

2017

# Lost Opportunities: Ecuador's Yasuní ITT Initiative

Julianna Hitchins  
*Pomona College*

---

## Recommended Citation

Hitchins, Julianna, "Lost Opportunities: Ecuador's Yasuní ITT Initiative" (2017). *Pomona Senior Theses*. 170.  
[http://scholarship.claremont.edu/pomona\\_theses/170](http://scholarship.claremont.edu/pomona_theses/170)

This Open Access Senior Thesis is brought to you for free and open access by the Pomona Student Scholarship at Scholarship @ Claremont. It has been accepted for inclusion in Pomona Senior Theses by an authorized administrator of Scholarship @ Claremont. For more information, please contact [scholarship@cuc.claremont.edu](mailto:scholarship@cuc.claremont.edu).

Lost Opportunities  
Ecuador's Yasuní ITT Initiative

Julianna Hitchins

In partial fulfillment of a Bachelor of Arts Degree in Environmental Analysis  
2016-17 academic year, Pomona College, Claremont, California

Readers:  
Professor Char Miller  
Professor Kenneth Wolf

**Abstract**

In 2007, President Rafael Correa of Ecuador proposed the Yasuní ITT Initiative at the United Nations General Assembly in an effort to contribute to the reduction of carbon dioxide emissions and the local preservation of biodiversity. The initiative proposed enacting an indefinite ban on oil exploration and extraction within the Ecuadorian Yasuní National Park so long as the developed world was willing to contribute to half the forgone costs of drilling. However, despite initial support, the Yasuní Initiative was unsuccessful, and due to a lack of financial support, Correa terminated the proposal in August 2013.

With the increasing threat of climate change, the recent Paris Agreement highlights the need for bold actions such as those proposed by the Yasuní Initiative—which represents a solution that the global community needs. This paper looks at the history of the Yasuní Initiative from its inception to ultimate termination, as a developing country's efforts to take part in the broader discussion of global warming and climate change. The Yasuní Initiative is examined within the context of Ecuador's relation to oil, the country's position as a steward of primary forest habitat that acts as a major carbon sink with rich biological and cultural diversity, in addition to the effect that the oil industry has had on the country with close attention to the Amazon region.

My research suggests that developed countries have limited tolerance for the participation of developing countries in substantive issues of combating climate change. While all indicators suggest that global warming and climate change is the product of human activity, primarily enacted by developed nations whose vibrant economies were formed on the basis of fossil fuel extraction, these developed nations seem reluctant to take responsibility and are unwilling to

assist developing countries who are disproportionately affected by climate change and global warming.

## Acknowledgements

I would like to extend my sincerest thanks to Professor Char Miller, and Professor Kenneth Wolf for their support and guidance during the research and writing process. Furthermore, I would like to thank Xavier Silva and Javier Robayo for showing and teaching me about their beautiful country, Ecuador. And finally, I would like to thank Héctor Vargas for showing me the wondrous nature of the Ecuadorian Amazon— *¡ama la vida!*

## Table of Contents

Chapter One: Setting the Stage.....	5
Chapter Two: Ecuador's Relationship to Oil .....	11
Chapter Three: Ecuador's Biological and Cultural History.....	16
Chapter Four: The Effects of Oil Pollution.....	22
Chapter Five: The History of the Yasuní Initiative.....	27
Chapter Six: Evaluating the Yasuní Initiative.....	38
Chapter Seven: Conclusion.....	48
Bibliography.....	51

## Chapter One: Setting the Stage

Evidence of global warming and climate change is everywhere. News headlines announcing the hottest years on record, extreme weather conditions, rising sea levels and sea surface temperatures, dying coral reefs, melting ice caps, and disappearing water sources, are common and widely interpreted as being part of our global environmental crisis. In July 2016, NASA's Goddard Institute for Space Studies released new data confirming that 2016 climate trends continue to break records with each of the first six months of the year setting a new record as the warmest respective month globally since record keeping began in 1880 (Lynch).<sup>1</sup> Extreme weather conditions are linked to global warming—for example, Hurricane Matthew in October 2016, formed by unusually high ocean temperatures, strengthened at a ferocious rate: upgraded from a tropical storm to a category five hurricane in just three days. Furthermore, examples of changes in our global environment include growth in the mortality rates for living organisms found on the Great Barrier Reef, due to prolonged higher-than-average sea-surface temperatures (Impacts of Rising Sea Temperatures on the Reef);<sup>2</sup> and the disappearance of the Aral Sea in Kazakhstan in 2014, which was once the fourth largest lake in the world, due to climate change and excessive irrigation (Howard).<sup>3</sup> The effects of climate change are not limited to the impact on humans; they also extend to the environment, and our ecosystems. As we continue to strive for securing a safe living environment, initiatives such as the United Nations Framework Convention on Climate Change are necessary to help us maintain this path.

<sup>1</sup> Accessed on 28 September 2016 <https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records/>

<sup>2</sup> Accessed on 28 September 2016 <http://www.gbrmpa.gov.au/managing-the-reef/threats-to-the-reef/climate-change/how-climate-change-can-affect-the-reef/rising-sea-temperatures>

<sup>3</sup> Accessed on 28 September 2016 <http://news.nationalgeographic.com/news/2014/10/141001-aral-sea-shrinking-drought-water-environment/>

Greenhouse gases are proving to be a particularly devastating threat on a global scale, which requires a global solution. The first international response to climate change was launched in 1992 in Rio de Janeiro with the signing of the United Nations Framework Convention on Climate Change (UNFCCC) (referred to here as ‘the Convention’). The Convention established the long-term objective of stabilizing “greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”(First Steps To a Safer Future).<sup>4</sup> Despite the signing of this 1992 document, global warming and climate change continued to increase at alarming rates, necessitating stronger action. As a result there have been several additions and extensions to the Convention, the first being the Kyoto Protocol.

The Kyoto Protocol (referred to here as ‘the Protocol’), was adopted in 1997 (though it did not go into force until February 2005), and was based on the principle of common but differentiated responsibilities. It placed the responsibility of current emission reduction on developed countries on the grounds that they were historically responsible for the current levels of greenhouse gases in the atmosphere due to their industrialization. If developed countries did not make significant reductions in their emissions, there would be increasingly smaller carbon space available to accommodate the needs of developing countries. The Protocol set internationally binding emission reduction targets for its subscribers; the first commitment period started in 2008 and ended in 2012. Participating countries committed to reducing their emissions by an average of five percent below 1990 levels. However, because major greenhouse gas emitters were not part of the Kyoto Protocol—for example China, as well as the United States of America and Canada—the Protocol covered only eighteen percent of global emissions, and so a second commitment period was agreed on in 2012, and will end in 2020. Under the Protocol, the

---

<sup>4</sup> Accessed on 28 September 2016 [http://unfccc.int/essential\\_background/convention/items/6036.php](http://unfccc.int/essential_background/convention/items/6036.php)



emissions of participating countries had to be monitored and precise records kept of the trades carried out. Although the Kyoto Protocol is considered an important step toward a global emission reduction plan and the stabilizing of greenhouse gases, it has not proved to be as effective as needed. In response, a more recent initiative by the United Nations Framework Convention on Climate Change (UNFCCC) was agreed to in Paris in 2015, commonly called the ‘Paris Agreement’ (referred to here as the ‘Agreement’).

The Paris Agreement is the most recent attempt at tackling global warming and climate change and was adopted by consensus in December 2015. The Agreement required unanimous approval by delegates from around the world and the voluntary commitment of nearly every country to lower greenhouse gas emissions. The agreement enhances the implementation of the Convention, and states in Article 2 that it “ aims to strengthen the global response to the threat of climate change” (Paris Agreement Article 2) within the context of sustainable development and efforts to eradicate poverty (UNFCCC).<sup>5</sup> The means by which the agreement proposed to achieve these goals included: limiting global warming to less than two degrees Celsius above preindustrial levels; adapting to the adverse impacts of climate change that does not threaten food production; and ensuring financial flows are consistent with a pathway toward low greenhouse gas emissions and climate-resilient development. The Paris Agreement was implemented to reflect equity and the principle of common but differentiated responsibilities and

---

<sup>5</sup> Article 2 of the Paris Agreement states that: 1. This Agreement in enhancing the implementation of the Convention including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: (a) Holding the increase in the global average temperature to well below 2° C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; (c) Making finance flows consistent with a path towards low greenhouse gas emissions and climate resilient development. 2. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

respective capabilities: “All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of Article 2, taking into account their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances” (U.N. Framework Convention on Climate Change Article 4.19).

However, the means by which each country will contribute toward the lowering of global temperatures varies as the agreement takes into account the limitations faced by developing versus developed countries. The Paris Agreement does not penalize those nations failing to control pollution or meet the respective goals set. However, the agreement’s transparency rules encourage countries to commit to their reduction goals and report on the results of their emissions reduction efforts.

Aside from international initiatives and prior to the Paris Agreement, some of the world’s major greenhouse gas emitters have set national targets to reduce emissions, forging their own initiatives to meet those goals. For example, in November 2011, Australia initiated a carbon trading plan—the world’s largest outside of the Europe. Under this plan, five hundred of Australia’s worst polluters would be forced to pay a tax on their carbon emissions (Gujji Muthuswamy). A second example of a country making similar efforts is India—the world’s third largest emitter of greenhouse gases (What Countries Are Doing to Tackle Climate Change).<sup>6</sup> As a developing nation, India was not required to cut emissions under the Kyoto Protocol, and believes that cutting its carbon emissions in the twenty-first century would hurt its efforts to bring millions of its citizens out of poverty. The Indian government had set a goal to generate twenty gigawatts of solar power online by 2022; estimating that one gigawatt of electricity is enough to power a small city. According to reporters from the Business Standard, in 2010, the

<sup>6</sup> Accessed on 6 October 2016 <http://www.npr.org/2011/12/07/143302823/what-countries-are-doing-to-tackle-climate-change>

country started levying a carbon tax on coal to help subsidize renewable energy projects representing a progressive stance of combating climate change; but arguably the most innovative effort by a developing country is Ecuador's Yasuní Ishpingo-Tambococha-Tiputini Initiative (referred to here as the 'Yasuní Initiative') in 2007.

The Yasuní Initiative represents this country's efforts to address global warming and biodiversity loss. Its central concept was to prevent the exploration and extraction of oil from Ecuador's Ishpingo-Tambococha-Tiputini (ITT) oil block—located in the Yasuní National Park—by sharing the economic loss through a fifty percent compensation package of projected earnings paid to Ecuador by developed countries. The rationale of the Yasuní Initiative was that developed countries had established vibrant economies based on the benefits of extractive industries, resulting in much of the existing greenhouse gases and should therefore be willing to aid developing countries who are being asked to forego this form of national development. As the second richest oil reserve in Ecuador, an agreement to not develop the ITT oil block would avoid the extraction of approximately 920 million barrels of oil, and the resulting emissions of approximately 407 million metric tons of carbon, forgoing approximately USD\$720 million in revenues each year for twelve years (Lang). In return, the Ecuadorian government was requesting a USD\$360 million annual subsidy. According to Bass et al. "The western Amazon is one of the world's last high-diversity wilderness areas" and is exposed to numerous threats including petroleum drilling. In addition to being biologically diverse, the Yasuní National Park overlaps with ancestral Huaorani (or Waorani) territory which is home to two indigenous groups, the Tagaeri and Taromenane who chose to live in voluntary isolation where they continue to practice their culture on tribal lands. Despite the rich biological and cultural value of the region, it is still threatened by the development of oil related industries. The Yasuní Initiative would

have prevented oil exploration and exploitation of the region, thereby preserving its biological diversity and culture, as well as combating global warming by keeping oil in the ground and preventing the emission of greenhouse gases.

The Yasuní Initiative, therefore, not only had the potential to achieve the above but would have also financed development projects such as renewable energy, transportation networks and the alleviation of poverty, amongst others. The Initiative would have relinquished billions of dollars in potential oil revenues, and would have brought substantial social and economic benefits through the Yasuní ITT Trust Fund financing sustainable development projects throughout the nation. Despite the innovative and promising nature of the Yasuní Initiative, on August 15, 2013 President Correa terminated the initiative due to a lack of financial support. In five years, only USD\$336 million in pledges had been raised—less than ten percent of the needed funds for the period and the amount collected from donors was only USD\$13 million (Sovacool & Scarpaci).

I contend that the failure of the Yasuní Initiative represents a lost opportunity in the fight against global warming. This study will not only assess the history of the Yasuní Initiative from its inception to implementation and ultimate termination but will evaluate how the design and execution of the initiative by a developing nation might have accomplished what its authors had in mind and contributed toward establishing a political environment of trust and unity in the fight against climate change. Any assessment of the Yasuní Initiative needs to be made in the context of Ecuador's development and relationship to oil, as well as the country's position as a steward of primary forest habitat that acts as a global carbon sink with rich biological and cultural diversity, and the effects the oil industry has had on the country.

## Chapter Two: Ecuador's Relationship to Oil

Ecuador is located on the Pacific coast of South America and is slightly smaller than Nevada with a total area of 283,561 square kilometers and a population of sixteen million people (Central Intelligence Agency). The country can be divided into four main geographic regions (see figure 1): the coastal plains along the Pacific coast (La Costa), the snow-capped Andes of the interior highlands, with the highest peak of Chimborazo at 6,267 meters (Sierra/Páramo), the Amazon jungle to the east (Oriente), and the Galápagos Islands located 1,000 km from the west coast.



Figure 1 Map showing the four geographic regions of Ecuador. Source: <http://geography.ridley.on.ca/>

Allen Gerlach explains that with the exception of the Galápagos, the country was occupied by indigenous populations, and prior to the Spanish conquest, in the early sixteenth century, these populations were divided and protected by the geographical features of the landscape, which included the steep Andean mountains, the thick vegetation of the Amazon, and 1,390 miles of coastline; allowing the formation of remarkably different tribal groups, cultures and languages (1). The Spanish conquest not only resulted in the colonization of the country, but also resulted in expanded ethnic diversity and a racially stratified society.

Oil has played a role in the development of Ecuador for centuries. This natural resource was first used by the indigenous peoples to “caulk canoes, waterproof arms and utensils, as well as make torches” (Gerlach 33). Since then, the exploitation of oil has transformed to more sophisticated uses, as Ecuador’s modern history (between 1900 and 2016) can be considered in the context of the effect that the international oil industry has had on the country’s economy, environment, and people. Commercial oil wells were first established in 1921 when Standard Oil obtained the first concession to explore and exploit this natural resource (Gerlach 33).<sup>7</sup> A more aggressive stance on oil exploration was initiated in 1967 when the “Texaco Gulf consortium discovered vast amounts of crude in the far north of the Sucumbíos province in the Oriente. Oil launched Ecuador’s third economic boom of the century, following those of cacao and bananas” (Gerlach 33).<sup>8</sup> Gerhard Drekonja states in his 1980 study that “Prior to mid-1972, when oil first began to flow through the pipeline, Ecuador existed contemplatively and modestly on the basis of exports of bananas, coffee, cocoa, sugar and shrimp. At best, export profits reached 200 million dollars per year.” (77). At the beginning of the oil era, in the 1920s, privately owned US oil companies initially controlled the market price for oil, until the formation of the Organization of Petroleum Exporting Countries (OPEC) in 1960.<sup>9</sup> The objectives of OPEC included “to coordinate and unify petroleum policies among Member Countries, in order to secure fair and stable prices for petroleum producers; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry” (Brief History).<sup>10</sup> In the early 1970s OPEC reduced oil exports to non-OPEC countries, thereby

<sup>7</sup> Standard Oil is an oil company established in 1870 by John D. Rockefeller in Cleveland, Ohio.

<sup>8</sup> The Sucumbíos province is the fifth largest province in Ecuador, located in the northeast region of the country.

<sup>9</sup> The Organization of the Petroleum Exporting Countries (OPEC) was founded in Baghdad, Iraq with the signing of an agreement in September 1960 by the Islamic Republic of Iran, Iraq, Kuwait, Saudi Arabia and Venezuela.

Ecuador would eventually join in 1973. [http://www.opec.org/opec\\_web/en/about\\_us/24.htm](http://www.opec.org/opec_web/en/about_us/24.htm)

<sup>10</sup> Accessed on 23 October 2016 [http://www.opec.org/opec\\_web/en/about\\_us/24.htm](http://www.opec.org/opec_web/en/about_us/24.htm)

creating an international shortage of oil and pushing prices higher so that member states such as Ecuador could reap greater profits (Gerlach 34). The increase in oil prices had a significant impact on the Ecuadorian economy: “Oil lifted foreign exchange earnings eightfold between 1971 and 1974 and almost overnight provided nearly one-half of all government revenue” (Gerlach 35), resulting in the nation’s rapid development. Oil replaced Ecuador’s agricultural exports; Alan Gelb explains that “cacao was the main engine of Ecuador’s economy from the late nineteenth century until the 1920s... A sharp decline in cacao production from 1920 to about 1950 thrust the country into a long period of economic stagnation. This ended with the introduction of bananas in the 1950s which became the main export crop until superseded by oil in 1973.” (173).

Following the discovery of oil, Ecuador was cursed with political instability and frequent shifts in government. “For almost forty years, political life centered around a strong populist caudillo, José María Velasco Ibarra, five times elected to the presidency, and four times toppled by armed force” (Gelb 174); Velasco was finally removed as president through a military coup in 1972.<sup>11</sup> During the time of Ecuador’s oil wealth that followed Ibarra’s presidency, there were several more shifts in government, and for the next seven years following the coup of Velasco, the country was directed by a military regime under the leadership of General Rodríguez Lara. The military dictatorship “was strongly nationalistic and attempted to eliminate economic dependency on foreign powers, to promote self sufficient economic development, and to carry out a radical agrarian reform” (Gelb 174). After assuming power, the military government shared its vision to modernize the nation by increasing the state’s share of oil revenues, as a result of oil prices steadily increasing between 1972 and 1980. As such, the state’s income rose but most of

<sup>11</sup> Caudillo refers to a head of state; military dictator. <http://www.dictionary.com/browse/caudillo>

the newfound wealth, approximately forty-five percent of oil-generated revenues, was spent on the armed forces (Gerlach 36).

During the 1970s and 1980s, the state, under military control, began a process of nationalizing oil companies; whereby any foreign or privately owned oil company was heavily taxed. This shift to the nationalization of foreign companies resulted in the appearance of economic progress and was well received due to the perception of an expanding industrial complex and the growing wealth of the republic. Unfortunately, this increased wealth did not have a significant impact on the lives of ordinary Ecuadorians and General Rodríguez Lara began to lose popular support. After seven years of military rule, the country returned to the democratic election process, which resulted in the presidency of Jaime Roldós, who held office between 1979 and 1981. Despite the ongoing perception of national growth, Roldós soon discovered that Ecuador's foreign debt had increased twenty-fold from \$209 million in 1970 to \$4,167 million in 1980 as the military junta had borrowed money using the nation's oil reserves as collateral for a range of ambitious modernization projects. This was the beginning of Ecuador's decline as a prosperous oil state and growing recognition that the perception of oil providing an endless source of wealth was misleading (Gerlach 39).

As the 1980s unfolded, the country's dependence on oil continued even though a dramatic decline in international oil prices resulted in Ecuador experiencing a severe economic depression; further damaging was the public's realization that much of the country's wealth had been squandered. The decline in oil market prices was met with major changes in developmental policies and leadership; between 1981 and 1997 five different presidents had been elected and the country responded to dwindling oil prices by increasing oil production. The rise in oil volume resulted in Ecuador exceeding the quota granted by OPEC, and in 1992 Ecuador left OPEC to



further boost its oil production. With the continuing fall of oil prices and increasing production levels, the state entered a vicious cycle of inflation and recession characterized by domestic deficits, slow economic growth and a growing foreign debt.

### Chapter Three: Ecuador's Biological and Cultural Diversity

The Ecuadorian Amazon covers 100,234 km<sup>2</sup> of land and contains two categories of reserve: public protected and untouchable areas (Zonas Intangibles). However, sixty-eight percent of the Amazon basin is covered in oil blocks, thirty-two percent of which are active and thirty-six percent are open for bidding. Protected areas cover twenty percent while untouchable areas cover twelve percent of the area. According to Janeth Lessmann et al., these areas overlap and four protected areas in the Amazon have significant proportions of their lands located within oil blocks, they include: Limoncocha Biological Reserve which has a hundred percent overlap; the Cofán Bermejo Ecological Reserve that has an eighty-four percent overlap; the Yasuní National Park with a forty-five percent overlap; and the Cuyabueno Wildlife Reserve that has a twenty-two percent overlap. As a result of this negligent zoning, only sixteen percent of the Ecuadorian Amazon is truly covered by protected zones free of oil blocks (5002).

According to R. A. Mittermeier et al., the western Amazon region is considered a wilderness area of high-biodiversity (10309). The Yasuní National Park, located in the upper Napo basin of the western Amazon region, was established in 1979 and declared a UNESCO World Biosphere Reserve in 1989. The park is notable because of its richness in diverse species, as well as being home to a number of endemic and endangered species.<sup>12</sup> Although the exact reason for the park's wide biodiversity is unknown, Judith Kimerling et al. speculates that this is a result of the unique climatic conditions that existed during the Pleistocene era, referred to as the "Pleistocene refuge hypothesis" (33). According to this theory "much of the Amazon basin dried out during periods of heavy glaciations, but isolated areas, including the Napo River area

<sup>12</sup> Endemic species are those that exist only in one geographic region, see <http://www.encyclopedia.com/environment/encyclopedias-almanacs-transcripts-and-maps/endemic-species> ; Endangered species are those that are threatened with extinction, see <http://www.merriam-webster.com/dictionary/endangered%20species>.

of the Oriente, remained moist providing refuge for rain forest plants and animals. During these periods of isolation, new species appeared. As a result, refuge areas are characterized today by a high degree of plant and animal diversity and endemism.” (Kimerling et al. 33).

The Yasuní National Park possesses impressive species richness which is evident in the taxonomy of amphibians, birds, mammals, and vascular plants; Yasuní National Park reaches diversity maxima with an estimated 274 documented amphibian and reptile species, 597 documented bird species, 176 mammal species (including ten co-existing primate species), and over 3,000 documented vascular plant species. According to Bass et al., the park can be classified as one of the two richest sites for amphibian species in the world, the second richest site for reptiles, one of the nine richest sites for vascular plants, one of the richest lowland sites for birds, and a site with extremely high mammalian richness, especially for bats (7). At the local scale, the park protects forests that harbor peak global richness for amphibians, birds, and mammals. However, this species richness in the taxonomy of species does not extend uniformly from north to south along the Andean foothills. Therefore, even within the western Amazon, the Yasuní National Park stands out.

The region is also known for its considerable number of endemic species. It should be noted that assessing endemism in the western Amazon is a particularly arduous task as vast areas within this region have yet to be surveyed and as a consequence, the distribution of species is still being investigated. With that said, there are substantial numbers of known regional endemics (species completely, or mostly, confined to the Napo Moist Forest ecoregion). This includes forty-three documented vertebrates, and estimated 220-720 plants, twenty amphibian species (endemic to the Napo Moist region), nineteen regionally endemic birds, and at least four mammal species. The region also has a considerable amount of globally threatened species

including thirteen documented vertebrates, and an estimated fifty-six plant species (twenty-eight documented within the park, and twenty-eight expected). With an additional fifteen vertebrate species near the classification of threatened, along with an estimated forty-seven plant species (thirty documented, and seventeen expected); the region is clearly sensitive to environmental change and its preservation is of utmost importance.

Bass et al., explains that the Yasuní National Park has the potential to sustain this biodiversity in the long term with its “1) large size and wilderness character, 2) intact large-vertebrate assemblage, 3) International Union for Conservation of Nature (IUCN) level II protection status in a region lacking other strictly protected areas, and 4) likelihood to maintain wet, rainforest conditions as climate change-induced drought intensifies in the eastern Amazon.” (13).<sup>13</sup> According to Carlos Larrea and Lavinia Warnars, human activity has severely affected biological diversity in the last fifty years, particularly in tropical rainforests and climate change threatens to aggravate this situation. The Stern Review noted that a global temperature increase of between one and two degrees Celsius (considered as moderate) could lead to the extinction of between fifteen and forty percent of existing species (6).

Ecuador’s population is as diverse as its landscape; this diversity is a result of the country’s *mesitzaje*. According to Lourdes Martinez-Echazabal, mestizaje refers to the “process of interracial and/or intercultural mixing, [and] is a foundational theme in the Americas particularly in those areas colonized by the Spanish and the Portuguese.” (21). *Ecuador Country*

---

<sup>13</sup> The International Union for Conservation of Nature (IUCN) is a membership Union uniquely composed of both government and civil society organizations. It provides public, private and non-governmental organizations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together. IUCN protected area management categorizes protected areas according to their management objectives. There are six categories for protected areas: Category Ia: Strict Nature Reserve; Category Ib: Wilderness Area; Category II: National Park; Category III: Natural Monument or Feature; Category IV: Habitat/Species Management Area; Category V: Protected Landscape/Seascape; Category VI: Protected area with sustainable use of Natural resources. <https://www.iucn.org/theme/protected-areas/about/protected-areas-categories>

*of Contrast* by Lilo Linke describes the Ecuadorian people and their racial groups in the 1940s and 50s. According to Linke, racial demographics were often hard to obtain given that “most Ecuadorians, above all in the rural areas, distrust officials and presume that forms to be filled in are all to do with taxation. People therefore reply as evasively as possible.” (10). However, according to the information provided by Linke, a government publication in 1942 gave the following race distribution for the country: 41 percent Mestizo (mixed Indian and white), 39 percent Indian, 10 percent White, 5 percent Black and Mulatto, and 5 percent other (12). These numbers have shifted in the last seventy-four years, as the World Bank provides contemporary demographics as 71.9 percent Mestizo, 7.4 percent Montubio, 7 percent Amerindian, 6.1 percent White, 4.3 percent Afroecuadorian, 1.9 percent Multatto, 1 percent Black, and 0.4 percent other. Linke states that, “race [in Ecuador] is so closely linked with social status” (10) and the existing social hierarchy is an extension of what was established during the colonial era with whites at the top of the social ladder forming the upper-class, followed by the mixed mestizos forming the middle-class, and finally at the bottom, indigenous people/Indians. The history and culture held by Ecuador’s indigenous peoples is invaluable, and as a people who survived the onslaught of the conquistadors, the subjugation that they introduced, and the epidemics that killed so many, they continue to be oppressed, but in this case, by oil corporations.

Ecuador’s Amazon basin has a rich heritage of indigenous cultures and is home to several indigenous groups, including: the Quichua, Shuar, Achuar, Cofán, Huaorani, Tagaeri, Taromenane, Shiwiar, Secoya, and Siona. Indigenous communities have become increasingly threatened as the oil industry which has continued to expand since the beginning of the oil boom in the 1970s. Clark Gray et al. elaborated that the expanding oil territory meant dwindling indigenous territory—a significant problem for indigenous groups, especially for those living in

voluntary isolation, as indigenous populations typically use large portions of land to sustain their way of life which relies heavily on hunting and shifting cultivation systems (98).<sup>14</sup> Oil company activities such as road construction promote colonization as industrial expansion is followed by loggers, ranchers, and agro-industrialists who destroy and degrade the forests, and undermine the autonomy of the indigenous communities. Although increasingly exposed to outside threats, indigenous communities have maintained their cultures while adapting to these unavoidable changes occurring around them.

Indigenous cultures remain strong; although not immediately apparent as individuals have not maintained many of the overt signs that contribute to the native Amazonian stereotypes—for example men and women wearing loincloth clothing. However, most indigenous communities now wear western clothes, and rely to some extent of mixed subsistence, trade, and cash economies. Furthermore, although many indigenous people speak Spanish, especially the younger generations, it is their second language; these communities have maintained their native tongue which is typically spoken within their homes and communities (Kimerling 37).

Within the Yasuní National Park live the Quichua, Huaorani, Tagaeri, and Taromenane groups. The Tagaeri and Taromenane are the only remaining indigenous groups living in voluntary isolation, and are descendants of the Huaorani who have lived in the Ecuadorian and Peruvian Amazon since ancient times and occupy most of the Yasuní National Park. Traditionally a group of people who have resisted contact and trade with their neighbors, the Huaorani have become known for their violent behavior. The first missionaries to the Ecuadorian

---

<sup>14</sup> Shifting cultivation is a method where by cultivators clear small plots or primary or secondary forest for temporary use. The cleared vegetation is mulched or burned, and a diverse mixed of crops are planted for one or more agricultural cycles, after which the plot is left fallow for multiple years (Gray et al.)

Amazon referred to the Huaorani as savages since they did not accept, and resisted, any contact with outsiders. Relations were eventually established in 1956 when the Summer Institute of Linguistics created a program for the Huaorani with an objective to limit them to certain lands—the Huaorani Protectorate. The impact that the oil industry, and other following trades have had on these groups is significant, and as such some groups, including the Tagaeri and Taromenane, have resisted and retreated further into the forest to maintain their way of life uninterrupted.

## Chapter Four: The Effects of Oil Pollution

Although Ecuador's oil reserves undoubtedly enhanced the national economy, it also caused significant political turmoil in the absence of consensus regarding the manner and rate at which the resource should be exploited and the way in which the resulting profits should be spent and invested. The effects of the oil industry have therefore been significant, impacting the political, economic and social development of the country. According to Dara O'Rourke and Sarah Connolly in their paper titled "Just Oil? The Distribution of Environmental and Social Impacts of Oil Production and Consumption" these authors claim that the "increasingly complicated and expensive processes for locating oil deposits in remote and inhospitable locations, bringing the oil to the surface, and then getting it to a market have major environmental, cultural and health impacts" (593). Once potential sites for oil extraction have been identified, but prior to determining whether commercial-scale drilling is viable, access roadways and infrastructure have to be constructed. As such, oil companies are required to build roads, platforms, pipelines, service areas, operated by contract crews, who establish test wells. Figure 2 shows the operating facility for the Tiputini oil block where the equipment for these activities is stored. If a site has been deemed as capable of supporting commercial-scale extraction, more wells and infrastructure are then built. O'Rourke and Connolly explain that "the physical alteration of environments from exploration, drilling, and extraction can be greater than from a large oil spill," resulting in major environmental impacts such as "deforestation, ecosystem destruction, chemical contamination of land and water, long-term harm to animal populations...human health and safety risks for neighboring communities and oil industry workers, and displacement of indigenous communities" (594).





**Figure 2 Aerial view of Oil Equipment at the new Tiputini Oil Block. Source: REUTERS/Guillermo Granja**  
<http://pictures.reuters.com/C.aspx?VP3=SearchResult&VBID=2C0BXZCZ5SDH8&SMLS=1&RW=1781&RH=899>

The effects of pollution from this industry are widespread, affecting the physical environment and its inhabitants. Deforestation and ecosystem destruction/habitat loss occur as a result of contractors clearing areas to support the expanding industrial complex. The exploratory and extractive activities include a number of contaminating processes. These activities use significant quantities of water which are contaminated during the drilling process and then discharged into the environment. This results in contamination of the water table, water sources and the land with which they come into contact. The majority of production waste from the oil industry is a hazardous and toxic effluent called produced-water. Produced water is extracted from the ground, and often reinjected into wells to force more oil to the surface. Produced water is several times saltier than ocean water, and contains industrial-strength quantities of toxins such

as benzene, xylene, toluene, and ethylbenzene.<sup>15</sup> In addition, heavy metals such as barium, arsenic, cadmium, chromium, and mercury have also been found in produced water.<sup>16</sup> O'Rourke and Connolly claim that produced water can also be radioactive, they state that "as much as 100 times more radioactive than the discharge of a nuclear power plant." (594). In addition, solid waste is also created during the exploration and extraction processes. Furthermore, during drilling "various muds, oily fluids, lubricants, and other chemicals are used to cool the drill bit, stabilize the walls of the bore hole, or liquefy earthen cuttings. These fluids and additives accumulate in large quantities during the drilling process, and are often stored or finally disposed of in waste pits" (ibid 595). These exposed waste pits pose a danger not only to aquifers as contaminants seep into the ground water supply, but are also consumed by animals and birds that mistake the pits for water holes and become coated in toxic waste.

According to a study by Miguel San Sebastián and Anna-Karin Hurtig, each exploratory well that is drilled in Ecuador produces an average of four-thousand cubic meters of drilling waste including produced water and drilling muds, as well as, fifty-three million cubic feet of waste gas from the separation process, which is burned daily without temperature or emission controls. Air contamination can also be generated at pits and oil spills as a result of hydrocarbons coming from standing oil slicks.

---

<sup>15</sup> Long term exposure to benzene results in effects on the blood. It causes harmful effects on the bone marrow and can cause a decrease in red blood cells leading to anemia. Benzene exposure can also result in excessive bleeding, and can affect the immune system, increasing the chance of infection. The main effects of xylene include depression of the central nervous system with symptoms such as headache, dizziness, nausea, and vomiting. The main effect of exposure to toluene is on the brain and nervous system, however, animals exposed to moderate or high levels also show harmful effects in their liver, kidneys, and lungs, as well as impaired immune function. And, the long term exposure to ethylbenzene has shown irreversible damage of the inner ear and therefore the hearing of animals, as well as kidney damage and cancer.

<sup>16</sup> Effects of barium exposure include change in heart rhythm and/or paralysis. One of the most characteristic effects of long term exposure to arsenic is changes in skin, however, other effects include the irritation of the stomach and intestines. Long term exposure to cadmium can result in kidney, bone, and lung disease. Exposure to chromium can result in airway irritation and/or obstruction, as well as, lung, nasal, or sinus cancer. And, exposure to mercury may have toxic effects on the nervous, digestive, and immune systems.

The Ecuadorian Amazon region is home to some 500,000 people, roughly 4.5 percent of the country's population (San Sebastián and Hurtig 1). Oil projects in the territories of indigenous peoples who live in voluntary isolation have become highly contentious and many lack resistance or immunity to common diseases found in urban environments. According to O'Rourke and Connolly, "there are no good international data or comprehensive analyses of distribution of impacts from oil exploration, drilling, and extraction. However, a number of recent studies have shown that current oil exploration has disproportionate impacts on indigenous populations" (596); these impacts include but are not limited to loss of land and introduction of diseases.

The above authors state that "territorial integrity and control are necessary for the cultural reproduction and ultimately the survival of Amazonian indigenous populations whose way of life and well being is closely tied to the thriving rainforest" (ibid 596). Throughout the Amazon basin, the construction of road systems causes deforestation, which contributes to the loss of territory and displacement of native groups. Furthermore, the opening of these access roads has allowed settlers with competing interests such as logging and mining and agriculture to enter indigenous communities and colonize these areas. This process not only reduces the land available to indigenous people, forcing them to relocate, but is disruptive to the structure of these societies and is the cause of much suffering and stress.

According to Sebastian and Hurtig, there are few epidemiological studies concerning those who live in communities near to the oil fields and are exposed to acute and/or long-term contamination. Their study reveals that residents of the oil producing areas and indigenous peoples have reported that many local streams once rich in fish now support little-to-no aquatic life; cattle are reported to be dying from drinking water from contaminated streams and rivers;

residents have also reported that bathing in the river water causes skin rashes, especially after heavy rains, which accelerate the flow of wastes from nearby pits to streams.

A case study from Peru, which has experienced similar circumstances to Ecuador, explored the effects of contact on groups living in voluntary isolation, and the impacts of these extractive industries on the health and rights in the Kungapakori Nahua Reserve (Napolitano and Ryan). According to the study, a number of extractive industries affect the territories of voluntarily isolated peoples, including agriculture, logging and small scale gold mining. However, of these industries, the oil/gas frontier has advanced the most. Among the negative social impacts of these industries include loss of territory and colonization, alcohol and substance abuse, domestic violence and suicide, and increase in infectious diseases such as HIV/AIDS and malaria, as well as pollutant-related increase in rates of dermatologic and pulmonary conditions, cancer, spontaneous abortion and other health indicators.

## Chapter Five: The History of the Yasuní Initiative

As we have seen, Ecuador's recent history is deeply intertwined with the exploration and exploitation of fossil fuels as the country's main source of domestic and foreign exchange revenues. Consequently, there was a need for movements such as the Yasuní Initiative to protect the areas being damaged as a result of these extractive processes. The Yasuní Initiative represents a developing country's efforts to protect its biological and cultural jewels, in addition to joining the broader discussion of global warming and climate change that has formerly been reserved for wealthier and more developed countries.

In 2015, Ecuador exported approximately 432,000 barrels of crude oil a day, a number that represents a growing trend based on the 334,000 barrels it exported per day in 2011.<sup>17</sup> To support this growing industry, Ecuador has needed to reserve large portions of their Amazon region for this purpose. According to Matt Finan et al., in support of this industry "The Ecuadorian government has zoned ~65% of the Amazon for oil activities (~52,300 km<sup>2</sup>)...Blocks overlap the ancestral or titled lands of ten indigenous groups...The oil frontier in Ecuador has now shifted south, where a quarter of Ecuador's untapped oil reserves lie in Yasuní National Park, the country's principal Amazonian national park." (151). The Yasuní Ishpingo-Tambococha-Tiputini Initiative is named after the oil fields located within the Yasuní National Park and Biosphere Reserve. These oil fields are found in the larger oil blocks: the ITT Oil Block or Block 43, and is adjacent to Block 31 (see figure 2). Matt Finan, Remi Moncel, and Clinton Jenkins explain that "Despite its designation as a national park in 1979, the Ecuadorian government continued to promote oil development in Yasuní. The southern section of the park was finally placed off-limits to the oil industry in 2007 with the delimitation of a 'zona

<sup>17</sup> Accessed November 23

[http://www.opec.org/opec\\_web/static\\_files\\_project/media/downloads/publications/ASB2016.pdf](http://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2016.pdf)

intangible’, an untouchable zone designed to protect the core territory of the Tagaeri and Taromenane.” (64). Blocks 43 and 31, found in the heart of the Yasuní National Park have been under siege, which Oilwatch, an organization formed as a network of resistance to oil companies in tropical countries, claims that given the high viscosity of the crude found in the region “with an API gravity of between 14 and 15 degrees”, the oil being pumped is the heaviest found in Ecuador, and the effort needed to extract the oil far exceeds its value.<sup>18</sup>

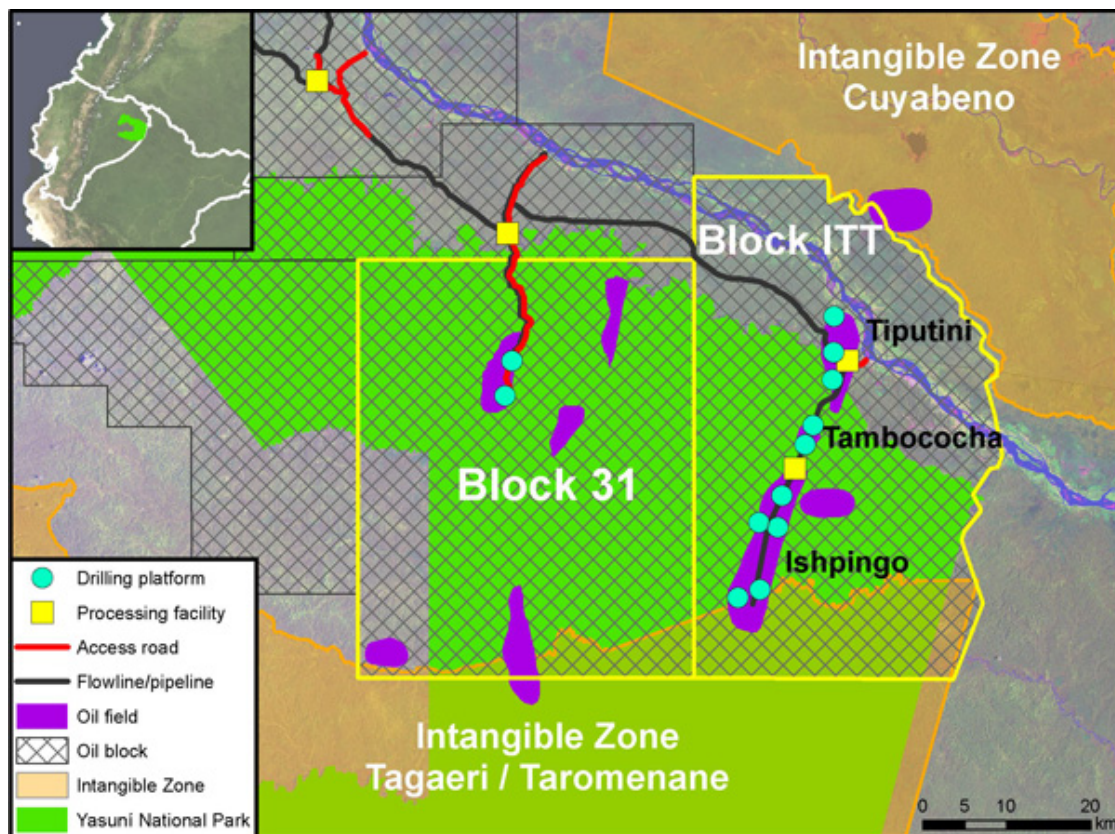


Figure 3 Map showing the ITT oil block, and block 31. Source: Mongabay <https://news.mongabay.com/2013/09/the-case-against-ecuadors-claims-of-low-impact-drilling-in-yasuni/>

<sup>18</sup> See <http://www.oilwatch.org/en/who-we-are>. Accessed 3 November 2016

See [http://www.sosyasuni.org/en/files/ow\\_itt\\_proposal\\_v8-ingles.pdf](http://www.sosyasuni.org/en/files/ow_itt_proposal_v8-ingles.pdf). Accessed 3 November 2016

API gravity: American Petroleum Institute measure of the density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API. Crude oils that are lighter (have higher degrees of API) are considered to be better because they can be processed with far less sophisticated and energy-intensive processes/refineries. API values generally fall between 10 and 70 degrees. [http://www.eia.gov/tools/glossary/index.cfm?id=A#API\\_grav](http://www.eia.gov/tools/glossary/index.cfm?id=A#API_grav)  
<http://www.petroleum.co.uk/api>

The desire to develop Block 31 was first expressed in 2002 when a Brazilian Oil Company, Petrobras, purchased Block 31 from the Argentine Company, Pérez Companc. In 2003, they submitted the first Environmental Impact Study for the development of two oil fields, Nenke and Apaika, in Block 31, which would entail the construction of two oil platforms, an oil processing facility, and most controversially, a new access road into the park for development of the oil fields. Their project was met with much resistance from the public, and was denied access by the government. However, in September 2006, Petrobras submitted a new EIS for the same project with the new design placing the processing facility outside the park with helicopter access to the drilling platforms instead of an access road; in October 2007, the Environment Ministry issued the environmental license necessary for the project to begin. In September 2008, President Correa made a surprise announcement that Petrobras had decided to terminate its contract and return the block to the state. Block 31 is now operated by the Ecuadorian state-owned oil company Petroamazonas.

In 2007, under the leadership of President Correa, Ecuador proposed the Yasuní Initiative at the United Nations General Assembly in an effort to contribute to the reduction of carbon dioxide emissions and the preservation of biodiversity. The initiative proposed enacting an indefinite ban on oil exploration and extraction within the Ecuadorian Yasuní National Park. President Correa stated that at the United Nations General Assembly sixty-second session that “It involves a commitment not to extract some 920 million barrels of oil, thereby avoiding the emission of approximately 111 million tons of carbon that would come from the burning of fossil

fuel.” (30). As a result, Ecuador would forgo approximately USD\$720 million in revenues each year, a very significant portion of Ecuador’s economy.<sup>19</sup>

The Yasuní Initiative suggested that petroleum and its value as a national resource was being reevaluated in Ecuador during the first decade of the new century. The goals of President Correa’s proposal were threefold:

1. To provide an innovative option for combating global warming by attacking the problem from its roots and avoiding the extraction of fossil fuels that would later be burned and thereby contributing to global warming
2. To protect the region’s immense biodiversity as well as the indigenous populations (including some living in voluntary isolation) of the region from destruction and displacement
3. To provide a means to improve social development, and diversifying domestic energy production towards renewable resources.

Correa explained that Ecuador was “prepared to make this huge sacrifice” so long as there was a shared “responsibility on the part of the international community, particularly on the part of developed countries, the planet’s main predators, and for a minimum compensation for the environmental benefits”. In effect, Correa was requesting an international contribution of USD\$3.6 billion dollars to be raised over a period of ten years (\$360 million annually) to help compensate for the loss of income. Benjamin Sovacool explains that the Ecuadorian government “issued Decrees 847 and 882 in January 2008, authorizing the establishment of a ‘National Development Fund’ and creating a Technical Secretariat” (204). Formed after Correa’s

<sup>19</sup> The translation of President Correa’s address was obtained from the United Nations General Assembly Records. Accessed 9 September 2016. <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N07/517/11/PDF/N0751711.pdf?OpenElement>



announcement of the Ecuadorian government's commitment to the Yasuní Initiative at the United Nations General Assembly, the fund was established to receive direct financial contributions or as credits against Ecuador's foreign debt.

The National Development Fund was to “help the country promote and develop renewable energy projects, transportation systems, programs to eliminate poverty, and equitable access to health care and education” (qtd. in Sovacool 204). However, in 2008 the proposal was modified as a result of the global economic crisis and the difficulty of raising funds for the initiative. Ecuador declared that it would issue Yasuní Guarantee Certificates (YGCs), for the carbon dioxide locked within the Ishpingo-Tambococha-Tiputini oilfields, with the idea that YGCs would become fungible commodities on the international carbon credits market (Finer et al., 2010). The YGCs were offered in exchange for contributions and served as a guarantee to ensure that the ITT reserves remained unexploited. The Ecuadorian government issued the YGCs in US dollars equivalent to the face value of each contribution equal to or above USD\$50,000. YGCs could be redeemed if the Ecuadorian government were to break the commitment upon which the Yasuní Initiative was based. The Yasuní ITT Trust Fund was formally established in 2010 and was administered by the Multi-Partner Trust Fund (MPTF) Office of the United Nations Development Program (UNDP). Tammy Silvia notes that “Contributions to the Fund were accepted from governments, intergovernmental entities, non-governmental organizations, private foundations, private-sector organizations and individuals.” (28).

The Fund was to be managed by a Steering Committee led by the Ecuadorian government with three representatives including a chairperson with a casting vote, two representatives from contributor governments, and one representative from the Ecuadorian civil society. According to Carlos Larrea and Lavinia Warnars, the Fund's capital would have been “invested in renewable

energy projects in Ecuador which can promise a stable and safe return, taking advantage of the country's hydroelectric, geothermal, wind and solar potential, in order to overcome its current dependence on fossil fuels, which currently account for 47% of all power generation.” (221). Despite the innovative nature of this proposal, in August 2013 President Correa announced the cancellation of the Yasuní Initiative in a nationally televised speech, stating “the world has failed us.”. President Correa had “struggled to get international partners to sign on, in part because momentum on climate policy has ebbed in the face of the prolonged global economic crisis.” (Walsh). The Yasuní ITT Initiative ultimately succumbed to a lack of international support, despite the benefits it promised and during the six year period of its existence it faced challenges that included limited donors, internal political disagreement and a lack of trust between the Ecuadorian government and contractual partners that ultimately proved insurmountable.

The Ecuadorian government had hoped that by crowd sourcing, numerous donors could make relatively small contributions thereby acquiring the entire fund from a wide range of sources. However, by 2013, the Yasuní Initiative had only raised USD\$13.3 million, accounting for barely 0.37 percent of the required amount. Initially, several European nations including France, Belgium, Turkey, and Spain promised relatively small payments. Germany, Europe's largest economy, went from being a major supporter to playing a crucial role in opposing the Yasuní Initiative. In addition, the Yasuní Initiative received support and contributions from several individuals and organizations, including: Nobel Peace laureates Muhammad Yunus, and Desmond Tutu; Ban Ki-Moon, Secretary General of the United Nations; Prince Charles of Great Britain, amongst others. The initiative also received formal support from the German Parliament, the European Union, and other international bodies such as OPEC, Andean Community of Nations (CAN), Andean Development Corporation (ADC), the Organization of American States

(OAS), the International Union for Conservation of Nature and Natural Resources (IUCN), and various indigenous organizations and ecological groups in Ecuador.

Following the appointment of Dirk Niebel as the Federal Minister of Economic Cooperation and Development in 2009, Germany pulled out of their tentative commitment to donate \$50 million to the Yasuní ITT fund made under Niebel's predecessor, Heidemarie Wieczorek-Zeul. According to Marc Hall, Niebel commented in a newspaper opinion editorial in 2011 that "Refraining from oil drilling alone is not going to help in forest preservation, and compensation payments have little prospect of success in climate protection measures." (Hall).<sup>20</sup> At the time, Germany's threat to withdraw support for the Yasuní Initiative had a negative impact on the support of other European Union members but Niebel's view was not unanimous within the German government and development policy spokesman Sascha Raabe openly criticized Niebel's opinions stating that "The attitude of Dirk Niebel is catastrophic and ignorant" (Trumpf).

Despite the Yasuní Initiative being widely endorsed as a positive step toward curbing climate change, political and economic reservations persisted in what amounted to a lack of trust between Ecuador and contributor states. In addition, criticisms of the Yasuní Initiative included the perception that donations would be at risk because the YGCs would decline in value due to a lack of trading value in the international carbon markets and not gaining interest. In addition, oil prices would ultimately increase and new demands would represent a significantly higher value on Ecuador's oil reserve and political pressure to exploit it. Therefore, in a future scenario of

---

<sup>20</sup> The commentary represents a translation provided by EurActiv, an independent European media platform specializing in the online publication of articles focused on European news and Euro-centric topics. <https://www.euractiv.com/section/sustainable-dev/news/europe-admired-ecuador-s-oil-drilling-ban-but-didn-t-want-to-pay/> sourced 17 November 2016

relatively high oil prices, it could be more profitable for the state to exploit the Yasuní ITT reserves than to preserve it, even if it has to compensate contributors for the value of their YGCs.

As stated in a televised speech by President Correa, “The compensation demanded was perfectly logical in environmental and economic terms: it constituted fair payment for generating environmental resources. Without the Amazon jungle, the main lung of the world, life on the planet would probably disappear. Despite that, we Amazon countries received nothing in return.”<sup>21</sup> Although this was the ultimate challenge faced by the Ecuadorian government, which resulted in the cancellation of the Yasuní Initiative, they did experience other challenges.

President Correa was confronted with political pressure regarding the development of the ITT oil block from high ranking government officials (although it is not specified who) as well as oil companies, and civil society groups. On the one hand, the government was being pressured by some members of the administration to develop the ITT oil blocks as they would contribute to urgently needed revenues for social programs. According to the former Minister of Mines and Energy, Alberto Acosta, “few [government] officials understood the rationality” (qtd. in Sovacool and Scarpaci) underlying the proposal. Furthermore, the efforts made by Correa were publicly disputed by PetroEcuador who, despite the President’s declaration, continued to negotiate arrangements with oil companies for extractive development of the ITT block in 2007.<sup>22</sup> When one considers that from 2004 to 2010, petroleum accounted for over half of Ecuador’s economy, representing approximately one-quarter of national GDP, 47 percent of the country’s energy, and contributing approximately one third of the government’s annual budget; the Yasuní Initiative represented an ambitious plan and a significant fiscal challenge. In effect it

<sup>21</sup> Accessed on 17 October 2016 <http://www.ecuador.org/blog/wp-content/uploads/2013/08/president-rafael-correa-on-the-yasuni-initiative1.pdf>

<sup>22</sup> PetroEcuador is a state owned Oil Company.

called for the loss of USD\$7.2 billion in potential oil revenue of which many Ecuadorians were sceptical. Tracy Davis describes the Yasuní Initiative as simply “too painful to be fiscally responsible” (247).

The origins of the Yasuní Initiative can be found in the civil society—organizations such as Oilwatch, Acción Ecologica, and Pachamama laid the foundation for what would later become the Yasuní ITT Initiative by proposing to enact a blanket moratorium on oil extraction on the entirety of the Ecuadorian Amazon (Pellegrini et al. 9). Pellegrini et al. states that “This group of activists and thinkers developed a critique grounded in a version of the ‘resource curse’” (9).<sup>23</sup> That is, countries rich in natural resources, particularly countries with one or few primary resources, find it harder to develop. In these states, environmental destruction is accepted as the inevitable cost of achieving development. This explanation links Ecuador’s persistent problems of poverty, environmental degradation and underdevelopment to the country’s dependence on oil extraction. Despite President Correa proposing the Yasuní Initiative, he continued to emphasize that the viability of the Initiative was dependent on the country’s ability to raise substantial funds, and that the Yasuní Initiative was not a binding commitment, which the civil society perceived as being a sign of Correa’s lack of commitment to protect the region. Furthermore, other incidents have led to tensions that exist between the government and the civil society that were bred out of political rhetoric by Correa. For example, Marc Becker explains that President Correa complained about ‘infantile environmentalists’ who, like his politically conservative critics, sought to undermine his government (56).

---

<sup>23</sup> “Resource curse” refers to the failure of many resource-rich countries to benefit fully from their natural resource wealth, and for governments in these countries to respond effectively to public welfare needs. While one might expect to see better development outcomes after countries discover natural resources, resource-rich countries tend to have higher rates of conflict and authoritarianism, and lower rates of economic stability and economic growth, compared to their non-resource-rich neighbors.”

[http://www.resourcegovernance.org/sites/default/files/nrgi\\_Resource-Curse.pdf](http://www.resourcegovernance.org/sites/default/files/nrgi_Resource-Curse.pdf)

Another challenge that arose was with the state's long-standing commitment to oil and the entrenched interests of the oil companies. Had the Yasuní Initiative been successful, it would not have prevented the development of other oil fields and been limited to those within the Yasuní ITT oil block. While the Initiative was being implemented, oil development had continued to grow and spread across eastern Ecuador to continue supporting the economy with oil accounting for approximately 30 percent of government revenues and over fifty percent of exports (Euler Hermes Economic Research 2).

In 2016, Ecuador is pumping oil at a loss, as low oil prices have gutted the oil industry. In February of that year President Correa reported that the nation was receiving as little as thirty dollars per barrel of crude, while production costs averaged thirty-nine dollars (Steve St. Angelo, par. 3). According to Pellegrini et al:

“The Spanish conquest and domination were indeed marked by the expropriation of large quantities of natural resources and the use of slave labour to extract and transport them. After colonial experience, foreign control of these resources continued through transnational companies exploiting natural resources in league with corrupt national elites. In line with these experiences in the continent, in Ecuador too there is a shared understanding that the riches of the country have not always been used for national benefit but rather exploited for the gain of foreign interest—but what of role/place of national oil companies?” (11).

An additional challenge facing the initiative is the fact that by acting as carbon offsets YGCs would have done little to address the potentially irreversible impacts of climate change.<sup>24</sup> A

<sup>24</sup> “Carbon offsetting is the use of carbon credits to enable businesses to compensate for their emissions, meet their carbon reduction goal and support the move to a low carbon economy.” <http://www.carbonneutral.com/resource-hub/carbon-offsetting-explained>

country or corporation wishing to emit a ton of carbon dioxide can still do so as long as it offsets that ton by purchasing a carbon credit or conducting an activity somewhere else to reduce greenhouse gas emissions, such as buying YGCs. Thus, the Initiative allowed for every ton of greenhouse gas avoided or offset by the Yasuní Initiative to be emitted somewhere else across the globe.

## Chapter Six: Evaluating the Yasuní Initiative

The Yasuní ITT Initiative was unique in that it represented the effort of a developing nation to contribute toward the global reduction of carbon emissions while domestically assisting in the development of a post-petroleum society and economy that would begin the transition to renewable energy and sustainable living conditions. Pamela Martin explains that “These goals are based on Ecuador’s vision of the good life (*el buen vivir*), a concept derived from indigenous cultures on living in harmony with nature” as mentioned in their 2008 Constitution (23). This concept would have acted as an important mitigation tool by promoting the need to care for, and live harmoniously in nature. Through implementation of the Yasuní Initiative, Ecuador’s leaders hoped to transform established notions of economics and social value, as a global partner in the fight against climate change and if successful, would have resulted in a suite of positive benefits, including the preservation of ecosystem services, the conservation of precious biodiversity, protection of indigenous peoples, poverty alleviation, social development, displacement of greenhouse gases, and served as a model for future or similar projects globally. Let us consider each of these potential benefits in turn.

### 1. Ecosystem services

One primary potential benefit of the Yasuní National Park relates to the crucial ecosystems services that it provides—global carbon and water cycling. People do not pay for the usage of these services, as they are always available to us. The biologist Pete Oxford points out that

“Every glass of water... you drink contains water molecules that... [have] been sucked up from the forest floor by the roots of a tree in the Amazon, pumped into the atmosphere by that tree during respiration and transpiration, and converted to rain to fall somewhere to be drunk by you. Your very blood contains molecules of Amazonian water!” (qtd. in Hannan 65)



Oxford therefore highlights how the natural resources of one nation are connected to the globe. Francesca Hannan explains that in the case of Yasuní National Park, an important tension arises as the potential value of the Yasuní is generally recognized through its potential oil extraction, which produces revenue for the country. However, this comes at a cost to the forest's ecological value being compromised as oil extraction necessitates deforestation and ultimately exacerbates global warming. As Ecuador's leaders face intense local pressure for social development and a means by which to attain it, they are confronted with the trade off in the form of national development at the cost of exacerbating the global climate crisis.

## 2. Conservation of precious biodiversity

A second benefit is the conservation of precious irreplaceable biodiversity. Species diversity becomes the measure of the region's unique biological wealth because unlike ecosystem services, these species can be quantified. When the Initiative was first proposed, the Ishpingo-Tambococha-Tiputini oil block was believed to be rich in oil, and was estimated to contain 920 million barrels; since the cancellation of the initiative and the drilling of exploratory wells, it was found that the block contains 1.67 billion barrels of oil. According to Sovacool,

The most profitable reserves are spread almost evenly across the block, meaning development would require six separate drilling platforms and one reinjection platform connected by an extensive access route in the form of a railway network. Large tracts of forest would need to be cleared and everything from drilling equipment and roads to support facilities and pipelines would have to be brought into the interior. (208).

The development of this region would require deforestation and construction, which would cause habitat destruction, species loss and displacement. Furthermore, following the development of

the site, the environment is at an increased risk of oil spills and pipeline failures. After the cancellation of the Yasuní Initiative in 2013, Silva claims that the “government promised to carry out the drilling with the highest environmental standards, affecting only 1/1000<sup>th</sup> of the National Park” (281), a goal that would be difficult to achieve given the extensive transportation networks needed to extract the oil.

### 3. Protection of indigenous people

A third benefit is the protection of indigenous people, particularly those belonging to the tribes living in voluntary isolation. The Yasuní National Park is the largest protected area in Ecuador and overlaps with Huaorani Territory, as well as the territory of some indigenous people living in voluntary isolation, such as the Tagaeri and Taromenane. The Yasuní Initiative would have protected the biodiversity of the region and the hunting and ancestral lands of the Amazonian indigenous peoples and their cultures. The subsistence of these groups is already in a precarious state with activities such as illegal logging, tourism, scientific research, and evangelical missions encroaching on their territory and culture. The Tagaeri and Taromenane maintain an aggressive posture toward outsiders; there have been several instances in which intruders have been injured and there have been reported murders of a significant numbers of oil workers.<sup>25</sup>

The Yasuní Initiative would have contributed toward the protection of the indigenous populations, however, with its cancellation these groups are now at greater risk. Fortunately the government promised that all precautionary mechanisms would be employed to safeguard the indigenous populations; and relatively recent amendments to the Ecuadorian constitution such as Article 54.7 which “requires the previous consultation of indigenous peoples for any project involving the exploitation of natural resources in their territories. Additionally, Art 57 guarantees

<sup>25</sup> See <http://www.newyorker.com/books/double-take/oil-and-the-huaorani>

and protects the will of indigenous people to live in isolation and it qualifies as “ethnocide” the violation of this provision.” (Silva 282). Article 57.7 states:

To free prior informed consultation, within a reasonable period of time, on the plans and programs for prospecting, producing and marketing nonrenewable resources located on their lands and which could have an environmental or cultural impact on them; to participate in the profits earned from these projects and to receive compensation for social, cultural and environmental damages caused to them. The consultation that must be conducted by the competent authorities shall be mandatory and in due time. If consent of the consulted community is not obtained, steps provided for by the Constitution and the law shall be taken.

Therefore, based on the constitution, evidence of the likely impacts on indigenous communities, and the government’s decision to go forth and drill shows at least a disregard for the constitution but potentially indicates the possible abuse of the existing laws. Furthermore, as Angela Cavender Wilson explains, the recovery of indigenous knowledge is a legitimate and fruitful course in the twenty-first century. She explains that regaining nearly extinct traditions provides a potential basis for restoring health and dignity to future generations. In the case of the Ecuadorian Indigenous tribes, by preserving the region, so too is their culture and place in history preserved. Although Wilson is member of the North American Dakota tribe, her views of regaining this history can be considered applicable to the South American peoples.

#### 4. Poverty alleviation and social development

A fourth benefit is local poverty alleviation and social development. Renewable energy projects could ensure stable and safe sources of prosperity as the country shifted its dependency from

fossil fuels. Furthermore, the interest earned from the fund associated with the Yasuní Initiative would have been invested by the State for the following purposes, within the guidelines of the National Development Plan, including: conservation efforts in maintaining ecosystems, particularly in forty-three protected areas; reforestation; forestation; natural regeneration and appropriate management of forest owned by small landholders; increased national energy efficiency and the promotion of social development by investing in education, training, technical assistance and productive job creations programs within ecotourism, agriculture and agro-forestry sectors. These significant benefits would target the poorest and most marginalized sectors of Ecuador's society and contribute toward sustainable employment (Warnars 55).

#### 5. Displacement of greenhouse gases

A fifth benefit is the displacement of greenhouse gases that would occur as a result of the prevention of burning fossil fuels. The Yasuní Initiative importantly strikes at the root of the cause for global warming and by “sequestering the crude oil found within the ITT block would have kept between 407 million and 436 million tons of carbon dioxide “sunk” in the ground rather than emitted into the atmosphere.” (Sovacool and Scarpaci 165), preventing a significant release of carbon dioxide. Given that Ecuador emits 29 million tons of carbon each year, and larger nations such as Brazil's annual emissions total approximately 332 million tons, and France totals about 373 million tons, the 407-436 million tons that the Yasuní ITT Initiative proposed to preserve would have been no small accomplishment (UNDP; Davis, 2008). Furthermore, this projected value does not consider the double benefit of leaving intact millions of acres of oil-growth forest, which serves as carbon sink, absorbing other greenhouse gas emissions from the atmosphere.

## 6. Ecuador and Yasuní as a model for others

A sixth benefit is the example that the Yasuní Initiative would have been for countries in similar positions. Journalist Jonathan Watts explains that the liquidation of the Yasuní ITT Initiative killed “climate campaigners hopes that the Ecuador plan could provide a model for other nations to resist the lure of oil money and leave fossil fuels under the ground.”. Watts suggests that Ecuador had the potential to act as a pilot project in the fight against global warming and that the Yasuní Initiative, if successful, might have been replicated in other developing countries with the potential to significantly reduce carbon emissions while strengthening the protection of carbon sinks as well as any other biologically important habitats, and relationships between developed and developing countries. Starting with movements such as granting nature rights, Acosta argues that while giving nature rights may seem strange from some perspectives, “great changes require bold action and open minds.” (qtd. in Becker 152).

In essence, given the significant global stakes, the Yasuní Initiative, if aggressively pursued, had many potential benefits with relatively small risks; qualifying it as a ‘bold action’ that appears to have lacked the ‘open minds’ needed for it to work. An initiative ahead of its time, the Yasuní Initiative sought to simultaneously combat global warming, preserve biodiversity, and proceed with social development but it failed due to a lack of funding and international support. In a televised address to the Ecuadorian people, Correa explained that the world we exist in today is one of hypocrisy, where the world’s most developed, financially stable, and largest polluters are unwilling to provide compensation for environmental systems from which they benefit; thereby leaving several under-developed countries to bear the brunt of climate change as developed countries are far less vulnerable from its effects, and also leaving

developing countries to clean up the ‘mess’ in the form of carbon emissions and green-house gases made by developed nations (Telesur; Indian Country Today Media Network).<sup>26</sup>

Although detractors of the Yasuní Initiative, such as Dirk Niebel, highlight weaknesses of the proposal based on existing trends in the use of fossil fuels—for example, Niebel states “Refraining from oil drilling alone is not going to help in forest preservation, and compensation payments have little prospect of success in climate protection measures.” (Hall). Niebel disregards the potential for the Yasuní Initiative to encourage other nation to act accordingly; not only in terms of forest preservation, but additionally preventing the extraction of oil. Critics like Niebel fail to take into account the growing development of renewable energies, and the fact that as the cost of these new technologies are inevitably reduced, the feasibility of oil extraction becomes harder to justify. In addition, it can be speculated that significant good would have resulted from the success of such an Initiative—as the creation of a developing country with the appearance of an equitable distribution of cost between both developed and developing nation partners. Given the need for global partnerships in the fight against climate change and a global dependence on nation states such as Ecuador to protect carbon sinks in the form of forest habitat, it is critical that developed nations, as the primary polluters of the climate, are not perceived as being self-serving and avoiding the responsibility of their actions over the course of the last one hundred years. Ultimately, the criticisms and uncertainty regarding the feasibility of the Yasuní Initiative were insurmountable, and have resulted in the continued exploitation of the region.

As of 2014, Ecuador had begun making plans for the future drilling of Yasuní National Park and as reported by *The Guardian*, Ecuador had commenced drilling at a platform in the Tiptuni oil block, and was one of first of nearly 200 wells needed to extract some 920 million

<sup>26</sup> [https://www.washingtonpost.com/news/energy-environment/wp/2015/02/03/the-countries-most-vulnerable-to-climate-change-in-3-maps/?utm\\_term=.c952b69cf571](https://www.washingtonpost.com/news/energy-environment/wp/2015/02/03/the-countries-most-vulnerable-to-climate-change-in-3-maps/?utm_term=.c952b69cf571)

barrels of crude (Vidal). As of October 26 2016, *The Guardian* reported that drilling was underway in the Yasuní National Park and that the Ecuadorian government claims to only be using a combination of the latest drilling technology and strict guidelines and conditions under which the state oil company Petroamazonas may operate—these efforts represent part of the government’s campaign that exploitation is possible without inflicting environmental damage. *The Guardian* (4 April 2016) reported an unidentified government spokesperson who commented on the measures taken to avoid environmental damage. These include: the prevention of gas flaring; eliminating the emission of carbon dioxide and greenhouse gases; extraction via horizontal drilling which “allows multiple wells to be tapped from the same drill site,” thereby reducing the amount of deforestation due to extraction. Furthermore, the spokesperson explained that these measures were not limited to improving the damage from the extraction process. For example, it is explained that “colonization [by people] of the area is banned by environment license.” In addition, the access path to the site would be made as small as possible, and would include tree canopy bridges to allow wildlife to cross overhead. Additionally, these paths would be “designed with underground passages to allow the natural passage of water.” From the public perspective, the Ecuadorian government appears to be making every effort to care for the environment, support poor communities and bolster the economy, but the net effect of these efforts and the damage caused is yet to be accurately assessed.

Based on the claims of the Ecuadorian government, the public should be able to access information regarding the extractive technologies and processes from the oil companies who are directed to practice appropriate safety measures. Petroamazonas, the state-owned company contracted to proceed with exploration and extraction in the Yasuní National Park provides

several articles on its website confirming the progress of the development of the Yasuní ITT Oil Block but also their newest environmental practices intended to ensure the safety standards that the government has promised. Moreover, Petroamazonas explains how they employ the latest, cutting-edge technology to perform the extractive processes, and their concern for the need to operate on a smaller surface area, as well as their ability to operate with directional drilling, horizontal, and multilateral wells, allowing them to increase their production (Petroamazonas).<sup>27</sup> Despite their efforts to establish transparency, Petroamazonas does not define what ‘cutting-edge’ means or appropriate data that would provide a quantifiable measure of the damage cause by mineral extraction. While it is possible that this information is withheld from the public because it provides commercial competitors with sensitive information regarding extraction methods, I believe that this is unlikely given the size and capacity of Ecuador’s oil industry as one of the smallest oil producing countries in the world. Based on my research, I have not been able to locate any reasonable excuse for the Ecuadorian government to withhold this information from the public and this is cause for concern. Furthermore, according to Amazonwatch, Blocks 31 and 43 are highly militarized, with entrance by the public forbidden.<sup>28</sup> Kevin Koenig of Amazonwatch reported that “satellite images and investigative undercover missions in the area not only show oil activity underway but also the construction of illegal roads in violation of the environmental license”.<sup>29</sup> The transparency that the state owned company therefore claims is at best questionable and the militarization of Blocks 31 and 43 needs to be explained to the public.

---

<sup>27</sup> “Directional drilling is defined as the practice of controlling the direction and deviation of a wellbore to a predetermined underground target or location. [http://petrowiki.org/Directional\\_drilling](http://petrowiki.org/Directional_drilling) “Horizontal wells are high-angle wells drilled to enhance reservoir performance by placing a long wellbore section within the reservoir” [http://petrowiki.org/Horizontal\\_wells](http://petrowiki.org/Horizontal_wells)

“Multilateral wells are new evolution of horizontal wells in which several wellbore branches radiate from the main borehole.” [http://petrowiki.org/Multilateral\\_wells](http://petrowiki.org/Multilateral_wells)

<sup>28</sup> A nonprofit organization founded to protect the rainforest and advance the rights of indigenous peoples in the Amazon Basin. <http://amazonwatch.org/about>

<sup>29</sup> <http://amazonwatch.org/news/2016/0406-drilling-towards-disaster-ecuadors-aggressive-amazonian-oil-push>



The expansion of drilling activity in these areas has threatened the voluntary isolation of the Tagaeri and Taromenane who are surrounded by development and a dwindling territory with the natural resources they depend on being continually compromised. However, because this latest phase of oil extraction is relatively new, the effect on the Tagaeri and Taromenane is yet to be fully calculated and may prove to be devastating for their survival.

## Chapter Seven: Conclusion

Climate Change as a concept emerged in the late nineteenth century and although initially limited to discussions within the scientific community, by the late twentieth century it had emerged as a household term with a growing sense that it represented the most critical challenge to the ongoing development of mankind in the twenty-first century. In September 2016, Oil Change International in partnership with fourteen other organizations from around the world released a study validating the growing movement to keep carbon in the ground by revealing the need to stop all new fossil fuel infrastructure and industry expansion.<sup>30</sup> The study explains that “existing fossil fuel reserves considerably exceed both two degrees Celsius and one and half degrees Celsius carbon budgets. It follows that the exploration for new fossil fuel reserves is at best a waste of money and at worst very dangerous” (Oil Change International 17). As the 2015 Paris Agreement stipulates, the increase in average global temperature needs to be held at well below two degrees Celsius above pre-industrial levels, and pursuing efforts to limit the temperature increase to one and a half degrees Celsius above preindustrial levels. The study explains that although there has been limited research on the impact of a one and half degrees Celsius increase in global temperature, some initial findings suggest that it could produce significantly less negative effects than a two degree increase. However, for the world to stay within these targets there is a need for immediate emissions cuts. This information challenges us to question how much room exists within the carbon budget for the development of new oil fields, gas fields and coal mines but also suggests that concepts such as the Yasuní initiative need to be assessed with greater foresight and consideration on the part of national leaders.

<sup>30</sup>350.org, Amazon Watch, APMDD, AYCC, Bold Alliance, Christian Aid, Earthworks, Équiterre, Global Catholic Climate Movement, HOMEf, Indigenous Environmental Network, IndyAct, Rainforest Action Network and Stand.earth

In 2012, Bill McKibben's article, *Global Warming's Terrifying New Math*, reported that "We have five times as much oil and coal and gas on the books as climate scientists think is safe to burn. We'd have to keep 80 percent of those reserves locked away underground to avoid that fate.". Four years after McKibben's initial publication, he provides an updated article titled, *Recalculating the Climate Math*, based on a study conducted by Oil Change International. McKibben explains that we have a two-thirds chance of staying below a global increase of two degrees Celsius. We can release 800 gigatons more carbon dioxide in the atmosphere to fall within this limit, however, data shows that coal mines and oil and gas wells currently in operation worldwide contain 942 gigatons worth of carbon dioxide. Simply put, this means that we are not only stocked with more carbon dioxide than we can afford, but scientists are claiming that the two degree Celsius threshold can no longer be considered accurate, and a call for an even lower temperature ceiling of one and a half degrees Celsius is now being made. The only strategy for combating the global temperature increase is by reducing the use of fossil fuels as quickly as possible in order to achieve zero net carbon emissions, McKibben states: "if our goal is to keep the Earth's temperature from rising more than two degrees Celsius—the upper limit identified by the nations of the world—how much more new digging and drilling can we do? Here's the answer: zero.". Based on the accumulative science and growing consensus that the above dire warnings are accurate, I contend that the Yasuní Initiative proposed by President Correa was a lost opportunity.

My research to date suggests that while it remains unclear how effective the Yasuní Initiative would have been, it is widely agreed by scientists that the greatest cause of global warming and climate change is the burning of fossil fuels. It is therefore imperative that we curb the fossil fuel industry or risk our planet continuing to warm at rapid rates and contributing to the

creation of a future that is uncertain and many predict to be calamitous. The Yasuní Initiative proposed to curb the oil industry by preventing the extraction of fossil fuels, and attacking the problem of carbon emissions at its source. Ecuador's Yasuní ITT Initiative represented a developing country's efforts to participate in a much broader discussion on global warming and climate change, which in the past, seemed to have been reserved for wealthier and developed countries. The rejection of the Yasuní Initiative suggests that developed countries have limited tolerance for the participation of developing nations such as Ecuador and yet there is wide agreement on who has caused climate change and the fact that it will have a disproportionate impact on those nations and people who played little part in its cause. While all indicators suggest that global warming, as a product of human activity is going to continue, perhaps the experience of the Yasuní Initiative suggests that it is time for us to reevaluate the manner in which concepts to combat climate change are evaluated. Based on the lack of support that the Yasuní Initiative experienced in part because of global financial crises, it seems apparent that many nations continue to approach the fight on climate change as an abstract concept that can be put off and dealt with at a later date, but it seems that time is running out.

## Bibliography

- Bass, MS., Finer, M., Jenkins, C.N., Kreft, H., Cisneros-Heredia, DF., et al. "Global Conservation Significance of Ecuador's Yasuní National Park." *PLoS ONE* 5(1) (2010). Web. 29 September 2016.
- Becker, Marc. "Ecuador's Bitter Choice." *Against the Current* 38.6 (2014): 10-13.
- Business Standard. "India's Carbon Tax Already Much Above Global Expectations." *Business Standard*. 28 February 2015. Web. 5 October 2016. <[http://www.business-standard.com/budget/article/india-s-carbon-tax-already-much-above-global-expectations-115022800021\\_1.html](http://www.business-standard.com/budget/article/india-s-carbon-tax-already-much-above-global-expectations-115022800021_1.html)>.
- Chimienti, Adam., and Matthes, Sebastian. "Ecuador: Extractivism for the Twenty-First Century?" *NACLA Report of The Americas* (2013): 59-61. Web. 6 November 2016.
- Finer, Matt., Jenkins, Clinton. M., Pimm, Stuart. L., Keane, Brian., and Ross, Carl. "Oil and Gas Projects in the Western Amazon: Threats to Wilderness, Biodiversity, and Indigenous Peoples." *PLoS ONE* 3.8 (2008): e2932. Web. 29 October 2016.
- Finer, Matt., Moncel, Remi., and Jenkins, Clinton N. "Leaving the Oil Under the Amazon: Ecuador's Yasuní-ITT Initiative." *Biotropica* 42.1 (2010): 63-66. Web. 9 September 2016.
- Gelb, Alan. *Oil Windfalls: Blessing or Curse?* Oxford University Press, 1988. Print.
- Gerlach, Allen. *Indians, Oil, and Politics*. Wilmington: Scholarly Resources Inc., 2003. Print.
- Gray, C.L., Bilsborrow, R.E., Bremner, J.L., and Lu, F. "Indigenous Land Use in the Ecuadorian Amazon: A Cross-Cultural and Multilevel Analysis." *Human Ecology* 36.1 (2008): 97-109. Web. 22 November 2016
- Hannan, Francesa. "On Valuing Life: Ecuador's Yasuní-ITT Initiative Payments for Ecological Services." 1:1: 63-68
- Kimerling, Judith., Scherr, S. J., Gibson, J. E., Prickett, G., Gale, J., Fischer, L., and the Natural Resources Defense Council. *Amazon Crude*. Green Ink Inc, 1991. Print
- Lang, Chris. "Ecuador Plans to Drill For Oil in The Yasuní National Park." *REDD-Monitor*. N.p. 22 August 2013. Web. 5 October 2016. <<http://www.redd-monitor.org/2013/08/22/ecuador-plans-to-drill-for-oil-in-the-yasuni-national-park/>>.
- Larrea, Carlos. "Yasuni ITT Initiative: A Big Idea from a Small Country." n.d.
- Larrea, Carlos and Warnars, Lavina. "Ecuador's Yasuni-ITT Initiative: Avoiding emissions by keeping petroleum underground." *Energy for Sustainable Development* (2009): 219-223.

- Lessmann, J., Fajardo, J., Muñoz, J. and Bonaccorso, E. "Large Expansion of Oil Industry in the Ecuadorian Amazon: Biodiversity Vulnerability and Conservation Alternatives." *Ecology and Evolution* 6.14 (2016): 4997-5012. Web. 17 November 2016.
- Linke, Lilo. *Ecuador Country of Contrasts*. London: Oxford University Press, 1960. Print.
- Lynch, Patrick. "2016 Climate Trends Continue to Break Records." NASA. N.p. 19 July 2016. Web. 5 October 2016. <<https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records/>>.
- Martin, Pamela L. "Global Governance from the Amazon: Leaving Oil Underground in Yasuni National Park, Ecuador." *Global Environmental Politics* (2011).
- Martinez-Echazabal, Lourdes. "Mestizaje and the Discourse of National/Cultural Identity in Latin America, 1845-1959." *Latin American Perspectives* Vol. 25.No. 3 (1998): 21-42. Document. 23 October 2016.< <http://www.jstor.org/stable/pdf/2634165.pdf>> .
- Mittermeier, R.A., Mittermeier, C.G., Brooks, T.M., Pilgrim, J.D., Konstant, W.R., da Fonseca, G. A. B., and Kormos, C. "Wilderness and Biodiversity Conservation." *PNAS* 100.18 (2003): 10309-10313. Web. 29 October 2016.
- Muthuswamy, Gujji., "Australia's New Cap On Emissions is a Trading Scheme In All But Name." *The Conversation*. 3 September 2015. Web. 5 October 2016. <<http://theconversation.com/australias-new-cap-on-emissions-is-a-trading-scheme-in-all-but-name-47035>>.
- Napolitano, Dora A and Aliya S S Ryan. "The Dilemma of Contact: Voluntary Isolation and the Impacts of Gas Exploitation on Health and Rights in the Kugapakori Nahua Reserve, Peruvian Amazon." *Environmental Research Letters* (2007).
- NPR News Staff. "What Countries Are Doing to Tackle Climate Change." *National Public Radio*. N.p. 9 December 2011. Web. 5 October 2016.< <http://www.npr.org/2011/12/07/143302823/what-countries-are-doing-to-tackle-climate-change>>.
- Ortiz, Rene G. *OPEC: Twenty Years and Beyond*. Ed. Ragaei El Mallakh. Boulder: Westview Press, Inc, 1982. Print.
- O'Rourke, Dara., Connolly, Sarah. "Just Oil? The Distribution of Environmental and Social Impacts of Oil Production and Consumption." *Annual Review of Environment and Resources* 28 (2003): 587-617. Web. 17 October 2016.
- Pellegrini, Lorenzo., Arsel, Murat., Falconí, Fander., Muradian, Roldan. "A New Conservation and Development Policy: Exploring the Tensions of the Yasuní ITT Initiative."
- Roitman, Karem. "Hybridiry, Mestizaje, and Montubios in Ecuador." *QEH Working Paper* No. 165 (2008). 23 October 2016.

- San Sebastián, M., Hurtig, AK. "Oil Exploitation in the Amazon Basin of Ecuador: A Public Health Emergency." *Pan Am J Publ Health* 15.3 (2004): 205-211
- Silva, Tammy. "Ecuador's Yasuni-ITT Initiative for mitigating the impact of climate change." *Environmental and Planning Law Journal* 32.3 (2015): 278-293.
- Sovacool, Benjamin. "Energy and Ethics: Justice and the Global Energy Challenge." Palgrave Macmillan, 2013. 194-217.
- Sovacool, Benjamin and Scarpaci, Joseph. "Energy Justice and The Contested Petroleum Politics of Stranded Assets: Policy Insights From the Yasuni-ITT Initiative in Ecuador." *Energy Policy* (2016): 158-171.
- Stern Review: The Economics of Climate Change. N.d. Web. 27 October 2016.  
<[http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview\\_report\\_complete.pdf](http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf)>.
- Trumpf, Steffen. "Niebels einsamer Kampf gegen Yasuní." *Zeit Online*. 6 October 2011. Web. 29 October 2016. <<http://www.zeit.de/politik/ausland/2011-10/yasuni-niebel>>.
- United Nations Framework Convention on Climate Change. *Paris Agreement*. 2015. Web. 28 September 2016.<[http://www.un.org/ga/search/view\\_doc.asp?symbol= FCCC/CP/2015/L.9/Rev.1](http://www.un.org/ga/search/view_doc.asp?symbol= FCCC/CP/2015/L.9/Rev.1)>.
- United Nations Framework Convention on Climate Change. *Kyoto Protocol*. Web. October 5 2016.  
<[http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)>.
- Walsh, Bryan. "Rainforest for Ransom." *Time International* 178.24 (2011): 34-39.
- Warnars, Lavinia. "The Yasuni-ITT Initiative: A New Model to Implement Human Rights and Biological Diversity Conventions and Frameworks?" *Policy Matters* (2010): 55-77. Electronic PDF.
- Watts, Jonathan. "Ecuador approves Yasuni National Park oil drilling in Amazon Rainforest." *The Guardian* 16 August 2013. 9 November 2016.  
<<https://www.theguardian.com/world/2013/aug/16/ecuador-approves-yasuni-amazon-oil-drilling>>.