

Winter 12-16-2016

# Distorting the Life of Maca (*Lepidium Miyenii*)

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**Distorting the life of Maca  
(Lepidium Miyenii)**

In Partial Fulfillment of the Requirements for the Degree

MASTER OF ARTS

in

INTERNATIONAL STUDIES

by **Fabiola Tavui**

November 23, 2016

UNIVERSITY OF SAN FRANCISCO

Under the guidance and approval of the committee, and approval by all the members, this thesis project has been accepted in partial fulfillment of the requirements for the degree.

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## **Abstract:**

The supply and demand of maca (*Lepidium Meyenii*), a native Peruvian vegetable, increased over the past decade; however, it has recently reduced. There are many implications for this outcome. Maca, a product with several health benefits, caught the attention of not just foreign businesses and investors but also of Peruvians. As maca became highly commercialized and exported abroad, the actors involved in the maca “business” at all levels contributed to its market to prospered but also to crumble. Some of the reasons due to the exploitation of maca itself for economic gains; distorting maca’s ecological environment and relation with natives; poverty and lack of education, distorting the market price of maca; smuggling maca out Peru through border controls; are amongst some of the few problems maca faces today. Even though there are laws that protect Peru’s biodiversity, including maca, and an anti-biopiracy commission established to track possible cases, along with national media reports that have brought consciousness to government and population on the topic; it has not been sufficient to eradicate or bring solutions to the problems maca has gone through. The reasons are several, Peru and its people are influenced by the footprint of colonization, especially as they live through the effects of coloniality of power and Eurocentrism which is embedded in the culture; as a result, it has affected the way Peruvians have and continue to interact with maca and dominant business actors. The research conducted in Peru reveals the actors involved paved the way for the distortion of maca through their behavior and interactions with mainly foreign businesses, and by ignoring future negative outcomes from their actions. Therefore, it’s a shared responsibility that all actors should be liable for, not just one group as whole. To improve and prevent cases like maca appears in the future, there must be a consensus, not just from the Peruvian people, but also the government. To achieve it, there must be an investment in education, training, etc. to teach

and spread ethics and morality to all angles of the population; however, it'll be challenging as corruption continues to thrive in Peru.

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### **Acknowledgements:**

I would like to thank you all the people who helped and supported me through this journey; Prof. Cantero for guiding me through the research and thesis process; the Rue W. Ziegler Fellowship Fund and the Master of Arts in International Studies Program; my family, mother, husband, his family; and especially, my aunts Maria Elena, Dora, Paquita and their daughters; all whom went above and beyond to try to help as much as they could. I'm so grateful and indebted to the Peruvian National Anti-Biopiracy Commission, Andrés Villadollid, Ing. Angelica Perez from APROMACA –Junin, Christina Guadalupe from Asociación Agraria Meseta del Bombón (ASAMEB), non-profit SERPAR for interviews, and every single person who I interviewed and contributed to this research.

## **Introduction:**

Maca is a vegetable root native of Peru. While its scientific name is *Lepidium meyenii*, it is more known internationally as a “Peruvian Ginseng.” It has many “nutritional and medicinal” benefits such as antioxidants, zinc, magnesium, fiber, proteins, etc., and through its consumption, it can help reduce blood pressure, increase energy and women’s fertility, alleviate menopause symptoms, improve cognitive function<sup>1</sup>. Some state that it can act as an “aphrodisiac,”<sup>2</sup> though no scientific evidence of this has been found. It’s history, and usage dates back to Pre-Colombian times, and historians, researchers and folklore record that native Peruvians, and perhaps their ancestors who lived during the Incan Empire, consumed it<sup>3</sup>, in some cases their ancestors.<sup>4</sup> Spared by the fact that it was not a favorite of early colonizers, Maca has endured for many centuries until today.

Despite the fact that Peruvians have had an on-going relationship with maca, it took the discovery of the modern world to make it become what it today. Before its discovery by German and Peruvian scientists,<sup>5</sup> it was the native locals from the Andes in Peru who mainly used maca. Furthermore, maca had not been a popular or known vegetable throughout Peru.<sup>6</sup> However, over

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<sup>1</sup> Gonzales, Gustavo et. al. “Role of Maca (*Lepidium Meyenii*) Consumption On Serum Interleukin-6 Levels and Health Status in Populations Living in The Peruvian Central Andes Over 4000 M Of Altitude.” *Plant Foods for Human Nutrition* (Dordrecht, Netherlands) 68.4 (2013): 347-351

<sup>2</sup> Smith, Tyler. 2015. “Maca Madness: Chinese herb smugglers create chaos in the Peruvian Andes.” *Herbalgram* no. 105: 46-55.

<sup>3</sup>“Boletín de Maca.” Comisión Nacional contra la biopiratería, Boletín de la Comisión Nacional contra la Biopiratería Centro de Información y Documentación (2014)

<sup>4</sup> Based on information obtained through interview (interviewees stories)

<sup>5</sup> FIRST RESEARCHERS ON MACA: the first westerner to have encounter maca is Gerhard Walpers; however, to Peruvians, it’s Gloria Chacon

<sup>6</sup> Aliaga, R. et al. “La cadena de valor de la maca en la Meseta del Bombón: Análisis y lineamientos estratégicos para su desarrollo.” Perú Biodiverso, Confederación Suiza, Ministerio de Comercio Exterior y Turismo, Cooperacion Alemana

the past 25 years, as scientific research furthered developed on maca, it has attracted foreign and local businesses, creating a high profitable and exploitable “superfood” market for maca, but also with support from the government. As a result, it became a unique Peruvian export. The reasons for its uniqueness state is mainly due to the way maca has been exploited and the consequences of those acts, as it has changed and influenced the way maca was being treated/dealt with in local, regional and international markets, produced, developed, commercialized and consumption.

Although maca has made many people rich and has improved many people's lives; yet, it's also brought other issues that involve actors within its commodity chain as their behavior of greediness and self-interest for their own benefit has resulted in distorting the life of maca as an exchanged commodity. Since the demand and supply skyrocketed over the last years, Peruvian farmers have benefited as their production increased and/or are obtaining more land to cultivate maca; while some have been able to expand their crops, migrated to maca farming areas to obtain jobs, and business have created new ways to commercialize maca.<sup>7</sup> But not only farmers are benefiting, but also middlemen and even the government as exports bring tax revenue. The sale prices have also increased over the course of a decade, becoming too expensive for local Peruvians to afford it, while making producers, and everyone that dealt with maca to sell it for high prices (exporting/trading) in places like the US, Europe, and China. Through the early commercialization of Maca abroad, though it opened the doors for its new market, but it also opened the doors for loopholes, such as foreigners or outsiders pricing and labeling maca for the Peruvian local market; changing the way maca was traditionally farmed by using new

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<sup>7</sup> Collyns, Dan. (2015). “Peru’s maca boom could fall flat if China starts growing its own.” BBC News Report Online

technology, methods, and chemicals to speed the growth; smuggling maca out Peru to be patented abroad (biopiracy), and leading to corruption, are some of the problem maca faces today.

Unique commodities, like maca, often go through different phases since their original discoveries. Commodity chains are often used to describe the interconnection in between the stages or paths the commodity goes through. While it does bring an understanding of the relationship in between the commodity and chain stages, it does not explain how those stages are influenced by the social life of the commodity.<sup>8</sup> Commodities have interconnected relationships with people and culture, at times these relationships could distort and influence the commodity chain and the life of the commodity itself. Based on the theory of commodity pathways (diversion) by Arjun Appadurai, he explains commodities as things, or objects that go through stages or “social” lives/levels. Commodities have been described as part of the capitalistic system; however, Appadurai explains also based on other theorists, that commodities can divert or go through different stages as it is driven by processes of politics. These processes are driven by different factors such as people, profits, demand and supply, etc. Yet, these factors can also be influenced by embedded coloniality of power and eurocentrism within a culture, making it favorable for those who benefit the most within a commodity chain. Moreover, these politic processes factors are also influenced by the interconnected relationship in between the global north and south as part of the world system. As result, the commodity can also be placed in to negative stages (internal or external) to exploit and maximize gains in unethical ways, such as biopiracy and the never ending cycle of corruption. Once this distortion process begins driven by

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<sup>8</sup> Appadurai, A. 1989. *Social life of things: commodities in cultural perspective*. Cambridge; New York

the already “influenced processes”, the ones of top who control the commodity chain are the only to benefit the most from the social life of the commodity, not the commodity itself or remaining actors.

The evolution of maca has been a roller coaster ride with many ups and downs, unlike more stable commodities in the international market. Moreover, the reason being is focused on maca’s relationship and the influenced processes by actors within the commodity chain, as they are part of and are also influenced by political factors; therefore, having the potential power to distort maca’s path and purpose for their own interest. Maca for several centuries was not a popular commodity and didn’t have a value until time of colonization. In the late 20<sup>th</sup> century and early 21<sup>st</sup> century, maca’s life went through several changes once it gained popularity through foreign interest. It’s relationship with locals changed as regional and foreigners developed scientific research on it, and an economic market started. Maca’s value was estimated and influenced by those actors. Likewise, further research developed, and local promotion of maca’s benefits spread regionally to maintain its economic market. However, once maca reached into the international market with the promotion of locals, government and foreigners forces in the 1990s, the popularity, supply and demand increased, but it also made it crash. Yet, maca’s market remained substantial for the countries that had already invested and benefit from maca. In the 2000s, Peruvian government became active to protect their biodiversity such as maca, it had been patented elsewhere; especially in the countries where it had engaged an economic market. Intellectual Property, Patent and Biopiracy laws were created to provide protection not just to maca, but Peruvian land, and traditional knowledge. However, lack of early enforcement, promotion, resources (monetary, educational, etc.), and foreign influences contributed to the



distortion of the maca market. By early 2010s, new studies on scientific and economical research developed, attracting new foreign markets to invest and exploit maca. In addition, the government once again promoted its consumption.

The maca market seemed prosperous as the supply and demand remained high locally regionally and international. The economic market of maca further developed; new products were developed and made out of maca, foreign businesses began to be established in Peru, new technologies for its production and commercialization among changes. There were positives and negatives outcomes such as maca was mainly exported than consumed throughout this time, but also deforestation increased. While it brought economic gains for mainly all actors in the commodity chain, at the same time, maca was brought up upon exploitation, leading to unethical paths/ways chosen by some/" greedy" actors. These actors were mainly the ones in power, the most profit invested in the market and foreigners. Once they fulfilled their aim, the Peruvian maca market was left in shock. Economic and environmental loses have begun to show and affected those in the bottom of the barrel. It again relives the same stage/path of the late 1990s, but this time Peruvian maca has to compete with genetic modified maca grown in other countries, meaning that it's already passed biopiracy stage. Nevertheless, the Peruvian actors involved with maca remain hopeful that the market will eventually pick up once again as maca history tells.

To review the proposed idea on the social life of things and its processes being affected by embedded factors, the theory of Arjun Appadurai will be furthered discussed along with Anibal Quijano, who discusses Coloniality of Power and Eurocentrism. Quijano's ideas will

show how they are embedded within the political processes Appadurai has described and how those reflect on what has happened with the social life of maca. Subsequently, the theories of Immanuel Wallerstein on the world-system and underdevelopment will corroborate with Quijano. Lastly, an introduction on theories and ideas on biopiracy it is listed as negative outcome from the political processes embedded from colonialism.

### **Literature review:**

#### **The Social Life of Things (Arjun Appadurai)**

Arjun Appadurai discusses in the social life of things theory as to describing the social relations of “things” through exchange, and how these “things” or “thing” are not just commodities, they become commodities essentially due to being moved to that stage/phase. The way “things” become a commodity are explained through political processes that drive “things” into the commodity stages and moves it in and out. These processes are driven by power, profit, people, etc. Thus, he provides furthered description on how these processes were developed in 5 categories. These are spirit of commodity, paths and diversions, desire and demand, knowledge and commodities, and politics and value. It is important to understand that this analysis is based not on economics, but rather sociological and anthropological. Furthermore, to grasp on his ideas on commodity stage and understand his approaches, Appadurai first focuses on defining values, exchange, and commodity in economic terms. He states that “economic exchange creates value” and this value is “embodied in commodities that are exchanged”; thus, his focus solely relays on the exchange form of a commodity. In other words, the path a “thing” takes to become a commodity, which is through an exchange form (path).

Deconstructing the relationship of value and economic exchange provides an understanding of how the social life of a commodity begins to develop. Appadurai discusses the “spirit of commodity” as to identifying different approaches when defining commodity so the focus is on exchange. He states that the definitions and views on commodity are too broad, and emphasizes to break from the Marxism view of commodity that it’s all about profit, but rather analyze “commodity” as two forms of approaches such “barter” and “gift exchange”, because commodities are essentially a form of exchange/distribution to consumption”<sup>9</sup>. He suggests that “commodities are things with a particular type of social potential, that they are distinguishable ‘products,’ ‘objects,’ ‘goods,’ ‘artifacts,’ and other sort of things.”<sup>10</sup> These particular “things” are often tied in the “capitalist mode of production”; therefore, he reiterates to leave “product or production” out of the definition of commodity, and solely focus on the “dynamics of exchange” to understand “commodity”.<sup>11</sup> Commodity then is left with the definition as to “being any-thing intended for exchange” and its definition becomes not what is, but what does it do. Appadurai defines commodity with answering to “what sort of an exchange is a commodity exchange?” question with the barter and gift exchange approaches on things, because these are forms of engaging “exchange” or “exchanging things” while not obtaining economic gain.

As there are several forms of exchange besides barter and gift exchange, true in modern societies, therefore, Appadurai understands this and maximizes the potential of the concept of “commodity” by presenting “things” in/within a social scale. He develops the idea that commodity is a stage for “things” that are placed in “certain situations”, where “things” can

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<sup>9</sup> Appadurai, A. 1989. *Social life of things: commodities in cultural perspective*. Cambridge; New York. p. 7-13

<sup>10</sup> *Ibid*, p. 6

<sup>11</sup> *ibid*, p. 7, 9.

further develop and engage with their “social lives”.<sup>12</sup> Thus, he calls it “commodity situation” which means that “the social life of any ‘thing’ be defined as the situation in which its exchangeability (past, present, future) for some other thing is its social relevant feature.”<sup>13</sup> This exchangeability brings social factors in to place as the interactions of a “thing” begins to engage and involve with/in different processes. A commodity situation of things means that is a “commodity phase of the social life any ‘thing’; there is ‘commodity candidacy of anything’; and in a ‘commodity context, any-thing may be placed.’”<sup>14</sup> These three stages play an important role on how a “thing” is diverted or relationships developed within its social life. In commodity phase, a thing can come in and out within the commodity stage with all different outcomes, and at times “irreversible”.<sup>15</sup> In commodity candidacy, “exchangeability of things refers to the standards and criteria of any particular social and historical concept.”<sup>16</sup> For example, establishing a price or value on a thing, hardships or necessities influencing the ‘exchange of value’ in between things, and the flow of things; all influenced by the ‘regimes of values’ at times driven by culture.<sup>17</sup> And, commodity context, where “social arenas within cultures” help the candidacy and phase of commodities.<sup>18</sup> Appadurai adds that in modern societies, it is likely that most “things” are/have been through these phases, therefore “commoditized” in the eyes of societies.<sup>19</sup> But, commoditization has “two views to differentiate the social life of a thing, as to one to see social aspects and the other one capitalist.”<sup>20</sup> In conclusion, when a thing enters in to a

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<sup>12</sup> Ibid, 13

<sup>13</sup> Ibid

<sup>14</sup> Appadurai, A. 1989. Social life of things: commodities in cultural perspective. Cambridge; New York. p. 13

<sup>15</sup> Ibid

<sup>16</sup> Ibid

<sup>17</sup> Ibid, p. 14

<sup>18</sup> Ibid, p. 15

<sup>19</sup> Ibid, p.

<sup>20</sup> Ibid, p. 16

commodity state or becomes “commoditized”, it is likely that it must have gone through at least one of the commodity situations of phase, context and candidacy. Finally, this is how Appadurai explains that things have career and social life.

The paths and diversions “things” take once they are in a commodity state are influenced by several factors and actors. First, Appadurai discusses Igor Kopytoff’s ideas on commodities’ lives having “history based” or (background) that gives it a “biography.”<sup>21</sup> Through learning the “history” of a “thing” while in a commodity state, it gives it relevancy as it adds value and is related in its “biography” of life. Furthermore, Appadurai provides an example on how a “thing”, in this case a “relic”, that once it’s “exchanged”, it becomes validated within its social life. He discusses Patrick Geary’s analysis on commodity exchange on relics, “these relics belong to particular economy of exchange and demand in which the life history of the particular relic is essential, not incidental, to its value. The verification of this history is also central to its value.”<sup>22</sup> While the history is an important factor for the value; however, according to Appadurai and Kopytoff, this one can also be “cultural regulated, interpretation and manipulation at some degree,”<sup>23</sup> and its influence and outcome could be negatively, positively or both. As an example, Appadurai shows how the kula systems is interpreted as “tournaments of value.”<sup>24</sup> He describes tournaments of values as “complex periodic events that are removed in some culturally well-defined way from the routines of economic life”<sup>25</sup> and it also “occurs in special times and places, their forms and outcomes always consequential for the more mundane realities of power and

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<sup>21</sup> Appadurai, A. 1989. *Social life of things: commodities in cultural perspective*. Cambridge; New York. p. 17

<sup>22</sup> *ibid*, p. 23

<sup>23</sup> *ibid*, p. 17

<sup>24</sup> *ibid*, p. 20-21

<sup>25</sup> *ibid*, p. 21

value in ordinary life.”<sup>26</sup> Therefore, the route the life of a “thing” during a commodity state is overtaken and influenced by outside forces, in this case driven by the actors that want to benefit from its social position. He calls this process the “politics of tournaments of value,” in which “actors manipulate the cultural definitions of path and the strategic potential of diversion, so that the movement of things enhances their own ending.”<sup>27</sup> Thus, the interpretation of tournament of values and its politics show how processes and actors can divert the paths and state of commodities and disrupt the social life of things.

There are other diversions that are much more complex which questions the morality and purpose of such, in addition to the actor’s behavior. Although Appadurai briefly describes terminal commodities as “objects make only one journey” and don’t come back;<sup>28</sup> however, it leaves in to question whether legacy or popularity or not, negative or positive biography makes it really as it completely left or “terminated.” Furthermore, he touches on enclaved commodities, which diverts the paths through restrictions. Enclaved commodities “tend to dissolve the links between persons and things, such a tendency is always balanced by a countertendency, in all societies, to restrict, control, and channel exchange. In many primitive economies, primitive valuables display these especially restricted qualities...”<sup>29</sup> In this sense, several issues are at stake, it does not only affect the “thing” or exchanged commodity’s state, but with restriction, and control have a big magnitude as it is controlled by power, driven by people with power. Consequently, Appadurai concedes this thought as he states that “where enclaving is usually in

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<sup>26</sup> *ibid*, p. 21

<sup>27</sup> *ibid*, p. 22

<sup>28</sup> *ibid* p 23

<sup>29</sup> *ibid* p 24

the interests of groups, especially the politically and economically powerful groups in any society, diversion is frequently the recourse of the entrepreneurial individual...<sup>30</sup> Therefore, once these politics from elite groups are involved in the paths and diversions are controlled by mainly their forces as they have not just the power in politics, but also their power and influence through their economic status. Finally, Appadurai touches on forthcoming outcome of this behavior, “politics of enclaving, far from being a guarantor of systemic stability, may constitute the Trojan horse of change.”<sup>31</sup>

As the spirit of commodity has been described, and how its paths and diversions set in, but there is also an influence of desire and demand when a thing is in the commodity state and is controlled by political processes that are brought from knowledge and commodities. Appadurai first explains the relationship in between demand and desire as to when “demand emerges as a function of a variety of social practices and classifications... a mechanical response to social manipulations, or the narrowing down of a universal voracious desire for objects to whatever happens to be available.”<sup>32</sup> The desire of wanting an object is what drives demand, and with continuous consumption, demand increases. Appadurai suggests that “consumption is eminently social, relational, and active rather than private, atomic, or passive.”<sup>33</sup> However, he also explains that demand hides “the relationship between consumption and production” since they work together, and this relationship can be manipulated through economic and social forces, but the same one also has the power limit it.<sup>34</sup> Therefore, as demand is influenced and controlled by the

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<sup>30</sup> *ibid*, p 25

<sup>31</sup> *ibid*, p 25

<sup>32</sup> *ibid*, p 29

<sup>33</sup> *ibid*, p. 30

<sup>34</sup> *ibid*, p. 31

ones in power, they determine how commodities will move in and out of their state. Appadurai adds to this with, “demand can be manipulated by direct political appeals, whether in the special form of appeals to boycott lettuce grown in bad labor conditions or in the generalized forms of protectionism, either “official or unofficial.”<sup>35</sup> Through the mechanism and behavior of desire and demand, not only creates division and competition too amongst those involved with the commodity exchange stage. Appadurai states that demands reflects “the state level dynamics, or as in the kula case, the hinge function of status of competition between elite males in linking internal and external systems of exchange.”<sup>36</sup> Once there is status competition made through demand, the elites remain in control even with loses or gains as they are also embedded within a political factor in the system.

As demand and desire designate the politics of value of exchanged commodities, the politics of knowledge that are often discussed on commodity as merely the same. Appadurai states that demand has “complex social mechanism” with short and long term strategies.” In short term, there is a “diversion might entail small shifts in demand that can gradually transform commodity flows for the long run...” And long-term, “established patterns of demand act as constraints on any given set of commodity paths...”<sup>37</sup> While these strategies are focused on knowledge of the demand and desire, the knowledge is distributed and diverted is essentially the same run by value and politics. But this is also true just for commodities itself, and Appadurai shows the relation by stating that “commodity represent very complex social forms and distributions of knowledge.” There are two types: “the knowledge (technical, social, aesthetic,

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<sup>35</sup> *ibid*, p. 33

<sup>36</sup> *ibid*

<sup>37</sup> *ibid*, p. 41



and so forth) that goes into the production of the commodity; and the knowledge that goes into appropriately consuming the commodity.”<sup>38</sup> Knowing that there are two parts on how to identify knowledge with demand and commodities, it is necessary as it acknowledges the complexity on how exchanged commodities and actors engaged/ behave within their own or their place/settings. Hence, Appadurai reveals that in “in complex capitalist societies, it is not only the case that knowledge is segmented (even fragmented) as between producers, distributors, speculators, and consumers (and different subcategories to each) ...the knowledge about commodities is itself increasingly commoditized.”<sup>39</sup> If it wasn’t for the knowledge that is distributed and used for/from demand and desire to all actors, commodities wouldn’t flow/be affected whether positive or negative therefore, making their career or social lives more or less complex through commoditization. Therefore, knowledge also shows how things can be controlled, just like demand and desire, Appadurai states that this “strategy consists in taking what are often perfectly ordinary, mass produced, cheap, even shoddy, products and making them seem somehow desirable yet reachable.”<sup>40</sup> It’s this knowledge that makes exchanged commodities or “things” move in and out of their state, a political control and control on value.

It all leads to politics processes of control, on exchange and value driven by several actors. Appadurai states that a commodity phase is brief and restrictive, “and apparently not ‘priced’ in the way other things might be. Yet the force of demand is such as to make them circulate with considerable velocity, and in much the same way, as their more mundane

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<sup>38</sup> *ibid*

<sup>39</sup> *ibid*, p. 54

<sup>40</sup> *ibid*, p. 55

counterparts...<sup>41</sup> Even though the commodity phase may be quick, it is the knowledge that surrounds this stage has been influenced by the demand and diversions. Thus, a thing while on a commodity state is predictable by the behavior of actors behind the knowledge that drives it through different paths, and therefore, exploited. Appadurai states that “diversions that become predictable are on their way to becoming new paths, paths that will in turn inspire new diversions or returns to old paths.”<sup>42</sup> It is the power of knowledge used to take on the paths of commodities that creates distortion, exploitation, and affects the way a “thing” lives its social life as it is controlled by strong/elite forces. Appadurai also indicates that knowledge and ignorance play a role in the movement of “some things”, while halting others. In addition, “the interaction between local, politically mediated, systems of demand” also plays another role.”<sup>43</sup> Clearly the knowledge used in commodity movements, or diversion is for the advantage or best suit for the ones that benefit directly or indirectly. The same knowledge can have positive and negative effects that an exchanged commodity lives through its paths. Recalling that “things” have social lives or “careers”, Appadurai explains that the production of commodity knowledge is likely “to be dominated by culturally standardized recipes for fabrication.”<sup>44</sup> This fabrication affects the social life of things as there are exploited and becomes distorted through the knowledge used by the actors that control its path and lives.

### **Colonialism: Coloniality of Power and Eurocentrism (Anibal Quijano)**

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<sup>41</sup> *ibid*, p. 24

<sup>42</sup> *ibid* p. 29

<sup>43</sup> *ibid* p. 56

<sup>44</sup> *ibid* p. 42

As Appadurai's theory has been laid out, Quijano's ideas will respond to the behavior of those actors and knowledge, and how their behavior has been influenced by colonialization; therefore, influencing the way they interact with exchanged commodities, or a "thing" that enters the commodity state. Quijano discusses colonialism through his idea of coloniality of power and eurocentrism to explain and provide an understanding on how some cultures, in this case Peruvian, and in Latin America, are still attached to and live under the shadow of their former colonizers. His theory describes how social classes, the idea of race, are managed through the control of political power from the bourgeois, but also integrating ideas that come from the world-system. Coloniality of power and eurocentrism is embedded in cultures, for this maca case, it's within Peruvian culture; it affects the social life of maca and the stages it has gone through, its behavior, biography, and influences functions within an exchanged commodity state. It is necessary to understand Quijano's ideas to vision how Appadurai's ideas on political process. The embedded footprint of colonialism lives through the political processes managed through the elites of societies on commodity states/stages. Often, in societies where the elites have power, cultures oblige to the treatment of them, whether good or bad, and acceptance of those habits/behavior become the norm.

As "things" go through a commodity stage/path explained by Appadurai, in a setting where colonialized norms and eurocentrism are centered as the control force that moves, and influence the behavior and drives of society, the classification and domination of classes have influenced the "things" or "exchanged commodities" and people interact in a globalized time for the advantage of those in power/hierarchy. Quijano discusses how a new model of global power developed through colonization, primary through two processes, "the idea of race" and a "new

structure of control of labor and its resources and products.”<sup>45</sup> As these processes began to developed during the first stages of colonization, conquerors maintained their power and impositions upon the new world. When the colonizers developed the idea of “race”, “it became the fundamental criterion for the distribution of the world population into ranks, places, and roles in the new society’s structure of power.”<sup>46</sup> Quijano also explains that race was set up to differentiate “conquerors and conquered”, which was developed through a “natural situation of inferiority.”<sup>47</sup> Therefore, in reference with Appadurai’s idea of processes of politics, race can be described and interpreted as a tool that colonizers or developed countries, societies, and people use to control the periphery’s activities and its development. The term race can be reflected within the processes of politics, in knowledge, as these ones have been influenced per say by race, but it’s because it’s embedded within the actors’ powers that control and influence those processes. Thus, the implication of race plays a big role within a commodity state, as race can influence the creation paths/diversion/use of knowledge/distortion for a “thing” and its social life’s interactions, and in favor of exploitation from actors for the advantage.

The new classification of power through colonization placed a new world order, where capitalism took on distribution of labor and race. The background of the new labor distribution was based on “slavery, serfdom, petty-commodity production, and reciprocity structures” that had been used as power control over colonies and its peoples.<sup>48</sup> As the conquerors developed this through control of exploitation, appropriation, distribution, etc., they “established and organized

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<sup>45</sup> Quijano, Anibal (2000). “Coloniality of Power, Eurocentrism and Latin America.” *Neplanta: Views from South* 1(3): 533-534.

<sup>46</sup> *Ibid*, p. 535

<sup>47</sup> *Ibid*, p. 533

<sup>48</sup> *ibid*, p. 534

to produce commodities for the world market”<sup>49</sup> creating a dependency that was not there before in between the old world, and its colonies. A capitalist atmosphere was developed through this time, “a new global structure of the control of labor were associated with social roles, and geohistorical places.”<sup>50</sup> At first, native Indians were able to live within their own communities, and engage into “the ancient practice of reciprocity”, while the Indian nobles became the intermediaries in between the conquistadors and the native people.<sup>51</sup> In addition, blacks were prompt to slavery, and whites were independent, engaging in to merchant and farming practices that contributed to production of commodities, on top of also being able to receive/deal with wages.<sup>52</sup> As time developed, new social identities were integrated such as yellow and olives, or mestizos (Spanish father, and Indian mother); however, as mestizos did not fully look white, they were not able to engage in to the same practices or obtain the same opportunities as the white.<sup>53</sup> Therefore, Quijano shares that the whiter a person looked, it brought somewhat inclusion or better opportunities to a lesser stand than from the whites to a native, colored person. As result, the new identities given to the people in the new world were based on “racial, colonial and negative” perspectives, as that’s how labor and race have “structurally remained linked”<sup>54</sup> in a new capitalist world.

As economic classes by race were developed through distribution of labor, the footprint of colonization and dependency in between the western world and former colonies became what

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<sup>49</sup> *ibid*, p. 535

<sup>50</sup> *ibid* p 536

<sup>51</sup> *ibid* p 536

<sup>52</sup> *ibid* p. 536

<sup>53</sup> *ibid* p 536

<sup>54</sup> *ibid* p. 536 and 551

is known today as coloniality of power and eurocentrism. Even though in the 18<sup>th</sup> and 19<sup>th</sup> century colonies became independent, it didn't make a difference for the native Indians as they had been placed in a low cast. Native Indians since the beginning of colonization were not only forced to work on manual labor until their deaths, then still obliged to their colonizers with produced labor, yet also after independence, they remained as "free and waged laborers".<sup>55</sup> However, in the case of blacks, mainly slaves, they were not paid, and forced to labor. Quijano states that the effect of coloniality of power can be seen through the distribution of labor based on race, which eventually led to a "racist distribution of new social identities" that became colonial capitalism and exploitation through race.<sup>56</sup> Thus, it could be interpreted as when a "thing" is a commodity state, the actors' background may vary depending on their different social and labor classes/distribution; therefore, influencing the way a "thing" enter a commodity state and how it's engaged through its different faces. Also, the actors involved having an advantage of race or usage, places them in a higher level than those in the periphery. In addition, though the coloniality of power, it shows that there would be a difference not just in between economic status per country, but as far as race, where it remains an issues in periphery countries, where their own core system is usually led by inferior race of the country.

Eurocentrism in Latin America is another influencing factor that have destined actors and its forces to remain in the same place since colonization, while not only affecting the "things" that entered a commodity stage, but their history, biography and development, just like the case of maca. Quijano describes eurocentrism as "the name of a perspective of knowledge whose

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<sup>55</sup> ibid p 538

<sup>56</sup> Quijano, Anibal (2000). "Coloniality of Power, Eurocentrism and Latin America." *Neplanta: Views from South* 1(3): 536-537.

systemic formation began in Western Europe... made globally hegemonic, traveling the same course as the dominion of the European bourgeois class...<sup>57</sup> The way to describe eurocentrism as it developed, is as follows. As a region, Europe thought that they were superior based on their conquests,<sup>58</sup> and since certain races were “condemned as inferior”, the others ones were considered exploitable.<sup>59</sup> In Latin America, eurocentrism can be seemed through today’s relationship between them and the western world, and the development of “internal colonization.”<sup>60</sup> This process began through colonization when “people with different identities inhabited the same territories as the colonizers” and “internal domination” proceeded since there were race, labor, and social classes divisions.<sup>61</sup> As result, inferiority from those in some sort of hierarchy or race color in outgrew amongst population despite being from the same place. For example, land distribution in colonized areas began as appropriation, then distributed first to whites or bourgeoisie, keeping control, profiting, and maintain their relationship with their former colonizers<sup>62</sup>; while native Indians were limited. Furthermore, Quijano adds, “‘denominators’ of social interests were much closer to the interests of their European peers, and consequently they were always inclined to follow the interests of the European bourgeoisie ...they were dependent.”<sup>63</sup> Perhaps, it may explain the reasons on how and why the interest from abroad comes in to a country and how it develops through a relationship from an individual or actor’s due to their inferiority status, not just financially, but racial. In a society where eurocentrism is embedded, such as Peru, the influence is often used to the greater benefit of self.

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<sup>57</sup> Ibid, p. 549

<sup>58</sup> Ibid, p. 552

<sup>59</sup> Ibid, p. 555

<sup>60</sup> Ibid, p. 558

<sup>61</sup> Ibid, p. 552

<sup>62</sup> Ibid, p. 560-563

<sup>63</sup> Ibid, p. 566

## **World Systems Theory (Immanuel Wallerstein)**

While Quijano's theories demonstrate how the effects of the actor's behaviors and mechanism used on their processes of politics for exchanged commodities, Immanuel Wallerstein theories touches on the intersubjectivity between all influenced processes of politics and its knowledge applied to exchanged commodities. In "The Capitalist World-Economy," Wallerstein describes how the world has evolved from a minisystem to World-system Empire to World-system economic, which is the current system we live in today. This system involves core, semi peripheral and peripheral structures. The core state is strengthening through the capitalists, their allies, and the periphery work; the semi-peripheral is needed for the core states to run the world-economy smoothly; and the peripheral states are managed by their own capitalist core within the state which maintains coalition with a core state capitalist.<sup>64</sup> As the world has developed over centuries, globalization has taken over along with capitalism, hence, the relationship actors and stages are interconnected. For this research purposes developed and developing nations can be interpreted as core, semi peripheral and peripheral states that compose and function within the World-System.

Since the capitalized markets is driven by actors (core) that influence processes of politics of exchanged commodities, and the life a "thing", their motives, relationship, and behaviors are focused on profit. Wallerstein explains these behaviors as the functionality of "regional specialization of the market" comes from actors in attempts to maximize their profits

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<sup>64</sup> Wallerstein, Immanuel (1974). "The Modern World System: Capitalist Agriculture and the Origins of European World Economy in the Sixteenth Century." Selections Online, p. 20-21.



whenever they can by avoiding normal operations of the market as “non-market devices are used to ensure short-run profits” by these actors.<sup>65</sup> Furthermore, he states that the profits influences “political entities” which influences the market and even the nation-state.<sup>66</sup> Therefore, it can be concluded that those in the core state are part of the political entities and make decisions and influence the market not just for their own gain, but specially benefiting from the developing and underdeveloping nations and/or the periphery. Wallerstein explains that capitalists, “pressed their governments” to place restrictions in their economic system, but now “urge and demand” these systems to change to benefit capitalist sector by trying to “maximize” their profits in the world’s “real economic market.”<sup>67</sup> As result, developing and most underdeveloping countries have been affect economically, therefore, this creates issues in all levels as it could limit productivity and accessibility to the less fortunate.

Because the world-system is not able to function in a two-way system, the theory integrates the semi-periphery state. Wallerstein discusses the semi-periphery is assigned to a specific “economic role”; thus, he states that the existence of the semi-periphery is necessary as its function is to be the “exploited and exploiter” and the core won’t be facing opposition from the periphery.”<sup>68</sup> For example, in developing and underdeveloping countries, a core nation or society has control over the semi-periphery, therefore, also becoming the intermediary for the periphery. However, periphery will always be affected by the greed or power of the core and semi-periphery affected, i.e. minority-majority groups such as the native/indigenous people due

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<sup>65</sup> Ibid, p. 17

<sup>66</sup> Ibid

<sup>67</sup> Wallerstein, Immanuel (1974). “The Modern World System: Capitalist Agriculture and the Origins of European World Economy in the Sixteenth Century.” Selections Online, p.20

<sup>68</sup> Ibid

to their geographical, economic, and race status as depicted by Quijano, which threatens the sovereignty of the nation along with its history. Wallerstein reflects on the idea of core exploiting the periphery in several aspects, for examples, he stated “each of the states or potential states within the European world-economy was quickly in the race to bureaucratize, ...to homogenize its culture, to diversify its economic activities...”<sup>69</sup> The core and semi-periphery benefit of the periphery status. The agricultural business in most developing and underdeveloping countries with most developed nations is much dependable, therefore, maintain the business has been necessary. But the agricultural sector in periphery countries, like Peru, are worked by mainly peasants, indigenous communities with low income that don't belong to the semi-periphery or the core systems.<sup>70</sup>

Developing and underdeveloping nations as stated, are at an economic and development disadvantage, but they have been since centuries ago through the power of former colonizers and new ones that continue to control them. Wallerstein describe how their status changed over time, “the independence of Latin America didn't do anything to change its periphery status, and by the 19<sup>th</sup>, Asia and Africa were also “sucked” in to that “periphery status....”<sup>71</sup> As more countries have attained that periphery status, it places them fragile category when it comes down to deal with the core in economic terms as those usually follow through with the core demands while remaining in the same status. Furthermore, Wallerstein states role of semi-periphery and periphery countries they continue to be trapped by the core as it continues to resonate their power

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<sup>69</sup> Wallerstein, Immanuel (1974). “The Modern World System: Capitalist Agriculture and the Origins of European World Economy in the Sixteenth Century.” Selections Online, p. 26

<sup>70</sup> Smith, T. (2015). Maca Madness: Chinese Herb Smugglers create chaos in the Peruvian Andes. Herbalgram, (105), 46-55.

<sup>71</sup> Ibid, p. 27

through politics of processes, not just through a core nation state, but by actors' power on commodities. Wallerstein describes this as when a state's hegemonic status begins to decline like in the US, it "increases the freedom" of multinational corporation businesses within the world market to be able to "maneuver against state bureaucracies..."<sup>72</sup> The core can also be highly influenced by those economically powerful status, which in this case are multinational corporations. In addition, he shares that, "the consolidation stage in the world system has contradictions such economic systems have crisis and could become weaken."<sup>73</sup> Therefore, MNCs located at core status, in any any country affects the periphery, population. For example, as reported in Peru, there have been issues with Maca and biopiracy. Over the past years that Chinese foreigners doing businesses in the country, began exporting it, and the Chinese demand for maca increased; concerns have increased among the population and the government.<sup>74</sup> Those concerns are mainly because it affects the local businesses of native and indigenous Peruvians in the agrarian sector, and the government began to focus on illegal trade and smuggling of the product by establishing specific department within their ministries for biopiracy.<sup>75</sup> In conclusion, developed countries and actors, in their core status continue to control the periphery and affect the social life of "things".

## **Biopiracy**

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<sup>72</sup> Wallerstein, Immanuel (1974). "The Modern World System: Capitalist Agriculture and the Origins of European World Economy in the Sixteenth Century." Selections Online, p. 32-33

<sup>73</sup> Ibid, p. 35

<sup>74</sup> Smith, T. (2015). "Maca Madness: Chinese Herb Smugglers create chaos in the Peruvian Andes." Herbalgram, (105), 46-55.

<sup>75</sup> Ibid

Another influenced process of politics that derives from the previously mentioned theories, is biopiracy. While Appadurai points out the politics of process that are influenced by politics of power, people, market, etc., Quijano and Wallerstein show that how coloniality of power, eurocentrism, and the world-system influences those politics; therefore, making biopiracy a consequence from their behavior which affects not only all the actors involved, but the life of a thing. Biopiracy is very complex issue. There is no concrete official definition;<sup>76</sup> however, the Merriam-Webster Dictionary describes it as “the unethical or unlawful appropriation or commercial exploitation of biological materials that are native to a particular country or territory without providing fair financial compensation to the people or government of that country or territory.”<sup>77</sup> For example, a native seed from country X has been discovered by a researcher backed by a private corporation; however, the researcher found this information through an indigenous community. The researcher goes back to his country Y, bringing with him the seed, and the corporation he works for decides file a patent the seed in country Y. If the seed patent is approved, the corporation will be commercializing the seed, and get profits. While this is happening in country Y, in country X, the indigenous community from where the seed is from is outraged; furthermore, it doesn't only implicate a seed, or biodiversity, but also traditional indigenous knowledge.<sup>78</sup> What the researcher and corporation did is called biopiracy.

In recent decades, further literature has developed, and several theorists such as Vandana Shiva and Ikechi Mgbeoji have been able to developed further this idea. In Shiva's book on

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<sup>76</sup> Susanna E. Clark, Isabel Lapeña, and Manuel Ruiz, The Protection of Traditional Knowledge in Peru: A Comparative Perspective, 3 Wash. U. Global Stud. L. Rev. 755 (2004), p. 373-374. Web. 11 May 2016. [http://openscholarship.wustl.edu/law\\_globalstudies/vol3/iss3/3](http://openscholarship.wustl.edu/law_globalstudies/vol3/iss3/3)

<sup>77</sup> “Biopiracy Definition.” Merriam-Webster Dictionary. Web. 18 April 2016.

<sup>78</sup> Comparative Law class research paper (5/17/2016)

biopiracy, she discusses that biopiracy has further been legalized through politics processes driven by actors in core statuses (policies and laws related to trade, WTO, etc.). For example, she states that policies involving “Intellectual Property rights are recognized to make profit,” but not when there are social needs. Furthermore, the “exchange of ideas in between natives and others” are driven by profits, because “they can transform them the free exchange of ideas into theft and piracy.”<sup>79</sup> This condition has persisted, as Appadurai states since the “things” enters the commodity state, and they can go through this stage, “theft, condemned in most human societies, is the humblest form of diversion of commodities from preordained paths.”<sup>80</sup> Once “things” have entered a commodity state, processes of politics that have already influence can drive “already exchanged commodities” in to a paths towards biopiracy. Appadurai shares that “diversion of commodities from their customary paths always carries a risky morally ambiguous aura... Inappropriate conversions from one sphere of exchange to another are frequently fortified by recourse to the excuse of economic crisis, whether it be famine or bankruptcy.”<sup>81</sup> The crisis that drives to these inappropriate paths can biopiracy due to the actor’s desire for economic and power advantage. In *Global Biopiracy*, by Mgbeoji, he discusses how the structure and processes by powerful states, influenced by MNCs, have used these ones to dominate the “patent systems appropriate and privatize” native biodiversity and its peoples’ practices.<sup>82</sup> It corroborates with the ideas of the previously mentioned theorists and shows how it is driven by those actors in power. As result, Shiva calls upon the “Conservation of biodiversity” as it’s the most ethical thing to do;<sup>83</sup> however, living through a globalized time and continuous pushed for neoliberal

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<sup>79</sup> Shiva, Vandana. (1997). “Biopiracy: The Plunder of Nature and Knowledge.” South End Press, p. 122

<sup>80</sup> Appadurai, A. (1989). *Social life of things: commodities in cultural perspective*. Cambridge; New York. p. 26

<sup>81</sup> *ibid*, p 27

<sup>82</sup> Mgbeoji, Ikechi. (2006). “Global Biopiracy.” UBC Press, p. 7

<sup>83</sup> *Ibid* 78, p. 123

policies for trade, it may be challenging for the global south, and for this research, Peru and maca.

The issue of biopiracy has increased over the last decades affecting nations in the global south, but mainly natural resources and their citizens. Though most countries already have laws in place to protect their native natural and cultural resources, the rise of biopiracy may be shaping the way laws, policies and treaties are being implemented, drafted and incorporated within their legal systems. Furthermore, if this statement is true, it leads to question whether countries are indeed strengthening their Intellectual Property Rights (IPRs) laws to combat biopiracy, or need to create new set of laws that target specifically biopiracy; because some countries have been able to develop further their current laws to combat biopiracy, while other nations are creating and implementing specific biopiracy laws. In the case of Peru, they are pioneers in to developing protective laws towards biopiracy over the past decade; however, it's not even enough as implementation and cooperation have been difficult to achieve. This is due to the influence of the actors that influence the processes of politics on commodities. Thus, biopiracy is not moral or ethical, though it keeps happening.

Through the discussion of Appadurai, Quijano, Wallerstein, and biopiracy theorists, “things” that evolved through states, such as commodity could result with negative outcomes or persecutions due to the influence of politic processes driven by actors in power. But, the influence those processes have been already influenced by embedded processes of coloniality of power and eurocentrism. Thus, the way those interact or became to be or relationship is explained through Wallerstein's theory on the World-System. The results of these influences can

also drive/divert the usual path of an exchanged commodity, and go through a biopiracy state, described as negative because it's mainly driven and built on economic exploitation.

In the case of maca, we can see this theory unveil as the history of maca is told. First, maca historical background is described as it lived through ancient times and colonization. It's interaction with colonizers placed it in the beginning of the commodity state, and its paths through the last century was diverted. In the 20<sup>th</sup> century, with western discovery, maca became an exchanged commodity (state). However, as maca popularity increased, demand and supply also did and it brought it to the international market, declined, and rose up again in the early 21<sup>st</sup> century. It wouldn't have happened if the commodity state where was maca hadn't been driven and/or influenced by all actors involved in the commodity chain. The actors in the case of maca are influenced by footprint of colonization, such as coloniality of power and eurocentrism. The influenced of such processes are embedded in the actor's behavior and how they deal with maca. As result, the social relation between commodities, stages, actors and maca could lead to negative diversions. The reason, is because the focus remains on the commodity chain power and economic gains, and not on maca's life due to way Peruvian culture has been accustomed and economic background. Wallerstein's theory shows how all became interconnected, especially the reasons why actors' behavior and responses to maca's market. As a negative outcome, or path, maca state was diverted to biopiracy, and even though Peruvian laws were created to protect its state, it's been a problem for Peruvian biodiversity, and how it's affected the social life of maca and its market through being patented, genetic modified abroad, and decreased demand. The reactions, behavior, and/or responses from actors show how embedded colonialism, eurocentrism

and the world-systems continues to control them. The outcome has been of unethical practices that leads to corruption, distorting the life of maca.

Note: There aren't any existing challenges, besides the fact that there isn't much studies on maca anthropological. Also, not enough time and interviews while doing research in Peru.

### **Methodology:**

This research has been conducted through mixed methods. First, quantitative and qualitative methods have been used to overview themes that have evolved from the topic obtained through interviews, and observations. The interviews were conducted for an approx. time of 15-30 minutes; however, a couple from 45 minutes to an hour. There were 10 open-ended questions related to maca's historical farming background, economic, effects on farmers, and biopiracy. The questions were translated into Spanish as all interviews spoke Spanish. Observations have been conducted while visiting places where maca is cultivated, and commercialized/distributed. In addition, experiences obtained through internship with Peru's Anti-Biopiracy National Commission will be included. Other sources that will be used through this research are selective readings such as theories, but also case studies will be reviewed, that being peer review articles, International Organizations such United Nations, World Bank, etc. and NGOs/foundations/institutes for reports/working papers/data/graphs, and news/magazine articles. The case studies chosen have relevance with maca's life, tournaments of value, commodity chain, farmers' livelihoods, scientific maca findings, etc.



The research on maca was conducted in Peru, in four cities: Lima, Huancayo, Junin, and Ninacaca. During this time, end of July and early August, maca had just finished harvesting cycle. In Lima, the capital of Peru, observations conducted throughout the city, especially in markets, food stands, stores, super markets, amongst many; while the interviews were conducted with experts on the topic, and local vendors. In Junin and Ninacaca, observations and interviews were conducted in maca fields with farmers/locals. In Huancayo, interviews with local maca vendors, and one expert were conducted; while observations were transcribed in notebooks. Furthermore, the obtained research data through interviews and observations in the previously mentioned cities, have been all be written in a notebook (safely kept), and two interviews recorded (used voice recorder). Also, before interviews and/or observations, I asked interviewees, and potential interviewees if I could get their permission to record and/or write the conversation/interview. In addition, photos were also taken through the research. Lastly, I was also assisted through contacts/interviewees to arrange meetings/interviews as it was challenging to get those.

While conducting the research, new themes and ideas developed that are relevant to the thesis; further, it came from questioning what is going with maca and peru, looking in to whether the farmers' livelihoods are being affected by biopiracy or the illegal trade, in what ways/how? if there are any other positive or negative factors within the commodity chain of Maca; what is happening to the local consumption, high prices; has the demand affected low-high quality of Maca? What is being done to protect Maca? What about their future? What do they think is going to happen to them? What are the concerns about patents on Maca abroad that raise

questions of biopiracy? These ideas were further discussed with experts, and answered true maca interviewees as they began to share their knowledge and stories.

My first observations began in Lima. I explored different areas around the city where maca was and is being sold. I conducted several interviews with those being in government and academia, but also local vendors and sellers. In addition, the observations took place at local markets and areas where maca was being sold, and interacted with maca consumers, and sellers in markets/stores, chain supermarkets, neighborhood markets (mercados), food stands, and local grocery and natural stores. The maca market seemed to have steady prices of supply and demand through the time I was there. Thus, every encountered place, had or would sell maca by its color, which was usually yellow, red or black (cheapest to the most expensive). But purchasing maca was cheaper in certain places (districts of Lima), while high in another such as tourists' spots and/or supermarkets, but also depending on the location and whether it was powder, fresh or dry maca. An important observation from local markets, it's that most maca vendors would purchase their maca from a third party, middle men/business. When asked, where the maca is originally from, several places would be answered as well as to they bought it from other markets. In addition, each time depending on the business, maca would always be advertised as the best superfood to eat specially for men, then women, and at some places for all family. It would be sold as a natural energizer, all in one, and if purchasing red or black, most would say that that's for men since maca is also a "natural Viagra". Subsequently, each person that was encountered that sold maca claimed that theirs (product) was the best quality and price. In regards to consumption, based on encounters and observation, maca continuous to be popular for breakfast drink as it usually sells out in the mornings in food stands.

My second stop was the city of Huancayo, in the province of Junin, and about 7 hours by bus from Lima. In Huancayo, I met with a local NGO named Serpar, and interviewed their director for agro-program such as for maca. While in Huancayo, I also visited markets, and few places where Maca was being sold, just like in Lima. The prices for power, fresh and dry maca were slightly similar as the ones in Lima, but a bit cheaper. Furthermore, I was able to interview a couple through doing observations in local markets. After Huancayo, I headed out to the third location, the city of Junin (same name as the province); about 5 hours away via bus. In Junin city, I met with two farmers and representatives of Maca associations. I interviewed them, and they also showed me their products. I was not able to go to their fields as it would have taken at least three hours, and had limited time. Though it was challenging to find/arrange further interviews with other local farmers, the interviewees were able to arrange me a visit to a Maca farm nearby from an acquaintance of theirs. I was able to take pictures, and observe several fields of Maca. However, the Maca farm owners or workers did not want to get interviewed. Furthermore, I continued with observations and interactions with maca vendors, and got more insight on the development, demise, and dangers of maca's market in that area.

The next and last city visited was Ninacaca, less than two hours away from Junin city. I interviewed a farmer that works with the NGO interview. A couple of other farmers were supposed to participate but cancelled. After the interview, I visited maca fields, and tried to engage further conversation with farm keepers; however, as expected, since it happened many times, no communication attained. During the field visits, interviews and observations in local markets in the last three cities, it was stressed that "El Niño" climate phenomenon had impacted

maca farming this year, on top of the low paying prices for maca. Every single encountered when asked about what happened to maca and the current outcomes, the answer would always mention “chinos” as the ones that caused the problem. Subsequently, when the interviewees and observation objects/people described or identified “Chinos”, translated in Spanish for Chinese, they don’t just mean Chinese people, it could also be other Asian ethnicities; but because Chinese nationals had engaged more business with them, than other Asian groups, the people I encountered didn’t identify or seem to know the differences of different ethnic Asian groups. Therefore, calling and/or naming all Asian ethnic groups in one category as “Chinos”. That’s how they’ll be identify through the next sections when quoting interviews or observatory conversations with locals. However, when analyzing all the information, proper identity will be provided.

### **Themes:**

The next sections will describe what the research found along with analysis explaining the actors behavior and maca;

### **Theme 1: The life of Maca**

#### **1. History**

The history of Maca through this research begins with its discovery and usage through the ancient history of the Incans and colonization era. According to some historians, research, and interviewees, maca was first consumed by native Peruvians (Incas) and also used for livestock food; however, through the colonization of Peru, Spaniard conquistadors determined

how maca was going to be used or consumed.<sup>84</sup> In the beginning, the colonizers ate maca as Incans, or natives, but eventually banned it for human consumption as it was believed that it increased fertility chances.<sup>85</sup> Then, native Peruvians were told to feed the livestock with it. However, native Peruvians continued to eat it as it as a staple food of the Andes. It continued through colonization, post-colonial era, but eventually changed in the 20th century. Throughout this first phase of the life of maca during the colonization period, there was no actual price or economy set yet on it; however, there was an “use-value” set by the colonizers through their first encounters. This set of “use-value” is described by Engels is as “to become a commodity a product must be transferred to another, whom it will serve as a use-value” by means of exchange.”<sup>86</sup> Maca’s first “use-value” that was introduced to the colonizers by the natives as it was thought that maca was edible for everyone. The colonizers established their set of rules and values for maca, banning it from human consumption, and distorting its “use-value.”

Besides, as Karl Marx states that “a man must produce use values for other, social use values.”<sup>87</sup> The usage of maca through this time had already established a social interaction and value with the colonizers; however, the colonizers sought out the power of this relationship, imposing what they thought it was good for maca, its consumption, and usage. As Anibal Quijano states, with colonization, there was a new set of processes of exploitation of labor and production, including “petty-commodity production” and a stand on feeling inferior

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<sup>84</sup> Based on interviews in Junin and Huancayo 2016

<sup>85</sup> Quiroz, C. F. y R. Aliaga (1997). “Maca (*Lepidium meyenii* Walp). Andean roots and turbs: Ahipa, arracacha, maca and yacon”. Promoting the Conservation and Use of Underutilized and Neglected Crops N.º 21. Roma: International Plant Genetic Resource Institute

<sup>86</sup> Appadurai, A. 1989. Social life of things: commodities in cultural perspective. Cambridge; New York. Introduction page 8

<sup>87</sup> Ibid, p. 9

“superiority”<sup>88</sup> in the new colonies. Perhaps, this may be one of the reasons why maca was isolated through this time as it was colonizer’s decision and imposition to keep maca that way, as they were inferior than native Peruvians.

As colonization era and post continued, the relationship of maca and native Peruvians developed further. Per interviewees, and historical information, maca continued to be consumed despite the colonizer’s rules, throughout this time up to the 19th and 20th century. Many generations of native Peruvians continued to consume maca; however, new methods of exchange appeared as population and economic growth began to develop. As some of the interviewees relate the stories about maca and their ancestors, they mentioned that maca was a household vegetable, it was never for profit as other vegetables such as potatoes or quinoa, etc.<sup>89</sup> However, as time progressed, people learned how to exchanged and benefited from goods. Some would engage “treque” exchange goods for other goods such as in the town of Ninacaca.<sup>90</sup> One of the interviewee recalls seeing his grandparents, parents and other relatives do that; he saw them exchanging maca for other Peruvian vegetables. The farmers that would engage this “exchange” would be local or not.

At this stage, we can see that what Arjun Appaiduri discusses about commodity stages as maca at first really had no place, but home, then it was subject of livestock, and vice versa. Then, with time, maca was entered into the exchange phase of "commodity state.". For Appadurai, the

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<sup>88</sup> Quijano, Anibal (2000). “Coloniality of Power, Eurocentrism and Latin America.” *Neplanta: Views from South* 1(3): 535

<sup>89</sup> Interviews from Huancayo, Junin and Ninacaca 2016

<sup>90</sup> Interview in Ninacaca 2016

idea of commodity is “a commodity is anything indented for exchange”<sup>91</sup>, it does not include production yet. However, he points out, that it is important to understand the differences or what happens through this “exchange” as is one of the dimensions that maca has gone through. He calls it barter, which is a “form of direct exchange, or trade”<sup>92</sup> This direct exchange means that, “exchange of objects for one another without the reference to money and with maximum feasible reduction of social, cultural, political or personal transaction cost.” What the relatives and ancestors of the interviewees were engaging as to exchanging maca for other goods explains in reference of not having or using money yet connecting through commodity exchange. The interviewees state that their families were very poor, and this was the only way eat other things besides what they farmed.

As maca exchange and consumption continued amongst the Andes of Peru with native local people, maca experience yet another change within its place in the commodity exchange phase. Prior to mid late 20<sup>th</sup> century, maca economic and cultural values remained the same until further discovery of its medicinal properties. It wasn't until the early 1960s when a Peruvian researcher Gloria Chacon published the further detailed information about maca,<sup>93</sup> and even further research followed as it also gained notoriety internationally. For some interviewees, this is what changed the life of maca and its discovery.<sup>94</sup> For most Peruvians, nationally and the people in the world, they didn't hear or know much about maca until his period of time. Furthermore, by 1970s and 1908s, foreigner researchers such as North American and European, also arrived and conducted further scientific studies and research with maca. According to some

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<sup>91</sup> Appadurai, A. 1989. Social life of things: commodities in cultural perspective. Cambridge; New York. Page 9

<sup>92</sup> Ibid, page 10

<sup>93</sup> Interview with indecopi (Lima)

<sup>94</sup> “Patentes referidas al *Lepidium Meyenii* (maca): Respuestas del Perú.” (2003) Indecopi Online Document, p. 16

of the interviewees, Peruvian farmers and university students and professors assisted the foreign researchers.<sup>95</sup> As farmers and locals began to notice the interest of outsiders for maca, more crops began to develop. Some of the interviewees, shared that some farmers already had crops just dedicated to maca, but they were small, as maca became to become more known people exchanged it more often, and now had a price tag. Though the price was not high, per national standards, among communities it was average as other products such as potatoes. The price as I was told was under \$1. Some interviewees state that “they are sure during this time, maca was taken out of Peru, perhaps patented and grown elsewhere like other Peruvian biodiversity.”<sup>96</sup>

Though the maca value had started to change by late 20<sup>th</sup> century, the consumption and methods consumption remained the same at least throughout all this time. However, change of methods of consumptions and production, evidently in the last decade of the 20<sup>th</sup> and up to now. Most people that were interviewed through this research are from the areas where maca was mainly farmed in the country, and consumed (meseta de bombom/Junin Department). The interviewees, and observations (watching locals, and conversation) stated that the ways that maca was consumed was usually in their household, and it was staple food locally. Most farmers would just farm maca outside of their home or somewhere along their crops (most farmers’ crops had other vegetable such as potato, etc.).<sup>97</sup> According to them, maca farming methods didn’t change, it was always “natural” or “organic”, and it hasn’t changed since it dates back from generations after generations. As far of the consumption, some of the interviewees related that the maca was consumed was by cooking it like a “papita” (potato). This is the way their

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<sup>95</sup> Based on interviews in Junin and Huancayo

<sup>96</sup> Interviews in Lima, Junin, Huancayo and Ninacaca

<sup>97</sup> Ibid



relatives, and ancestors have cooked maca, such as by boiling, and eat it like a potato. Some even drink the water that was boiled. The interviewees stated that they consume maca that way because it is more natural, and better ways to obtain its medicinal properties (this information gathered through traditional knowledge, research explained to them and media).<sup>98</sup>

As the first phase maca begins to develop through the commodity exchange stage, Appadurai discusses and brings further what this stage means, and what will happen next through the different stages. In this case, maca will go through different ups and downs. Appadurai states that commodity (phase), some “things” are found within the commodity phase or “commoditization” that “fits the requirement to be in the commodity candidacy, and appear in a commodity context” as they are unique as commodity, as they are connected to “social and cultural factors”.<sup>99</sup> Commodities experience their “own careers” to become “legitimate” within the “commodity context” to embrace the capitalist world, but not in the “noncapitalist society world”.<sup>100</sup> It has been noted how the life of maca has developed through the colonization era up to the 1980s. In the late 1980s and early 1990s, maca reaches the “legitimate” level. However, Appadurai tells us that there are a few distinctions or different routes that maca may take through its time or path, and there are four types or classes; commodity by destination, by metamorphosis, by diversion, and ex-commodities. Thus, maca falls in to all them, commodity by destination means that an object is intended for exchange.<sup>101</sup> The first interactions of maca, natives and colonizers, and its exchanged that ended up putting maca out of human consumption, and only for livestock; which leads to the second type commodity by metamorphosis. This type means “a thing” is used for

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<sup>98</sup> Ibid

<sup>99</sup> Appadurai, A. 1989. *Social life of things: commodities in cultural perspective*. Cambridge; New York. Page 15

<sup>100</sup> Ibid, p. 15

<sup>101</sup> Ibid, p. 16

other usages besides being in the commodity state.<sup>102</sup> The third type is by diversion, “objects placed in to a commodity state”, but protected by it. An example, would be when maca was banned from consumption, but still remained amongst the native Peruvians of the Andes diet, and as time when by it began to be exchanged (traded), but not economic gain. The last one, ex-commodity phase, means that “an object” or thing is temporarily or permanently retrieved from its commodity stage<sup>103</sup>. The last one will be further discussed through this section, and what occurs with maca in the 21<sup>st</sup> century.

## **2. Maca in the 1990s**

In the late 1980s, there was already further research developed in to what the benefits of maca were from the first documented research; however, in the 1990s, maca became popularized not just nationally, but internationally. As a new market for maca had developed through the late 1980s due to field research in the highlands of Peru, perhaps international interest increased. By the 1990s, under the government of Alberto Fujimori, new economic and trade related laws were created. Through his government, and connection with Japan, further research on native Peruvian biodiversity, including maca. According to research and news of the 1990s, Alberto Fujimori promoted maca internationally, especially in Japan.<sup>104</sup> The “first boom of maca” was created during this time,<sup>105</sup> and many interviewees confirmed that this happened.<sup>106</sup> New research, investments and new businesses related to maca benefited farmers, and many were now

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<sup>102</sup> Ibid

<sup>103</sup> Ibid

<sup>104</sup> Hermann M. and Bernet T. 2009. The transition of maca from neglect to market prominence: Lessons for improving use strategies and market chains of minor crops [on-line]. Agricultural Biodiversity and Livelihoods Discussion Papers 1. Bioersivity International, Rome, Italy. Page 34

<sup>105</sup> Proyecto Perúbiodiverso, SECO, GIZ-PDRS, MINCETUR, Promperú y MINAM (2011a). La cadena de valor de la maca en la Meseta del Bombón: Análisis y lineamientos estratégicos para su desarrollo. Lima: Cooperación Alemana al Desarrollo, p. 52

<sup>106</sup> Interview notes

employed and living off maca. All interviewees that were farmers stated that they too benefited, and are witness of the first boom of maca.<sup>107</sup> During this time, international interest from Japan and other parts of the world including Asia (Korea and China), Europe (Germany, Switzerland, France) and north America continued, and foreigner businesses conducting imports and exports were established within Peru.<sup>108</sup> As result, Peruvian maca farmers began to see the benefits of the demand for maca. During this time, some of the interviewees recall that maca was being sold by kilo for \$ 2-3, and went up to \$10-13, dried, fresh, seeds, and were doing well financially.<sup>109</sup> Some of the interviewees decided to dedicate their farming only for maca and seeding from this time. By mid 1990s, maca fields were about 556 hectares nationally, but this number increased by the end of the decade.<sup>110</sup> Also, some interviewees state that companies national and foreign would approach local farmers to buy maca, including seeds, directly from them, and a few maca companies were established around their area as well.

The phase that maca had gone through the 1990s, shows how its path as a commodity went to economic exchange with high value. Now that there was an economy established for maca, and trade; however, other issues would arise. Appadurai states that within the commodity context, “it may bring together actors from different cultural systems who share only the most minimal understands (conceptual point of view) about the objects in question and agree only about the terms of trade.”<sup>111</sup> This brings an understanding of maca being traded, sold, and used during the 1990s, and more importantly, the actors involved disregarding the negative outcomes

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<sup>107</sup> Ibid

<sup>108</sup> **Several sources, must quote how many?**

<sup>109</sup> Interview notes from Junin, Huancayo and Ninacac

<sup>110</sup> Ibid 105, p. 66

<sup>111</sup> Appadurai, A. 1989. Social life of things: commodities in cultural perspective. Cambridge; New York. Page 15

of such. Every actor had a different view of how they benefited through the commodity exchange of maca, that being economic or health related. In addition, there were some drawbacks towards the end of the 1990s. As there was already research indicating that maca helped increasing fertility and other health benefits such as energizer, stress reliever, etc. and these were being promoted for its consumption (production, sales, exports). On the other hand, there were also rumors that had spread out through years since the discovery of maca that it would help sexual dysfunction<sup>112</sup> and people began to call it the Andean Viagra. Some of interviewees stated that this tale was probably created to increase the sale and trade by farmers and locals to outsiders. Yet, they also say it also created interest among researchers, and buyers, especially foreigners.

Research to corroborate the maca “tales”/stories was conducted, but there were already other negative outcomes to come. Some of the research conducted by Japanese researchers revealed that maca didn’t help with sexual dysfunction and this information impacted the way maca would be imported and consumed. Some of the interviewees tell their side of the story as, when the “Japanoses” (Japanese) came back [to Peru] and said that Peruvians were claiming things about maca that were not true. However, some interviewees state that they agree with the Japanese, and have never claimed that statement because they know that it isn’t for sexual dysfunction, but they understand that some of their peers stood by this to make sales.<sup>113</sup> In addition, by the late 1990s, maca had been taken out of Peru in large quantities, and the government wanted to prevent further issues as maca began to be grown in Japan, perhaps patented.<sup>114</sup> The government created a law that prevented seeds or maca to leave the country.<sup>115</sup>

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<sup>112</sup> Interview notes Huancayo Junin and Ninacaca

<sup>113</sup> Ibid

<sup>114</sup> **must quote**

<sup>115</sup> Peruvian law (Decreto Supremo 025-99-AG)

However, maca farmers saw this action by the government as a problem. Their involvement felt for some farmers as a problematic solution to protect maca, and it was not well handled by the government because maca farming jobs somewhat decreased and affected their lives.<sup>116</sup>

However, a few stated that while the government was providing assistance by promoting maca, they also should have been protecting too at the same time. Most say: “the government didn’t act right”, but this is also because the president of that time and his government were known to be corrupted. The maca economy was perceived as tumbling.

The reputation of maca became affected by the previous described events in the late 1990s, yet the belief of reputation played a major role in the outcome and transition of the commodity exchange of maca in to the next diversion path for the last couple of years. Appadurai explains there are different types of exchanges and approaches, as one of those is a “calculated exchange” that can be driven through monetary or other “interpersonal forces”<sup>117</sup> within the commodity exchange, in this case, within the maca market or commodity exchange phase. Through the last events of maca went through, it seems that farmers and profit driven actors thought everything was methodically calculated, in other words, going through the “calculated exchange” phase; however, they didn’t count on the actual research on maca and sexual dysfunction benefits coming back to haunt them as it was an illegitimate claim. As most were surprised with the outcome of purchasing less maca, and farmers and local jobs were being affected with the news. Appadurai explains that this happens in “modern industrial” areas that go through the exchange phase because it’s attached to “reputation, name, or fame with the critical

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<sup>116</sup> interview notes

<sup>117</sup> Appadurai, A. 1989. *Social life of things: commodities in cultural perspective*. Cambridge; New York. Page 19

form of capital for producing this profit being people rather than other factors of productions.”<sup>118</sup>

As maca reputation was damaged, and the market deteriorated, at least not all jobs and profits were lost because maca was still exported to Japan and United States continuously, though prices had dropped.

There were few people maca farmers and companies that during this time were established, and continued to export it internationally. Companies, or bigger guys than farmers benefited the most out of this stage. In addition, some interviewees state the government stopped their assistance with maca trade, and many were left stranded with maca surplus and crops; though there was at least a market set for them, and knew that there would be buyers.

As these events led maca’s reputation to diminished in the late 1990s, the results demonstrate that colonialism’s footprints (or influence) and high hand power have continued to rule within Peru. Appadurai describes this stage through the example of the kuka (Papa New Guinea), where tournaments of value are “strategic skills” that are “culturally measured by the success with which actors’ attempt diversions or subversions of culturally conventionalized paths for the flow of things”.<sup>119</sup> In the case of maca, it is evident that the actors involved have driven maca’s tournament of values to their best interest, which eventually drove maca’s devaluation; however, it is based on those factors that coloniality of power comes in to place. First, the tournament of values was distorted by the “wife tales about maca”, the promotion by the government”, and exploitation by local and foreign individuals/corporations/etc for economic gain as maca had continued to bring profits despite the low yet steady abroad demand and the already established maca market from permanent foreign companies (investment) in Peru maca

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<sup>118</sup> Ibid

<sup>119</sup> Ibid, p. 21

field and/or economic. Actors thought that maximizing their use or source of maca would benefit them, but didn't think about the consequences what would happen to maca or how it could be affected (eventually/outcomes of their behavior). Second, their behavior or approaches with maca had already an emphasis of "capitalistic and Eurocentric" character. Quijano describes this behavior through the "commodification of labor" which began from colonization times to modern eras, where "...the entire production of such a division of labor was articulated in a chain of transference of value and profits whose control corresponded to Western Europe."<sup>120</sup> Despite maca gaining popularity, reputation demised and slow economic growth towards the late 1990s, Peruvian farmers (those who cared) and maca itself had lost against the elites or bourgeoisie power over maca's commodity exchange/chain. According to some interviewees, maca farmers during this time complained about the government practices and involvement towards maca.<sup>121</sup>

While the behavior of famers that contributed to distortion of the maca market and tournament of values, the majority became/attributed to (or embraced) its new system as at the end of the day they had to provide for their own livelihoods. However, it doesn't change the status or behavior of the actors of the top of maca's commodity status, as its depicts how they have controlled the maca market through capitalism and colonialism (foorprint); because the outcome has been that the most affected people through the crisis of maca has been the ones on the bottom and those are mainly small scale farmers that were heavily dependent on maca as their main source of income. Because maca's tournaments of values were driven by actors

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<sup>120</sup> Quijano, Anibal (2000). "Coloniality of Power, Eurocentrism and Latin America." *Neplanta: Views from South* 1(3): 538

<sup>121</sup> interview notes Huancayo, Junin and Ninacaca

already in a capitalistic state,<sup>122</sup> meaning that maca, though not actual economic value, there was already social value, which native Peruvians would continue to use but Colonizers retain control over it therefore keeping the economic value out of it.

### **3. Maca in the 2000s**

Through early 2000s, the maca market remained stable for the most part. But by mid 2000s, the market didn't just expand, but began to gain more popularity internationally, and laws development followed. The life of maca through this time continued to bring profit for local farmers and steady revenue for companies. As it began to gained popularity, mainly due to further interest from countries like China, Korea, United States, France and other European states, more research was found and maca markets in those countries also developed. The new and international research showed and found even further information about maca having other natural benefits. The Peruvian government became active to protect maca as business was steady, laws to protect maca from biopiracy were proposed and promoted. As the laws focused on Peruvian biodiversity, there were some that were strictly focused on maca. One of them was the maca law that would recognize maca as a national product; therefore, would be protected in cases of biopiracy as there was a commission already established to look at it. The next section will be discussed furthered.

With more focused on maca throughout this time, prices again in the Andes began to increase for maca by the mid and late 2000s. Even though the main imported of maca was the United States through this time, China's interested also increased. As foreign companies and

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business deals and contract were already set with American and Asian companies, some of the interviewees reflect that during the 2000s, their maca business was steady. Some state that they only dedicated their time to maca; while other also lived out of livestock and other farming products. They also stated the pay remained the same but began increasing just like it did in the 1990s. Some of the interviewees revealed that they had contracts with local, regional and international companies. Their farming methods and business remained the same, as according to them it's been "traditional" or "organic". The main exporters were United States, Japan, then other Asian and European countries. However, China, became among one of the biggest exporters of maca towards the late 2000s until today. was one of the biggest exporter recipients along with the United States.

#### **4. Maca today**

In the early 2010s, maca went from a regular and stable market to a high boom or "demand". The market for demand and supply of maca came back stronger in the international market, stronger than the 1990s, yet it didn't have the same outcome as the lesson from earlier decades' experience and lessons were enough to protect it from failure and its consequences. The majority of the interviewees along with media and governmental information describe this time as the "phenomenon of maca".<sup>123</sup> They also recall that they started noticing this phenomenon mainly during the early 2010s; perhaps the reasons were that had gained more popularity in Asia, especially in China and attracting them to come to Peru for maca.<sup>124</sup> According to them, the demand for maca outgrew as it didn't before and it reached its highest pick during 2012-2014.

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<sup>124</sup> Collyns, Dan. (2015). "Peru's maca boom could fall flat if China starts growing its own." BBC News Report Online

Maca became very valuable commodity in Peru, not only because its health benefits, but because of its profits and its unique place in the commodity chain of supply and demand.

Some of the stories that the interviewees shared is that Chinese foreigners came to the areas where maca was being farmed and began to buy as much as they could. The areas were the same as the ones were visited in the 1990s, such as Junin, Huancayo and surrounding cities. Furthermore, as maca gained popularity, maca was being farmed in other areas now, which include Huancavelica and Cajamarca provinces. During this time, the maca business was booming, and prices per kilo went up, the highest in the history. The majority of interviewees stated that it was the Chinese who set up the prices, when they came for harvest the second time during 2012-2014, because they came up with the pricing numbers already and labels.<sup>125</sup> They (foreigners and/or Chinese) were buying maca by color, the interviewees and observations, they state that it was then that maca was labeled by color or “price worth”. Some of the interviewees state that Chinese would come to farmers or maca vendors and tell them that they would buy their maca for X amount, which would be higher than at the time prices. Seeds were selling for \$1000-2000 soles per kilo.<sup>126</sup> Few of the interviewees state that the Chinese would come and say “I will pay you XXX for all your maca” and all in cash; therefore, this attracted maca farmers as it convenient for them to sell their product. According to media news, maca was selling in 2014 for \$\$ and the market made \$\$\$.<sup>127</sup> These are few of the reasons why people became engaged in to selling their maca to Chinese/foreigners. A couple of the interviewees and observation participants state seeing and hearing that the Chinese would bring luggage full of cash to pay for

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<sup>125</sup> Interview notes from Junin and Ninacaca

<sup>126</sup> Ibid

<sup>127</sup> Ninahuanca, C. (2014). “Biopiratería de la maca se previene con investigación.” *Diario la Republica*

maca. They also state that it was during this time that that people and farmers (non-maca) saw that maca was very much lucrative, and decided to get involved in the business. Many farmers that were farming different crops, began to only farm maca and sell it as well.

As the demand for maca continued to grow, including competition, as the quickest way to grow maca eventually brought some agro ecological and economic issues. Several interviewees stated that when it came to maca, the Chinese (or foreigners), they didn't care whether maca was organic or "conventional" because they mainly wanted big ones, whether those being fresh or dried, it didn't matter as long as it was big of size, and paid higher price for red and black maca. In addition, they also purchased seeds, and tons. This caused everyone (farmers and workers) to grow as much as maca as possible since they (Chinese and/or foreigners) would buy everything maca. All farmers then wanted to sell maca and produce the product as fast as possible.<sup>128</sup> Therefore, this could have affected the way maca had been farmed through the years. Some of the interviewees state that they know people (fellow farmers) who were using chemicals to grow maca faster disregarding the conventional or traditional methods of maca farming. According to some interviewees, they knew and told their peers that using chemicals would eventually destroy their land for future farming, but during this time, everyone thought about the profits and not the future. The interviewees also state that they didn't engage in to those practices as they had always sold organic or "traditional farming" maca. Furthermore, some of the interviewees state that even though they had contracts already with foreign companies, since the Chinese were paying more and were physically in their area, they also sold it to them. However, one of the

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<sup>128</sup> Neuman, William. (2014). "Vegetable Spawns Larceny and Luxury in Peru." The New York Times. Web

interviewees state that they didn't break their contracts because they wanted maintain their long business relationship with maca business, but they did increase the price per kilo slightly.

As maca gained momentum through this time of high pick, further economic opportunities arose developing new and additional markets and concepts within the commodity chain of maca. One of these markets is land profitability or "exploitation". As result of wanting to farm more maca, the actors involved with maca productions exhorted their capabilities for maximum gains and results. According to the interviewees, most maca farmers have some knowledge on maca farming and that maca absorbs all minerals in the soil, and that land must rest; however, this may have been ignored too, and continued to be reused over and over in some cases.<sup>129</sup> Therefore, obtaining and farming more maca in other in more land/farms was important to have and produce for large harvest and highest profit; consequently, this also created a market for buying land for exclusively maca farming. As result, farmers began investing in their own crops, switching to all maca and leaving their other crops for the time being, taking out loans to invest further into their farming services (e.i. buying tractors, trucks, etc.) to expand in to the maca business. In addition, some farmers (independent or company sponsored) were able to buy and/or lease more land for maca,<sup>130</sup> while other farmers that were part of cooperatives or associations, mainly remained with four hectares each as defined by the Native Peruvian Indigenous/laws.<sup>131</sup>

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<sup>129</sup> interview notes, ninacaca and junin

<sup>130</sup> Neuman, William. (2014). "Vegetable Spawns Larceny and Luxury in Peru." The New York Times. Web

<sup>131</sup> Ibid 128

As local natives were able to developed in to the maca business and maximize their maca land farming, foreigners were also able to do the same. These foreigners, mainly Chinese, also began to buy land to further expand their business and farming in the areas of Junin and surrounding cities, but also throughout Peru.<sup>132</sup> Most of them had already established their businesses in these areas too, not only with farmers, but with locals through their maca transactions. By purchasing lands and establishing maca companies, employability, also increased. While local Peruvian farmers increased their production, they needed more help with labor; and in most cases, family locals, and friends would work in the farms to help with harvesting, and distribution. The local maca farmer would actually have their own people and/or hiring people to farm. However, Chinese and foreigners' maca farms employed local farmers as they needed local knowledge to farm maca. As result, there was competitiveness, but employment remained steady. According to interviewees, many local farmers also decided to work for the Chinese.<sup>133</sup> Farmers knew that the Chinese would buy their maca harvest, whether they were independent farmers or from cooperatives/associations, and pay the high prices, while also providing jobs through supply and demand of maca caused by them.<sup>134</sup> However, other already established maca businesses were hit with the Chinese demand, and slowed the exportation of maca with those countries such as Japan and American, as they had already businesses and contracts within the same areas, and farmers chose to work with and sell the highest payers. Some of the interviewees state that they knew this "exploitation" of maca would have consequences, especially with land, but at the same time it was helping it was farmers, and themselves get out of poverty and improve their livelihoods. Yet, also the companies and the

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<sup>132</sup> Ibid

<sup>133</sup> Interview from Junin and ninacaca

<sup>134</sup> Ibid

maca market was also flourishing and gaining even more than them. Nevertheless, there were some farmers, and locals that were aware of this scenario, and knew that at some point the “maca bubble” would burst, like some of the interviewees.<sup>135</sup> This economic phase led to another form of profitability of maca, but also caused more exploitation of land and biodiversity.

Since maca exportation to Asia, and other countries had rapidly increased during these last years in the mid 2010s, maca also went through several stages of exploitation and/or commodity exchange at international scale. For example, as maca exports increased mainly towards Asia, in this case, China maca patent cases filing increased, which increased the radar of Peruvian’s for biopiracy cases for China and other countries. China also began farming Peruvian maca in China.<sup>136</sup> Questioning of how maca farming in other countries such as China, United States, among other countries began to rise, and the Peruvian government, along with media began to acknowledge the problem. Also, some of the interviewees state that through the phenomenon of maca, many locals, including acquaintances of them moved to China with work contracts to work on maca fields.<sup>137</sup> Consequently, further scientific research on maca’s benefits increased as well in China, United States, and Peru. In addition, most scientific research began comparing maca’s properties, but comparing Chinese maca and Peruvian maca. Some of the interviewees reveled that they had heard that the Chinese began cultivating their own maca with Peruvian seeds through the time of the phenomenon of maca, but didn’t think at the time it would

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<sup>135</sup> interview notes Huancayo, Junin and Ninacaca

<sup>136</sup> “ADEX denuncia a China por biopirateria de semillas de maca.” El Comercio Web 2014

<sup>137</sup> Ibid 134

affect them as Chinese continued to buy their maca; meanwhile, others did.<sup>138</sup> Some of these issues will be further discussed in the next two sections.

In 2015, the exports of maca decreased, and the market of maca began to show the same signs as of the 1990s. While this time was not reputation that slowed it down, this time international competition distorted the supply and demand of Peruvian maca as the Chinese maca market started to boom. Peruvian farmers didn't expect the regression of the maca market. While for few years the majority of the actors within the commodity chain of maca benefited, it was during this time that they started to realize that the loses and gains. The majority of the interviewees recalled that when the Chinese or foreigners came back last year, they no longer wanted to pay the high prices they had set up. Some of them state that foreign buyers would say that Peruvian maca was too expensive and Chinese cheaper. The interviewees state that it was them (Chinese) again setting up the low prices, messing with the market prices. By this time, farmers were ready to sell as much maca as they did in the previous years, however, they didn't count on their production to be short sold. Most farmers had invested on maca farming, by getting bank loans, leased land, machinery to increased their harvest, so by selling maca at a low price would not benefit them. Some of the interviewees state that most farmers didn't have any choice but to sell what they had. A couple of interviewees state that were situation was different as they had set contracts with long time companies/business. However, they saw their peers struggling. In addition, again in 2016, Chinese and other foreigners came back to buy maca. This time, according to all interviewees the Chinese buyers again tried to "lowball" maca prices

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<sup>138</sup> Ibid

again.<sup>139</sup> Some state that this had been a premeditated tactic by the Chinese, and that's how the do business "distorting markets". Some of the interviewees state that maca farmers have decided to stored their maca until prices go up, or more stable, and are still waiting. They want the prices to go up to at least \$10-13, because now it's gone down to \$2-3 per kilo. Many farmers are facing economic hardships as they haven't had economic gained for the last couple of years and many have loans to pay back.

While farmers have been affected by the Peruvian maca market crash, other Peruvian actors within the commodity chain have benefited. For example, the since maca prices have gone down, production and commercialization have increased at cheaper prices; therefore, allowing more local consumption and expanding the local maca market. As more national and international companies began to be interested in maca, new ways of consumption were developed. Today, there are also new products made out of maca, consumed locally, and continues to be exported overseas. Those are maca powder, liquor, etc. These are sold across Lima, and other cities within Peru, including in those where this research was conducted. Through these cities or areas, maca juice is consumed as breakfast drink and is very popular sold by street vendors. The way it is usually prepared, it's by boiling maca powder, and usually sold for \$0.50-1.50 depending on the area; however, there are other methods on making maca punch/juice or consumed. Furthermore, the way maca was consumed during colonization era has somewhat changed as some of these practices continued within some households as part of cultural customs; for example, in Junin, Ninacaca and Huancayo. Some interviewees also relate that cooking maca as a potato, as stated previously, these are the methods that are still practiced

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<sup>139</sup> Interview and observation notes from all cities



today that way in some native households. However, according to some interviewees, powder genitalized maca is more convenient. In all the cities where maca research was conducted, it was a fast selling product.

## **Theme 2: Biopiracy**

Through the field research conducted on maca, biopiracy surged as a problem many times. In this section, the biopiracy of maca findings will be discussed and explored. Since maca has gone through various diverse paths within its position in a commodity exchange phase, I argue that it also goes through a “biopiracy diversion” as a negative consequence from the influence of actors involved. Once maca enters into this “biopiracy” state driven by its actors, biopiracy goes in to full effect having negative effects that actors with power benefit from; however, it distorts maca’s life and affects the people at the bottom. A “thing”, “exchanged commodity” or, in this case, maca eventually leaves this “biopiracy” state by, for example, when its patented and produced elsewhere, a new market is created that affects the value and commodity exchange of maca. As discussed in the literature review section, biopiracy is a global issue that has affected Peru’s biodiversity, including maca. The issue of biopiracy and maca began appearing over the past 20 years, but increased rapidly over the past decade just as it gained international popularity.

Even though there is no conclusive evidence or exact dates when maca entered the biopiracy state, during the 1990s biopiracy cases on maca, and other Peruvian biodiversity became known and noticeable with irreversible outcomes. During the late 20<sup>th</sup> century as maca’s social life was encountered by western research, actors interested in business and production,

government promotion and propaganda abroad,<sup>140</sup> local support, Peru also became bidding to international laws, and treaties trade related, bilateral agreements, including those on protecting biodiversity and/or environment such as the Convention on Biological Diversity.<sup>141</sup> The country focused on implementing those within the country. However, as mentioned before, also during this time maca started to be commercialized internationally for the first time and the market was booming. It could be argued that since there were no laws prior to this time, maca could have been taken out of the country, then eventually patented once the international laws were implemented; but because there was no law before, it rises the questions of legality and morality. The actors involved with patenting maca sought out opportunity to take advantage of maca's position. In addition, other interviewees agree with this, and gave similar examples on how maca would have been probably taken out of Peru, such as "there is no way on knowing exactly how maca was taken out of Peru" and that "you could hide it in your pocket or inside an empty pen... maca seeds are so tiny, not traceable."

Some of the scenarios that were observed through research field in Peru and interviews were ever since maca began to be commercialized, promoted internationally in the 1990s, also seeds began to sell too. Seed sale began when maca was being commercialized in the 1990s as some of the interviewees recall that "seeds were just sold" to "Japanese" and other foreigners<sup>142</sup>. During this time, seed farming, development, new technology and processes were being taught to farmers too. Some maca farmers relate that they've been using the same techniques of maca

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<sup>140</sup> Andina. (1996). "Fujimori: Peru es un centro alimenticio basico." Andina Peru News Agency, Noticias seleccionadas del 13 de noviembre de 1996 text

<sup>141</sup> Boisson, L. (2000). "Convention on Biological Diversity." UN Office of Legal Affairs, Cartagena Protocol on Biosafety on Biological Diversity Web

<sup>142</sup> Interview notes Junin and Huancayo

farming generation after generation, while others had developed their own techniques for seeding; but only one interviewee recalls that he didn't know how to reproduce seeds, but he was taught by an organization that would buy maca from him.<sup>143</sup> Vandana Shiva explains the development process of biopiracy state, as to “the new biotechnologies reproduce the old patriarchal divisions of activity/passivity, culture/nature. These dichotomies are then used as instruments of capitalist patriarchy to colonize the regeneration of plants and human beings.”<sup>144</sup> Therefore, Shiva explains how through this process, leads to diversion and distortion of not only an exchanged commodity like maca, but also the culture around it. That being, in the case of Peru, shows the actors' behaviors, especially the actors that have control, power and influence through the embedded form of coloniality of power and eurocentrism that influences and manifest through the diversion path that leads distorting the maca market and its life with biopiracy. Furthermore, Shiva goes further to discussed how the less powerful have been taken advantage to divert maca into the biopiracy state, “the farmers, who are the guardians of the germ plasm, have to be disposed to allow the new colonization to happen...Seeds have been treated as gifts and exchanged freely between farmers, will become patented commodities...”<sup>145</sup> Based data retrieved from this research and testimonies, local farmers didn't know or think about the outcome or persecutions of selling maca seeds to foreigners would bring future problems would affect their lives; however, a couple of interviewees state that somehow they knew something bad would eventually happen if continued to sell seeds and maca to them, and it did afterwards.

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<sup>143</sup> Interview quote from Ninacaca

<sup>144</sup> Shiva, Vandana. (1996). *Biopiracy: The Plunder of Nature and Knowledge*, South End Press, p. 54

<sup>145</sup> Shiva, Vandana. (1996). *Biopiracy: The Plunder of Nature and Knowledge*, South End Press, p. 53

Even though some actors drove maca through the biopiracy stage, others realized the problems that it would bring and action needed to be taken. Some actors, in this case, Peruvians began to notice the traits as maca began to be patented abroad in the late 1990s. For example, some of the first cases were covered by the media in the 1996 when a Peruvian newspaper reported biodiversity, such as maca was being taken out of Peru and taken to Japan; Peruvian president showed case maca to the Japanese and the world how native Peruvians “Incas” had been eating maca with maize during an speech<sup>146</sup>, but also that same year he signed important international treaty from Andean Community (South American states), Decision 391 of the Cartagena Agreement in 1996 of the Convention on Biological Diversity, “establishing the common regime on access to genetic resources”<sup>147</sup>, and protection on “sovereignty of genetic resources”, providing a list of limitation in which members cannot exploit genetic resources, their specific areas, endangered species, breeds, relations to the ecosystems, etc.<sup>148</sup> In other words, by Fujimori signing this treaty, Peruvian biodiversity like maca, including seeds could not just be taken out the country, as it became illegal. Therefore, this international treaty touches began to track down on biopiracy providing specific protections. By this time and early early 2000s, new laws protecting Peruvian biodiversity and maca laws were established. But also, Asian, American, European universities along with foreign companies began patenting maca through this time. Companies such as PureWorld Botanicals filed patents in the United States for maca, but Peru’s National Anti-Biopiracy Commission disputed the patent.<sup>149</sup>

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<sup>146</sup> Andina. (1996). “Fujimori: Peru es un centro alimenticio basico.” Andina Peru News Agency, Noticias seleccionadas del 13 de noviembre de 1996 text

<sup>147</sup> “Decision No.391 Establishing the Common Regime on Access to Genetic Resources.” Peru country IP laws, World Intellectual Property Organization (WIPO), Andean Community (1996).

<sup>148</sup> Ibid

<sup>149</sup> “Patentes referidas al *Lepidium Meyenii* (maca): Respuestas del Perú.” (2003) Indecopi Online Document

Overview of Peruvian's biopiracy, IP and maca laws:

Maca is protected under various Peruvian laws and some created specially to target biopiracy. It begins with the Peruvian Constitution of 1993 articulates on these topics. The Article 66 indicates that, “all natural resources... are the nation’s patrimony... The government enjoys the sovereign right to their development.”<sup>150</sup> Furthermore, Article 67 states, “the government determines the nation’s environmental policy... promotes the sustainable use of its natural resources.”<sup>151</sup> The next articles 68, and 69 reiterates the government’s obligations, Article 68 “Government has an obligation to promote the conservation of biological diversity and protected natural areas,”<sup>152</sup> and Article 69 touches on protecting the Amazon. Other legal framework prior to the biopiracy laws and the Constitution, it’s the Industrial Property Law effective since 1953.<sup>153</sup> There have been several amendments to the law, and last one happened in 1996.<sup>154</sup> In regards to patents and biological materials, article 28 states that inventions are not patentable if there is harm to plants or environment.<sup>155</sup> Furthermore, the development of Intellectual Property Rights in Peru became eminent during the early 1990s. By 1992, INDECOPI was created through an executive order.<sup>156</sup>

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<sup>150</sup> “Political Constitution of Peru: Chapter II The Environment and Natural Resources.” Peru’s Congress Library, English version, 2009: 21-22. Web. 09 May 2016.  
[[http://www.congreso.gob.pe/Docs/files/CONSTITUTION\\_27\\_11\\_2012\\_ENG.pdf](http://www.congreso.gob.pe/Docs/files/CONSTITUTION_27_11_2012_ENG.pdf)]

<sup>151</sup> Ibid, p. 22

<sup>152</sup> Ibid.

<sup>153</sup> “Intellectual Property Rights Toolkit Peru.” Stopfakes.gov Country IPR Toolkits, U.S. Department of Commerce (2006). Page 25. Web.

<sup>154</sup> “Peru’s Industrial Property Law (Legislative Decree No. 823 of April 23, 1996). World Intellectual Property Organization (WIPO), p. 1. Web

<sup>155</sup> Ibid, p. 7

<sup>156</sup> “About Indecopi.” Indecopi Peru. Web. ([https://www.indecopi.gob.pe/web/indecopi\\_ingles/sobre-el-indecopi](https://www.indecopi.gob.pe/web/indecopi_ingles/sobre-el-indecopi))

INDECOPI is the National Institute for the Defense of Free Competition and the Protection of Intellectual Property, where the National Commission Against Biopiracy was created.<sup>157</sup> INDECOPI is a specialized agency that oversees, protects and promotes Peru's IP. Furthermore, in relation to biodiversity and international framework, Peru was a signatory country of the Convention on Biological Diversity in 1992, and incorporated the convention's framework within their new policies and laws.<sup>158</sup> In addition, Peru is signatory of several international agreements for indigenous rights and binding to protect its national heritage. For example, Peru's law, "Regime for Protecting the Collective Knowledge of Indigenous Peoples related to Biological Resources" (Law 27811) recognizes collective rights over traditional knowledge. It requires the prior informed consent from communities before accessing traditional knowledge, and benefits from using it are to be shared fairly and equitably.<sup>159</sup> Since 1997, Peru has the Law of Biodiversity (Law 26839) in accordance with CBD. It recognizes that the knowledge, practices and innovations of communities are part of their cultural heritage, and such innovations can include traditional crop varieties.<sup>160</sup> This law also oversees the enforcement of IP, genetic resources in regards to "conservation and sustainable use of biological diversity" through promoting research, and regulations towards genetic resources, environment, etc.<sup>161</sup>

After the rise of biopiracy cases in Peru and around the world, the Peruvian biopiracy laws were created in 2001, after issues started arising on traditional knowledge and indigenous

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<sup>157</sup> Ibid

<sup>158</sup> Convention on biodiversity 1992 Peru CBS website

<sup>159</sup> "National and local policy and law for protecting bio-cultural heritage." Bio-cultural Heritage: Promoting resilient farming systems and local economies Policy and Practices. International Institute for Environmental and Development (IIED) Protecting Community Rights over Traditional Knowledge Project. Web.

<sup>160</sup> Ibid

<sup>161</sup> "Law on the Conservation and Sustainable use of Biological Diversity (Law No. 26839 July 8, 1997)." Peru country IP laws, World Intellectual Property Organization (WIPO). Web.. (Spanish Version only available)

rights and constituted in 2002 and 2004. The first one, Law 28216, protects access to Peruvian biological diversity and the collective knowledge of Indigenous People.<sup>162</sup> The Law 27811 provides protection of collective knowledge of Indigenous People related to biodiversity.<sup>163</sup> These laws became beneficial to protect the Peruvian people and natural resources as it takes precautionary measures and combats biopiracy. Furthermore, through this law, the National Commission for Biopiracy Prevention was established through Peru's INDECOPI (IP government agency), where biopiracy cases within Peru are monitored for future court procedures.<sup>164</sup> Besides legislative law preventing biopiracy, the Peruvian government appointed support from several institutions such as ministry of interior, foreign trade and tourism, national council for the environment, national council for trade promotion, and natural resources, national institute of agricultural innovation, and as well as non-governmental organizations, such as International Center of Potato<sup>165</sup>, and Sociedad Peruana de Derechos Ambientales (Peruvian Society of Environmental Law - SPDA). As result, since 2004 the National Biopiracy for Prevention Commission<sup>166</sup> receives support from these institutions and work together in collaboration in regards to biopiracy in Peru<sup>167</sup>.

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<sup>162</sup> "Law No. 28216 on the Protection of Access to Peruvian Biological and Collective Knowledge of Indigenous Peoples." Peru Country IP site, World Intellectual Property Organization (WIPO), 200

<sup>163</sup> "Peru: Law No. 27811 of 24 July 2002, introducing a protection regime for the collective knowledge of indigenous peoples derived from biological resources." Peru Country IP site, World Intellectual Property Organization (WIPO), 2002.

<sup>164</sup> "Comision Nacional Contra la Biopirateria" Indecopi Peru.  
([https://www.indecopi.gob.pe/web/indecopi\\_ingles/sobre-el-indecopi](https://www.indecopi.gob.pe/web/indecopi_ingles/sobre-el-indecopi))

<sup>165</sup> Comision Nacional Contra la Biopirateria: Quienes Somos" Indecopi Peru.

<sup>166</sup> "Quienes Somos." Sociedad Peruana de Derechos Ambientales (SPDA).

<sup>167</sup> Ibid

Most recent international treaties that was relevant to tackle down on biopiracy in Peru are the Nagoya Protocol from 2012<sup>168</sup>, and the Paris Agreement in 2015. The Nagoya Protocol treaty came out of the yearly meeting with Convention of biological diversity. Its focus is on the protection of genetic resources, benefit sharing, traditional knowledge (indigenous rights), and insures the conservations of such.<sup>169</sup> Furthermore, it also ensures that parties to the protocol take measures and cooperate if there is any violation found.<sup>170</sup> Peru's biopiracy law complies with the requirements of the Nagoya Protocol, and becomes one of the active members of the protocol in regards to biopiracy. The Paris Agreement is not only an international agreement for climate change<sup>171</sup>, but it has legal instruments that will be useful in terms of biopiracy that Nagoya doesn't have. Through the agreement, bidding countries have legal grounds to protect biodiversity from one another.<sup>172</sup> In July 25, 2016, Peru along with 178 countries signed on to ratify the agreement.<sup>173</sup> Therefore, Peru now has the tools to move forward with biopiracy cases of not only maca, but for all their biodiversity.

### *National Anti-Biopiracy Commission*

Since its creation through Peruvian laws in 2004, the National Anti-Biopiracy Commission has served and provided support to the Peruvian government, and the community

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<sup>168</sup> "Parties to the Nagoya Protocol." Convention on Biological Diversity: Nagoya Protocol of 2010. United Nations Environmental Programme.

<sup>169</sup> "About the Nagoya Protocol." Convention on Biological Diversity: Nagoya Protocol of 2010. United Nations Environmental Programme. Web. 19 April 2016.

<sup>170</sup> Ibid

<sup>171</sup> UNFCCC. 2016. "Paris Agreement: Essential Elements." United Nations Framework Convention on Climate Change Website

<sup>172</sup> Hance, Jeremy. (2016). "What does the Paris Agreement mean for the world's other 8 million species?" The Guardian, Environment.

<sup>173</sup> UNFCCC News. (2016). "Peru Deposits Instrument of Ratification of Paris Agreement." United Nations Framework Convention on Climate Change Website



that protects biodiversity. The commission states that has been 24 cases of biopiracy and 18 have won.<sup>174</sup> Some of those are maca related. Today what is found about biopiracy and maca are several cases, those local and internationally. According to the Commission, there are 1,406 patent petitions abroad just on maca alone,<sup>175</sup> which creates risks for maca. The Commission work relies on detecting potential patent cases that are at risk of biopiracy; once one is detected, they notify the embassy of the country where the patent was being submitted. Then the embassy is in charged to talk to the government of that country and the company that it is illegal to patent maca. By this time, the commission has already submitted a report, therefore, the Peruvian embassy is aware of the problem with maca. Now it's up to the company or government to stop the patent; but if they move forward with it then Peru has to move forward with litigation/lawsuit/take it to court; which is often expensive and it takes time.<sup>176</sup> Lastly, the Commission has limited resources and funding to fight biopiracy, thus, the Peruvian government support is needed at full potential.

While the National Anti-biopiracy Commission works to monitor maca patents across the world, at home, the issue of biopiracy has been fed by actors involved in the commodity exchanged state, therefore, it became more disruptive for maca. As biopiracy cases have increase in recent years from China, United States, France, Poland, Switzerland, Korea, and even Brazil, brings in to question how and why many countries have continued to pursue maca patents. Hence, it's not just the countries that led, but also the companies that have pushed too. In early

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<sup>174</sup> interview with National Anti-biopiracy Commission

<sup>175</sup> Gestión. (2016). "Advierten que 29 semillas Peruanas están en riesgo de ser patentadas en el extranjero." Grupo Comercio

<sup>176</sup> Notes from interview with National Antibiopiracy Commission

2010s, as the boom of maca took over, it was mainly Chinese interest that brought notoriety to maca as they were the main exporters. In early 2010s, Peru saw a wave of foreigners, especially from China that came in to Peru to buy maca, and it was later known that they had been taken Maca out of Peru illegally; in 2014 2,600 pounds of contraband (maca) were confiscated at Peruvian ports.<sup>177</sup> Maca cannot be taken out of Peru in natural state or seeds, maca must leave the country already processed. However, it didn't stop actors involved with the illegal exportation and production of maca. The New York Times reports that when the Chinese arrived to the small of Junin, "a future was made overnight."<sup>178</sup> According to interviewees, the "chinos" (Chinese) came to Junin, the areas where most maca was produced, and began buying as much maca as they could"; they said, "they wanted all my maca" and that "they paid high prices, and especially for seeds." According to the interviewees, before the maca boom, maca prices average around \$8-12 soles per kilo. However, in 2014 when the Chinese came, and began to buying all maca, yellow for \$80-100 soles, red \$150-200 soles and black \$300 soles. Then, seed purchasing proceeded used to be sold at \$1000-2000 soles per kilo.<sup>179</sup> Based on more media information, most people that took maca out of Peru illegally had been through borders with other countries such as Bolivia and Chile, there is no border control; however, others state that it also leaves through lima.<sup>180</sup>

The actors' non response towards biopiracy and adding fuel to fire, by contributing towards the advancement of the biopiracy problem brought irreversible consequences; yet, it

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<sup>177</sup> Neuman, William. (2014). "Vegetable Spawns Larceny and Luxury in Peru." The New York Times. Web

<sup>178</sup> Ibid

<sup>179</sup> interview notes from Junin

<sup>180</sup> "ADEX: 2 mil toneladas de maca salen del país por contrabando cada año." Canal N Noticias 2014

seems that they didn't see or expect the forthcoming. Peruvian media news started reporting in last couple of years that maca was now being grown in China, and caused worried amongst the maca market. In the case of farmers, they would be hit the most. Reports stated that it's been growing in Yunnan, China, and it would start competing with Peruvian maca.<sup>181</sup> Furthermore, this wouldn't be the first time that a Peruvian product goes through a biopiracy state. Some of the interviewees were aware about this situation, they said that they've heard it not just from TV, but from other peers that have been working in China, but most believe that Peruvian maca is better, because in the area where it goes (their location) is unique for the mineral in the soil that are necessary to grow maca, and the Chinese can't replicate maca, even though they are trying. Furthermore, some of the interviewees state that they didn't think about much about the repercussion of selling maca seeds to foreigners as they saw an economic opportunity to improve their livelihoods; but when they started noticing that some of their peers started migrating to China to work for their Chinese buyers, it became a problem. They also state that reason why the Chinese offered contract jobs to maca farmers was to learn about Peruvian maca farming, so they can start growing their own. By then, they recognized that maybe "seeds" shouldn't have been sold, but it would have been done anyways because of the money and greed. Only a couple of farmers acknowledged that this shouldn't have been done since they lived this experience before in the 1990s; further, they said, "we" Peruvian farmers messed up, "got ourselves" in this mess that we can't get out and know the good ones have to pay and live through this. But also "the government should have acted too", and "everyone is responsible for this..."<sup>182</sup>

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<sup>181</sup> Gestión. "Una empresa del gobierno chino cultivaría y comercializaría maca en Yunnan, según Adex." El Comercio 2014.

<sup>182</sup> Interview notes Junin, Huancayo and Ninacaca

As there is now a new competitive market for maca as a result of biopiracy, there isn't much that can be done to reverse back but to keep working as it is still a problem. Maca prices have gone down dramatically, farmers are feeling the economic burden and have asked the government for support<sup>183</sup>; however, since it's a demand and supply problem, there isn't much the government can do for them; while, other actors are taking advantage and profiting from the situation. The Anti-biopiracy Commission have continued to advocate and work towards helping maca. There is an understanding now on what the government and farmers want; while interviewing, it is worth noting that neither some farmers (the ones that understood biopiracy) or the governments are opposed to maca be taken out of Peru, as long as the people who take it pay back their dues and recognize where maca is from, which is Peru. Subsequently, while the Commission works with other ministries except Borders and Customs, which is essential to prevent maca from getting out of the country illegally<sup>184</sup>; however, there has been discussion to integrate them, but unfortunately since Peru has a bureaucratic system, it could be a while until is integrated. Thus, it seems that the actors involved in the biopiracy state that while the majority didn't act as to benefit from the situation; a few have been active to solve the problem; but it wasn't enough, and everyone knew that some point there would be consequences of such.

### **Theme 3: Unethicality**

The connection in between the life of maca and biopiracy, while it is driven by those process of power (people, politics, etc.) as discussed by Appadurai, the immorality or unethical behavior within those processes are deeply embedded within Peruvian culture as a result of

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<sup>183</sup> Mitma, Daniel. (2016). "Agricultores de la region Junín reclaman por los bajos precios." Diario el Correo Peru

<sup>184</sup> Information obtained through interview and witnessed PRIVATE meeting

Coloniality of Power and Eurocentrism. Quijano talks about the footprint of colonialism that led to coloniality of power and eurocentrism within Peruvian culture; therefore, stipulating an understanding why Peruvians have made the life of maca difficult, making it difficult for an object or commodity to succeed or overcome within its commodity exchange stage or bring an understanding why this unique commodity like maca ended up being or falling in a devalued market again and the outcomes of the its life within the biopiracy. The actors' actions described in previous sections shows how they have been affected by their not just by their social class, but also their race. Quijano states that in Latin America, the "Eurocentric perspective was adopted by the dominant groups of their own, leading them to impose the European model of nation-state..."<sup>185</sup> As the maca market developed, maca went through the commodity exchange stage, the actors that were in control (directly and indirectly), were the ones with more accessibility, not just economically, but politically. All the laws created to protect maca, perhaps have been undermine by trade laws, both hurting maca's social life and its relation with the people at the bottom. Most farmers that come and live from humble backgrounds, many often poor have been driven and attracted to pursue and give in into the maca market and its stages (commodity and resulting into biopiracy). Quijano adds, "domination is the requisite for exploitation, and race is the most effective instrument, associated with exploitation... serving as a global model of power."<sup>186</sup> The elites of Peru having controlled on what is going on with maca market, government, but they also have power, influence and exploit the people. Thus, in a country where corruption and economic hardships of the poor prevail, then that behavior resonates and

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<sup>185</sup> Quijano, Anibal (2000). "Coloniality of Power, Eurocentrism and Latin America." *Neplanta: Views from South* 1(3): 570

<sup>186</sup> *Ibid*, p. 572

becomes normalized with everyone (or majority); therefore, resulting in scenarios and cases like maca.

Other issues that have surged from the actions brought from actors, are violence and fraud. There are several media reports that relate what have been the consequences of dealing with maca, from farming to trading. The stories related the pro sperities of maca farm owners, and workers, sharing how much they profited<sup>187</sup>, it brought up dander on sharing how the maca business is dealt with. Some of the farmers, workers, companies were affected. Some of the testimonies, stories and also observations from interviewees reveal that they've seen how "chinos" would bring thugs to the city other cities if an owner would refuse to sell maca, others, or intimidate locals that ripped them off by selling them rocks instead of maca; then, kidnapping the owners of maca companies, and having to protect their farms/crops as in nighttime, people would come and steal it. Most maca owners now have and have hired security not only for their companies, but for their crops and families. In regards to police or government assistance, I was told when people would complain about the crimes, police wouldn't do anything. They would only act when government officials or media would come. Furthermore, in terms of maca, as mentioned previously, some people would sell dried maca with rocks, and maca powder is often mixed with "morocho" or "chicken's food" since maca, itself its expensive, so it lowers the price for the vendors, but affects the consumer. Some of the interviewees state that they know this because they've been told at mills what is being done, and they've notified government officials, but nothing gets done about it. Some of the interviewees state that "it is not the way is supposed to be" and is gives a "bad reputation/name" for hardworking and real maca workers..."

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<sup>187</sup> Neuman, William. (2014). "Vegetable Spawns Larceny and Luxury in Peru." The New York Times. Web

Furthermore, they also state that there is no way to tell the difference in between pure maca and distorted maca because maca has different colors (yellow, red and black) however, it is mixed with other products. The only way to tell is by doing a scientific test. Even though the government has laws that regulate on food and health services there is not actual certification that states that maca is real, sanitation practices, etc. In addition, most maca companies that export obtain foreign certifications, such USDA. Yet, the government through other ministries, such as PromPeru, promotes maca locally and internationally for consumption, and business. For most actors the main goal is maca is to sell it, profit, even if it means defrauding everyone involved as it is accepted amongst Peruvian culture since they are accustomed to those expectations. An interviewee said, “we are never going to learn from this experience, it’ll happen again...”

### **Conclusion:**

To understand the social life of maca, or of a “thing” one must examine the states it’s gotten through, and understand that the processes of politics driven and influenced by actors have been embedded through coloniality of power and eurocentrism. A “thing” just doesn’t become a commodity, it is driven to that state for many reason, and commonly capitalistic. The results vary and for the case of maca, it drove it to the state of biopiracy. Maca will continue to go through changes through the commodity state as it is reliving what it went through in the 1990s, but now through a fully changed atmosphere since biopiracy has distorted its state, and there is new competitive market. It is the result of actors’ behaviors and influences, embedded in Peruvian culture since the time of colonization. The Peruvian society and outside influences continue to affect the way “things” or native biodiversity become a “commodity.” Despite the

recent increase on scientific research, small significant government involvement, there needs to be further research on maca's social and political impact. There aren't enough references, resources and perhaps, interest, so that Peruvians can become engaged and aware of what is happening to maca and other cases.

Most Peruvians interviewed through this research were not hopeful that the outcome could eventually change. Most stated that Peruvians were not going to learn and the problems they encountered with maca will happen again. There are many factors that can contribute to "acceptance." If there is more focus on maca research, and not just for market and economic gains, the government will proceed to take more action, invest and implement towards education, training, workshops to prevent cases like maca. It is something necessary for Peruvians as morality and ethics have been diminished from corruption resulting in accepting this behavior and causing it to create problems that lead to maca to crumble. Support should also be given to those who are currently active in the case of maca, specially those who have devoted many years, time and effort to eradicate the problem; but they are only a few. Furthermore, the media reports must continue because it can resonate amongst Peruvian people. It is challenging, as it could take many years, the change needs to be reciprocal to protect Peruvians and their biodiversity.



## **Bibliography:**

- “About Indecopi.” *Indecopi Peru*. 19 Dec. 2016, [https://www.indecopi.gob.pe/web/indecopi\\_ingles/sobre-el-indecopi](https://www.indecopi.gob.pe/web/indecopi_ingles/sobre-el-indecopi)
- “About the Nagoya Protocol.” Convention on Biological Diversity: Nagoya Protocol of 2010. *United Nations Environmental Programme*. 19 Dec. 2016, <https://www.cbd.int/abs/about/>
- “ADEX denuncia a China por biopiratería de semillas de maca.” *El Comercio*, 19 Dec. 2016, <http://elcomercio.pe/economia/peru/adex-denuncia-china-biopirateria-semillas-maca-noticia-1738185>
- “ADEX: 2 mil toneladas de maca salen del país por contrabando cada año.” *Canal N.pe*, 19 Dec. 2016, <http://canaln.pe/actualidad/adex-2-mil-toneladas-maca-salen-pais-contrabando-cada-ano-n150130>
- Aliaga, R. et al. “La cadena de valor de la maca en la Meseta del Bombón: Análisis y lineamientos estratégicos para su desarrollo.” Ministerio del Ambiente (Perú Biodiverso, Confederación Suiza, Ministerio de Comercio Exterior y Turismo, Cooperación Alemana), <http://bibliotecavirtual.minam.gob.pe/biam/bitstream/handle/minam/1432/BIV01208.pdf?sequence=1&isAllowed=y>. 19 Dec. 2016.
- Argumedo, A. & Pimbert M. (2006). “Protecting Indigenous Knowledge against Biopiracy in the Andes.” International Institute for Environment and Development – IIED Report
- Boisson, L. (2000). “Convention on Biological Diversity.” UN Office of Legal Affairs, Cartagena Protocol on Biosafety on Biological Diversity Web
- Biopiracy Definition.” Merriam-Webster Dictionary. Web.
- “Boletín de Maca.” Comisión Nacional contra la biopiratería, Boletín de la Comisión Nacional contra la Biopiratería Centro de Información y Documentación (2014)
- “Decision No.391 Establishing the Common Regime on Access to Genetic Resources.” Peru country IP laws, World Intellectual Property Organization (WIPO), Andean Community (1996). “Patentes referidas al *Lepidium Meyenii* (maca): Respuestas del Perú.” (2003) Indecopi Online Document
- “Fujimori: Peru es un centro alimenticio básico.” *Noticias seleccionadas del 13 de noviembre de 1996 Andina Peru News Agency*, 19 Dec. 2016, <http://www.thegopherarchive.com/info.php?ID=64803&lid=245030>
- “Advierten que 29 semillas Peruanas están en riesgo de ser patentadas en el extranjero.” *Gestión*, 19 Dec. 2016, <http://gestion.pe/economia/advierten-que-29-semillas-peruanas-estan-riesgo-patentadas-extranjero-2169892>

“Una empresa del gobierno chino cultivaría y comercializaría maca en Yunnan, según Adex.” *Gestión*, 19 Dec. 2016. <http://gestion.pe/economia/empresa-gobierno-chino-cultivar-y-comercializar-maca-yunnan-segun-adex-2106227>

Gonzales, Gustavo F, Manuel Gasco, and Ivan Lozada-Requena. “Role of Maca (*Lepidium Meyenii*) Consumption on Serum Interleukin-6 Levels and Health Status in Populations Living In The Peruvian Central Andes Over 4000 M Of Altitude.” *Plant Foods for Human Nutrition* (Dordrecht, Netherlands) 68.4 (2013): 347-351. MEDLINE. Web. 19 Dec. 2016.

Hance, Jeremy. “What does the Paris Agreement mean for the world’s other 8 million species?” *The Guardian, Environment*, 06 Jan. 2016, <https://www.theguardian.com/environment/radical-conservation/2016/jan/06/-paris-agreement-biodiversity-coral-reefs-forests>. Accessed 19 Dec. 2016.

Hermann M. and Bernet T. “The transition of maca from neglect to market prominence: Lessons for improving use strategies and market chains of minor crops [on-line].” Agricultural Biodiversity and Livelihoods Discussion Papers 1. *Bioversity International*, Rome, Italy. Page 34 ([https://www.bioversityinternational.org/fileadmin/\\_migrated/uploads/tx\\_news/The\\_transition\\_of\\_maca\\_from\\_neglect\\_to\\_market\\_prominence\\_\\_nbsp\\_lessons\\_for\\_improving\\_use\\_strategies\\_and\\_market\\_chains\\_of\\_minor\\_crops\\_1318.pdf](https://www.bioversityinternational.org/fileadmin/_migrated/uploads/tx_news/The_transition_of_maca_from_neglect_to_market_prominence__nbsp_lessons_for_improving_use_strategies_and_market_chains_of_minor_crops_1318.pdf))

“Intellectual Property Rights Toolkit Peru.” Stopfakes.gov Country IPR Toolkits, U.S. *Department of Commerce*, Nov. 2006, p. 25. <https://www.stopfakes.gov/servlet/servlet.FileDownload?file=015t00000004q86>. Accessed 19 Dec. 2016.

Landon, Amanda J. 2007. “Bioprospecting and Biopiracy in Latin America: The Case of Maca in Perú” *Nebraska Anthropologist*. Paper 32. <http://digitalcommons.unl.edu/nebanthro/3>

“Law on the Conservation and Sustainable use of Biological Diversity (Law No. 26839 July 8, 1997).” Peru country IP laws (Spanish), *World Intellectual Property Organization (WIPO)*, 19 Dec. 2016, <http://www.wipo.int/wipolex/en/details.jsp?id=3420>

“Law No. 28216 on the Protection of Access to Peruvian Biological and Collective Knowledge of Indigenous Peoples.” Peru Country IP site, World Intellectual Property Organization (WIPO), 19 Dec. 2016, <http://www.wipo.int/wipolex/en/details.jsp?id=5752>

Mgbeoji, Ikechi. (2006). “Global Biopiracy.” UBC Press, p. 7

Mitma, Daniel. “Agricultores de la region Junín reclaman por los bajos precios.” *Diario el Correo Peru*, 15 Jul. 2015, <http://diariocorreo.pe/ciudad/se-desinfla-el-interes-por-la-siembra-en-agricultores-602435/>. Accessed 19 Dec. 2016

Neuman, William. “Vegetable Spawns Larceny and Luxury in Peru” *The New York Times*, 07 Dec. 2014, [https://www.nytimes.com/2014/12/07/world/americas/in-peru-maca-spawns-larceny-and-luxury.html?\\_r=0](https://www.nytimes.com/2014/12/07/world/americas/in-peru-maca-spawns-larceny-and-luxury.html?_r=0). Accessed 19 Dec. 2016.

Ninahuanca, C. “Biopiratería de la maca se previene con investigación.” *Diario la Republica*, 20 Jul. 2014, <http://larepublica.pe/20-07-2014/biopirateria-de-la-maca-se-previene-con-investigacion>. Accessed 19 Dec. 2016.

“National and local policy and law for protecting bio-cultural heritage” Bio-cultural Heritage: Promoting resilient farming systems and local economies Policy and Practices. *International Institute for Environmental and Development (IIED) Protecting Community Rights over Traditional Knowledge Project*, 19 Dec. 2016, <http://biocultural.iied.org/national-and-local-policy-and-law-protecting-biocultural-heritage>

“Peru’s Industrial Property Law (Legislative Decree No. 823 of April 23, 1996). *World Intellectual Property Organization (WIPO)*, 19 Dec. 2016, p. 1, [http://193.5.93.81/wipolex/en/text.jsp?file\\_id=129322](http://193.5.93.81/wipolex/en/text.jsp?file_id=129322)

“Peru: Law No. 27811 of 24 July 2002, introducing a protection regime for the collective knowledge of indigenous peoples derived from biological resources.” *Peru Country IP site, World Intellectual Property Organization (WIPO)*, 2002, <http://www.wipo.int/edocs/lexdocs/laws/en/pe/pe011en.pdf>. Accessed 19 Dec. 2016.

“Political Constitution of Peru: Chapter II The Environment and Natural Resources.” *Peru’s Congress Library*, English version, 2009: 21-22. Web. [[http://www.congreso.gob.pe/Docs/files/CONSTITUTION\\_27\\_11\\_2012\\_ENG.pdf](http://www.congreso.gob.pe/Docs/files/CONSTITUTION_27_11_2012_ENG.pdf)]. Accessed 19 Dec. 2016.

“Parties to the Nagoya Protocol” *Convention on Biological Diversity: Nagoya Protocol of 2010. United Nations Environmental Programme*, 19 Dec. 2016, <https://www.cbd.int/abs/nagoya-protocol/signatories/>

“La cadena de valor de la maca en la Meseta del Bombón: Análisis y lineamientos estratégicos para su desarrollo” *Proyecto Perúbiodiverso*, Cooperación Alemana al Desarrollo SECO, GIZ-PDRS, MINCETUR, Promperú y MINAM (2011a), p. 52, <http://bibliotecavirtual.minam.gob.pe/biam/bitstream/handle/minam/1432/BIV01208.pdf?sequence=1&isAllowed=y>. Accessed 19 Dec. 2016.

“Quienes Somos” *Sociedad Peruana de Derechos Ambientales (SPDA)*, <http://www.spda.org.pe/quienes-somos/>. Accessed 19 Dec. 2016.

Quiroz, C. F. and Aliaga, R. “Maca (*Lepidium meyenii* Walp). Andean roots and turbs: Ahipa, arracacha, maca and yacon”. *Promoting the Conservation and Use of Underutilized and Neglected Crops* N.º 21. Roma: International Plant Genetic Resource Institute, 1997, [http://www.biodiversityinternational.org/uploads/tx\\_news/Andean\\_roots\\_and\\_tubers\\_472.pdf](http://www.biodiversityinternational.org/uploads/tx_news/Andean_roots_and_tubers_472.pdf). Accessed 19 Dec. 2016.

Quijano, Aníbal. “Imperialism and The Peasantry: The Current Situation In Peru.” *Latin American Perspectives* 9.3 (1982): 46. Publisher Provided Full Text Searching File. Web.

Quijano, Anibal (2000). "Coloniality of Power, Eurocentrism and Latin America." *Neplanta: Views from South* 1(3): 533-580.

Shiva, Vandana. (1997). "Biopiracy: The Plunder of Nature and Knowledge." South End Press, p. 122

Smith, Tyler. 2015. "Maca Madness: Chinese herb smugglers create chaos in the Peruvian Andes" *Herbalgram* no. 105: 46-55

Clark, S., Lapeña, I., and Ruiz, M. "The Protection of Traditional Knowledge in Peru: A Comparative Perspective." *3 Wash. U. Global Stud. L. Rev.* 755 (2004), p. 373-374.

"Paris Agreement: Essential Elements." *United Nations Framework Convention on Climate Change Website* (UNFCCC), 2016, [http://unfccc.int/paris\\_agreement/items/9485.php](http://unfccc.int/paris_agreement/items/9485.php). Accessed 19 Dec. 2016.

"Peru Deposits Instrument of Ratification of Paris Agreement." *United Nations Framework Convention on Climate Change News Website* UNFCCC, 26 Jul. 2016, <http://newsroom.unfccc.int/paris-agreement/peru-deposits-instrument-of-ratification-of-paris-agreement/>. Accessed 19 Dec. 2016

Wallerstein, Immanuel (1974). "The Modern World System: Capitalist Agriculture and the Origins of European World Economy in the Sixteenth Century." *Selections Online*