productivo of Pinapple
- Cluster of La Vega (with focalization of Oriental Vegetables)
- Cluster of Jarabacoa (with focalization of Coffee)
- National Confederation of Producers of Dominican Cocoa
- Cluster of Bananas

In order to develop all the typical products of Dominican agriculture, the government (with the CNC – Consejo Nacional de Competitividad) created all over the years, different clusters focalized in all the specialties. These are public clusters.

But there are also some private clusters:

- Clusters of Producers of Cocoa in Monción
- Cluster of Cannava in Monción
- Cluster of Greenhouse Products in Jarabacoa

Summing up, agriculture counts 30% of available earths, 17% of total employment and 11% of total GDP. But there is not just agriculture, in agriculture industry. There are some related sectors very important in last Dominican economic years:

- Biotechnologies
- Agriculture Products
- NGOs aid

All of them are strictly related to the investment in R&D. Biotechnologies regard the usage of GMO (Genetically Modified Organisms) that in the Dominican Republic are allowed by the law. Agricultural Products,

instead are all the products created to improve the productivity of the areas, in order to overcome a great disadvantage of all the country, its dimensions.

After the earthquake in Haiti, the exports to Haiti increased a lot but under a different name, as aid. The Dominican Republic became the first food partner of Haiti, and all the countries operating with NGOs in Haiti for providing food aid.

The main strength of the Dominican Republic in this sector is the increasing demand for its typical products. Prices of Sugar, Coffee and Cocoa for instance are increasing. Also in terms of related industries, the Dominican Republic is strong in biological products, and the demand from United States or European Union is getting very high. Also in this case, the Dominican Republic has the same advantage, its perfect geographical position for exports to North and South America, and also to Europe.

The main weakness is represented by the dimension of the islands that prevents a mass production, also for the lack of technologies for which investments in last years are increasing. An other natural disadvantage is represented by climate. There are often hurricanes, tropical storms in the island and for this reasons there are some technologies consolidated in Western countries, that cannot be used in the Dominican Republic.[12]

4.3.4 Construction Industry. Renewable Energies as future scenario

Construction industry was one of the most important sectors in the past. Also nowadays, constructions are important but considering the real estate bubble of 90s' in the Dominican Republic, not totally exploded, construction companies faced a lot of different challenges.

In particular construction continues to be an important sector in Dominican economy, but especially in the last years, the target is completely changed. During the 80s' private real estate was the most important part of construction business. During the 90s' there was the hospitality period, with

[12] Camera di Commercio Dominico - Italiana, Settore Agroindustriale in Repubblica Dominicana, Area Acca Partenariato, 2011

hotels and resorts. Nowadays, the Dominican Republic is facing the Renewable Energy challenge, like a lot of other developing countries.

The Law 57-07 about Incentives for Renewable Energies was the first government step for the implementation of an energy plan in the country. The greatest opportunity of the islands is surely represented by the wind energy. A local company called EgeHaina, exploiting an investment of US$ 100mlns opened two wind parks in Juancho, in Southern part of the country (officially the poorest area of the Dominican Republic). 56 km of parks with the creation of a relative cluster, called Cabo Engaño Wind cluster.

That area is a perfect zone for the power of wind, but not for tourism plans. In fact, that region is completely devastated by Santo Domingo's trash, swept away but the waves of the sea. For this reason, the government preferred that area, more than others with good wind conditions as well.

In 2010 a great Chilean construction company, Cementos Andinos, made an other strong investment to the construction of a third wind park, the Parque Eólico Los Cocos, with the project of an other park, the Parque Eólico Quilvio Cabrera.

According to Tito Sanjurjo, president of EgeHaina, wind energy is generally the most expensive among the renewable energies. This happens for the complexity of technology, for the regulatory complexity (caused by the strong environmental impact), the fast growing evolution of technology, difficulty of replacing the investment and relative not-governmental support.

But the production cost in the Dominican Republic is one of the lowest in the world. The average production price all around the world is about 6 US$ for KW, with a customer price of 9 US$. In the Dominican Republic the production price is just 3.3 US$ (one of the lowest in the world), while the customer price can reach also the 30 US$.[13]

Obviously this gap between production and consumption in the Dominican Republic is caused by the high inflation rate of the country. The reasons of the low cost production are generally three:

[13] I. Aizpún, B. Sánchez, El viento que traerá la luz, Diario Libre Medio Ambiente, 2011

1. ZFEs Advantage – A lot of ZFEs are mostly specialized in energy and new technologies. In particular there are four ZFEs in the South region of the country specialized in Energy businesses (Azua, Independencia, San Cristobal, Peravia, San Juan de la Maguana).
2. Mature Construction Industry – A saturated real estate environment generally generates the necessity of a country to focus the investment in concrete or cements in other typologies of infrastructure. Dominican history tells the passage from houses to resorts (and now innovative constructions).
3. Great necessity of alternative energies – The price of oil and derivates in the Dominican Republic is very high because of its very disrupting inflation rate. This causes a very expensive price for alternative energies at the consumer level, but very low at production level.

Renewable energy industry is the focus of construction activities in the Dominican Republic in the last period. But it could be also in the future something of very interesting and important for the entire Dominican economy. The necessity of energy, the high prices of oil but also the natural features of the island could be good drivers for the evolution of the industry.

4.4 Wind Energy, importance of FTZs and logistics as drivers of development of this industry

The winning strategy for implemented by the government in the Dominican Republic was linking FTZs and logistics industry to renewable energy sector. In 2010, FTZs situated in the southern part of the Dominican Republic largely operated in renewable energy research and relative implementation. Baní, Barahona, La Armería, Nigua, Pedernales and Villa Altagracia FTZs focused a lot on manufacturing activities, such as production of concrete or other construction material. San Cristobal Itabo FTZs,

Interexport Free Zone and Miltiparques del Sur FTZs, were mostly related to research and development and logistics activities.[14]

The lower costs of construction materials, thanks to the using of FTZs are a strong competitive advantage of the Dominican Republic. On the other side, a great problem is represented by the transportation of energy. In order to find a way of distributing energy from the storage spaces in the wind parks to all the other energy sources all around the country, is very difficult, but the creation of focused FTZs on logistics and research and development is surely a great advantage and strength for the Dominican future in this particular industry.

In particular for distribution of energy, the Dominican Republic has National Competitive Advantages strictly related to logistics industry.

4.5 The determinants of Dominican National Competitive Advantage. A diamond study of the logistic industry development.

Porter's Diamond is a framework that is used in general to study and analyze the competitive advantage of a firm, but it can be used also for industries or nations.

The official form of Porter's diamond has inside four variables:

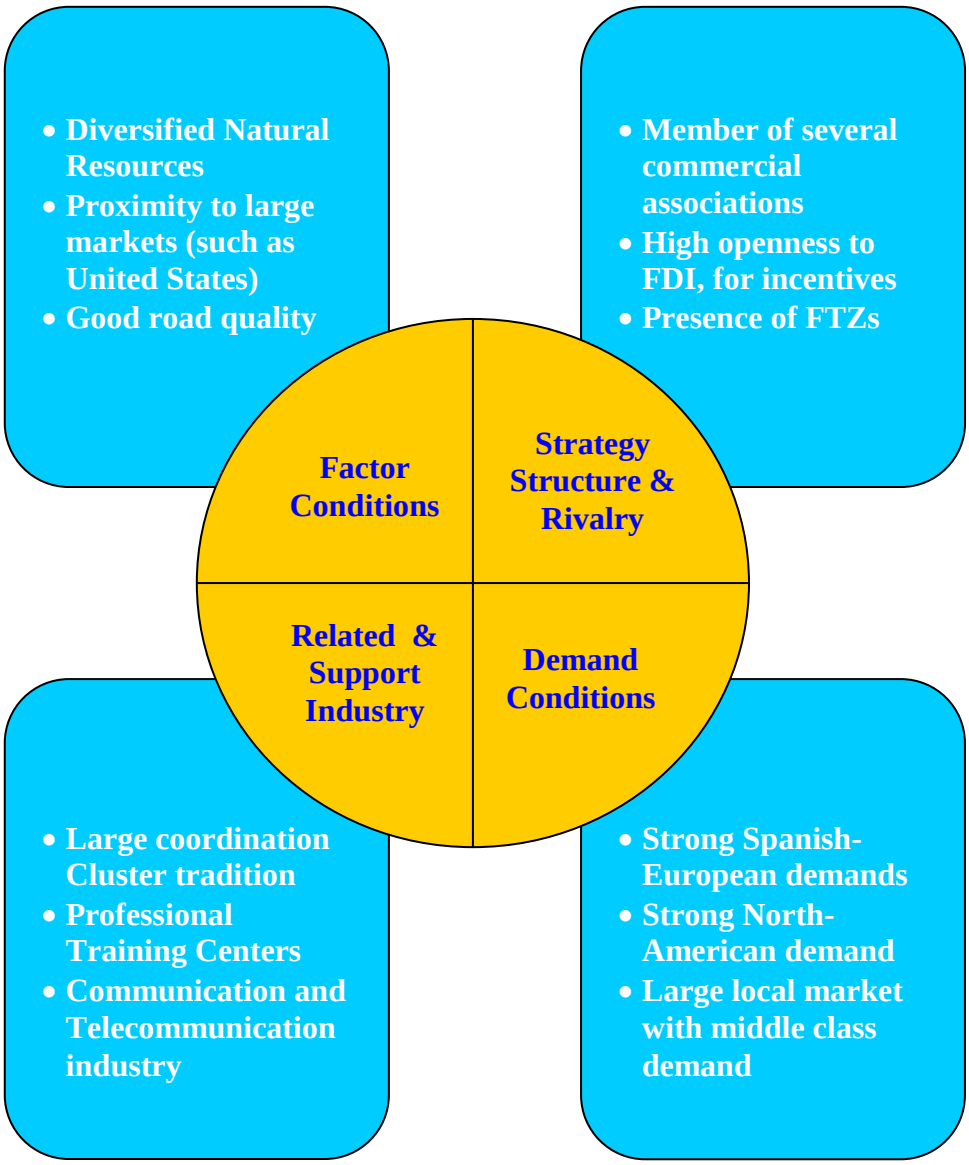
1. Factor Conditions
2. Demand Conditions
3. Firm strategy, Structure and Rivalry
4. Related and Support Industries

But in literature, Porter's diamond is considered incomplete. One of the most important things Porter's diamond does not consider is the Role of the Government and Institutions, that, even if at a firm level is not so crucial, when it is a nation or an industry to be analyzed becomes very important.

For Dominican Republic case, its competitive advantage can be summed up in this way:

[14] Informe Estadistico – CNZFE, 2010 – Sector Zonas Francas

Table 4.4 Porter's Diamond for Dominican National Competitive Advantage (made by the author)



4.5.1 Factor Conditions

Among all the Caribbean countries, the Dominican Republic enjoys favourable factor conditions in terms of:

1. Diversified Natural Resources: Minerals, Coffee, Sugar, Tobacco and Cocoa are the most important natural resources of Dominican country. In particular for logistics industry, it is an

important factor because the first step of supply chain is generally the procurement of raw materials. For this reasons, a lot of companies could decide to internationalize there in order to exploit these advantages in the first step of the chain.

2. Proximity to Large Markets: The island is situated very close to United States and in a middle way between North and South America. For a lot of products, in America, in general there are two main markets. The North American one is composed by United States and Canada, and all the Latin America, composed by the Spanish-speaker countries. A third important market growing fast is the Brazilian one.
3. Good Road Quality: It is an other important factor for logistics industry. For the creation of logistics cluster and for the fast transportation of materials and products, this is a crucial feature. In particular the island counts five great highways connecting all the most important corners of the country, without official limits of speed.

An adding factor condition could be represented by the feature of labour force. It is cheap but unskilled. These are features that actually can be positive or negative in different contexts, also considering the general logistics system of the country.

But there are also negative conditions factors the country is working on. Among these it is interesting to remark the poor telecommunication infrastructure, such as for internet connectivity or IT supports. Moreover, the high cost of electricity, can be a hostile situation especially for the development of the poorest areas, for example the south. The Enactment of Electricity Law in 2001 improved a lot the industry, creating a more competitive systems, decreasing considerably the blackouts.

As an international level, the only country that could have similar optimal factor conditions could be Cuba, especially for land size and population. But there the Communist system created an other idea of economic development.

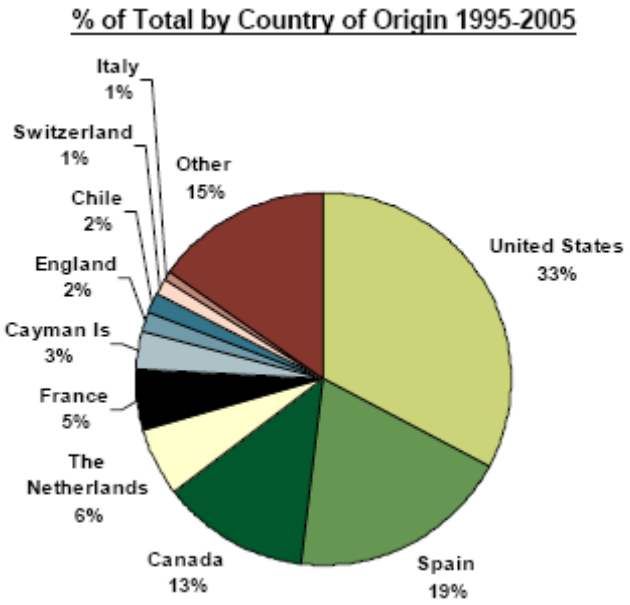
4.5.2 Demand Conditions

In all the industries, the demand for Dominican businesses is generally shared among three different kinds of customers:

1. North American demand: It counts the highest complex share of demand thanks to the proximity of the market and the strategic position of the island. In particular the demand is from United States but also Canada counts a remarkable share. In terms of logistics, Cuba trade ban is the most important reason for United States demand.
2. Hispanic demand: It regards two different typologies of demand. One is the Latin one, represented by all the Spanish speaker countries of Central and South America. The other one is the European one, represented by Spain as bridge for European Union, generally for colonial reasons. In fact, the majority of the European companies in the Dominican Republic is Spanish.
3. Local Dominican demand: Thanks to the large size of population, in comparison with the other Caribbean countries, there is an emerging middle class of Dominicans, representing the local demand. In FTZs for instance, after United States, the second country with more companies is the Dominican Republic.

An interesting point is represented by the double face of demand conditions in the country. Dominican demand is the local one, related to basilar businesses (for example more focused on manufacturing), dominated by middle class. The other one is more sophisticated and represented by Hispanic and North American ones. In complex, the demand is more common from downstream companies.

Picture 4.5 Total FDI by Country of Origin (DRCB Economic Statistics, 2006)



Summing up, the most important negative feature and consequence of all the demand conditions is that, in the complex, in the Dominican Republic there is an unsophisticated demand, with the exception of the foreign one. This typology of demand could be negative for the development, especially without good governmental policies.

4.5.3 Strategy, Structure and Rivalry

This is surely the most crucial and fool of opportunities point of the diamond. In fact the strategy of the country is surely the key success factors of its past and future development.

Important features are represented from a political point of view. The Dominican Republic is a stable country. All the administrations in its last 20 years terminated their mandates (officially for law an administration lasts 4 years). The main parties are the Liberal-Democratic (of centre-left) and the Revolutionary (of left). For this reasons the country appears progressive in ideals but liberal in the economy.

From an economical point of view, the economy is enough diversified, with different strong sectors, like in a developed country.

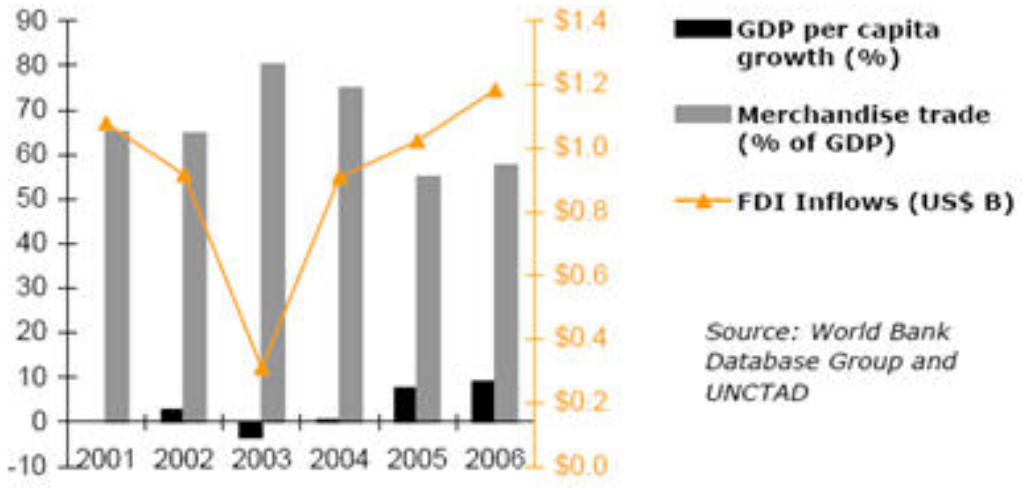
The most important success factors of the country are:

1. International Commercial Agreements: The Dominican Republic has access to North American markets thanks to CAFTA DR, signed the 1st March 2007. CAFTA DR represents an agreement with United States, in which both the countries have the commitment to favour the increase of commercial exchanges, to eliminate the obstacles to free trade and to facilitate free circulation of goods. The agreement has also the cancellation of the 80% of trade barriers. With this operation CAFTA DR becomes the second market for United States after the NAFTA (composed by United States, Canada and Mexico). In America, the Dominican Republic is the 7th commercial partner of United States (after Canada, Mexico, Brazil, Venezuela, Colombia an Chile), and every year the volume of the trades increases. Thanks to this agreement the export sector for the Dominican Republic can grow a lot. On the other part of the Ocean, thanks to the Cotonou Convention, there is the possibility of entering European product to the Dominican Republic in positive circumstances. It permits a particular tariff regime among 79 countries in Africa, Caribbean, Pacific area and European Union. The evolution of this agreement is represented by EPA (European Partnership Agreement), that has a particular consideration for the countries of CARIFORUM (Caribbean agreement). The main objective is the reduction of poverty in Caribbean region by European Union, through plans of development of companies and programmes directed to sustain fiscal reforms in these countries (the Dominican Republic included). CARIFORUM countries in 15 years, have to pay Europe back for the help, in terms of export and import advantages. There is also CARICOM, in which the Dominican Republic is observer member because it is a trade agreement among English speaker countries of Caribbean. All the countries in this agreement eliminated border

taxes for the majority of the products. Finally WTO represents the highest form of agreement, in order to regulate the fair play in trade activities. In last years the Dominican Republic is also developing a good system of agreement with Asian emerging countries.

2. High openness to FDI: Inflow FDIs are favoured a lot by the government through the implementation of FTZs for instance, or through the fiscal innovative regulations. Foreign capital in the country is very high and as it is shown in the following graph, it is always increasing all over the time.

Picture 4.6 Inflow FDI in the Dominican Republic in the last decades (WB, 2011)



3. Presence of FTZs: Dominican ZFs, as largely explained before, are the actual key success factor of the Dominican system of economic development. They offer strong advantages in terms of logistics and taxes.

The main problems of the country, that can also create problems in the future for development and sustainability, are strictly related to the interconnections between economy and politics. In the Dominican Republic there is a general poor coordination between government and private sectors. The high level of corruption of the country and the lack of transparency decrease foreign trustee. Dominican financial history is full of bank bailouts,

and all the politics and the high class has still to show if they are able to fight and win against the corruption cancer.

4.5.4 Related and Support Industries

In logistics business it is very important to consider and analyze if a country is actually able to coordinate. And it is strictly related so some factors regarding the related and support industries and especially about the tradition and the culture of the nation.

The Dominican Republic represents a positive example of coordination thanks especially to three arguments:

1. A great coordination cluster tradition: As described before, most of the economic industries of the Dominican Republic were developed through the implementation of industrial clusters. The cases analyzed above are especially related to agriculture and tourism activities. If a country has this soul, it is surely more related to logistics activities than other ones.
2. Professional Trading Centres: For this point is important the role of INFOTEP (Instituto Nacional de Formación Técnico Profesional) that offers training for developing skills (from computer sciences to languages). At this time there are more of 200 training centres in all the country. INFOTEP has developed a new plan with the cooperation of the ILO (International Labour Organization) and has recently successfully implemented a methodology for the measurement and improvement of productivity.
3. Communication and Telecommunication Industries: For logistics activities is surely important the communication technology. In particular, the Dominican Republic is investing a lot on it, through the creation of particular ZFEs focused on it. It is the case of Cyber Park of Santo Domingo, situated at the east of the Capital. Even if the Telecommunication industry is

not so developed in the island, the country is investing a lot for its future scenarios.

A problem of the country, regarding the related and support industries is generally that, not considering tourism industry, all the other sectors are niches. For instance, agriculture is focused on typical fruits or oriental vegetable and not on mass market.

4.5.5 Role of Government and Institution

The intervention of the Government in the Dominican Republic is strong and recently was focused generally to reach two objectives:

- Openness of the economy to FDIs
- Privatization of State Owned enterprises

Moreover, these policies were accompanied by other policies for the promotion and the protection of investments. These were the most favourable developments in the business environment of the Dominican Republic.

The Government made several policies and developments in the last years, throw interesting laws and reforms:

- Significant Tariff Reform (Law 146-00, December 2000), slashing the number of tariffs by half and cutting off peaks, dropping tariff dispersion from 10.2% to 7.9% (WB CEM 56-57)
- Foreign Investment Law 16-95, opening all sectors of the economy to foreign investment, including a private airport, with very few exceptions limited to sectors deleterious to the public welfare (with negative externalities such as hazardous waste). (State Department)
- Law 69 mandates local sourcing for companies when products are of roughly the same cost and quality as imports, but this has helped local business without deterring investors. (State Department)

- All the relative International Commercial Agreements described in past paragraphs, such as DR-CAFTA Free Trade Agreement, CARICOM FTA or WTO. (WB CEM 54-55)

The Government in the last decades created a good economical climate and the consequences of its laws and reforms are an environment with no restrictions on foreign exchange, ownership share or technology transfer, and it allows a very innovative capacity of entrepreneurship.

But an other important role is in the hands of institutions. The most important and remarkable in Dominican development are surely:

- CEPI (Centro de Exportación y Promoción de las Inversiones), a Centre for Export and Promotion of Investment was established in 2003 as a shop for investors. It was adding to the OIP, the Office for Investment Promotion, established in 1997.
- CNC (Centro Nacional de Competitividad), a Centre for National Competitiveness. It suggested for a lot of time technical reforms for competitiveness, promotion of Industrial Property instruments, sustainable development, trade facilitation and logistics, innovation, technological development and cluster development.
- CNNC (Comisión Nacional de Negocios Comerciales), a National Commission of Trade Negotiations, promoted by the Ministry of Foreign Affairs, it is responsible for coordinate Dominican trade policies.

In a different way from other countries, the Dominican Republic never focused its development on educational institution such as universities. It incentives more foreign education, through creation of scholarships.

4.6 The Dominican Republic and the global Logistics Industry

An analysis regarding the global Logistics Industry and the role of the Dominican Republic inside it can pass through a simple analysis of the

industry. In fact, Logistics Industry, as explained before, has an important role in the future of commerce, especially in internationalization topics.

According to Marcus Stuart Bowles, one of the most important experts in the world of Logistics, the entire industry can be divided in two great typologies, with relative approaches:

1. Supply-Side Logistics: Regarding Procurement phase of supply chain and all the Material Management.
2. Demand-Side Logistics: Regarding Forecasting and all the Order Processing.

These two parts of Logistics Industry, represent also the trend that a nation can have in its implementation. There are countries that are naturally oriented on Supply-Side Logistics. An example can be Russia, where there is a strong capacity for raw materials. Other countries are naturally Demand-Side Logistics oriented, and it is the case of countries such as India, where, for its natural human resources is a perfect place for Order Processing.

The Dominican Republic could be in the middle. It has some perfect human resources for Demand-Side Logistics, such as a good knowledge of English by workers and a Spanish speaker environment. Spanish is in absolute the most common language spoken in all the Continent. But on the other side, it is a country full of raw materials, it is strong in mining and agriculture (with typical and rare products) and this is optimal for Supply-Side Logistics.

But there is an other point that is very important to analyze to see the position of the Dominican Republic in the complex and global Logistics Industry environment and this is the Technology-Side of the business. In case of Logistics the most important part to analyze in a country regards surely the Transportation system, with its infrastructure, and the Telecommunication system, in particular in terms of ICT development.

In the following paragraphs it is going to be described what the Dominican Republic can offer in terms of competitiveness and transportation system and who is demanding Logistics services to the Dominican Republic.

Logistics Industry, as showed before, is surely a great challenge for all the countries, but the Dominican Republic has a natural tendency in this sector, for historical and physical reasons.

4.6.1 The Supply-Side Logistics, Procurement and Materials

The Dominican Republic can offers a lot in terms of Procurement and Production advantages but also in Raw Materials availability. All this first part of the supply chain, represents also the Supply-Side Logistics.

In this phase, the most important variables to be considered to choose a supplier and also a country where decentralizing this phase are different. There are no-cost related factors such as:

- Quality of Product supplies
- Reliability of Product and Supplies
- Technical and Financial Ability to meet needs
- Location and Attitude

In Dominican Republic case, products have a general good quality. For the sectors more requested there is a high reliability of the product and even if there is not, the Government acts to improve it. For example in agriculture if there is not a high reliability of some products, the Government makes investment or creates clusters. The financial and technical ability to meet customer needs is not so strong, and for this reason the Dominican Republic has not the same levels of procurement requests of other countries such as China. The Dominican Republic appears more focused in its core competencies. The location is optimal, as largely explained before, and this is surely the best economical feature the Dominican Republic can offer.

But there are also cost related factors:

- Transport Costs
- Costs for receiving and preparation for use of received material
- Costs in maintaining inventory
- Production costs

The great Dominican competitive advantage in global Logistic Industry is surely in terms of costs.

Transport costs are very low, even if there has been a strong increase in oil price in the country in the last years. Costs for receiving and for maintaining inventory are very low thanks to ZFs. Especially the creation of Logistics-Oriented FTZs in the last years, improved this advantage and the reduction of this kind of costs. Finally, production costs are very low, thanks to the low labour costs, and even if it represents a negative externality, to the illegal work environment with low trade unions power.

In global Logistics Industry there are some countries with the same features of the Dominican Republic but in a different context.

Sri Lanka is an example of this. From a logistic point of view Sri Lanka is an island situated close to India (to the south of Indian Peninsula, in the centre of Indian Ocean). India is one of the most powerful emerging economies. In Sri Lanka people also speak English, but it is more interesting because labour cost is lower and it has a great necessity of capitals.

The Supply in Logistics Industry is represented by all the countries can offer Logistics services and in the most part of the cases, it is a consequence of its geographical position but also for the factors described above.

Table 4.5 Logistics Performance Index of some countries (Scdigest.com, 2011)

	Logistics Performance Index	
	Rank	Score
Singapore	1	4.19
United Arab Emirates	20	3.73
Poland	40	3.04
Tunisia	60	2.76
Honduras	80	2.50
Dominican Republic	**94**	**2.38**
Russia	100	2.37
Madagascar	120	2.24
Algeria	140	2.06
Rwanda	160	1.77
Afghanistan	180	1.01

Table 4.6 Logistics Performance Index of Caribbean Countries (Scdigest.com, 2011)

	Logistics Performance Index	
	Rank	Score
Panama	54	2.89
Mexico	56	2.87
El Salvador	66	2.66
Venezuela	69	2.62
Costa Rica	72	2.55
Guatemala	75	**2.53**
Honduras	80	2.50
Colombia	82	2.50
Dominican Republic	96	2.38
Jamaica	118	2.25
Nicaragua	122	2.21
Haiti	123	2.21

Among all the Caribbean countries, the Dominican Republic has a good position and it is considered like the best insular country for logistics performance. Among all the countries of the region Panama is the best, thanks to its stability and the presence of Panama's channel, linking Atlantic and Pacific Oceans. All over the world, the Dominican Republic performance in logistics is upper the average.

Dominican problems continue to be delinquency, violence and social risks. An other matter is the lack of laws and the great corruption.

4.6.2 The Demand-Side Logistics, Forecasting and Order Processing

Order Processing is the core of the logistics activity. The receipt of the customer is surely the last step in the supply chain, but in a logistics point of view it represents the initial step that culminate in the delivery of the product to the customer.

One of the most important things is certainly to have a good flow of communications, that keeps all the system together supported by a suitable and efficient management information system that can improve the processing of customer orders but also the flow of interesting information for management decision making.

So, logistics does not just mean finding raw materials at a low price, but there are interesting advantages also in terms of order processing activities that are generally related to Demand-Side Logistics.

For this, a country has to offer

- Good geographical location
- Good human resources
- Good ICT technologies

In the Dominican Republic, the geographical location variable is optimal. Human resources represent a good advantage especially for linguistic reasons. Improvement of Human Resources is a process Government is implementing day by day, through the openness of the country to foreign know-how in ZFs for instance. Poor ICT technologies represent still a problem in fast receiving of orders for instance, and on this factor the Dominican Republic has still to work a lot, to improve its status.

The majority of the demand from logistics services in the Dominican Republic comes from United States.

It is possible to identify some specific corridors for commerce:

1. North-South (From United States to South America). Especially between United States and Brazil as emerging economy (but also Argentina or Chile).
2. East-West (From Europe to South America). The continuous growth of Brazil is also in this case, part of the Dominican Republic logistics development (but also Argentina or Chile).
3. Internal Corridor (From all over the world to other Caribbean countries). In order to understand this corridor it is possible to make two clear examples. The first one, regards Cuba. Between United States and Cuba there are a lot of limits in commerce, even if Cuba for a lot of things depends from foreign countries and also United States exploits some advantages from Cuba in terms of production for instance. The Dominican Republic is the hub for this relation. A second example regards Haiti. The lack of physical infrastructure and governmental institutions

after the earthquake, generated a necessity by NGOs to use the Dominican Republic as platform to Haiti. In both Cuba and Haiti situations, the Dominican Republic was chosen for its natural vocation to be a logistics area.

4. Latin American Platform to United States (From Latin American countries to United States or Canada). A lot of Latin American MNEs, especially from Colombia, Argentina, Peru and generally South American countries, use the Dominican Republic like a platform to United States exploiting its fiscal and geographical advantages.

The result is that a good number of order processing for the Hispanic MNEs are decentralized to the Dominican Republic. According to BCRD, the Dominican Republic (21.3%) is the third country chosen by Latin American MNEs as back-office, after Panama (43.9%) and Colombia (27.4%). The businesses are not generally innovative. Costa Rica for instance, attracts mostly companies for renewable energy businesses. The Dominican Republic is most related to food or commodities.[15]

4.6.3 The Technology Side, the role of Transportation

In today's global business, supply chains are becoming increasingly longer and transportation needs to connect buyers and sellers who may be tens of thousands of miles apart. This increased spatial gap results in greater transportation costs and time, which in turn necessitates higher inventory and storage costs. Freight movement has been observed to absorb between one-third and two-thirds of total logistics costs.[16]

In an integrated logistics system, the choice of transportation service directly impacts on inventory and storage costs. For example, if a company switches from rail to air transportation to move finished goods from a factory to the customer, it would incur lower inventory and storage costs. This advantage will of course be at the expense of higher transportation costs.

[15] M.S.Bowles, Managing Supply Chain, Institute for Working Future, 2010
[16] R.H. Ballou, Business Logistics Supply Chain Management, Hardcover, 2004

Hence the company has to make the transportation decision taking into account the total cost or systems approach, which considers all the elements of the integrated logistics system. [17]

One of the best ways to create a logistics system with a good transportation environment is the usage of an intermodal transportation.

Intermodal transportation, in its definition is the utilisation of two or more modes of transportation combined. The common intermodal combination could involve rail, road and water transport.

In Dominican Republic case, there is a good intermodal transportation and it is implemented with three different modes:

1. Water transportation, with simple local Ports and also PHs, with relative ZFs linked to them.
2. Ground transportation, with 'autopistas', a Dominican idea of highways that represents the road transportation
3. Air transportation, with international and domestic airports, all of them optimal for transport of people and goods.

The Port system of the Dominican Republic consists of thirteen primary ports and seventeen smaller ports. Primary ports are actually PHs with ZFs linked to them and particular areas.

The biggest port now is considered Puerto Caucedo, situated close to Las Americas International Airport (the airport of the Capital). For a lot of years, at least until 2004, the biggest port was Haina, situated at 20km to the west of Santo Domingo. Both the two PHs had a great role for development of the humanitarian cluster for Haiti.

An other important Port for history, is surely the Santo Domingo's one. It is located on Ozama River, in the centre of the city. It has 12 docks and a maximum depth of 8.5 meters.

It is important to remember also Puerto Plata, in the north, that, with its 6 docks and maximum depth of 10 meters, it can be considered the gate to United States (just 800 miles to Miami). Moreover, it is situated 20km from the

[17] N.Lalani, Transportation Management and Operations for the 21st Century, ITE Journal, 1999

Union International Airport, the biggest in the north of the country, and close to an important tourism cluster.

There are 6 maritime lines operating in the country transporting goods to Europe and 18 transporting goods to the United States.

Table 4.7 Characteristics of the thirteen PHs in the Dominican Republic (CNC, 2005)

CHARACTERISTICS OF SOME DOMINICAN REPUBLIC PORTS						
PORT	No. of DOCKS	LENGTH - meters		DEPTH - meters		TYPE OF CARGO
		MAX	MIN	MAX	MIN	
CAUCEDO	1	600		14		Containers
AZUA	2	183		8	7	Oil, gas and multi-purpose
CABO ROJO	1	97.5		10.67		Limestone, aggregates and material for roads
PUERTO PLATA	6 plus 1 CBM	243	145	10	6.1	Multi-purpose, fuel oil, gasoline and passengers
SAMANA	2	230		9.15		Multi-purpose
BARAHONA	5	188	183	10.3	8	Lime, soda, coal and multi-purpose
LA ROMANA	1	220		8.5		Sugar, molasses, fuel oil, containers
PALENQUE	1 SBM			13.72		Crude oil
SAN PEDRO DE MACORIS	5 (2 CBM)	260	183	12.5	7	Cement, clinker, sugar, molasses, fertilizers, oil, gas and diesel fuel
BOCA CHICA	3	140		7.6		Multi-purpose
MANZANILLO	2	226		10.5		Multi-purpose
HAINA	16 (10 on the East and 10 on the West)	53.2	522.8	11	6	Grains, sugar, fertilizers, chemicals, fuel oil, ferro-nickel, asphalt, LO/Lo containers, multi-purpose
SANTO DOMINGO	12 (5 on the East and 7 on the West)	400	192	8.5	5	Fuels, grains, multi-purpose and passengers)
Source: Dominican Republic Port						

The road network of the Dominican Republic has 5,000 km of highways and 14,000 km of rural roads. Domestic transportation is accomplished by road, since no rail service exists.

Regarding container cargo, whether imported or exported, trailers are used, provided at no cost (for up to 5 days) by the shipping companies. This specific method like that used in the United States and in ports in Central America and Caribbean, also requires that the ocean lines have trailers for these services; it is estimated that there are some 3,500 trailers in the country.

According to the World Bank, the inventory of trailers is one of the factors that affect the higher cost of freight in the Dominican Republic.

A high percentage of trucking service is provided by transportation companies, the majority of which are small companies, whose owners have from one to five trucks. A smaller percentage of the fleet is owned by the users. An example can be given by transportation rates. The freight charge in transportation from Caucedo to Santo Domingo is 150 US$, from Haina is 60 US$. The majority of the internal logistics is between Santo Domingo (the Capital) and Santiago (the financial Capital).

Puerto Plata can be considered the port of Santiago. In the following table there is the linkage between main PHs and roads with the distances to the main cities of the country.

Table 4.7 Distances from main Ports to main cities (Word Bank, 2004)

Route	**Distance – Km**
Caucedo – Santo Domingo	30
Caucedo – Santiago	180
Haina – Santo Domingo	20
Haina – Santiago	170
Puerto Plata – Santo Domingo	215
Puerto Plata – Santiago	40

Officially, in the Dominican Republic there are 9 highways for a relative small territory:

1. Santo Domingo – San Fernando de Monte Cristi
2. Santo Domingo – Comendador
3. Santo Domingo – San Rafael del Yuma
4. Santo Domingo – Higuey
5. Las Galeras – Villa Bisonó
6. Santo Domingo – San Cristobál
7. Santo Domingo – Samaná
8. Bonao – Constanza
9. Santo Domingo – Yamasá

Other 4 highways are in construction and they will be ultimate until 2013, according to the communication plan of the nation.

Regarding the air transportation, the Dominican Republic counts 7 airports. The most important ones are logistically the International Airport of the Americas, 20 minutes from the Capital Santo Domingo, and Gregorio Luperón Airport in Puerto Plata, 15 minutes from the Port.[18]

Table 4.8 Main airports in the Dominican Republic (MOT, 2010)

AIRPORTS IN THE DOMINICAN REPUBLIC		
Name	Location	Runway Length in Feet
Las Américas	Santo Domingo	11,000
Herrera	Santo Domingo	4,199
La Romana	La Romana	6,299
San Isidro	Santo Domingo	7,000
Cibao	Santiago	5,249
María Montez	Barahona	6,500
Puerto Plata or Gregorio Luperón	Puerto Plata	9,121
Cabo Rojo	Cabo Rojo	5,000
Constanza	Constanza, La Vega	5,348
Punta Cana	Punta Cana	9,121

The optimal transportation intermodal system makes the Dominican Republic a perfect place for creation of logistics clusters.

In next pages, the analysis of the logistics cluster will be in an interesting and complex industry like the NGOs activities regard. In particular the Dominican Republic was the centre of an 'early recovery cluster' in the west part of the country, to help Haiti in the first months.

With the description of the mechanism inside it, it will be easy to understand the advantages of logistics in terms of saving money but also timing. In the case of NGOs the second point, the timing, is crucial. For profit organization is surely more important saving costs, but in both the situation with logistics there are great advantages.

[18] M.G. Ibarra, M.R. Gil, P.M. De Galofre, A.R. Blanco, Logistics Guide for the Dominican Republic, Ibarra & Asociados S.A, 2005

Part II

The Practice. Food Fortification and Logistics in the Dominican Republic and their importance for Humanitarian Initiatives in Haiti: Oxfam case as distributor NGO

Chapter 5

Food Fortification as core business in Agriculture industry of the Dominican Republic. Role of Logistics and FTZs

In the past Chapter a general overview on the economy of the Dominican Republic was given. The main and most successful industries in the Dominican economy are surely tourism, manufacturing, agriculture and construction.

For this thesis and the business case it is very interesting underline and tell more about the agriculture industry.

As described in the past Chapter, Agriculture and Food industry in the Dominican Republic is based on clusters. In all Cibao province, the most important area for agriculture in all the country, there are different clusters focused on particular products, sometimes typical, sometimes exotic.

The great disadvantage of the Dominican Republic in this sector is related to the dimension of the country. The Dominican Republic cannot even imagine to compete on quantity with bigger countries such as Argentina, Mexico or Brazil, just to list some names in the same region.

In last 10 years, the Dominican Republic fount an other way to exploit its natural features and product, and this strategy is strictly related to FTZs activities. Some of them, the FTZs instituted in the last years, are focused on research and development and especially GMOs and modifications of food.

With this strategy, the Dominican Republic can have food products with different features and with competitive advantages with the similar products of the other competitors.

Also in this case, logistics-oriented FTZs are very important, because with this strong know-how in food biotechnologies, a lot of commodities can be imported by other countries, and with competitive costs, they can be modified in order to have advantages.

From a scientific point of view, biotechnologies applied on Food have positive and negative arguments. As it is common in the Dominican Republic, there is not a strong ethic debate on common people, so the Dominican Republic appears an interesting place to develop this sector.

FTZs and logistics activities are good drivers, but also NGOs demand. MercaSID is an interesting example of it.

5.1. Biotechnologies as future scenarios of Agriculture industry in the Dominican Republic

Biotechnologies represent an optimal future scenario for a lot of industries, businesses and activities.

In literature it is possible to identify four different forms of biotechnologies, with four different colors:

1. Red Biotechnologies – It is applied to medical and health processes
2. Green Biotechnologies – It is applied to agricultural processes
3. Yellow Biotechnologies - It is applied to energy and industrial processes
4. Blue Biotechnologies – It is related to marine and aquatic applications.

Considering this classification it is easy to understand how biotechnology can be considered the future scenario for a lot of different industries.

Considering in particular the Green Biotechnology it is interesting to make some examples of activities. Selection and domestication of plants, designing of transgenic plants, creation of stronger plants, improvement of foods, creation of new technologies for improving the quantity and the quality of the final product.

But surely the heart of the Green Biotechnology is represented by GMO foods.

Coming back to our case, in the Dominican Republic agriculture was for a lot of years an important and successful sector, but now there are a lot of problems in its sustainability. Green Biotechnologies could be an interesting solution for the development of this sector.

The Dominican Republic in the last decades is doing a lot especially in the utilization of GMOs, Food Fortification Processes and Creation of new Techniques of Cultivation.

5.2. Food Fortification technology

Food Fortification is a process related to the addition of micronutrients (such as vitamins) to a simple category of food. The reason can be simply commercial, related to the provision of particular nutrients to a food or also for public health, in order to reduce dietary deficiencies in difficult environment (for example after the Haiti earthquake emergence).

It is possible to recognize three different categories in technology and target of supplementing food:

1. Additives which repair a deficit to 'normal' levels
2. Additives which appear to enhance a food
3. Supplements taken in addition to the normal diet

One of the most typical and common example of fortified food is the iodised salt. The usage started during the World War II in the United States in order to solve thyroidal illnesses. Other examples could be folic acid added to flour, in order to prevent different neural tube defects in infant. Calcium is also often added to fruit juices.

There are also some cases of fortification of foods related to GMOs, as for instance the 'Golden Rice', that is a variety of rice with addition of beta carotene.

The most important target of fortified food is related to the medical treatment. In particular medical conditions, nutritional supplementation is

fundamental and very effective for the immune system (for instance for the prevention of cancers).

Among the different supplements in food it is possible to identify:

- Vitamins and Co-Vitamins
- Essential minerals
- Essential fatty acids
- Essential amino acids
- Phytonutrients
- Enzymes

In this thesis, it will be described the importance of fortified corn for the diet of children in Haiti, after the earthquake disaster. There are positive and negative arguments for it. The Dominican Republic has a great role in fortification of food because the agriculture industry in the last decades was focused on biotechnologies. The Dominican Republic as platform for aid to Haiti, had a great role in fortification food processes.

5.2.1 Positive arguments for Food Fortification

In order to understand positive and negative consequences of the usage of fortified food, it is interesting to take as example, fortified corn and its usage in a typical Haitian institution after the earthquake.

Among the positive arguments it is possible to recognize:

- Lower Costs – In particular fiscal and economical conditions, such as in the Dominican Republic, the cost of the fortified corn appears lower than the cost of corn plus vitamins and relative pills.
- Solution for public health problems – In disaster situations, especially in malnutrition cases, fortified food could be a great solution to the problem. There is the opportunity of using a simple food without having direct relations with pharmaceuticals and related companies, that a lot of time they have no ethical behaviors.

- Compliance effect – It is a medical term to explain how for a person is better to ingest vitamins or particular substances through food and not with single pills. Especially for children it is surely better let them ingest vitamins through normal food than through periodic pills.

These are surely the most interesting arguments to know for the develop of this thesis, especially in Haiti case.

5.2.2 Negative arguments for Food Fortification

There is a great group of physicians and scientists that think generally the risks related to the usage of fortified food overcome the benefits on the entire population.

Among the negative arguments it is possible to identify:

- Damages for toxicity – A lot of fortified products were banned in a lot of countries for evidences in health damages. Some products fortified with vitamins or minerals are stronger for nutrition and they can give problems and serious damages to liver or kidney, or also problems to pregnant women. The problems is also related to the nature of this components, not always pure and sometimes with a high level of toxicity.
- Low control on quantities – A way to avoid the damages related to toxicity is certainly the control on quantities, that in fortified food is almost impossible. With the ingestion of food there are some quantities that are not controllable as it could be done with a simple pill. This situation could be very risky especially for children in industrialized countries.
- Higher costs in no advantageous environments – In industrialized countries, it is surely better, from an economical point of view, purchasing pills and food separately. In these countries, the cost of fortification processes is very high because

not supported by fiscal advantages ad in the Dominican Republic.

So, considering the costs, it is not always better fortify food that purchase pills. It is interesting to understand, the role of FTZs and logistics industry in its activity, taking as example the Dominican Republic.

5.3. Role of FTZs and logistics in Food Fortification process

All the economical history of the Dominican Republic is related to FTZs, and the future of this sector is related to the ability of the Dominican Republic of creating a strong and stable logistics industry.

Taking as example the Food Fortification processes, the development of this know-how is strictly related to the FTZs development. In the last 10 years the only stable industry in the Dominican Republic was agriculture with a stable number of companies operating in agriculture and technologies for agriculture. The official statistical dossier of 2010 by CNZFE, counts a 7.23% of companies operating in agriculture industry for a total of 40 companies.

Most of them have their activities with a headquarter in the FTZs of the Districto Nacional, the region of the capital Santo Domingo, but having operating offices in other FTZs in Cibao region, the valley between Santiago de los Caballeros and San Francisco de Macorís in the north.

This valley is the heart of the Dominican agriculture industry with all the different clusters described in the Paragraph 4.3.3.

Caribbean Industrial Park (Zona Franca del Caribe), situated close to the Cibao International Airport of Santiago, is one of the most interesting FTZs operating in agriculture technologies.

With its 18 official companies registered and all the relative affiliates, Caribbean Industrial Park is focused on research and development of new technologies for agricultural activities.

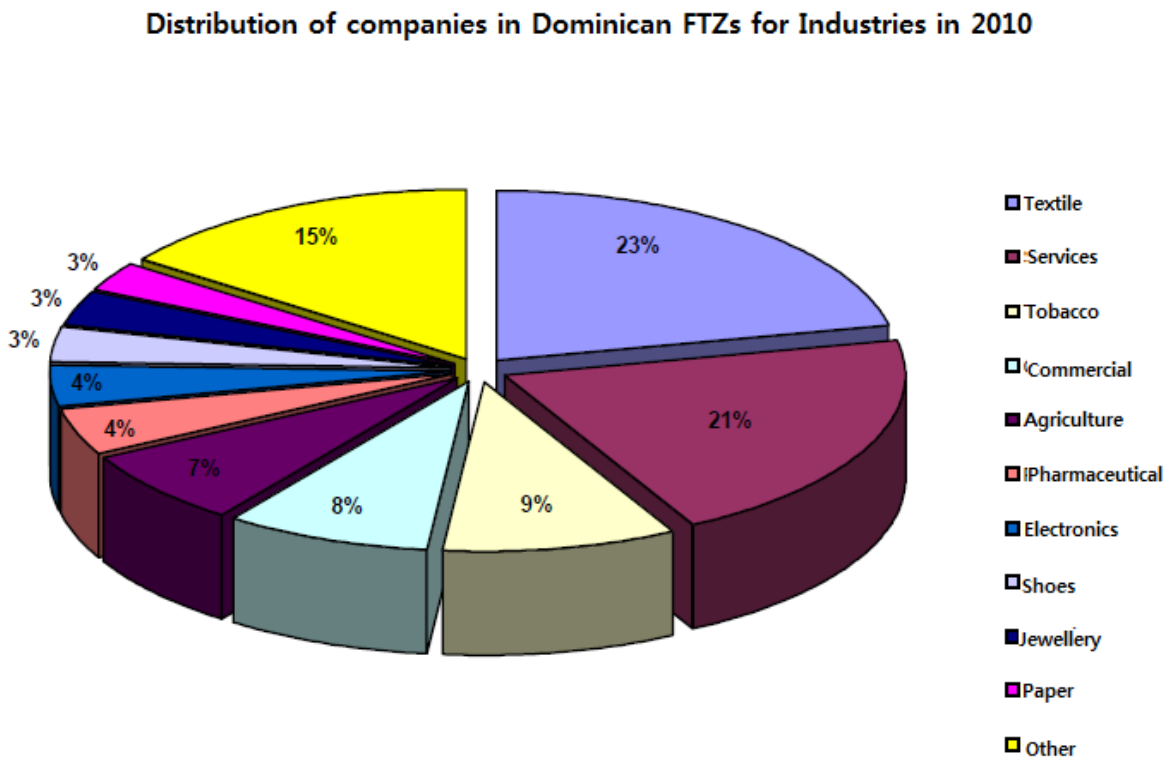
In particular the existence of a FTZs has different advantages:

- The advantageous fiscal policy allows the companies to make focus investment to their own goals
- The presence of foreign companies gives the opportunity to share know how, having positive externalities.
- Caribbean Industrial Park's structure is the typical of a Port Hinterland (in this case Airport Hinterland), giving the opportunity of having a lot of advantages in terms of logistics activities or services.

In the last years the government is trying to move the industrial park to a simple FTZs status to the creation of an official PH, on the model of Puerto Caucedo and its Multimodal Caucedo PH (see Chapter 6).

If FTZs represents the fiscal advantage for the presence and the development of a particular industry, the creation of a PH and the logistics activities are the future and sustainability of the industry.

Picture 5.1. Distribution of Companies in Dominican FTZs for Industries in 2010 (CNZFE, 2010)



Food Fortification is the step of a Supply Chain of a final food product, so Logistics appears very important in order to reduce costs in the different steps. As it will be described in the Chapter 7, about the supply chain of the fortified corn, the reducing of the costs utilizing a company affiliated to a FTZs is very interesting, especially in comparison with other food fortification processes in different places, without fiscal advantages.

In the end, the researcher nature of some Dominican FTZs proves how the Dominican Republic could have a great success in this industry, and it is surely a good platform for distribution of it.

5.3. Advantages of the Dominican Republic on handling this industry

Taking in consideration the Porter Diamonds of the past Chapter, it seems that the Dominican Republic would have great opportunities in logistics industries.

But logistics is a generic word and it has to be contextualized in different industries. Distribution of food, using the Dominican Republic has platform, could be an interesting idea of success for different reasons:

- Strong Agricultural Industry – As largely described the Dominican Republic has a stable and high quality agricultural industry but with a great weakness caused by the dimension of the country. This problem can be overcome through biotechnologies techniques.
- Great Presence of countries with food Necessity around the Dominican Republic – In particular Food Fortification is very important in particular public healthy problematic problems. So, in order to produce fortified food, is important to find customers. NGOs operating in countries such as Haiti or Central America countries are good players.
- Positive economical environment – Presence of FTZs, PHs, fiscal advantages for import and exports, strong FDIs, great

investment by the government in the logistics sector, but also on agriculture, describe a positive environment for handling this activities.

- High technology – The presence of focused FTZs, defined as EFTZs, with strong investment in research an development, are surely a great strength for the Dominican Republic, not just in Food Fortification processes, but in all the innovative technologies in agriculture.

Among all this advantages there is a strong problem related to the nature of the agricultural industry. It is not the industry of the future, and focusing on it could condemn the Dominican Republic to continued investments in research and development.

5.4. MercaSID as pioneer in the production of fortified food

MercaSID is one of the leaders in the Dominican Republic in distribution of food and flours. Important is its activity in Food Fortification, in particular of corn flours.

Born as Sociedad Industrial Dominicana, C. por A., was founded in the city of Santo Domingo in 1937 by Jesús Armenteros Seisdedos and José María Bonetti Burgos, as a company committed to producing cooking vegetable oils.

Through the years, La Manicera, as it more commonly become known, began to expand the array of products it offered the Dominican consumer, introducing to the market new varieties of oils, margarines and detergents.

On June 1, 1971 it signs with Unilever Export Limited an Agreement of Technical Assistance and Distribution (Royalty Agreement) and in the decade of the 1980s it begins developing agro industrial projects with oil palms, flowers and citric fruits.

MercaSID, with this name, becomes during in the 90s a distributor for the Dominican Republic of renown brands such as Kellogg's, Kimberly Clark,

Hershey's, Eridania-Behim Say (Koipe), Haagen Dazs, General Mills, Novartis, among others.

Nowadays it presents different products consequence of food fortification and in particular for fortified corn.

It is possible to recognize products B2B and B2C.

Among the B2C products it is possible to identify:

- Maicera – It is made up of Cornmeal, Folic Acid, Pyridoxine Chlorohidrate, Calcium Panthotenate, Iron (Ferric Fumarate), Thiamine Monohydrate, Nicotidamine, Vitamin A, Palmitate, Vitamin E, Acetate. This product is mainly used in the creation of easy preparation such as light breakfasts, desserts and snacks like "atoles", "majarete", juice drinks, muffins, cookies. It does not represent the standard fortification made by MercaSID.
- Mazorca – This is a raw cereal resulting from dry degermination and from grinding yellow corn, and subjecting this to a drying process to thus obtain the desired humidity and stability. Aside from the nutrients it contains on its own, Mazorca Cornmeal is subjected to a fortification process within the production system to add essential nutrients for the strengthening and development of the human body.

In particular Mazorca represents the most important product B2C of MercaSID and the same Food Fortification process is used also for all the other B2B products:

- DM Flour
- Extrathick F
- Semolina FL
- Granular
- Semolina SK
- Semolina SC

Thanks to the digermination process, these flours have a 2-3 months of conservation versus the natural 30 days of simple corn.

The fortification process gives to the corn different other important components in context as childhood, adolescence, post-operation periods, pregnancy or general illnesses. These components are:

- Iron
- Niacin
- Folic Acid
- Pantothenic Acid
- Vitamin A, E, B1, B2 and B6

These components can be defined as the ingredients of the typical MercaSID receipt of fortification for corn.[19]

Dominican food is famous for the usage of corn flour. One of the most important source of carbohydrates in the Dominican Republic is corn. But the Dominican Republic is a small country and it cannot sustain all the demand, just with the local supply.

For this reason, a lot of the corn used by MercaSID is imported through the PHs, at advantageous prices. In general the imports are from Asia, in particular China and Thailand.

5.5. Fortified Food as innovative aid in NGO activities during emergences

Fortified food is usually common is every person's every day diet. Especially in the last years, it is very simple to find products as cereals or juices fortified with particular supplements and additional components.

From a customer point of view, the price of a box of fortified food is very high in comparison with the normal one. From a business point of view, in a market B2B, the situation is completely different because it works on large scale.

Taking as example, how it is done in this thesis, the no profit sector and the distribution of aid to Haiti, from the Dominican Republic, the

[19] Website of MercaSID

customer of the flour, in this case fortified corn flour, is a distributor NGO, that has to distribute this kind of food to a particular institution.

In situation of malnutrition or disasters, like after Haiti earthquake, a normal person needs two different typologies of products to ingest:

- Normal food – Proteins and Carbohydrates essentially
- Supplementary Components – Vitamins and relative substances

In normal contexts, simple food is provided by food distributors, while vitamins by pharmaceuticals. In last years, the trend is changing because fortified food could be useful especially because it is simpler to be ingested.

The final distribution to an institution is always managed by the distributor NGO (in this thesis the case is about Oxfam), but the primary distribution is managed by two different companies, with higher costs.

The utilization of fortified food, reduces the costs of distribution and transportation because the relation is just with a company.

In Haiti case, having a provision of fortified corn from MercaSID is surely cheaper for a distributor NGO, than dealing with two different provisions, one from a food distributor and an other one from a pharmaceutical company.

In order to better understand the supply chain of an aid and all the advantages in terms of costs, in the Chapter 7 the activity of Oxfam and the supply chain is described.

Among the appendixes there is also an interesting interview with José Llanos, manager of the Department of Marketing and Sales in MercaSID, that can be considered a good continuation and ending of this chapter.

But after the creation of the aid, Logistics is fundamental to distribute it. In next Chapter, it will be described the structure of the Dominican Republic as platform for NGOs activities, with relative FTZs and PHs.

Chapter 6
Puerto Caucedo, Rio Haina and FTZ at Haiti border for humanitarian initiatives

Logistics clusters can be related to several industries but with a same final target. For a lot of years the Dominican Republic was focalized on textile industry for instance. All the logistics clusters were basically related to export-import activities for textile industry, especially to the United States.

After the Haiti earthquake in January 2010, there was a strong increase in different industries of manufacturing. According to the CNZFE report 2010, the importance of Textile industry (considering employment and number of industries) in ZFs decreased of 7.2%, while Pharmaceuticals and Food products increased (respectively 1.2% and 4.1%). Everything happened in just one year.

This is actually the consequence of all Dominican Republic interventions to help Haiti, after the earthquake. The Dominican Republic is the closest country and, after a complete destruction of all the infrastructure in Haiti for the terrible cataclysm, the east side of the island sent to the west side all the first aid of the case (in terms of food and pharmaceuticals essentially).

The most important thing to underline is the difference among two main concepts:

- Early Recovery cluster: It is considered a provisory cluster (it last in general 3 months). It is related to logistics providing of aid in an area that needs it. Sometimes it can finish its activities after 3 months, if the emergence is finished. In other cases there is an evolution and it can become a permanent cluster.
- Humanitarian cluster: It is a form of logistics cluster but with a strong concentration of NGOs and companies related to NGOs activities. It is definitive, and it generally lasts until the complete

achievement of its last objectives. In different casse it can have different names, as it will be shown after.

In Dominican Republic case, there was an evolution from an early recovery cluster to a humanitarian cluster, with also a change in the geographical structure of it.

6.1 Implementation of Umbrella Clusters by World Food Program

The WFP (World Food Program) is a branch of UN (United Nations), in FAO (Food and Agriculture Organization) institution. The WFP is the world's largest humanitarian agency fighting hunger worldwide.

Born in 1961, WFP has a vision in which every man, woman and child has access at all times to the food needed for an active and healthy life. Its headquarter is in Rome and it works through FAO and IFAD (International Fund for Agricultural Development), both part of UN.

According to its strategic plan, WFP has five objectives:

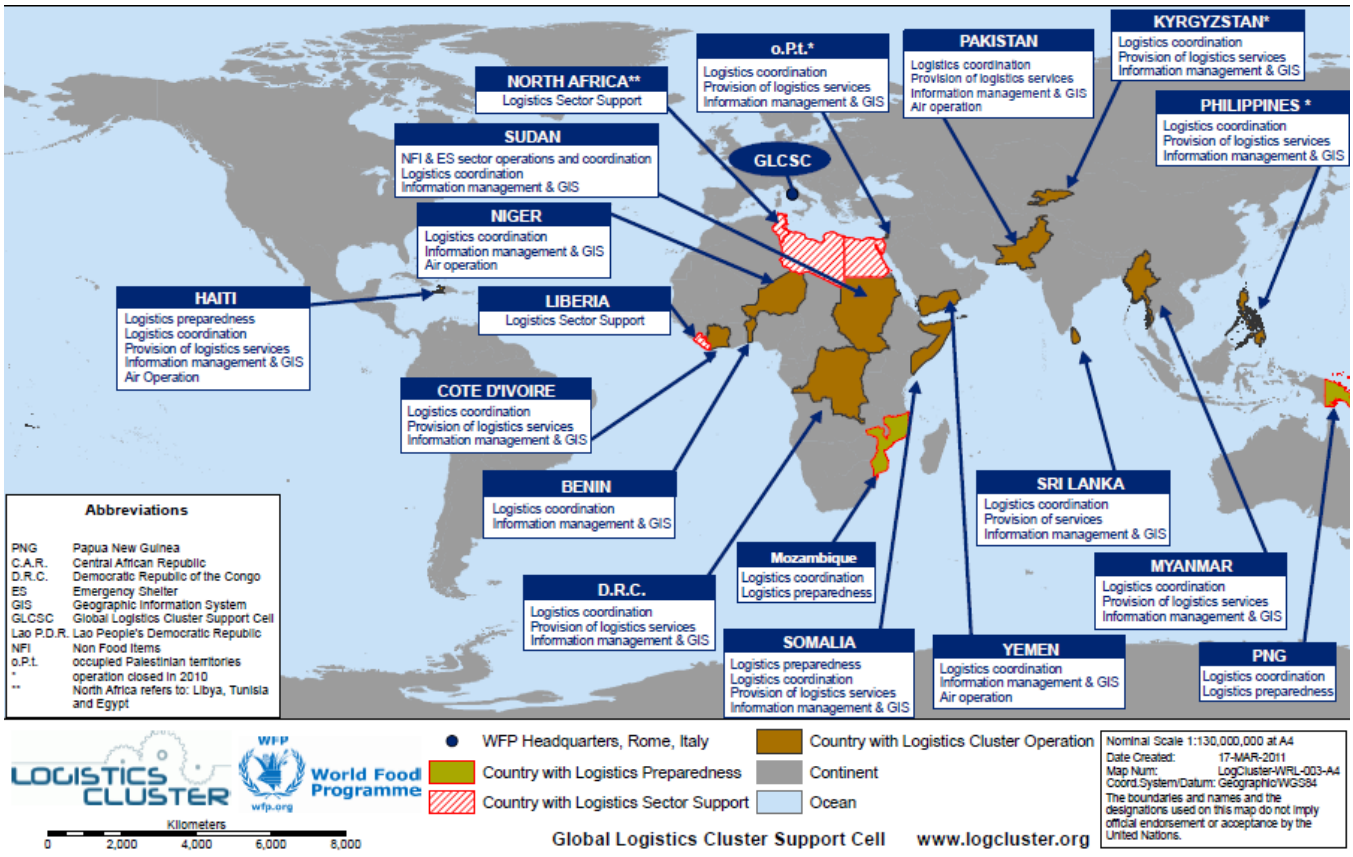
- Save lives and protect livelihoods in emergencies
- Prepare for emergencies
- Restore and rebuild lives after emergencies
- Reduce chronic hunger and under nutrition everywhere
- Strengthen the capacity of countries to reduce hunger

Logistics is the core of WFP's operations. When an emergency strikes, WFP finds a way to respond within hours, delivering urgently needed food and life-saving relief by land, sea and air. But an effective response requires teamwork, and WFP, as designated lead agency of the global Logistics Cluster, also coordinates services and staff for the wider humanitarian community's efforts to deliver relief to victims of disaster.

Nowadays, WFP has a great role in leading the global humanitarian team. For this reason all around the world there are 18 logistics clusters, with different scopes and scales, ranging from a simple sharing of information to pooling common air, ocean and overland transport.

The aim throughout was to improve the speed and effectiveness of the humanitarian response by wringing the maximum benefit from the combined logistics assets, expertise and experience of participating organizations.

Picture 6.1 Map of all the WFP's Logistics Clusters operating in the world in 2011



In order to organize the effort, WFP hosts the GLCSC (Global Logistics Cluster Support Cell) at its headquarter in Rome.[20]

In WFP terminology it is possible to identify two different kinds of logistics clusters:

1. Early Recovery clusters: Instituted in emergencies, in order to get food to where it is needed, saving the lives of victims in wars, civil conflicts and natural disasters.
2. Umbrella clusters: After the emergency has passed, WFP uses the food to help communities rebuiling their shattered lives. In this kind of cluster, all the companies participating are in general

[20] Fighting Hunger Worldwide, World Food Programm, 2011

related also to different industries such as education or construction.

For the first three months after the earthquake, in the island of Hispaniola, WFP implemented an early recovery cluster and after that it started to simplify the structure, creating an umbrella cluster.

The transition between the two ideas of cluster is related to the nature of operation. WFP early recovery cluster was implemented in the Dominican Republic for an emergency operation. After the first three months the umbrella cluster was related to a development operation.

6.2 The Constitution of an Early Recovery Cluster for coordination in the Dominican Republic during humanitarian emergence in Haiti.

At 4.53pm of 12th January 2010, Haiti was convulsed by a 7.0 magnitude earthquake. Its epicentre was less than 20 kilometres south-west of the capital Port-au-Prince. The scale of devastation was immense. It counted 230,000 people dead, 300,000 injured and one million homeless. A lot of building collapsed, included the National Palace, official residence of the Haitian president. All the infrastructures, ports and airports included, were damaged a lot.

Haiti is part of an island shared with the Dominican Republic. Their political and historical relations were not so good, but the Dominican Republic was the only real platform to help Haiti in the first hours after the earthquake. WFP implemented an ER cluster, exploiting ports, airports and streets in the Dominican Republic, and facilitating border crossing.

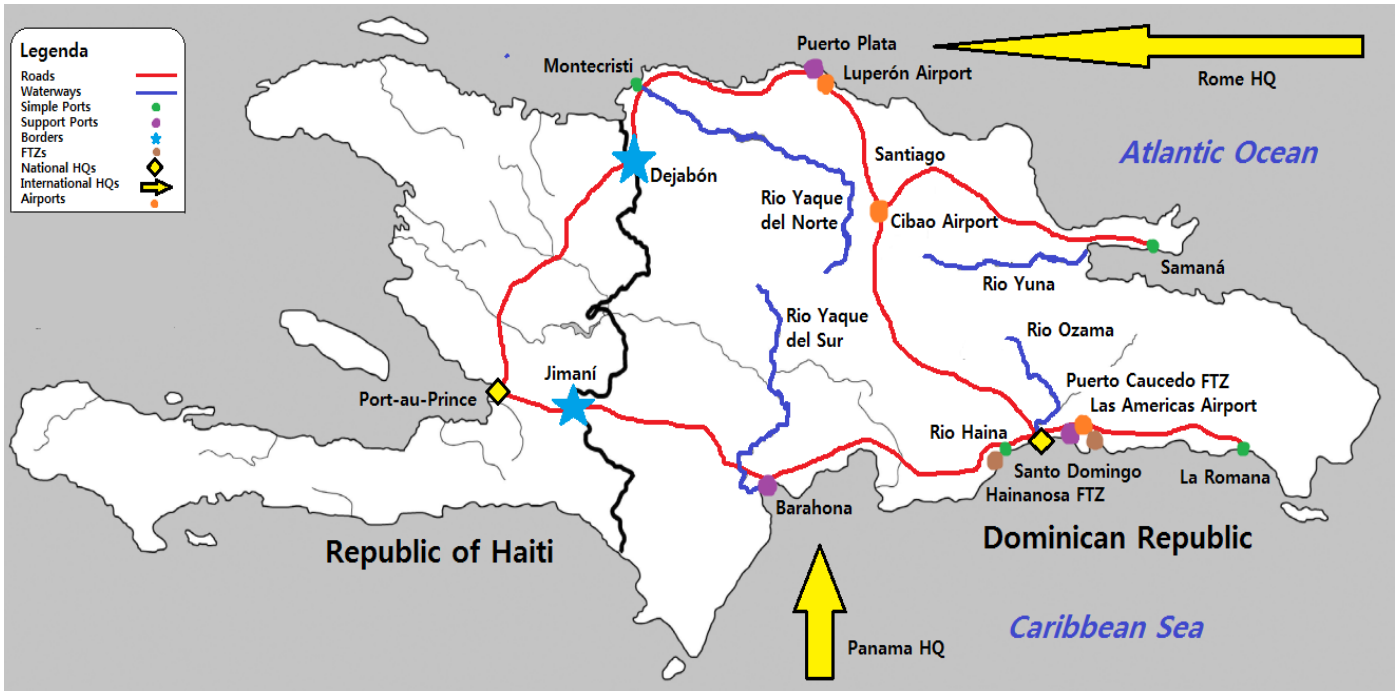
The ER cluster during the first three months counted this complex geographical structure:

- International Support Cells: One in Rome, for Western countries and one in Panama, for Latin American countries.
- Ports Infrastructure and Local Support Cells: Barahona, Puerto Plata and Santo Domingo 'Puerto Caucedo' with all the four

functions of a PH (Stuffing, Storage, Distribution, and Value Added Function). These ports were defined Support Cells because they actually coordinated all the aid coming from different places. Puerto Plata in the north was the main reference for United States for instance, Puerto Caucedo for Europe, and Barahona for Latin America.

- Airport Infrastructure and Local Support Cells: Santiago, Santo Domingo 'Las Americas' and Puerto Plata. In an ER cluster airport infrastructures are very important for timing reasons but its costs are higher.
- Road Corridors: Autopista Sanchez from Santo Domingo to Haiti Border, Autopista Duarte from Santo Domingo to Santiago, continuing to Puerto Plata and Monte Cristi, Autopista Mella from Santo Domingo to Higuey, passing through La Romana and also Autopista del Norte, connecting Samaná to Santiago and Puerto Plata.
- Water Corridors: Rio Ozama, from internal towns to Santo Domingo, Rio Yaque del Norte, connecting to Atlantic Ocean, Rio Yaque del Sur, connecting to Caribbean Sea and also Rio Yuna as support to Samaná area
- Border Crossings: Elias Peña border in the south, in Barahona province at Jimaní. Dejabón border in the north.
- Zonas Francas: Multimodal Caucedo Park, the ZF related to Puerto Caucedo PH, Hainanosa Park, the ZF related to Rio Haina PH and also all the ZFE at Haiti Border, with Jimaní and Dejabón areas.
- Haiti side Corridors: From Jimaní to Port-au-Prince and from Dejabón to Port-au-Prince.
- NGOs operating in the cluster: All the NGOs affiliated to WFP and oriented to early recovery activities
- All the Supporting Industries: All the companies operating in the cluster in different industries

Picture 6.2 Structure of ER cluster of WFP in Hispaniola (made by the author)



So, all this structure was supported by different kinds of companies composing the cluster. In particular these companies are operating in different industries but with the same final target. The main sectors with relative numbers of companies according to WFP report are:

- Fuel Companies (3)
- Transporters (4)
- Vehicle Rental (4)
- Taxi Companies (8)
- Freight Forwarding Agents (3)
- Handling Equipment Companies (4)
- Labour Providers (2)
- Electricity and Power (12)
- Telecommunication (6)
- Food and Services (71)
- Accommodation (25)

The actors of the supply chain change with the typology of the product. For instance, the supply chain changes if the aid is a food or a pharmaceutical. In Appendix 1, there are all the no NGOs companies in the Dominican logistics cluster of WFP.

6.3 The Structure of the definitive Logistics Cluster for NGOs operating in the Dominican Republic and Haiti

The objective of the ER cluster is providing aid of emergence. So, it needs essentially airports (that provide fast transportation) and a lot of roads or waterways. In the first three months after the Haiti earthquake, the Dominican Republic was the actual platform of all the aid to Haiti, and for this reason the structure was very complex.

After the first three months of emergence the kind of operation changed. From an emergence operation, WFP planned a development operation. In this case the structure, after May, was very simplified:

- International Support Cell: Just one in Rome as GLCSC, for administrative directives from WFP
- Ports Infrastructure and Local Support Cells: The plan had a 30% of imports or production of aid in Rio Haina PH (at the west of Santo Domingo, where there was the WFP Dominican HQ) with its relative ZF of Hainanosa Park, in which a special area was created dedicated to the production and the storage of aid destined to Haiti. The remaining 70% of import and production was addressed to Puerto Caucedo PH and the Multimodal Caucedo Park as ZF. In particular Dominican government gave a total exemption from taxes for all the aid to Haiti, for 6 months (until the end of 2010). Rio Haina and Puerto Caucedo became the official support cells of WFP in the Dominican Republic.

- Airport Infrastructure: Santo Domingo 'Las Americas' was kept as the only airport of the Dominican Republic for WFP operations, considering Port-au-Prince airport was opened again.
- Road Corridors: The main ones were the Autopista Sanchez, from Santo Domingo to the Haiti border in Jimaní. Autopista 'Mella' connecting Santo Domingo to Puerto Caucedo and 'Las Americas' area. All the other roads were kept not as corridors but as normal connections for local aid.
- Water Corridors: Also for them, not more corridors but simple ways to transport particular kinds of products, especially from Cibao area (that is the most important agricultural cluster of the Dominican Republic)
- Border Crossings: In new development operation just Jimaní was considered, with a particular change. In Jimaní, WFP created a local support cell, moving to the border the role that was of Barahona in the ER cluster. Barahona was chosen as first local support cell for safety reasons.
- Zonas Francas: Also now, Multimodal Caucedo Park, Hainanosa Park and Haiti Border FTZ.
- Haiti Corridors: From La Source (at Dominican border) to Port-au-Prince. In La Source a mirror-base of Jimaní was implemented, as a local support cell for Haiti side.

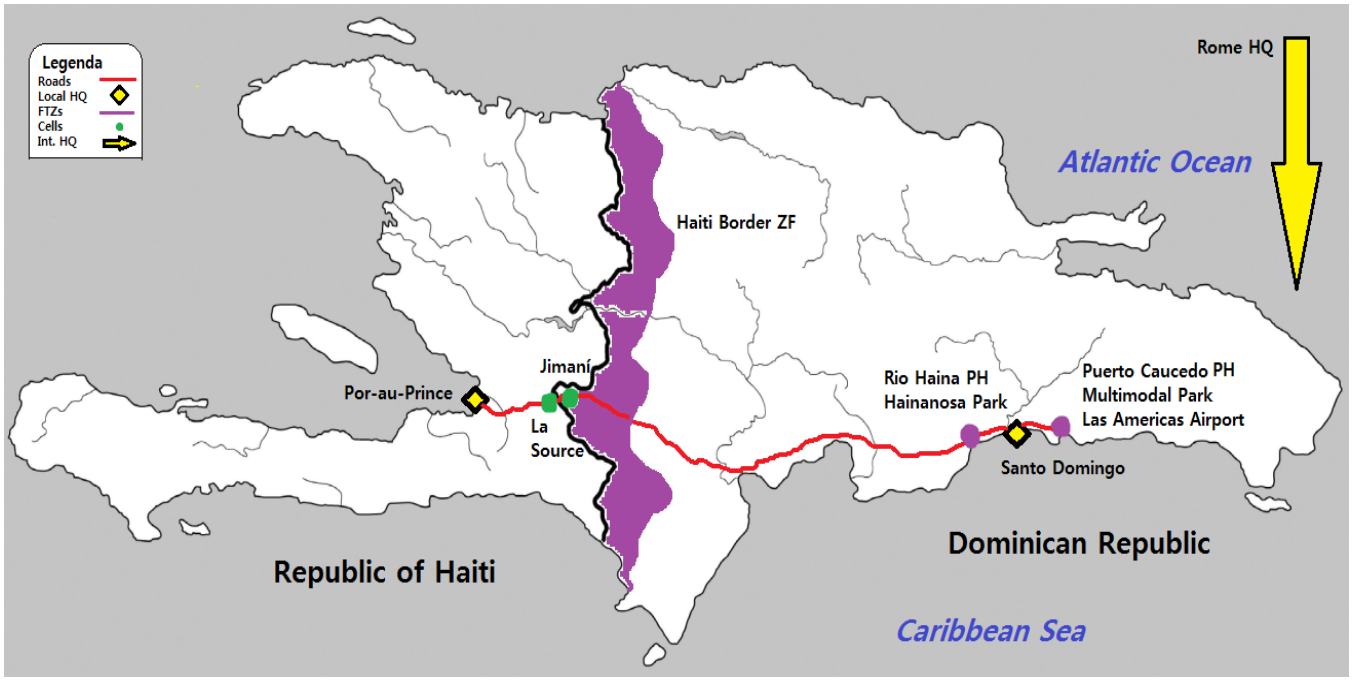
Also in this case, there are NGOs and supporting industries, operating in the cluster, but with a strong focalization on different kinds of aid. More than food, the most important things now, are all the construction materials.

So, the final structure of the umbrella cluster for humanitarian activities in the Dominican Republic is characterized by three main pillars:

1. Puerto Caucedo PH, with Multimodal Caucedo Park as Logistics ZF and 'Las Americas' Airport, at east of the capital Santo Domingo
2. Rio Haina PH, with Hainanosa Park ad Logistics ZF, at the west of the capital Santo Domingo

3. All Haiti border area with its ZFE, with just one gate to Haiti through Jimaní and La Source areas

Picture 6.3 Structure of Logistics Cluster of WFP in Hispaniola (made by the author)



There are also other ways to provide aid to Haiti now. Port-au-Prince airport was opened again, as also the port, but Dominican cluster still has some special advantages.

6.3.1 Puerto Caucedo PH. Multimodal Caucedo Park and 'Las Americas' Airport

All the Puerto Caucedo PH is a world-class marine terminal and FTZ, located in Punta Caucedo,, 25 km at east of Santo Domingo. Caucedo is part of the DP World portfolio of marine terminals and for this reason all the area is commonly called DP World Caucedo.

DP World is an international leader in operations, new terminal development, logistics and other related services. DP World's experience, knowledge and dynamism have been brought to Caucedo a successful model of high efficiency and productivity.

In particular, thanks to it, Puerto Caucedo and the relative FTZ, the Multimodal Caucedo Park, can be described a Logistics-Oriented FTZ, for its strong number of logistics related companies.

Table 6.1 General Overview and Performance of Port Caucedo (WFP, 2010)

Country	Dominican Republic
Province	Boca Chica
City	25km at East of the city of Santo Domingo, the Capital
Port Name	Puerto Caucedo
Latitude	18° 25' 34" N
Longitude	69° 37' 53" W
Vessels calls	1,078
Container Traffic (TEUs)	736,879
Total Cargo handling (m.tons)	6,802,305
Export activity of the Port	Bulk MT/Year 684,423 Container TEU's/Year 166,182
Import activity of the Port	Bulk MT/Year 1,667,531 Container TEU's/Year 163,008
Humanitarian Cargo (m.tons)	762,743

So, the humanitarian activities in Port Caucedo during the 2010, counted as about the 11,2% of the total activities.

The private port in Caucedo was opened in 2003. During the first phase of the development of the Port of Caucedo, it had a 600m dock and 14m depth and it was able to receive ships from the Panama Canal. The terminal had 50 hectares of operational area (creating all the PH). The storage capacity in the lot was 19,000 TEUs (that is the unit of measure equivalent to one 20-foot container) and it had 390 reefer connections, with a 16-barrel gate, and a 4 lane access road. In 2006 the logistics zone and the primary access route were opened. The direct access is from the terminal and from the airport of the Americas.

It is placed in an advantageous position to provide world class services not only for the local import and export markets, but also for transhipment services requested by the world's most important shipping lines. They work alongside Customs and the different shipping associations in order to offer importers and exporters a complete logistic chain solution.

Summing up the port offers a wide variety of services:

- Safe storage of loaded containers
- Assistance in the customs inspection process or simply the verification of cargo
- Loading and unloading of containers
- Complete refrigerated cargo services
- Over dimensioned cargo handling
- Vehicle discharge and storage

Puerto Caucedo can be considered as a Logistics-Oriented FTZ and analyzing the companies inside it is possible to recognize this feature. About the 72% of the companies of the area are logistics oriented and more than the half are humanitarian related.

Table 6.2 Shares on business sectors in Puerto Caucedo PH (CNZFE, 2010)

Business	**FTZs in Puerto Caucedo PH**
N° Companies	64 (Multimodal, Las Americas and San Isidro FTZs)
Logistics	72%
Manufacturing	21%
Others	7%
Humanitarian Related	56%

But the infrastructures used by the humanitarian cluster are not just related to the port. There is also the 'Las Americas' airport that has a very important role.

The real name of the airport is 'Aeropuerto Internacional Las Américas Dr. José Francisco Peña Gomez', and it is situated at 3kms from Puerto Caucedo area. It is a touristic and commercial airport.

AERODOM (Aeropuertos Dominicanos Signo XXI) is the owner company of the airport but for about 30 years it built all the airports of the Dominican Republic, as branch of the Government.

Table 6.3 General overview and Performance of 'Las Americas' Airport (WFP, 2010)

Country	Dominican Republic
Province	Boca Chica
City	22km at East of the city of Santo Domingo, the Capital
Airfield Name	Aeropuerto Internacional 'Las Americas' Dr. José Francisco Peña Gomez
IAIA & ICAO codes	SDQ & MDSD
Latitude	18° 25' 47" N
Longitude	096° 40' 80" W VOR 17/30
Total aircraft movement	29,466
Total passenger movement	3,044,716
Humanitarian Flights	6,722

In 2010, the number of aircrafts for humanitarian aids was 6,722, the 22.8% of the total aircraft movement. In particular, one part of them was addressed to internal Dominican aid, for all the humanitarian operations inside the Dominican Republic. Just a bit less of the 20% was addressed to Haiti operations.

In 2009, before the earthquake, the humanitarian flights in 'Las Americas' airport were just a bit more of 1,000, likely just for internal use.

6.3.2 Rio Haina PH with Hainamosa Park

The biggest port until 2003, was considered Haina. According to a Word Bank report, in 2003, two-third of the cargo volume moved through the port of Haina. In 2004, a considerable share of the container cargo has travelled through the Port of Caucedo, that now it is considered the biggest of all the country.

The Port of Haina is still in activity and it is located in the same name river, at 20km from Santo Domingo. It has 12 docks, 10 of which are located on the Eastern shore, and 6 on the Western one, the maximum depth is 11 meters. Caucedo and Haina were very important in the implementation of the logistics cluster for helping Haiti, created in 2010.

Table 6.4 General Overview and Performance of Rio Haina Port (WFP, 2010)

Country	Dominican Republic
Province	Boca Chica
City	20km at West of the city of Santo Domingo, the Capital
Port Name	Rio Haina
Latitude	18° 25' 13" N
Longitude	70° 01' 08" W
Vessels calls	832
Container Traffic (TEUs)	351,052
Total Cargo handling (m.tons)	4,098,234
Export activity of the Port	Bulk MT/Year 287,011 Container TEU's/Year 98,476
Import activity of the Port	Bulk MT/Year 1,113,756 Container TEU's/Year 102,734
Humanitarian Cargo (m.tons)	512,567

Haina Port counts about the 12,5% of the total cargo in humanitarian ones. Considering that the Haina Port is one of the biggest of all the country, this data can explain the most important reasons that brought to choose Haina as second hub for the humanitarian cluster, after Puerto Caucedo.

The reasons are generally two:

- The high storage capacity of the PH, the biggest in all the country. In particular, in the first early recovery cluster, the most important port was Barahona, but it has a lower storage capacity, and in the second phase of humanitarian operation is better to give importance to storage function, more than to the distribution an consolidation one.
- The presence of two industrial parks composing the Hainamosa FTZ area, already specialized in production of commodities for early recovery emergencies.

The two industrial parks of Hainamosa compose the entire Hainamosa FTZ situated at 3km to the Rio Haina Port. All the area has the typical structure of a PH.

Considering all the companies officially part of the FTZs of the area it is simple to understand how also Rio Haina PH ZFs are Logistic-Oriented FTZs. Logistics oriented companies are the 61%.

Table 6.5 Shares on business sectors in Rio Haina PH (CNZFE, 2010)

Business	**FTZs in Rio Haina PH**
N° Companies	39 (Hainamosa Park I & II plus ZFE)
Logistics	61%
Manufacturing	35%
Others	4%
Humanitarian Related	60%

Summing up, in the logistics cluster for the aid to Haiti, around the 70% of the total aid is imported through the Puerto Caucedo PH (65% through the port and the other 35% through the airport, it depends on the priority). The other 30% over the total imported aid, comes from Rio Haina port. In this case the greatest role is for the logistics oriented companies (transportation, cargo, port activities etc).

But there is also a remarkable role for manufacturing. Commodities for aid, or simply early recovery aid, such as food, cement for construction or clothes, come from the Rio Haina PH for around the 60%. An other 10% is produced in Puerto Caucedo PH. The other part, around the 30% in the other ZFs of the Dominican Republic.

Foreign NGOs have about the 67% of all their total aid to Haiti, related to FTZs during a particular step of the supply chain or all the entire production.[21]

The reasons for choosing a FTZ for production of aid is the same that the other companies have for choosing a FTZ for their activities, such as lower costs or taxes exemption.

[21] WFP data – Interview with Elizabet Fadul, responsable of the Dominican side program to Haiti

6.3.3 Haiti border FTZ and its crucial role in humanitarian initiatives. Jimaní and La Source areas

Haiti border FTZ was instituted with the Law 28-01, and it has special advantages in terms of costs and taxes, considering all the others ZFs and EZPs of the Dominican Republic.

The most remarkable advantages are in terms of:

- Exemption from taxes for 20 years
- Advantaged rent prices
- Opportunities of advantaged financing for 20 years
- Exemption from border taxes on raw materials, instrumental and transportation goods
- Preference treatment for particular goods that have limits of quantities of imports from some special countries
- Particular care for know-how and human resources with stages and internships for workers lasting 6 months, totally paid by the government

It is important to know that the most common source of financing for the foreign investors in ZFs, ZFEs and Haiti border ZF in the Dominican Republic is generally the CEI-RD that has a lot of incentives in order to attract FDIs to the island.

All the area may be considered optimal for the implementation of commercial hubs, thanks to its advantages in terms of fiscal policies and social and economical controls.

The most important area in all the FTZ at the Haiti Border is, for the humanitarian operation, the Jimaní area. In Jimaní, in the southern part of the border it was created a Platform for Coordination of all the aid coming from the other parts of the Dominican Republic.

So, the Logistics Cluster by WFP established a field office and transit hub at Jimaní border crossing to facilitate the coordination of road transport from Santo Domingo area (and Barahona during the early recovery phase), to Port-au-Prince, epicentre of the earthquake.

The most important objectives of this area are essentially four:

- Providing a 'marshalling' area for trucks or cargo prior to joining MINUSTAH (the UN operation – the official operation in Haiti territory) escorted convoys into the area of Port-au-Prince.
- Ensuring more effective security of personnel, assets and commodities
- Improving storage capacity, especially for aid to be delivered every day or more frequently.
- Providing a more strategic location for movements to other locations with Haiti.

Temporary storage is probably the most remarkable issue. In 2010, after two month from the earthquake, it was erected a great temporary storage area so that the limited capacity within the other PHs (such as Puerto Caucedo and Rio Haina, but also Barahona) and the city area was not compromised.

On the other side, there was the earthquake and now there is all the MINUSTAH area, based at the border in La Source.

La Source area, more than a transit hub is a real platform for coordination, not just to Port-au-Prince, but to all the areas damaged by the earthquake, situated at the border, or in general before the hinterland of the capital of the Republic of Haiti.

6.4 Results and impacts on NGOs activities

In response to the earthquake in Haiti, and with the main goal of supporting operations in Haiti, this ER cluster in the Dominican Republic functioned in full coordination with ER cluster in Haiti (with one part is La Source area) and was active for all the emergency period.

An ER cluster has generally three objectives:

1. Augment on-going humanitarian assistance operations
2. Support spontaneous recovery initiatives by affected communities

3. Establish the foundations of longer-term recovery by fostering coordination and information sharing mechanisms

In order to achieve these objectives it is possible to recognize three important results on NGOs:

- Ensure complete alignment with ER cluster in Haiti
- Ensure that early recovery issues are covered in the activities of the different clusters, taking in accounts all the early recovery aims and objectives described above
- Cover the areas of early recovery not covered by the other clusters such as livelihoods not included in Agriculture and Fisheries cluster, community-level infrastructure, governance, land and property etc.

The ER cluster in the Dominican Republic supported Haiti in different ways and it had in last year strong impacts on NGOs active in the area, in different fields such as:

- Operational Information
- Networks with local authorities and NGOs in both sides of the border
- Mobilizing support from the authorities in the Dominican Republic and national partners, too
- Logistics impacts with an easier access to isolated areas
- Preventing potential problems prompted by the emergency in border areas, in terms of safety for instance
- Financial support and lower costs[22]

Summing up, the most important advantages for NGOs activities in Haiti, using Dominican cluster are surely of two kinds.

1. Safety: Haiti is one of the most unsafe countries of the world, with a high rate of criminality. The poor conditions of population could be a dangerous risk for delivering aid to the villages. It was common to have assaults on port cargo also

[22] WFP, Early Recovery Cluster in Dominican Republic, Response to Haiti, 2010

before the earthquake. With the logistics cluster, there was much more control also by Dominican authorities.

2. Costs: The reduction in terms of costs using the ZFs was very high. For instance, the production of a simple alimentary aid in Hainanosa Park counts an exemption of 10% in taxes and a reduction of cost in average of 12.2% while the import from a foreign country has a reduction of 14.3%, in comparison with the price of producing or importing a good in Haiti.[23]

If a no-profit organization has as legislative limit to reinvest profits in its final aim and not on other activities, it is simple to understand how the cost issue is very important for an NGO. It can consider as source in its balance sheet few things, and the most common one is the donation.

There are also other NGOs not using the logistic cluster but for them there are sometimes a lot of controversies or problems.

6.5 Advantages on the Dominican social, political and economical status

On a company point of view the impacts were on all the companies of the cluster but especially on NGOs activities.

But the advantage was not just for the NGOs inside the cluster or just on a company level. Also the Dominican Republic as country counted a lot of positive consequences on it:

- Cash for work and seeding financial support – the Dominican Republic could have a great opportunity of attracting capitals in terms of supports for humanitarian initiatives, with the opportunity to create employment
- Infrastructures along all the Humanitarian Corridor – the Humanitarian Corridor is represented by the line between Puerto Caucedo and Port-au-Prince, with the opportunity of having capitals to improve the status of the road infrastructure,

[23] WFP 2011 data

in a region (the southern one with capital Barahona) that is the poorest of the country.

- Governance with participatory recovery planning and migration information management – One of the greatest problem in the Dominican Republic history was the migration from Haiti, and after the earthquake the situation got worst. Haiti is the poorest country of Caribbean region with the Dominican Republic is one of the faster growing. Having information about the migration variables appears fundamental for the development of the country.
- Environmental impact mitigation – The creation of a humanitarian cluster allowed the government to control better the status of an area destroyed for a lot of years by dumping and illegal real estate. All this system was out of control for a lot of years because of the presence of the biggest area of ZFs at the border. The presence of international NGOs such as Greenpeace, operating in protecting environment from polluted destroyed drainages in Haiti, had a great role also in the Dominican Republic environment protection
- 'Social National Responsibility' – The conflicting relation with the Republic of Haiti, caused by their history, generated in the country a sort of 'Social National Responsibility' that maybe in the future can improve the relation between the two countries. Logistics cluster could mitigate the intervention of the Dominican Republic army in Haiti, for the early recovery phase, that in other contexts would be not accepted by Haitian population.

The structure of the early recovery cluster, and after, of the official logistics cluster can be simply understood making some examples of particular business cases that describe the activities of NGOs.

Chapter 7

Oxfam case for Haiti earthquake emergence, and its usage of the logistics cluster in distributing fortified corn

The earthquake of January 12 in Port-au-Prince, capital of the Republic of Haiti, was a terrible natural event that destroyed a country, already mired in poverty and corruption.

The first country that actually helped Haiti, in the first days after the earthquake was the Dominican Republic, situated on the other part of the island of Hispaniola. But it was not simple to help Haiti. Historically, the two countries were in conflict for a lot of years, for different reasons. After its independence, Haiti started to make a war against the Dominican Republic, in order to conquer all the island. The result was the relegation of Haitian in a small territory of the island but very densely populated.

The Dominican Republic started to have a constant economic growth, especially in the last decades, thanks to its national competitive advantages (the Spanish language first of all), while the Republic of Haiti continued to remain a poor country, the poorest in the Latin America, and one of the poorest of the world.

The majority of the aid came from the Dominican Republic, during the first three months of the earthquake, but officially through UN army. Dominican government put away from the port regulation, all the taxes on goods destined to Haiti, for the first 3 months (than 6 months), and a lot of companies started to use FTZs to import aid or produce them.

Oxfam was one of the first NGOs operating in the Dominican Republic for helping Haiti. They signed about one hundred contracts with Dominican suppliers of aid (from food to building material, passing through clothes, and in general everything was needed). It was one of the most operative NGOs in Dominican/Haitian first early recovery cluster and then in in the second phase as well.

In the typical supply chain of an aid, it is possible to find several steps that they can be summarized like this:

- Producer (With all the entire value chain of the product)
- Distributer (NGOs, such as Oxfam for instance)
- Costumer (Generally an institution operating in the area)

It is interesting to analyze all this supply chain. In order to be clear and simple, it needs to consider an orphanage as customer. This orphanage was helped by Oxfam in the first emergency phase. Oxfam is the distributor and it is using the typical structure of the early recovery cluster (during the first 6 months) and the logistics cluster (after the first 6 months). The producer can be a Chinese producer of corn, operating also in the Dominican Republic through the Multimodal Caucedo as FTZ, for instance.

But now, in July 2011, after one year and half since the earthquake, it is anymore an emergency period, and for this reason the orphanage is starting to find some problems of sustainability. There are not anymore some kinds of advantages related to the supply chain of the aid. Dominican ports do not have special priorities and policies for Haitian aid anymore. And it is interesting to analyze the other opportunities to make sustainable the activity of the orphanage.

At the end, it will be analyzed, for comparison, the activity of an other NGO, not using Dominican logistics cluster, but the Port-au-Prince hub. This strategy was adopted a lot by American NGOs, with a lot of controversies.

7.1 To Haiti from the Rest of the World, the activities of NGOs. Oxfam case

Oxfam is an international confederation of 15 organizations working together in 98 countries and with partners and allies around the world to find lasting solutions to poverty and injustice. They work directly with communities and they seek to influence the powerful to ensure that poor people can improve their lives and livelihoods and have a say in decisions that affect them.

For this reasons, Oxfam activities are not simply related to the supply of food. There are four different core activities made by Oxfam:

1. Water, sanitation and hygiene
2. Food security and livelihoods
3. Rebuilding communities
4. Advocacy and campaigning

If the first two are related to early recovery situations, the last two are totally aimed to long term plans, especially in a sustainability issue. For this reason, Oxfam can be considered a great benchmark for developing the country system in Haiti, after the earthquake.

Before the earthquake of January 12, Haiti was already a country mired in poverty and struggling to recover from earlier disasters. These are some data of the situation in the Republic of Haiti, before the earthquake:

- 55% of people lived on less than $1.25 per day (Office of the UN Special Envoy to Haiti
- 86% of people in urban areas lived in slums (UN Habitat)
- 47% of people had no access to basic healthcare (WFP)
- 83% of people had inadequate access to toilets (WFP)
- 58% of people did not have access to clean drinking water (Office of the UN Special Envoy to Haiti)
- 70% of the agricultural sector was devastated by hurricanes in 2008 (UN Consolidated Appeals Process).

After the earthquake the situation was also worse. The damage and losses caused by the earthquake are estimated at US$ 7.8 billion. This is the equivalent to more than 120% of the 2009 GDP of Haiti and represents the highest economic impact of a disaster compared to national income anywhere in the world in 35 years.

The earthquake created approximately 19 million cubic meters of debris to remove. During the first days, the majority of Haitians removed the debris from their plots by hand but actually they needed a standard pick up truck more than 8 million trips to a waste facility to move this amount of debris.

The earthquake struck an area more densely populated than the 2004 Southeast Asia tsunami zone and the area affected by the Bam earthquake in Iran. Just to make an example, over 1,000 people per square kilometre in Port-au-Prince, compared to between 250 and 1,000 people per square kilometre in Sri Lanka, India and Iran.

Moreover, the Haitian government lost much of its operating capacity. 13 of 15 ministry offices were destroyed, and one-third of Haiti's 60,000 civil servants died.

Oxfam, thank to its privileged relations with UN, was one of the first NGOs to collaborate with the WFP. During the creation of the first early recovery cluster between the Dominican Republic and Haiti (first 6 months), Oxfam reached a lot of great results:

- Provided clean drinking water and sanitation facilities to over 317,000 people
- Constructed over 1,400 latrines
- Cleared debris from drainage canals, benefiting over 110,000 people
- Provided public health education for over 210,000 people
- Distributed hygiene kits (soap, shampoo, toothbrush, toothpaste, sanitary pads, towels) for 120,000 people
- Provided cash-for-work and cash grants benefiting over 134,000 people
- Developed partnerships with over 30 Haitian national and local organizations
- Provided tarps and tents for 98,000 people

Financial support was surely very important but also the way to use this money. Other NGOs did not have such results in terms of numbers.

The funds were raised by Australia, Belgium, Canada, China, Germany, United Kingdom, India, Ireland, Italy, Netherland, New Zealand, Spain, United States (and European Union in general). The total available amount

was US$ 90 million, while the spent amount during the early recovery cluster was one third (about US$ 30 million)[24].

The first definitive results, forecasted after three years, will be definitively shown if the activity of Oxfam in Haiti is successful or not.

7.2 Reasons behind the usage of Dominican humanitarian Umbrella Cluster by the Oxfam

The process of providing aid could be implemented in two different ways, but with different results:

1. Using Haitian infrastructures, generally damaged by the earthquake, with lower costs in terms of distance transportation but higher risks
2. Using Dominican infrastructures, in the other part of island with problems in terms of distance, but lower costs in terms of taxes or in general lower risks.

There are a lot of reasons to understand why Oxfam preferred to use the Dominican Republic as platform for its aid to Haiti.

- Privileged relations with UN – Missions des Nationes Unies pour Stabilisation en Haïti (MINUSTAH) is the main reference for all the mission to Haiti. Oxfam has good relations with this institution. In Port-au-Prince, the only NGO operating inside the logistics base is Oxfam. It is not a case Oxfam is participating to the WFP, that is a UN program.
- Security – Haiti has a high criminality rate, and after the earthquake the situation got worse, because of poor conditions of population. Moreover, it is not simple to find places for storage, safe at the same time. The Dominican Republic could offer a more controlled environment, avoiding risks like robbery of food or other aid.

[24] J. Schindall, Aid to Haiti, 6 months on: a long way to go, 2010

- Costs – On a side, Haiti offers lower costs in terms of geographical proximity, but the Dominican Republic has advantages for taxes, both for manufacturing and for import or export, with the utilization of logistics FTZs, to have better policies for duties. For this reason, from the Dominican Republic in general costs appear lower than through Haiti directly.
- Better coordination – Port-au-Prince is completely destroyed. The earthquake broke down the building of the UN and UNICEF for instance, and for this reason there was not actually a base for coordination. All the main activities were moved to Santo Domingo, in order to better coordinate all the system of providing aid.
- Better geographical covering – From the border bases in Jimaní and Lasource, reaching villages in countryside is very simple. There is all the area between the border and the capital where there are a lot of villages totally destroyed or very damaged by the earthquake. For this reason with a Dominican cluster, there was a better geographical covering of all the area.
- Cluster advantages – The strong concentration of NGOs and other companies operating in producing and distribution aid, create a typical structure of a cluster, with all the relative advantages in terms of sharing costs, better coordination and more efficient provision of aid.

Oxfam is not the only NGO operating in this cluster but there are also other distributors and this is s great advantage for Haiti situations.

During the first phase with the early recovery cluster, every NGO was providing everything without a strong specialization in its activities. During the second phase there are some NGOs concentrated on supply of medications, others on food, others on material construction. And this is surely the core advantage of the WFP logistics cluster. Giving a specialization to the NGOs, reduces inventories and increase responsibility concept.

7.3. Providing aid to an orphanage. The case of the Orphelinat Foyer D'Orelph in Port-au-Prince.

Orphelinat Foyer D'Orelph is situated in the area of Croix des Bouquets, one of the poorest of Port-au-Prince. The situation of this structure is very complex, because of different reasons.

The director of this orphanage is called Valiere Delice. In the orphanage, before the earthquake there were 23 kids. After the earthquake the kids became 55, with great problems for the sustainability of the structure.

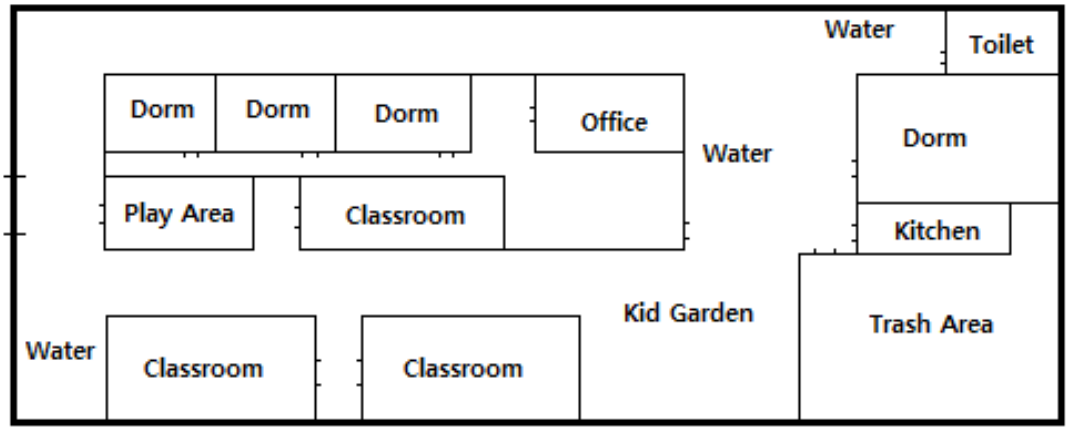
An important thing to underline is that this structure is not registered with the IBESR because it is expensive and difficult in terms of timing. IBESR is a branch of the Social Ministry and it is also a very corrupted institute, where even if a structure does not have the requirements, it is not difficult to be registered if there is someone that can pay.

With the registration, it would be very easier having access to the aid that the structure needs. In this orphanage there are several problems to be solved in terms of the four typical prerogatives of Oxfam's activities:

1. Water, sanitation and hygiene
2. Food security and livelihood
3. Rebuilding communities
4. Advocacy and Campaigning

Just to better understand then, the situation of the orphanage, it is interesting to make a plan of it.

Picture 7.1 Map of the Orphelinat Foyer D'Orelph in Port-au-Prince



Valiere wants to found a solution to his problems even if he perfectly knows how the environment is difficult in Haiti. Registration is the real priority because without it, the process of receiving aid from an NGO like Oxfam is very difficult, and sometimes impossible.

Some of the problems Valiere has, they overcome the limits of these three four typologies of activities. Sometimes the security of food could be related to a bad situation in sanitation.

7.3.1 Water, sanitation and hygiene

For NGOs this is generally the primary problem to be solved. In Haiti case, after the earthquake there was also a terrible epidemic of cholera. For this reason the programs for sanitation and hygiene are considered a priority. In the orphanage it is possible to recognize these particular problems.

- Water Tank Stand - Valiere has managed to secure a new water tank (2000 gallon one) however it will not be given to him until the water tank stand has been re-enforced to take the weight of the new tank. So it needs funds to enforce it, or in this way there will be not a constant and huge provision of water.
- Pipes and Tanks – There is a septic tank hole needs closing up. Pipes need fixing to ensure proper drainage and to prevent the dry tanks from clogging up with rubbish. The (one and only) dry tank gets full very quickly and needs to be pumped out frequently to prevent overspill. More dry tanks need to be dug up. There is also a dry tank in the shower are which has been cemented at the bottom hence does not drain into the ground but just builds up. Valiere would like to empty it and brake the cement at the bottom. This would allow for one more toilet to be back in use. Hole-in-the-ground toilet needs pumping out as its getting full.
- Shower and Hand Wash - The showers that were built no longer work as they need new, sturdier, better quality knobs. It

needs to build three hand was stations (for dorms, for kinder area and for kitchen)

These problems are simply to be solved, with UNICEF collaboration (that has constant programs for sanitation), and also with a contract signed with Oxfam, that freely of charge, can solve these situations. But registration continues to be the priority.

7.3.2 Food security and livelihood

The problem of food is very important. The typical dish eaten by the kids is composed by rice and beans, and it is simple to understand how this could be dangerous for their development and health. It is easy to find in this orphanage, particular problems in terms of:

- Food provision – Rice and beans does not represent a good dish everyday, but it is the cheapest one and sometimes the only available. For this reason Valiere wants to try to have different kinds of food. A variety that can help kids. There are some of them that feel tired in the afternoon because of the poor alimentary regime they have.
- Generator Stand – It regards more the livelihood. A generator stand construction has began, but needs carrying on. At the moment the generating is placed in front of one of the classrooms to be and had never been used (or used very little). The generator stand is going to be constructed above the well. Having a working generator will allow Valiere to have electricity at night which will prevent kids from getting hurt and allow for some after dark activities.
- Trash – This is one of Valiere's priorities. There is an area close to the kitchen that is like a dump. There is a poor excuse for a fence to keep the children from entering the trash area. Plus cross contamination hazard as kitchen is right next door. Valiere could use a trash burner, but it is expensive (around US$ 4000)

Getting money for doing these kinds of activities is not simple. The only way to have it, it is related to private donors. But with registration an other solution could be signing a contract with an NGO operating in the sector and specialized on it.

7.3.3 Rebuilding communities

Rebuilding a community is not simple. It is not just a physical rebuilding, in terms of construction, but it is also something that regards the education and the culture. For this reason, it not just important to build a right structure but also having a good system for educating the kids. This is Valiere's project for his orphanage:

- Kinder Garden – Valiere wants an area for personal development on kids. But there is all an area of the structure that appears good but no-utilizable. It needs smoothing off door frame and other sharp points, painting the walls to allow for re-decoration, chairs, tables, blackboard and finally clearing of the area directly outside the kinder garden and turning that into a play area
- Play area – It is very related with the project of the Kinder Garden. Currently the kids play room is used as Valiere's office, and dining area. Valiere would like the kids to have a play room with toys and video games.
- Schools - Valiere would also like to section off a corner in one of the classrooms to turn it into a medical corner with shelves and a bench to act as a bed. Ideally the orphanage nurse would store all the medicine there too so needs to be behind a lock. It could be interesting considering the final program of studies that Valiere is thinking about. For oldest kids (generally 13-18, teenagers) there are some plans of teaching a job. The two coursed Valiere wants to have in his school, are for mechanics and nurses. He wants to build a community again and giving

them the opportunity to survive also in the real life after the orphanage period.

It is an ambitious project and for this reason it will be very difficult to see everything in little time but Oxfam is surely a good reference for having aid and help for this orphanage program.

7.3.4 Advocacy and Campaigning

In the last paragraphs it was shown a general situation of the orphanage, and in particular which is the project to develop it. But it is just something related to the short term and not to the issue of sustainability. In particular, to understand the work of Oxfam and the important of the logistics cluster, it is useful to solve long term's problems, such as the constant provisions. Valiere has these particular problems to solve:

- Inconstant Provision of Food – In a typical day of a kid there are two moments to eat. One in the morning (for breakfast at 7am) and another one in the afternoon (for dinner at 4pm). The only available food is rice and beans. But there are some periods of the year when it is very difficult to receive rice and beans every day, because the demand of this kind of food is high. So Valiere would like to give to his kids something of better. The idea was having a provision of fortified corn, that is better for the diet and the growing up of kids.
- Inconstant Provision of Sanitation items – Cholera is one of the most terrible problems in Haiti and its very difficult to find sanitizers or alcohol. Valiere would like to have a constant provision of sanitation items but it is not simple. UNICEF could help Valiere, because it has a plan of distributing sanitation items freely of charge.
- Inconstant Provision of Water – Especially during the dry season, water can be a very rare good. Drinking water is also rarer because of the status of drainage, totally destroyed by the

earthquake. Valiere has to find drinking water in public places, but it is expensive, and not sustainable for the future.

Oxfam could be a could reference also in these cases. Especially for the food provision. Oxfam has a plan of distributing different kinds of food and not just beans and rice.

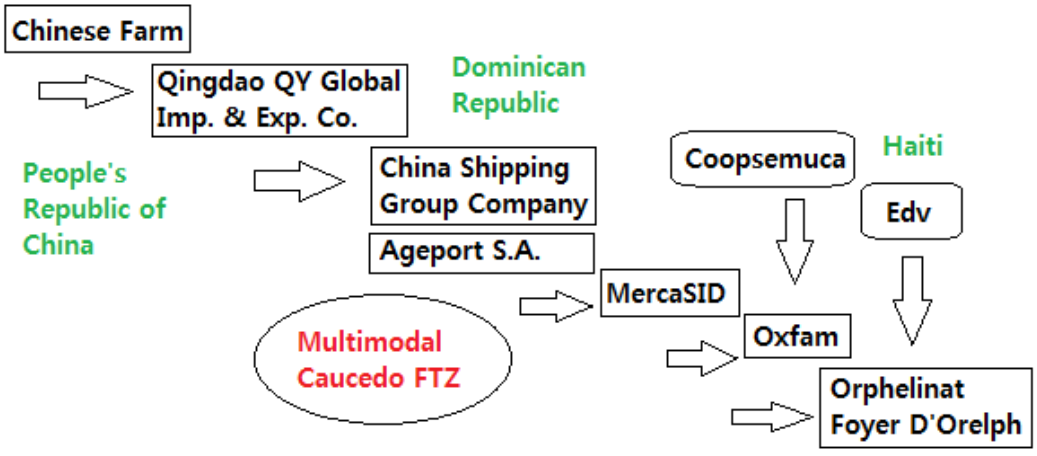
7.4 The Supply Chain of a simple aid. From the producer to a Haitian orphanage.

In order to understand better how Dominican Republic cluster was useful for aid to Haiti after the earthquake, it is interesting to analyze the supply chain of a simple aid. The choice is analyzing the fortified corn that is a particular kind of corn, treated in a particular way in order to make it more nutrient and healthy.

The majority of simple corn comes from Asia, and in particular from Shendong region in China, where there are a lot of farms producing corn.

Summing up, all a long the supply chain, there are different steps and actors, from China to Haiti. This is just an example of a typical supply chain, because obviously there are also some others ways to provide corn.

Picture 7.2 Example of Supply chain of Fortified Corn



7.4.1 Asian corn as main food. From a Chinese farm to the NGO distributor in Haiti

The supply chain of fortified corn starts in China, in Shandong Province, where there is the 43% of the Chinese production of corn, in general destined to export. Chinese are not consumers of corn, their cooking is generally based on rice and for this reason the production of corn is not destined to local market.

Price of corn in China is very low and in all the Shandong Province there are more than 10,000 farm. And it is from one of these that the analysis of the supply chain can start.

A Chinese farm sells corn at 0,22€ for kilo to an export company. One of the most interesting and operative on the Pacific Ocean transportation is the Qingdao QY Global Imp. & Exp. Co., Ltd, based in Qingdao, always in Shandong Province. This company charges about the 30% and the price rise at 0,29€ for kilo and its port of export is Delian, close to Beijing. Delian is one of the biggest ports operating in export and import activities.

The transportation company that is going to carry the corn is the Chinese Shipping Group Company, based on Delial but officially registered in the list of the companies operating in Multimodal Caucedo FTZ in the Dominican Republic. There, the official name is Ageport S.A. (Sociedad Anónima).

Corn is refrigerated because all the transportation from Delian to Panama (where there is the channel linking Pacific Ocean and Atlantic Ocean) and from Panama to Santo Domingo, takes about 1 month (and there is a charge of the 25% on the price). The price of corn rises to 0,36€ for kilo. The price that Chinese Shipping Group Company charges counts also the tax to pay for passing through the Panama channel.

The port of arriving is Puerto Caucedo, that is part of a PH that has Multimodal Caucedo Park as FTZ. As indicated in the principles of Dominican FTZs, there are no taxes to pay for imports of good, so the passage through this port is free of charge.

So, at this time, the price of corn is 0,36€ for kilo. The cargo is moved by a local transportation company that is part of Multimodal Caucedo FTZ and also part of the logistics cluster of WFP, and it is called Coopsemuca y/o Conrado Vargas (that is the president). The transportation charge to Port-au-Prince is about the 30% on this initial price. But before to reach Haiti, there are other steps that corn is making.

The corn that there is now in the cargo of Puerto Caucedo is refrigerated and not fortified. The process of fortification is made by a company in Santo Domingo, called MercaSID (introduced in Chapter 5), that is a very active distributor of food and an important supplier of NGOs.

The fortification of corn is a difficult process. It mainly consists of adding iron, niacin, folic acid, pantothenic acid, Vitamin A, Vitamin E, Vitamin B1, Vitamin B2 and Vitamin B6. These are essential nutrients for strengthening and development of human body, especially for children. The process is made just for Haiti because it is a kind of food used just in places where there is a strong malnutrition. So, MercaSID, makes this process close to Jimaní, in the Haiti border FTZ, to charge a lower cost. At the end of the process the cost of fortified corn's price is 0,98€ for kilo.

When the corn is finally fortified, it is possible to move it to Haiti, but, according to the quantity needed it can be stored freely of charge in Jimaní area. It does not cost anything because it is a service provided by FAO according to the WFP.

Table 7.1 Increasing of price of corn, all along the Supply Chain (WFP, 2011)

Company	**Country**	**Price**	**Charge**
Farm	China	0,22€	-
Qingdao Imp. Exp.	China	0,29€	30%
China Shipping	China	0,36€	25%
Ageport **(FTZ)**	Dominican Rep.	0,36€	Free of Charge
Coopsmuca	Dominican Rep.	0,46€	30%
MercaSID	Dominican Rep.	0,96€	Adding factors
Oxfam	Haiti	0,96€	Free of Charge
Edv	Haiti	0,96€	Free of Charge
Final Orphanage	Haiti	0,96€	-

Coopsemuca y/o Conrado Vargas brings the fortified corn to Haiti because it was previously sold to an NGOs related to the WFP. One of this, and that one that in the WFP counts the higher quantity (about the 37% of total food provided in Haiti) is Oxfam, that buys fortified corn at 0,98€ for kilo (the price charged by MercaSID) plus the transportation charge made by Coopsemuca y/o Conrado Vargas.[25]

7.4.2 Oxfam as distributor, requirements and activities

In every humanitarian activity there are two different NGOs to identify. Some of them are operating as distributors, other as mediators. Actually they have two different role but for a lot of aspects, they are complementary. In order to help a structure it needs to monitor the institution. Summing up, it is possible to recognize:

- Distributor NGOs – Oxfam is one of them
- Mediator NGOs – European Disaster Volunteer for instance that helps practically and monitors

Generally an institution, as in this case the Orphelinat Foyer d'Orelph, asks for help to a mediator NGO, that is directly on the field. But it needs to find a partner that is a distributor for constant distribution of aid.

The work of a mediator NGO is free of charge because they can survive thanks to donation and volunteer job.

A distributor NGO as Oxfam is also free of charge, but sometimes it can apply additional costs for additional quantities or situations that do not feat with the contract.

The requirements for an institution to receive constantly aid are:

- Official registration at IBESR – The reason is related to a terrible phenomena is happening in Haiti after the earthquake, that is the illegal adoptions. Monitoring a structure means being sure that in the institution there are not abuses.

[25] Data from MercaSID, Banco Central de la República Dominicana

- Impossibility to receive other aid – If an institution is already applied with a distributor of aid, it cannot ask for an other distribution. If the conditions of the contracts change (for instance for an increase in number of kids), it needs to stipulate an other contract.
- Authorization from UNICEF – This institution officially monitors with a mediator NGO the status of the institution and if the requirements are respected.

At this point there are not additional charges on price, so Oxfam is able to buy food and give it freely of charge to the needing institution, respecting the requirements in the contract.

For a distributor NGO the sources in balance sheet come from private and public donations or constant government financing (in general, as in Oxfam case, it is affiliated to international organization as WFP).

7.4.3 The orphanage as final customer, results and advantages for the Orphelinat Foyer D'Orelph

Behind the fortified corn, the typical nutrient in the Orphelinat Foyer D'Orelph is rice. In Haiti, the price of rice is very high, about 0,92€ for kilo. This is caused by the high demand of this commodity, especially after the earthquake. And the nutrition features of rice are certainly not the same of the fortified corn ones.

One of the best problem of the kids is tiredness, a very common consequence of the poor diet, composed just by rice and beans. Considering that the price of fortified corn is just a bit higher that the rice price, the alternative of fortified corn appears very interesting.

Valiere, the director of the orphanage wants a better nutrition of his children and thanks to fortified corn he can achieve this objective, spending less. Considering that the price of rice is 0,92€ for kilo but Valiere spends also money for alternative vitamins that are not in the composition of rice, the price plus vitamins increases a lot.

Considering that the price of rice has a strong volatility in Haiti, and this is a common effect of disasters, the alternative of fortified corn would be surely successful.

Summing up among the results and the advantages for the Orphelinat Foyer D'Orelph it is possible to recognize:

- Costs – On the whole, the costs of implementing a diet based on fortified corn is lower than the rice, considering all the vitamins that generally it needs to be added. With the fortified corn it does not need to add other vitamins to the initial commodity.
- Better Nutrition – Fortified corn has more calories and vitamins fundamental for the correct development of the kids. There is also the opportunity for corn to be generally used in different ways of cooking, giving more variety to the diet.
- Externalities – Using fortified corn, especially if it was implemented by a huge number of institutions could let decrease the demand of rice, decreasing the price of this commodity. It would be surely an interesting positive externalities, especially for other institutions that are continuing using the rice as their main meal.

A constant provision of fortified corn is not simple. So the real problem of this project is in terms of sustainability for the long term. The tale of the Orphelinat Foyer D'Orelph could have a happy ending just with the completion of the registration process. In this way, the orphanage could be inserted in the definitive list of WFP, having a constant quantity of fortified corn every week, for 3 years (duration of a development operation by WFP).

An other great problem is represented by the strict rules of WFP, especially in terms of features of the institutions. Officially WFP just provides school meals, so for this reason the Orphelinat Foyer D'Orelph has to be presented as a school.

In this way, the provision will be for every kid officially registered in the school, but not in the orphanage.

7.5 Problems in distributing aid. Sustainability of the institution and the implementation of a long term plan for the orphanage.

Considering all the problems described above and the wishes of Valiere for the future, the most important thing is creating a long term plan to develop the structure. And it is not easy in Haiti.

The priority for doing everything is the registration. Even if it is expensive, it is fundamental for every kind of aid received or long term plan. The process is very complex:

- It needs to prepare a document for every kid, like a curriculum vitae, describing all the life of the children. They have actually to be orphan and in Haiti a lot of orphanages have also abandoned children, and officially for the Haitian rules, these are not orphans.
- It needs to pay about 5,000 US$ of administrative and legal expenditures.
- The orphanage has to respect all the requirements in term of cleanness and kids' lifestyle.

The only problem is that the IBESR is going to judge and monitor these orphanages and it is a very corrupted institution.

After the registration it is possible to implement a long term plan:

1. Step 1 – Planning the implementation of school activities in the orphanage in order to receive the status of school and so the fortified corn through school meal.
2. Step 2 – Applying to the WFP process. For this, it is very important to respect all the hygiene requirements for the structure, especially if it is also an orphanage and not just a school.
3. Step 3 – Rebuilding the community through the implementation of a good education plan, starting from the youngest kids and the primary school, continuing through the working training of the oldest ones.

After the registration, the constant provision of food is implemented by Oxfam through the WFP and the UNICEF plan for orphanages. For the provision of water and sanitizers the responsible is just the UNICEF.

The most important thing, for a sustainable long term plan, is the creation of a community able to live autonomously, focusing on its strengths and avoiding the risk that some kids, after they are 18 year old, they do not have any kind of skill in their hands.

In this way, the effect of the sustainability of the orphanage can be extend to the entire Haitian society.

7.6 Some controversies, critics for United States' aid passing through the Cap Haitien port

Returning to the supply chain of an aid, there is also an other way to provide aid to Haitian institutions. This was generally a way chosen by United States and main reason is related to the proximity of the country.

After the earthquake, the port of Port-au-Prince was totally destroyed and the airport had also a lot of damages. The only available maritime entrance to Haiti was Cap Haitien, in the northern region and very far from the epicentre of the earthquake.

The policy of United States was sending aid without a real sustainability plan. This avoided a lot of deaths for malnutrition but it totally destroyed the agriculture sector in Haiti. The 80% of rice used in Haiti, comes from United States, and was sold at about 0,92€ for kilo. A great part of the increase of price from the starting price of rice in United State (0,37€ for kilo) is related to import taxes that could be avoided using the Dominican Republic as platform.

Oxfam denounced this situation and in particular about the anti-competition policies of United States. The Law Bumpers denies direct aid to sectors in foreign countries that are in competition with United States. Considering that the production of rice before the earthquake was very

common in Haiti, rice business is officially one of these businesses in competition with United States' economy.

It is not something that depends on NGOs but on American government.

Table 7.2 Supply chain of American rice though Cap Haitien and hypothetically through Multimodal Caucedo FTZ in the Dominican Republic (WFP, June 2011)

Through **Cap Haitien**				Through **Multimodal Caucedo FTZ**			
Company	**Country**	**Price**	**Charge**	**Company**	**Country**	**Price**	**Charge**
Farm	US	0,37€	-	Farm	US	0,37€	-
Exporter	US	0,48€	30%	Exporter	US	0,48€	30%
Transport	US	0,62€	25%	Transport	US	0,62€	25%
Importer	Haiti	0,73€	15%	Importer	DR	0,62€	Free
Transport	Haiti	0,92€	30%	Transport	DR	0,78€	30%
Distributor	Haiti	0,92€	Free	Distributor	Haiti	0,78€	Free

Taking as example the company Riceland Food, based in Arkansas, with the typical supply chain of rice from United States to Haiti, passing through Cap Haitien, the price of rice is about 0,92€ for kilo in Port-au-Prince, while with a hypothetical utilization of the Dominican Republic as platform, the price could decrease until 0,78€ for kilo, considering the exemption of taxes on imported goods in Multimodal Caucedo FTZ.

Just to make the Table 7.2 clearer, Riceland Food is considered as example of farm. The exporter is who is managing the process of export from United States. The first transportation company is the shipping enterprise. The importer is who actually imports the quantity of rice in Haiti. The last transportation company is that one is moving the food from Cap Haitien to Port-au-Prince storage structures. The final distributor is obviously an NGO operating in distributing food such as Oxfam.

Actually Oxfam does not work through the Cap Haitien port but it prefers foods imported from FTZs in the Dominican Republic because cheaper and safer, in terms of transportation and control.

The sea port at Cap Haitian was primarily used as the point of entry for containerised commodities, also by WFP. The infrastructure was strengthened too meet additional demand and to develop the area. But its usage is not related to big quantities such as Puerto Caucedo or Rio Haina.

Considering the supply chain of corn, in order to create fortified corn, starting from United States, it has to be fortified or in the Dominican Republic or in the United States (with higher costs) and this is not sustainable for a distributing NGO. In Haiti there are no fabrics operating the fortification process of corn.

Using a low cost country as platform for aid is a successful strategy as shown by WFP results, all around the world. A similar role had Philippines and Sri Lanka during the tsunami of Indian Ocean in 2004. It is a logistic coordination role of a country that can develop efficiently the economy of a country, as in Dominican Republic case.

So, considering with the policy of United States aid there is not an actual advantage for Haiti in terms of country development or humanitarian aid, there is no reason to continue to provide aid in this way, using a mistaken logistical way and not solving the problems of the country in a long term strategic vision.

Oxfam denounced this situation and it had its own results. In last 18 months a lot of aid were provided by the NGOs, without an actual monitoring or screening process, and the result was the creation of a vicious circle of dependence for the Haitian institution from the foreign aid.

Nowadays, it is difficult to get food or in general aid without an registration. The institution are started to be more autonomous, in order to lay the foundations for a long term plan and a self-sufficient system.

This is actually the only possible future for a country like Haiti, that had a lot of economical and social problems also before the earthquake and now it wants to start again.

Chapter 8
Conclusion

During the introduction to this thesis, in the last part we made some questions to give an answer, and now, after a long trip through Development Zones, Caribbean countries and NGOs' activities, it is time to answer these questions. The questions were:

- Are the Logistics-Oriented FTZs the future of the FTZs?
- Which is Dominican future in logistics industry?
- Was actually positive using the Dominican Republic as platform during Haiti earthquake?

There is not a unique and sure answer to this question, but after this thesis it is certainly possible to give a serious opinion.

The future of FTZs is Logistics

There is a strong economical literature that affirms FTZs are destined to die. Its usage will be soon abandoned by the Government because there is a strong disadvantage in them, that it is difficult to be overcome.

FTZs have the feature to develop just an area of the country leaving in misery all the other areas.

Implementing Logistics-Oriented FTZs this disadvantages is avoided because the positive effect of a FTZ is not just on the companies inside the FTZ but also in all the companies related to the business. And in a Logistics-Oriented FTZ there are a lot of companies related to the final good because of the nature of the logistics industry.

In this situation, all the companies related to the supply chain of the product have advantages. So, it is not just something that is linked to the local environment of the FTZ but also outside.

For importing for example an aid to Haiti through Multimodal Caucedo Park, it will be not used just companies that are part of the FTZ but also companies outside it. All the transportation companies, or the accommodation structures are not part of the FTZ but just linked to it.

In developed countries the usage of Manufacturing-Oriented FTZ is obsolete. According to the evidence, the new FTZs created in developed countries are Logistics-Oriented. And all the FTZs in the developing countries that are becoming developed, tend to become Logistics-Oriented.

In BRICS countries for instance, most of the FTZs are becoming complex (with the creation of specialized FTZs) or are becoming Logistics-Oriented. But there are no FTZs that, following the evolution of the country economy, they remain just Manufacturing-Oriented.

So, it is true that FTZs can become obsolete, not giving more advantages to the area where they are implemented, but it is also true that to avoid this risk, it is possible to change their nature, starting to implement logistics activities.

It cannot happen always, but it depends on local or macroeconomic variables, such as the geographical position or the labor cost. Natural or social features of the country are very important to start logistics activities and develop logistics industry.

Future scenarios for Dominican economy

The Dominican Republic has all the requirements to become a rich economy in the future, especially for the strong intervention of the Government in important and crucial businesses for the country.

There are some typical industries that will continue to be strong, for natural reasons of national competitive advantage. Some of them are:

- Tourism – There are no developing Latin American countries that are not still strong in tourism. For example Costa Rica continues to be strong in tourism even if now there are more important business such as renewable energies.

- Agriculture – It is difficult to imagine the Dominican Republic without strong agricultural clusters, also because actually the Government invests a lot on them, implementing and developing them.
- Construction – Speaking to every Dominican, they affirm that is impossible to see Santo Domingo without no workers in the streets. This is totally true, because every Government of Dominican political history invested a lot in public infrastructures, such as buildings or highways.

But among these strong industries, destined to be strong also in the future of Dominican economy, there are surely other industries, destined to have a great role in the future. These industries are all the industries logistics related. Among this, it is possible to remark:

- Transportation – The creation of new highways and the strong increase in the number of transportation companies in the last decades is a prove of how the Dominican Republic is investing a lot in the logistics industry. Dominican Government is understanding how the Dominican Republic has a great national competitive advantage in logistics activities.
- Telecommunications – While transportation represents the physical face of logistics industry, telecommunications are the virtual face. The improvement in telecommunications' technologies is a prove of the strong concentration of investments by the Government in this industry. In last years, it had low results, essentially because of an immature market, but in the future there are surely good margins of development of this industry and success.

Summing up, considering that logistics industry is strictly related to these two activities, the transportation and the telecommunications, and considering the positive margins of development of the two industries, it is possible to affirm that the future of Dominican economy is strictly related to its performance in logistics industry.

Logistics Industry represents the higher opportunity for its National Competitive Advantages, observing also its direct National Competitors in the same geographical area.

If the Government will be able to focus its incentives and investments for improving this sector the Dominican Republic will have great results.

The Dominican Republic as platform for NGOs

As largely described in the Chapter 7, the advantage of using the Dominican Republic as platform for aid by NGOs during Haiti earthquake emergence is surely clear and without doubts. The advantages are generally in two different faces:

- Costs – Avoiding the payment of VAT or other import taxes, it is possible to have a lower costs for the aid, if this is imported in the Dominican Republic from abroad. If this is produced in the Dominican Republic it is possible to exploit the manufacturing advantages of local Manufacturing-Oriented FTZs.
- Safety – Avoiding the storage phase in Haiti, with higher risks in terms of criminality or corruption, and exploiting the better social background of the Dominican Republic with almost the same advantages in terms of geographical proximity.

Considering these two important advantages it is possible to describe a best practice in Dominican umbrella cluster.

It is possible to recognize two different kinds of aid:

- Dominican Aid – The domestic one, in general manufactured in the Dominican Republic in Hainamosa Parks, more Manufacturing-Oriented. This is the reason why Rio Haina PH, counts just the 30% of the total aid imported for Haiti. All the local fruit or food aid, coming from the Dominican Republic clusters (Cibao Valley for agriculture for instance), pass through Rio Haina and Hainamosa Park and no through Puerto Caucedo and the Multimodal Park.

- Foreign Aid – The foreign one, in general imported through Multimodal Caucedo Park, a typical example of Logistics-Oriented FTZ. This is the reason why Puerto Caucedo PH counts more than the 70% of the total aid destined to Haiti. Most of them are from foreign countries, and they pass through Multimodal Caucedo Park and Puerto Caucedo PH, to avoid import taxes or VAT.

Considering the reduction of costs using the Dominican Republic as platform both in producing in a Manufacturing-Oriented FTZ or importing through a Logistics-Oriented FTZ, it is possible to affirm how was positive the decentralization of NGOs activities in the Dominican Republic.

Thanks to the experience of the humanitarian cluster in the Dominican Republic, the principle of the platform for aid, could be used also for other kinds of businesses.

Foreign textile companies for instance, could be based in the Dominican Republic and use the country as platform to export in United States or other nearby countries.

The only problems remains the number of Logistics-Oriented FTZs in the Dominican Republic. The only one that can be considered totally Logistics-Oriented is the Multimodal Caucedo Park, that was actually created with this objective.

All the others are mixed, hybrids in the world of FTZs that are trying to improve their status abandoning manufacturing activities.

Logistics Industry is a difficult challenge but it is one of the best way to face the internationalization of the activities and the globalization. Winning in this industry means winning in the entire economy.

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Appendix 1

No NGOs Companies in the Logistics Cluster

Fuel

Coastal Petroleum Dominicano
Nativa
Tropigas

Transporters

Coopsemuca Y/O Conrado Vargas
Sindicato de Camiones y Furgones de SD
Transporte Marreo
Transporte Guzman Lopez

Vehicle Rental

Dollar Rent a Car
Honda Rent a Car SA
Mc Auto Rent a Car SA
Thrifty Car Rental

Taxi Companies

Apolo Taxi
Exito Taxi
Nacional Taxi
Delta Taxi
Millenium Taxi
Taxi Imperial
Taxi Monumental I
Taxi Monumental II

Freight Forwarding Agents

Hispaniola Freight Services
Maersk Logistics
Adam Servis

Handling Equipment

Grúas Hino CxA
Liftring Dominicana SA
Servicio de Monta Carga y Transporte CM SA
T&S Transportes y Servicios SA

Electricity & Power

CDEEE
EGEHID
ETED
UERS-PRA
EDENORTE
EDESUR

Telecommunications

Tricom SA
Claro
Orange Dominicana
Viva
One Max
Wind Telecom

Food

MercaSID
Cesar Iglesias C Por A
Factoria de Arroz y Pastas Alimenticias J. Rafael Nuñez
Feliciano Peñalba
Procesadora Sánchez Ramírez
Factoría Agromolino de Moya
Factoría Bija
Factoría de Arroz Bisono
Font Gamundi y Co.
Arroz Hermanos Jerez
Factoría Hermanos Hernandez
Granos Nacionales
Comercial Agricola Sanz
Comercial Ramírez
Almacenes Castillo
Asociación de Comerciantes de Productos Agropecuarios
Casa Rodriguez
Almacenes de Granos Dominicanos

Accomodation

Apart-Hotel Atalaya
Clarion Hotel
Occidental El Embajador Hotel & Casino
Barcelo Gran Hotel Lina
Reinaissance Jaragua Hotel & Casino
Hispaniola Hotel
Hotel Colonial
Hotel Matum
Hotel Ambar
Hotel Platino
Hotel Mountain View
Hotel Victoriano
Hotel Villa Taina
Chic Hotel
Hotel El Libano
D'Angel Hotel
Hotel Maguana
Hotel Deysi Hns
Hotel Jimaní
Hotel Costa Larimar
Gran Hotel Barahona
Hotel Luxor
Hotel River View

Various

Casa Otero – Calderos
Cilindros Nacionales
Inoxida
Agrobiotek
SGS
Baltic Control
Fersan
Agro-Arrocersa SA
Sacos Nuevos y Usados José Gomez
Comercial Lijo
Gomas y Plasticos
Envases Dominicanos
Imprende la Unión
Mediabyte
Amigo del Hogar

Imprenta Original
Hiper Mercados Olé
Ferreteria Americana
Farmaconal
Bio-Medica
Bio-Nuclear
Serviamed
Serclamed
UNICEF Supply Division
Ferquido
Fertilizantes SD
Rinconadas
Bio-Agro
Agro Insumos Roswill
Solares & CIA Dominicana
Ferreteria Dominicana
Centro Commercial Lama
Ferreteria Casa Mejia
Cepror Villa Tapia
Delta Commercial
Editora Corripio SA
Industrias Nigua SA
Papeleria CCC
Suplidora Alonzo
Seguros Universal
Cecomsa
Soluciones Ambientales y Diseño
Video AAA
Viova SA
Productive Business Solutions
Delissa SA
Interauto SA
Compuaxess
Computadoras Dominicanas SA
Grupo Ramos
Cimple Publicidad

Appendix 2
NGOs companies in WFP in Haiti

Action Contre la Faim

Agence d'Aide a la Cooperation Technique at au Developpement

Ananda Marga Universal Relief Team International

Care International

Caritas Internationals

Initiative Developpement

Medicins du Monde

Médicins Sans Frontières

Oxfam International

Sos Enfants Sans Frontières

Save the Children International

Terre des Hommes

Welthungerhilfe German Agro Action

Appendix 3
Interview with José Llanos of MercaSID

Good morning José Llanos, we are going to start this interview with a simple question, but important to describe the point of view of this interview. Which is your position in the company?

I am José Llanos, manager of the Department of Marketing and Sales in MercaSID. I am also responsible for the Social Corporate Responsibility plan of the company and for this reason I am related a lot to the World Food Program activity in Haiti.

Which are the activities of MercaSID?

MercaSID is a distributor of food. Officially we provide food to restaurants, bars, supermarkets, schools all around Santo Domingo. Our activity is more focused on Districto Nacional but there are some affiliates operating also in Santiago. The activity in Santiago is completely different, because MercaSID is purchaser of food from the farms of Cibao that is the richest area in terms of agriculture and plants.

Considering that Santiago is the richest city of the Dominican Republic, why is MercaSID not a strong distributor in Santiago?

It is difficult to explain a reason. MercaSID is a company of the Capital and for this reason we developed a lot here. But I can offer to you a simple explanation. In Santiago food activities are in general more difficult. Cibao is very close to Santiago and all the local companies have a strong bargaining power in the local colmados[26] or for bars and restaurant. For the supermarkets is just a bit different because the rules for great distribution are completely different, but Santiago has a great tradition of small retailers.

[26] A typical local minimarket

Now, focusing on the aim of this interview, I know MercaSID is strong in Food Fortification processes. So, how can we define and describe Food Fortification?

MercaSID is the leader in Food Fortification in the Dominican Republic. Food Fortification is a chemical process that allows to add some healthy components for the organism to a particular food, without changing the taste of the product. The most common example there is all around the world is the iodated salt. In theory it is not a difficult process but in practice it requires a good knowledge in chemistry because, different quantities of these components could be dangerous for the health or change the taste of the food.

So, is there a real risk for the health in consuming fortified food?

It is not 100% out of risk but as everything in the nature. Also a natural product can have the same problems because the abuse of every ingredient can be dangerous. A person that has problems of high blood pressure, and uses a lot of salt (not iodated), is using a risky product. So I cannot affirm that fortified foods are seriously risky, or at least more than a natural product.

Which are the 'fortified products' of MercaSID?

The majority of the products of MercaSID are fortified. We have products B2C as flours, oils, milks and all the other products that are considered basic ingredients to cook. And then we have the products B2B, that we generally sell in large scale to big companies producing other goods as cookies for instance. All of this products are fortified because in the Dominican Republic is useful to give a better nutrition because there are some situations of malnutrition. I can give to you an example. In Villa Mella[27], in all the slum there are terrible situations of poverty and in this area the only way to

[27] A famous slum of Santo Domingo

buy food is generally in street markets. If a person that makes empanadas[28] used our flour, the food a person is going to eat will be fortified and more nutrient than a normal product. The Government in the last decades is giving a lot of incentives to companies like us to improve the nutrition in poor areas such as Villa Mella or the small villages all around the country. On the other end they can give to agriculture and food industries a particular mark, related to the production of special foods, more competitive on the market. With fortified foods, our company can survive in the globalization.

I checked all the prices of MercaSID, why B2B products costs are lower than B2C ones?

This is quite normal because with an other business in B2B, we work on bigger quantities. Let's have as example Mazorca corn flour that I am sure is the product of you interest. Mazorca corn flour is sold at 10 pesos[29] to a supermarket, that generally sells it at 14,95 pesos[30]. Every package is 14 oz[31]. Mazorca represents our standard receipt for corn fortified flour. The name of the equal product B2B is called Granular Flour and it is sold in bags of 50 or 100 lbs[32] at a price between 395 and 622 pesos[33]. But the price has a strong volatility because there are a lot of variables to consider in B2B. One of them is the risk or the transportation.

Talking in European measures, that could be clearer for everyone. Fortified corn is sold to the consumer at 0,68€ for kilo, while to an other company at 0.31€ for kilo, so why is it sold to Oxfam in Port-au-Prince at 0,96€ for kilo? This is a WFP data…

The reason is simple. It is not Dominican corn and there are not incentives by the Government for selling corn abroad. For law we have the

[28] Typical Latin American fried food with corn mass
[29] 0,18€
[30] 0.27€
[31] 396.9g for a price of 0.68€ for kilo
[32] 22,68kg or 45,36kg
[33] 7,17€ and 11,30€ at a price between 0,24€ and 0,31€ for kilo, according to the quantities

priority to the domestic market and for this reason we cannot sustain the sales to Haiti at the same price. Here in the Dominican Republic there are limits of price that we have to respect for the commodities, and corn is the form of carbohydrate more used in all the country. For balance sheet, we generally increase the price of other products such as margarines. The majority of the corn for Haiti comes from other country, especially in Asia, where corn is not so used and they can sell to us at a lower price than other countries such as Argentina or Brazil where is more used. In the end, you have to know that for the World Food Program we are 'particular' distributors. The business that we have with Oxfam for instance is a typical B2B. But Oxfam does not work in food industry but it is an other distributor of food, more specialized. So, if we are sure that the payment from a local restaurant or bar is quite instantaneous, from Oxfam or other organizations in Haiti, there are different timings. And sometimes we do not have a lot of warranties.

MercaSID is officially in the list of the Dominican Logistics Cluster created by Word Food Program for providing food to Haiti. As manager of the Department of Marketing and Sales in MercaSID, I am sure in these last month after the earthquake, World Food Program has been an important player in your activity. Which is MercaSID role in the Logistics Cluster of World Food Program?

As I said to you before we are officially listed as distributors of food among the Dominican companies and our task is the provision of fortified corn flour called Mazorca and fortified soy oil, called Crisol. These are the two main products exported to Haiti and sold to NGOs through the Logistics Cluster.

Beside the economical advantages, why did you decide to create this link with the World Food Program?

It was not our decision. We were contacted by the UN in 2008, before the earthquake in the meanwhile we were preparing a plan of Social Corporate

Responsibility. We decided to start this plan because our business was starting to enter US market especially in Hispanic areas such as Miami and Los Angeles, for the huge number of Latinos there. Our idea of Social Corporate Responsibility was more related to nature, biologic products or respect of the environment. When UN was looking for us we had a great occasion of implementing a social plan without high costs and with a great sustainability. We do not have a lot of economical advantages, maybe just on local visibility.

Isn't there also an inventory matter? In the sense that World Food Program is also an occasion to reduce inventories and in consequence the inventory circle…

We never had problems of inventory. We never had more than 32 days of inventory circle in last 10 years, when MercaSID changed the administration. Considering that for example the fortified corn flour has 3 months of storage, we are largely quite for inventories. Our products are generally recent and fresh. And we do not need any alternative occasions to dispose of inventories.

So, the core business of MercaSID is the distribution of corn flour. Which is the typical supply chain of the corn?

It is not the core business. We have also other business but certainly Mazorca fortified corn flour is one of the most profitable products for us. Regarding the supply chain for about the 60% of the flour the corn used is Dominican. The production is in Cibao district, where there are a lot of farms specialized on corn. The local price is very volatile but we generally purchase local corn at about 28 – 30 pesos for lb[34], just a bit more than foreign corn. The advantage of foreign corn is represented by the quantities and for this reason we cannot sustain all our activity with local corn. The problem is the cost of transportation that from abroad is certainly higher but it is still affordable thanks to the advantageous fiscal regimes in some ports as Puerto

[34] About 0,25€ for kilo

Caucedo. All the other corn comes from Asia, or China or Thailand where until one year ago the price was about 50% cheaper than here. In the last month the price is increasing a lot and it is reaching local prices.

So isn't corn just Dominican? But MercaSID has a Dominican image brand…

You know, the brand is Dominican but nowadays is difficult in small countries like the Dominican Republic surviving just with own strength. But we do not cheat the customer because the technology of fortification, the monitoring, the features of the corn and also the manufacturing systems are all made in the Dominican Republic. For example the cut of the sour is perfect for Dominican food. For this reason the customer is generally happy and satisfied.

The DR is usually considered a tax heaven by a lot of foreign companies, thanks to the large number of FTZs and PHs. Which is the role of FTZs system in MercaSID business?

I can sum up two different roles of Free Trade Zones in our activity. One is the import export phase for that part of commodities that is imported from abroad. We can import them at better prices than other countries. Our competitors in US have a lot of problems for importing rice from China for instance because there is a strong taxation. Here it is a real paradise for this. We do not pay any additional costs in some ports as Puerto Caucedo that is surely the more important. We are not part of any Free Trade Zone so we have to pay a part of the taxation, but it is common here to have an affiliated company for transportation that generally is part of a Free Trade Zone and avoid costs that in other countries are common. Puerto Caucedo is excellent for this because there is always a company from a different country that can be used as referent for a particular import. There is a Brazilian referent, that we use for example for palm oil, or a Chinese one, for rice or corn. The second role is given by the research and development activity. For us GMO

technology is very important. Here it is not like in Europe where people is afraid of GMOs. Here, GMOs are the solution for productivity and improvement in technology. The collaboration inside the FTZs operating in research and development among the different companies, it is very useful to give to our country a knowhow that we naturally do not have.

In your opinion, how much the government is improving the FTZs system in the country?

In the last decade, the only great improvement was given by the creation of Puerto Caucedo. Everything in the Dominican Republic is imported through Puerto Caucedo. I think the Government could create other ports or airports with the same fiscal regime of Puerto Caucedo to improve the status of the Free Trade Zones industry.

Coming back to the World Food Program activities, which NGOs do you provide?

Oxfam is our main consumer. But there are also Action contre la Faim, Caritas International, Médecins Sans Frontières and Save the Children International. But there are also other NGOs that prefer to purchase other products from other companies.

According to NGOs, this is not an emergence period anymore. The emergence operation finishes after 6 months. Now it is a development operations and also the logistics structure of the World Food Program cluster in the DR is changed. How long are you able to sustain the distribution of aid to NGOs in Haiti?

We do not have a real limit related to our balance status. The only problem is related to the increase of the price of the commodities. All the commodities are increasing all around the world, and the real problem is China. China was for all of us a good referent for low cost commodities but in the last year corn, rice and wheal increased a lot and if the price overcome the

local price, it could become not more sustainable. In that case the solution could be selling it without fortification as a lot of our competitors already do.

Are there other competitors in the DR are doing the same program of SCR?

Yes, there are. Especially there is very active and famous local company called Granos Nacionales also this with the headquarter in Santo Domingo but they do not do fortified food. Their activity is more related to commercialization of rice and beans, that is also a typical source of carbohydrates in local diet. But for this reasons there are a lot of competitors in Haiti because rice and beans is a very common business, especially after the earthquake. It is a cheap and without risks business.

And now some questions that I can ask just to a Dominican. What do you think about the difficult relations between DR and Haiti?

Eh, I know it is difficult to understand our relations. You know we fought for a lot of centuries, first of all during the French – Spanish period and then with the independence. They tried to conquer us. But now we are richer than them. I really think that this period after the earthquake will be the end of our bad relations. I remember that the day after the earthquake the first aid was given by the Dominican Republic, but Dominicans were not allowed to enter Haitian territory because Haitian people did not want to be helped by Dominicans. All the aid given by the Dominican government in the first days were distributed through UN. Now, after one year and half there are a lot of Dominican working over there. A lot of companies like the ours, have partners there and this is surely something of unthinkable two years ago.

And which is the future of the DR economy?

Costs are increasing a lot, inflation is very high and this is the most important problem for our economy. And the problem is especially for a

social point of view. There is not a good system of redistribution of richness. And without purchasing power is difficult for a company goes on. In our case for instance, we have more advantages because our activity is basic. Every Dominican consumes corn flour or oils but for the other business this could be a great problem.

And what about the future of agriculture and agro industrial industries?

In all the years of my life I do not remember any crisis of agriculture. This industry is basic in our culture. The only real competitor for us is Cuba, but it does not have a free system like the ours, that maybe economically is too free. And the investment on agro industrial are very positive for the future of this industry, waiting for the fall of the Cuban regime that can give a great sprint to their economy, also in agriculture.

Considering the great critics to United States for the management of the operations in Haiti, which is the future of Haiti and especially of its agricultural industry?

After the earthquake Haitian government had a great opportunity to exploit all the foreign investment, in form of aid, to build a new Port-au-Prince, in an other area like a planned city on the model of Washington for instance. People there is still in tents and they are building alone their houses in the same areas and just with sand and water. They are loosing a great occasion after a terrible tragedy. Regarding the agriculture I do not know any real competitor in Haiti. Ten years ago, when I started to work for MercaSID, there was a company in Haiti called Hasco, operating in sugarcane business. A lot of people were working there, now are working in the Dominican Republic or in the US. Everything is blocked by the system and people is eating tree soups. It is very difficult to solve a problem like this, considering that all the world is working there, without results.