

**Mendel University in Brno Faculty of Regional Development and
International Studies**

Tradition of Coca Leaves Utilization by the Quechua People in Bolivia

Bachelor thesis

Ivan Morales

Supervisor: Mgr.et Mgr. Miroslav Horák, Ph.D.

Brno 2017

DECLARATION

I declare that I carried out this thesis: Tradition of Coca Leaves Utilization by the Quechua People in Bolivia

Independently, and only with the cited sources, literature and other professional sources.

I agree that my work will be published in accordance with Section 47b of Act No. 111/1998 Coll. on Higher Education as amended thereafter and in accordance with the Guidelines on Publishing University Student Theses.

I understand that my work relates to the rights and obligations under the Act No. 121/2000 Coll., the Copyright Act, as amended, in particular the fact that Mendel University in Brno has the right to conclude a license agreement on the use of this work as a schoolwork pursuant to Section 60 paragraph 1 of the Copyright Act.

Before closing a license agreement on the use of my thesis with another person (subject) I undertake to request for a written statement of the university that the license agreement in question is not in conflict with the legitimate interests of the university, and undertake to pay any contribution, if eligible, to the costs associated with the creation of the thesis, up to their actual amount.

In Brno, 19.05.2017

.....

Signature

ACKNOWLEDGMENTS

I would like to thank Mgr. et Mgr. Miroslav Horák, Ph.D. for his guidance, patience, good will and advice. I also want to express my gratitude to my parents and sisters who are my biggest motivation. Finally, I want to thank all my professors in the faculty.

.

ABSTRACT

Bolivia is a country located in the heart of South America. It extends from the Andes Mountain Range to the Amazon Rain forest. The combination of its' geographical location and topography lends itself to a vast array of microclimates that provide a rich platform for a wide variety of agricultural, livestock and forest products. Coca (*Erythroxyllum coca.*) is a plant that is native to the Yungas area. Its traditional crop dates back to pre-Inca times. Since the 1970's its cultivation increased greatly due to the rapid growth of the plant and its dynamic commercialization. While it was used primarily as raw material in the manufacturing of hallucinogenic drugs, this document describes its traditional uses as applied by the inhabitants of the Chapare region where it was most aggressively cultivated. The inhabitants of the region were comprised of natives known as the Quechua who immigrated to the region and workers who were relocated from the mines that were closed as a result of a Supreme Court Decree 21080. This Decree was implemented to stop the illegal use and trafficking of the Coca plant as a drug.

Keywords: Coca, Quechuas, Bolivia, Traditional Uses, Chapare

RESUMEN Bolivia es un país ubicado en el corazón de América del Sur, debido a que su extensión tiene una gran variedad de climas, también es conocida por la diversidad étnica y la fuerte influencia de las culturas andinas originales. La coca (*Erythroxyllum coca.*) es una planta arbustiva que se desarrolla de manera natural en la zona de los Yungas, donde su cultivo tradicional data de tiempos preincaicos. Desde los años 70 su cultivo se incrementó de gran manera en la región del Chapare cochabambino debido al rápido crecimiento de la planta y por su dinámica comercialización principalmente como materia prima para la elaboración de productos alucinógenos. El presente trabajo pretende mostrar otros usos de la hoja de coca (principalmente del Chapare), retomando principalmente los usos de manera tradicional para que la producción y comercialización de la coca por parte de los habitantes de esta zona compuestos principalmente por migrantes de origen quechua y relocalizados de las minas que fueron cerradas como resultado del Decreto Supremo 21080, sean incentivadas a fin de evitar su uso y comercialización para fines ilícitos destinados principalmente al narcotráfico.

Palabras Clave: Coca, Quechuas, Bolivia, Usos tradicionales, Chapare

List of Abbreviations

BC	Before Christ
ASP	Assembly of People's Sovereignty
CATO	Area defined as the basis for the cultivation of coca by a family (40 X 40 m)
CC	Cubic Centimeters
CONNIOB	Confederación Nacional de Naciones Indígenas Originarias de Bolivia
COB	Central Bolivian worker
DEA	Drug Enforcement Administration
FARC	Revolutionary Armed Forces of Colombia
FONADAL	National Alternative Development Fund
IPSP	Political Instrument for Sovereignty of peoples
JTF	Joint Task Force
LPP	Law of Popular Participation
MAS	Movement towards the socialism
MNR	Nationalist Revolutionary Movement
NAS	Narcotic Affairs Section
UN	United Nations
SOBOMETRA	Bolivian Society of Traditional Medicine
TIPNIS	Indigenous Territory and National Park Isiboro Secure
UMOPAR	Rural Patrol Mobile Unit
USA	United States of America
USAID	International Agency for Development

Contents

I. INTRODUCTION	9
II. GENERAL OBJECTIVES	9
2.1 Specific objectives	9
III. METHODOLOGY	10
IV. BACKGROUND	10
V. THE QUECHUAS	11
VI. DESCRIPTION OF THE STUDY AREA	13
6.1 The coca leaf in the Andean society	15
6.1.1 Economic	16
One important aspect Coca cultivation is to earn revenue and respond to the new urban demands in the Andean economy. However, the importance of the leaf goes further, in small communities the coca leaf is literally the equivalent of currency used for the exchange of goods.	16
6.1.2 Social	16
6.1.3 Magical	17
6.2 Law 108	26
6.3 The new law 906 “La Ley General de la Coca” (The General Law of Coca)	27
6.4 Alternative development in the Chapare	27
VII. THE QUECHUAS STRUGGLE WITH COCA LEAF IN THE CHAPARE	28
VIII. ACTUAL USES OF COCA LEAF	34
8.1.1 Read luck with Coca leaves	37
8.1.2 Inaugurate reunions and events	37
8.1.3 The pijcheo or acullico	38
8.1.4 Offer for the Tio (Devil)	40
8.1.5 Consumption as an analgesic	40
8.2 Nontraditional uses of the coca leave	42
8.2.1 Ointments	42
8.2.2 Coca Flour	42
8.2.3 Toothpaste and Shampoo	43
8.2.4 Sweets and Candy	43
8.2.5 Coca Gum	44
8.2.6 Coca liqueur	44

8.2.7 Handicrafts.....	44
8.2.8 Ophthalmic extract of coca	45
8.2.9 Coca syrup.....	45
IX. ANALYSIS OF THE POTENTIAL OF COCA USES.....	45
9.1 propose for nontraditional uses	47
9.1.1 Medical uses for the coca leaf.....	47
9.1.2 Use of coca leaves in cosmetics	49
9.1.3 Uses for painting.....	49
9.2 proposal for strengthening traditional uses of coca leaf	50
9.2.1 Uses in incense and offering to the Pachamama	50
9.2.2 Opening of an event or activity	50
9.2.3 Reading of luck with coca.....	51
X. CONCLUSIONS AND RECOMMENDATIONS.....	51
References.....	53
Annexes.....	57

I. INTRODUCTION

Bolivia, officially named the Plurinational State of Bolivia, is a country located in South America that has an area of 1,098,581 Km², making it 13.93 times larger than the Czech Republic. With a population of over 10 million inhabitants, it's considered one of the poorest countries in the world.

Bolivia shares borders with the Republic of Brazil to the North, the Republics of Paraguay and Argentina to the South, and Chile and Peru to the West. It is also a landlocked state just like the Czech Republic.

Within the nation there are 36 recognized native cultures. More than 50% of the total population are the Aymaras and Quechuas (Constitucion Politica Del Estado, 2009). Both are known to follow certain traditions that are sometimes misunderstood by other cultures, such as the use of coca leaves.

II. GENERAL OBJECTIVES

The current document aims to present actual alternative uses of the coca leaf in Bolivia with emphasis on the social and magical uses. The goal is to spread acceptance of these uses so that they are not viewed as simply as strange rituals. For example, many of these uses have rich cultural and historic value. Finally it seeks to propose way to take advantage of the high coca production in the Chapare region and commercialize these uses.

2.1 Specific objectives

To make know the traditional and nontraditional uses of coca leaf in Bolivia, mainly by the Quechuas.

To strengthen these traditional and non-traditional uses to achieve greater international acceptance when applying them in different national and international events where the Quechuas are present.

III. METHODOLOGY

- Bibliographic compilation
- Analysis of the bibliography used.
- Classification in traditional and non-traditional social components.
- Analysis of the components.
- Proposed changes or modifications of the analyzed components.
- Conclusions and recommendations.

IV. BACKGROUND

Bolivia is a Latin American country located in the center-west of South America. It has a population of approximately 10.1 million inhabitants. Its has a surface area of 1,098,581 Km². This makes Bolivia the sixth largest country in South America. Bolivia covers different geographic areas such as the Andes mountains, Bolivian plateau, Amazon rain forest, plains of Moxos and Chaco. This results in one of the countries with the greatest biodiversity in the world.

Politically, Bolivia is constituted as a plurinational, decentralized state with autonomy. The city of Sucre is the national Capital and seat of the judicial body. The city of La Paz is the seat of executive, legislative and electoral bodies (Constitucion Politica Del Estado, 2009).

Bolivia is divided into nine parts known as departments and each department has its own departmental level capitol. Within each department there a various regions called provinces. Each province also has its own provincial level capital. For example, the department of

Cochabamba which is composed of 16 provinces. One of the provinces is Chapare. It is located in the northern area of Cochabamba. It is bordered to the north by the department of Beni, to the east by the province of Carrasco and Tiraque, to the south by the provinces of Punata, Jordan and Cercado, and to the west by the province of Quillacollo and Ayopaya. The capitol of Chapare is Sacaba. It covers an area of 12,445 km² and has a population of 227,404 inhabitants (2005) (INE 2012).

V. THE QUECHUAS

Quechua is a native language of the Andes. Spoken for hundreds of years this language is believed to have existed since the pre-Inca period (Noble & LaCasa, 2007). It is because of this language that the Indigenous people of the Andes, the Quechua receive their name.

Along-with the Aymaras, the Quechua are the successors of the Incas; the word Incas meaning: “sons of the Sun”. According to legend, the Quechuas were born when Manko Kápac and Mama Ocllo emerged from the sacred lake “Titikaka” (Titicaca), traveled to the chosen site of Cusco in Peru. Later the origin of the Quechua culture was finally consolidated with the arrival of Pachakutec in 1438.

The Quechua’s religion is strongly tied to agriculture. Many of their rituals and believes involve the god Pacha Mama which means “mother earth”. They believed the earth itself was the embodiment of the Pacha Mama. They would perform rituals for the Pacha Mama in order receiving blessings. The rituals were related to agriculture and involved providing offers to the ground in order to receive blessing in return.

As Ticona (2010) states, the Quechuas a native group that have been colonized, is difficult to teach them how to be decolonized for them to incorporate with the new challenges that modern society tries to push them back to sub urban or completely rural areas.

The Ayullu is name for a life model, a town that lives under the Pacha Mama’s blessings.

The Quechuas have their own philosophy about time and space which are represented by 2 concepts

The Qaypacha, which represents our world, a human world, with living beings and what surrounds them, including tangible elements such as soil and fields.

On the other hand the Janaq Pacha, refers to everything that is intangible like the sun, stars, reward or punishment that is determined by the behavior and generosity of each individual. (Illimuri, 2011)

Illumiri (2011) Mentions that this ethnic group is not exclusive to Bolivia. They can also be found in Ecuador and Peru. The INE and the CONNIOB both agree, that the Quechua Indians being the nation's largest native culture with over 2.2 million people represents a cultural heritage worthy of being studied.

- Region: Bolivian Andes.
- Departments: Chuquisaca, Cochabamba, Santa Cruz, Potosí, Oruro and La Paz.
- Language: Quechua, Spanish.
- Principal activity: Agriculture, livestock and poultry farming.
- Products: Oca, corn, potato, wheat, barley, quinoa, and vegetables.
- Inhabitants: 2 293 980 (INE 2012)

This culture has adapted itself to the three climatic regions of Bolivia, taking advantage of them to build the basis of their economy while respecting the principles of both universes mentioned above and by offering their actions to the Pachamama.

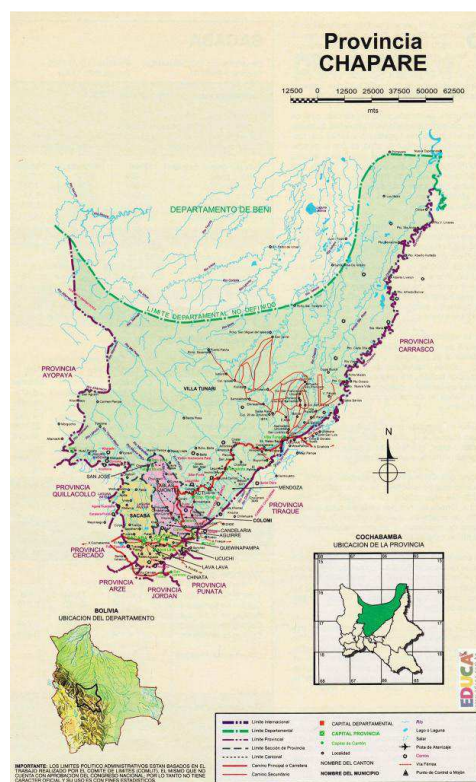
The main Quechua economic activity in the Bolivian plateau is agriculture. This includes the cultivation of cereals such as quinoa, barley, wheat, livestock and breeding of camelids.

In the same way, Quechuas living in the valleys depend on the cultivation of corn, potatoes, other vegetables, along with floriculture and the breeding of poultry, sheep, pigs, goats and cattle.

Meanwhile, in the Chapare region, they are dedicated to the sowing of coca, cultivating fruit, floriculture and the exploitation of wood.

VI. DESCRIPTION OF THE STUDY AREA

Graph 1. Map of the Chapare Province



Source: Educa.com.bo (2017).

The Bolivian Plurinational State is divided into departments, each department is composed of a number of provinces. The Chapare province belongs to the Cochabamba department.

It has a surface of 12,445 km² and includes the municipalities of Sacaba, Colomi and Villa Tunari. According to the 2012 census, this region has a population of 262,845 inhabitants.

The Chapare province dominates the cultivation of coca leaf, which is the primary material used for the production of cocaine. Coca cultivation is the main source of income of the coca growers of this region who are organized in six federations of “Cocaleros” coca leaf producers of the Tropics of Cochabamba.

The current president of Bolivia, Evo Morales Ayma, has ruled the country for 11 years and has presided over the federation Cocaleros for the past 17 years. He owns at least one “Cato” of coca, 1,600 m² and gets his greatest political support from cocalero affiliates. They refer to themselves as a social movement who support of the process of change (Seleme, 2012). (See annex number nine)

Although the Federation remains under the command of President Morales, it has become a violent organization that makes personal and corporate interests their priority. For example, they supported the right to own multiple “Catos” of coca per family by changing the law which had limited the amount of catos a family could own to one.

According to Seleme (2012), because of the high demand of coca, Coca farmers have seen themselves pushed into forests and protected national parks of Bolivia in order to expand cultivation. Due to these problems the state has made several investments in Chapare in order to support protection of the parks, education and peasants.

In addition to the invasion of the rain forest by coca growers in the Chaco region, there are state dairy companies, cardboard and paper mills, that threaten the area. Plans are being made to build a road that would pass directly through the heart of a national park (Isiboro-Securé TIPNIS) endangering not only flora and fauna but also the indigenous peoples Yuracaré, Mojeño and Chimán.

During the beginnings of the decade the United Nations Office of Drug Control in Bolivia, recorded that there was around 27 thousand hectares of coca plantations. This was an alarming number when we consider that only 12 thousand hectares were “legal”, and almost all of these legal or traditional plantations are mostly in the Yungas region in La Paz. Some experts speculated that the number is even higher due to the fact that the UN didn’t take into account the areas that are national parks; for instance, the TIPNIS. Most of the coca in the Chapare (about

95%) is considered (even by the own coca growers) unsuitable for human consumption. This is how coca expanded to neighboring Santa Cruz department, where it is also grown and made into paste and hydrochloride. It was then introduced to Brazil, via smuggling, for domestic consumption and export to Europe and other latitudes (Seleme 2012).

6.1 The coca leaf in the Andean society

For thousands of years, the coca shrubs grew on the eastern side of the Andes Mountains and it is known that it represented a key element of the Andean people and was an important necessity for their work and religion. The coca plant (*Erythroxylum coca*) is a shrub with oval leaves similar to laurel. It reaches an altitude of approximately 1 to 2 meters. These leaves release a slight dose of cocaine alkaloid, numbing the senses, alleviating hunger, pain and even supplies some vitamins.

The word “coca” comes from the Aymara word q’oka, which means “food for workers”. Although its exact origin is unknown, some ethnobiologist estimate that coca has been grown in the Andes for at least four thousand years. In Peru and Bolivia, figurative pottery from the Chavin period and wooden vessels of Tiahuanaco clearly show men (probably priests) chewing coca. Whatever the true origin is, traditional consumption remains an important symbol of ethnic identity for the indigenous population of the South American highlands (Cabieses, 1980).

In addition to these medical qualities the plant also plays an important role in the Andean societies. Attributed to being native to South America and because of the Tiwanaco Empire, its use was extended all along the Andean region and beyond. Records of coca used as a domestic plant date back to Andean prehistoric times in present day Colombia, Ecuador, Peru, Bolivia, Chile, Argentina, Paraguay, and Brazil. There is evidence of the oldest coca leaf found in northern coast of Peru dating back to 2500 BC.

Chewing coca is a very common practice in South America, Banks (2012) explains this practice which consists of detaching the leaf from the central nerve and placing it between the cheeks and

the jaw, combining it with baking soda. The mixture of these three elements (coca leaf, saliva, and bicarbonate) gives rise to a bolus that brings together alkaloids and some nutrients.

The Spanish used this practice with the Indian miners in order to save food.

The current president of Bolivia Evo Morales: “In this confrontation we see that Bolivia has defended the cultivation of the leaf stating the argument that “coca is not cocaine”, while the United States, the biggest market of cocaine with a 50% of cocaine consumption considers coca leaf as a threat to their people, In these days the leaf has become a symbol for indigenous people and groups, and It could even be said that it is the backbone of the Andean Societies (Banks, 2012).

According to Silva (2012) there are three types of relations between the coca leaf and the inhabitants of the Andes:

6.1.1 Economic

One important aspect Coca cultivation is to earn revenue and respond to the new urban demands in the Andean economy. However, the importance of the leaf goes further, in small communities the coca leaf is literally the equivalent of currency used for the exchange of goods.

6.1.2 Social

We could say that for Quechuas, Aymaras and other Andean indigenous groups the coca leaf is the equivalent of coffee in western civilizations. The workday in the Andes has four pauses, designated to the coca chewing, in addition, the Andean cultures understand social exchange as reciprocity, and the coca leaf plays an important role in this dynamic. It is fundamental when a leader is assuming a position in a community. Furthermore, coca leaves are distributed in meetings and social gatherings to be chewed by everyone present. A marriage proposal supposes the donation of handful of leaves, and after marriage a couple should build their house and plant a coca shrub in it (Silva, 2012).

6.1.3 Magical

The coca leaf is used in religious rituals for various purposes. It is used to protect an individual from spells, bad energies, change bad luck, predict the future and to make offerings to the Pacha mama (Mother Earth).

The Incas in the high plateau, and subsequently the Quechuas and Aymaras, recognized the sacred plant for excellence, in the old world it was known as MAMA COCA, the queen of the Andes. They believe that the plant provides food and security when consumed. The antibiotic effects of the plants are so potent that it is believed that the consumption of the plant is the reason that the indigenous people in this region have such good dental health. In addition, the

leaf is more nutritious than wheat and contains various minerals, vitamins, as well as the alkaloid of cocaine. When the leaf is consumed in the traditional indigenous way called “acullicu”. This method of consumption consists of a pile of fresh leafs put in the mouth between the cheek and the teeth. This ancestral method liberates among other alkaloids, the cocaine; however, it is without any harm to the consumers health. This process helps against the cold temperatures of the high mountains, prevents hunger, relieves pain and produces a pleasurable stimulation. Even after abruptly ending a prolonged consummation of the coca leaf, the consumers don't face abstinence syndrome, a basic condition of a substance that is addictive. In other words there are no withdrawal symptoms.

With all of these factors, it comes as no surprise that so many native groups In South America, not only from the Andes but almost throughout the entirety of the sub-continent benefited from this shrub.

When the Spanish conquest took place, the Catholic priest quickly recognized a strategic resource in it that is both material and symbolic. At first, as it was a source of idolatries, they prohibited its cultivation and consumption, declaring it satanic (Musalem & Sanchez, 2011).

From the era of colonization to present day regardless of Catholic priests' declarations indigenous people throughout the Andean region, including Colombia and Argentina continue to use the plant not only as a relatively cheap source of energy and satisfaction but also for magical

purposes. The plant has been believed to be magical and having the capability to predict the future. In fact, there are presently still traditional magicians and fortune tellers use the leaves for this purpose. They first drop the leaves on to an aguayo (cloth spread on the ground), then proceed read the formation of the leaves to find answers. (See annex number two)

Coca is grown in large parts of South America, especially in Peru, Colombia, and Bolivia. The places where it grows best are the warm valleys in the eastern slopes of the Andes, between a fifteen hundred and eight hundred meters above sea level, in rainy climates exempt from extreme temperatures. The leaves provide an indispensable stimulant to about ten million people (Donghi,2017).

Inca Garcilaso was an historian of the Spanish conquest and descendent of the Incas. He said: “Many years before the Spanish arrived in South America, coca leaf was not so easy to obtain. It was exclusive to the more powerful Inca and principal members of the Inca families; however,

by the time of the colonization, it was within the reach of everybody with the expansion of the cultivation”. Inca Garcilaso tried to defend the leaf from the prohibition set by the conquistadors. The Spanish didn’t believe in the magnificent effects of the plant, and they saw the religious ceremonies as devils work. But the Indians were not able to carry out the painful tasks imposed on them in the mines if they were not given their ration of coca. They then decided to partially modify their previous decision. They again distributed coca to the miners, three or four times a day, giving those short periods of rest at work to chew the leaves. In this way, the plant has been able to preserve its prestige among the natives until now. There are still some traces of religious veneration that people felt for coca.

Magical and religious uses of Coca continued to be prohibited during the conquest and the colony and even today, these spiritual uses are subject to scandal for the Evangelical (Lutheran) churches settled in the highlands which, as the Catholics, continue to identify these acts with the devil.

Albert Niemann received world recognition as the first to discover cocaine in 1859 although Enrique Pizzi, an owner of a Bolivian drug store is the first record of someone extracting the alkaloid of cocaine in 1857. Later Sigmund Freud wrote the text *Über Coca* after experimenting

with cocaine as a stimulant and Tonic. Finally Carl Koller, his former colleague in Vienna, was the first to apply cocaine as an anesthetic starting a new era of surgery with anesthesia.

Further studies of the Cocaine alkaloid led to greater knowledge chemically about its anesthetic and stimulating properties. Various new elements were derived that are currently still used as modern day anesthetics. For instance, Lidocaine, Novocain, Benzocaine and etc. All these developments were the result of small modifications made in the laboratory of the cocaine molecule (Arteaga, 2012).

At the end of the XIX Century, cocaine continued to be an important component in medicine and achieved a status of prodigy drug, because of medical advances that were made from it. Another such advancement was the nerve block injection in 1885, made by Corning. Another in 1899 when Bier made the Spinal anesthesia in humans. Thus coca became much appreciated and a symbol of high class, status and good taste. Elites from Europe and North America used it frequently. Even the famous fictional character Sherlock Holmes used cocaine (Diniejko, 2013). Curiously, cocaine use was also widespread among black workers in the United States to increase their work capacity. The bosses distributed it among the black workers in the cotton plantations of New Orleans and ports of the Mississippi river.

For many years legal cocaine was produced industrially by Parke Davis, Merck Laboratories and others, such as the Central Pharmacy of Paris. As of 1865 the Andean countries had difficulty responding to the international demand for Coca. For this reason the English, initiated cultivations of coca for export in Ceylon and Malaysia. The Dutch did it a little later in its colony of Java, an island that would become the world's leading exporter, supplying 40% of the international consumption. In World War II, the Japanese destroyed the coca plantations of Malaysia. It is believed that those of Indonesia were also destroyed. From 1942 onwards the plantations of Java were destroyed as well (Silva S. 2012). Coca-Cola had cocaine in it, as did many other alcoholic and non-alcoholic beverages. When the alkaloid was a legal stimulant, it was used widely until the first alarm bells sounded in the 20th century. (Ott, 2010)

The work "Interpretation of the Dreams" was a project created by Freud where he used Coca in the form of oral preparations and subcutaneous injections cocaine. Freud's writings at the time

when he was a regular consumer and enjoyer of its effects, remain a good source of knowledge about the substance. In his article of 1884, called *Über Coca* he wrote: "The Indian always carries with him a small bag with coca leaves (a chuspa) when he travels, and also a bottle with ashes of the plant." (bleach).

According to (Musalem & Sanchez, 2011) According to Arriaga (2012), Paolo Mantegazza was an Italian anthropologist and medic who lived in the Andes for many years, in 1859 he became one of the authors who described his discoveries of the therapeutic effects of the consumption of cocaine. Mantegazza experimented on himself to determine the effects of elevated doses of cocaine. He described the effects as a state of much greater happiness compared to the state prior to consumption, accompanied by a desire to stay still with an occasional sudden urge to move abruptly. The analogy of these results along with those obtained by von Anrep in animals is unmistakable. As the dose increased further, Mantegazza fell into blissful sleep. The rhythm of its pulsations accelerated and the temperature of the body increased somewhat. He realized that he could not speak and that his handwriting was not firm. Later he experienced splendid and vivid hallucinations. At first, for a short time, the hallucinations frightened him; however after that period of time they became joyful. This cocaine intoxication did not produce any type of depression, nor did it leave any sign of intoxication. According to the unanimous assertions of all authorities, both the oldest and most recent (including Julian, Martius, Unanué, Mantegazza, Bingel, Scrivener, Frank and others), coca solves all kinds of dyspepsia problems, and may achieve a permanent cure when used for a sufficient period time (Arteaga, 2012).

During the twenties of the XX century, racist stereotypes in the United States identified alcohol with immigrants from Ireland and Jewish origins, as well as marijuana with Mexicans, opium with Chinese, and cocaine with Afro-Americans. This was the same form a racism that led to the prohibition of alcohol which produced over 30,000 intoxication deaths related to methyl alcohol and chemicals. Throughout a press campaign that warned, "These substances induced blacks to rape white women", sales of cocaine were restricted and later prohibited. This limited sale to those who had it prescribed by a physician. This opened a new and very profitable market for mafias and politicians.

In 1970's consumption of cocaine exploded as a preoccupation in the western countries. There was a huge interest in cocaine hydrochloride in developed countries and became a symbol of high status and class in the 70's. This caused the governments of the countries involved to act. The United States was an important player getting directly to the zones where the raw material was cultivated. The United States strongly influenced the military of Colombia as well as created and financed the so-called "Plan Colombia" with the motto "Coca zero". The plan consisted of massive destruction of plantations of coca, poisoning huge areas of the Amazon rainforest seriously compromising the health of the natives in the area, poisoning the river thus exterminating all the fish, among other acts that had serious consequences.

Musalem & Sanchez (2010) explain how a professor emeritus of neurology at the (Universidad Del Valle in Colombia) writes, "In 1961 at the UN, the coca leaf was presented as a poisonous plant and was included in the list of narcotics. The Plan Colombia is only achieving the eradication of the indigenous and the displacement of peasants." Coca leaf, in addition to being of medical use against arthritis, as an analgesic, antiasthmatic, antidepressant and an appetite suppressant, can also help to improve the serious problem of cocaine addiction, crack and coca paste. Furthermore, it serves to improve laryngeal fatigue (dysphonia, hoarse voice), remove dizziness, lose weight, improve diabetes mellitus and Parkinson's.

Instead of destroying the more than 100,000 hectares of coca plants with toxic substances, or plucking and disposing of them, we should use the leaves as food. Destroying coca leaves to avoid drug addiction is as useless and absurd as destroying grapes, barley, potatoes and sugar cane to avoid alcoholism" (Musalem & Sanchez, 2011).

At the Coca museum in La Paz, Bolivia, there is a panel at the beginning of the tour that highlights an ancient Aymara legend, according to which coca will always provide relief and light to the indigenous, but warns that when the white man puts his hands on it, he will only find pain (Museum of coca, 2017).

Musalem & Sanchez (2011) state that, after committing to the gradual eradication and also decrease of consumption by native populations throughout many international agreements mostly influenced by the United States, Bolivia so far sees the coca leaf as a national identity as well as a strategic product and claims it with pride.

According to Dr. Llosa “It has been shown that cocaine ingested orally by the skin or by means of atomizers, lotions or ointments, is absorbed well and does not cause physiological, psychological or behavioral disorders, as occurs when consumed compulsively in high doses, for purposes of addiction by nasal, pulmonary or intravenous route” (Cabises, 2012).

Cocaine could not be completely eradicated from medicine because it had more anesthetic qualities than synthetic drugs, is used for more delicate surgical operations, and is inexpensive. Currently, only 36 countries (the so-called Legal Cocaine club) are authorized to produce and commercialize legal cocaine for medical purposes. No Latin American country has access to this club. At present, synthetic derivatives are the local anesthetics most used in modern medicine (Silva S. 2012).

According to a survey related to coca in Bolivia, it was found that most of the Chapare’s farmers that live on the land are mostly married men. Units with a female head account for only 10% of the total proportion, that is very low when compared to the corresponding national scale, which is 19.8%. The level of instruction of heads of household in Chapare is low. A third of them did not attend school and most, 54%, only completed primary school. It is clear that the main activity of the Chapare is agriculture due to the fact that only 20% of the population in the region have other economic activities.

The average land that the peasants have in their plot is around ten hectares. Very few people have above thirty hectares and overall there is a fair amount of equality in land distribution throughout the area. In general, out of the ten or so hectares that most peasants own, only about three hectares are used for cultivation.

Since 1988 policies have been established to decrease the cultivation of coca which was illegal until very recently (March 8, 2017). Attempts to replace cultivations defined that the Chapare is

a “transitional area” and even though they started voluntary eradication with compensation for the farmers that would change their cultivation, gradually it became a forced eradication. Simultaneously alternative development policies of changing traits have also been put in place. Initially, it was sought to replace crops with various forms of assistance conditioned to eradication, ending in the creation of market opportunities and the primary transformation of products in order to improve their competitive position.

This process has given rise to a remarkable peasant differentiation that is spatially reflected in coca-growing areas. There are peasants whose diversification is based on products used for direct food consumption and areas open to diversify their production more according to the opportunities of commercialization. The spatial variable suggests that this differentiation is strongly influenced by the quality of the soils, but there are also many other variables such as the degree of formal education and access to markets. Interestingly there has been a higher level of

education, greater proximity to communication channels (roads), greater willingness to participate in the market and therefore, to take advantage of the National Fund for Alternative Development (FONADAL), and Government institutions.

As a result coca cultivations have been drastically reduced in the Chapare, being replaced by other agricultural products. The plots of coca plantations are very small and dispersed throughout the region; however, we can see a centralization in the oldest plantation zones, nearby valleys of Cochabamba, other zones where there is really no other alternative cultivation that can beat the coca’s capabilities, and peripheral areas of protected national parks.

In contrast the Yungas region has a different behavior in comparison to the Chapare. The old law 1008 played an important role in influencing behavior. Another factor is that occupation of coca plantations in the region is very rooted in the culture and it’s considered a traditional area of coca cultivation. Furthermore, the growing of the plant had a legal status in this region, and also most of the alternative development and cultivations didn’t reach this region.

Table 1 comparison between Chapare and Yungas.

Variables	Indicators	Chapare	Yungas
Education	Level of instruction.	-0.833	(Out of the model)
Market	Special cultivations.	-1.535	-11.008 0.262
	Livestock.	-0.145	
	Energy used.		
	Force employed in the farm.	0.456 0.427	
	Food Crops.		
Localization	Distance	0.018	0.011
	Municipality	(Out of model)	
Time	Labor old	0.001	0.014 0.101
	Age		
	Number of lots		
Prediction (%)		81.5	76.4

Source: (Laserna, 2012)

As can be seen in the educational case, the relation is opposite, both cases have a higher average in education compared to the rest of the country. In the Yungas, the fact that it is out of the model means that there is no difference in education between people who cultivate coca and those who don't. Also in the Chapare region we observe that more educated people mean fewer

coca plantations. In terms of proximity, if the market is closer to the plantations in both cases (Chapare and Yungas), there is less likelihood to plant coca. Employment outside the agrarian farm is positive in both cases, this means that the coca plantation is as a reserve and they have a different economic activity, or simply that the coca plantations do not provide enough income. The availability of food crops, due to the fact that they are predominantly used for family consumption, is complementary to that of special crops or mercantile crops and consistently has the reverse effect.

Yungas being a high altitude zone of the mountains and until recently being one of the few legal zones to plant coca, has a natural situation where coca plantations are close to roads. While the Chapare due to the location of areas with quality soil and being a zone with no legal rights to plant coca, explains (Laserna 2012) the fields are more commonly found far from the road. However, the soil quality is not the most important factor, it didn't even get into the case study model, although it is an important factor. On the other hand, Yungas region has a historical tradition, as well as the legal status for a long time ago.

We can affirm that the Yungas has the "traditional factor". This means that the possibility of coca plantations is higher than in the Chapare due to the fact that it is the traditional destination of migrants of the high land and the tradition is not presently tending to change and diversify the plantations.

We can finalize that coca grower of the Yungas have an economic style similar to the ones of the non-coca growers of the Chapare. And the biggest difference between the coca growers in both regions is economic flexibility that is related to the markets. Also, coca growers of the Chapare can relate to the non-coca growers of the Yungas because both have different policies adapted to support the markets in their respective regions (Laserna, 2012).

Laserna (2012) also explained that colonization in the Chapare was conceived as the extension of the agricultural frontier by the economic occupation of the tropics by peasants displaced from traditional areas. Hence, coca was a key crop since it represented the most secure link with the market.

If for the colonizer, the union was the mechanism of access to land and linked to the political system, coca was the mechanism of access to the market, since its sale was fast, secure and allowed the acquisition of goods and tools that were not produced on the farm.

The coca boom of the early 1980's expanded these functions extraordinarily and multiplied the opportunities of colonization, making it more attractive and viable for thousands of peasant's families who moved to the Cochabamba tropic, mainly from the nearby valleys.

The most important flows were to the Chapare and not to the Yungas of La Paz, because the Chapare was more accessible by the new trunk road between La Paz via Cochabamba and Santa Cruz. This was due to the population pressure in Cochabamba being very intense. Also there was already colonization experience in the area and the availability of land was much greater than in the Yungas (Laserna, 2012). The decision to cultivate coca in Yungas and Chapare was strongly influenced by the legal and political conditions of both zones, which are classified in very different ways in the Law 1008. However, it is common to both areas to include coca as a complementary crop that links the peasant's economy with the market. Therefore, as the grower improves his condition of access to the market, coca leaf cultivation loses relevance.

6.2 Law 108

On December 29, 1988 the Supreme Decree number 22099 was established. It regulates the law 1008 on the Regime of Coca and Controlled Substances, which defines the production and use of both licit (traditional) and illicit (drug) Coca leaf. In this sense, Article 8 of the aforementioned law establishes and delimits three areas of coca production in the country: the traditional production zone, the surplus production zone in transition and the illicit production zone (ILDIS, 1992).

The traditional production area is where coca has been produced historically and socially for its traditional use. According to Article 9 of the Law 1008, the surplus production zone in transition is where coca cultivation is the result of a spontaneous colonization process that has sustained the expansion of surplus crops due to the growth of demand for illicit uses. The area of illicit

production of coca is constituted by those areas where coca cultivations are prohibited. This delimitation covers the entire territory of the Republic outside the areas already defined.

Once law 1008 was established in the 1990's it was characterized by a marked reduction in the productive activity of the department of Cochabamba, mainly due to the eradication process which was a key element. Statistics to show negative figures of -74.6% in the volume of production and -73.8% in the cultivated areas respectively (Rojas, 2012).

6.3 The new law 906 “La Ley General de la Coca” (The General Law of Coca)

On the March 8, 2017, President Evo Morales, enacted a new called the “General Law of the Coca” that replaced the 1008 law.

This law has a more social content in consideration for the coca grower, seeking to diversify the use of coca as well as establishing strategies and methodologies of government control with the participation of social organizations (La Razon, 2017).

This law also includes the increase of legal area permitted for the traditional cultivation of coca leaf from 12,000 hectares to more than 22 000 hectares. For this reason, it has generated conflict of interests between coca producers of the Chapare and traditional areas.

6.4 Alternative development in the Chapare

Until 1986 coca cultivation predominated in the Chapare region in the department of Cochabamba with 76,300 hectares (65% of total production), against only 40,601 hectares of licit crops. Thirteen years later the situation is totally different, with 93.5% of the total agricultural frontier legally cultivated and the remaining 6.5% with coca leaves. In the years 1988–1999 the area occupied by alternative crops has increased gradually from an area of 40.6 thousand hectares to 108.5 thousand hectares cultivated, this represents a 167% increase in spite of the reluctance of the peasants, which have been, among other factors, the cause for many projects,

even at the agro-industrial level, to fail. From the beginning, rice and pasture crops stood out, occupying approximately 70% of the total in 1986. Over the years the structure of the cultivated areas was changed thanks to the different projects promoted in the name of Alternative Development, which introduced new crops to the area (among which palm hearts, black pepper and passion fruit) and promoted others based on the degree of profitability. This was achieved thanks to the new varieties and production techniques adapted through the competition of the Bolivian institute of agricultural technology in the Chapare (IBTA Chapare) (Rojas, 2012).

Table 2 Evolution of the coca plantation area in Chapare (ha).

MUNICIPALITY	2003	2004	2005	2006	2007	2008	2009	2010
VILLA TUNARI	4250	5841	4094	4857	4536	4767	5020	4855
ENTRE RIOS	1106	1921	817	870	1103	1151	1163	1360
PUERTO VILLAROEL	1394	821	818	1110	1531	1666	1721	1824
TIRAQUE (SHINAHOTA)	214	724	605	691	777	902	886	902
CHIMORE	250	525	432	542	587	701	616	820
TOTORA (VANDIOLA)	114	253	245	270	274	289	294	300
TOTAL	7328	10085	7011	8340	8808	9476	9700	10061

Source: (Karl Hoffmann, 2012)

VII. THE QUECHUAS STRUGGLE WITH COCA LEAF IN THE CHAPARE.

Until the 1970s, few groups of indigenous people from the lowlands occupied the Chapare. Migrants began to move from the highlands since the thirties and forties, as part of a state policy to combat poverty (Sanabria, 1993). After the national revolution, the Revolutionary Nationalist Movement party or MNR (Spanish abbreviation), continued to foment this migration with a new

economic policies that promoted agricultural production in large holdings of lowlands over small parcels of the highlands for the division of their lands during the agrarian reform.

The MNR also saw this migration as necessary means to transform the backward Bolivian peasant economy into a modern capitalist economy (Sanabria 1993, Farthing and Kohl 2005). The Chapare eventually absorbed much of this migration because the migrants found cultivation of land there simple. Due to its high market value and suitability of Chapare, coca cultivation became a survival strategy for both farmers and miners. In the 1960's and 1970's, market prices for upland crops fell sharply. For example, tubers, a basic Andean crop, fell by 40% in relevant prices between 1963 and 1975 (Sanabria1993). The small farmers who received very little support from the government of the modernized Bolivian state began to migrate to the lowlands to find a new way of life. At the same time, the rise of the international trade of cocaine began, creating demand for coca from Bolivia and Peru and later from Colombia. More immigrants flooded the Chapare while the economic crisis of the eighties lashed Bolivia. As global tin prices fell sharply the government began to close mines, displacing thousands of workers and dismantling the powerful dominance the national economy had as coca producers (Kllein, 2003). Although there was no previous history of intense coca cultivation in the Chapare, farmers could harvest their coca four times a year and did not have to build steep terraces on coca plots as they were forced to in the Yungas of La Paz and Vandiola (Painter 1994, Farthing & Kohl 2005). Moreover, the soil and the rain patterns were ideal for coca production, although inadequate for most other crops (Sanabria, 1993; Painter, 1993). As coca became one of the few lucrative industries in Bolivia, displaced workers and farmers became increasingly dependent on recognizing its importance, not only for its own economic survival but for the national economy, particularly after neo-liberal reforms destroyed other livelihood possibilities. In an interview Stated Banks (2012)., the mayor of Shinahota, a town of the Chapare commented, "The coca for the people of the tropics represented a symbol of liberation, not only of the tropics, but of the country." To the interviewer.

The coca growers repeatedly pointed out in interviews that the recent history of the region defined its current importance in national politics. When the displaced miners and peasants colonized the Chapare, there was very little state presence in the region. These two groups, accustomed to organizing at the community level, soon came to dominate the political structure

of the region organized in labor unions or “Sindicatos” (in Spanish) a word adopted by the local mining unions. The colonizers of the Chapare began to organize community development and land distribution. These unions were a combination of peasant federations and mining unions. Today there are hundreds of unions, one for each Chapare community. Leaders are elected each year and meet regularly with other union leaders. The “sindicatos” are organized in large centers, which in turn are part of the organization that groups the six coca grower’s federations. The “cocaleros” of the Chapare have a strong history of institutional opposition to state policies and foreign intervention. While mining unions declined under neoliberal reforms, coca growers flourished as the most powerful social actors in the social area (Banks, 2012).

In 1988 President Víctor Paz Estenssoro’s administration imposed law 1008 as part of the efforts to control coca, which was promoted using the growing war on drugs led by the United States. This agreement, signed by the governments of Bolivia and the United States, encouraged coca growers to eliminate their coca crops with economic compensation for voluntary eradication and alternative development projects that replaced coca with other USAID-financed crops. It also militarized the coca eradication process by introducing forced eradication supported by US training, and the Bolivian anti-narcotics force, the Rural Patrol Mobility Unit (UMOPAR) and the Joint Task Force (JTF) (Cano, 2012).

When the law 1008 established the limit of 12 000 ha of coca cultivation for traditional consume they set the location only in the Yungas sector, meaning that the entirety of Chapare was considered illegal, this caused many protest from the Chapare people. They protested with marches and manifestations, the encounters with policy and military turned each time more violent especially after the training of the Bolivian troops by the DEA, which at the same time financed by the Narcotics Affairs Section (NAS) (Ledebur, 2005). Neither the Bolivian nor the US government blamed police or military forces for the violence, so the six federations of Coca growers started protests blocking roads and organizing more often marches. These acts of violence as Ledebur (2005) mentions, reflects the different points of view by the Bolivians who saw the Coca leaf as sacred and the United States that saw it as harmful.

The neoliberalism reform in the 90's in Bolivia meant a deeper US foreign policy thus deepening as well the war on drugs. In addition, with the election of Gonzalo Sánchez de Lozada in 1993 the reform passed from economical to the political. (See annex number four)

The president established the (LLP-1994 "Ley de participacion popular")the Popular Participation Law this meant that direct municipal election allowed a more decentralize politic system. Mainly in the rural areas. So in the 90's the natives of the amazons started to demand autonomy and rights not long after the Andean groups, the Quechuas and Aymaras, followed them. The president and vice president the Aymara Victor Hugo Cardenas officially declared Bolivia a plural ethnic state for the first time in history. It was the same argument that the COB mainly influenced by the coca growers (cocaleros) marched from Chapare to La Paz crossing over 600 Km in protest of the legal status of the coca, and stating that the coca was a symbol of the native people of Bolivia. (Healey 2007).

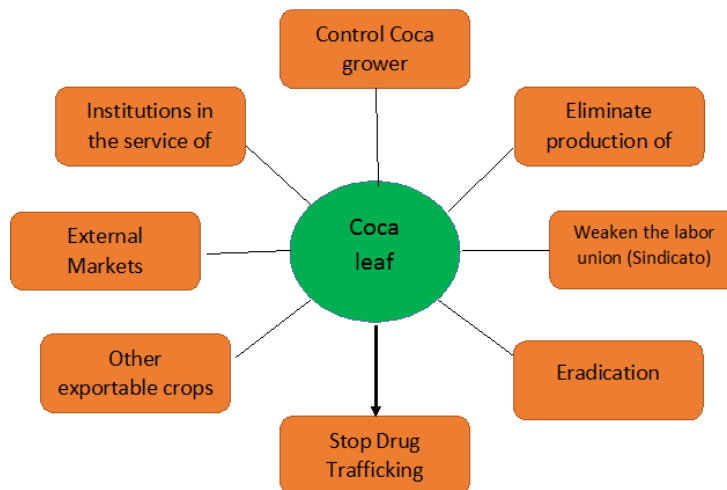
Coca growers protests escalated in 1997 when president Hugo Banzer Suarez signed an agreement with the Clinton administration ironically called "Plan Dignidad" (Dignity plan), similar to the infamous Plan Colombia that increased both forced eradication and alternative development incentives, thereby increasing violations of human rights and violence in the Chapare. For example, in 1998 the JTF launched an aggressive eradication campaign that left 13 coca growers dead (Ledeburg, 2005).

As eradication of coca intensified so did resistance protecting coca cultivation. In the mid-1990's, this resistance grew, transitioning from a social movement to an official party. In 1995 the coca growers formed the Assembly of people's sovereignty (ASP), which was denied the official status of a political party during 1995 elections and 1997 elections. However, some of its candidates were able to run for the Left United (UI), benefiting Evo Morales and three other candidates who won seats in the congress in 1997 (Heasley, 2007). Although the CSTUCB and COB initially rejected the LPP, decentralization eventually helped the social actors to create an official party. In 1999 the cocaleros created the political instrument for the sovereignty of the people, (ASP-IPSP) that won the municipal elections of the Chapare. The party later adopted the acronym MAS when it joined the UI leaders to resurrect the almost defunct Movement to Socialism. In 2002, Morales ran for president under the MAS and almost won the election. The MAS remains a unique political party because of its origins in the bottom-up social movement

against the state and social policies unlike a traditional top-down party dominated by elite interest.

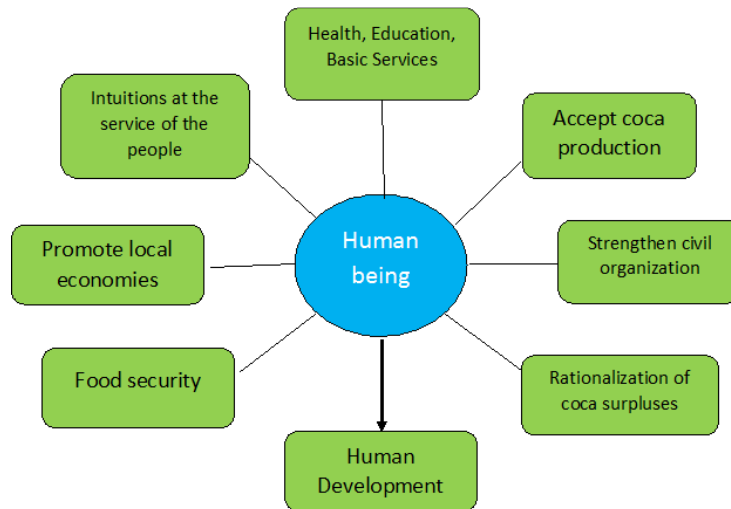
Sanchez de Lozada had a second term as president since 2002. He faced political instability when faced with a weak and decentralized state, unable to suppress protests against coca eradication and privatization. In 2003, a resident of the city of El Alto organized massive protests known as the Gas War, fighting for the national distribution of royalties from the growing hydrocarbon industry that was privatized during the first period of Sanchez de Lozada. After ordering the troops to shoot the Protestants, Sanchez de Lozada and his minister of defense, Jose Carlos Sanchez berzain were forced to resign, being responsible for the death of about 70 civilians (Larson, 2009) Carlos Mesa assumed the presidency in 2005, but was not able to honor his promises so fearing further instability, Mesa resigned. He declaring, “I am not willing to prolong this embarrassing comedy we are in”. In 2005, Morales won the first round of elections with the greatest majority of votes in Bolivia’s history (Banks, 2012).

Graph 2. Principles of Alternative development



(Villamil Soler A. 2011)

Graph 3. Principles of Integral Development with Coca leaf.



Source: Informe “Descripción y Análisis de la situación actual del sector de Desarrollo integral con Coca en Bolivia y el rol del FONADAL en este sector”. Proyecto de apoyo al FONDAL. Union Europea. Ana Villamil Mayo2011

While alternative development emphasized coca leaf substitution, integral development with coca emphasizes the inclusion of coca leaf as an element of the peasant productive matrix (Villamil, 2011).

In the Chapare up until 1991, six federations of coca producers emerged. They were formed from unions that forged their strength by organizing resistance against oppression. This continued during the US financed “war on drugs”. Evo Morales, who was one of the leaders of the largest federation, the Federation of the Tropics, was elected in 1996 to lead the combined federations.

The region of the Chapare trade unions represents approximately 44,000 families. Most from Quechua speaking highlands and valleys, as well as relocated miners. It maintains a mix of indigenous cultural forms that emerged within what was a mainly marked an oriented economy. They are organized in almost 700 local unions of different sizes and strength with specific unions for women that were formed after 1994. When the COB gave in under the siege of neoliberalism in the late 1980s. The coca growers of the Chapare began an almost uninterrupted cycle of protests forging alliances with other groups at the national level. This included the teachers union to the indigenous people of the East (Farthing & Kohl, 2009).

VIII. ACTUAL USES OF COCA LEAF

The impact of international conventions on domestic public policies related to the coca leaf is very large. In fact, much of the Bolivian domestic legislation related to the coca leaf up to the present is inspired, if not dependent, on international conventions related to narcotics.

The criminalization of the coca leaf, initiated by the Opium and Narcotic Convention of 1925, did not take immediate importance in the Bolivian internal regulations until it was decided to specify in the application for the agreements of interdiction of alkaloids by internal dispositions. The first Law on Narcotic Drugs in 1961, which responds to international conventions in their entirety.

The sequence of norms applying and adjusting the international conventions on narcotics for its application in Bolivia has occurred in more than 60 norms during the period from 1962 to the present. The penalization of the Coca Leaf has not yielded the expected results. The adoption of this policy has coincided with the expansion of the alkaloid markets and, of course, its expansion of the production and marketing markets of the Coca leaf (Arteaga, 2012).

The relationship between internal policies and international policies is not harmonious in any area. This confirmed in the case of the coca leaf. These divergences or convergences show, on the one hand, the limitations of international conventions, on the other the permeability of internal rules to policies established by international conventions.

It seems inappropriate to make internal policies dependent on international conventions since they create situations of rigidity that are unmanageable. The policy of penalizing the coca leaf, currently in force, presents these difficulties (Coca Una Mirada integral Tomo I, 2012). The consumption of coca leaf considered "in its natural state" such as food, medicine and ritual were on Tuesday, January 22, 2013, decriminalized by the United Nations (UN). This caused massive mobilizations and festive acts in different regions of the Plurinational State of Bolivia.

The chewing of the coca leaf, known as "chajcheo" in Peru, "mambeo" in Colombia, "coqueo" in the North of Argentina or "pijcheo" in Bolivia, is no longer prohibited in the international

community. Before and contradictorily to this, the use of the coca in the multinational Coca-Cola was allowed, but its consumption was prohibited because it was considered as illicit.

After the success in Vienna reporter Contreras (2013) wrote: In 1961, the leaf which was considered sacred since ancient times in Bolivia was considered poison for the developed countries of the world; even though the Bolivian government took steps to prevent it from being viewed as a narcotic.

Because of the dependence on US policies, various governments tried to implement policies to eradicate coca crops and replace them with alternative development products. All neoliberal policies failed because they considered the sacred leaf to be a drug, the coca producer as a drug dealer, and the consumer as a narcotic-dependent.

Violating human rights and trampling on national sovereignty, attempts were made to impose different plans from government spheres, such as the Triennial Plan (Plan Trienal), Five-Year Plan (Plan Quinquenal) and others with the sole objective of ending coca plantations at a given time. They never could, instead resistance and defense of the natural crop resulted in hundreds of dead, wounded and orphaned. This also germinated the formation of a powerful political instrument that today is in power.

Bolivia withdrew from the Vienna Convention in mid-2011 and in December of that same year requested its readmission on the condition that the “*pijcheo*” (also called “*acullicu*”) no longer be penalized. The UN disseminated this decision among the 184 member countries of the Convention, which had a period of 12 months to demonstrate and accept or reject the reservation. Most accepted the readmission and the decriminalization of the natural product, known as the sacred leaf.

On Tuesday, January 22, 2013, of the 184 countries that make up the Vienna Convention, some objected to the readmission of Bolivia, including the United States, Canada, Russia, Sweden, Mexico, United Kingdom, Japan, Germany, Finland, Portugal, Israel, the Netherlands, France, and Italy.

Today the Head of the Plurinational State of Bolivia, Evo Morales Ayma, stated that the determination to readmit Bolivia to the Vienna Convention grants, besides the legalization of the pijcheo (chewing coca), the permissibility of cultivating the coca leaf in to “necessary extent” for traditional uses. This means that Bolivia has the legitimate power to determine the number of coca crops for traditional uses.

“The Plurinational State of Bolivia reserves the right to permit in its territory the traditional chewing of the coca leaf for its consumption and use in its natural state for natural and medicinal purposes, as well as cultivation, trade, and possession of the coca leaf to the extent necessary for these lawful purposes.” explained the president.

“Now thanks to this success, it’s not only allowed the pijcheo (chewing of coca), but also the cultivation of coca in Bolivia.” he remarked.

According to the president of Bolivia, the decriminalization of the so-called aclicu of the coca leaf, it’s an international win for Bolivia against “the empire”.

The representative of the United Nations Office on Drugs and Crime Prevention (UNODC), Cesar Guedes, clarified that the extension of coca plantations is subject to a report, to be presented to the UN by the Bolivian government. Meanwhile, the export of coca leaf and its derivatives is not provided for in the Vienna Convention.

“It’s a victory for our culture, our social movements, and indigenous populations. Correcting a historical mistake after almost 50 years. The coca in its natural state is not a drug, and this is claimed with the readmission of Bolivia.” celebrated the vice minister of the integral development of coca Dionisio Núñez (Contreras, 2013).

According to the United Nations Office for drugs and crime Prevention, in the actuality, Bolivia produces 27,200 hectares of coca. The 1008 law recognizes twelve thousand hectares to be legal coca plantations.

Nevertheless, Bolivia does not depend a study to determinate the quantity of plantations for traditional coca consumption. Considering that each time, more sectors recognize it as food

medicine, and ritual. For almost 50 years, a natural product coca was penalized because of the decisions of developed countries.

There are over 250 varieties of *Erythroxylon* species known up till this date, however only two types contain the alkaloid of cocaine, they are the *Erythroxylon* coca (commonly known as Bolivian, or Peruvian coca). And the *Erythroxylon novogranatensis* (it was known as well as Colombian coca or New Granada) It was the noble type of coca for the Incas because of its sweetness, later the name was changed to Coca Trujillo and it was the only one with the specific aroma demanded by Coca-Cola. Among other differences the cultivation process, shape of the leaves and also the steam are different. (Granda, Rosero, & Rosero, 2015)

8.1.1 Read luck with Coca leaves

Since ancient times the Quechua culture and principally the Kallaways utilized coca leaves to read the future or luck of the people. This gives the coca leaf a special value from the Andean worldview that consists of knowing that it holds a person. There are no records that this ritual had been used to produce any harm or discomfort to any person in terms of witchcraft.

It is known of people who have turned to these sorcerers to know things like who stole their car, or where someone is; although many young people find out or want to know about their future, happiness and money.

The fortune reading with coca leaves is the prerogative of the religious specialists. It is considered an extremely serious function that serves a purpose in innumerable events; many of which according to Acosta, “diagnose health, illness, find a cure, receive good luck, see the past or future, and receive protection from witchcraft, robbery, punishment, failure etc.”.(See annex number seven)

8.1.2 Inaugurate reunions and events.

In the Andean culture, mainly where there is an active participation of the communities, the town peasants and social organizations like the local authorities perform a tribute using coca. They place it a special table, and wave it towards the maximum authority in order to wish good omens upon the event. During the development of the event, people use a handful of coca to create the so-called coca cake. Together with bleach, ash or baking soda it is kept moist in their mouth. This is how they extract the products contained in the coca leaf (i.e. "pijcheo"). This form of consumption of the coca leaf does not cause any dependence on the coca leaf.

In the k'inthu ritual there are many codes. Messages depend on the time and how many leaves there are. for chachawarmi (complementary duality, male-female) or jiwasa (us), three leaves are contributed representing us, the guest also contributes one, making a total of four sheets; This represents "taq-pacha" (all of us). After this greeting, another k'inthu is offered to the comrade.

If one finds himself in a group there are also etiquette rules and good behavior. The first to be served are the wise elders, then men, next young and finally the women, accompanying the invitation with phrases of affection and respect. For example, "Aceptemos entonces, contigo hermano nos acullicaremos, que sea en buena hora" meaning, "let's accept each other and among brothers lets chew in this good time". After these friendly phrases they proceed with the chewing of the coca, for around 20 minutes or more (Silva, 2012). (See annex number twelve)

8.1.3 The pijcheo or acullico

The most used form of coca leaves by the Quechua and Aymars cultures is the so-called "pijcheo" or "aculliku", which consists of carrying a handful of coca leaves in the mouth and forming a "bolo" (small ball). The combination of saliva and the pressure of the teeth and the cheek (without biting) extracts the juice from the leaves and therefore the components contained in the coca leaf. These components can be better obtained by mixing the coca with bleach, ash or soda directly in the mouth while the person chews.

This practice is widespread in Bolivia among heavy transport drivers, masons, miners, farmer, people of the lower class, and very few of the middle class, with practically null consumption of the upper class. Interestingly in the north of Argentina it is the upper middle class that consumes coca through the “pijcheo” and is offered in some restaurants before eating.

The Bolivian institued of Height Biology, the center for Ecological and Botanical Research of the UMSS (CIBE) and the French Institute for Scientific Research for Development Cooperation (ORSTOM) published in 1977, the results of their research on akulliku Coca leaf. This research concludes that traditional coca Akulliku with the following conclusions:

- a) Improves tolerance to work.
- b) Stimulates respiratory centers (improves oxygenation).
- c) Inhibits platelet aggregation (less risk of embolism).
- d) It regulates the glucose metabolism (sugar).
- e) It does not prevent normal daily intake of nutrients.
- f) Works as an adapter for life in high altitudes

(Silva, 2012). (See annex eleven)

Rules of etiquette in the traditional use of coca

Chewing coca is a symbol of social integration with other members of the community or family. It is part of the spiritual and religious life of many people in the Andean region. It is closely linked to work and is considered by itself a festive act. The consumption of coca is regulated by a series of rites that go back many centuries (Cabieses H. 2012). These rites include:

1. Coca is chewed in a group and an educated Indian does not chew it alone.

2. The first leaves of a new purchase are burned in a bonfire, as a sacrifice to the indigenous gods.

3. Coca is chewed in K'intu, that is, some leaves carefully placed one on top of another and held between the thumb and forefinger.

4. Before putting the coca leaf in the mouth, they should be blown on, this is known as "pukuy" and is done to achieve "Kintu" meaning summoning the local, regional and universal gods in that order.

The working day is divided into two parts, which are also divided into two parts. The four parts are divided into three intervals to rest. During the first interval, only coca is chewed, in the second, it is eaten abundantly and chewed as digestive, and in the third, it is only chewed again.

8.1.4 Offer for the Tio (Devil)

Miners in Bolivia, before entering the mine shaft, kneel before an image that represents the lord of the subsoil (devil) called "Tio" by the miners. They offer him coca, alcohol, and cigarettes in order to have a good production. This is a practice that all miners do regardless of the type of mineral material they are going to extract. They argue that it brings them luck in finding the

mineral that they are looking for. When they do not offer anything to "Tio" the miner faces finding nothing and is more likely to suffer an accident (See annex number five).

8.1.5 Consumption as an analgesic

The most common product where coca leaves are used is the well-known coca mate, which basically involves making a tea. Several coca leaves are placed in a cup and boiling water and left there for 5 minutes before drinking it. Often it is used as a tea in order to combat stomach

pain, altitude sickness or fatigue. The taste of this “mate” (tea) is not very pleasant. It is slightly bitter and it is recommended to take without sweetening.

Other people have the custom of placing a coca leaf on the temples of the head. This serves as a headache remedy. There are no records of the validity of this treatment, however, older peasants still practice this custom.

Laserna (1996) argues that if only 5% of the world consumption of coca tea infusions such as combinations like the Trimate (mate made of chamomile tea, anise, and coca tea) could be reached, there would probably not be enough coca production (legal and illegal) in Peru and Bolivia to supply that market.

Coca leaf is used not only to ensure health, but also to protect the health, being the chewing or drinking the most common forms for consume coca medicinally it has been proven that also helps with all type of pains, and even helps when a person has consumed much alcohol (Granda, Rosero, & Rosero, 2015)

Coca mate is a well-known product in Bolivia and Peru and is considered effective for altitude sickness. The main producer is Enaco of Peru, with the very successful commercial name of "Mate de coca Matisse". In Bolivia there are four main producers: Coinca, which distributes bags of mate of coca under the trade name of "Golden of coca". The Bolivian-German company Flansalst, which sells under the trademark "Mate Windsor". The Enproalyva Society, under the trade name "Mate de coca Lupi". Finally there is the Fimex Society, which produces and distributes the "Mate Kirtg", which is the most economical.

In the Mate Windsor and Mate Lupi product lines includes a Trimate, which is a mixture of coca, anise, and chamomile. There is also another "trimate" commercialized with the name of Tea of Los Andes “Amancay”. It is well-known that it contains coca, flower of chamomile and fruit of

anise. According to some chemical analyses, this product could be exported because a packet contains a term of 0.095% of cocaine. The amount of cocaine is below the maximum established by the Vienna Convention of 1967. It is produced by the Company ALFA Laboratories, and a box contains 25 packets (Calvin, 2012). (See annex number six)

8.2 Nontraditional uses of the coca leave

8.2.1 Ointments

The Bolivian society of traditional medicine (SOBOMETRA) is composed of naturalist doctors and kallawayas that are researching and developing products with natural herbs. Thus is how many varieties of ointments get on the market for different body aches. This Includes remedies for diseases like diabetes. Even without scientific evidence it is known that “pijcheer” coca maintains the sugar levels in the body in a stable state. These ointments have a quality control supervised by health ministry, where final decisions are considered the minister of traditional medical coca. (See annex number three)

8.2.2 Coca Flour

A couple of years ago, due to the encouragement to diversify the uses of the coca leaf, there was an incentive to create coca flour in order to be utilized in the pastry and bakery industry. Until this idea has not seen an increase and the population has not shown much interest. This is why coca flour is rarely used except in sporadic occasions in small productions such as cupcakes and biscuits.

The coca flour is ideal for preventing bone diseases, like the osteoporosis. It has been proven that the coca flour contains over 2000 milligrams of calcium per 100 grams, much more than the amount found in milk or cheese.

Anemia can also be treated with this product, due to the great quantity of iron and vitamin B. The body tends to absorb the vitamin B very easily. This is why it is a great dietary supplement for anemic people or those suffering from mal nutrition, it also increases the body defenses.

High triglyceride and cholesterol problems can also decline soon after beginning to consume coca flour. It also regulates glucose and blood pressure.

It is recommended for people who suffer from depression, as it helps raise the spirit and feel better emotionally. It can also be given to children with hyperactivity, as a notable change in their behavior has been observed.

It has very strong antioxidant effects, and is recommended for degenerative diseases, such as Alzheimer's and cancer. (Barrio, 2012). (See annex number one)

8.2.3 Toothpaste and Shampoo

The national industry in its desire to diversify the use of coca leaves has been producing cosmetic products based on coca. This is why the local markets contain toothpaste, shampoo and other coca-based products. They are intended to demonstrate other uses of coca. These products only have a small local market but are supported by organizations that support these initiatives.

The coca toothpaste is produced in Bolivia by Ban-LLo, under the trademark Co-dent. The label of the product indicates that is made of coca leaves in its natural state, without alkaloids. It helps to prevent cavities and preserves the health of the gums. It is sold in plastic tubes and the paste is green and has gel consistency. It also sells the Co-dentecito for children, which contains coca, clove, cinnamon, laurel, sodium sulfate, potassium sulfate, fiori, fruit essences and cedar (Calvin, 2012). (See annex number eight)

8.2.4 Sweets and Candy

Based on the benefits of the coca leaves, candy and sweets are produced with coca. These products are in high demand from tourists and are mainly being sold at the tourist posts and

markets, among typical art and other products of the Andean region. However, they are also commercialized in supermarkets and pharmacies.

8.2.5 Coca Gum

Calvin (2012) states that there are two Bolivian industries produce coca gum, The Ploft Company produces and distributes in boxes of 120 units with the trademark “Chicle de Bola-Coca”, which costs three euros. The company Coincoca produces it in plastic bags and contains coca, anise, and chamomile, there are also pills, syrup, and mate with the same formula. The Coincoca label informs that coca chewing gum accelerates the digestion of children and the elderly, has an anticoagulant effect, facilitates the metabolism of fats, carbohydrates, and uric acid, takes away appetite, thirst and prevents tiredness.

In both cases the taste is out of the ordinary, definitely is not of the best tastes. Also even though it's not written in the labels this bubble gum has a laxative effect.

8.2.6 Coca liqueur

One of the products that are being marketed inside and outside the country of Bolivia is the coca liqueur, with a sweet taste, it has a good level of acceptance in the market both national and international. It's still not considered a big national product, but it's making a name for itself in the market of spiritual drinks.

8.2.7 Handicrafts

The fight of the actual government to decriminalize the coca leaves incited the production of handicrafts with the leaves, destined to tourism, effectively tourist seemed to shown interest in this types of art, especially young tourists.

It is a market that can grow, however, the need for raw material (coca leaves) is very limited, and small, which does not represent a very attractive offer for coca growers, with the Chapare coca being limited by size and quality. Thus, the artisans prefer the coca of the Yungas. (See annex number ten)

8.2.8 Ophthalmic extract of coca

This extract is produced in bottles of 150 cc and is the product of coca with the highest multivitamin content: it solves the lack of vitamin K in infants and facilitates the formation of prothrombin in the liver, avoiding hemorrhages. It can be used by people with diabetes and people with vision problems, with polyglot varicose veins, arthritis, and rheumatism; In addition, it reinforces the enamel of the teeth (Calvin, 2012).

8.2.9 Coca syrup

Contains coca, honey, and sugar, is sold in bottles of 100 cc. It is a powerful stimulant of the blood and muscle system, revitalizes those who are tired and provides an athletic physical constitution. It is effective against altitude sickness, in the case of problems due to the change of diet, fatigue due to excess physical work, typhoid fever, tuberculosis, colic, asthma, pneumonia and gastric ulcers. It can be taken by adding milk or citrus (Calvin, 2012).

IX. ANALYSIS OF THE POTENTIAL OF COCA USES.

The scientific potential determined by the Japanese investigators and scientists about the coca. The authors of this information are (Seki & Nishi, 2012).

Table.3. The content of the Coca leaf.

COMPONENT	QUANTITY
CALORIES	305 kcal.
PROTEINS	19.9 g
CARBOHYDRATES	46.2 g
FATS	5 g
VEGETAL FIBER	4.4 g
ASHES	9g
CALCIUM	1.540 mg
PHOSPHOR	911 mg
SODIUM	40.6 mg
POTASSIUM	2.02 mg
IRON	45.8 mg
ALUMINUM	39.5 mg
MAGNESIUM	6.65 mg
iodo	0.5 mg
ZINC	2.70 mg
COPPER	1.21 mg
CHROME	0.359 mg
VITAMIN A	11.000 UI
VITAMIN B1 (THIAMINE)	0.35 mg
VITAMIN B2 (RIBOFLAVIN)	1.91 mg
VITAMIN B3 (NIACIN)	0.3 mg
VITAMIN B5 (PANTOTHENIC ACID)	0.684 mg

VITAMIN B6 (PYRIDOXINE)	0.508 mg
VITAMIN B7 (OR VITAMIN H BIOTIN)	0.0863 mg
VITAMIN B12 (COBALAMIN)	1.05 mcg
FOLIC ACID	0.130 mg
VITAMIN C (ASCORBIC ACID)	1.4 mg
VITAMIN E (D-ALPHA TOCOPHEROL)	43.5 UI

Source: (Seki & Nishi, 2012)

According to the same authors, coca is a dietary supplement that has essential nutritional factors like vitamins, minerals, and fibers. Also establishing that coca leaf is a natural food that provides the basic daily requirements of calcium, iron, phosphorus, Vitamin A, vitamin B2 and vitamin E, helping to maintain a young and healthy body. The coca leaf stimulates the consumption of oxygen and inhibits blood prevents decay, contributes to the control and treatment of diabetes, prevents heart attack, strokes, Parkinson's disease and cancer.

Coca is the ideal food because of little or no organic salts, low fat, and calories, as well as plenty of dietary fiber and vitamins.

It is indicated in people with chronic fatigue, poor adaptation to height, obesity, diabetes, arterial hypertension, sleep disorders and risk of senile dementia (loss of frequent memory or attention).

Table.

For this analysis, two groups are considered, traditional and nontraditional social uses, making an analysis of both types of uses.

9.1 propose for nontraditional uses

We initiate the proposal as a result of the information that has been proposed in the first instance the less known uses and fields where it is possible to take advantage of the properties of the coca leaf without this representing to cause dependence to the product.

9.1.1 Medical uses for the coca leaf.

Considering the various medical benefits of the coca leaf for the human health and knowing that nowadays has a very limited medical use, its suggested to realize deeper investigations of these properties to create medicine destined to combat ills that are currently not properly attended due to lack of knowledge or to consider itself a natural degenerative diseases like for example Parkinson. Currently in Bolivia is common and allowed to sell the “Sorojchipils” A medicine, in form of pills that combat altitude sickness mainly for tourists visiting the Andean region of Bolivia, however, its use are not properly disseminated, so it would correspond to create an informative communication policy on the different benefits of coca leaf in medicines, and remark that these pills, for example, don’t cause any dependency of any kind.

According to the Kallawayas (naturist doctors), they are able to cure cancer based on medicinal plants among which coca is an important element in their treatment.

It is known that very few Quechua goes to the dentist because it is understood that, by acullicar coca leaves, prevent the appearance of decay in their teeth, which requires a deeper study.

The coca leaf having different vitamins, proteins and other components are an ideal product for multivitamins to be used by athletes, convalescent people and older adults in order to maintain good health.

By having very little fat and other products that contribute to weight gain in the human body, it could be used as a medicine to maintain or even lose weight.

The production of medicines and the production of coca flour at an industrial level and possibly its export for confectionery would open a quite attractive market which may additionally include the following:

- Control of the amount of coca flour processed, exported and used in the local legal market.
- Control of the quality of processed coca flour
- Creation of a tax on coca flour
- Formalization and legalization of the use of controlled coca leaf.
- Dissemination of the positive properties of the coca leaf by demonstrating that the natural alkaloid of the coca leaf is not dangerous or harmful until it is combined with other non-authorized substances (eg ether, hydrochloric acid, and acetone)
- Establish an international information policy on the benefits of coca leaf.
- Generate new sources of employment.

9.1.2 Use of coca leaves in cosmetics

There is knowledge in the elaboration of ointments, creams, toothpaste, shampoo and other based on the coca leaf, so it would be interesting to create a cosmetologist mixed company between the state and the private company that guarantees that the raw material coming from areas that are of legal cultivation, proven with for example some certificate of origin. The quantity and quality of the products would be transformed into the final product where it will be packed, labeling and packaging for distribution and marketing in the domestic market as well as the international market.

The coca leaf would pass to the unpacking room, cleaning and purification of the product, so that according to its elaboration (past or liquid) it is transported to the room where along with other products would be transformed into the final product where it will be packed labeling, packed for distribution and marketed in the domestic market as well as the international one.

This production involves having professional staff such as chemical engineers, biochemist, assistants, controllers and supervisors, and plant workers.

It must have an adequate and modern infrastructure that responds to modern international norms and standards that allow using energy, water, and others in an economic and ecological way complying with technical and environmental standards as well as having environmental and technical supervisors that guarantee ecological, financially attractive and accessible to potential customers.

It is important the diffusion and marketing component from where you have to know the properties and qualities of these products in order to achieve international acceptance mainly considering that the local market is limited.

9.1.3 Uses for painting

Currently, research is underway in the production of paints from the coca leaf as a raw material, which represents an alternative use of the coca leaf. This activity will make it possible to diversify the construction industry, generate permanent direct and indirect sources of employment, support such initiatives and disseminate their results.

9.2 proposal for strengthening traditional uses of coca leaf

The coca leaf is currently used in different spheres and activities, however, the present work proposes to strengthen and massify the use and diversification of these traditions, without altering them, but giving it a more international or globalizing character.

9.2.1 Uses in incense and offering to the Pachamama

Generally in an incense is not always used coca leaf, however in some cases if it is used and consists of burning the offering in a kind of portable burner or stove when the fire is low, by international standards is not allowed in hotels, offices, airports, halls and other environments closed the use of fire (small, medium and small bonfires) for the risk of a fire, so it is proposed the installation and use of fireplaces intended exclusively for this activity. At the conclusion of the act, all waste (ashes) must be destined to a composting plant.

This means training people in the construction, installation, assembly, commissioning of the chimneys, respecting technical and environmental safety measures.

9.2.2 Opening of an event or activity

Each time a community, local, ministerial, or other local, departmental or national meeting where indigenous Quechua and or Aymara authorities are involved, a ritual can begin with requesting that it be carried out without setbacks and that have optimal result for the objectives of this meeting, it is customary to install a ceremonial table where the coca leaf is the main object in it, resulting in those events are chewed coca in a large quantity, Being that these bolos (the material of chewed coca), is thrown in the corners of the room by lack of suitable garbage dumps. Proposing that the custom of starting the event with the coca offering be continued, and then handing out to each person who is consuming the coca a little bag with clear instructions of deposit the remaining bolo in it and then throwing it away to the garbage dumps when it's sufficiently full.

It would be up to the company that rents the premises or the administration of the space, to organize a group of people who supervise the proper use of the bags and their subsequent deposit in the spaces destined for their storage: it must be later transferred to the composting plant.

9.2.3 Reading of luck with coca

This tradition should be maintained as such, without alternations, although a circle of properly registered and authorized soothsayers should be kept in order to avoid, deceive people. This registration must be annual in order to avoid scammers, in addition to that they must have an adequate environment to carry out their activity, considering that they have had unpleasant experiences in this regard.

X. CONCLUSIONS AND RECOMMENDATIONS

The coca leaf has been used by Quechuas and Aymara natives since ancient times, there were never references to drug addiction or dependence when chewed, and the uses were and are for different activities from medicinal to rituals, as demonstrated in this work, it was the foreign culture that produced products that made the human being dependent on its use, so it is appropriate to show the different uses of this plant so discriminated by international politics.

Since 2013, when the readmission and decriminalization of the natural product, known as the sacred leaf, the current Bolivian government carried out many activities to diversify its uses, these, however, were not sufficient from the point of view of information and dissemination on the potentialities of the coca leaf.

Many people maintain this myth that coca is harmful, mainly in Europe, so it is necessary to create a communicative information policy on the benefits, potentials, and properties of coca.

Coca cultivation continues to be the most cost – effective agricultural activity. Coca requires scarce cultural work, adapts easily and produces more than one annual crop (between three to four harvests per year). It does not require technical assistance, it is not subject of the inclemency's of the climate and for its commercialization, it does not need roads or bridges. It remains, therefore, a challenge to consolidate sustainable development processes are not

sustainable in themselves, but are conditioned by a plays a fundamental role, must generate the mechanisms to favor the sustainability of the actions that generate wealth and equity and also the instruments to minimize activities contrary to this objective.

It is recommended to establish a program of diffusion and communication aimed at the international public (mainly European) to show: the composition of the coca plant, medicinal and therapeutic uses, uses in cosmetology and others in different fairs, exhibitions, and international events. Countries.

Develop events with the participation of international representatives for the commercial exchange of coca derivatives.

Create a coca research center (Coca Research Instituted – INVICO) that has the task of finding potentials and different uses of the coca leaf in order to not cut the production of this plant and to achieve a legal destination of the this product. Instance that must be conformed by professional personal, highly qualified and to experience on the subject.

The coca leaf, like any cultivated plant, has benefits that, if properly exploited, will improve the quality of life of any user, so it is important to disseminate these benefits widely and if there are groups of people interested in obtaining illicit profits these groups and not the plant must be internationally sanctioned. That is why in the government of Bolivia remains “Just as the grape is not wine, coca is not cocaine”.

References

- ABI. (2017). *El Presidente Evo Morales*. [photograph]. Retrieved from <http://www.eldeber.com.bo/bolivia/Cocaleros-de-los-Yungas-rompen-el-dialogo-con-Evo--20170128-0091.html>.
- Alter Consciens. (2010). *Jonathan Ott: coca, cocaína y Coca Cola*. from <http://www.youtube.com/watch?v=fwqn7vmBzZs>.
- Arteaga Aranibar, M. (2012). Historia y Politicas Publicas de la Hoja de Coca. *Coca Una Mirada Integral Tomo I Historia*.
- Bank, E. (2012) Desde los cultivos de coca al gabinete: Historia social del movimiento cocalero en el Chapare. *Coca Una Mirada Integral Tomo III Movimientos Sociales Y Situacion Legal*.
- BoliviaMall. (2017). *Coca earrings*. [photograph]. Retrieved from http://www.boliviamall.com/popup_image.php?pimgID=9685
- Barrio, S. (2012), Anatomia de la hoja de coca. *Coca Una Mirada Integral Tomo V Mitos, verdades y controversias*.
- Cabieses F. (1980). Aspectos etnologicos de la coca y la cocaine. Cocaina 1980-actas del seminario interamericano sobre aspectos medicos y sociologicos de la coca y la cocaina. Lima: Editorial Fr Jeri.
- Cabieses, H. (2012). La historia y la mitologia tienen 5 mil años de antigüedad. *Coca Una Mirada Integral Tomo I Historia*.
- Cano, C. (2012). *Reinventando el desarrollo alternativo* (1st ed.). Bogota: Corporacion Colombia Internacional.

- Carrasco, N. (1995). *La hoja sagrada de KUKA o coca*. *Boliviana De Cultura*. Retrieved from <http://indigenas.bioetica.org/base/base-b1.htm>
- Chiaperu. (2014). *Shampoo of Coca*. [photograph]. Retrieved from <https://chiaperu.wordpress.com/2014/04/19/champu-natural-coca-en-barra/>
- Cocaleros proyectan demandar la Ley de la Coca por inconstitucional. (8 de Marzo 2017) *La Razón*. Retrieved from <https://chiaperu.wordpress.com/2014/04/19/champu-natural-coca-en-barra/>
- Consejo nacional de lucha contra el tráfico ilícito de drogas (CONALTID). (2007). *Estrategia de lucha contra el narcotráfico y revalorización de la hoja de coca 2007 - 2010*. La Paz: Viceministerio de Relaciones Exteriores y Cultos.
- Constitucion Politica Del Estado. (2009). La Paz.
- Contreras, A. (2013, January 13). *La hoja de coca triunfó en el mundo*. *América Latina en movimiento.*, from <http://www.alainet.org/es/active/60930>
- Diniejko, A. (2013). *Sherlock Holmes's Addictions*. *Victorianweb.org.*, from <http://www.victorianweb.org/authors/doyle/addiction.html>
- Donghi, A. (2017). *Freud y la cocaína*. *Imagoagenda.com.*, from <http://www.imagoagenda.com/articulo.asp?idarticulo=695>
- Durand, A., Pallet, S., Laserna, F R. *Coca. Una mirada integral. Tomo 2: cultivo y comercialización*. La Paz: Ediciones Vinculos- Programa de Asistencia Presupuestaria Sectorial, 2012.
- Educa.com.bo. (2017). *Provincia Chapare*. Retrieved from <http://www.educa.com.bo/geografia/provincia-chapare-mapa>
- El Boliviano (2014). *Aguayo*. [photograph]. Retrieved from <http://elbolivianoenvivo.com/con-presencia-del-mandatario-boliviano-se-inaugura-pabellon-en-expo-milan-resaltando-la-quinua-y-hoja-de-coca/>
- Farthing, L., & Kohl B., (2005) *Conflicting Agendas: The Politics of Development Aid in Drug-Producing Areas*. *Development Policy Review* 23 WEB
- Healey, S., (2007) *Bolivian in the Age of Reckoninig: The Peasant-Indigenous struggle for Sustainable Rural Communities*. Ph.D. dissertation, Departament of Rural Studies, University of Guelph

- Granda, L., Rosero, M., & Rosero, A. (2015). *Etnobotánica y fitoterapia en América* (1st ed., pp. 72-80). Brno: Miroslav Horák, Retrieved from https://www.academia.edu/17649371/Etnobot%C3%A1nica_y_fitoterapia_en_Am%C3%A9rica
- History of the coca plant (2017). *Cocamuseum.com*. Retrieved April 3 2017, from <http://www.cocamuseum.com/history-of-the-coca-plant/>
- Hoffman, K. (2012). Descifrando la coca: Evolucion del comportamiento de cultivos, produccion e ingresos en diferentes escenarios de analisis.
- ILDIS - CEDIB (1.992). Coca - Cronología: Boliuia 7986 - 1992, Cochabamba - Bolivia.
- Ilimuri, R. (2011). Los Quechuas. *Bolivia Retrospectiva*. Retrieved from <http://etniasbolivia.blogspot.cz/2010/07/los-quechuas.html>
- Instituto Nacional de Estadística (2017). *INE - Instituto Nacional de Estadística - INE - Instituto Nacional de Estadística*. Retrieved February 17, 2017 from <http://www.ine.gob.bo/>
- Informe de la 'Ruta de la Hoja de Coca*. (2015). *Encod.org*. Retrieved April 5 2017, from <http://www.encod.org/info/Informe-de-la-Ruta-de-la-Hoja-de.html>
- Klein H., (2003) *A Concise History of Bolivia*. Cambridge: Cambridge University Press..
- La Razon (n.d.). *El tío*. [photograph]. Retrieved from <http://fritzspringmeier.bligoo.com/el-culto-del-tio-de-la-mina#.WRzZiGiLTb1>
- Labrousse, A. (2004). *Geopolitique des drogues* (1st ed.). Paris.
- Larson, B. (2009). democratic progress or peril? indigenous and popular mobilization in bolivia. *democratic deficits: addressing challenges to sustainability and consolidation around the world, 1*.
- Laserna R., (2012) *Coca y mercado en la economía campesina Yungas y Chapare en Bolivia*, falta infooo
- Ledebur K., (2005) *Bolivia: Clear Consequences*. In *Drugs and Democracy in Latin America: The impact of U.S. Policy*. Coletta Youngers and Eileen Rosiry eds. Boulder: L. Rienner
- Marapi Salas, R. (2013). *Pijcheo*. Retrieved from <https://www.havanatimes.org/sp/?p=77897>
- Mate de Coca. (2015). Mate de coca [photograph]. Retrieved from <http://www.ciudadhumahuaca.com/hojadecoca/uso-medicinal.html>

- Ministerio de Desarrollo Rural y Tierras Viceministerio de Coca y Desarrollo Integral Fondo Nacional de Desarrollo Alternativo FONADAL. (2011). *Estrategia nacional de desarrollo integral con coca endic*. La Paz.
- Musalem Nazar, P., & Sánchez Bustos, S. (2011). *Aportes Para Una Nueva Política De Drogas* (1st ed.). Santiago de Chile.
- Nazar P., & Sánchez S. (2011). *Coca y cocaína*. Chile: Colegio Médico de Chile A.G
- Noble, J., & Lacasa, J. (2007). *Introduction to Quechua* (2nd ed.). Indianapolis, IN: Dog Ear Publishing.
- Ortman, E. (2015). *Conversamos con don Víctor Cadima, director de la Mancomunidad del Trópico*. [photograph]. Retrieved from <http://www.encod.org/info/Informe-de-la-Ruta-de-la-Hoja-de.html>
- Painter, J., (1994) *Bolivia and Coca: A Study in Dependency*. Boulder L.Reinner Publishers.
- Panacea Chronicles (2015). *Coca Ointment*. [photograph]. Retrieved from <https://paneachronicles.files.wordpress.com/2015/03/pomade1.jpg>
- Reinicke G., (2012), *Coca. Una mirada integral – Historia. Tomo I Historia*.
- Rojas, F. (2012). *La Economía de la Coca. Coca Una Mirada Integral Tomo IICultivo Y Comercialización*.
- Sanabria H. (1993). *The Coca Boom and Rural Social Change in Bolivia*. MAS INFO
- Seki, K., & Nishi, Y. (2012). *Coca, un biobanco* (1st ed.). t'ika & teko.
- Seleme, S. (2012). *El Reino del Chapare*. eju.tv. Retrieved April 5 2017, from <http://eju.tv/2012/10/el-reino-del-chapare-2/>
- Silva, S. (2012). *Coca la Hoja Sagrada. Coca Una Mirada Integral Historia Tomo I Historia*
- Soto K., (2016). *Coca flour*. Retrieved from <http://www.nutriyachay.com/blog/los-beneficios-de-consumir-harina-de-coca/>
- Ticona, E. (2010). *Saberes, conocimientos y prácticas anticoloniales del pueblo aymara-quechua en Bolivia*. La Paz: AGRUCO, UMSS-FCAyP/COSUDE.
- Wright, D. (2012). *Yatiri*. Retrieved from <http://cocaven.blogspot.cz/2012/03/de-la-hoja-de-coca-el-acullico.html>

Annexes

Annex one. Coca flour.



Source: Soto K., (2016).

Annex two. Yatiri telling the fortune with coca leaves.



Source: Wright, D. (2012).

Annex Three. Coca ointment.



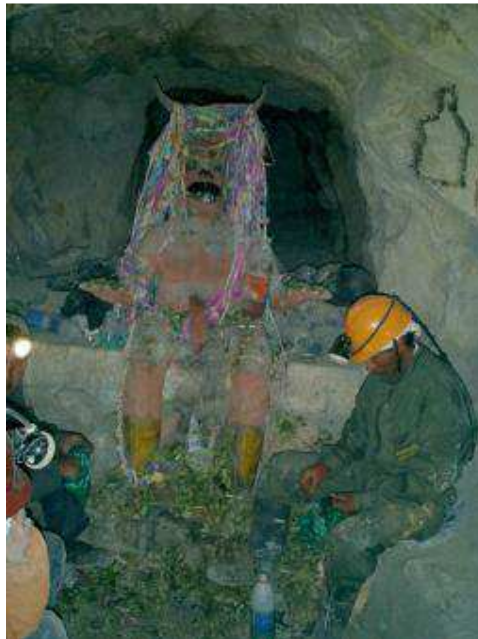
Source: Panacea Chronicles (2015).

Annex four. Reunion of different coca union groups.



Source: Ortman, E. (2015).

Annex five. Coca offers for the “Tio”.



Source: La Razon (n/d)

Annex six. Mate de Coca (coca infusion)



Source: Huamahuaca.com (2015).

Annex Seven: Coca leaves on an Aguayo.



Source: El boliviano (2014)

Annex eight. Shampoo made with coca



Source: Chiaperu. (2014).

Annex nine President Morales in a coca reunion



Source: ABI (2017).

Annex ten. Coca earrings



Source: Boliviamall (2017).

Annex eleven. Man chewing coca.



Source: Marapi (2013).

Annex twelve Reunion opening with coca leaves.



Source: Author archive.