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# Maize from Sacred to Profane

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*Maize from Sacred to Profane*

By  
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\* \* \* \* \*

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In Partial Fulfillment of the Requirements for Graduation

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## Preface

*This thesis is a broad study of how corn has influenced the political, social and economic structure of the Americas from the early inception of the first Native American civilizations to the present day. Divided amongst four chapters that aim to explain how corn's development has changed the power dynamic across North and South America, this thesis depicts how corn has sustained state power and how its development as a commodity has transitioned to empowering corporate interests. The first chapter uses a variety of primary sources such as religious texts and artifacts to illustrate corn's sacred role as the creator of humanity and participation in religious ceremonies. After European contact, the second chapter analyzes the trading properties of the Columbian Exchange and how corn served as a catalyst for colonization, population growth and the expansion of the slave trade. The next chapter analyzes U.S. census data and secondary sources that explain the establishment of the United States and how corn rapidly became a commodity and byproduct for a multitude of American businesses that were supported through policies and initiatives set up by the U.S. government. The last chapter uses records from the U.S. Department of Agriculture and arguments presented by a multitude of corn lobbying firms that support the acquisition of land and expansion in large corporate farms. Through subsidies and technological advancements corporations are able to gain the most profit through their ability to refine corn's natural state. Policies were instituted by the U.S. government in order to bolster economic return. Today, corn has transitioned from the most important agricultural product with sacred and nourishing properties that aided in the development of societies to a commodity used by corporations to extend their power in politics. This thesis is about that transition.*

## Introduction

Nearly ninety million acres of American farmland are used to grow corn that is then manufactured into the materials that compose various consumer products. These include spark plugs, tires, tanning leather, energy bars, surgical dressing, animal feed, oil drilling, salad dressing, pharmaceuticals, pickles, labelling, shampoo and conditioner.<sup>1</sup> Corn can be molded into a variety of forms due to its ability to be grown in a multitude of environments, even those with limited resources in labor and capital. Furthermore, corn is a vegetable and a grain that was a versatile solution in early years of its domestication and continues to be so as scientists are able to manipulate the DNA of organisms, increasing corn harvest. Prior to European contact, Native Americans were the first to manipulate corn kernels to produce higher yields of their crops and diversify the genome of corn, creating newer types of corn.

Indigenous groups also relied on corn because of the sacred role it played in the formation of religious scripture; centralized in political and religious ceremonies, indigenous groups began to manipulate the appearance of corn in order to celebrate, consume and learn from maize kernels. Due to the domestication process that became prominent in recent years, in addition to scientific advancements in technology and understanding of organism's DNA, corn has been refined into a variety of byproducts such as corn oil, corn starch and ethanol. Through the process of domestication and inventions, corn aided in the development of American industries and created the potential for massive economic gain.

This thesis explains corn's political role in the shaping and development of past and modern societies in North and South America. As a staple crop, corn has been able to catalyze

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<sup>1</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association. Accessed March 04, 2019. <https://corn.org/>.

the strength and growth in several different industries. Holding a sacred role in early Native American civilizations, corn's religious symbolism and centrality in Native American culture has transitioned into a more standard commodity that could be used for capital gain. Just as commonly used in day to day life, corn has lost its symbolic role in political life but has remained fundamental in economic dependability and advancement. State powers have continued to use corn to sustain their growth and security; however, the balance in powers has shifted as farming has changed from small family farms to agriculture that is mass-produced. In doing so, state powers have continued supporting the growth of cash crops but have tailored policies towards large agricultural firms that promise economic stability and production. The importance of corn has evolved and has become profane as it has been manipulated by corporations to build up capital rather than support individual livelihoods.

This thesis is divided into four chapters that examine corn's journey from its earliest use as a domesticated product to modern day society. Often times history overlooks the contributions of indigenous groups, therefore the first chapter investigates the use of corn in Mayan, Aztec and Inca empires because maize originates in Central America and was spread throughout the continent. It continues on to the Amerindians that cultivated the land: prior to European contact, maize served as a staple crop in their diet and structure of society. Corn held a symbolic role in the religious infrastructure of Native Americans as the creator of humanity. Growing cycles and religious ceremonies were coordinated with one another by the religious storytelling that navigated these empire's political life. A sacred crop, corn helped expedite many technological advancements.

These methods were later adopted and manipulated upon European contact. Chapter two illustrates how the Columbian Exchange provided the first market of trade between the New and Old World. The connections established between both hemispheres were funded by corn's nutrients that aided in the construction of settlements and population growth as well as served as a tool to sustain the slave trade. The biological to cultural effects of corn were used as an instrument in the colonization and social hierarchy of the Americas. A commercial crop, that once had symbolic value in religious political structure, corn was just as commonly used but less valued.

In chapter three, the context shifts to the foundation of the United States, Americans felt destined to move further west in order to expand their territory and opportunities for profits. The federal government instituted initiatives that supported farmers, and more specifically the growth of the cash crops corn, cotton, soybeans and wheat. By understanding the correlation between farming and the federal government's belief that these crops would bring economic sustainability, I hope to persuade readers of the importance corn played in the socioeconomic and political framework of America.

Eventually the technology Native Americans used when celebrating the religious properties of corn in political ceremonies, had been manipulated into other byproducts of corn. Corn therefore catalyzed the growth of the livestock industry because it is cheap and easy to grow. The policies instituted by the U.S. government are further analyzed in chapter four, when corporations were beginning to capitalize off their ability to refine corn's natural state. Policies in the form of tariffs and subsidies, were instituted by the U.S. government in order to bolster economic return. By using this historical timeline, I hope to persuade readers into understanding



the valuable properties of corn that promoted state power and how this powerful grain is now being used as tool for corporate benefits and influence in politics.

## Chapter 1

### Maize God

Growing up my mother always emphasized the importance of having a deep, purposive connection to one's land. In our culture, an individual's roots are fundamental to their identity; my mother would always make an effort to emphasize my Peruvian identity especially when sharing meals and stories with one another. *Choclo* or *elote* was always a central part or complimentary side dish in every traditional Peruvian meal. The word *maiz* was introduced to me in my fifth grade Spanish class. From then on, I learned a variety of names to use when referring to corn. Transcending in every Latin American cuisine, corn is an essential ingredient when feasting. Prior to Columbian contact the indigenous civilizations in North and South America based their society on the growing properties of corn. Religion and politics were aligned with one another and corn's sacredness was integral to both. A versatile crop, corn served as the main feed of Amerindian communities as they enabled state power through their function as a feed and building blocks of society.

Corn's adaptability allowed indigenous civilizations to develop their technology and economic structure around the growing cycle and properties of corn. As corn spread across North and South America, it became a vital feature in Amerindians' daily lives, inspiring these

indigenous groups' religious, spiritual, fiscal and political lives. The story of maize showcases how corn enabled the three greatest empires in the New World: the Aztec, Inca, Mayan and other indigenous groups in North and South America used corn to promote growth, structure and sustain power. It is necessary to analyze the role corn played in these pre-Columbian societies, in order to understand the importance corn played in the lifeblood of these societies and the expansion of power across North and South America.

Located in the central region of Mexico, the Balsas River valleys of Oaxaca contain the oldest fossil records of maize. Historians argue that the domestication of maize catalyzed the growth and power of indigenous civilization.<sup>2</sup> There are over 24,000 specimens of maize found across the globe that have been cultivated for thousands of years. Although no wild maize exists today,<sup>3</sup> archeologists believe that corn moved longitudinally over both North and South America through a process of domestication. Alex Chepstow-Lusty of the French Institute of Andean Studies in Lima, Peru explains how corn's popularity grew by sharing records from 2,700 years ago pollen showcasing Amerindians shifting their diets away from eating wild food such as quinoa to maize.<sup>4</sup> It is easy to understand how corn became highly favorable for its adaptability, cost effectiveness, and easy and quick growing cycle when analyzing the prosperity of these indigenous groups. As a staple crop and the main source of nutrition for many indigenous populations, maize was utilized for survival in indigenous societies. One can imagine how corn has become a daily commodity that's influence and nourishing properties have impacted the political, economic and cultural landscape of the Americas.

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<sup>2</sup> Klarén, Peter F. *Peru: Society and Nationhood in the Andes*. New York: Oxford University Press, 2000. p. 5

<sup>3</sup> Fussell, Betty. 1999. "Translating Maize into Corn: The Transformation of America's Native Grain." *Social Research* 66 (1): 41-65. <https://search.proquest.com/docview/209670587?accountid=14637> p.47

<sup>4</sup> Pringle, Heather. "Lofty Ambitions of the Inca." *National Geographic* 219, no. 4 (April 2011): 37-58. <http://search.ebscohost.com/login.aspx?direct=true&db=rgm&AN=504528393&site=eds-live>.

## Corn Myths and Scripture

Across indigenous populations in the Americas, corn holds a symbolic role in the daily life and scripture of Amerindians; to these groups, the environment and a connection to land are sacred. For the Aztecs, Incas, Mayans and a variety of other indigenous groups, mythological scripture depicts the sustaining properties of life that originate from corn. The Incas believe corn is a gift from their sun god, Inti. Thousand year old Inca ruins have motifs of maize stalks, ears and tassels carved into sculptured corn stalks, “in temple gardens; the husks and silks were fashioned in silver, and the corn kernels were made from solid gold”.<sup>5</sup> The most sacred shrine of Inti is located in the Inca capital of Cusco, Peru and is “lined with 700 half-metre panels of beaten gold whilst outside was a life-size scene of a field of corn with llamas and shepherds all made from gold and silver”.<sup>6</sup> According to the Ancient History Encyclopedia the Inca Religion and Empire were dependent on Inti granting a good harvest for the people.

In Lake Titicaca, the Incas built the most sacred temple called *Qoricancha* for their god Inti. This temple is described to have a “a maize field complete with life-size llamas and shepherds was constructed out of pure gold and dedicated to the Sun”.<sup>7</sup> Corn was used to honor gods and its symbolism also influenced northern tribes and folklore. For the Iroquois, a tribe from the Northeast region of the United States, it is believed that “during a famine Spirit Woman walked through the fields and corn sprouted in the prints of her moccasins” bringing substances to their community. Meanwhile “the Pueblo Indians believe that six sisters came from the stars,

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<sup>5</sup> "Thanks for the Miracle of Corn." CNN. Accessed October 23, 2018.  
<http://www.cnn.com/2000/FOOD/news/09/08/corn.lat/>.

<sup>6</sup> Cartwright, Mark. "Inti." Ancient History Encyclopedia. October 22, 2018. Accessed October 23, 2018.  
<https://www.ancient.eu/Inti/>.

<sup>7</sup> Cartwright, Mark. "Inti." Ancient History Encyclopedia.

each bearing a different color of the sacred corn -- yellow, red, blue, white, speckled and black”.<sup>8</sup>

Through myths, the power of corn is conveyed as a holy symbol of creation. When Europeans came to the Western hemisphere maize was referred to as a standard grain. As maize became more prevalent, the term corn was used to describe its appearance. A focal point in Amerindian politics, corn’s ceremonial and mythological influences led societies to transform and organized themselves based on the growing cycle and nourishing properties of corn.

## Religion & Order

The originator of life for some indigenous societies, corn played a heavy influence on the religious scripture that guided indigenous populations political and social order. The religious significance of corn for some indigenous groups can be pinpointed to its pivotal part in the creation of humanity. The cycle of life is symbolized through the cultivation of corn throughout the year. *Codex Chimalpoca*, a cartographic Aztec depiction illustrates the belief that *Quetzalcoatl* “brought the first maize out of the mountain Tonacatepetl from which created the first man”.<sup>9</sup> These were the first grains of maize that gave the Mesoamericans corn and became the flesh of individuals’ bodies.

Corn or maize is referred to as *centeozintli* or *teotle cintli* which translates to “sacred maize”.<sup>10</sup> Written between 1554 and 1558, *Popol Vuh* is the story of creation for Quiche Mayan people, a region in modern day Guatemala. Often referred to as the Mayan Bible, “The *Popol Vuh*” is not regarded by the Maya as ‘the word of God’ persay, nor as sacred scripture but rather as an account of “the ancient word.” This includes the understanding the Quiche had of

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<sup>8</sup> "Thanks for the Miracle of Corn." CNN.

<sup>9</sup> VanDerwarker, A. (2013, August 02). Popol Vuh. Retrieved from <https://www.britannica.com/topic/Popol-Vuh>

<sup>10</sup> VanDerwarker, A. (2013, August 02). Popol Vuh. Retrieved from <https://www.britannica.com/topic/Popol-Vuh>

cosmology and creation before the coming of Christianity.<sup>11</sup> Allen J. Christenson translates the *Popul Vuh* from K'iche', a Mayan language, and illustrates how Mayan civilization organized their society based off the stories told in the *Popul Vuh*. This religious text helped design the political and social agenda of the Mayan people, in which stories are based many off the growing properties of corn.

The religious importance of maize stems from book IV of *Popul Vuh*, in which human beings are created out of an ear of corn. In a mountainous region an ear of corn is broken and a yellow and white maize were formed, “thus was found the food that would become the flesh of the newly framed and shaped people”.<sup>12</sup> Quiche culture and the scripture of the *Popul Vuh* depict yellow and white breeds of corn, with different female and male characteristics because of their ability to cohabitate and reproduce offspring. Moreover, yellow and white corn are often referred to as “She Who Has Borne Children and He Who Has Begotten Sons” in *Popul Vuh* thus emphasizing their gender distinctions. Gender distinctions were affirmed through the *Popul Vuh* interpretation of life utilizing corn. Moreso, indigenous groups were able to further develop species of corn through a process of crossbreeding explained further in figure 10. Indigenous beliefs and ceremonies reflected the strong correlation between honoring earth for ensuring the survival and creation of its people. Corn facilitated ceremonial practices and went further by advancing the methods used for domesticating corn.

The religious scripture of the *Popul Vuh* taught people to use corn as a tool to build up self sufficiency and independence. During the seventeenth century Maya of Guatemala would

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<sup>11</sup> Knox, John S. "Christianity." Ancient History Encyclopedia. October 21, 2018. Accessed October 22, 2018. <https://www.ancient.eu/christianity/>.

<sup>12</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality*. Oklahoma City: University of Oklahoma Press Norman, 2007. p.194

burn the blood of a male child's umbilical cord and run an ear of maize across the smoke.

Afterwards, the seeds of the maize are planted and used to nourish a child until he reaches an age in which he can cultivate the plant himself. This anecdote is a reflection of corn being used as a prop during religious ceremonies and the importance these corn kernels placed in the growth of a child. Building responsibility and self sufficiency, corn was honored for its religious role in the creation of life and its physical contribution to the daily diets of Mayan people.

Corn played a central role in family structure as the process of its cultivation had been personified into gender distinctions that came together to conceive life. In Mayan culture, fertility is associated with the growing capabilities of maize. Christensen translates and explains *Popul Vuh*, and how their gods attributed to their convictions in the power of maize and environment, “as a goddess of fertility and the seasons, the weeping of Xmucane may have been associated by the Quiches with life-giving rains that helped the dry maize stalks to sprout again”.<sup>13</sup> Xmucane is often referred to as grandmother, and her tears are an analogy for rain that aids in the growth of the crops used to nourish K'iche people. In addition the stories are woven into family values, norms and mythology.

With there being a goddess of the creation of life and her role with the cultivation of corn, death is symbolized through the sacrificial burning of corn. For instance, “the Atiteco practice of first burning and then burying split cobs of maize, which they call ‘twins,’ recalls the history of the twins in *Popul Vuh* who also descended into the underworld where they were burned to ashes and eventually rose to new life”.<sup>14</sup> The correlation between the reincarnation of corn can be

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<sup>13</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality* p.188

<sup>14</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality* p.189

explained by the kernels of corn harvested being replanted and spouting into new ears of corn ready for harvest once again. As life and death are both memorialized through ritualistic practices involving corn, Ladyblood, a mother like figure in *Popul Vuh*, plants an ear of corn to commemorate Mayan warriors. Corn's religious significance allows for Mayan society to be structured around survival and maizes' ability to sustain earth's inhabitants. An honorary device, corn symbolism is continued to be personified through the stories of *Popul Vuh*.

Corn's ultimate role in Mayan society was ensuring the survival of future generations and the state. Humanity was created through a single ear of corn and has been used to promote reproduction and prosperity of land. Stories told in *Popul Vuh* parallel the growing cycle of corn with the life cycle of people. Nicolas Chavez Sojuel, a Tz'utujil Maya from Santiago, Atitlan recalls a ritualistic process in which candles are placed on the four corners of a maize field. Each corner represents the four directions of earth, "in the east so the light will shine on the seeds; in the west so the maize won't be burned by the sun; in the north so the maize seed will be protected; and in the south so the harvest will be abundant".<sup>15</sup> *Yo 'k*, the split head of maize is placed in the center of the field. This ceremony depicts indigenous folk's connection between land and state as it steps from the honoring of the planet, earth's soil and orbit around the sun. All in all, the Mayans understood how these are the key factors in quality of production of crops. Their advanced grasp of solar orbit and agricultural productivity led them to develop worshiping techniques that take into account the various factors that yield to high levels of farming productivity.

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<sup>15</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality*. p.189



## Maize and Early Scientific Advancements in the Pre-Columbian Era

Corn also served as a mechanism and guideline for many scientific advancements in Mayan society. Literature from the pre-Columbian era contained references to mathematical, astronomical, calendrical and ceremonial knowledge of maize. Mayan linguist, Domingo Martinez Paredez, explains how corn is centralized in Mayan society. Paredez contributes the Mayan language for the spread of their civilization and culture through religious doctrines. These testaments were recorded by priests with collaboration with indigenous scholars as books, songs and dance. They represented the day to day lives of the Mayan and Aztec people. According to the Mayan calendar the inscriptions found in the Maya city of Palenque, Mexico dictate that “the First Seed of Maize” occurred on June 16, 3122 BC. The Olmec Maize God’s left ear has a corn cob emerging from it in representation of the sprouting of earth. Consequently, the end of the world correlated with the absence of corn.

Author of *Our Sacred Maiz Is Our Mother Nin Tonantzin Non Centeotl*, Roberto Cintli Rodriguez adds to the notions proclaimed by Paredez the author of *Un Continente y Una Cultura* (*One Continent and One Culture*, 1960) by emphasizing “that as having a direct result of having maize, the peoples were able to studiously observe the various phenomena caused by the sun, moon, and universe, which allowed them to arrive at a concept of time and formulate an advance calendar”<sup>16</sup> and even discover the concept of zero. Scientific advancement were accomplished through the observations of corns growing cycle. The methods in which Mesoamericans analyzed the solar system and its religious significance as well as the production of a calendar

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<sup>16</sup> "Our Sacred Maíz Is Our Mother: Indigeneity and Belonging in the Americas. By Roberto Cintli Rodríguez Et Al. ( Tucson : University of Arizona Press , 2014 . Xxvi 253 Pp. Illustrations, Maps, Appendices, Notes, Bibliographical Notes, Index. \$35.00 , Paper.)." *The Western Historical Quarterly* 46, no. 3 (2015): 374-75. doi:10.2307/westhistquar.46.3.0374 p.4

are due to the important observation of corn. These advancements were translated and reproduced in the political, social and economic order of these great indigenous empires.

Even colors are symbolic as they are reflective of the environment and the growing cycle of corn. Man was created from yellow and white corn, “yellow is associated with south, misfortune, death, and dry season... white is associated with the north, new life, and the rainy season”.<sup>17</sup> Yellow corn is also associated with the fruitfulness of earth. When maize was first discovered according the teachings of *Popul Vuh*, a parakeet helped guide the discovery of maize. The blue-green colors of the parakeet are believed to be connected to the sky and “the living green of growing maize”.<sup>18</sup> *Popul Vuh* personifies the environmental and agriculture effects of life as writer “water is their blood,” when describing the newly formed people. Religious life guided the political and family structure of the Mayans and corn played a dominant role in how it is shaped. Corn was the primary food for Native American tribes, and religious life reflected and respected the need to grow ample food for their survival. Every aspect of this staple crop was analyzed and used as a representative figure in the daily lives of Amerindians.

Another example from *Popul Vuh* that demonstrates the Mayan dependence of corn for survival of continuous generations is the story of a pregnant woman arriving to her mother-in-law’s house. The mother-in-law is Xmucane and she asks her pregnant daughter in law to retrieve food. She states, “to get food that these may eat. Go and harvest a great netful of

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<sup>17</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality*. p.193

<sup>18</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality*. p.193

maize and return with it”.<sup>19</sup> This story is a reflection of the women’s role to provide for her family. According to Christianson, the net itself represents “the divine order or the universe”.<sup>20</sup> Sent to retrieve a net of maize, this story demonstrates Mayan emphasis on survival and maintaining Mayan dependence on maize. The stories told throughout *Popul Vuh* showcase indigenous civilizations reliance on corn for its sustaining properties.

Stories throughout the culture of indigenous groups in the Americas reflect their dependence on corn. Maize value however emphasized through religious texts has also to do with its ability to be manipulated into a variety of cultural dishes, “in Mexico and the Southwest, stone-ground cornmeal is still made into tortillas, or mixed with meat and steamed in dry husks as tamales”.<sup>21</sup> The heavy presence of corn in dishes was due to its ability to grow in abundance due to advanced agricultural techniques. As corn granted the expansion of Amerindians’ bellies it also provided ample opportunities for indigenous groups across the Americas to increase their civilizations and technology.

Corn became moldable through the recipes that have sustained, influenced and continued to be used in modern day society. Tortillas, tamales and different porridges were able to be created through a process called nixtamalization. Corn is cooked in an alkaline solution in preparation for it to be cooked. This allows for maximum nutritional benefit and for maize to transform into various different textures. Maize’s popularity as a feed, is due to its moldable process that was later shared with foreigners, in addition to a variety of farming techniques, who continued the manipulation of this process in their conquest of the Americas and in the

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<sup>19</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality* p.136

<sup>20</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality* p.136

<sup>21</sup> "Thanks for the Miracle of Corn." CNN.

development of industries in later centuries. Despite these advancements corn is continued to be eaten its original form as well as in cultural dishes created by indigenous groups; but it has also been molded into a variety of feeds, sugars, porridges and alcoholic beverages and also supplied 60% of the Amerindian diet.

Farming provided substances and work for indigenous communities along with the symbolism it obtained from religious texts, ceremonies and practices as it upheld the socio economic and technological development of societies. Ceremonies of harvesting crops and then burning land allowed for the ash of crops to be used as fertilizer for future generations of crops and the religious significance of this practices was sacred as “it is obligatory for all people to give thanks for their food and their land”<sup>22</sup> during days of religious ceremony. This ritual occurred after the cultivation of milpa crops. One of the earliest and most advanced forms of agriculture according to the *World History Encyclopedia* that the Amerindians helped developed is milpa agriculture and the utilization of the three sister plants. Squash, beans and maize were the bases of milpa farming, “the beans used the corn stalks for its vines while adding nitrogen to the soil. Maize required large amounts of nitrogen and provided stalks for climbing bean vines. The squash helped shade the ground and prevent the evaporation of moisture”.<sup>23</sup> Food harvesting allowed for the development of “complex societies with specialization among professions and enough time for higher learning. Improved food production also led to an increase in the total population in the region and the building of infrastructure to improve the quality of life”.<sup>24</sup> For

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<sup>22</sup> Christenson, Allen J. *Popul Vuh the Sacred Book of the Ancient Maya: The Great Classic of Central American Spirituality* p.138

<sup>23</sup> Watts, Timothy J. "Mesoamerican Agriculture." In *World History Encyclopedia*, by Alfred J. Andrea. ABC-CLIO, 2011. [http://libproxy.union.edu/login?auth=shibboleth&url=https://search.credoreference.com/content/entry/abcclio/w/mesoamerican\\_agriculture/0?institutionId=5120](http://libproxy.union.edu/login?auth=shibboleth&url=https://search.credoreference.com/content/entry/abcclio/w/mesoamerican_agriculture/0?institutionId=5120)

<sup>24</sup> Watts, Timothy J. "Mesoamerican Agriculture." In *World History Encyclopedia*, by Alfred J. Andrea.

the Quiche, *echa'* means food in which a person depends on for survival, and thus farming “was a complex process that required large numbers of people working together”.<sup>25</sup> Anthropologists note how climate and environmental conditions are reflected in agricultural techniques, practices and is reflected in the language of indigenous groups. Amerindian dependence on corn was reflected in every aspect of life from religion to work.

### **The Incas & Corn**

Farming was central to the organization of Inca political, social and economic life because it provided means of subsistence and power. The physical landscape of the Inca empire was designed based off the geography of the Andes in South America. The mountains were surrounded by the coast and the Amazon, but the majority of the empire was located in the hidden valleys of the Andes. For the Inca, mountains connected people and trade: the Incas had a series of trails that would connect them to neighboring villages. It was a common practice for people to stack rocks as they completed their pilgrimages or to leave a small gift behind like a feather or a piece of chewed up corn.

Farming was central to the organization of society because goods were used for celebrations, sacrifices and nutrition. In order to maximize production, the Inca implemented an advanced irrigation system that dates back to pre-Incan times from 3000 to 1800 BC<sup>26</sup> called terrace farming. This method involved sculpting mountains to look like a step ladder in order for water to be equally distributed amongst crops. The mountains acted as a highway for the Incas as “the geographical relationship of the montana to the highland resource zones is the primary

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<sup>25</sup> Watts, Timothy J. "Mesoamerican Agriculture." In *World History Encyclopedia*, by Alfred J. Andrea.

<sup>26</sup> Klarén, Peter F. *Peru: Society and Nationhood in the Andes*. New York: Oxford University Press, 2000. p. 5

determinant of the local patterns of settlement, tenancy, economic specialization, and networks of interchange”.<sup>27</sup> The Incas were able to maximize production in dry mountain ranges while simultaneously integrating these farming practices into the structure of their society.

Socioeconomic order for the Incas can be analyzed by the work that civilizations put into farming. The Inca empire was located in an arid and cold atmosphere that allowed for starches like corn, potatoes and yucas to flourish in the soil of the mountain ranges. With over 55 types of corn and over 3,000 varieties of potatoes, farming was central in the cultivation of these crops. In fact, working the fields was integrated into Incas way of life. Irrigated fields were reserved for farming crops such as maize, potatoes and ocas. The Inca empire agriculture provided for 4,500,000 distributed over 1,738,000 square kilometers.<sup>28</sup> Farmers would harvest these crops and send them to the capital for ceremonies.

The trail to the Inca capital, Cuzco is named after corn on the cob, *choclo*. Cusco and the city of Machu Picchu are an example of the important role corn played in the architecture and development of political importance and the lives of civilians through the infrastructure that was influenced by maize. Corn was able to flourish in the Inca empire because it was highly valued and “served to stabilize the food supply and produce surpluses that, in turn stabilized the population and freed up labor to undertake more specialized tasks like constructing elaborate ceremonial buildings and making various crafts”.<sup>29</sup> The harvesting of crops such as corn provided a means of labor to constituents of the Inca empire. Furthermore, the admiration

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<sup>27</sup> Keatinge, Richard W. *Peruvian Prehistory: An Overview of Pre-Inca and Inca Society*. Cambridge: Cambridge University Press, 1996. p.292

<sup>28</sup> Grobman, Alexander, Wilfredo Salhuana, Ricardo Sevilla, and Paul C. Mangelsdorf. *Races of Maize in Peru*. Washington, D.C., 1961. p.25

<sup>29</sup> Klarén, Peter F. *Peru: Society and Nationhood in the Andes*. New York: Oxford University Press, 2000. p. 5

political figures had of corn allowed for elements of this crop to be intertwined with the empire's political life and organization of its territory.



**Figure 1:** Known as *tostada*, this type of corn can be found in variety of Peruvian dishes and served in as an appetizer at restaurants. Cooked in a skillet, *tostada* is recognized as a food farmers eat while cultivating fields because of long-lasting, tasty and snack-like appeal.<sup>30</sup>

### Art as Artifacts

Corn played an important role in Amerindian lives from its social, political and economic participation in the expansion of the three greatest empires in the New World prior to European contact. The Aztecs and the Mayans displayed their admiration for corn in the book *Popul Vuh*. The Incas also believed in ceremonial practices that made corn sacred and although there were more varieties of potato found across the Inca empire, corn retained its cultural prominence. This section highlights how ceramic art is an important artifact when observing the importing

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<sup>30</sup> "Inca's Food Maiz Cancha Chulpe Para Tostar- Dried Corn Chulpe for Toasting - Product of Peru 15oz." Amazon. Accessed March 05, 2019. <https://www.amazon.com/d/Popcorn/Incas-Food-Cancha-Tostar-Toasting/B007FJEWDK>.

functions of daily tasks and how corn played a role in orchestrating these events in the Inca empire.

Ceramic artifacts display how food was consumed for religious ceremonies, festivals and daily meals. Detailed outlineings of figures also represented the empire's political appreciation for corn as well as corn's sacred importance. Historians note how ceramic art displayed and individuals wealth and was considered as a respectable offering, "the Cuzquenos left the ceramic vessels on peaks as offerings to send an ideological message to the local inhabitants, their subject".<sup>31</sup> Richard Keating, author of *Peruvian Prehistory: An Overview of Pre-Inca and Inca Society* explains how items such as "food and culinary equipment connect with it have always been good indicators of class... the vessels, though not only reflected divisions that existed in Cuzquena society, they helped to create such divisions".<sup>32</sup> Maize is used as a decoration in Peruvian art for its political importance and set precedents for individuals status in society. These artifacts give insight on which families were wealthy and maintained religious or political power. Inca culture was incorporated a variety ceremonial practices were centered around corn, and were used to exemplify the power and the honoring of important people.

Corn brought substances to Inca constituents as well supported the political and economic structure of the empire through its sacred role in religious life. Religious ceremonies that honored Inca people were catered with maize based beverages. For example, *Chicha* is a maize beer. The preparation of *chicha* involves breaking corn kernels in one's mouth then boiling the kernels with water and milk under a hay filter. Maize beer is associated with fertility

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<sup>31</sup> Keatinge, Richard W. *Peruvian Prehistory: An Overview of Pre-Inca and Inca Society*. p.182

<sup>32</sup> Keatinge, Richard W. *Peruvian Prehistory: An Overview of Pre-Inca and Inca Society*. p.182



and before participating in any agricultural work, Inca farmers would bestow gifts made from maize to the Pachamama, the goddess of earth and time.

*Qhapaq Raymi* was a practice believed to help corn grow and involved sacrificing a llama and kicking over jars of maize brew for the Pachamama.<sup>33</sup> Another example is *Yawar sankhu*, a sacred food made out of grounded corn and the blood of llamas.<sup>34</sup> The ceremonial use of corn reflected its highly valued properties and use during for celebration. Similar to the Aztec and Mayans, corn's use in these ceremonies is based off its significance in religious folklore that impacts the political rulings and participation of these great Amerindians empires.

Corn also provided a source of income and was used as a tool to organize socioeconomic standing in Inca society. Alcoholic and nonalcoholic corn drinks and food were served during religious celebrations. The drink *chicha morada*, which translates to purple corn is a sweet corn based drink commonly drank in the Andean region. Richard W. Keatinge author of "Peruvian Prehistory: An Overview of Pre-Inca and Inca Society" considers *chicha* an "appropriate drink to offer in reciprocation for work".<sup>35</sup> Incas centralized their government through community efforts and gatherings that were made possible by the vast amount of large community kitchens, storage facilities, ceramic dishes and women who would prepare food and drinks to tax paying citizens. Chiefs would offer *chicha* to those who contributed labor as part of their taxes. Taxes were collected in the form of labor and collection of goods. Collection tax was called *Mit'a* and involved the collection of corn, potatoes, and quinoa. Maurice Godelier calls the labor tax system the "Inca mode of production".<sup>36</sup> Afterwards, these products were collected then placed in large

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<sup>33</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 84

<sup>34</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 273

<sup>35</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 183

<sup>36</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 182

storage facilities. Used for celebrations to honor gods and politicians, corn based products aided in the economic power of civilizations through its collection as a taxed good.



**Figure 2:** From the Pre-Inca Chimu Civilization in the 14th Century the figure is holding a husk of corn. This ceramic figure is used for a specific function as a vase as well as decorative that displays the important role corn played in celebrations.<sup>37</sup>

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<sup>37</sup> "Vase depicting a figure eating corn, artifact originating from Peru. Pre-Inca Chimu Civilization, 14th Century." In *Bridgeman Images: DeAgostini Library*, edited by Bridgeman Images. Bridgeman, 2014. [http://libproxy.union.edu/login?auth=shibboleth&url=https://search.credoreference.com/content/entry/bridgemandea/g/vase\\_depicting\\_a\\_figure\\_eating\\_corn\\_artifact\\_originating\\_from\\_peru\\_pre\\_inca\\_chimu\\_civilization\\_14th\\_century/0?institutionId=5120](http://libproxy.union.edu/login?auth=shibboleth&url=https://search.credoreference.com/content/entry/bridgemandea/g/vase_depicting_a_figure_eating_corn_artifact_originating_from_peru_pre_inca_chimu_civilization_14th_century/0?institutionId=5120)

The acquisition of goods was the method used by the Inca government to collect taxes that would then be utilized for the celebration of the state. Inca remnants uncover several large storage bunkers that were filled with food and supplies utilized for the social gatherings, “one of its barracks were occupied by female specialists who prepared maize beer and fest foods in huge kitchens”<sup>38</sup> others were occupied by elite male administrators. Items left in these storage units were used to facilitate and orchestrate rituals and gatherings. Farming remained central in the socioeconomic order of the Inca empire and growing cycles determined when to have festivals, rituals and sacrifices to celebrate the state. Therefore, most offerings were made during the rainy season.

Human sacrifices were common in Incan societies, “a *qhapaq hucha* was ritually slain as part of a festival celebrating the harvest might be interred with special ears of corn”.<sup>39</sup> People were also sacrificed for fertility purposes and the body would be decorated with corn, dried potatoes and other “cultigens”.<sup>40</sup> Besom highlights the strong correlation “between the image of a plant and its fertility. Thus, the lords of Cuzco left corncobs carved from seashells on the slopes of Mount Wana Kawri and Achpiran... and burned maize ears made of wood on Mantocallas Hill”.<sup>41</sup> Anticipating the fertility of cultigens and the availability of water were believed to have been connected to the worshipping on Incan gods. These ideologies were incorporated into the Incan agricultural calendar. Other offerings included shells, textiles, coca leaves, chicha, feathers, corn products and other types of food that collection contributed to the power of the state.

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<sup>38</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 185

<sup>39</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 39

<sup>40</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 41

<sup>41</sup> Keatinge, Richard W. Peruvian Prehistory: An Overview of Pre-Inca and Inca Society. P. 48

Hernando Pizarro, the Spanish conquistador who conquered parts of the Incan empire was one of the first Europeans recorders of maize. His observations depicted the centrality of corn in indigenous daily life; corn was used a tool to enable state power throughout indigenous groups in the Americas. These groups were the first to mold corn into a variety of forms that would be used for religious ceremonies and it also supported nearly 60% of the average Amerindians' diet. Cultures during this time period were centered around earth's natural processes because indigenous people's religion were based off of growing cycles and the power of the sun. Therefore corn was admired for its sacred role in the creation of humanity and as a substances that aided in the further development of these empires. Central to the government oversight through the collection of taxes, growth in populations and religious life, corn was used as a sacred pillar of indigenous life. The following chapter will depict European contact in the New World. Unaware of the religious significance of corn, Europeans were more focused on expanding their power through the colonization of land and acquisition of goods. Despite this, corn aided in their development and continued to support indigenous populations. The role corn played in the maintenance of state power would transform in later years but its presence in society would remain important.

## **Chapter 2**

### **Corn is the Same Color as Gold**

#### **Impacts of the Columbian Exchange**

As a young student, I was told the story of the Pinta, La Niña and the Santa Maria as they sailed across the ocean blue in 1492. Christopher Columbus was sent on a voyage to find a faster route to Asia, instead he encountered the Americas; catalyzing a movement labeled as the Columbian Exchange. However, I was never told the story of how this biological exchange of goods would transform the cultural landscape of the Americas. This chapter will analyze the true motives of the Europeans as they were able to find riches, establish markets and settlements in the New World. In addition, this chapter will highlight European ignorance towards the sacred value that corn held in indigenous communities: Europeans were not aware of corns potential long-term impact on the growth of future colonies. To them, this easily grown commodity was distinguished as a food for the poor and unworthy.

Europeans looked down on corn, they misunderstood the value that maize held because it was grown easily, cheaply and quickly. However, with the guidance of Amerindians, Europeans were able to use the techniques shared with them to grow their population in the New World. Overall, this chapter will demonstrate how the Columbian Exchange provided a market for the

trade of goods and the creation of capital within the New World. As European presence became more powerful and tactful, maize began to be stripped from its cherished role in Native American culture while keeping its presence in fields and social order. By analyzing the triangle of the slave trade and how it intensified the need to supply and sustain the exchange of goods and people across the Atlantic Ocean, I intend to demonstrate how the nourishing properties of corn and its economic enterprise upheld state powers that were able to guard control over their reigning regions, changing the landscape and culture of the Americas.

### **Europeans First Interactions with the Sacred Maize or not so sacred interactions**

Although the Spanish conquistadors were in search of gold, corn and a variety of other common goods were brought to Europe as they were both valuable and unfamiliar. Although sugar, tobacco and indigo have held a strong role in the development and narrative told of the established colonies in the New World, corn is often a neglected crop for its contribution. Corn is “a ready-to-eat vegetable and storage grain, a source of fiber and animal feed, a heating fuel and an intoxicant”.<sup>42</sup> Popularized as the first alcohol on the new frontier, corn could be brewed into any beer and fermented into any whiskey. Its versatility made corn popular to the Native Americans, the colonizers in America and the people in the Old World receiving the variety of foreign products corn be manipulated into.

The Encyclopedia of World Trade explains how “after Christopher Columbus’s voyages, corn spread quickly to Europe and along maritime trade routes, connecting Spanish and

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<sup>42</sup> Pollan, Michael. *The Omnivores Dilemma: A Natural History of Four Meals*. New York, NY: Penguin Books, 2016. p.25

Portuguese colonies with centers of population in Africa and Asia”.<sup>43</sup> The introduction of these goods to Europe and other parts of the world was the beginning of the Columbian Exchange. This network of commerce traded material goods, animals, produce and even people across the Atlantic Ocean, “ironically, the introduction of cattle by Spaniards into the Americas in the colonial period ravaged teosinte corn in its native distribution as an understory plant in pine and oak woodlands”.<sup>44</sup> The New World provided European explorers a new trading hub that would expand their empire and increase their net worth. In addition to the opening of a new market with the discovery of the Americas, corn catalyzed the growth of industries, trade and a partnership between both sides of the Atlantic.

This paper expands on arguments on the power of corn from its interaction and contact between Native Americans, Europeans and slaves found in historian and professor Alfred Crosby’s book, *The Columbian Exchange: Biological and Cultural Consequences of 1492*. Crosby narrates the impact the discovery of the Americas placed on Europe, Asia and Africa through chapters of his novel that highlight the economic, social and biological impacts of the trade. His book focuses on the biological and cultural impacts the discovery of the New World placed on both hemispheres, with a series of narratives on corn, as it originates from Central America. Through his documentation of trade he describes the increase in population in both hemispheres, and supported by other historians, testaments of the “fast-growing Peruvian strains of corn imported into parts of southern Europe flourished as a spring-summer crop and contributed to population increases in areas of northern Italy and the Basque countries of Spain

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<sup>43</sup> Lopez-Lazaro, Fabio. "Corn." In *Encyclopedia of World Trade: From Ancient Times to the Present*, edited by Cynthia Clark Northrup. Routledge, 2013.  
<http://libproxy.union.edu/login?auth=shibboleth&url=https://search.credoreference.com/content/entry/sharpewt/corn/0?institutionId=5120>

<sup>44</sup> Lopez-Lazaro, Fabio. "Corn." In *Encyclopedia of World Trade: From Ancient Times to the Present*,

and France”.<sup>45</sup> Corn’s nutritional value and fast growing cycle had catalyzed the growth in both hemispheres. This lucrative crop was used primarily as a ritualistic crop for Amerindians that allowed them to support, sustain and augmentation of their states order and health. The Columbian Exchange transformed its role in society by making corn a commodity that fueled the power of the European conquest.

The power of corn was not truly understood by Europeans. To them, corn did not hold the sacred role that it did to Native Americans who worshipped it. However, with harsh winters and in a foreign environment, Europeans began to rely on farming methods utilized by Amerindians who depended on corn to settle in North America. A common story told in American history is the construed story of Thanksgiving in which the Native Americans helped the Pilgrims survive the winter. Although details of this interaction have been misinterpreted, it is true that the Patuxet tribe through the help of Squanto who acted as a liaison between both parties shared farming techniques in hope that the knowledge would aid those who had settled on the rocky and cold coast of New England. Despite the positive exchange of knowledge and food, these European settlers longed to grow their own European grains in the New World. In fact, corn was primarily used as feed and molded into a variety of forms such as flour. Be that as it may, corn helped save and build these first colonies but was not considered worthy enough to be the primary food of these European colonists. Europeans were dependent on the cultivation of corn from a need of survival, to a good that could provide prosperity when not consumed directly.

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<sup>45</sup> Lopez-Lazaro, Fabio. "Corn." In *Encyclopedia of World Trade: From Ancient Times to the Present*,



## Kernels of Social Order

The Columbian Exchange introduced corn to Europeans who depended on this staple crop when expanding their empires. Growing corn in Europe's wetlands was difficult, so the majority of corn was cultivated in the Americas in order to nourish growing populations and sustain the slave trade. Through its increased use, corn had enabled racial prejudice in two ways and continued the hierarchical divide that kept rich white male Europeans in power. The first was through its implication as a poor man's food and the second was through its role in the slave trade. Wheat was preferred over maize by Europeans. Like the potato, corn was not highly favored by wealthy Europeans. Crosby notes how in the Americas the European's demand for their own kinds of food was strengthened by social and racial prejudice, "to this day areas of Mexico consider maize products as food of the Indians, and wheat bread the food of the upper class".<sup>46</sup> This racial bias occurs when Europeans landed in the New World, as they witnessed indigenous dependence of this crop.

Today this connotation no longer exists, but corn remains cheaper than wheat and in fact many individuals who suffer from gluten intolerance use corn as an alternative. Nevertheless, Europeans continued to use maize and its byproducts as feed to expand their farms and newly formed societies. Maize may have held a negative connotation but "for those to whom famine is a reality, maize has the additional benefit of producing food fast. Few other plants produce so much carbohydrate, sugar, and fat in as short a growing season".<sup>47</sup> Maize had the ability to feed large quantities of people and serve as feed for cattle. In order to ensure the stability of the state, England enacted a series of corn laws that regulated its supply demand relation of corn because it

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<sup>46</sup> Crosby, A. W. (2003). *The Columbian exchange: Biological and cultural consequences of 1492*. Westport, CT: Praeger. p.106-7

<sup>47</sup> Crosby, A. W. (2003). *The Columbian exchange: Biological and cultural consequences of 1492*. p. 171

became a staple in market growth and the prevention of famine. Europeans became dependent on its nourishing properties per its ability to produce vast quantities with minimal usage of land. Corn became even more valuable “because it grew on land too poor for other crops, and it became a rich source of calories”.<sup>48</sup>

Through its preservation of socioeconomic order, corn and variety of other of American domestic products such as the potato, peanut, tomatoes, peppers and beans were recognized as the “starchy foods [that] fed Africa’s growing population”.<sup>49</sup> Maize’s sustaining properties served as the expansion tool for European colonization in the New World and upheld racial prejudice that aided in the expansion of slavery. Feeding into state power, corn also strengthened the slave trade as it fed shipments of Africans into the new world, with domestic products being exported out. Corn’s cheap cost as well it being the primary food consumed by marginalized groups made Europeans assume that it was inferior to native European goods.

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<sup>48</sup> Crosby, A. W. (2003). *The Columbian exchange: Biological and cultural consequences of 1492*. p. 171

<sup>49</sup> Cumo, Christopher. "The Columbian Exchange and African Economics and Trade." In *World History Encyclopedia*, by Alfred J. Andrea. ABC-CLIO, 2011.  
[http://libproxy.union.edu/login?auth=shibboleth&url=https://search.credoreference.com/content/entry/abccliow/the\\_columbian\\_exchange\\_and\\_african\\_economics\\_and\\_trade/0?institutionId=5120](http://libproxy.union.edu/login?auth=shibboleth&url=https://search.credoreference.com/content/entry/abccliow/the_columbian_exchange_and_african_economics_and_trade/0?institutionId=5120)

Crop	Average annual production 2008-2012	Primary growing areas	Seeding	Flowering or heading	Harvesting
<b>Corn</b>	12 billion bushels	Iowa	April and	July through	Oct and Nov
		Illinois	May	first half of	
		Nebraska		Aug	
		Indiana			
		Minnesota			
		Ohio			
<b>Soybeans</b>	3 billion bushels	Illinois	May and	July through	Late Sept
		Iowa	June	first 3 weeks	through Oct
		Minnesota		of Aug	
		Indiana			
		Ohio			
<b>Barley</b>	205 million bushels	North Dakota	April and	July through	Late July to
		Montana	May	first half of	end of Sept
		Washington		Aug	
		Idaho			
<b>Oats</b>	76 million bushels	Iowa	April and	July through	Aug and
		Minnesota	May	first half of	Sept
		South Dakota		Aug	
		North Dakota			
		Wisconsin			

Source: USDA 2013 ([http://www.nass.usda.gov/Statistics\\_by\\_Subject/index.php](http://www.nass.usda.gov/Statistics_by_Subject/index.php)); USDA 2010

**Figure 3:** The table above is taken from the U.S. Department of Agriculture's survey of bushels of major cash crops harvested in 2010. The crop production in 2013 showcases that corn was the most produced good at this time. It is also important to note that the majority of these crops were grown in America's corn belt.<sup>50</sup>

<sup>50</sup> Alberta Agriculture and Forestry, Trade and Environment Division, & Economics and Competitiveness Branch. (2018, April 05). U.S. Crops - Where Are They Grown? Retrieved from [https://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sis5219](https://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sis5219)

Type of wheat	Average annual production 2008-2013	Primary growing areas	Seeding	Heading	Harvesting
Hard red	951 million bushels	Kansas	Late Aug to	The following	Late Aug to
winter		Colorado	end of Oct	year from late	end of Oct
wheat		Oklahoma		April through	
		Texas		early June	
Hard red	506 million bushels	North Dakota	April to May	Mid-June to	Mid-July to
spring		South Dakota		mid-July	Mid-Sept
wheat		Montana			
Soft red	426 million bushels	Indiana	Late Sept to	the following	Late Aug to
winter		Ohio	end of Oct	year from late	end of Oct
wheat		Illinois		April through	
		N. Carolina		early June	
		Arkansas			
		Tennessee			
Soft white	209 million bushels	Washington	Early Sept	The following	Mid-July to
winter		Oregon	to mid-Nov	year from mid-	early Sept
wheat		Southern Idaho		May to end of	
				June	
Durum	86 million bushels	WisconsinNorth Dakota	April to May	Mid June to	Mid-July to
wheat		Eastern		mid-July	mid-Sept
		Montana			
		South Dakota			
Hard white	16 million bushels	Kansas	Late Aug to	The following	Late Aug to
winter		Colorado	end of Oct	year from late	end of Oct
wheat				April through	
				early June	

Source: USDA 2013 ([http://www.nass.usda.gov/Statistics\\_by\\_Subject/index.php](http://www.nass.usda.gov/Statistics_by_Subject/index.php));

**Figure 4:** Following the figure 3 is figure 4 that is also taken from the U.S. Department of Agriculture in 2013. Wheat production is categorized in a variety of forms but its total production does not exceed the total production of corn or soybeans.<sup>51</sup>

### Corn Came and Left Africa

The continent of Africa played an important role in the Columbian Exchange, as it was the main supplier of slaves into the New World. By the end of the 16th century, Spanish and Portuguese traders had brought corn to Africa and Asia. With the Columbian Exchange in full effect, large shipments of maize were traded across Europe, Asia, parts of the Middle East and Africa. Crosby notes how maize became one of the most important American foods consumed in Africa and its impact transformed the landscape and culture of Africans who harvested corn.

<sup>51</sup> Alberta Agriculture and Forestry, Trade and Environment Division, & Economics and Competitiveness Branch.

Produced in Africa, corn was also the primary consumed good of African slaves during the Middle Passage. Corn was grown in the coastal region of West Africa and Angola and was fully embraced “by the first half of the sixteenth century. By 1561, it was grown in Mozambique on the east coast, and by the nineteenth century it had supplanted sorghum as a food source in most of the wetter parts of sub-Saharan Africa”.<sup>52</sup>

Produced everywhere in Africa except Uganda, corn became a staple in many individual’s diets<sup>53</sup> in a variety of starchy cultural dishes such as *ugali*, *banku*, *ogi*, *samp* and porridge that are resemblance of the methods of preparation used by Native Americans.<sup>54</sup> Compared to other regions of the world, wheat and rice were the predominant source of carbohydrates while corn’s growing capability and modability was favored in regions in which hunger was more of an issue, as corn had a greater growing capacity. Corn was adopted instead of wheat and rice by “mountain-dwelling agriculturalists on marginal soils where corn flourished, becoming the preferred staple of poorer regions and contributing to population growth wherever a wet season and warm temperatures allowed for successful cultivation”.<sup>55</sup> The introduction and popularity of growing corn in regions deemed to be uncivilized by Europeans furthered the notion that corn was a crop for the indigent and justified slave traders who used corn as a feed to Africans who were captured as slaves.

Prior to the Columbian Exchange, Africa was linked to Asia and Europe through Muslim caravans on the Silk Roads. The Columbian Exchange intensified the demand of African

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<sup>52</sup> Lopez-Lazaro, Fabio. "Corn." In *Encyclopedia of World Trade: From Ancient Times to the Present*,

<sup>53</sup> Crosby, A. W. (2003). *The Columbian exchange: Biological and cultural consequences of 1492*. Westport, CT: Praeger. p.186

<sup>54</sup> "Maize: The Beloved African Food Staple And Its Different Dishes." Answers Africa. May 02, 2018. Accessed March 04, 2019. <https://answersafrica.com/maize-different-dishes.html>.

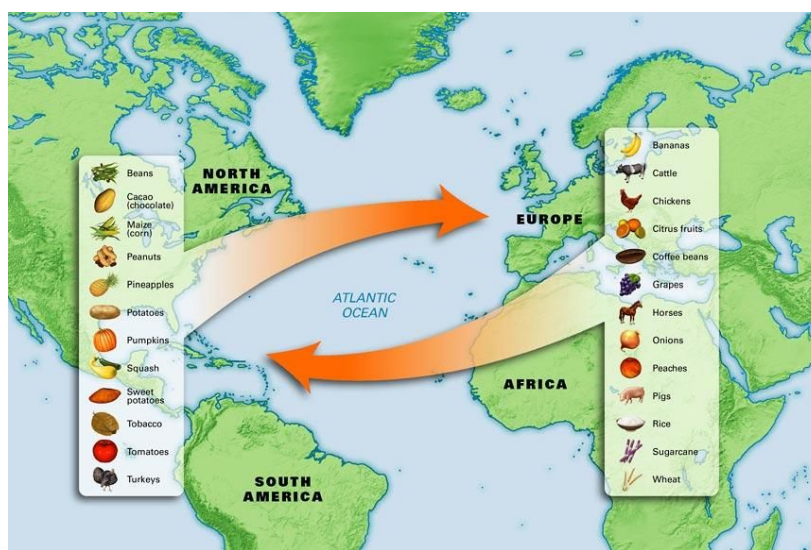
<sup>55</sup> Lopez-Lazaro, Fabio. "Corn." In *Encyclopedia of World Trade: From Ancient Times to the Present*,

products therefore, intensifying the rate of shipments between the new and old worlds. With the increase of cargo sent across the Atlantic, food was needed to sustain passengers and crew members on these voyages. Corn became a solution for merchants anticipating to make maximum profit. More specifically, the byproducts of corn were less perishable, cheap and could come in a variety of forms that could be used to feed slaves travelling from Africa to North and South America, “corn's spread was thus connected to the triangle trade based on slavery”.<sup>56</sup> Corn simultaneously funded the slave trade because it was not only a source of nutrition for passengers but also a good used for transatlantic trade. Corn enabled the participation of a free labor force while shaping slave-based industries that organize the social hierarchy of the New World.

Previously, indentured servitude supplied labor in the New World but with large shipments of slaves that minimized the already cheap cost of indentured servants it became a concern to maintain this order. Therefore, the slave trade continued to thrive as well as the use of corn as a cheap feed. The map in figure 6 illustrates the demand of slaves between 1500 to 1900 that were needed to work the fertile lands of the Caribbean, Chesapeake and what is now Brazil. The demand for labor only continued to increase the demand for food, resulting in larger rates of corn being grown to feed the growing number of slaves and states being formed after the discovery of the New World. Corn catalyzed this growth and its use justified the social hierarchy that prompted Europeans as the maintainer of state power.

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<sup>56</sup> Lopez-Lazaro, Fabio. "Corn." In *Encyclopedia of World Trade: From Ancient Times to the Present*,



**Figure 5:** The map above showcases the introduction of new foods from the Old to New world and vice versa after European contact during the process of the Columbian Exchange. It is important to note how corn and wheat were both introduced as a result of the Columbian Exchange.<sup>57</sup>

Although it is unclear the original date in which corn was exported out of the Americas, historians believe corn was first brought over to Europe in one of Christopher Columbus' first 40 voyages out of the New World. However, the Portuguese explorers were the first to bring bags of corn to Africa and referred to it as *milho*. Likewise, in English, corn referred to any grain and did not simply mean corn or *milho* until it was established as a staple in these cultures. The variety of names associated with this crop displays its important role in a variety of societies and how the development of its name is representative of its growing influence, the Middle Passage established the first market demand for corn. Author Arturo Warman, who wrote *Corn and Capitalism, How Botanical Bastards Grew to Global Dominance*, confirms data that corn was the principle food used during the slave trade.

<sup>57</sup> "Columbian Exchange." Columbian Exchange. Accessed March 12, 2019. <http://epicworldhistory.blogspot.com/2012/07/columbian-exchange.html>.

The exact statistic of the number of bushels of corn is unknown due to a variety of factors related to the poor records kept during the slave trade but the “eighteenth-century market for corn generated by the African slave trade was the largest in history for that grain outside of America”.<sup>58</sup> Warman estimates that a minimum of thirteen tons of corn were needed for the transatlantic portion of the Middle Passage. This would be sufficient food for the 250 slaves on board (not including crew) that would voyage for approximately forty-five days across the Atlantic. This rationed out to two pounds of corn per person per day. Slaves received two meals a day on Middle Passage, one of corn the other of beans. At minimum cost, corn supported the expansion of the slave trade and delegitimize its sacred value for its participation in the profane act of slavery.

A cheap good, corn’s role in the Columbian Exchange brought immense profits to supporters of the slave trade and state. Corn served as “principle medium for exchange,”<sup>59</sup> as it gave extended power to the middle men of the slave trade power. In his book, Warman gives the example of Johny Kabes of Komeda, whom “among his many enterprises, Kabes provisioned the English with raw materials and labor to construct their forts, owned flotillas of canoes for hire, and controlled salt pans and corn plantations that furnished food for slave vessels embarking on the Middle Passage.”<sup>60</sup> Kabes entrepreneurship was based on exploiting labor and utilizing corn as currency and feed. Jean Barbot, a French explorer and active participant in the slave trade, observed in 1632, between the months of February and August that “corn fluctuate in price from a crown to twenty shillings and assumed the increased owed itself to the great number of slave

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<sup>58</sup> Warman, Arturo. *Corn & Capitalism: How a Botanical Bastard Grew to Global Dominance*. Chapel Hill: University of North Carolina Press, 2003. p.63

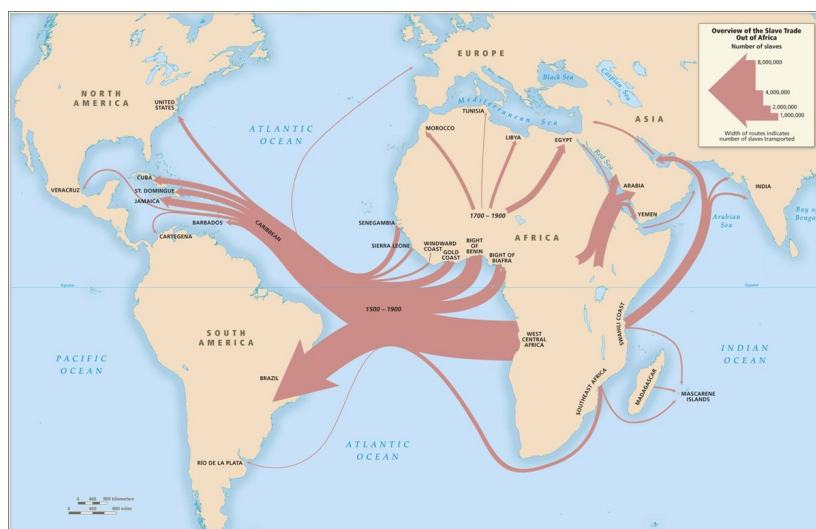
<sup>59</sup> Warman, Arturo. *Corn & Capitalism: How a Botanical Bastard Grew to Global Dominance*. p.63

<sup>60</sup> Warman, Arturo. *Corn & Capitalism: How a Botanical Bastard Grew to Global Dominance*. p.62



ships arriving on the coast”.<sup>61</sup> Warman also adds that farmers saw large profits from corn, selling it to European forts, to slave ships, and to other nations.

Kara Newman, author of *The Secret Financial Life of Food*, explains how the dual identity of corn made it “indispensable to the slave trade: corn was both the currency traders used to pay for slaves in Africa and the food upon which slaves subsisted during their passage to America”.<sup>62</sup> Newman expands on the examples of Johny Kabes and Jean Barbot, by explaining the value of corn in the livelihood of slaves and the fiscal status of its owners. Corn helped centralize power through its dual identity. Without it, the slave trade would be lacking food, goods for exchange, limiting the powers of the state and not providing a method to continue the growth of both regions.



**Figure 6:** The map above is an illustration of the slave trade between 1500 to 1900. The thicker the width of the arrow, the more slaves that were brought to that region.<sup>63</sup>

<sup>61</sup> Warman, Arturo. *Corn & Capitalism: How a Botanical Bastard Grew to Global Dominance*. p.62

<sup>62</sup> Newman, Kara. "The Commodity That Built a Nation: Corn Futures." In *The Secret Financial Life of Food: From Commodities Markets to Supermarkets*, 27-41. Columbia University Press, 2013.  
<http://www.jstor.org/stable/10.7312/newml5670.7>. p.28

<sup>63</sup> "Mapping The Slave Trade: The New Archive (No. 10)." Not Even Past. July 14, 2018. Accessed March 12, 2019.  
<https://notevenpast.org/mapping-the-slave-trade-the-new-archive-no-10/>.

Corn became the gold that European conquistadors came to America searching for. Its golden husks provided high vitamin contents that help fight off diseases like scurvy, a common illness that would plague people on the long voyages. With high yields of production, this American plant was preferred over wheat and rice as a commodity for trade as its short growing cycles and ability to be stored and molded into a variety of flavors and textures. Stemming from the Columbian Exchange, the slave trade gave corn status, as it created a demand for corn therefore increasing its wealth and commonality. The discovery of America provided a platform and opportunity for the exchange of raw materials and goods between the New and Old world. Therefore, corn was used a device to keep this exchange alive and brought wealth upon the many merchants and state participants.

Colonial powers were able to succeed in the New World through their exploitation of the people and crops native to North and South America, in spite of Europeans' disdain for their own consumption of this good. In the years following, nations began to develop off the backs of slaves who were fed corn solely for their survival to execute a purpose of labor. The Columbian Exchange marked the beginning of the discovery of the New World would place on foreign markets. Centuries after the initial discovery of the Americas, the demography and geography would change. European colonies became settlements and eventually their own territories. By 1776 the United States was established. In order to continue maintaining growth, this newly formed nation would continue the practices shared with them by the Native Americans, the exploitation of African slaves for labor and the profits from trading goods across the world. The following chapter expands on how corn enabled this growth and assisted in the powerful and wealthy nation that is now the United States of America.

## **Chapter 3**

### **Corn the American Way**

High yields of corn production transformed the physical landscape of the United States. Over this past Summer I traveled to the Midwest, as I looked out my car's windows I passed by acres of corn fields. Their husks blew in the wind, a sight you don't often see in New England. The culture of the United States began to mold itself based on the availability and resources its land could provide as individuals began to move westward. Thomas Jefferson envisioned the United States to be land of farmers, while President Abraham Lincoln saw the success of specialized regional industries. This chapter illustrates how the regions of the United States have developed based on how farming, specifically of corn, influenced the prominence and success of certain industries. The south became specialized in growing cotton, the north in trade and family farms and the Midwest began to grow its farming and livestock industry. The specialization in regional differences reinforced America's policies that would grant maximum profit for feeding the nation and sending goods abroad. However, tension built up between the predominant sectors of America's labor force.

Small farmers were able to capitalize on the growth benefits of corn but could not compete with large plantation owners who used corn as feed for their slaves but attained most their wealth from cotton. This growing imbalance of wealth within the farming community is depicted in this chapter by the role corn played in each farm plot. Despite the growing disparity between farmers, corn continued to catalyze the growth in population as a cheap source of food and feed the livestock industry. With higher demands for cheap feed, a corn-livestock symbiotic cycle of supply and demand was established. By the end of this chapter I intend for readers to understand how this cheap commodity centralized the United States' focus on increasing supply at lower and cheaper rates, therefore feeding into American's desires and aspirations of food export dominance in the global economy.

### **God Gave Me Land So I Shall Plant**

The newly formed United States was composed of thirteen states all with regional differences in culture and specialization in industry. Nevertheless slavery prevailed and the nation was constituted of small farming communities with a handful of urban areas. Higher rates of immigration and the acquisition of new territories granted civilians the opportunity to move westward. Land was cheap for those who could afford it, amplifying the desire for pioneers to reside on the new frontier. Family farming along with the use of slave labor on small and large plots of land magnified the social hierarchy of the United States. American staple crops such as wheat, tobacco, and corn catalyzed the movement across the North American continent. In addition, the debate surrounding the constitutionality of slavery intensified regional differences and the social hierarchy of America. Despite these contentious issues, farming remained a

ritualistic practice for survival as it provided a source of capital and nutritional value. In order to fund the acquisition of land for farming and the establishment of new states, the federal government sponsored a series of movements and battles in support of securing the prosperity of the United States and its citizens.

The years preceding the American revolution involved a series of battles and triumphs to expand the territory of what was determined to be the United States. The Seven Years War was fought over the Ohio River Valley for its fertile land that could be used for farming and expansion of American industries. In 1803, President Thomas Jefferson paid \$15 million for the Louisiana Purchase, nearly doubling the size of the United States, Jefferson envisioned a nation of small farmers. After the War of 1812, the psychological impact of winning a war against Great Britain, the people of the United States set out a new goal of settling in further western territory. With high rates of agricultural productivity, the formation of a new region and identity was constituted in the United States. Cynthia Clammit, author of *How Corn Shaped the U.S. Heartland*, describes the process by which corn prevailed across the Midwestern region of the US. Clammit quotes a speech by Greg Koos, executive director of the McLean County Historical Museum in Illinois, “it was the use of this plant [corn] and the search for new land upon which to plant it which fueled much of the trans-Appalachian drive in the late 18th century”.<sup>64</sup>

Pioneers driven to establish roots utilized corn because its seeds were able to grow in American soil with high yields of production. Clammit later illustrates how corn was an ideal crop to harvest on small farms and how it brought people further west. She quotes in her novel a letter written by an Illinois pioneer in 1830, “The Land is as Rich as I could wish and the Greatest

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<sup>64</sup> CLAMPITT, CYNTHIA. "BIRTH OF THE MIDWEST AND THE CORN BELT." In *Midwest Maize: How Corn Shaped the U.S. Heartland*, 26-34. University of Illinois Press, 2015.  
<http://www.jstor.org/stable/10.5406/j.ctt130jtgd.7>. p.28

Depth of soil I ever have seen. All the Different Kinds of grain and vegetables grow to the greatest perfection. We can Live as well as we could wish if we had but Comfortable Buildings and Mills to grind our grain Well".<sup>65</sup> Although farmers did not revere corn for its spiritual significance as it did for the Native Americans who cultivated the fields before them, those who settled successfully in America's heartland cherished corn's golden kernels for the wealth it brought to their homes and communities.

The fastest acquisition of states in American history can be correlated to the settlement of pioneers who intended to capitalize off the reaping benefits of corn. The bulk of American statehood occurred after the War of 1812 in western and southern region of the United States. Corn Belt states such as Indiana, Illinois and Missouri achieved statehood shortly after the war. Settling in these new territories provided individuals an opportunity to own land and support families, with corn acting as the predominant supplier of income. Across all societies that prospered off the large harvests of corn, they relied on corn's ability to grow in almost any environment, fast and with minimum cost to provide for their fiscal welfare. Even though wheat remained Americans' cereal of choice, one ear of corn had the worth of half a pound of grain, making it a more favorable cash crop.<sup>66</sup>

By the 19th century, America was experiencing one of its largest waves of immigration. American culture at the time was to continue expanding the boundaries of the nation in order to provide opportunities for its constituents. The term Manifest Destiny was coined in 1845, after Texas was annexed into the Union. It was Americans' God given right to acquire land that would eventually be cultivated. Corn fed desires, individuals' stomachs and new industries. This

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<sup>65</sup> CLAMPITT, CYNTHIA. "BIRTH OF THE MIDWEST AND THE CORN BELT." p.29.

<sup>66</sup> CLAMPITT, CYNTHIA. "BIRTH OF THE MIDWEST AND THE CORN BELT." p.29.

god-given right justified American expansionism, and the policies instituted by the federal government supported the manifestation of land. Corn was used as a tool for settlement and the powers of the state benefited from its physical production.

### **Corn is Not for People**

As corn manifested in popularity abroad, the American farming industry was determined to maximize the use of corn. The Columbian Exchange was the first exhibition of corn into Europe. Previously, wheat was the primary grain Europeans chose to eat. However, corn was not neglected. Instead it was used as feed for slaves and as a supplementary grain. The negative attitude surrounding corn began to change beginning in the 19th century. Author Kara Newman of *From Commodities Markets to Supermarkets*, sites that “40 percent of Europe’s population, meaning that people both produced and ate corn or ate other things that had been grown in association with corn”<sup>67</sup> from the United States. This transition of Europeans welcoming corn products into their diets, promoted the expansion of the corn agricultural industry in the United States. America remained an agricultural based economy however, with the growth in urbanization and population, producers were separated from consumers. Intensifying regional differences. Despite the contrasting economies within the nation, America's improvement in transportation and infrastructure strengthened the connections between regions and increased profit for farming. One can see the effects of food production in increased population size and the rapid assembly of states in the Midwestern region of the United States.

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<sup>67</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. New York: Columbia University Press, 2014. p.29

Historically, the southern portion of the United States is notorious for its use of slaves to grow cotton and other products such as sugar and tobacco for economic gain. Surprisingly, “even during the height of the pre–Civil War cotton boom years, corn occupied between five and twelve times the total surface area planted in cotton among the fifteen slave states. However, the value of corn was two-thirds that of cotton”.<sup>68</sup> The majority of American farms during the pre-Civil War era were composed of small scaled family farms, the bulk of which did not own slaves. Corn was a resourceful commodity for farmers who could not afford to own large farms and purchase slaves. Nevertheless, corn still provided an opportunity for wealth but not at the scale of large plantation owners. The poorest and richest farmers could have corn in the 19th century for animal feed, whiskey or beer. However, slaves were accustomed to eating corn during their journey to the New World, and variety of dishes were made by slaves using their corn and pork rations, “the standard ratio of corn for slaves was a peck of corn a week, or about two pounds of corn a day for an adult slave”.<sup>69</sup> In fact, it could be grown for little to no cost for slaves and “6 percent of slave’s work time on cotton plantations was devoted to the cultivation of corn for food”.<sup>70</sup> Corn was used as an efficient and cheap way to secure the use of slaves as a labor force.

Corn played an important role in the development of slave culture and increased the divide amongst wealthy and poor as it was mainly used as animal feed and food for the unwealthy. Both poor farmers and slaves depended on corn for survival. During the mid 18th century, rich land owners were able to continue increasing their wealth because cotton was double the value of corn. Even though corn was grown at a higher acreage rate than cotton,

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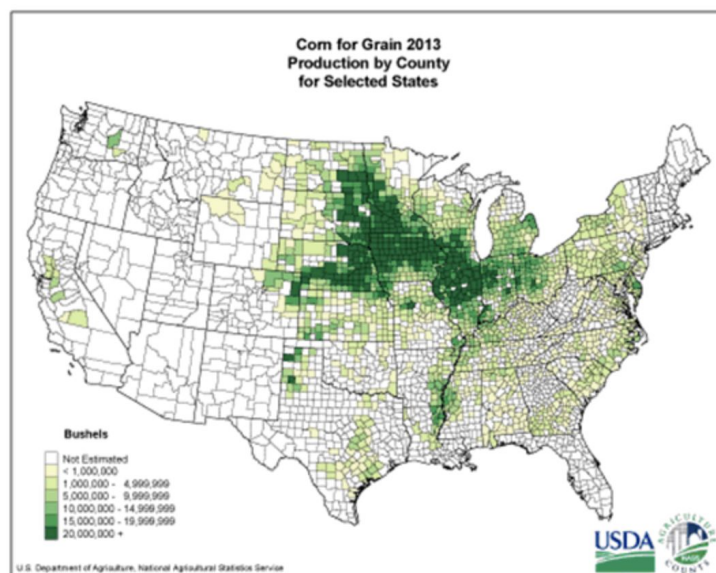
<sup>68</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. p.29

<sup>69</sup> Warman, Arturo. *Corn & Capitalism: How a Botanical Bastard Grew to Global Dominance*. p.160

<sup>70</sup> Warman, Arturo. *Corn & Capitalism: How a Botanical Bastard Grew to Global Dominance*. p.161



cotton's commercial value brought important political and economic power to the southern region of the United States.



**Figure 7:** The map above obtained from the U.S. Department of Agriculture is a report from 2013 that displays the productivity of regions throughout the United States and their corn production. The corn belt region, which is composed of the majority of Midwestern states has areas that produce over 20,000,000 bushels of corn. Corn is grown throughout the United States and high yields of production are also seen in both the Northeast, portions of the South and West coast.<sup>71</sup>

Responsible for feeding people domestically and abroad, corn also became the feed for the American livestock industry. A cheap and hearty commodity, “swine and large livestock traditionally were fattened up, or “finished,” with corn before going to the slaughterhouse, or before walking the long road to central areas”.<sup>72</sup> The Midwestern region of the United States is referred to as the “Corn Belt” because it is the main crop harvested for consumption and for the animal feed sector in the United States. Shaping the identity and industries this of region, corn

<sup>71</sup> Alberta Agriculture and Forestry, Trade and Environment Division, & Economics and Competitiveness Branch.

<sup>72</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. p.33

was being used to feed cattle and hogs, this “corn-livestock paradigm, is recognized as one of the best-run, most economical, and highest-yielding farming regions in the world”.<sup>73</sup> In fact, farmers use a “corn-pig” cycle to determine how many yields of corn to plant and produce each year. For example, “the hog eats the corn, and Europe eats the Hog. Corn thus becomes incarnate; for what is a hog”.<sup>74</sup> An empirical rule of thumb dictated that five pounds of corn was necessary for a pig to gain one pound of weight.<sup>75</sup> Fifteen to twenty bushels of corn were used to fatten up one pig. The “corn-pig” cycle fueled capitalistic practices that support the mass production of both commodities. As a result, corn was an export product by itself and in the livestock products shepherded abroad. Intentionally consumed or not, corn was making its way into the bellies of millions of consumers. The U.S. became the highest consumer of meat because of the abundance of corn and meat produced in various regions. Moreso, American food products were in higher demands and the need to grow them in abundance increased. Corn fed the livestock, farming, and trading industries and the U.S. government, consumers and producers intended to maximize profits made from the production of corn.

American corn products reached further territories as it was packaged in the sale of livestock. At first Europeans looked down upon corn because they preferred crops native to their region. Despite this, they depended on corn for their need for survival and eventually their desire to expand their settlements and power across the Atlantic. This relationship changed as European consumer began to digest corn in variety of its byproducts. Therefore proving its importance and staple in diets. By the 19th century “America was responsible for 90 percent of England’s beef

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<sup>73</sup> CLAMPITT, CYNTHIA. "BIRTH OF THE MIDWEST AND THE CORN BELT." p.33

<sup>74</sup> Quoted in William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: Norton, 1991), 226.

<sup>75</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. p.33

imports”.<sup>76</sup> Consumption of corn elevated as technology developed in the form of refrigerated transportation aided in the corn-fed U.S. livestock exports to Europe. Newman expands on the symbiotic relationship between corn and livestock, “as export demand for American livestock increased, more corn was grown to feed the animals; as more corn was available, a greater share was apportioned for feeding livestock”<sup>77</sup> and was being sold domestically and abroad.

Midwestern cities such as Cincinnati, Ohio and Abbeville, Kansas became the hub for the domestication of animals used for consumption. The identity of the Midwest became defined by its production of corn. Iowa, Illinois, Nebraska, Minnesota, Wisconsin, Indiana, Michigan and Ohio’s fertile lands “produced yields of 40 to 60 bushels per acre—1.1 to 1.7 tons per acre—which were twice the U.S. average at the time”.<sup>78</sup> Large farming communities developed overnight and “corn truly becomes a commodity, that would be around by 1910, when the United States produced a little more than 2.5 trillion bushels of corn, almost 70 million tons. This amounted to more than 1,500 pounds for each of the almost 92 million Americans recorded in the 1910 census”.<sup>79</sup> The domestication of corn across America’s heartland infiltrated a variety of domestic and foreign industries. Corn’s moldability aligns with the U.S. government and consumers adaptability to utilize corn in a variety of ways and a part of Americans’ daily lives. The U.S. census reflects the high demand and consumption of corn that assured the continued growth of corn farming industry.

America’s heartland began to focus on the economic capabilities of growing corn. As the United States was fighting a Civil War, the economic and social future was at stake. Slavery

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<sup>76</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. p.33

<sup>77</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. p.34

<sup>78</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. p.33

<sup>79</sup> Newman, Kara. *Secret Financial Life of Food: From Commodities Markets to Supermarkets*. p.34

brought prosperity to Southerners, at the expense of what is considered moral and humane. The nation divided, President Abraham Lincoln gave a speech in 1962, defining the parameters and the specialization of different regions, “the great interior region, bounded east by the Alleghenies, north by the British dominions, west by the Rocky Mountains, and south by the line along which the culture of corn and cotton meets... In the production of provisions, grains, grasses, and all which proceed from them this great interior region is naturally one of the most important in the world”.<sup>80</sup> Centered in the United States, the Midwest provided food and mobilized the economy and industries of the north and south. President Lincoln believed that Midwestern farmers supported the nation in the abundance of crops they were able to harvest and sell restricted the industries in other regions, “with cheap corn flowing in from the Heartland, farmers back east began to specialize. In New England, dairy and fruit replaced grain as commercial crops, while people in the Middle Atlantic states began to raise more poultry and vegetables”.<sup>81</sup> The economic structure of the United States had been molded by the domestication of one crop’s ability to infiltrate a multitude of industries. It would not be long until the United States would realize the fiscal impact the specialization of farming could have on the world.

By 1865 slavery had ended in the United States. However, former slaves continued to work as sharecroppers for little to almost no pay. Many former slaves moved north for better opportunities. Even with the end of slavery, obtaining a cheap labor source continued to assist America’s growing agricultural business, as its roots has already plotted differences in regional trade and economies. After the Civil War, Thomas Jefferson’s vision of a nation composed of

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<sup>80</sup> CLAMPITT, CYNTHIA. "BIRTH OF THE MIDWEST AND THE CORN BELT." p.31

<sup>81</sup> CLAMPITT, CYNTHIA. "BIRTH OF THE MIDWEST AND THE CORN BELT." p.34

small family farms began to shift to the manufacturing of goods on large corporate estates.

Cotton, tobacco, rice, sugar cane and indigo were the predominant crops cultivated by slaves on plantation. However the shift in the labor force led rise to the cotton, wheat and soybean industries that could be planted and harvested on large fields with the use of advanced agricultural machines. Nevertheless, corn remained vital to the small farmers who could profit easily from its sale and to slaves in which it helped develop their culture and nourish them. The pioneers who moved westward because of their belief in Manifest Destiny, could not predict the prosperity the divine crop of corn would give to the both the Western and Eastern hemispheres diet, trading systems and social hierarchy. The dreams of former presidents could not predict the outcome of the modern day agricultural-complex that influences the political structure of America.

## **Chapter 4**

### **From Purity to Poison**

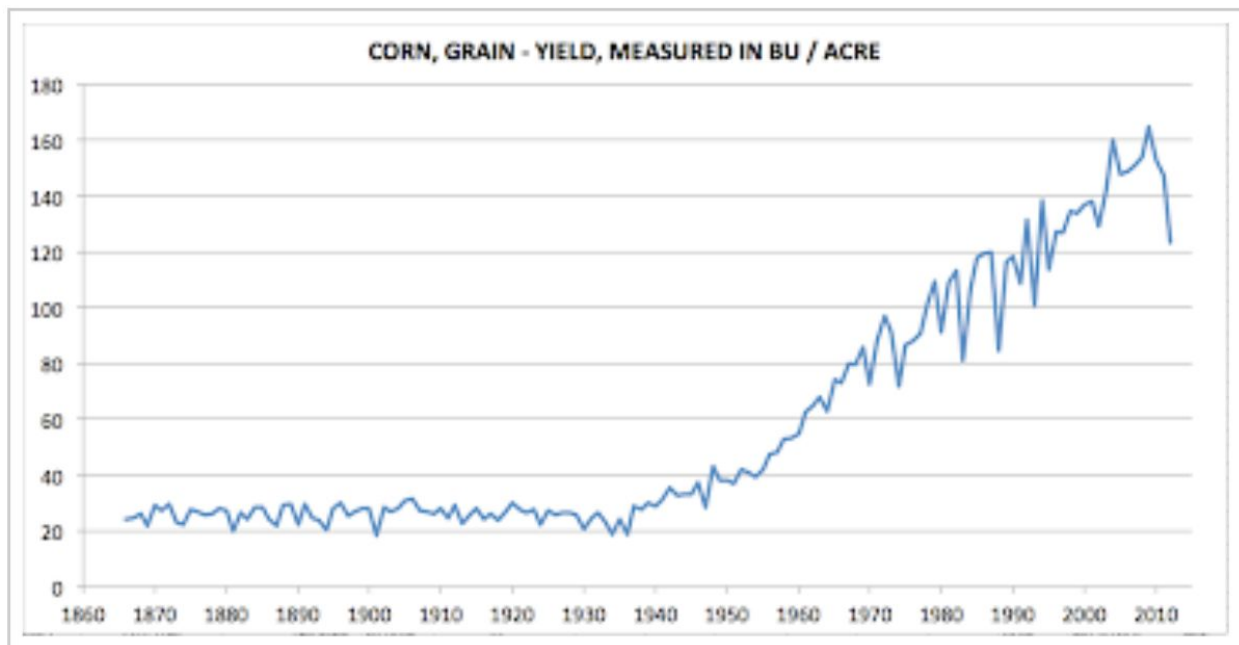
My grandmother grew up on a small farm in Iowa right after the Great Depression. As a young girl she was taught to ration food so the government could send troops fighting in Europe to sustain them during World War II. The years between the Civil War and WWII were transformative in America's agricultural industry. The end of the Civil War marked a shift in agricultural productivity and labor force. As industries began to develop, corn was used as a tool to feed into the livestock industry and expand American farming. Triggered by the Great Depression, this chapter analyzes policies set in place to ensure American security in foreign markets as they continued to export corn by itself, as a byproduct and in refined goods. With advancements in technology the corn that Native Americans worshiped had transformed into a cash crop that could convert into a miracle amount of products. Farming no longer was the job of family estates but rather to ensure economic upsurge, corporations took over the agricultural industry through policies that made the mass-production of goods cheaper and more affordable that were originally meant to support small farms. This involved a series of policies created to mobilize America's economy out of the Great Depression and in the advancement in

technologies used to modernize food production. Despite the negative drawbacks and series of positive impacts of genetically modified corn and its use in refined forms, agribusiness today play a strong role in the political and economic structure of the United States. This chapter will explain how the power of the state is no longer dependent on the marvelty of corn, but rather corporation's ability to alter its natural state and use maize as tool for prosperity.

Fearful of the stagnant growth in food production, the federal government of the United States set policies in place to increase the manufacturing of American crops. A variety of subsidies, farmer compensations and scientific changes of crops's DNA catalyzed the mass production crops such as corn, wheat and soybeans. In the early 20th century, the United States had to compete with foreign competitors, support American industries and feed civilians, as well as nourish troops fighting World War I. An era of food rationing commenced and did not end until after the Great Depression in which President Franklin D. Roosevelt enacted the New Deal. Along came a series of reforms and programs including the Agricultural Adjustment Act (AAA) that changed the future of the American agricultural industry. The policies enacted were meant to support small farmers who could not tend to their crops because of their lack of resources and money.

As policies were being amended to promote American agriculture and farmers, the U.S. also began developing a series of genetically modified organisms that stimulated production and maximized the profit in crops. American policies began to favor the use of these modified crops because of their versatility, high yield of production and low cost. However, large corporations used these modified crops to expand their production and used small farmers to leese the

modified seeds if they also wanted to expand their production value.<sup>82</sup> This chapter explains the process by which the government implemented policies to expand the production of cash crops. As well as, corporations ability to manipulate these policies through their lobbying and monopoly of this American industry.



**Figure 8:** The graph above displays an upward growth in corn production measures in bushel per acre. Starting from 1860, when corn first became domesticated as a commodity, after WWII in 1945, corn production has spiked. With the highest corn harvested around 2008 at 160 Bu/Acre and a low of 20 Bu/Acre around 1900. Eight times higher in the rate of production, this graph emphasizes the United States growing domestication of corn.<sup>83</sup>

The U.S. corn belt had increased in size and rate of production. Modern inventions at the time changed the variety in which corn was manipulated and exported as to foreign markets. For example, corn oil and corn-oil cake reached considerable export levels before WWI. Corn oil

<sup>82</sup> *Food, Inc.* By Robert Kenner, Robert Kenner, Robert Kenner, Richard Pearce, Eric Schlosser, Eric Schlosser, Melissa Robledo, William Pohl, Jeff Skoll, Robin Schorr, Diane Weyermann, Elise Pearlstein, Elise Pearlstein, Kim Roberts, Kim Roberts, Michael Pollan, Michael Pollan, Gary Hirshberg, Joel Salatin, and Mark Adler. Directed by Richard Pearce.

<sup>83</sup> "Early Warning." Relative Price Levels in the Euro Area 1995-2009. Accessed February 06, 2019. <http://earlywarn.blogspot.com/2012/08/estimated-2012-us-corn-yield.html>.



was a cheap and nutritious form oil used for cooking. Likewise, corn oil cake was used as a cost effective feed for animals. As corn continued to be manipulated and exported as a byproduct, World War I changed corn's importance in foreign trade. The biggest competitor U.S. corn was Argentina. As reported by the United States Department of Agriculture compilation of data from 1928 and previous years, some European nations prefer the smaller Argentinian kernels over the corn kernels grown in the United States. Nevertheless, the U.S. continued to produce two-thirds of the world's supply of corn. However only a small percentage is actually exported into foreign markets. The majority of U.S. corn recipients were the United Kingdom, Germany, Cuba, Canada and Netherlands. Statistically the number of corn being exported was low. For example, in 1897 and 1899 corn exports reached 10% while in 1927, less than 1% of U.S. corn was sent abroad. Despite these low figures, exports have generally increased except for the years following the Civil War. In "1900 a record of 213,000,000 bushels of corn were sold. However in 1925 only 10,000,000 bushels were sold".<sup>84</sup> The disparity in percentage of exports and number of bushels sold can be explained by the mass production of corn in the United States. Although millions of bushels of corn were being exported abroad, statistically the percentage of bushels being exported were low because of the surplus in corn.

Corn was not only sold in foreign markets as a commodity but also in the byproduct of other commercial goods. Starting in the 1800s corn was used to feed America's livestock industry. Inevitably cattle and pigs were exported abroad and with the advancement in refrigerated technology, packaged as meat. Cornmeal is another example of corn being exported as a byproduct. Cornmeal is a coarse flour used for cooking a variety of dishes and in 1927, 11%

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<sup>84</sup> United States. Department of Agriculture. *Corn Statistics - Year Ended December 31, 1928, With Comparable Data For Earlier Years*. 1930. p.9

of corn exported came in the form of cornmeal. The USDA *Corn Statics* report from 1930 explains how “modern inventions and chemical analysis have greatly expanded the uses of corn and added to the value of the corn crop... Exports of glucose and grape sugar used to mix with syrups and in the production of such products as jams, jellies, and candy have increased from a little over 13,000,000 pounds in 1881 to nearly 149,000,000 pounds in 1927”.<sup>85</sup> Carbohydrates extracted from the endosperm of corn are used as a thickening agent known as cornstarch. Utilized for cooking and cleaning including laundry work, in dressing and finishing textiles, in the manufacturing of baking powder, and in toilet powders, [were] exported in heavy volume”<sup>86</sup> At a rate of 37,000,000 pounds in 1918 to 212,000,000 pounds in 1927. Despite the variety of corn products used for exports, grits and corn feed were not products valuable for foreign trade.

For centuries, the agriculture industry in the United States has received bountiful support from the federal government. Beginning in the late 19th century, “The Morrill Act of 1862 established the land-grant colleges to teach agriculture and other subjects”.<sup>87</sup> This permitted states to finance colleges that specialized in the study of agriculture. In addition “the Hatch Act of 1887 funded agricultural research, and the Smith-Lever Act of 1914 funded agricultural education”.<sup>88</sup> The federal government went further by enacting the Federal Farm Loan Act of 1916 which intended to increase the credit of rural farmers and established banks that would give farmers loans. Today this farm credit program is known as the “Farm Credit System, which is a

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<sup>85</sup> United States. Department of Agriculture. *Corn Statistics - Year Ended December 31, 1928, With Comparable Data For Earlier Years*. 1930. p.9

<sup>86</sup> United States. Department of Agriculture. *Corn Statistics - Year Ended December 31, 1928, With Comparable Data For Earlier Years*. 1930. p.9

<sup>87</sup> Edwards, Chris. "Reforming Federal Farm Policies." Cato Institute. April 12, 2018. Accessed February 06, 2019. [https://www.cato.org/publications/tax-budget-bulletin/reforming-federal-farm-policies#\\_idTextAnchor007](https://www.cato.org/publications/tax-budget-bulletin/reforming-federal-farm-policies#_idTextAnchor007).

<sup>88</sup> Edwards, Chris. "Reforming Federal Farm Policies." Cato Institute.

government-sponsored financial system with more than \$280 billion in assets”.<sup>89</sup> Eventually these series of reform developed into the Agricultural Marketing Act of 1929 which created the Federal Farm Board, that tried to raise crop prices by buying up and stockpiling production. That did not work, and after spending \$500 million this early agricultural boondoggle was abolished in 1933”.<sup>90</sup> The policies enacted during this time period are reflective of Americans desire to specialize in food production. By supporting farmers the U.S. government intended to increase productivity and profit.

### **Feeding Solutions**

The years following the Great Depression in the United States were an era of mass restoration as American politics were created to promote the livelihood of American workers. Within days of President Roosevelt being elected he called upon Congress to amend a series of reforms that would fix America’s economy after the aftermath of the Great Depression. His program was titled the New Deal and was composed of fifteen major pieces of legislation. In order to restore farm productivity, reduce export surplus and raise prices, the Agricultural Adjustment Administration (AAA) was established in 1933. Under Secretary of Agriculture, Henry Wallace, he planned to “subsidize producers of basic commodities for cutting their output. Its goal was the restoration of prices paid to farmers for their goods to a level equal in purchasing power to that of 1909–14, which was a period of comparative stability”.<sup>91</sup> This thus began the era of subsidized farming. Furthermore, the government established the Commodity Credit

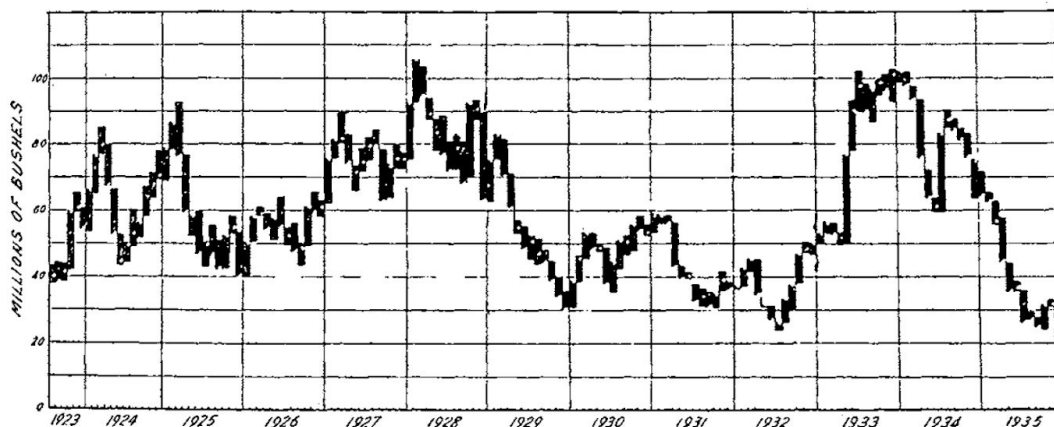
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<sup>89</sup> Edwards, Chris. "Reforming Federal Farm Policies." Cato Institute.

<sup>90</sup> Edwards, Chris. "Reforming Federal Farm Policies." Cato Institute.

<sup>91</sup> Britannica, The Editors of Encyclopædia. "Agricultural Adjustment Administration." Encyclopædia Britannica. April 12, 2018. Accessed February 06, 2019.  
<https://www.britannica.com/topic/Agricultural-Adjustment-Administration>.

Corporation (CCC) in order to facilitate production, “stabilize, support, and protect farm income and prices”.<sup>92</sup> Commodity price support, supply regulations, import barriers and crop insurance were all methods utilized by the federal government in order to promote the production and sale of American crops. However by the late 20th century, these subsidies that were meant to support small scale farms were unable to compete with large agribusinesses that used these premiums to invest in the mass production of goods.



**Figure 9:** The graph above taken from the U.S. Census displays the Chicago Board of Trade's sales from July 1933 to December 1935. A monthly range in “open commitments in corn futures” the graph showcases an upward trend in sales except during a downfall between 1929 to 1933, the years the Great Depression took place in U.S. history.<sup>93</sup>

A spike in American crop production occurred after a series of reforms were set in place to combat the ill effects of the Great Depression. These policies were tailored to promote American agricultural business and the value of American goods in foreign markets. 93% of the corn stalks traded out of the United States came from the Chicago Board of Trade. In 1933, corn

<sup>92</sup> USDA-Farm Service Agency ARC/PLC Program Landing Page. Accessed February 06, 2019. <https://www.fsa.usda.gov/about-fsa/structure-and-organization/commodity-credit-corporation/index>.

<sup>93</sup> *Corn Futures Statistics*. Washington, D.C.: U.S. Dept. of Agriculture, Commodity Exchange Authority. P.9

prices were  $19 \frac{3}{4}$  -  $20 \frac{1}{2}$  cents shorter from the high prices of 1932.<sup>94</sup> Many Americans could not afford the cheapest of American goods during the great depression, and the federal government intended to regulate the price of cheap goods, including corn, in order for American farmers to benefit from sales and minimize the poverty and famine plaguing the nation.

Under provisions of rule 251, in July 1933 the director of the Chicago Board of Trade, “declared that beginning with Monday, July 24, 1933, and effective until further notice, there was to be no trading in corn futures below the following minimum prices, known as pegged prices: July corn, 46 cents; September corn, 53 cents; December corn  $57 \frac{1}{2}$  cents; and May corn., 63 cents.”<sup>95</sup> These minimum prices remained effective until July 1933. The regulatory price modification policies and payments benefitted American farmers and “totaled \$1,500,000,000 by 1936”.<sup>96</sup> However, “a rise in commodity prices was attributable mainly to severe drought conditions in 1933–36. In spite of its limited achievements, the early AAA program was favoured by most farmers. The Supreme Court declared the act unconstitutional in 1936, and Congress passed new agricultural legislation two years later based on the soil conservation concept”.<sup>97</sup> Although farmer’s income doubled between 1932 and 1936, the demands of World War II contributed to the increase demands and accumulated farmer’s surplus in food.

The demands of food supply during World War II catalyzed the growth in food production and modification. The United States was responsible for shipping out crates of food supplies to feed hungry armies fighting abroad in Europe during World War II. At home, American consumers could not afford the already cheap food prices because of the impacts of

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<sup>94</sup> *Corn Futures Statistics*. Washington, D.C.: U.S. Dept. of Agriculture, Commodity Exchange Authority. P.9

<sup>95</sup> *Corn Futures Statistics*. Washington, D.C.: U.S. Dept. of Agriculture, Commodity Exchange Authority. p.9

<sup>96</sup> Britannica, The Editors of Encyclopaedia. "Agricultural Adjustment Administration."

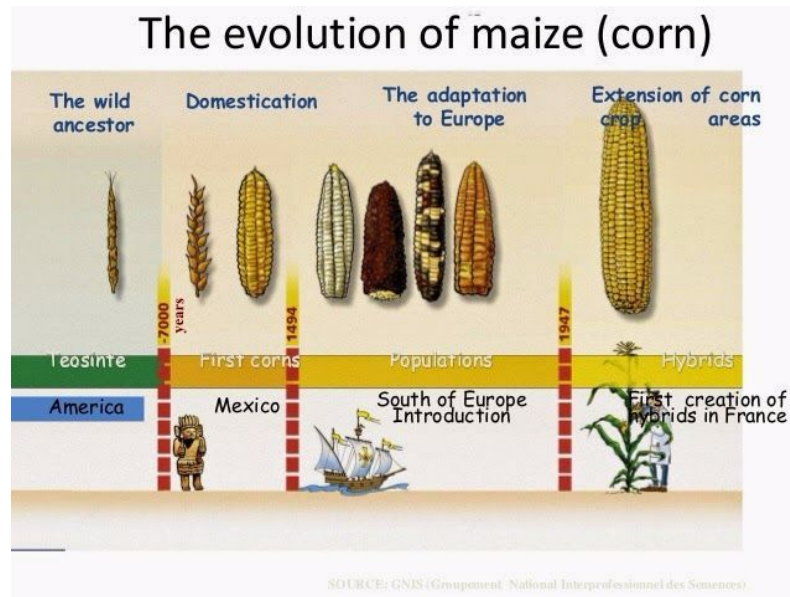
<sup>97</sup> Britannica, The Editors of Encyclopaedia. "Agricultural Adjustment Administration."

the Great Depression and Dust Bowl. With high rates of unemployment, the U.S. government felt the pressure of increasing food supply, decreasing the price of food and promoting American business. The 1920s and 30s sparks the beginning of genetic modification as scientists began breeding hybrids strains of corn in order to increase the yield of kernels. Scientists have gone further with the assistance of large agricultural corporations like Monsanto to engineer “new drought-tolerant strains of corn that can thrive under hotter, drier conditions”.<sup>98</sup> The American food industry evolved from the hands of the federal government concerned about feeding its hungry constituents, to corporations eager to manufacture high yields of corn for profit. The film *Food Inc.* explains how the partnership between the federal government and agricultural businesses to develop these new strains of seeds actually hurt small scale farms. In fact, this evolution in farming actually hurt small farming because it allowed for agricultural businesses to monopolize the farming industry because they own the patents on GMO-ed seeds needed to mass produce these crops.

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<sup>98</sup> Plumer, Brad. "A Brief History of U.S. Corn, in One Chart." The Washington Post. August 16, 2012. Accessed February 12, 2019.  
[https://www.washingtonpost.com/news/wonk/wp/2012/08/16/a-brief-history-of-u-s-corn-in-one-chart/?noredirect=on&utm\\_term=.6cf81f1f4d47](https://www.washingtonpost.com/news/wonk/wp/2012/08/16/a-brief-history-of-u-s-corn-in-one-chart/?noredirect=on&utm_term=.6cf81f1f4d47).

## Manipulating a Commodity



**Figure 10:** The chart above illustrates a timeline of the manipulation of corn starting from prior to European contact to early stages of European experimentation of corn. Today no wild maize exists today. Native Americans cross-bred different varieties of corn in order to produce corn with more kernels. This process has continued and is still replicated today by scientists who want to maximize profit by genetically engineering cobs of corn.<sup>99</sup>

One of the earliest examples of corn manipulation sponsored by the U.S. government is the creation of popcorn. Previously Native Americans would breed together different species of corn in order to forge a corn cob with more kernels. The U.S. government partnered with corporations focused on the production seeds in order to produce unique hybrids of corn able to tailor markets eager to expand the capabilities and outcomes of a corn kernel. Genetic modification for commercial production began in 1934 with the first hybrid popcorn, Minhybrid 250, by the Minnesota Agricultural Experiment Station. Although this hybrid corn only grew on the northern edge of the US. corn belt, other hybrids corns were developed in order to grow

<sup>99</sup> "Story Map Journal." Arcgis.com. Accessed March 07, 2019.  
<https://www.arcgis.com/apps/MapJournal/index.html?appid=4bf275a2146f48eebef6dbd04bdfbea3>.

throughout the corn belt. By the 1940s, “the Indiana and Kansas Agricultural Experiment Stations in cooperation [along] with the U.S. Department of Agriculture's (USDA) Bureau of Plant Industry”<sup>100</sup> developed a series of corn seeds that were able to grow throughout the United States with high yields of productions as the developers took into account “all aspects of cultivation, from seed selection, fertilizers and soils, to insect and disease control, to harvesting, storing and marketing”.<sup>101</sup> Corn had shifted from a staple crop utilized for survival, to a marketable commodity fed to aid the growth of commercial industries.

The story of popcorn is a classic example of American corporations capitalizing off the shortcomings of other industries in order to maximize profit and sales. Large shipments of food were sent across the Atlantic to support American troops and her allies. As a result, a series of laws and campaigns were created to promote food rationing. In particular, there was a shortage in sugar. Candy production had gone down, but popcorn sales went up. Americans began to eat three times as much popcorn as an alternative to their previous snack of choice, especially when visiting the movie theatre. Unfortunately, popcorn sales declined with the invention of the television in the 1940s, “attendance at movie theaters declined and, with it, popcorn consumption. The Popcorn Institute (a trade association of popcorn processors), began a campaign to convince consumers that popcorn was as good to eat while at home watching television as it was at the movies”.<sup>102</sup> American culture was shifting and welcoming the variety of corn produced products into their homes.

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<sup>100</sup> "Popcorn Explosion." United States Department of Agriculture. Accessed February 12, 2019. <https://www.nal.usda.gov/exhibits/speccoll/exhibits/show/popcorn/popcorn-explosion>.

<sup>101</sup> "Popcorn Explosion." United States Department of Agriculture.

<sup>102</sup> "Popcorn Explosion." United States Department of Agriculture.



Advertising to American consumers the benefits of popcorn consumption, the Popcorn Institute along with their partnership with Coca-Cola, Morton Salt and other popcorn companies, “made the early 1950s the largest home-consumption growth period for the popcorn industry”.<sup>103</sup> This GMO-ed crop once again saw an increase in sales by the 1980s, with the expansion of household appliances. Microwave popcorn expanded the array of markets corn’s manipulated kernels could enter as popcorn now be made at home and sold on the shelves of grocery stores. Today the American consumers eat “17.3 billion quarts of popped popcorn each year [and] the average American eats about 68 quarts”.<sup>104</sup> Technology advanced this consumption of this good by marketing popcorn in a variety of settings. Corporations continued to partner with the scientific community to expand the use of corn in a variety of common commodities and large industries’ ability to dominate markets. These businesses were able to maintain control over the variety of forms corn could be manipulated into because of the partnership they had with the government in the development of corn and the capital to increase research and scientific advancements in productivity.

### **Sweet Benefits for Corporate Interests**

One of the most powerful inventions funded by the agricultural industry was their ability to extract specific nutrients and qualities from corn kernel. This advancement transformed the sugar industry as corn had been manipulated by scientists using the funding of corporations to extract nutrients from corn in highly condensed forms of sugar compounds. The Native Americans were the first individuals to manipulate the form in which corn could be consumed.

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<sup>103</sup> "Popcorn Explosion." United States Department of Agriculture.

<sup>104</sup> "Popcorn Explosion." United States Department of Agriculture.

This process is referred to as nixtamalization. Used by the Amerindians, Africans and taught to Europeans in order to develop different varieties flour and alcohol, this technology has been reproduced at higher degrees of scientific advancement by corporate enterprises to be in the form of high fructose corn syrup (HFCS).

Invented in the 1950s, HFCS is an alternative liquid sweetener that was cheap to make and had a long shelf life. This invention help nourish and sustain soldiers during WWII at low costs to the U.S. government. Sugar is composed of fructose and glucose but HFCS is genetically modified by separating the two molecules. Commercialized in the 1960s, high fructose corn syrup can be found in a variety of household products ranging from hair styling products to pickles. From 1980 to 1985 the soft drink industry transitioned to 100% use of HFCS. Today 37.7 lbs of HFCS are consumed a year by the average American.<sup>105</sup> Corporation were in a frenzy because of HFCS cheap cost and ability to serve as a central ingredient in a variety of goods.

Debate over the use of byproducts of corn began to heighten as research over the long term effects of HFCS began to escalate. Today, America has entered an era of high rates of obesity and illness that most scientists correlate with the overuse of corn products. The body processes fructose differently than the compounds of simple sugar, increasing health risks such as fatty liver, diabetes, high cholesterol and cancer. A 20 oz soda has an unhealthy level of fifteen tablespoons of sugar. In addition, unknown and known chemical contaminants to cause damages are used in the manufacturing of HFCS. For example, chloralkali is found in beverages containing HFCS at a toxic level with resiments of mercury. A red flag for poor quality of food,

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<sup>105</sup> CNN. "The Mystery of High Fructose Corn Syrup." YouTube. October 01, 2010. Accessed March 04, 2019. <https://www.youtube.com/watch?v=FawgZ4TGwqE>.

American business are still able to manufacture and sell processed food with the support and assistance from the federal government.<sup>106</sup>

There are over twenty different U.S. subsidies that regulate and promote corn horticulture. These subsidies and policies allow for corn to be wielded into HFCS, cornstarch (a finely grounded flour used for thickening), corn oil (an oil obtained from the germ of corn) and ethanol (a liquid produced from the fermentation of corn natal sugars and alcohol used as supplement for natural gasoline). The policies allocated to corn farming allow for farmers to be protected from the instability of the climate that may corrode the yields of corn production, adjust prices to assist small farms and to establish tariffs that would boost the sales of American corn. However according to the Center for Disease Control and Prevention, the consequences of these subsidies have been reflected in the poor health of American citizens.<sup>107</sup> Nevertheless, large processed food manufacturers, as well as the Corn Refiners Association (CRA) continue to lobby for the continuation of these subsidies.<sup>108</sup> The U.S. government is more inclined to protect these corporate industries than the consumers' health, although the power agrobusiness attained were from policies originally meant to support Americans during an era that was compromising to Americans well being and survival.

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<sup>106</sup> S, John. "Straight Talk about High-fructose Corn Syrup: What It Is and What It Ain't." OUP Academic. December 01, 2008. Accessed March 04, 2019. <https://academic.oup.com/ajcn/article/88/6/1716S/4617107>.

<sup>107</sup> McMillan, Tracie. "Do Corn Subsidies Really Make Us Fat?" National Geographic. July 12, 2016. Accessed March 04, 2019.

<https://www.nationalgeographic.com/people-and-culture/food/the-plate/2016/07/are-corn-subsidies-making-us-fat-/>.

<sup>108</sup> Zorn, Marc. "Who Invented High Fructose Corn Syrup." Vision Launch. July 03, 2014. Accessed March 04, 2019. <http://visionlaunch.com/who-invented-high-fructose-corn-syrup/>.

## Health of a Nation

In a commercial advertisement broadcasted in 2011 by the Corn Refiners Association, a mother is criticized for serving juice containing HFCS at her child's party, she responds "What? It's made from corn, it's natural and just like sugar it's fine in moderation".<sup>109</sup> This advertisement was released after the backlash from consumers and health care professionals began to lobby against the use of artificial sweeteners heavy presence in almost every consumer good. Despite CRA's efforts to change public perceptions, large sugar companies "led by the Western Sugar Cooperative, sued the Corn Refiners Association in 2011, alleging that giant food makers -- including Archer Daniels-Midland, Cargill Inc., and Tate & Lyle -- engaged in a \$50 million ad campaign to promote high-fructose corn syrup as 'corn sugar,' while describing it as 'natural' and 'nutritionally the same as sugar'".<sup>110</sup> As other large corporate manufacturers began to push against the rising use of HFCS, public attitude and perception of this modified sugar began to change. Public concern emphasized that heavily subsidized food has little to no nutritional value, yet the U.S. government has not implemented any policy that would require these corporations to manufacture goods with consumers health in mind.

Corn once provided 60% of Amerindians nutritional value in the variety of cultural dishes it was used as a core ingredient for. Today corn has been mass-produced to the point in which there is little to no nutritional value in its servings. National Geographics explains how the government subsidized commodity crops such as corn make it cheap to grow and consume. However, the overuse of subsidies may be the leading cause in obesity, as "56 percent of all

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<sup>109</sup> Midgica. "Corn Refiners Association HFCS Commercial - Party." YouTube. July 17, 2011. Accessed March 04, 2019. <https://www.youtube.com/watch?v=IQ-ByUx552s>.

<sup>110</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association. Accessed March 04, 2019. <https://corn.org/>.

calories consumed [by Americans] come from subsidized foods”.<sup>111</sup> Researchers proclaim that there is a link between subsidized food and health, “people whose diets contained more subsidized foods tended to have worse health than those whose diets contained less. The people who ate the most subsidized food had a 41 percent greater risk of belly fat, 37 percent high risk of obesity, 34 percent higher risk for elevated inflammation, and 14 percent higher risk of abnormal cholesterol”.<sup>112</sup> These statistics do not comply with American dietary recommendation in which suggest that half of an individual's calories should come from fruits and vegetables and a quarter from whole and unprocessed grains. With the remaining calories being devoted to protein.<sup>113</sup> Even though theses figures are reported from the United States Department of Agriculture, the U.S. government continues to subsidies these nutritionally inadequate cash crops. This puts poorer populations at risk of food insecurity, and once again allocates subsidized corn products as food for the poor.

Corporations are able to lobby and leverage public opinion by using the government to enact policies that favor their interests. This results in neglecting the needs of their average constituents. More specifically, individuals from low-income backgrounds who are forced to purchase food that lacks nutritional value. People from low-income household have less food purchasing power as they are limited to items at the grocery store that are cheap and long lasting. As a result, poorer populations are more at risk of food inadequacy, and other health related issues related to one’s diet. The Center for Disease Control indicated in 2014 that poorer, less

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<sup>111</sup> McMillan, Tracie. "Do Corn Subsidies Really Make Us Fat?" National Geographic.

<sup>112</sup> McMillan, Tracie. "Do Corn Subsidies Really Make Us Fat?" National Geographic.

<sup>113</sup> "Choose MyPlate." Choose MyPlate. Accessed March 04, 2019. <https://www.choosemyplate.gov/>.

educated and racially ethnic minorities are more at risk for diabetes.<sup>114</sup> The U.S. government continued support of large corporations is harmful for the vast majority of Americans.

The use of HFCS has been correlated with the rise in diabetes in the United States but lobbying companies and large scale agro-corporation dispute this cause and effect relationship by using statements such as “at current physical activity levels, most Americans need to reduce their total intake of calories, including calories from sugars and sweeteners. That is why CRA does not promote increased consumption of sugars or other caloric sources”.<sup>115</sup> Rather than admitting to the long term health repercussions HFCS can cause, the CRA puts blame on consumers by releasing statements that support “comprehensive, evidence-based efforts that encourage consumers to achieve and maintain healthy lifestyles through dietary balance, moderation, and physical activity”.<sup>116</sup> Rather than improving the quality of corn byproducts, the CRA chooses to dedicate their efforts to releasing advertisements that justify and promote the use of corn sweeteners, regardless of their health impact. With the approval and support from the U.S. government, despite their acknowledgement of growing health issues, the United States government remains acute to the burgeoning health disparities plaguing the nation.

In response to consumer concerns, the CRA has released statements that are intended to console growing concerns from consumers. The CRA website promises to adapt to the needs of their partnered organizations, consumers and compliance with the federal government. According to their website, they advocate improving Americans health through transparent policies such as “nutrition labeling, the Dietary Guidelines for Americans, and disclosures

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<sup>114</sup> "Diabetes in Low-Income Communities: Its Causes and Its Solutions." Illinois Science Council. January 03, 2019. Accessed March 04, 2019.

<http://www.illinois-science.org/2018/10/diabetes-in-low-income-communities-its-causes-and-its-solutions/>.

<sup>115</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.

<sup>116</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.

concerning bioengineered food (e.g., genetically modified organisms (GMOs))”.<sup>117</sup> However CRA members do not need to comply with this rule when manufacturing HFCS because “the proposed rule would not require disclosure of HFCS from bioengineered corn because HFCS is a pure sugar; it does not contain DNA. So, HFCS is the same whether it was or was not produced from bioengineered corn”.<sup>118</sup> Although CRA promises the use of labelling for genetically modified organisms, this law does impact products that use HFCS. Therefore leaving consumers blindsided by the health impacts or high sugar contents of this artificial sweetener, despite the national trade associations promise to be transparent.

### **Power of Cornperations**

The Corn Refiners Association is a national trade cooperative that represents the corn refining industry and its function helps influence agricultural policies instituted by the federal government. Comprised of five member companies, including Archer Daniels Midland Company, Cargill, Ingredion Incorporated, Roquette America, Inc. and Tate & Lyle Americas, the CRA’s headquarters are in Washington D.C. Fully functioning since 1913, the CRA serves as an important segment of American agribusiness as corn refining companies “manufacture sweeteners, starch, advanced bioproducts, corn oil, and feed products from corn components such as starch, oil, protein, and fiber”.<sup>119</sup> Referenced as “myriad of value-added products,”<sup>120</sup> these commodities are an important for the bolstering of America’s economy and the creation of jobs. The U.S. government interested in the creation of jobs as well as maintaining dominance in

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<sup>117</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.

<sup>118</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.

<sup>119</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.

<sup>120</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.

global markets is devoted to legislating policies that feed the needs of these large corporations.

The power these agribusiness have allows them to influence Federal Food and Drug laws because of their commitment to securing America jobs.

The creation of American jobs has been a focal point in many politicians legislation priorities. Satisfying corporate interests has been an important concern for politicians who receive assurance from agrobusiness. Through this alliance, politicians and corporations are compensated with the creation of new jobs and policies that favor economic return, “according to the U.S. Department of Agriculture (USDA), every \$1 billion in U.S. agricultural exports supports 8,100 jobs in the wider economy”<sup>121</sup> and “in 2017, U.S. corn refiners exported over \$2.1 billion in goods, adding \$4.9 billion to the U.S. economy”.<sup>122</sup> The members of the CRA support a “quarter-million American jobs and an annual economic impact of \$54 billion”.<sup>123</sup> With high returns in economic revenue the CRA supports policies at the state and federal level that work “to foster technological innovation, expand commercial opportunities, advance free trade, build the bioeconomy, and feed a hungry world”.<sup>124</sup> The policies legislators make do not take into account the long term health effect mass-produced food can cause.

Instead, the policies enacted are tailored towards minimizing unemployment and dominating in the free market. America is heavily reliant upon the international market to support 43 million jobs that are needed to export food from its seed to fork. U.S. refined corn

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<sup>121</sup> "Effects of Trade on the U.S. Economy." USDA ERS - Food Environment Atlas. Accessed March 04, 2019. <https://www.ers.usda.gov/data-products/agricultural-trade-multipliers/effects-of-trade-on-the-us-economy.aspx>.

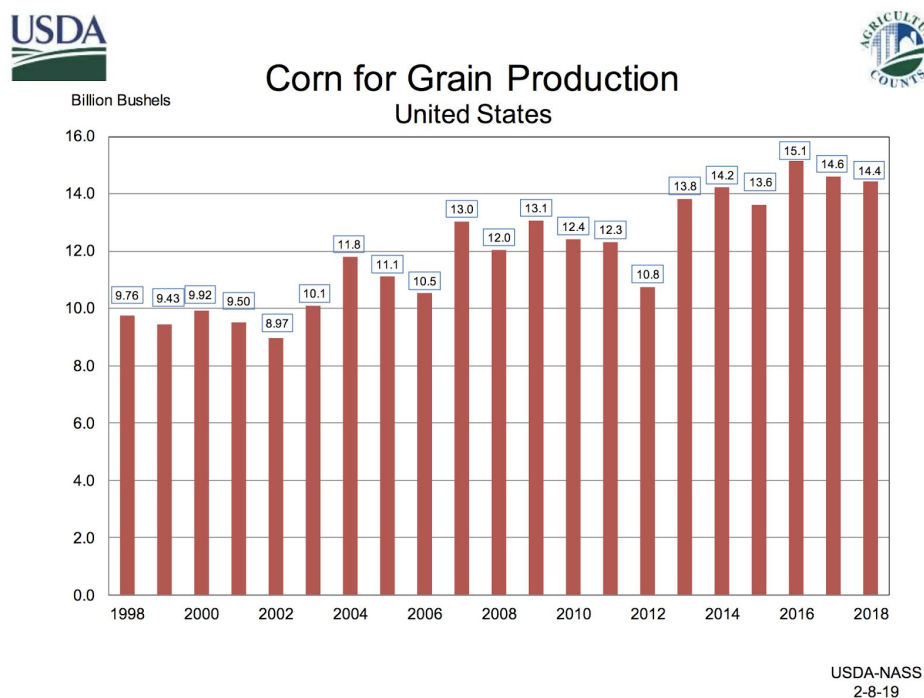
<sup>122</sup> "Effects of Trade on the U.S. Economy." USDA ERS - Food Environment Atlas.

<sup>123</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.

<sup>124</sup> "Corn Refiners Association – Innovating the Kernel." Corn Refiners Association.



represents between 15-20% of crops exported abroad.<sup>125</sup> With high demand for U.S. food products, ensuring the growth in American agriculture is a protocol in ensuring economic stability. Corn has helped catalyzed agricultural corporations strong yield of influence and power over the American diet, economy, landscape and policies. Corn had once held a role of as a sacred figure that upheld the power of the state and the wellbeing of its constituents. Today corn can be correlated to the demise in the health of the nation, through corporations exploitation of its use and support from the federal government. From a pure, life generating crop, corn is now responsible for the degradation of the American people.



**Figure 11:** Published in 2019, the U.S. Department of Agriculture released a graph showcasing the steady growth in bushels of corn produced within the United States. This steady incline in corn production allows for corn to be incorporated into a variety of goods and services.<sup>126</sup>

<sup>125</sup> "Corn Refiners Association Statement On New U.S. Trade Agreement With Mexico And Canada." Corn Refiners Association. October 01, 2018. Accessed March 04, 2019.

<https://corn.org/corn-refiners-association-statement-new-u-s-trade-agreement-mexico-canada/>.

<sup>126</sup> "United States Department of Agriculture." USDA - National Agricultural Statistics Service Homepage. Accessed March 12, 2019. [https://www.nass.usda.gov/Charts\\_and\\_Maps/Field\\_Crops/index.php](https://www.nass.usda.gov/Charts_and_Maps/Field_Crops/index.php).

## **Conclusion**

Today, corn remains an integral part of people's lives and is nearly as important as it was during the pre-Columbian era; however, the importance and variety of corn has been transposed to a more modern context. To the Native Americans, corn was a pillar of their worshipping practice and organization of society. Corn has become a staple in the American diet, yet most citizens are unaware that corn is an ingredient in most food items and can also be used as a political tool for negotiation. Originating in the valleys of central Mexico, corn has been a vital component in the development and expansion of state power throughout centuries of colonization, exploration and growth. A powerful tool in maintaining power, the American government has created policies that promote the capacity for high yields of production. Hoping to reap economic benefits from crop overproduction, the U.S. government policies have supported the success of large agricultural firms.

Although these policies were created to support small scale farms that were once the driving force behind the United States economy, corporate power has transformed the landscape of the Americas. These corporate interests have entrenched the U.S. political will, propagating profit-oriented policies that turned corn into a tool for economic growth. Corporate expansion into the corn industry was a result of the potential for extensive profits and the U.S. government has only exacerbated this issue with negligent policy.

Additionally, religion once played an immense role in the political structuring of indigenous civilizations; yet, currently, money and building capital are more important in the

structuring of the Americas economy and political will. As a feed, corn was able to nourish social groups that have been historically marginalized, but the Native Americans believed that it held spiritual influence and power. They had justified reasons for its manipulated use in a variety of cultural dishes and ceremonies, as there was substantial cultural reverence for maize. Today corn is profane. There is no longer a religious significance for corn, but it has been manipulated to the point where it can cause long-term health damages to those who consume it. Nevertheless, corn is still consumed at the same levels it was prior to European contact. However, in another distinction from Native American cultures, the current levels of manipulation have been done only for the fiscal return of large corporations.

Early U.S. agricultural and land policies were intended to to promote farming in order to expand American individuals, create new industries and bolster population growth. Corporations have used these historic policies to capitalize and monopolize the food market, yet have simultaneously neglected American consumers and workers. Corn was heralded as a ‘bringer of life’ according to the religious story telling of Amerindian groups, but today it contributes to one of the largest health concerns in the US. Concerningly, the U.S. government has neglected to rectify these new developments as consumer interests have been overtaken by corporate influence.

When we begin to analyze the history of corn, it does not begin in what is now the United States. Corn originates from the central valleys of Mexico but is currently produced in bulk in the Midwestern region of the United States. The Columbian Exchange provided the first network of trade and throughout the 19th to the 21st centuries the U.S. began to manufacture corn at an increasingly massive scale; the U.S. government, eager to sell their goods at maximum profit

established the North American Free Trade Agreement (NAFTA) in 1994.<sup>127</sup> The US, Canada and Mexico were the three main arbitrators in this trading alliance. The agreement promised free trade amongst these North American nations to promote the exchange of goods amongst the regions.

The agreement seemed promising to the development for all of the countries economies, but the nations began to experience downturns in nation-specific industries. Mexican farmers could not compete with American subsidized crops, so the United States experienced a large wave of undocumented immigrants coming from Mexico to work in American fields. Ironically the crop that emerged from Oaxaca, Mexico thousands of years ago had become so mass-produced and subsidized in the U.S. that Mexican farmers could not compete with their North American neighbors. This created a two fold problem with conservative Americans: they supported big business but held disdain for undocumented and migrants. Other critics of NAFTA explain that this agreement undermined American jobs and industries. President Donald Trump established the United State-Mexico-Canada Agreement (USMCA) in November 2018, with the intention of modernizing America's agricultural industry.<sup>128</sup> The future sale of American corn abroad can impact the U.S. and world economy, but it currently has unclear and uncertain impacts. What is known, is the American government's main desire is to continue protecting its agricultural businesses and remain a leader in world economy. Corn may no longer hold its religious value, but it will continue to be used by governments and corporations alike to expand its political and economic power in any and all ways possible.

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<sup>127</sup> "NAFTA's Economic Impact." Council on Foreign Relations. Accessed March 12, 2019.

<https://www.cfr.org/background/naftas-economic-impact>

<sup>128</sup> "United States-Mexico-Canada Agreement." Summary of the U.S.-Australia Free Trade Agreement | United States Trade Representative. Accessed March 12, 2019.

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*I affirm that I have carried out my academic endeavors to my fullest ability and honesty*

- Gizela Thomas