KADIR HAS UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF SOCIAL SCIENCES AND HUMANITIES

THE ROLE OF NATURAL RESOURCES IN THE COLOMBIAN PEACE PROCESS

GİZEM KAYA

ADVISOR: ASSOC. PROF. DR. HAMİD AKIN ÜNVER

MASTER'S THESIS

ISTANBUL, JULY, 2021

THE ROLE OF NATURAL RESOURCES IN THE COLOMBIAN PEACE PROCESS

GİZEM KAYA

ADVISOR: ASSOC. PROF. DR. HAMİD AKIN ÜNVER

MASTER'S DEGREE

SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES
WITH THE AIM TO MEET THE PARTIAL REQUIREMENTS REQUIRED TO
RECEIVE A MASTER'S DEGREE IN THE DEPARTMENT OF
INTERNATIONAL RELATIONS

ISTANBUL, JULY, 2021

NOTICE ON RESEARCH ETHICS AND
PUBLISHING METHODS

I, GİZEM KAYA;

- hereby acknowledge, agree and undertake that this Master's Degree Thesis that I have prepared is entirely my own work and I have declared the citations from other studies in the bibliography in accordance with the rules;
- that this Master's Degree Thesis does not contain any material from any research submitted or accepted to obtain a degree or diploma at another educational institution;
- and that I commit and undertake to follow the "Kadir Has University Academic Codes of Conduct" prepared in accordance with the "Higher Education Council Codes of Conduct".

In addition, I acknowledge that any claim of irregularity that may arise in relation to this work will result in a disciplinary action in accordance with the university legislation.

GİZEM KAYA

21 JULY 2021

KADIR HAS UNIVERSITY
SCHOOL OF GRADUATE STUDIES

ACCEPTANCE AND APPROVAL

This study, titled **THE ROLE OF NATURAL RESOURCES IN THE COLOMBIAN PEACE PROCESS** prepared by **GİZEM KAYA**, was deemed successful with the **UNANIMOUS VOTING** as a result of the thesis defense examination held on the **21 JULY 2021** and approved as a **MASTER'S THESIS** by our jury.

JURY:	SIGNATURE:
Assoc. Prof. Dr. H. Akın Ünver (Advisor) (Kadir Has University)	_____
Asst. Prof. Dr. H. Emrah Karaoğuz (Kadir Has University)	_____
Asst. Prof. Dr. İ. Efe Tokdemir (Bilkent University)	_____

I confirm that the signatures above belong to the aforementioned faculty members.

_____

Prof. Mehmet Timur Aydemir
Director of the School of Graduate Studies

APPROVAL DATE: 21/07/2021

TABLE OF CONTENTS

THE ROLE OF NATURAL RESOURCES IN THE COLOMBIAN PEACE PROCESS

ABSTRACT

Natural resources, depending on how governments handle them, continue to shape post-conflict societies increasing the risk of conflict recurrence or contributing to long-lasting peace. This thesis, considering two different kinds of literature examining the effects of natural resources on post-conflict countries, determined its main research question as *"How do natural resources affect the Colombian peace process?"* Do natural resources increase the risk of conflict recurrence in Colombia? Or are they mediators for sustainable peace? This thesis embraces a bottom-up approach that includes public views over natural resources in Colombia, focusing on Twitter as its workspace. In line with this, from the ratification of the peace agreement until the declaration of the first official Covid-19 case in Colombia; using time series, quantitative text, and sentiment analysis methods, it aims to investigate the impacts of illegal crops, gemstones, forests, and land-related issues on the peace process from the perspective of Colombians. According to the results obtained from the analyzes of these four segments, issues related to illegal crop cultivation are at the forefront in the peace process. Quantitative text analysis results reveal words related to government and politicians, as well as words related to protests and environmental concerns. In the sentiment analysis results, in tweets about mining and deforestation, negative emotions leave behind positive emotions, while positive emotions about coca and rural slightly exceed negative ones. Consequently, Colombia seems to be open to likely conflicts in terms of natural resources-related problems, including the environment, indigenous and local peoples' livelihoods, the situation of social leaders, and grievances on the issue of violence. Under these circumstances, building sustainable peace based on effective and fair natural resource management remains to be attained as an objective in the long term.

Keywords: Natural resources, Colombia, Colombian peace process, civil war, conflict recurrence, sustainable peace, environmental peacebuilding, post-conflict societies, Twitter, computational social science, time series analysis, quantitative text analysis, sentiment analysis.

KOLOMBİYA BARIŞ SÜRECİNDE DOĞAL KAYNAKLARIN ROLÜ

ÖZET

Doğal kaynaklar hükümetler tarafından nasıl ele alındıklarına bağlı olarak, çatışma tekrarı riskini artırarak ya da uzun süreli barışa katkıda bulunarak çatışma sonrası toplumları şekillendirmeye devam etmektedir. Bu tez, doğal kaynakların çatışma sonrası ülkeler üzerindeki etkilerini inceleyen iki farklı literatürü dikkate alarak, ana araştırma sorusunu *"Doğal kaynaklar Kolombiya barış sürecini nasıl etkilemektedir?"* olarak belirlemiştir. Doğal kaynaklar, Kolombiya'da çatışma tekrarı riskini artırır mı? Yoksa sürdürülebilir barış için aracılar mı? Bu tez, çalışma alanı olarak Twitter'a odaklanarak, Kolombiya'daki doğal kaynaklara ilişkin halkın görüşlerini içeren aşağıdan yukarıya bir yaklaşım benimsemektedir. Bu doğrultuda, barış anlaşmasının onaylanmasından başlayarak Kolombiya'daki ilk resmi Covid-19 vakasının ilanına kadar; zaman serisi, nicel metin ve duygu analizi yöntemlerini kullanarak, yasadışı mahsullerin, değerli taşların, ormanların ve toprakla ilgili konuların Kolombiyalıların bakış açısından barış sürecindeki etkilerini araştırmayı amaçlamaktadır. Bu dört kesime ilişkin analizlerden elde edilen sonuçlara göre, barış sürecinde yasadışı ürün ekimi ilgili konular ön plandadır. Nicel metin analizi sonuçları, hükümet ve politikacılarla ilgili kelimelerin yanı sıra protestolarla ilgili kelimeleri ve çevresel kaygıları ortaya çıkarmaktadır. Duygu analizi sonuçlarında ise; madencilik ve ormansızlaşma üzerine olan tweetlerde olumsuz duygular olumlu duyguları geride bırakırken, koka ve kırsal ile ilgili olumlu duygular olumsuz olanları çok az bir farkla aşmaktadır. Sonuç olarak Kolombiya; çevre, yerli ve yerel halkların geçim kaynakları, sosyal liderlerin durumu ve şiddet konusundaki şikayetler dahil olmak üzere doğal kaynaklarla ilgili sorunlar açısından olası çatışmalara açık görünmektedir. Bu koşullar altında, etkin ve adil doğal kaynak yönetimine dayalı sürdürülebilir barış inşası uzun vadede ulaşılması gereken bir hedef olmaya devam etmektedir.

Anahtar Sözcükler: Doğal kaynaklar, Kolombiya, Kolombiya barış süreci, iç savaş, çatışma tekrarı, sürdürülebilir barış, çevresel barış inşası, çatışma sonrası toplumlar, Twitter, programlamalı sosyal bilimler, zaman serisi analizi, nicel metin analizi, duygu analizi.

EL PAPEL DE LOS RECURSOS NATURALES
EN EL PROCESO DE PAZ COLOMBIANO

RESUMEN

Los recursos naturales, dependiendo de cómo los manejen los gobiernos, continúan dando forma a las sociedades postconflicto, lo que aumenta el riesgo de que se repita el conflicto o contribuye a una paz duradera. Esta tesis, considerando dos tipos diferentes de literatura que examina los efectos de los recursos naturales en países en posconflicto, determinó su principal pregunta de investigación como *"¿Cómo afectan los recursos naturales al proceso de paz colombiano?"* ¿Los recursos naturales aumentan el riesgo de que se repita el conflicto en Colombia? ¿O son mediadores de una paz sostenible? Esta tesis adopta un enfoque de abajo hacia arriba que incluye opiniones públicas sobre los recursos naturales en Colombia, centrándose en Twitter como su espacio de trabajo. En línea con esto, desde la ratificación del acuerdo de paz hasta la declaración del primer caso oficial de Covid-19 en Colombia; utilizando series de tiempo, texto cuantitativo y métodos de análisis de sentimientos, tiene como objetivo investigar los impactos de los cultivos ilícitos, las piedras preciosas, los bosques y los problemas relacionados con la tierra en el proceso de paz desde la perspectiva de los colombianos. De acuerdo con los resultados obtenidos de los análisis de estos cuatro segmentos, los temas relacionados con el cultivo ilegal de cultivos están en la vanguardia del proceso de paz. Los resultados del análisis de texto cuantitativo revelan palabras relacionadas con el gobierno y los políticos, así como palabras relacionadas con protestas y preocupaciones ambientales. En los resultados del análisis de sentimiento; las emociones negativas dejan atrás a las emociones positivas en los tweets sobre minería y deforestación, mientras que las emociones positivas acerca de la coca y las zonas rurales superan ligeramente a las negativas. En consecuencia, Colombia parece estar abierta a posibles conflictos en términos de problemas relacionados con los recursos naturales, incluido el medio ambiente, los medios de vida de los pueblos indígenas y locales, la situación de los líderes sociales y los agravios por el tema de la violencia. En estas circunstancias, la construcción de una paz sostenible basada en una gestión eficaz y justa de los recursos naturales sigue siendo un objetivo a largo plazo.

Palabras clave: recursos naturales, Colombia, proceso de paz colombiano, guerra civil, recurrencia del conflicto, paz sostenible, construcción de paz ambiental, sociedades postconflicto, Twitter, ciencias sociales computacionales, análisis de series de tiempo, análisis cuantitativo de textos, análisis de sentimientos.

ACKNOWLEDGEMENTS

I would like to thank my advisor, Assoc. Prof. Dr. Hamid Akın Ünver for widening my interest in computational social science with his projects and research. Without his studies, this thesis would not evolve in this way. I submit my gratitude to Asst. Prof. Dr. Hüseyin Emrah Karaoğuz, his courses had a significant impact on the improvement of my thesis, and I am also grateful for his and Asst. Prof. Dr. İhsan Efe Tokdemir's valuable feedback in my thesis defense. I also thank my dear friends Erman, Eda, and Abdullah for their inspiration throughout my master's degree. I am grateful to Yusuf for his genuine support and confidence in me; I would not have completed this thesis without his encouragement in my darkest days. Most importantly, I present my sincere gratitude to my family for their endless support in my life.

The last word, I thank the process that eventually enabled me to combine what I have learned passionately and perseveringly for the previous three years of my life in this thesis.

To the indelible memory of
İsmail & Hafize Tendürek

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ACLED	Armed Conflict Location and Event Data Project
AD	Alternative Development
CRR	Comprehensive Rural Reform
DFID	Department of International Development
EITI	Extractive Industries Transparency Initiative
ELN	National Liberation Army
FARC	Revolutionary Armed Forces of Colombia
NGOs	Non-Governmental Organizations
UCDP	Uppsala Conflict Data Program
UNEP	United Nations Environment Program
UNODC	United Nations Office on Drugs and Crime

1. INTRODUCTION

The versatile effects of natural resources have been prominent in the different stages of the Colombian civil war and the peace process. Land-related issues are at the origin of the conflict, while illicit crops and gemstones enabled rebels to sustain armed conflict throughout the years via the revenues from drug trafficking and illegal mining. Forests both have been a shelter to insurgents and subjected to illicit activities that caused deforestation. For that reason, the impacts of resources on the duration of civil wars have widely been deemed negative as they increase rebel resistance. Nevertheless, their effects are less studied in peace processes while maintaining to shape the course of the peace.

In this regard, two opposite views dealing with natural resources are prominent in peace processes. The first one pursues the resource-conflict literature and examines resource impacts on conflict recurrence. In contrast, the second view focuses on the likely cooperation areas that enhance trust and peace in post-conflict countries. According to the first view, countries undergone natural resources-related conflict are more prone to conflict relapse (Rustad & Binningsbø, 2012); therefore, resources should be handled carefully in peace processes. In terms of the second view, effective natural resource management can increase trust between former adversary sides, thereby contributing to long-lasting peace in post-conflict societies. At this point, governance and addressing grievances of the public are the foremost constituents to strengthen the peace.

In light of these two kinds of literature, the Colombian peace process needs a detailed examination of resources that had a significant impact on the civil war. For that reason, this thesis' main research question is: how do natural resources affect the Colombian peace process? And its subsequent questions are: do natural resources increase the risk of conflict relapse in Colombia? Or are they mediators for peace by increasing trust? To answer these questions, this study drawing insights from greed and grievances-based approaches contends that governance and effectiveness of political institutions are significant to not fall into conflict trap. Therefore, this study espouses a bottom-up approach including public opinions that can demonstrate the likely positive and adverse

sides of natural resources in the Colombian peace process. Thus, it prioritizes the Colombians views on natural resources by focusing on Twitter to seek answers to its questions. To trace these questions' answers, tweets containing "coca, mining, deforestation, and rural" will be extracted, and they will be analyzed through the quantitative text analysis and sentiment analysis methods by using the R programming language.

The logic of the research question is premised on the idea that natural resources had versatile effects on the Colombian conflict, shaping the peace process. Another reason for the research question is a vital requirement for the bottom-up approach in peacebuilding processes, and Twitter is one of the prominent means to reach public views. Therefore, contrary to widespread top-down methods, this study focuses on Twitter, which offers people a vivid environment to express their concerns about their current situations. Besides, this study acknowledges its constraints deriving from people that do not use any social media platforms or Twitter in Colombia, and it strongly favors to field study to grasp unattainable persons' views on resources. However, it aims to contribute to the literature in terms of social media and Twitter research on natural resources and the peace process.

This thesis proceeds as follows. The second chapter explains the logic behind the methodology by touching on the reason for selection Twitter, selected words, and time interval. The third chapter introduces greed and grievance-based approaches, which are the leading theories on the civil war and resources, and advocates that rather than these theories, governance and political institutions' effectiveness are the essential determinants of conflict recurrence stemming from the natural resources in post-conflict societies. The fourth and the fifth chapters are separated for the literature review that encompasses the impacts of natural resources in civil wars and peace processes. This literature review constitutes two parts and proceeds as follows: firstly, the role of natural resources will be examined in the civil war context, considering the characteristic of resources. Then, their likely effects on conflict recurrence and sustainable peace will be elaborated on in the post-conflict context in chapter five. The potential impacts of natural resources on the conflict recurrence will be detailed in terms of rebels, government, international actors,

and the public perspectives. Finally, the avenues for long-lasting peace after intrastate conflicts will be scrutinized in terms of the natural resource management under the environmental peacebuilding framework. Chapter sixth focuses on the Colombian peace process regarding natural resources, including coca, gemstones, forests, and land-related issues. The seventh chapter analyzes the tweets by employing time series analysis, quantitative text analysis, and sentiment analysis. The eighth chapter concludes this study, and the ninth chapter offers new avenues for future research.

2. METHODOLOGY

This study utilizes time series analysis, quantitative text analysis, and sentiment analysis methods to answer its primary and subsequent questions. Time series analysis of four tweet segments compared to the ACLED dataset on the Colombian protests, riots, and violence against civilians can unearth the likely similarities between these conflict times. Quantitative text analysis helps us is to understand which issues stand out more with selected words, thereby increasing our understanding of negative and positive issues in the peace process. Further, it can unpack the main actors related to each resource sector in line with the literature over the conflict recurrence deriving from the government, rebels, international actors, and public. Thus, we can find a more evident connection between these tweets and conflict events. Lastly, sentiment analysis over resource and environment-related issues can reveal the potential risks and strong sides of the peace process in each tweet segment; thereby, we can be closer to explaining the impacts of resources in terms of contributing or undermining peace.

This thesis relies on Twitter as its primary source to reach Colombians opinions and focuses on four correlated dimensions in the Colombian context; coca, mining, deforestation, and rural, by considering their impacts in the civil war and the post-conflict process. The time of the study is limited from the ratification of the Colombian peace agreement on November 30, 2016, to the declaration of the first Covid-19 case on May 6, 2020, in Colombia. In line with the academic literature, "Coca," "Minería," "Deforestación," "Campesino" included tweets that were collected in the Colombian context. These tweets were extracted by using both Python and R with the Twitter API. Then, the quantitative text analysis method was applied by using the R programming language with the Tidytext package. Additionally, time series analysis was employed on these four tweet sections. These tweet times were compared to the ACLED dataset that contains Colombia conflict events starting from April 2018 to observe a potential match. Moreover, sentiment analysis of these tweets was conducted by employing NRC Spanish Emotion and Sentiment Lexicon developed by Saif M. Mohammad.

2.1. RATIONALE FOR THE SELECTION OF TWITTER

The bulk of the literature on natural resources and peacebuilding pursues the same pattern with the practices in this field by embracing predominantly top-down approaches. In this vein, policy reports and UNEP documents constitute a significant portion of the literature (Conca & Wallace, 2009; Krampe, 2021). While Krampe (2021) states that domestic actors are portrayed as a risk factor in the natural resource management process based on qualitative content analysis of UNEP documents, Johnson et al. (2021) highlight that bottom-up approaches focusing on individual tend to find positive effects of natural resource management in peace processes. On the other hand, recent studies underline the requirement of bottom-up approaches and big data use that include local people's perspectives considering the technological advancements (Ide et al., 2021). For instance, Koren et al. (2021) investigate social unrest risk in Kenya by focusing on water and food insecurities on Twitter.

In line with the current advancements in technology, people can express their thoughts through online platforms easily. Social media increases interaction between people by reducing barriers derived from traditional media (Zeitzof, 2017, p. 1980). Conversely to the conventional media constraints, people can express their opinion via real-time narratives, thereby reaching audiences from all around the world with an unprecedented information size and speed before (Unver, 2019, p. 7). In this vein, Twitter is one of the pivotal social media platforms that enable people to express themselves (Murthy, 2012) and the most commonly used medium in academic studies (Ahmed, 2019). Further, Twitter ensures to development of an understanding to conceive populace attitudes (McCormick et al., 2015, p. 6); thereby, researchers can benefit more from it.

Notwithstanding, in peace processes, responsiveness to society's anxieties is of utmost importance. Hence, as the most powerful tool for improving dialogue and expressing concerns, social media, particularly Twitter, can provide us dynamic and bottom-up perspective for peacebuilding (Nigam et al., 2017). Colombia has one of the highest social media usage among Latin American countries (Fabra-Mata & Mygind, 2019). According to Colombia's digital situation statistics between 2019-2020, 55.2 % population prefer Twitter as the fourth most used social platform after YouTube, Facebook, and Instagram

(Medina, 2020). Further, studies focusing on the Colombian peace process on Twitter support this phenomenon. For instance, Nigam et al. (2017) investigate the Colombian public's polarization before the 2016 peace agreement. Barreto-Galeano et al. (2019) focus on ideologic rhetoric from several political actors, guerilla groups, NGO's and media in the peace process. Fabra-Mata and Mygind (2019) explore Norway's contribution to the Colombian peace process using Twitter data. Nevertheless, as one of the principal elements of the Colombian peace process, the investigation of public views about natural resources and the environment remains vital.

This thesis mainly focuses on resources-related specific words in the Colombian context on Twitter to address this gap. In line with the current developments in the peace and conflict studies and the Covid-19 pandemic that limit our mobilization, it can be seen that these new technologies gain more importance in every area of life and academic studies. Considering this limitation and new techniques, I will pursue my research based on Twitter data that contain the most suitable specific words related to the context of the natural resources in Colombia.

2.2. RATIONALE FOR THE SELECTED WORDS AND TIME PERIOD

This thesis focuses on four dimensions of illicit crops, mining sector, forest, and land, following the literature encompassing natural resources' impacts on conflict and post-conflict processes. Eloquently, this selection relies on the roles undertaken by these natural resources in both the conflict and the post-conflict processes in Colombia. From the illicit crops segment, coca cultivation emanates as the main thrust to drug trafficking in Colombia. Therefore, related to the drugs segment, tweets encompassing "coca" (coca) were collected. Illegal mining that includes gemstones such as gold, silver, and minerals constitutes another tangible dimension; thereby, this thesis extracted tweets containing "minería" (mining) to include all gemstones related words.

Moreover, forests have been subjected to numerous illegal activities by armed groups, companies, the government, and the local population; thus, deforestation is a significant problem for Colombia. Therefore, "deforestación" (deforestation) related tweets were collected. By extension to these areas, land-related grievances have been at the center of

the conflict in Colombia, and they affect the peace process vastly, including displaced people' and victims' grievances. As we witnessed in the first section of the peace agreement, comprehensive rural reform was formed to deal with the land distribution-based problems. For that reason, to cover all land-related issues in the countryside, this thesis focuses on tweets that include "campesino" (rural). This selection is based on the historical ties of these resources related to the civil war and their importance on the Colombian peace process.

This study covers the period that includes after the ratification of the Colombian peace accord on 30.11.2016 to the statement of the first official Covid-19 case on 06.03.2020 in Colombia. The logic of this selection lies in that peace agreements may not always bring peace and signing a peace agreement brings lots of responsibilities that require addressing public grievances outright. The time limitation to the declaration of the first Covid-19 case premised on the idea that its' negative impacts on public grievances should be evaluated separately. For that reason, this study does not include after the period of 6 March 2020.

2.3. RATIONALE FOR THE METHODOLOGY

This thesis firstly employs the quantitative text analysis method in the R. Several packages enable us to do quantitative text analysis in R, such as the TM package, the Quanteda, and the Tidytext. In the scope of this study, I used the Tidytext package developed by Julia Silge and David Robinson and benefited from their book (2017). I used the Tidytext package in my study because my Twitter data is based on Spanish texts, and compared to other packages, I found it easy and very efficient to use in Spanish texts. For example, when I tried to use the TM package in Spanish texts, I faced several problems related to character string and encoding. By using the Tidytext package, after the tokenization process, the most frequent words were identified. Then, bigrams were also detected, which helped reveal the most significant issues and actors. Besides, Colombian newspapers and Spanish resources were utilized while analyzing and contextualizing these bigrams.

The quantitative text analysis is commonly used for Internet-based resources, such as social media posts, Tweets, comments from Facebook and YouTube, and large policy documents (Basu, 2019). In the scope of this study, quantitative text analysis can help us understand the possible risks and mediation areas for peace. Which actors appear more in this context also provides us knowledge of the conflict risk or potential mediating areas are stemmed from whether the government members, rebels, local people, or international actors. Time series analysis of tweets that are compared to the ACLED dataset can demonstrate the possible similarities with the conflicts that occurred in Colombia. Moreover, sentiment analysis can elucidate these tweets' content and contribute to our understanding of the positive and negative aspects of resources perceived by the public. Hence, our knowledge on the governance and public institutions' effectiveness in resources area can increase, and we can obtain ideas on whether resources enhance trust and peace in post-conflict societies through resource management, thereby contributing environmental peacebuilding literature empirically.

2.4. LIMITATIONS

This thesis acknowledges the difficulty of reaching the whole Colombian population's thoughts over natural resources via Twitter. It is necessary to conduct field research in Colombia to include the entire local population, including indigenous communities' views on resources. Several studies address this void (Ceron et al., 2018; Parada-Hernández & Marín-Jaramillo, 2021); therefore, this study offer an alternative approach that becomes increasingly important in terms of arguing social media agenda. Twitter only provides perspective and angle, it does not represent communities, but it offers additional contribution as it is a place where an alternative agenda can be discussed and worked on a long-term basis.

The second limitation emanates from the ACLED dataset from April 2018; however, this study surveys the tweets from 30 November 2016 to 5 March 2020. Therefore, this study will only be able to examine the period between April 2018 to 5 March 2020 from the time series analysis. The third limitation comes from the sentiment analysis that is based on the dictionary-based approach. Some words such as president names, the government are acknowledged as positive. However, in different contexts, these meanings can have

diverse connotations. One word such as "leader" has a positive meaning in the dictionary; however, this term in tweets may be pertinent to the assassination of social leaders. Dictionary can not distinguish this difference and accepts this word as positive. We should be aware of these limitations derived from the dictionary-based approaches.

3. THEORETICAL FRAMEWORK

The question of what causes civil wars has laid the groundwork for the greed and grievances theories that reflect stark opposite views based on economics and political science. While the grievance-based approaches concede social, economic, and political inequalities as underlying factors triggering conflict, the greed-based approach argues that materialist objectives of individuals drive to conflict (Cederman & Vogt, 2017). Therefore, the dichotomy of greed and grievance can be interpreted in accordance with whether they consider rebellion as producing public good or private good (Hoeffler, 2011, p. 275).

Given that post-conflict countries are highly vulnerable to conflict relapse, the underlying reasons for conflict should be paid more attention to in peace processes from the perspectives of grievance-based approaches. According to the greed and grievance approaches, respectively, resource-based civil wars recur because the opportunity to resume conflict is still lucrative for rebels, or the troubles of previous civil wars continue to exist. By contrast, Walter (2011) couches that greed and grievance-based theories can not explain why some countries fall into conflict trap, while others maintain peace; thereby, she asserts political institutions' weakness as the driving factor to conflict relapse. Nevertheless, the odds of the recurrence of civil wars decreases when the mechanisms controlling the accountability of governments function well (Walter, 2014, p. 7; Nichols et al., 2011).

Similar to Walter's (2011, 2014) argument, the role of institutions and good governance stand out as foremost constituents to not experience resource-based conflict again as complying to this thesis' literature review part. Furthermore, given the importance and difficulties of maintaining a commitment to peace agreements, establishing control mechanisms strengthening political institutions is vital to perpetuating peace. For that reason, this thesis' theory chapter, also considering the greed and grievance theories, will evaluate the risk of conflict recurrence and the possibility of enhancing peace in terms of the effectiveness of institutions and governance over natural resources in Colombia. In

this chapter, first, grievance and greed theories will be introduced. Following, Walter's argumentation on the importance of governance and political institutions over recurring conflict will be elaborated in the Colombian peace process considering resources.

3.1. GREED-BASED APPROACH

In the aftermath of the Cold War, the impacts of natural resources became more apparent within the growing number of civil wars, and the UN and the World Bank reports have starter to draw more attention to resources. Simultaneously, the economic explanation of civil wars has been burgeoned under the greed-based theories; Collier and Hoeffler (2002, 2004) found a link between a country's dependence on primary commodities and the greedy mechanism of civil wars. According to this view, primary commodities comprise significant value for countries dependent on natural resources for their GDP and controlling the revenues of these resources is crucial for stakeholders. Moreover, rebels are conceded as bandits pursuing profit to increase their income; thus, natural resources constitute incentives to fight for those who seek self-enrichment (Collier & Hoeffler, 2002, 2004).

In addition, the greed-based approach emphasizing that inequalities are ubiquitous; for that reason, it argues that grievance-based approaches do not explain the cause of civil wars (Collier & Hoeffler, 2004). Hoeffler (2011), based on the "collective action" theory, purports that private gains are more important than common grievances as they facilitate to maintain rebellion. Notwithstanding, natural resources constitute a significant value to finance insurgencies, several studies have found no relations between natural resources and the onset of civil wars (De Soysa, 2002; Sambanis, 2002, Fearon & Laitin, 2003).

This approach sustains their arguments for explaining the recurrence of conflict without paying attention to the governments' attitude in peace processes. However, it ignores the discontentment of the public stemming from governments' unaccountability and reluctance to comply with peace agreements may spur another conflict. The unfair distribution of resource revenues may trigger some parts of public or ignored groups' grievances, thereby inducing the undermining of peace processes.

3.2. GRIEVANCE-BASED APPROACH

Inequalities permeating society and taking structural forms can kindle unrest together with political and economic injustices. Inequalities over land distribution and income injustices can evolve into political violence and civil war if governments do not implement policies addressing them thoroughly (Regan & Norton, 2005). Thus, grievance-based theories feature these injustices as determinants of internal armed conflict.

One of the primary theories from the grievance-based approach is the "relative deprivation" theory was developed by Gurr (1970) by drawing on psychology. According to relative deprivation theory, if the abyss between individuals' expectations and achievements expands, the risk of conflict increases. For instance, education brings expectations to individuals; however, if they are unemployed after completed their education or do not obtain what they want to achieve, this situation may spur unrest (Murshed & Tadjoeddin, 2009, p. 97). Indeed, this example also the clearest sign that the utterance of equality of opportunity in education is just an illusion that conceals the structural and settled inequalities behind it. From this perspective, economic, political, social deprivations are potent drivers for violent conflict (Basedau et al., 2015).

The second most known theory comes from the horizontal inequality perspective; Stewart (2000) claims that discriminations based on ethnicity, religion, linguistic or other differences within groups can cause conflict. For instance, differences in the implementation of taxes and public services and excluding some groups from benefiting the revenue of resources can trigger conflict (Murshed & Tadjoeddin, 2009). Alienating certain groups from the political decision-making mechanisms, inequalities based on land distribution may also beget conflicts.

These grievances continue after peace agreements from the post-conflict societies' aspect since they are not addressed thoroughly. Inequalities endure as long as settled state characteristics resting on discrimination exist. The grievance-based approach has some critical points to explain the resource-driven conflict recurrence in post-conflict societies.

However, it lacks to consider the importance of governance and political institutions on resources as determinants of the sustainable peace.

3.3. GOVERNANCE IN POST-CONFLICT SOCIETIES

Since the new civil wars are mostly the repetition of previous ones, to permanently terminate them constitutes the most pressing issue of the post-conflict countries and the international agenda (Walter, 2014). Unlike the explanations of the onset of civil wars, greed and grievances theories may lack explaining recurring civil wars. Thus, the effectiveness of political institutions and governance emerge as essential determinants of conflict relapse, considering the difficulties in implementing peace agreements. In the wake of peace agreements, strengthening political and legal institutions is necessary to inhibit the recurrence of violence. Differentiating from the grievances-based approach, Walter (2014) emphasizes the lack of accountability of the government elites and puts forward that if the public does not attend political life and transparency in information channels is missing, the risk of civil war recurrence increases.

Unlike the implementation period of peace agreements, the relationship between the public and government is vertical in consolidation and normalization processes (Ohlson, 2008, p. 151). In other words, the public may be forced to comply with the undue practices of governments' on peace agreements. Although a civil war attains a negotiated settlement, the agreement's implementation faces several challenges that directly affect public conditions. Thus, the trustworthiness of governments, which are settled political institutions control, arises as a decisive factor in whether to return violence (Walter, 2011, p. 30). Further, people may start to question whether their situation before implementing the peace agreement better or not. If large public groups remain dissatisfied with the current situation, they may end up preparing for another war (Ohlson, 2008).

The Colombian Peace Agreement prioritizes resource-based issues, differentiating rural reform and illicit drugs in its first and fourth chapters. As we observe from the agreement, natural resources are at the heart of the Colombian peace process. Nevertheless, even if natural resources-related problems have been addressed in the agreement, their implementations have faced several challenges. This situation unearths the severe issues

with the accountability of the government and the lack of control mechanisms of institutions; therefore, Colombia has been remaining at stake in terms of the conflict recurrence.

In this regard, articulating natural resources' impact on the recurrence of conflict is pointless without addressing the effectiveness of the political institutions and governance. Grievances of the public may continue after the peace agreement due to the lack of control mechanism over the implementation process, or some rebel groups and criminal actors may want to continue to war to obtain income. However, these reasons are insufficient to explain the recurrence of conflict without considering governance and political institutions that are closely related to democracy.

To reduce conflict relapse to the greedy rebel argument prevents grasping fundamental reasons causing the conflict outright. Grievances of the public based on land, illicit crop cultivation, deforestation, and illegal mining affecting local livelihood, may spur conflict. Indeed, the Colombian peace agreement has remained far from fulfilling the ending violence towards ex-combatants, social leaders, and local people. Hence, it is evident that political institutions are not strong enough to force the state elites to comply with the agreement. This thesis is based its main argument on the effectiveness of governance and political institutions on natural resource management.

4. THE ROLE OF NATURAL RESOURCES IN CIVIL WARS

In the aftermath of the Cold War, a growing number of civil wars mainly occurring in Africa commanded scholarly attention towards the nexus of natural resources and civil war. In line with an array of UN reports and World Bank documents, the economic dimension of civil wars gained importance in the literature. Thus, it has paved the way arising a massive literature that comprises the relationship between abundance or scarcity of the natural resources and conflict (Gleditsch, 1998; Brunnschweiler & Bulte, 2009; Bretthauer, 2014; Maxvell & Reuveny, 2000; Theisen, 2008; Koubi et al., 2013), also the impact of different type of natural resources towards onset or duration of the conflict (Collier & Hoeffler, 1998, 2002, 2004; Le Billon, 2001; Sambanis, 2002; De Soysa, 2002; Fearon & Laitin, 2003, 2004; Ross, 2004a, 2004b; Lujala, 2009, 2010).

This exhaustive literature chiefly investigates the impact of different types of resources on the conflict onset and duration, disaggregating them such as oil, timber, gemstone, primary commodities, agricultural products; however, even if it includes a range of high-quality researches based on quantitative methods, their results show variety (De Soysa, 2002; Ross, 2004b). Ross (2004b) aggregates these differences within five categories; the first one is whether natural resources impact the onset of conflict or not. The second, whether they affect the duration of the conflict or not, the third whether natural resources affect all types of conflict or only a particular kind of conflicts, the fourth whether all sorts of resources have an impact on civil war or not, the fifth is related to causal mechanisms of conflict and resources (Ross, 2004b, p. 338).

On the other hand, Le Billon (2005) asserts that different types of resources can spark different types of armed conflicts such as coup d'état, secession, warlordism, and peasant rebellion (p. 38). With respect to resources' proximity and distance to the state control, point-resources near the state control can spark coup d'état, while their distance from state control triggers secessionist movements. On the flip side, scattered resources are locating near the state cause rebellions, whereas if they are located far from state control, they cause warlordism, representing de facto sovereignty. Given the importance of

excluding and marginalizing the peasants' population from the agricultural domain, it can spur political mobilization and cause mass revolutionary demonstrations. In a peasant rebellion, armed groups may emerge as a protector of these marginalized groups, yielding their economic incentives for cultivating agricultural products like in Colombia, the Philippines, and Nicaragua (Le Billon, 2005, p. 43).

Further, Billon (2001) approaches resources from the violence perspective, and he posits that the form of violence changes according to resource involvement to extraction or production (p. 568). In terms of extracted resources, violence might be more visible due to the rebels' willingness to control territory; however, in terms of produced resources such as crops, violence most likely takes shape in structural form (Scott, 1985). Thus, it should be acknowledged that resources related to extraction or production may have different forms and impacts on people.

Natural resources have been seen as drivers of a conflict and finance mechanism to maintain conflict for armed groups (Collier & Hoeffler, 2004; Hoeffler, 2011). While Le Billon (2001) recognizes the Collier and Hoeffler (2004) argument, he also states that dwindling armed conflict to the solely greed-driven motivation can be flawed because grievances of people also are matter (p. 580). De Soysa (2002) also highlights that the governance aspect should be concerned.

In the scope of this study, taking stock of Ross' (2004b) categorization, I will examine the role of natural resources by dividing them into two categories; primary commodities and lootable ones. Since the transportability and extractability of the resources have a noticeable impact on civil wars, and primary entities, unlike the lootable ones, are more difficult to extract by unskilled workers and rebels, this categorization represents the most propitious one.

4.1. PRIMARY COMMODITIES AND CIVIL WAR

Many rebel groups became more dependent on resources to finance armed conflict since external assistance had decreased since the end of the Cold War (Billon, 2001). Natural resources constitute a prominent cause for fighting, particularly for countries mainly

depending on primary commodities for their growth, and they may both motivate and finance violent activities (Collier & Hoeffler, 1998; Le Billon, 2001). Collier and Hoeffler (1998, 2002, 2004) conceptualize primary commodities as an initiative for rebellion, contending that primary commodity increases civil war risk due to the extortion risk. According to De Soysa (2002), this view reflects rebels solely as loot-seekers who want to maximize their expected utility by looting natural resources (p. 397). Moreover, it ignores the grievances causing a rebellion, accepting rebels as company workers. On the other hand, according to Sambanis (2002), whether looting is the rebels' ultimate goal or just a way to sustain rebellion is ambiguous. Humphreys (2005) claims that the link between primary commodities and conflict partly results from the dependence on agriculture.

Primary commodities point to a broad category that includes oil and agricultural products (Ross, 2004b). Fearon and Laitin (2003) allege that primary commodity does not affect civil war based on their database result; however, oil impacts the onset of civil war, particularly in separatist movements. Fearon (2004) states that land or natural resources conflicts between an ethnic minority group and the state-supported dominant group tend to be longer; he defines it as 'sons of the soil' war (p. 277). In terms of legal agricultural products and conflict, Ross (2004a) does not find any relation, and Ross (2004b) indicates no specific connection between the onset of the civil war and primary commodities.

In terms of oil, Lujala (2009, 2010) considers the resource's location and couches that when conflicts happen in oil areas, it lasts in secessionist movements. Conrad et al. (2019) focus on the nexus between rebels' exploitation of natural resources and conflict duration, and they assert that only natural resource smuggle markedly increases civil war duration. Rather than focusing on the resource type such as lootable or primary commodities, this approach emphasizes the importance of rebel groups' different strategies over natural resources that affect political and social outcomes. Brunnschweiler and Bulte (2009) also remarked that the lootability of resources is a crucial factor, criticizing Collier and Hoeffler's arguments by not considering smuggling (p. 653).

Some studies also state that countries dependent on primary commodities for their economic growth are most likely to confront political instability and conflict (Collier, 2000; Ross, 1999) as natural resources decrease political institution's ability to solve problems in peaceful ways (Le Billon, 2001).

4.2. LOOTABLE COMMODITIES AND CIVIL WAR

Natural resources are often subjected to the risk of extortion and looting as their location mostly takes place in remote areas. Extractive commodities such as minerals, drugs, and diamonds are more susceptible to face looting activities. Le Billon (2005) asserts that high-value and easily exported resources dispersed in the large territory are more attainable for insurgents (p. 34). Moreover, centralization and state capacity have a notable impact on looting.

From this angle, lootable resources can be defined as easily transportable and extractable by unskilled workers or individuals such as diamonds, drugs, alluvial gemstones, agricultural products, and timber (Ross, 2003, p. 54; Le Billon, 2005). Between the 1990 and 2000s, lootable resources such as opium, cocaine, and diamonds were widespread in most civil wars, and they captured significant attention (Mildner et al., 2011, p. 166; Ross, 2004b). For instance, diamonds are seen as guerillas' best friend, given their impacts in Sierra Leone, Angola, and DRC (Le Billon, 2005). Ross (2003) contends that lootable resources can trigger non-separatist conflicts, but they have little impact on separatist ones (p. 47). Lujala et al. (2005) set forth that lootable diamonds are strongly associated with the initiation of civil wars.

Further, lootable resource adverse effects might continue in the peace process since to continue conflict may seem more profitable to insurgents than sustain peace. On the other hand, local and poor people may also benefit from lootable resources; for that reason, impeding the flow of lootable resources can be more difficult (Ross, 2003, pp. 55-56). This section will deepen the role of alluvial gemstones, diamonds, and drugs that include coca and opium in civil wars.

4.2.1. Alluvial Gemstones and Diamonds

Several studies on gemstones and diamonds converge around the findings that they have no significant impact on the initiation of civil wars (Ross, 2004a; Humphreys, 2005). Regan and Norton (2005) contend that extractable resources such as gemstones, opium, diamonds, unlike the conventional view claiming that these resources fuel civil wars, have not to do with the onset of civil wars. Ross (2004a) also states that in Sierra Leona and the Democratic Republic of Congo, gemstones may have a motivating effect on rebels, but other cases, in Angola, Afghanistan, Cambodia, Burma, and Liberia have no effect. However, once the civil war started, these resources have a marked impact on sustaining rebellion. Stedman (2001) also states that gems tend to prolong conflicts, impeding the implementation of the peace agreement.

On the other hand, Gilmore et al. (2005) and Lujala et al. (2005) investigate the relationship between diamonds and conflict particularly and, they state that primary diamonds and onset of civil war do not have a relationship; however, secondary diamonds increase the onset of ethnic civil war. Moreover, after the end of the Cold War, secondary diamonds have a robust and positive relationship with the onset of all civil wars (Lujala et al., 2005, p. 539). Primary diamonds point to kimberlite diamonds extracted by large-scale companies, while secondary diamonds are extracted via artisanal tools (Lujala et al., 2005, p. 543). Further, their geographical distribution differs from one another; primary diamonds are more likely to control by the government due to their precise location. Nonetheless, secondary diamonds spread over large areas, and they are more difficult to control by the government; thus, rebels can easily take advantage of them both at the onset of conflict and to sustain rebellion.

4.2.2. Drugs

Drugs and contraband resources have been widely argued in their possible effects on civil war onset and duration. As Le Billon (2005) stated, distant areas lack state control, and it facilitates rebels' control over lootable resources so that they can maintain conflict. Ross (2004a, 2004b) states that the production of coca and opium has little effect on the initiation of conflict in Afghanistan, Burma, Colombia, and Peru, but civil war led to drug

production in Colombia. Similarly, Fearon (2004) claims that contraband commodities impact civil war duration, making civil wars longer. Fearon (2004) proposes that the course of civil war, which is affected by contraband resources such as diamond, coca, opium, is more prone to be longer such as countries like Colombia, Angola, Burma, Sierra Leone (p. 284). Cornell (2005) underlines that drugs have firmly to do with the duration of the conflict, but not the onset.

By extension, Cornell (2005) asserts that terrorism and organized crime literature can link to narcotics and conflict. Based on empirical studies, Cornell (2005) claims that existing drug production empowers armed conflict narcotics production and increases rebels' involvement in the drug trade; hence, their capacity to challenge state authority increases. To sum, gemstones, coca, opium have no relation with the onset of the conflict; however, they affect the duration of civil war (Ross, 2004b).

5. THE ROLE OF NATURAL RESOURCES IN PEACE PROCESSES

Although a bulk of studies investigate natural resources' role in civil wars, their likelihood effects in post-conflict societies have not drawn the same attention (Rustad & Binningsbø, 2012; Roy, 2016; Webersik & Levy, 2016, p. 39). Given the studies that demonstrate their impacts on armed conflicts, it is apparent to require a further account of natural resource impacts in post-conflict countries. In this regard, two opposing and preponderant angles have arisen over natural resources in post-conflict societies; the first one evaluates the likely natural resources effects on the risk of conflict relapse in post-conflict societies (Rustad & Binningsbø, 2012), while the second view underscores the importance of the effective natural resource management to impede conflict (Bruch et al., 2016). Moreover, the latter includes a burgeoning literature over natural resource management in post-conflict societies with its foundations to environmental peacebuilding concept (Conca & Dabelko, 2002; Ide, 2017, 2019, 2020; Dresse et al., 2019). This literature depicting a more positive perspective upon environmental challenges and resources-related issues principally asserts that natural resources can bring sustainable peace in post-conflict societies via effective management.

Furthermore, in terms of high-value resources, it can be pointed two possible outcomes for post-conflict societies; the first one is they can hinder economic development and lead to a conflict relapse either by triggering government corruption or facilitating the former armed groups to the conflict (Nichols et al., 2011), the second is they can promote peace by increasing economic equality and living standards via good governance (Lujala & Rustad, 2012; Bruch et al., 2016). Their effect on the peace process highly depends on how they are handled by the government, which is also significantly related to democracy and institutionalism. If they are driven by good governance through effective and fair management, they enhance sustainable peace.

In this chapter, firstly, natural resources' effect on the risk of conflict recurrence will be examined considering four central points that comprise rebels, governments, international actors, and the public. Secondly, the role of natural resources over long-lasting peace will

be scrutinized, focusing on natural resource management after intrastate conflicts via environmental peacebuilding literature.

5.1. THE RISK OF CONFLICT RECURRENCE

At first glance, it is not inaccurate to utter that the preponderant view over the relation between natural resources and civil war has not undergone a significant change in post-conflict literature. Even if new perspectives regarding the role of environment and resources commenced to appear in the mid-2000s, they have not attracted considerable attention until the mid-2010s. Thus, the literature mainly problematizes and securitizes the asset of natural resources in post-conflict societies by separating them as high-value or lootable ones and assessing their likely effect on conflict recurrence (Lujala & Rustad, 2012; Roy, 2016). On the other hand, the post-conflict process also sets renewable resources such as land and water in terms of their possible effects on conflict recurrence (Lujala & Rustad, 2012).

Countries having an armed conflict history are more likely to recurrence of it. Regardless of how these conflicts end, most of them started again, like in Sierra Leone, Sri Lanka, Rwanda, Afghanistan, Angola, Burundi (Webersik & Levy, 2016, p. 39). Webersik and Levy (2016), considering natural resources are at the heart of the armed conflict, contend that a peace accord that does not address resource-related issues will probably cause conflict recurrence given the discrimination of some groups to access resources continues (p. 39). This view goes beyond the pre-accepted immediate social and political issues in post-conflict societies by including natural resources, environmental challenges, and resource scarcity topics in the political agenda that can potentially undermine peace.

On the flip side, while the most common question of the literature is what features of a nation render it more susceptible to civil war, the most relevant question is what attributes of post-conflict societies drive them to conflict recurrence (Quinn et al., 2007, p. 168). As one of the main drivers of conflict relapse, natural resources maintain their significance in this context. Eloquently, Nichols et al. (2011) assert that post-conflict peacebuilding entails a rigid caution upon these issues when natural resources shape a conflict onset or duration (p. 11).

In post-conflict peacebuilding literature, the risk of conflict relapse can be framed in four key dimensions; the first is the rebels-based aspect that perceives fighting for resources as more advantageous than peace situations. The second is stemmed from the government that adopts corruption and poor governance. The third one is derived from the acts of international actors that ignore public requirements. The last one comprises the public that has unresolved resources-related grievances. Besides, these four separated dimensions form an intricate structure that concurrently inclusive of each other.

5.1.1. The Rebels Aspect

Several scholars have continued to accentuate the adverse effects of natural resources in post-conflict societies, utilizing the central premises of the natural resources and civil war literature (Nichols et al., 2011; Rustad and Binningsbø, 2012; Whittemore, 2008). According to this literature, rebels' motivation over seizing and fighting for natural resources persists to be a salient factor, particularly after natural resource-induced conflicts. Rustad and Binningsbø (2012) state that any armed conflict with a linkage to natural resources is more likely to happen in conflict recurrence within five years than those not having the resource-conflict mechanism. Therefore, natural resources persevere to be decisive factors in the peace process regarding their impacts on insurgents' willingness to continue fighting. Similarly, Brown (2006) emphasizes combatant access to resources as one of the critical obstacles to the peace process (p. 6).

Both high-value natural resources and land tenured-related issues may heighten the conflict risk in post-conflict societies. Doyle and Sambanis (2000) observe that natural resource dependence and peacebuilding efforts are negatively correlated because the lootable resources may easily beget new civil wars, thereby decreasing the peacebuilding success (p. 789). The opportunity to continue to exploit illicit and lootable resources by rebels impacts the post-conflict situation negatively (Brown, 2006). Further, Bigombe et al. (2000) account for natural resource exports in terms of the rebel looting mechanism, and they argue that it eventually causes conflict relapse (p. 324). Combatants are prone to taking advantage of resources, and criminal activities can increase as of a lack of adequate state capacity in post-conflict societies (Brown, 2006). Quinn et al. (2007)

consider the risk of conflict recurrence according to former combatants' cost and benefits calculation on continue conflict or sustain peace.

The distribution of natural resources can ignite conflict from the motivation framework due to the lack and unfair access to resources. According to Lujala and Rustad (2012), revenues derived from natural resources can motivate rebels, and they can be a finance mechanism to sustain rebellion; moreover, inequalities fueled by the unfair distribution of incomes and exploitation can cause conflict recurrence (p. 7). Likewise, Wennmann (2011) addresses natural resources' financial capacity to armed conflict and the odds of conflict recurrence in the peace process (p. 268). On the other hand, the connection between armed conflict recurrence and land lies over their long-run effects on local peoples' livelihood that shape their survival mechanisms depending on land, water, and shelter. For that reason, Bruch et al. (2008) state that inequalities deriving from the distribution of the natural resource revenue can cause the recurrence of conflict (p. 59). The odds of attracting supporters due to the unequal revenue distribution of natural resources occur as one of the notable elements of rebel aspects (Rustad & Binningsbø, 2012). Conflict recurrence is highly related to horizontal inequalities that increase different groups' grievances, and depending on it, new members' recruitment to the insurgency (Walter, 2004). Additionally, if a peace agreement does not encompass natural resources and land distribution relating to grievances that led to the conflict, conflict relapse more likely to occur (Rustad & Binningsbø, 2012, p. 534).

On the other hand, several studies approach conflict recurrence and natural resources from the security perspective (Bryden, 2006; Whittemore, 2008). Whittemore (2008) argues that effective government control over resources is essential to impede rebels' capacity to continue strife (p. 389). Whittemore (2008) and Bigombe et al. (2000) converge over the idea of the need for a transparent and independent government to fight against corruption and resource exploitation so that they can impede rebel predation. Bigombe et al. (2000) accept natural resource dependence as the most significant driver of conflict in post-conflict societies; therefore, it is crucial to reduce the risks that cause rebel predation over natural resources (p. 330). This approach offers a range of

recommendations to the government, including being more transparent about natural resource rents for reducing public support to rebels (p. 331).

Natural resource management has substantial importance in transforming post-conflict societies to sustainable, long-lasting peace (Bruch et al., 2008; Nichols et al., 2011, p. 12; Whittemore, 2008, p. 388). Moreover, it is not only limited to countries that suffered high-value resource-related conflicts but also includes conflicts over land distribution and issues encompassing government inability to bring services covering water, food, and other livelihoods to people (Bruch et al. 2008, p. 58; Nichols et al., 2011, p. 12). If these requirements do not handle well, the conflict might reignite. By contrast, good natural resource management can fulfill peacebuilding objectives by increasing trust and building confidence.

5.1.2. The Government Aspect

Natural resources are conceived as a rapid remedy to overcome the conflict's remnants by many governments in the post-conflict period. Due to their direct contribution to the economy, they can ameliorate the country's economy rapidly than investments that government would perform in other sectors. Therefore, this situation may seem more profitable for governments, at least in the short term.

Given that the danger of the resource curse does not disappear when the conflict ends, dependence on natural resources may undermine governance and increase inequalities. Thus, Mildner et al. (2011) state that resources can weaken institutions because of the rent-seeking behavior of governments, thereby causing conflict (p. 162). Beevers (2015) underlines the danger of governance vacuum stemmed from the conflict and stresses that corrupt officials who tend to take advantage of extracted resources may put peace at risk by compromising with opportunistic companies (p. 228). Although Beevers (2015) primarily draws attention to the international actors' role in the peace process, he also emphasizes the main priorities of government responsibility to enhance peacebuilding efforts, such as establishing rules and institutions that include natural resource management and improving transparency and confidence.

In this regard, Liberia and Sierra Leone constitute illustrative examples. In Liberia, Charles Taylor accepted and used resources as a tool for his power consolidation; he abolished agreements with companies over resources and authorized his government over resources (Beevers, 2015, p. 229). In Sierra Leone, President Siaka Stevens utilized natural resources to consolidate his political power, and these actions lead to the exploitation of land and put at risk local peoples whose livelihoods depend on alluvial diamonds; as such, in Liberia, natural resources served as a mean to sustain political power instead of developing institutions and addressing public priorities (Beevers, 2015, p. 230).

In a fragile post-conflict environment, good governance of natural resources can facilitate the transition of peace, while rotten governance mostly puts societies in front of violent conflict. However, most of the time, short-term objectives overcome longer-term priorities of sustainable peace in post-conflict societies; hence, governments seek rapid economic growth by ravaging the environment or trying to maximize their interests. These interests mostly create deep inequalities in already divided societies via corruption and obscurity (Bruch et al., 2016).

Wiens (2015) emphasizes the importance of the social value of state responsiveness to the resources curse, and he contends that leaders who benefit a great deal of revenue from resource extraction do not tend to accept institutional limitations over their power (p. 86). Wiens emphasizes the peril of authoritarianism taking advantage of resources; thereby, governments secure their political support and impede opposition through patronage (p. 86). In other words, Wiens (2015) argues that controlling power on resources contributes to authoritarianism by supplying power to leaders, which helps them consolidate their power. This view highlights the importance of institutions that hold governments accountable and responsible to citizens. On the other hand, Brinkerhoff (2005) accepts unaccountable security forces as the most significant barrier to state legitimacy because they can obstruct essential services and cause the conflict to recurring (p. 6). In line with the government perspective, weak governance and corruption will be scrutinized concerning natural resources in the following headlines.

5.1.2.1 Weak Governance

The term governance has been subjected to plenty of definitions; while World Bank (2007) definition indicates the government officers' behavior to shape public policy by providing goods and services, DFID (2019) definitions offer a broad definition that encompasses the use of power, and a county's management of its interior affairs (p. 4). In a post-conflict situation, good governance of natural resources can positively contribute to peace, whereas governance deficiency causes severe damages.

Restoring governance and building effective institutions are the essential elements for recovering war-torn countries. For long-term peace and stability, building trust and effective governance are the fundamentals of post-conflict societies (Rondinelli, 2008). Brinkerhoff (2005) points to three avenues to strengthen governance in war-torn countries: rebuilding legitimacy, security, and effectiveness (p. 5). These three strands of governance intersect with natural resources in many ways as well, building legitimacy entails expanded participation while reducing inequities, and it also encompasses meeting public demands, the rule of law. In terms of security, it covers the disarmament, demobilization, and reintegration process of ex-combatants rebuilding the economy and job opportunities (p. 6). Effectiveness includes reparation of devastated infrastructure, deliverance of services. Brinkerhoff (2015) relates efficiency with good governance; conversely, corruption and patronage mean failed states. Bryden (2006) states the importance of institutions that ensure good governance and accountability.

Post-conflict societies mostly struggle with a lack of social trust, weak institutional capacity, and the focus mainly on the rapid economic recovery. UNDP's report (2008) states that all war-torn countries are at some extent at risk of state failure. If a government does not provide fundamental requirements such as health, education, public goods, it is more likely to be vulnerable to recurring conflict. Also, under state failure, the risk of natural resource exploitation and pillaging increases. Weak governance and lack of appropriate norms can cause exploitation and malfeasance of natural resources, weakening government legitimacy and fuel grievances.

Further, some states that have the capability to implement policies addressing causes of conflict may not want to do this because their interests are contradicted with inclusive remedies that cover a large part of society. Thus, even some states keep their power after armed conflict, they may seek to continue particular groups' privileges (Webersik & Levy, 2016, p. 61). These governments often tend to yield licenses for the exploitation of resources without considering its social and environmental costs.

Bruch et al. (2016) assess high-value resources role in terms of three notable negative impacts on governance; the first one is related to elites' decision-making behaviors which shift from the long-term solution-based aspect to the short-term one since they aspire to obtain as much of the benefits from natural resources as possible. The second one concerns their exploitation and investment that sometimes can be valuable even more than national GDP, thus causing excessive political influence on them and arbitrary treatment in specific sectors related to these natural resources; the third one is due to the volatility of their prices they cause economic and political instability and also undermine the government accountability to its citizens (Bruch et al., 2016, pp. 954-955).

Nichols et al. (2011) state that the legal systems, rules, and norms existing before the conflict do not adequately address the current situation requirements (p. 12). Therefore, post-conflict societies mostly lack the fulfillment of accountability and transparency overarching engagements. Similarly, Bruch et al. (2016) state that inadequate laws may create renewed conflict.

5.1.2.2 Corruption

In many conflict-affected societies, corruption constitutes one of the key problems of local populations due to the inherent characteristic of the transition process. Power struggles of contending parties over resources, lack of state institutions on controlling and monitoring, law enforcement capacity, ambiguous political mechanisms, and new rules tried to be established contribute to lay the foundations for corruption in post-conflict societies (Cheng & Zaum, 2016). Moreover, the propensity to lack transparency and clarity is prevalent in post-conflict societies; thus, natural resources, due to their

substantial benefits, can be regarded as a means to increase the private gain or extend power by elites (Cheng & Zaum, 2016, p. 461). Arbitrary behavior of government officials can motivate corrupt practices over resources (Le Billon, 2014). Thus, government accountability and legitimacy undergo profound devastation. Concurrently, exacerbated inequalities and deterioration of the environment with disagreements on natural resources increase the risk of conflict recurrence.

Cheng and Zaum (2016) define two types of corruptions; the first one is the "grand corruption," including the political influence of government elites and bureaucrats, the second is called "petty corruption" that involve minor administrative officials who grant individuals illegal licenses for mining, hunting, fishing (p. 462). Le Billon (2014) stresses different resource sectors' effects on corruption, and he claims that some resource sectors are more prone to increase inequalities caused by corruption while others do not (p. 770). Le Billon (2014) states that oil-rich countries are more vulnerable to grand corruption, and it decreases trust, while petty corruption does not have the same impact on inequalities and confidence (p. 775). However, the systemic version of petty corruption should also be considered carefully. Regardless of its scales both type of corruption deteriorates state legitimacy and decreases public services.

Although the transition period provokes a significant increase in corruption, countries' historical and domestic contexts are also crucial determinants (Le Billon, 2008). In line with each conflict-affected country's unique conditions, their past experiences offer significant insights. Most of the time, circumstances that pave the way for the previous conflict can be observed in failed state mechanisms affected by corruption. In terms of natural resources that have an impact on conflict onset and duration, they also trigger a rapid corruption mechanism. However, natural resources alone do not beget corruption; political, economic, cultural, and historical conditions of a post-conflict country determine it (Cheng & Zaum, 2016, p. 475).

Transparency and accountability consist of a significant proportion of conflict and peace situations. Corruption can fuel conflict or may be derived from conflict. In the context of peacebuilding efforts, it should be handled carefully to prevent its possible effects leading

to conflict. Building trust and confidence between people and states, "transparency and accountability of revenue flows" can provide concrete bases. Thus, they help to surpass specific problems that occur in conflict periods.

Corruption undermines the legitimacy and credibility of government and increases the grievances of pastoral communities (Bruch et al. 2004, p. 959). If the state itself transforms into a corruption mechanism that benefits private gain by exploitation, this can lead to violence and return to conflict (Cheng & Zaum, 2016, p. 465). States that historically shaped and governed by corruption, illegitimate governments, clientelism are more vulnerable to social unrest because of lack of trust (Bryden, 2006, p. 24). However, Billon (2014) draws attention to the inequality, mistrust, and corruption trap, and he argues that trust can be built with elections and institutions.

5.1.3. The International Actors

International actors may play a significant role in post-conflict countries, supporting peace by peacebuilding efforts or undermining it via several rent-seeking companies. Beevers (2015) emphasizes the role of international actors on natural resources in post-conflict societies by claiming that they are in favor of speed commercial exploitation without noticing the underlying elements of conflict related to the public aspect; hence land tenure, ownership, and insufficient decision-making procedures do not include public (p. 237).

Bryden (2006) also draws attention to the role of international actors in the post-conflict process in the security sector, and she claims that it can create tension between locals and external expectations (p. 23). Thus, a severe risk appears due to neglecting local people's capacities. Non-governmental organizations (NGOs), donor countries, commercial companies' participation in the post-conflict process do not meet with expectations of locals, concluding with "wasted resources," and it increases grievances by undermining external interventions (Bryden, 2006, p. 23).

Existing contracts with international companies can be important determinants of the resource sharing process because of obligations that render governments to comply, can

create disputes among ex-belligerents who claim ownership over land and oil; for example, Chinese oil companies' intervention in the negotiation process between Sudan People's Liberation Movement and the government was one of the major impediments in income sharing in Sudan (Wennmann, 2011, pp. 269-270).

5.1.4. The Public Aspect

Unresolved human requirements over land and property areas are significant pitfalls in front of the peace settlement. Disputes over land allocation, water, forests, and fisheries beget social unrest and conflict among locals (Ratner et al., 2017, p. 879). Especially after long-term civil wars and destabilization over land issues, societies become more vulnerable to this threat. Settling land reform can be a daunting task in post-conflict societies, given the different social, political, and ethnic groups' complaints related to land tenure (Bruch et al., 2008, p. 73-74). Additionally, displaced people may deepen already existed grievances.

Property rights over natural resources may constitute a sticking point in post-conflict societies due to the often uncertain and rapid transition processes. Rebuilding property rights is challenging when natural resources were at the heart of the conflict (Meinzen-Dick & Pradhan, 2016, p. 525). On the other hand, post-war reconfiguration of property and land-related issues and ambiguities over property rights can spark conflict (Unruh, 2010, p. 337; Ayling & Kelly, 1997, p. 182).

Problems related to land issues arising from the implementation of peace accords do not disappear quickly. Land-related issues are formed as one of the important aspects of the public. The absence of explicit norms brings about lots of challenges on land tenure issues in post-conflict societies. This situation can create a vogue for rent-seeking government elites or some companies as well. (Bruch et al., 2016, p. 964).

Keels and Mason (2019) approach the land issue in terms of their involvement in peace agreements. They claim that conflicts related to unequal land distribution are more prone to fall into the conflict trap if the land reform does not guarantee a peace agreement. From this point of view, peace agreements should include land issues if the onset of civil wars

affects land distribution. This situation signs the government's willingness to solve the main point, and it encourages overcoming commitment problems and alleviates the reluctant rebels to sign the agreement (Keels & Mason, 2019, p. 46). This article confronts that inclusion of land-related principles in the peace agreement reduces the risk of conflict relapse. It is important to note that state elites should consider promoting security and include grievances that triggered the conflict in peace agreements.

On the other hand, legal pluralism is one of the essential elements of post-conflict societies; it encompasses local, religious, customary practices and enhances natural resource management. During the conflict, the implementation of statutory law can be weakened. It can undermine local communities' conditions after conflict; thereby, some groups and local people can be isolated to access natural resources through this law. In this context, customary and religious law may take alternative roles to cover the allocation of natural resources (Bruch et al., 2016, p. 966)

While the centralized government is appropriate to manage comprehensive projects that include land reform, dealing with extracting industries, natural resources can be dealt with more effectively by local communities (Nichols et al., 2011, p. 14). Notably, local communities depending on natural resources for their livelihood are better aware than government officials of what has to be done to manage resources effectively. Arrangements over natural resources affect the whole country from top to bottom. If these regulations are not seen as legitimate and fair by large public communities, it is more likely to fail. Thus, public engagements can be seen as the most important mainstay for the success of implementation. The Rio Declaration on Environment and Development stated the importance of all relevant level citizen participation to resolve environmental issues (Nichols et al., 2011, pp. 16-17). Rout (2003) attributes disputes over natural resources management to a range of actors' different objectives and emphasizes the importance of legal pluralism, which both individuals and communities benefit, overcome over the unequal power relationship on natural resources.

Given the significant effect on local livelihoods, resource management requires a bottom-up approach, while they are often handled by top-down governance that heightens

grievances. Many examples substantiate the public's participation in the decision-making process to bring sustained implementation and long-lasting legitimacy in post-conflict societies (Nichols et al., 2011, p. 17). Other critical issues are related to gender; women's involvement in the decision-making process is vital because they are more familiar with the problematic areas related to the environment than men. Women are primarily responsible for lots of household work is related to sanitation, water, land, food, cultivating, and their opinions are systematically ignored.

As UNEP states, there is a lack of integration in peacebuilding efforts, becoming salient at the local and international levels. For instance, extractive projects can cause civil unrest among locals due to their detrimental effect on the environment and livelihood (Le Billon, 2014, p. 772).

5.2. THE CHANCE FOR LONG-LASTING PEACE

This chapter aims to shed light on how natural resources strengthen peace in post-conflict societies. Do natural resources function as cooperation tools for sustainable peace? To answer this question, considering the advancements of the environmental peacebuilding literature, the natural resource management concept will be elaborated after intrastate conflicts. In line with this concept, non-renewable and renewable natural resources will be examined separately by dealing with also land, water, and forest management within the latter one. Further, to grasp this detailed literature outright, environmental challenges closely associated with natural resources and their effects on the conflict will also be briefly introduced.

The preceding chapter commands attention to the thorniest issues emanating from the asset of high-value and land-related natural resources in post-conflict societies while also touching upon solutions that depend on building trust, restoring governance, and equitably allocating resources. Nonetheless, the main focus was premised on the idea of averting natural resources' conflict recurrence effect in post-conflict societies. Conversely, environmental peacebuilding literature seeks to thrive possible cooperation areas stemming from the environmental challenges and natural resources to establish resilient peace both after interstate and intrastate conflicts. As a concept evaluating

environmental risks and natural resources as the collaborative tools for peace, environmental peacebuilding challenges the orthodox view that accepts resources and climate-induced risks as conflict multiplier. According to the literature assuming natural resources and climate change as potential threats for conflict, environmental peacebuilding approaches these phenomena more positively.

After the Brundtland Report identification of environmental issues as potential causes of conflict in 1987, an immense body of research dealing with the relationship between conflict and the environmental challenges and resource scarcity (Gleditsch, 1998, 2012; Homer-Dixon, 1991, 1994; Suhrke, 1993; Raleigh & Urdal, 2007; Theisen, 2008; McNeely, 2011; Ide, 2015; Beckline et al., 2017; Koubi, 2019; Koren, 2019; Hardt & Scheffran, 2019), and resource abundance and conflict literature spawned (Gilmore et al., 2005; Ross, 2004a, 2004b; Bretthauer, 2014). On the one hand, a host of research focuses on the relationship between conflict and climate change (IPCC, 2001, 2007; Nordås & Gleditsch, 2007; Barnett & Adger, 2007; Theisen et al., 2013). On the other hand, some researchers remain skeptical about the causal mechanism between environmental issues, natural resources, and conflict (Hauge & Ellingsen, 1998); and climate change and conflict (Gleditsch & Nordås, 2009; Hendrix, 2017; Adams et al., 2018).

This sophisticated research area examining the role of resources and environmental effects on violent conflict prompted a new strand of peacebuilding approach that focuses on the potential cooperation avenues of resources and environment rather than conflict. Among resource-conflict scholars, Ross (2004b) draws attention to a plethora of resource-driven conflict research, and he couches that "what is to be done about it" is a missing point. Similarly, Wennmann (2011) connotes that it is time to shift from how natural resources cause conflict to how natural resources enhance long-lasting building peace. Thereby, this new strand of peacebuilding approach began to inquire about the relationship between environmental challenges and cooperation. Conca and Dabelko (2002) spearheaded this literature by their seminal book Environmental Peacemaking focusing on how environmental cooperation can bring peace. It reflects the paradigm shift from the relationship between resources and conflict to the nexus of resources and peace (Dresse et al., 2019). Moreover, this paradigm is also acknowledged as a direct response

to the predominant literature limitations that consider the environment solely in terms of its likely effect on the armed conflict (Ide et al., 2021, p. 2).

Moreover, dubbing of this paradigm also is subjected to several different views; Dresse et al. (2016) posit that environmental peacemaking emphasizes shared natural resources' cooperation role in the interstate dimension. Ide (2019) prefers to use environmental peacemaking by pointing out that environmental peacebuilding signifies a broader concept encompassing environmental resources in post-conflict societies (p. 3). In this regard, the environmental peacebuilding concept prefers to be used throughout this thesis.

The most recent overview of the environmental peacebuilding studies puts forth that this literature comprises environmental outcomes of armed conflict, disasters, cooperation on shared resources, and natural resource management (Ide et al., 2021, p.1-2). Ide (2020) also states that the increasing number of interests on the environmental issues on peacebuilding effort in practice matches the growing academic literature on this issue. However, this situation may cause bogus attempts to some organizations, groups, or governments to take advantage of grants under the environmental peacebuilding hood.

Ide (2020) defines five practices related to environmental peacebuilding; the first consists of averting or mediating environmental conflicts, whereas the management of natural resources in post-conflict countries comprises the second one. The third practices include climate security due to its possible effect on grievances and political instability. The fourth practices include disaster risk reduction with a reconstruction of a post-disaster environment. The fifth sets of practices perceive environmental challenges as a cooperation mechanism by increasing intergroup interaction (Ide, 2020, p. 2).

Environmental cooperation and resource risk are two salient approaches in the environmental peacebuilding literature, and natural resource management is a common concern for establishing resilient peace (Krampe, 2017). While the cooperation perspective focuses on interstate conflicts, the resource risk approach concerns potential instability caused by resources after intrastate conflicts. The latter highlights the mitigate

these risks through environmental cooperation, whereas the first one underpins the spillover effect of peace through cooperation (Ide, 2017, 2019; Krampe, 2017).

Foremost studies in this literature broadly focus on the role of shared resources after interstate conflicts (Conca & Dabelko, 2002; Ide, 2017); mainly water-related issues (Weinthal et al., 2014, Agesstam, 2018; Jägerskog et al. 2014; Wink, 2018), and the role of conservation areas such as peace parks (Ali, 2007; Westrick, 2015; Walters, 2015). These studies rest on the idea that transboundary environmental challenges can cause cooperation rather than hostility (Conca & Dabelko, 2002; Ide & Scheffran, 2014). However, in line with the increased number of civil wars after the Cold War, environmental peacebuilding literature also started taking into account the intrastate dimension (Conca & Wallance, 2013; Johsnon et al., 2021). Thereby, natural resources have emerged as the factors that primarily need to be addressed in the post-conflict period.

The central premise of focusing on natural resources as cooperation tools in peace settlement is derived from their miscellaneous functions in civil wars. For countries emerging from violent conflict, natural resources take precedence over other determinants to enhance countries' stabilization and recovering livelihoods and economic growth (Jensen & Kron, 2018). Thus, natural resource management emerged as a key peace bolster factor. If natural resources are integrated into peacebuilding efforts and well managed by governments, they can open a range of opportunity windows for long-lasting peace. Good governance and conservation of renewable and non-renewable resources can enhance economic growth and development (Weinthal & Johnson, 2018, p. 86).

Johnson et al. (2021) investigate environmental peacebuilding mechanisms after intrastate conflicts, focusing on the natural resource management initiatives and their effect on the peace continuum in post-conflict countries, and concluding their results by demonstrating these initiatives cause negative and mix results. Johnson et al. (2021) remark that articles that are founding positive effects of environmental peacebuilding initiatives comprise bottom-up approaches, while adverse effects are aggregated in top-down approaches (p. 12). From a different angle, we can postulate that this study a clear

reflection of the need for bottom-up approaches that bring local people perspectives in natural resource management.

Another comprehensive study identifies three main blocks regarding when, how, and why questions related to the initial conditions, mechanisms, and outcomes of environmental peacebuilding (Dresse et al., 2019). Initial conditions refer to both biophysical and socio-politic atmospheres, while mechanisms encompass activities type and implementations. As an outcome, environmental peacebuilding's first mechanism is to decrease environmental degradation and resource inequalities (Dresse et al., 2019); the second expectation is building trust between conflict sides through cooperation (p. 108). Thus, inequities can be eliminated by creating opportunities to access natural resources; therefore, the way toward sustainable peace can be burgeoned.

A sizeable body of research indicates that environmental peacebuilding is theoretically inadequate and needs to be developed (Krampe, 2017; Ide, 2019; Dresse et al., 2019; Johnson et al., 2021). Krampe (2017) attributes this issue to the UN and other organizations' aim to securitize natural resources, and he claims that it causes policy-oriented and technocratic studies (p. 5). By extension, while domestic actors constitute essential elements for environmental peacebuilding, international processes are lack including them properly. Krampe (2021) investigates the role of ownership and inequalities in United Nations Environment Programme (UNEP) reports covering 2008-2015, and he concludes that these reports pose local actors as risk factors lacking the necessary capacity and skills or greedy people chasing exploit resources.

It is worth noting that there is no consensus on whether environmental peace supports positive peace. The link between environmental peacebuilding and sustainable positive peace remains theoretically underdeveloped. Ide (2020) takes attention to this point, demonstrating opposing sides of environmental peacebuilding. Krampe (2017), perpetuating his concern on it, posits that studies merely show that neglecting natural resource management in post-conflict countries increases conflict risk. On the flip side, resource-induced conflict can cause securitization of resources; thereby, it leads to conceding peace as an absence of violence (Krampe, 2017). Besides, positive

environmental peacebuilding needs to be improved in definition (Hardt & Scheffran, 2019). Ide et al. (2021) remark that bottom-up approaches, gender, the use of big data and frontier technology, and conflict-sensitive programming are prominent in terms of future avenues for environmental peacebuilding.

Resource extraction and issues related to land, water, minerals, timber cause severe problems in people's lives and trigger conflict (Balag'kutu et al., 2018, p. 273). Several studies emphasize the importance of a blended approach that includes renewable and non-renewable natural resources in post-conflict societies (Jensen & Kron, 2018; Weinthal & Johnson, 2018). Given high-value resources and extractive activities do not increase the local people's living standards in an immediate period, to live up expectations of local people, rural livelihoods should be geared toward supporting and recovering agriculture, water, fishery, and forest (Jensen & Kron, 2018, p. 135). Thus, it can bring a developed capacity conducive to include women, children, ex-combatants by prompting employment and contributing to agriculture. Weinthal and Johnson (2018) separate resources as renewable and non-renewable and investigate the different contributions of these sectors to the peace continuum.

To further elucidate the impacts of natural resource management in post-conflict societies, this chapter, considering Weinthal and Johnson's (2018) separation, will examine non-renewable and renewable resources.

5.2.1. Non-Renewable High-Value Resources

High-value natural resources can lay the foundation for consolidating peace, although the bulk of the literature emphasizes that they bear the risks of reigniting conflict in post-conflict countries. In this regard, natural resource management comes forward to be a predominant factor determining the consequences. Natural resource management is closely related to the context and impacts of resources in the conflict-ridden country, cut across all stakeholders' interests. Further, the impact of resources in civil war, the international market, regional dynamics, countries' domestic structure, and previous resource management policies are the highly pertinent determinants in peace settlement (Rustad et al., 2012, p. 572).

In the wake of the UN Peacebuilding Commission and World Bank documents, the international community has given precedence to the role of natural resources in the resettlement process of war-torn countries. Natural resources can boost the post-conflict countries' economic growth by alleviating poverty, creating job opportunities, overcoming victims' grievances, and thus, they can be a catalyst to perpetuate peace (Rustad et al., 2012, Beevers, 2018). If natural resources are managed appropriately, it demonstrates the benefits of peace surpass the costs of the conflict (Beevers, 2018, p. 219). Furthermore, Rustad et al. (2012) deem possible spillover effects of natural resources, such as facilitating democratization, supporting disarmament and demobilization processes, increasing livelihoods, and entrenching civil society (p. 613).

In this regard, Collier and Hoeffler (2012), by ranging them "revenue transparency, expenditure scrutiny, commodity tracking, and reduced exposure to the price shocks," set forth four main principles to reduce natural resources' conflict-driven effect in post-conflict societies (p. 306). Exclusively, transparency and scrutiny appear as integrative mechanisms in war-torn countries that allow peoples detaching from their states to trust their countries' natural resources use for the nation's wellbeing (Collier & Hoeffler, 2012, p. 308). Commodity tracking enables to wipe out the assumption that natural resources are used to fund armed conflict by demonstrating government willingness to hedge the greedy use of illicit resources. Lastly, cushioning the impact of price shocks stemmed from natural resources requires diversifying sectors of the economy that would enhance peacebuilding efforts in the long term. (Collier & Hoeffler, 2012, p. 309).

On the other hand, accurate estimation of natural resources' base and local livelihoods dependence is crucial for sustaining peace (Rustad et al., 2012). The knowledge of the public should be adequate to know which natural resources are at stake or abundant; thus, it averts unrealistic expectations and curtails misperceptions that state elites are involved in corruption (Rustad et al., 2012, p. 573).

Revenue allocation is another main particularity for sustainable peace (Collier & Hoeffler, 2012). Fair, effective, and transparent resource allocation not only contributes

to eliminating public grievances but also copes with unequal relationships and patronage structures emanating from settled corrupt practices. Further, concurrent views of Ross et al. (2012) connote that decentralization of natural resource revenues empowers positive impacts, overcoming horizontal inequalities in post-conflict societies.

Deemed as foremost conflict drivers, high-value natural resources such as diamonds, gemstones, oil also retain their prominence in the scope of environmental peacebuilding. To effectively manage these resources, it is crucial to determine the type of management that would build trust and bring sustainable peace (Weinthal & Johnson, 2018). In countries that resources impacted violence and civil war, such as Liberia, Sierra Leone, Angola, Colombia, these resources should be thoroughly dealt with after the conflict period. The public also must engage in the revenue flux of these resources. The governance of these resources must include public' requirements, increasing social welfare, employment, and development.

In countries that non-renewable resources played a significant role in their civil wars, governments and the international community should carefully adjust resource distribution and their uses (UNEP, 2009). At this point, stumbling blocks derived from the improper use of natural resources by governments that seek to consolidate their powers, and deepening inequalities in public, must be eliminated to establish resilient peace. Additionally, in the realm of resource-conflict literature, oil has been conceding as the utmost conflict-driver asset; it can prompt a range of adverse political and economic consequences, as well as corruption, and its negative effects mostly converge around authoritarian regimes.

As a means of peace consolidation, The Extractive Industries Transparency Initiative (EITI) was established to monitor the revenue flux of oil, gas, and other extractive resources and ensure transparency in 2003. The EITI is an initiative to foster governance and accountability by the publication of company payments and government revenues from the extractive sector (Rich & Warner, 2012). The importance of participation in the EITI is highlighted to foster peace settlement, accruing properly resource revenues post-conflict countries. (Rich & Warner, 2012; Collier & Hoeffler, 2012, p. 307).

Furthermore, other high-value resources such as diamonds, gemstones, and illicit crops should also be addressed in peace processes, depending on the countries' civil wars and these resources' impact. High-value resource management is vital so that the income from them does not directly go to state coffers or military expenditure. From this angle, Kimberley Process is a decent example to foster transparency and accountability of the diamond trade. The Kimberley Process Certification Scheme brings governments, non-governmental organizations, and diamond companies altogether, and it controls the diamonds' revenues from the conflict zone, making them difficult to sell (Grant, 2012; Wright, 2012; Bone, 2012). Thus, the KPSC plays a significant role in enhancing peace in post-conflict societies (Weinthal & Johnson, 2018; Collier & Hoeffler, 2012).

On the flip side, a common view on poppy cultivation states that impeding them increases the conflict risk by representing a mismanagement example without considering their impacts on local livelihoods. To wholly address these resources, their importance for local livelihoods should also take into consideration. For instance, Afghanistan's poppy cultivation was mismanaged because these resources play a crucial role in local livelihood, and initiatives that prevent it failed to not address farmers' motivations and needs (Catarious & Russell, 2012). Likewise, Colombia has been experiencing the same situation. Coca production is embedded in the daily lives of indigenous. Therefore, eradicating coca products does not bring healing without meeting their livelihoods.

5.2.2. Renewable Resources

The environment is constantly subjected to pernicious effects of armed conflict, and its havoc eventually touches off formidable consequences to human life. Degradation of the environment is an overriding concern for people whose livelihood directly depends on water, land, and forest, and they are more likely to suffer from this ravage. Compared to high-value non-natural resources, renewable resource impacts are more visible for many local people.

Resource-conflict literature and post-conflict peacebuilding literature primarily problematize the high-value non-renewable resources since their direct impact on the

onset and duration of civil war. However, problems associated with renewable resources are almost invisible as they become the main form of daily practices and structural violence. Given that peace does not mean the absence of violence, improving vital resources for human life is an inextricable condition of post-conflict settings. Eliminating all structural forms of violence associated with essential resources also brings about resilient peace.

Renewable resources such as land and water are closely pertinent to social welfare; for that reason, government and international organizations must address them concretely at the end of the civil war. Moreover, local people's participation in the decision-making processes over land, water, fishery, and forest-related issues is the main compromise point of the literature since these issues primarily impact the rural population, and they know better main problems than state elites.

Since the end of the Cold War, armed conflicts mainly occur where people's livelihoods depend on the land and natural resources (Unruh & Williams, 2013). In the face of diffuse destruction, land has been subjected to severe damage that affects the whole environment. When wars end and displaced people return, land-related issues become more pressing. On the one hand, spoiled land and environment have to be recovered; on the other hand, the grievances of displaced people are required to be resolved based on a fair land distribution mechanism.

Post-conflict countries tend to exclusively seek rapid economic recovery, paying much less attention to land-related grievances. When land-related disputes are at the heart of the conflict, the inclusion of land reform in peace agreements strengthens government credibility, thereby reducing the risk of conflict recurrence (Keels & Mason, 2019). From the government's perspective, it might be challenging to address land-related disputes, but in the long term, it increases the allegiance of rebels to the peace process, including large public groups.

In countries like Afghanistan, Darfur, and Colombia, land, and water played a prominent role in the conflict. In Afghanistan and Darfur, local disputes are based on water and land-

related problems, while the Colombian conflict is seen as an agrarian conflict in which land plays varying effects during the conflict (Unruh & Williams, 2013, pp. 535-536). While the Colombian peace agreement includes land-related problems under the rural reform chapter, the government has retreated from implement some parts of the agreement (Parada-Hernández & Marín-Jaramillo, 2021).

Land issues cut across many agricultural and food security fields, including refugees, demobilized soldiers, and displaced peoples' return. Therefore, resettlement and agricultural development should go hand in hand in the post-conflict recovery process (Swain, 2016). Further, environmentally respectful reconstruction of rural areas brings economic wellbeing, which empowers the state's legitimacy and social unity in the long term.

Although water constitutes a prevailing concern after interstate conflicts, it has remained less studied in the realm of post-conflict societies. In line with the Environmental Law Institute and UNEP supports, the "Water and Post-Conflict Peacebuilding" book edited by Erika Weinthal, Jessica Troell, Mikiyasu Nakayama was published in 2014. Together with studies of several practitioners and academicians, how water can be a solution for long-standing peace and also can be a catalyst to the return to the conflict are elaborated. Further, water has become a crucial issue to address in post-conflict societies since water provisions can empower economic livelihoods and food security (Weinthal et al., 2014; Weinthal & Johnson, 2018).

Water is conceded as a fundamental human right, and the government's ability to provide water and sanitation is an evident indicator of transition to peace (Weinthal & Johnson, 2018). In some post-conflict countries, such as Afghanistan, water comprises the most contentious issues along with land, even if the water-related issues were not among the root causes of conflict (Weinthal & Johnson, 2018). Meeting the basic needs of local people is a potent way to render peace efforts prolific. In this regard, particularly sound management of water aggrandizes trust in post-conflict societies. Swain (2016) states that water management is closely bearing on governance sectors, and the government should be poised to manage it effectively to sustain peace in the long term.

Solutions for water-related issues should include all stakeholders, particularly local people, women, children, and indigenous people whose daily needs cut across common water-related problems (Swain, 2016, p. 1318). If the government facilitates the afflicted groups' requirements related to their livelihoods that include water, it paves the way to sustainable peace. Nevertheless, there are always evident risks emanating from governments and donors' activities that create large dams or irrigation projects that no longer address local people's needs (Swain, 2016, p. 1318). Additionally, indigenous people's requirements are often ignored by companies and state elites. Participation of the public in the decision-making mechanism is crucial for effective water management (Troell & Weinthal, 2014, p. 443).

In Colombia, water is vital as much as peace for indigenous groups living in arid and mountainous places. After they were subjected to a humanitarian crisis in 2014, the Wayúu community reached potable water with the cooperation between the United Nations Development Program (UNDP), the private sector, and the government (El sueño del agua se hace realidad para aldeas indígenas en Colombia, n.d). To supply necessary living conditions to indigenous people that they can grow their food without waiting for help from others is an essential determinant of peace.

Forests may engage in varying roles in civil wars and peace processes, financing armed conflict through high-value timber trade or being a haven for insurgents, or contributing to increasing locals' livelihoods through preservation and effective management in the peace process. For instance, in Liberia, Charles Taylor financed the armed conflict through timber trade; in Sierra Leone, forests became a base for the Revolutionary United Fronts (Weinthal & Johnson, 2018, p. 89). Moreover, the devastation of forests through timber contraband and illegal mining with opportunistic companies' activities cause the acceleration of the environmental destruction and increase locals' grievances. Therefore, dealing with these challenges by exerting valid environmental policies becomes obligatory for sustainable peace.

The participation of locals, allocation of the resource revenue, governance are striking points in forest management. Beevers (2012) contends that to sustain peace, forests and

renewable resources should be effectively managed and preserved that concurrently would increase local livelihoods and economic growth. In terms of local livelihoods and extractive operations, forests yield unnumerable opportunities via proper management. The development of forest management promoting property rights and allocating revenues can enhance peace by increasing economic growth and local livelihoods (Chanty & Schweithelm, 2015).

Beevers (2015, 2016) states forest reform is a peacebuilding priority that builds trust and enhances cooperation. In this regard, community ownership and land rights appear as critical conditions (Beevers, 2018). Unlike the UNEP documents that reflect local actors as a risk factor in natural resource management (Krampe, 2021), involving domestic actors in the management processes is significant to sustain peace. Communities should be responsible for their forests and manage them with the support of the government (Beevers, 2018, p. 223). To reach sustainable forest management and increase people's livelihoods, not merely government or timber companies, local communities should engage in the management process (Beevers, 2018). Post-conflict countries often experience a rapid reconstruction process that results in deforestation, and Colombia also is in a critical situation after the peace agreement (Mendoza, 2020).

6. THE COLOMBIAN PEACE PROCESS AND NATURAL RESOURCES

After 52 years of armed conflict, Colombia attained a negotiated settlement with the Colombian Peace Agreement in 2016. Starting in 2012 in Havana, negotiations were finalized after four years, with a peace accord signed between the Revolutionary Armed Forces of Colombia (FARC) and the government on August 24, 2016. However, rejection of the agreement with 50.2 percent votes in the referendum revealed its intransigent aspect again. Thus, a revised agreement was signed between the FARC and the government on November 24, 2016, and ratified in the Colombian Congress on November 30, 2016, without resorting to the second referendum (DeMeritt et al., 2019).

Yet to date, reaching a peace accord has remained far from fulfilling underlying requirements, such as terminating the violence, ensuring secure demobilization, disarmament, and reintegration processes. Furthermore, the reluctance of the government to implement several obligations of the agreement renders this situation more worrisome (Vélez-Torres & Lugo-Vivas, 2021); for instance, the decision of Colombian President Iván Duque's to cut off economic support to the National Program for the Substitution of Illicit Crops (PNIS) in 2019 (Parada-Hernández & Marín-Jaramillo, 2021, p. 8). Therefore, considering these setbacks, one can utter that Colombia has been going through a very fragile peace process.

Although natural resources closely have to do with the Colombian conflict, they have remained in the background of both academic and political agendas for a relatively long period (Lavaux, 2007). Throughout the civil war years, gold, coal, oil, and mines scattered in different regions of the country, such as Cesar, Northern Antioquia, Arauca, were exploited by armed groups to finance the insurgency (Lavaux, 2007, p. 22). In addition, explosive activities targeting oil pipelines by armed groups, excessive coca cultivation pose significant challenges for biodiversity, forests, and soil (Lavaux, 2007, p. 22; Valenzuela & Caicedo, 2018, p. 248). Between 2007 and 2014, 723 attacks happened in oil pipelines (Valenzuela & Caicedo, 2018, p. 248). In this regard, they do not only facilitate to maintain the conflict for rebels; further, they engender pressing issues that

would make human life even more thorniest. These issues deepening rural poverty and inequities can beget many difficulties that may drive social unrest in the peace process and trigger catastrophes in the long term. Nonetheless, effective management of natural resources can compose sustainable peace by averting these challenges in Colombia.

From the environmental perspective, the Colombian armed conflict has left a vast impact on renewable and non-renewable resources (Valenzuela & Caicedo, 2018). Given the natural resources' broad impact on the Colombian conflict, studies started to address their roles in the peace process from the environmental peacebuilding perspective (Valenzuela & Caicedo, 2018; Vélez-Torres & Lugo-Vivas, 2021; Morales-Muñoz et al., 2021). In line with this new strand of peacebuilding, natural resource management gained a robust foundation for long-lasting peace.

It is necessary to address to root causes of the conflict and inequalities for achieving long-lasting peace (De Coning, 2018). The Colombian Peace Agreement demonstrates that it prioritizes the origin of the conflict by including rural reform and illicit crops chapters separately. Thus, the peace accord implicates restorative principles that have redress victims' and rural peoples' grievances related to land. Both the FARC and the government show the willingness to end the root causes of the conflict with the Comprehensive Rural Reform (CRR). CRR addresses the transformation of the countryside for both men's and women's well-being and defines accessing land as a priority for peace. Dealing with natural resources and their management is crucial in peace processes (Bruch et al., 2008; Morales-Muñoz et al., 2021). Ensuring viable livelihoods to rural populations and encouraging sustainable resource use comprises inherent aspects of natural resource management (Conca & Wallace, 2009).

From this perspective, both renewable and non-renewable resource management can reduce poverty and build trust in Colombia. In this regard, tapping into the land, forest, water, minerals are essential to improve local communities' livelihoods and eliminate staple insecurities (Morales-Muñoz et al., 2021). By contrast, the Colombian peace process is fraught with multi-faceted difficulties encompassing handling illicit crops, extraction of gemstones, deforestation, and land-related problems. In terms of their

inherent impacts on humans and the environment, these difficulties are inextricable from each other.

Considering resource extraction and other factors causing environmental change, Suarez et al. (2018) focus on environmental sustainability in post-conflict countries, particularly in Colombia. Regarding environmental change, land, deforestation, and natural resource extraction are prevalent forms that shape the Colombian peace process (Suarez et al., 2018). Decades of armed conflict concomitant with drug trafficking, degradation of the environment, and disputes over territory have left indelible marks in the lives of rural people (DeMeritt et al., 2019). Deforestation and land-related issues are the main obstacles in the face of long-lasting peace. These issues do not just deprive local people of their subsistence but also put the environment in formidable danger in the long period. Although war-torn countries re-establish their societies amidst a high-tension environment, dealing with communities' grievances from the local perspective can decrease the odds of the conflict relapse (Nilsson & Marín, 2020).

Historically, Colombia has been shaped by disputes over natural resources, which continue after signing the peace agreement (Rettberg, 2019). Insecurities have increased in the wake of the peace accord, and primarily the rural populace has been affected by this limbo. Inadequate land use planning, land occupation without a proper settlement is a pervasive security concern for Colombia (Suarez et al., 2018).

This chapter drawing on the literature review part, aims to address possible positive avenues and hurdles emanating from the natural resources in front of the long-lasting peace in Colombia. It focuses on four dimensions considering their importance in the Colombian context: coca as the main subsistence driving drug trafficking that also affects deforestation. Gemstones such as gold and silver that trigger illegal mining. Forest and land due to their permanent impacts in both the conflict and post-conflict process. This section combines the analysis of tweets containing coca, mining, deforestation, and rural. It aims to explain these tweets in line with the literature on these issues.

6.1. ILLICIT CROPS

Colombia has long been plagued by illicit crop cultivation, widely deemed a means to finance the armed conflict by rebels. Along with the insurgent dimension (Jonsson et al., 2016), illegal crops are involved in multiple aspects of the peace process; such as the criminalization of rural and indigenous population (Thoumi, 2012; Acero & Machuca, 2021), health and environmental-related issues (Vargas, 2002, 2005; Lavaux, 2007; Negret et al., 2019, Vélez-Torres & Lugo-Vivas, 2021), and gender (Parada-Hernández & Marín-Jaramillo, 2021).

The entrance of illicit crop-related issues to the Colombian social and political agenda is dated back to the increased incidence of drug trafficking in the early 1970s (Thoumi, 2012). Besetting with guerilla groups' involvement in the supply and sell chains and the USA pressures about to impede it, the Colombian government has been exerting different drug policies to terminate their recurrent impacts on the armed conflict (Vargas, 2002, 2005; Acero & Machuca, 2021). The evolution of this problem has been shaped by the interaction between illegal drug economies and the Colombian government anti-drug policies underpinned by the international community (Thoumi, 2012). Despite these stark policies, the illicit drug market has expanded with also an emergent strand of new criminal actors that triggered an unprecedented level of violence among drug traffickers, guerilla groups, and paramilitary forces in Colombia.

In line with the growth of drug trafficking, coca cultivation expanded towards Andean forests; and the demographic features of these regions were subjected to change through rural and urban migrations (Vargas, 2002). Starting from the 1970s, the government implemented manual and aerial spraying techniques to eradicate illicit crops (Vargas, 2002, p. 12; Thoumi, 2012). Finally, the government action to fumigate these areas spurred adverse effects on the population that primarily depend on coca cultivation. Labeled as the main reason for drug trafficking, growers of this plant have been criminalized. Moreover, ignoring the socio-economic impacts of illicit crop cultivation on peasants' and mestizos' daily lives and eradicating these crops without exerting proper aid programs did not solve the primary motive for coca cultivation (Valenzuela & Caicedo, 2018).

Concurrently, employing aerial spraying techniques to eradicate illicit crops kindled overriding concern on biodiversity and the environment (Vargas, 2002, p. 12; Valenzuela & Caicedo, 2018; p. 246). They have posed severe peril to entire tropical forests in Amazon, besides their harmful effects on human health. Thus, herbicides and chemicals have elevated complaints about both environmental and health-related issues (Acero & Machuca, 2021). Although social tussles led to the substitution of glyphosate instead of other chemicals after the 1980s, its effectiveness spurred new discussions about they did not live up to expectations (Vargas, 2002; Acero & Machuca, 2021).

Eradication of illicit crops entails economic programs that would ease the transition from illegal cultivation and reigning drug demand from the international market (Fjeldså et al., 2005). Alternative Development (AD) programs have constituted the second significant dimension of struggling illicit crop cultivation; these programs aimed at zero coca production by providing incentives to the peasants. To reach an AD program, peasants should eradicate all coca products and guarantee the government that they will not replant them again (Acero & Machuca, 2021). Nevertheless, AD programs maintained to overlook the dependency of the rural population on the illicit crops for their livelihoods by solely accepting them as criminal coca growers. Coca producers were conceded as collaborators to armed groups (Acero & Machuca, 2021).

Furthermore, AD programs lacked meeting the basic requirements of locals, such as ensuring them underlying services or creating new livelihoods channels. One of the main reasons for coca cultivation from the local perspective is to find a way to increase their subsistence. However, these programs failed to facilitate land access and other public goods and services that cocaleros would replace coca cultivation. This situation stalemated small producers and many indigenous groups. It has brought new obstacles in front of effective resource management and good governance.

There has been a range of different views over the growing number of coca cultivated areas; LeGrand (2017, p. 261) draws attention to the termination of the aerial spraying in 2015, while Prem et al. (2021) point out the joint press of the FARC and the government

in 2014 that announced to yield incentives to those who relinquish to cultivate illicit crops by substituting their legal products. Unlike the widespread views, Prem et al. (2021) contend that the increase in coca cultivation has not stemmed from the prohibition of glyphosate aerial spraying in 2015; there was already a significant increase in coca cultivated areas from 2014. Drawing on these common and inaccurate views, the government resumed using glyphosate with the USA's pressure; however, current findings demonstrate that it did not reduce coca crops. Contrary to fumigation, coca cultivation relocated and expanded throughout the years (Vélez-Torres & Lugo-Vivas, 2021). Besides, using glyphosate has increased environmental and health-related concerns, as well as violence.

Unlike the widespread view, insurgents' drug trafficking does not always constitute an obstacle to peace (Jonsson et al., 2016). Jonsson et al. (2016) state that when government decisiveness to end drug trafficking and rebels' relinquish to benefit from drug trade co-occurs, it culminates "cooperation for change" (p. 546). The provisions for impeding drug trafficking both in the peace negotiations and the peace agreement between the FARC and the Colombian government signal both sides' willingness to collaborate. The Colombian Peace Accord highlights the importance of dealing with illicit crops in the fourth section of the agreement. Several studies define this chapter as the significant shift in recognizing cocaleros' and peasants' requirements, such as rural infrastructure encompassing health, education, employment, and assistance (Vélez-Torres & Lugo-Vivas, 2021). However, the implementation of this chapter faced several challenges due to the government's reluctance to comply with it (Vélez-Torres & Lugo-Vivas, 2021; Parada-Hernández & Marín-Jaramillo, 2021).

Although the efforts to eradicate illicit coca production realized by the government, Colombia maintains to be the leading producer of coca leaves globally. Rural and indigenous production mechanisms constitute roughly 80% of the world cocaine trade (Ceron et al., 2018). This situation has a strong connection with the lack of institutional capacity of the Colombian government in remote areas. Due to the armed conflict, farmers also cultivate illicit crops as a means of increasing their livelihoods. Power vacuum in rural areas also triggers expanding armed groups' activities to these areas and

taking advantage of illegal crop production (Ceron et al., 2018). Therefore, it has caused the removal of landowners in these areas and violence, criminal activities, and land-related disputes. Coca cultivation has a complexity that brings together different actors, such as the government, armed groups, farmers (Mendoza et al., 2020). Reforms should be considered in terms of the coca being an essential subsistence of farmers and local communities.

National Program for the Substitution of Illicit Crops (PNIS) was started to implement after 2017 by the Juan Manuel Santos government; 130.000 families relinquished to cultivate coca by substituting licit crops (Vélez-Torres & Lugo-Vivas, 2021). However, several studies state that the substitution policy of the state has not met the expectations of the people living in remote areas in terms of their livelihoods (Vélez-Torres & Lugo-Vivas, 2021, p. 59, Parada-Hernández & Marín-Jaramillo, 2021). Moreover, land grabbing and illicit crops have increased after the peace agreement (Vélez-Torres & Lugo-Vivas, 2021).

Acero and Machuca (2021) contend that different actors' interests in coca production can cause conflicting outcomes on preserving or altering existing illicit crop policies in Colombia; therefore, rather than solely involve the FARC and the Colombian government, these policies also entail to be covered national and international actors' concerns. For that reason, illicit crop policy is precarious insofar as it is bonded to changes in these actors' power relations. Moreover, past inconclusive illegal crop policies compromise the peace by hedging reforms (Acero & Machuca, 2021, p. 2). Additionally, Colombian society's concern over peace and drug policies is crucial to attaining sustainable outcomes.

As a more bottom-up approach example, Ceron et al. (2018), surveying the impacts of substituting illicit crops and land governance on the prosperity of rural communities, employ the "Working With People" (WWP) model to La Macarena region. The model offers a new focus on affected communities to increase their prosperity via social learning, and building trust stands out as a prominent factor (Ceron et al., 2018). Besides, Parada-Hernández and Marín-Jaramillo (2021) focus on the economic empowerment

effect of coca cultivation on peasant women in the conflict period and propose that the government consider this aspect by producing comprehensive policies in the peace process.

6.2. ILLEGAL MINING AND GEMSTONES

The mining sector generates increasing concern for at least two pressing reasons in post-conflict Colombia. Considering the lootable resources' effects in the civil war, the first one relies on the idea that lucrative resources, in particular, gold span across different criminal groups' interests, thereby elevating violence. The second one points out the institutional vacuum conducive to attracting international companies' investment to the extractive sector. Thus, environmental havoc is accelerated by opportunistic companies' violations incorporated with the corruption that leads to social unrest.

Focusing on drug trafficking as the only form of the armed groups' criminal activities may overshadow the other critical sectors such as illegal mining. Given the link between illicit coca cultivation and gold mining (Massé & Le Billon, 2018, p. 117), they financed the armed conflict; and they continue to generate recurrent forms of crime that affect social, political, and economic aspects in post-conflict Colombia. For instance, municipalities standing out in their gold-mining sector were subjected to a notable increment while there was a general decrease in homicide incidence in the country (Rettberg & Ortiz-Riomalo, 2016, p. 88).

Antioquía, Chocó, and Bolívar have a gold mining extraction ratio of approximately 18.8 tons annually. Besides, many different areas in Colombia are involved in illegal mining; according to United Nations Office on Drugs and Crime, illegal gold mining reaches 60% that has no environmental or technique permissions in Colombia (Suárez, 2020). The rapid exploitation in the gold mining sector has caused several conflicts in where the local communities live. According to the United Nations Office on Drugs and Crime, gold exploitation occurs in socially and environmentally vulnerable places in which more than one type of illegal activity co-occurs, and these places overlap with illicit crop areas (Suárez, 2020). Moreover, cities that extracted a significant portion of gold, such as

Nariño, Cauca, and Antioquía, are places that the highest number of social leaders and ex-combatants assassinations happened (Betancur, 2019, p. 30).

Furthermore, the Colombian government's perception of this sector as a "locomotive of development" also signals possible environmental degradation risks. Lucrative resources constitute an overriding concern due to their striking impact on political instability and corruption in post-conflict countries. Throughout the armed conflict, guerillas and paramilitary groups sought to control resources to finance the conflict, and small-sized miners have been beset by these illegal groups and multinational companies' activities along with state policies that criminalize them and expel them from them their territories (Betancur, 2019, p. 23).

The weak governance and institutional capacity over the mining sector in Colombia have brought about corruption and the destruction of the forest, land, and river basins (Valenzuela & Caicedo, 2018, p. 247). National parks underwent several illicit activities using indigenous, local labor by FARC. While criminals and armed groups form a significant proportion in the illegal mining sector, greater attention should be paid to opportunistic national and international companies involved in practices that violate environmental law.

6.3. DEFORESTATION

As having one of the world's most affluent biodiversity areas, Colombia’s forests have been subjected to harmful activities by different actors throughout the conflict and the peace process. Although recent studies stress that deforestation in the peace process increases compared to the armed conflict period (Mendoza, 2020; Prem et al., 2020; Clerici et al., 2021), biodiversity loss remains one of the tangible outcomes of the armed conflict.

In the aftermath of the peace agreement, forested places underwent several changes, including infrastructure and eradication of illicit crops. Murillo-Sandoval et al. (2020) found a 50% increase in deforestation rate in the Andes-Amazon Transition Belt within the one year after the peace agreement compared to the four-year peace negotiation

process. Forests are accepted as safe havens for armed groups, and several studies posit that the incidence of deforestation was low during the armed conflict in Colombia (Clerici et a., 2020; Prem et al., 2020).

Deforestation has a strong to do with coca cultivation in both the conflict and the peace process of Colombia (Clerici et al., 2018, 2020; Negret et al., 2019; Mendoza, 2020). Mendoza et al. (2020, p. 2) claim that deforestation in the conflict period is not at odds with forest loss in the peace process. On the one hand, logging, coca cultivation, and mining due to their direct effects on finance to armed conflict by rebels are seen as the foremost drivers of deforestation in the civil war (Landholm, 2019; Mendoza, 2020). In addition, land grabbing and crop production maintain to cause forest loss in the peace process (Mendoza, 2020). Forest loss has increased in former conflict areas; in the aftermath of the ceasefire, FARC-controlled areas endured a gradual augmentation in deforestation compared to the prior situation (Prem et al., 2020; Clerici et al., 2021).

Between 2001 and 2013, 290.000 ha of forest loss occurred in Colombia due to coca cultivation (Rincón-Ruiz et al., 2016). Drug trafficking areas coincide with high-level deforestation (Clerici et al., 2020). Although coca crops are accepted as the leading factor to deforestation, cattle farming, illegal mining, timber exploitations also constitute significant catalysts of deforestation in Colombia (Suarez et al., 2018). Further, deforestation has been the most prevalent form of the municipalities affected by the armed conflict (Valenzuela & Caicedo, 2018, p. 246). This situation eloquently emanates from the poverty aggravated by the lack of employment opportunities to fulfill the rural populace's needs.

Effective drug policies and conservation to the affected territories from coca cultivation with good governance are important (Rincón-Ruiz et al., 2016; Clerici et al., 2020). The poverty that is shaped by inadequate economic opportunities in rural areas is also a strong determinant of illicit cultivation that leads to deforestation (Álvarez, 2001). Studies focusing on forests and deforestation in the Colombian peace process also include licit-illicit crops and biodiversity dimensions (Fjeldså et al., 2005; Negret et al., 2019; Baptiste et al., 2017).

6.4. RURAL AREAS AND LAND-RELATED ISSUES

Historical inequities perpetuating over land distribution have been at the origin of the contention in Colombia since the colonial period (Rettberg, 2019; Nilsson & Marín, 2020). These disparities have led to the establishment of the FARC as a peasant-origin armed group that aimed to eliminate grievances over unequal land ownership (Sanín, 2004, p. 263). Nevertheless, throughout the conflict, the FARC and other armed groups were involved in several illicit activities such as drug trafficking and illegal mining that caused severe destruction to both environment and the lives of rural dwellers. The Colombian government carved out paramilitary groups involved in abuses of civilians and violations of human rights (Grajales, 2017). Further, the armed conflict brought about displacement, thereby characteristics of rural have changed.

The Colombian agreement demonstrates mutual recognition of the root causes of the conflict, prioritizing the rural reform in the first section under the "Towards a New Colombian Countryside: Comprehensive Rural Reform" headline. Conflicts characterized by unequal land distribution should address land reform to impede the conflict in their peace agreements, increasing the rebel's confidence in the agreement (Keels and Mason, 2019). Given the Uribe government's historical position that denied the roots of the conflict as unequal land distribution, claiming that disorder was emanating from narco-terrorist groups that aspire to increase their dividends (Buchely, 2020, p. 2; Melo, 2015, p. 44), the Comprehensive Rural Reform (CRR) section reflects a turning point of the government's behavior, as a clear signal of the willingness to solve Colombia's main problem (Vélez-Torres & Lugo-Vivas, 2021). Therefore, this section encompasses the structural transformation of land through a gender equality-based approach based on sustainability and participation while empowering state presence in rural areas.

The Colombian countryside has been most ravaged by the armed conflict between the FARC and the government (DeMeritt et al., 2019). On the one hand, considering landowners' historical position supported by the conservative party, they would not favor the agreement. Moreover, landowners' attitudes may have impacted peasants who are dependent on them for their livelihoods. Nevertheless, DeMeritt et al. (2019) found that

rural areas where the violence was pervasive to a significant extent favored the peace agreement. Indeed, the peace agreement defines national plans for the new agrarian reform, including integrating and narrowing the gap between urban and rural areas. Given the rural problem led to campesinos being a labor force for left and right-wing armed groups throughout the conflict, to eradicate poverty and increase the well-being of rural dwellers, equal access to public services stands out as a rudimentary for a decent life.

The new rural reform encompasses regional integration and economic development of the country, eradicating poverty, empowering equality, and providing equal rights that impede to recurrence of conflict. It addresses the transformation of the countryside through appropriate land distribution and restitution, highlighting rural woman access along with the most afflicted communities such as indigenous people. Moreover, the agreement states that land is not sufficient to solve rural grievances, thereby enhancing infrastructure through public services such as health, education, and technical assistance gain importance. Participation of rural communities is vital for strengthening policies that will be implemented. Besides, it includes land restitution for the victims of displacement (Final Agreement to End the Armed Conflict and Build a Stable and Lasting Peace, 2016).

Nevertheless, recognizing the causes of the conflict considering rural reform does not guarantee peace (Velásquez et al., 2020). In the wake of the peace agreement, problems related to implementing the agrarian reform have surfaced with the increased violence. One of the constant reasons for violence is illicit crop problems that significantly impact rural population subsistence by taking structural form. Furthermore, coca production, deforestation, illegal mining has a deep connection with land-related issues, and these factors have featured the Colombian rural over the years. Although violence has decreased in the country, selective violence threatens social leaders, ex-combatants, and political activists (Grajales, 2020). Thus, demobilized FARC leaders declared to take up arms again due to the government's betrayal of the peace accord. Moreover, the government substitution program for illicit crops encountered the resistance of armed groups, along with the FARC's demobilization process, new criminal groups that seek to benefit from the drug trade appeared (Nilsson & Marín, 2020, p. 239). Restitutions for victims posed new challenges creating anti-restitutions groups.

The main emphasis is on local participation in peacebuilding efforts. Legacies of the civil war still affect Colombian rural. Although several attempts were exerted to increase rural economic development, they were underfunded (Velásquez et al., 2020, p. 321). This situation creates a lack of trust, and locals do not want to resort to mediators such as municipal administration, stating that officials are the same ones with the past implementation programs, and they want to create their system. Le Grand et al. (2017) remark that Colombians' grievances have been elevating over issues in the land inequalities, power imbalances between peasants and cattle ranchers. In addition, the cultivation of illicit crops and armed conflict are stemmed from the disparities in land access (Vélez-Torres & Lugo-Vivas, 2021). Therefore, after signing the peace agreement, Colombia faces conflict risk due to the challenges of implementing the agreement as land shapes every aspect of political and social life.

7. ANALYSIS AND DISCUSSIONS

This section relying on the preceding chapter, analyzes four natural resources-included dimensions of the Colombian peace process. 124.340 Spanish tweets on "coca," "mining," "deforestation," and "rural" in the Colombian context were analyzed separately employing the quantitative text analysis, time series analysis, and sentiment analysis in R. Primarily, each tweet segment time series' were shown to grasp both the tweets' volume and the possible matches among these four sections. The time of each segment cover from 30.11.2016 to 05.03.2020. Moreover, the ACLED dataset on the Colombian conflict starting from April 2018 to 5 March 2020 will be shown in terms of protests, violence against civilians, and riots to find likely similarities with these tweets' times. Following the time series, each section's most frequent words and bigrams were demonstrated by employing the Tidytext package. Moreover, sentiment analysis was employed for each topic, using NRC Spanish Emotion and Sentiment Lexicon developed by Saif M. Mohammad.

As we observed from **Figure 7.1**, coca has the highest number of tweets among these four dimensions. Then, tweets containing mining stand out. The word deforestation and rural included tweets follow them, respectively. Coca-included tweets and mining-included tweets show similar trends in late 2017, in the middle of 2018, and in the spring of 2019. Rural-included and coca-included tweets concurrently increase two times in late 2017; surprisingly, they showed a similar trend in spring 2019; and the last months of 2019. Deforestation and mining tweets show highly similar trends starting from 2017, and they almost match at the end of 2019. The destruction of the environment and green areas for the extractive sector may affect this situation.

According to the ACLED dataset on the Colombian conflict events, protests increase starting from mid-August, and they, together with the riots, reach the peak point in November. While violence against civilians is high during the spring and summer of 2018, it decreased in October 2018; following it, protests showed a decrease in December 2018. From the time series analysis of the tweets, coca-included tweets increased in the

mid-2018 and hereafter; however, they fell in the autumn months of 2018. Mining, deforestation, and rural-included tweets drop in the last months of 2018.

From February 2019 to March 2019, protests rose, similar to the number of deforestation-included tweets. Coca-included and mining-included tweets elevated in the first months of 2019. Overall, the increased number of protests and resource-related tweets in the first months of 2019 may have a nexus. Throughout 2019, protests showed a slight increase in July, then starting from September, they reached the peak in November. As we observed from **Figure 7.1**, the number of deforestation and mining-included tweets elevated after mid-2019. All tweet segments increase in the last months of 2019, similar to protests, violence against civilians, and riots from the ACLED dataset. In the first months of 2020, coca-included tweets and violence against civilians demonstrate a growth.

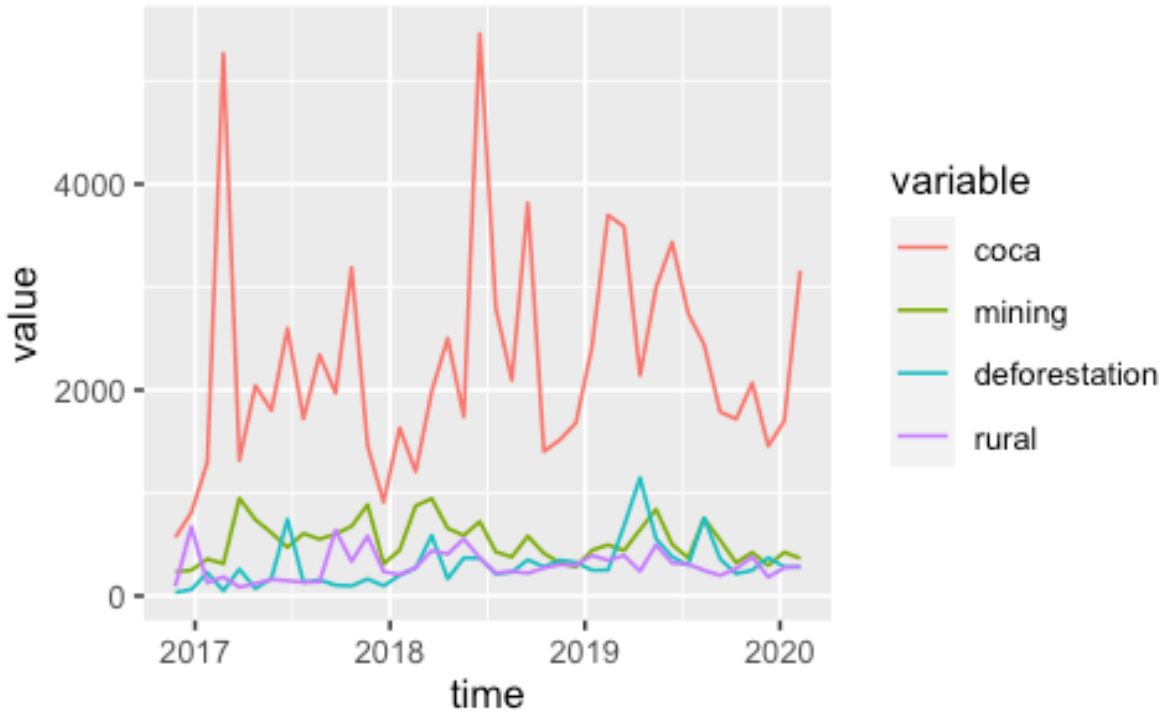

Figure 7.1: The time series of coca, mining, deforestation, and rural-included tweets.

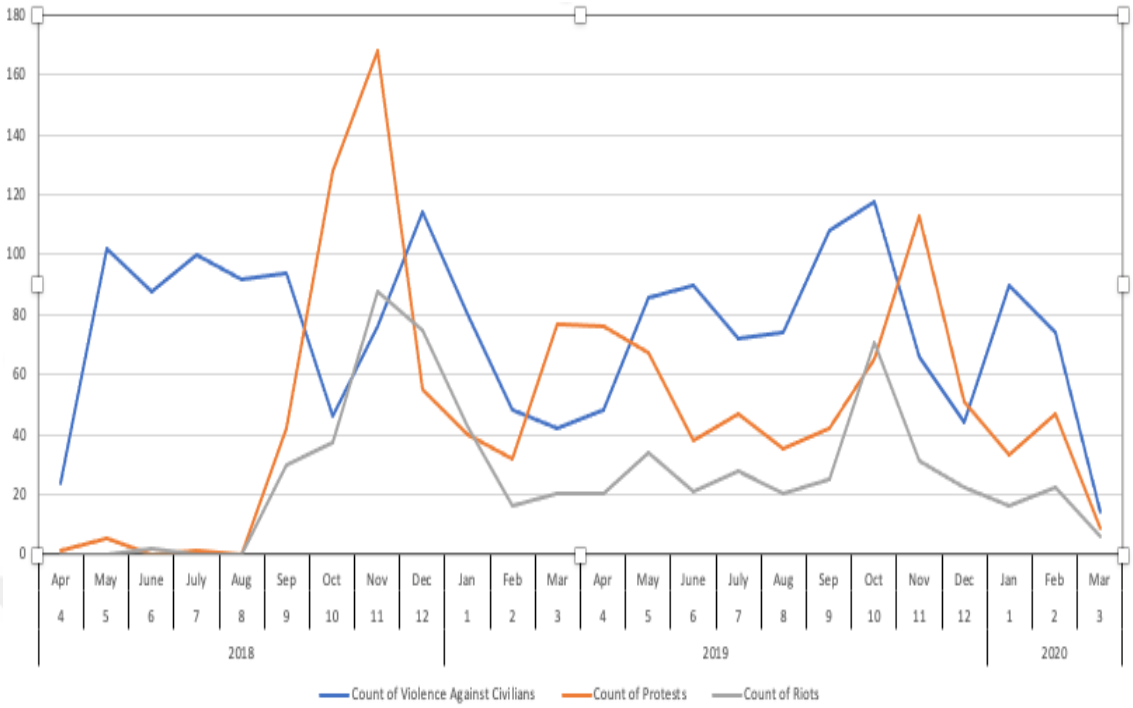

Figure 7.2: Colombia conflict events on violence against civilians, protests, and riots based on the ACLED dataset. (Source: ACLED)

7.1. COCA

Illicit crops, in particular, coca, have been continuing to be of utmost importance from the perspective of the Colombian public in the peace process. This thesis collected and analyzed 79.787 Spanish tweets that include coca from the ratification of the peace agreement to the declaration of the first official Covid-19 case in Colombia. The number of tweets indicates that coca is the most significant issue among resources for Colombians that shape their lives in the peace process. In the aftermath of the peace agreement, there is a marked increase in the number of tweets surpassing 5000. Then, it fluctuates between 1400 and 3200 tweets on average throughout the rest of 2017. However, it peaks again in mid-2018, exceeding 5000 tweets. This date may have coincided with the problems derives from the implementation of PNIS. After the second semester of 2018, the number of tweets shows ups and downs, approximately between 1500 and 3700 tweets in the rest of the months to 2020. In addition, the volume of the tweets also signals the need for in-depth examination for future research.

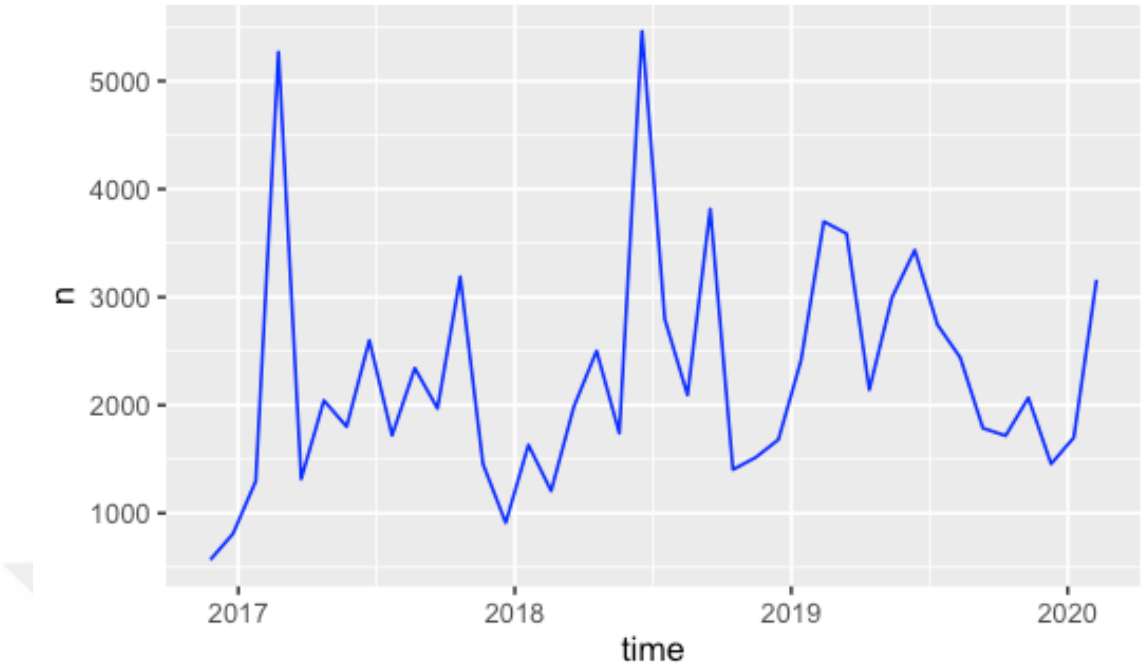

Figure 7.3: Time series on coca-included tweets.

Results show that "farc," "peace," and "hectares" are the most used words in this context. Moreover, Juan Manuel Santos, the previous president of Colombia and awarded the Noble Peace prize appears more than "government," "production," and the current president Ivan Duque's name. It is conspicuous that signed peace agreements frequently occur in these tweets, such as the FARC and Juan Manuel Santos. This phenomenon may also signal the FARC's impact on drug trafficking lasts in Colombians' opinion. Among the most frequent words, Venezuela and the USA draw the attention; the USA's impact on Colombian's drug policies is also known from the literature. Venezuela as a neighboring state may be involved in coca-related issues in many different aspects. Then "increase," "glyphosate," and "leaf" appear. In line with the academic literature on fumigation and aerial spraying, these words show similarity with the public views. These terms may point out protests and demonstrations over fumigation on illicit crops. The name of Alvaro Uribe, who was the president before the peace negotiations started in 2012, is repeated more than Gustavo Petro, the ex-guerilla member, currently politician. Ironically, the word "thanks" is also the most repeated fifteenth one; the terms "drug trafficking" and "bargain" follow it. Overall, these word frequency tables show that the main armed group of Colombia, the FARC, keeps it's pertinent with coca in the peace

process. The peace strikingly is considered in the coca context; hence, it addresses coca-related issues thoroughly for sustaining peace.

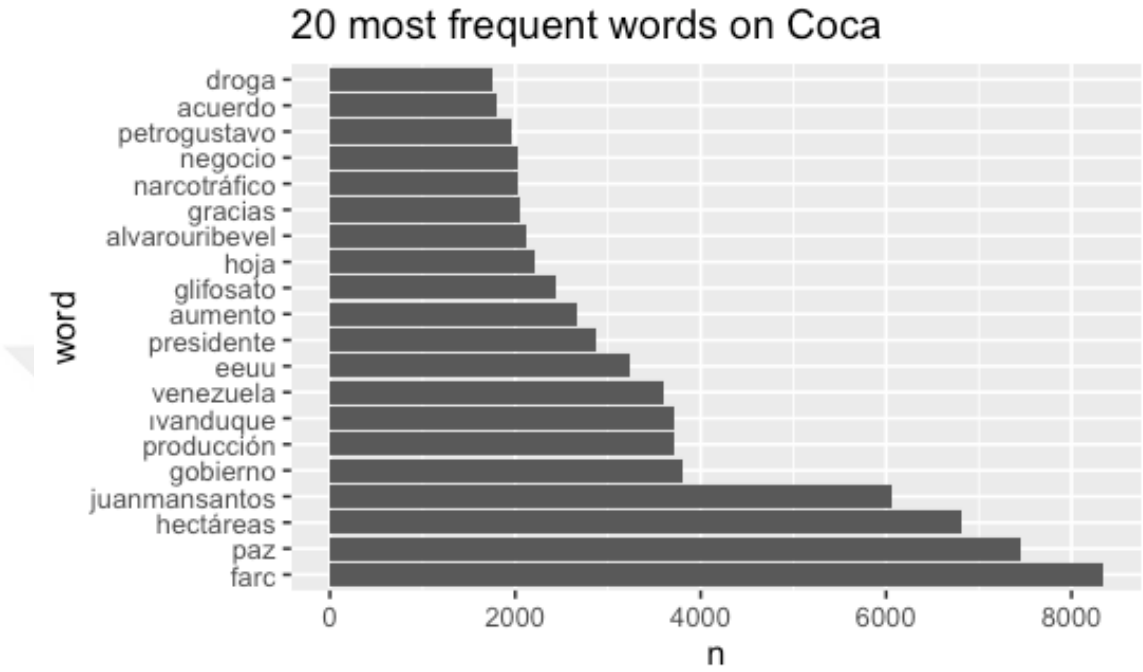

Figure 7.4: Word frequency analysis on coca.

Table 7.1: Spanish-English Translations of the 20 most frequent words on coca.

Number	Spanish	English	Number	Spanish	English
1	farc	FARC	11	aumento	increase
2	paz	peace	12	glifosato	glyphosate
3	hectáreas	hectares	13	hoja	leaf
4	juanmansantos	Juanmansantos	14	alvarouribel	Alvaro Uribel
5	gobierno	government	15	gracias	thanks
6	producción	production	16	narcotráfico	drug trafficking
7	ıvanduque	Ivan Duque	17	negocio	bargain
8	venezuela	Venezuela	18	petrogustavo	Petro Gustavo
9	eeuu	USA	19	acuerdo	agreement
10	presidente	president	20	droga	drug

Bigrams on coca include in the first five lines "Pablo Escobar," "social leaders," "military bases," "Manuel Santos," and "first producer." It shows that Pablo Escobar is still important on coca-related topics. However, it should be examined in the context; most of them are used with the president named sarcastically. The previous president stands out more than the current president Ivan Duque. "Record figure" is another bigram that stands out with meaningly "first producer" and "all-time high." In line with the literature on the most controversial issue, which is fumigation of illicit crops, "aerial spraying," "destroyed plantation," "destroyed sierra" appear in public views. The word "Environment" related to aerial spraying demonstrates the environmental concerns. "Illegal mining," as the most repeated ninth bigrams, has intricate relations with coca cultivation. "Farc Eln" appears as the dominant rebel group involved in illicit crop cultivation and drug trafficking. The "United Nations" and "Donald Trump" reflect the international actors' impacts on coca-related issues in Colombia.

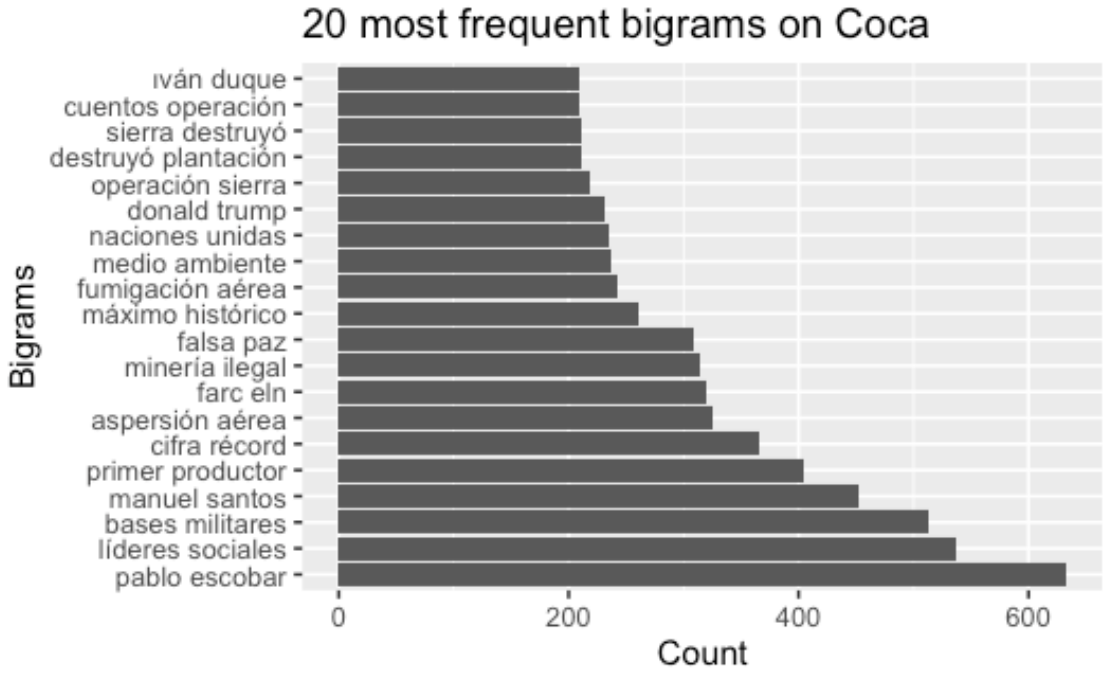

Figure 7.5: Bigram analysis on coca.

Table 7.2: Spanish-English Translations of the 20 most frequent bigrams on coca.

Number	Spanish	English
1	pablo escobar	Pablo Escobar
2	líderes sociales	social leaders
3	bases militares	Military bases
4	manuel santos	Manuel Santos
5	primer productor	first producer
6	cifra récord	record figure
7	aspersión aérea	aerial spraying
8	farc eln	FARC ELN
9	minería ilegal	illegal mining
10	falsa paz	false peace
11	máximo histórico	all-time high
12	fumigación aérea	aerial spraying
13	medio ambiente	environment
14	naciones unidas	United Nations
15	donald trump	Donald Trump
16	operación sierra	Sierra operation
17	destruyó plantación	destroyed plantation
18	sierra destruyó	Sierra destroyed
19	cuentos operación	operation stories
20	ıván duque	Iván Duque

Unlike the implications from the most frequent words and bigrams on tweets bearing coca, positive sentiments outpace the negative feelings in the sentiment graph. According to these results, trust is the highest emotion appearing on coca-related tweets. However, fear, sadness, and anger are following it. While anticipation and disgust have nearly similar amounts, joy and surprise are the lowest ones. Regarding these results, building trust over one of the most contentious resources in post-conflict Colombia seems likely possible. However, negative emotions also maintain their existence that may have strong potential to alter this situation. Further, the fourth chapter of the peace agreement dealing with directly illicit crop issues may have positively impacted the emotion of trust.

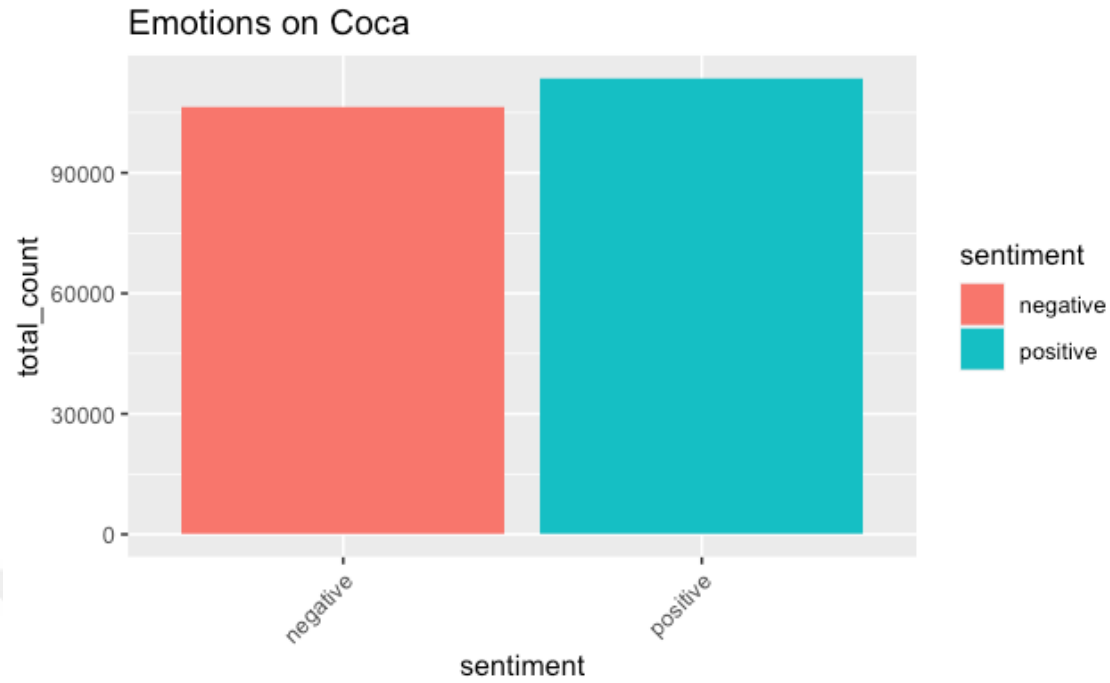

Figure 7.6: Sentiment analysis on coca.

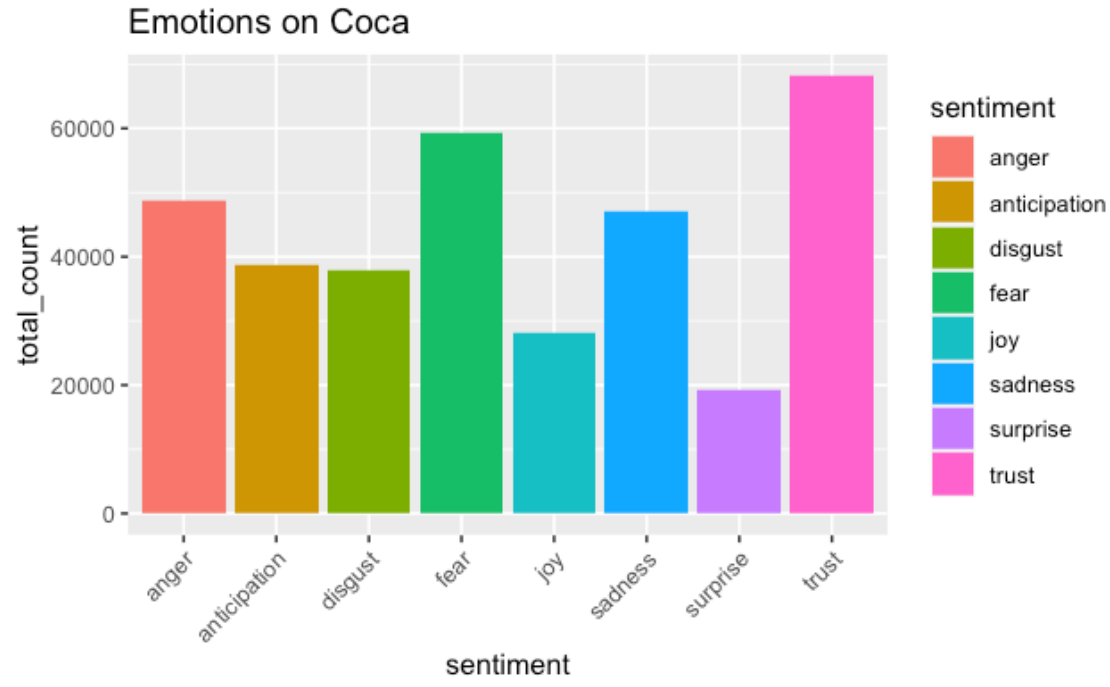

Figure 7.7: Emotions on coca.

7.2. MINING

The second most tweeted issue among the extracted words is “minería” (mining), with the 20.894 Spanish tweets. In the first months of 2017 and 2018, mining tweets increase sharply by surpassing 900 tweets, and in the middle of 2017 and 2018, they show a notable decrease. While in 2017’s last months, these tweets elevate again, in the rest of 2018 gradually reduce. In 2019 these tweets portrayed significantly fluctuated form and decrease towards 2020.

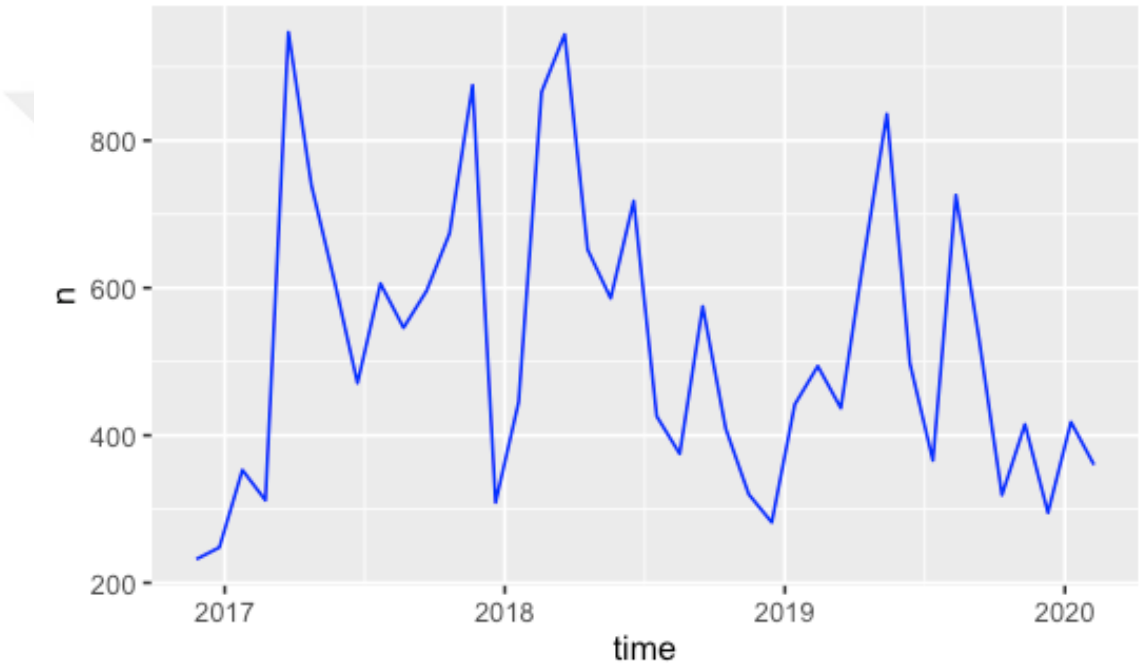

Figure 7.8: Time series on mining-included tweets.

"Illegal," "gold," "water," and "oil" are the most common words used with mining in collected tweets. Some technic words such as fracking and mercury are also forefront. In 2018 the government prohibited mercury in any mineral extraction operation (Cardona, 2018); its adverse impacts on health and environment main worries for taking this decision; however, to control mercury in illegal mining is still challenging. The frequency of the term "mercury" could be related to this decision. The term "environment" is the most repeated seventh. The following lines after the environment are separated for the politicians and government. Illegal mining-related issues are also connected to coca and drug trafficking. Moreover, environment-related matters, such as deforestation, the

environment, rivers, and badlands, stand out. Compared to the coca tweets, Ivan Duque and Gustavo Petro are the prominent politicians that frequently take place in mining tweets. "Development" and "economy" are also the most frequent words in this context; it may be stemmed from the government's point of view towards the extractive sector as a locomotive of development.

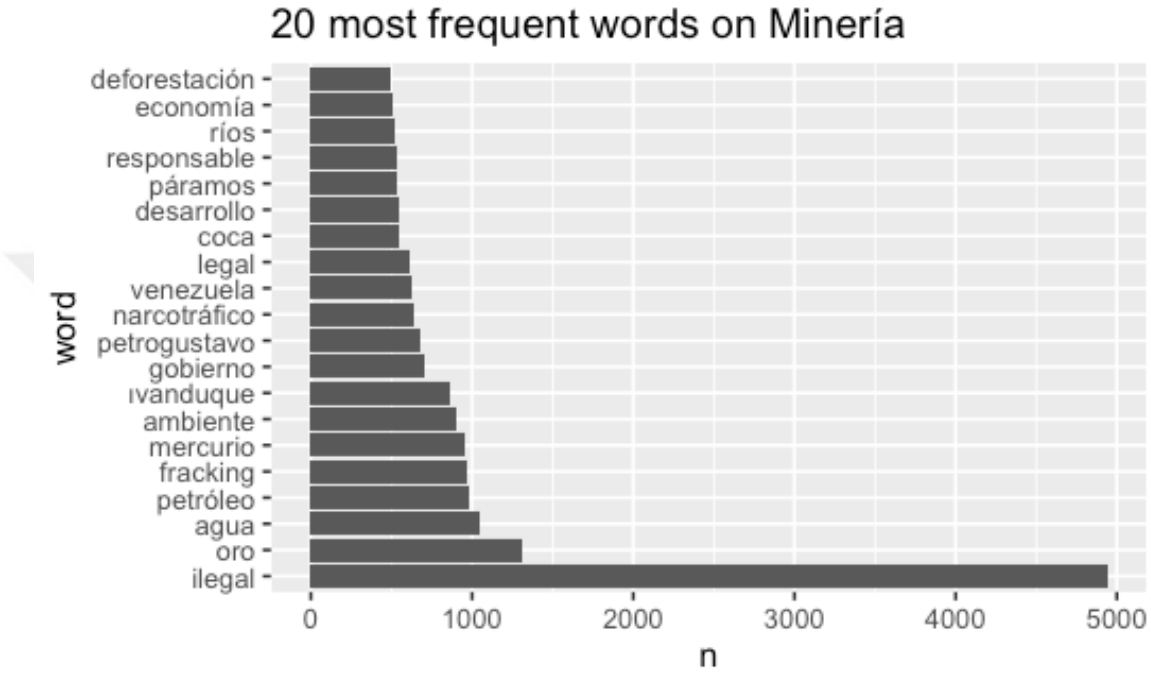

Figure 7.9: Word frequency analysis on mining.

Table 7.3: Spanish-English Translations of the 20 most frequent words on mining.

Number	Spanish	English	Number	Spanish	English
1	ilegal	illegal	11	narcotráfico	narcotrafficking
2	oro	gold	12	venezuela	Venezuela
3	agua	water	13	legal	legal
4	petróleo	oil	14	coca	coca
5	fracking	fracking	15	desarollo	development
6	mercurio	mercury	16	páramos	badlands
7	ambiente	environment	17	responsable	responsable
8	ıvanduque	Ivan Duque	18	ríos	rivers
9	gobierno	government	19	economia	economy
10	petrogustavo	Petro Gustavo	20	deforestacíon	deforestation

The environment is the most used bigram in the mining sector. It signals that environmental-based issues are significant in this aspect. “Bien hecha*” and “cielo abierto*” literally means “well done” and “open sky”. However, they have contextual meanings related to the mining sector in Colombia. “La mineria bien hecha” (Martínez, 2019; Villa, 2020) points out economic development via mining. It may also be a motto for the government to increase the efficiency of the mining sector (Zapata, 2017). "Cielo Abierto" signifies "Open-pit mining" that addresses removing surfaces to reach the minerals. "Consultas Populares" points out referendums that enables local communities to vote for mining (Dietz, 2018; González, 2019). "Illicit crops" and "social leaders" take place the most frequent fifth and sixth bigrams. The assassination of social leaders may have an impact on this situation. The "Sierra Nevada" is one of the living places for the indigenous of Colombia, and it has been subjected to megaprojects, including mining (Volckhausen, 2020). "Climate change," "environment," "natural resources," "environmental damage," "sustainable development" point out environmental-related concerns in the mining context. These issues have mostly become explicit in the mining sector. Unlike the other sectors, "armed groups" are seen; it might be derived from different guerilla groups' involvement in illegal mining. "Free Santurbán" points out the protests towards an international company aiming to the open-pit mining for gold and silver which took place in the Santurbán paramo in Santander city. "Foreign investment" and "water resources" can also be considered together with Santurbán context, as its water resources were in danger due to the international companies' investments. Moreover, "Bajo Cauca" is a place that was severely affected by illegal gold mining (Mercado, 2019). Francia Márquez is an environmental activist who defended her territory Cauca from legal and illicit mining against multinational companies, criminal groups, and government and awarded the Goldman price in 2018 (Makazaga, 2018).

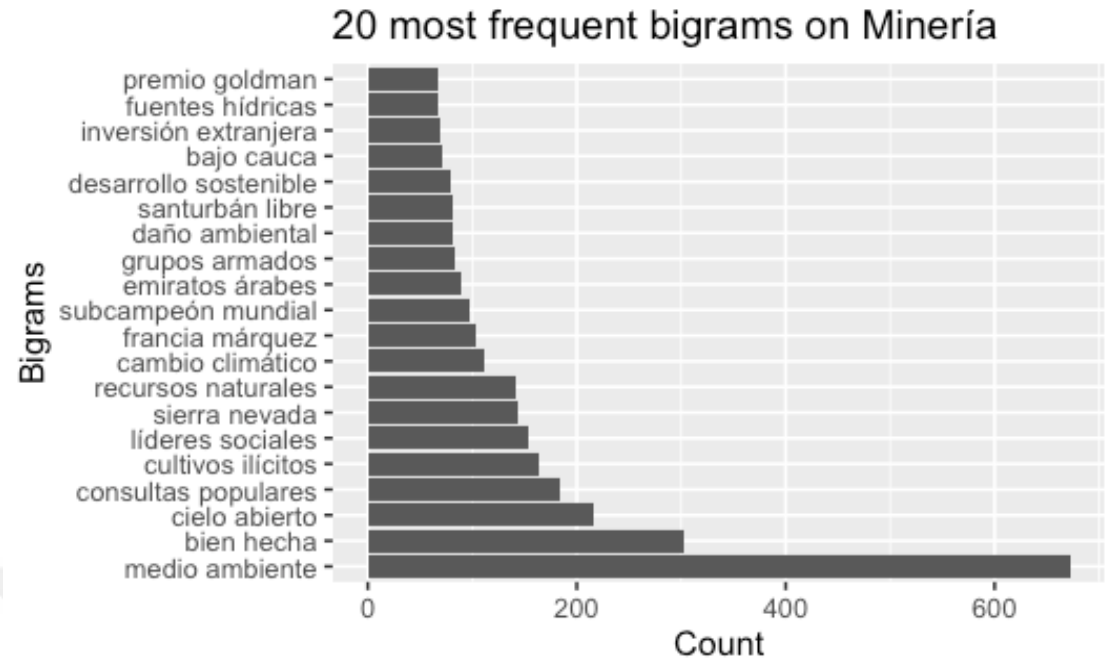

Figure 7.10: Bigram analysis on mining.

Table 7.4: Spanish-English Translations of the 20 most frequent bigrams on mining.

Number	Spanish	English
1	medio ambiente	environment
2	bien hecha*	well done
3	cielo abierto*	open sky
4	consultas populares	referendum
5	cultivos ilícitos	illicit crops
6	líderes sociales	social leaders
7	sierra nevada	Sierra Nevada
8	recursos naturales	natural resources
9	cambio climático	climate change
10	francia márquez	Francia Márquez
11	subcampeón mundial	world runner-up
12	emiratos árabes	Arab Emirates
13	grupos armados	armed groups
14	daño ambiental	environmental damage
15	santurbán libre	free Santurbán
16	desarrollo sostenible	sustainable development
17	bajo cauca	down Cauca
18	inversión extranjera	foreign investment
19	fuentes hídricas	water sources
20	premio goldman	Goldman award

In line with the literature and the most frequent words on mining, negative sentiments are predominant in the graph. This situation may derive from tweets pointing out protest-related events. Anger is the most intense emotion in mining, and it may highly emanate from environmental destruction. Sadness takes place in the second line, while disgust and fear demonstrate almost equal rates. On the contrary to the tweets including coca, trust appears in the fifth line. Anticipation, joy, and surprise constitute the lowest feelings. The problems related to the mining sector remain latent compared to the drug trafficking-related problems in Colombia; however, multiple actors benefit from legal and illegal mining in Colombia at the expense of the havoc of nature. The local and indigenous peoples have been affecting mainly by this destruction.

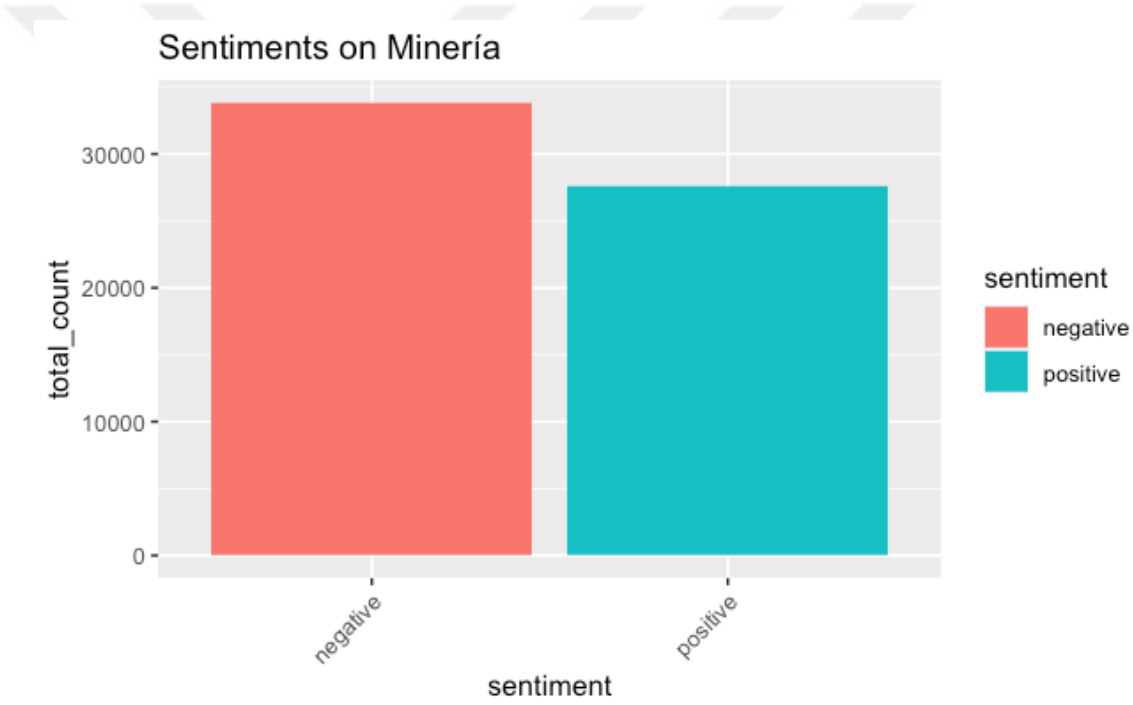

Figure 7.11: Sentiment analysis on mining.

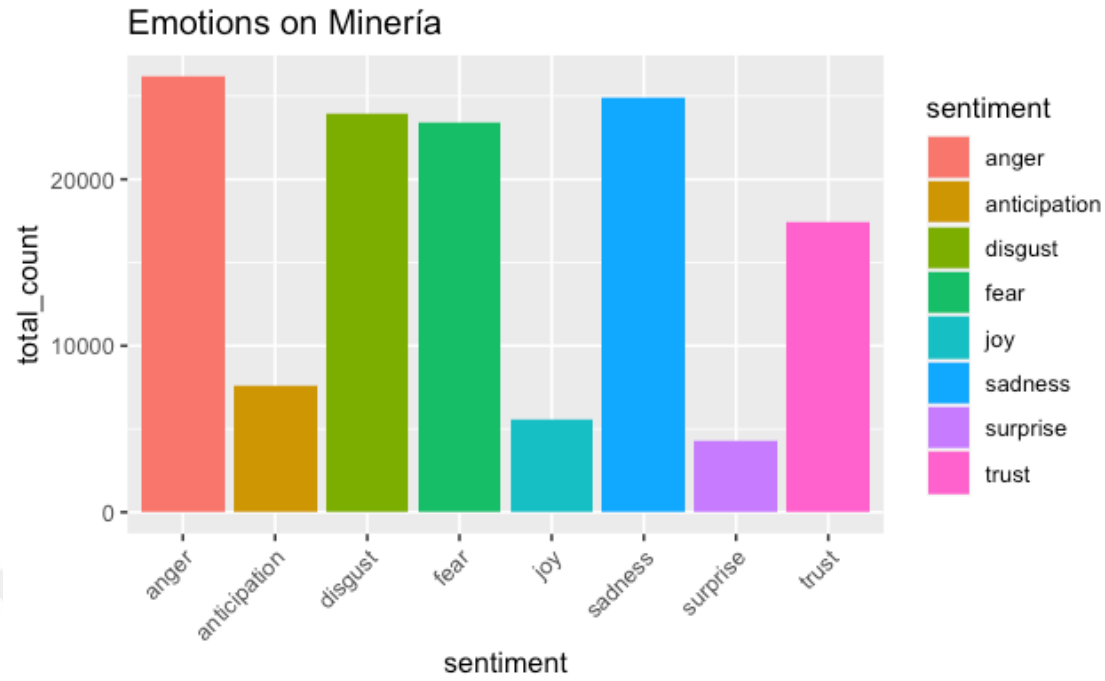

Figure 7.12: Emotions on Mining.

7.3. DEFORESTATION

12.114 Spanish tweets were collected that include deforestation in the Colombian context. The four peak points are remarkable in the middle of 2017, the first months of 2018, and roughly the first and middle of 2019. These peaks may signal the significant events related to rural infrastructure works, criminal groups' activities in forests. Compared to coca and mining, deforestation has fewer tweets. However, the literature on deforestation widely posits that forest loss has been increasing since the peace agreement. Overall, we can postulate that the tendency to tweet about deforestation increases in Colombia.

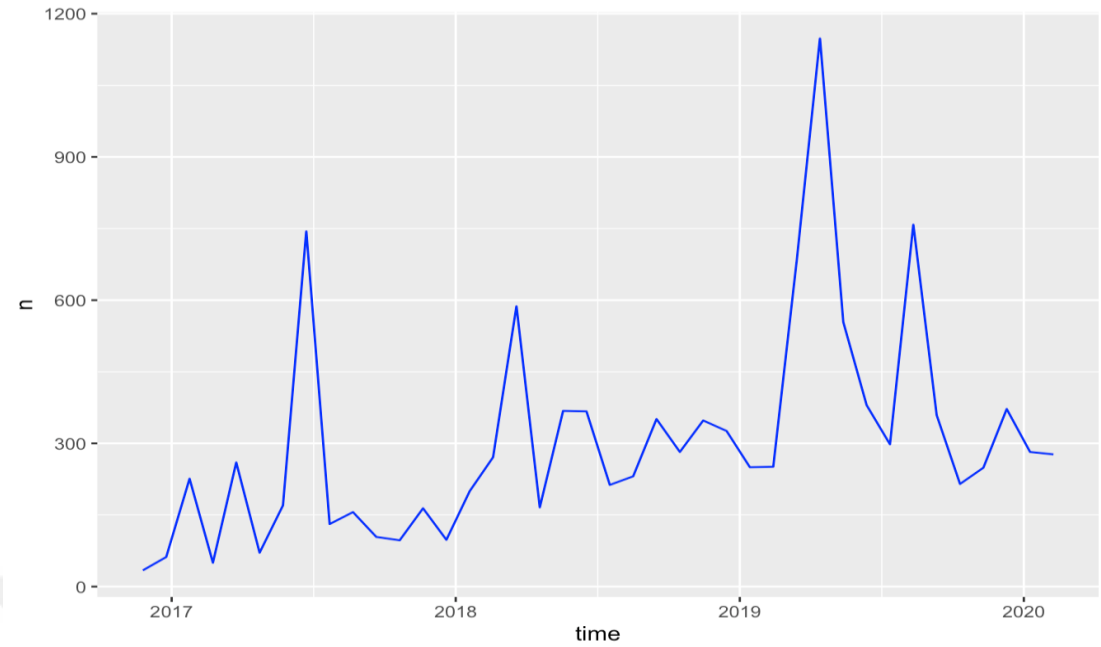

Figure 7.13: Time series on deforestation-included tweets.

The most frequent words are Amazons, the Ministry of Environment and Sustainable Development of Colombia, and the president Ivan Duque. Then, the term "brake" takes place in the fourth line, pointing out stopping deforestation. Interestingly, "Norway" is the fifth most used word. As a foreign country, "Brazil" is also among the most frequent words. In line with the literature, we observe cattle raising, and it can be a major factor to lead deforestation in Colombian rural. Then, "increase" and "illicit activities" stand out. From the environmental aspect; Amazon, environment, climate, species, crops constitute a significant proportion. Environment-related issues are more prominent in the deforestation context, along with mining tweets.

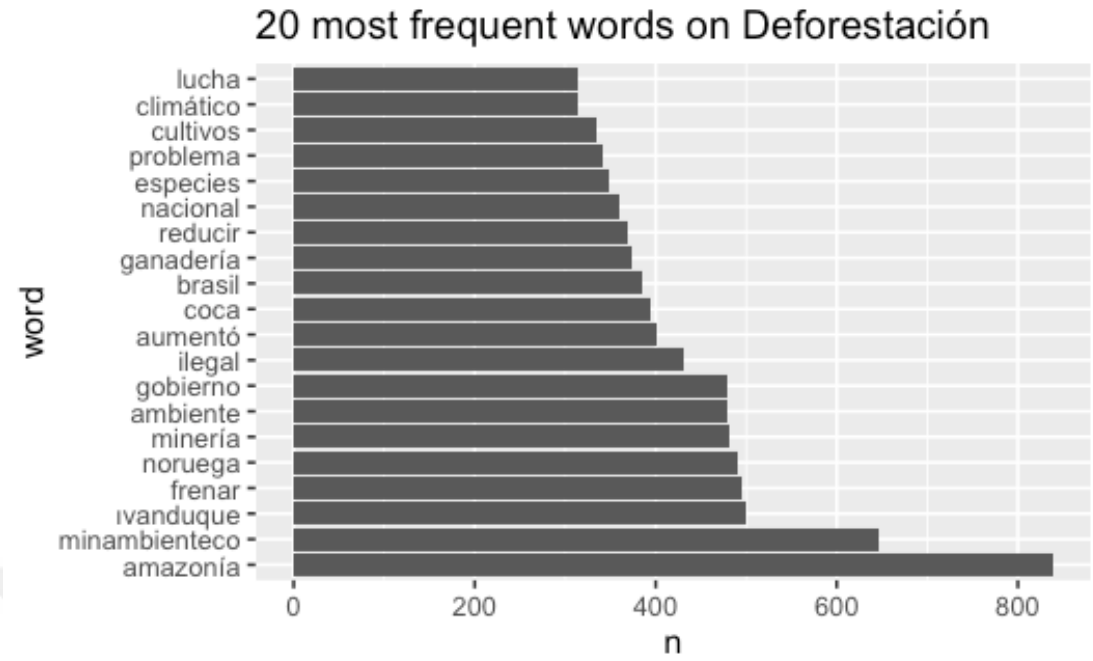

Figure 7.14: Word frequency analysis on deforestation.

Table 7.5: Spanish-English Translations of the 20 most frequent words on deforestation.

Number	Spanish	English	Number	Spanish	English
1	amazonía	Amazon	11	coca	coca
2	minambienteco	minambienteco	12	brasil	Brazil
3	ıvanduque	Ivan Duque	13	ganadería	cattle raising
4	frenar	brake	14	reducir	reduce
5	noruega	Norway	15	nacional	national
6	minería	mining	16	especies	species
7	ambiente	environment	17	problema	problem
8	gobierno	government	18	cultivos	crops
9	ilegal	illegal	19	climático	climate
10	aumentó	it increased	20	lucha	struggle

Bigrams on deforestation brighten that environment-related concerns consist of a significant number of tweets. "Climate change," "environment," "sustainable development," "environmental problem," "endangered species" are among the most frequent phrases. In the third and the fourth lines, we see illicit activities such as illegal mining and illegal crops. In this context, the words "Norway will give," "Norway deliveries," and "United Kingdom" draw the attention as being remote states to Colombia.

However, Norway's contribution to the peace negotiation is also known from the academic literature. The director of the Humboldt and ecologist, Brigitte Baptiste's name, takes place two times in the list; she blames the government for not preventing deforestation and corruption (Morales, 2018; Pardo, 2018). The words "last indigenous" and "isolated indigenous" reflect the serious concern of deforestation, as indigenous' living place undergoes vast devastation. "Armed conflict" continues to be critical in this domain.

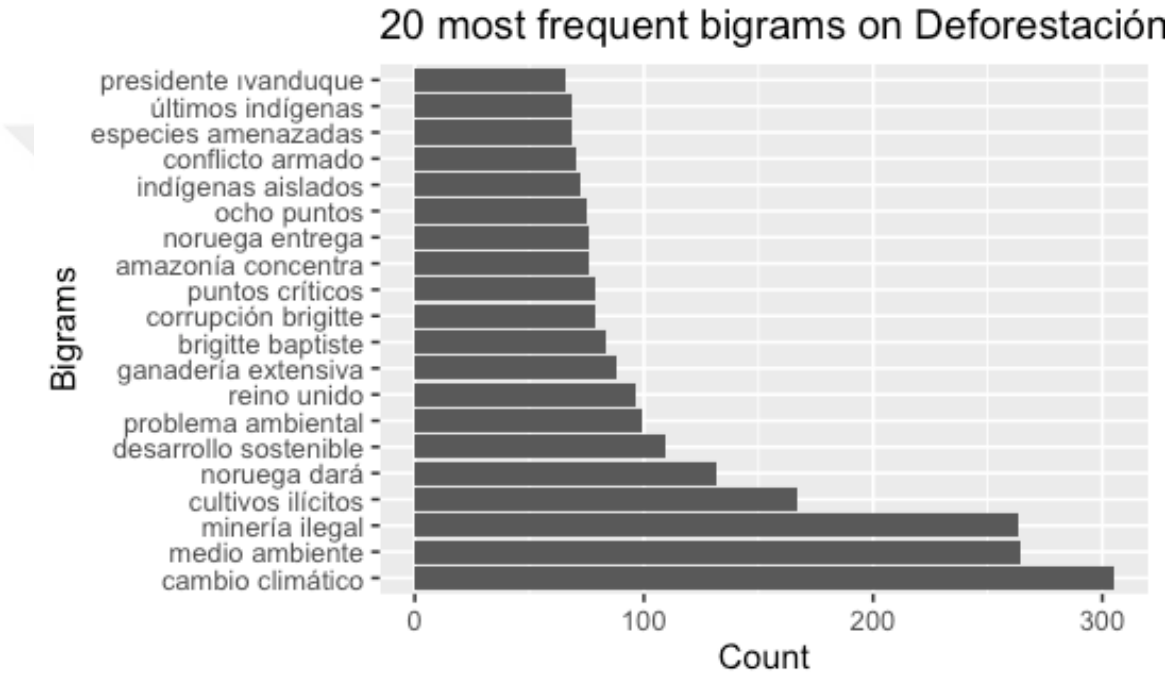

Figure 7.15: Bigram analysis on deforestation.

Table 7.6: Spanish-English Translations of the 20 most frequent bigrams on deforestation.

Number	Spanish	English
1	cambio climático	climate change
2	medio ambiente	environment
3	minería ilegal	illegal mining
4	cultivos ilícitos	illicit crops
5	noruega dará	Norway will give
6	desarrollo sostenible	sustainable development
7	problema ambiental	environmental problem
8	reino unido	United Kingdom
9	ganadería extensiva	extensive livestock farming
10	brigitte baptiste	Brigitte Baptiste
11	corrupción brigitte	Brigitte corruption
12	puntos críticos	critical points
13	amazonía concentra	amazon concentrates
14	noruega entrega	Norway deliveries
15	ocho puntos	eight points
16	indígenas aislados	isolated indigenous
17	conflicto armado	armed conflict
18	especies amenazadas	endangered species
19	últimos indígenas	last indigenous
20	presidente ıvanduque	President Ivan Duque

Similar to the mining tweets, deforestation-included tweets have mostly negative sentiments; however, the difference between positive and negative sentiments is lesser than the gap in mining tweets. Among these emotions, fear is prominent. The loss of forests along with climate change-related concerns may trigger this feeling. It also signals that deforestation is a serious problem. This feeling can also be stemmed from the destruction of the living places of the indigenous population. The second potent feeling is trust; anger and sadness come after it. Anticipation and disgust show similar shapes. Joy and surprise are the minimum ones, similar to coca and mining tweets.

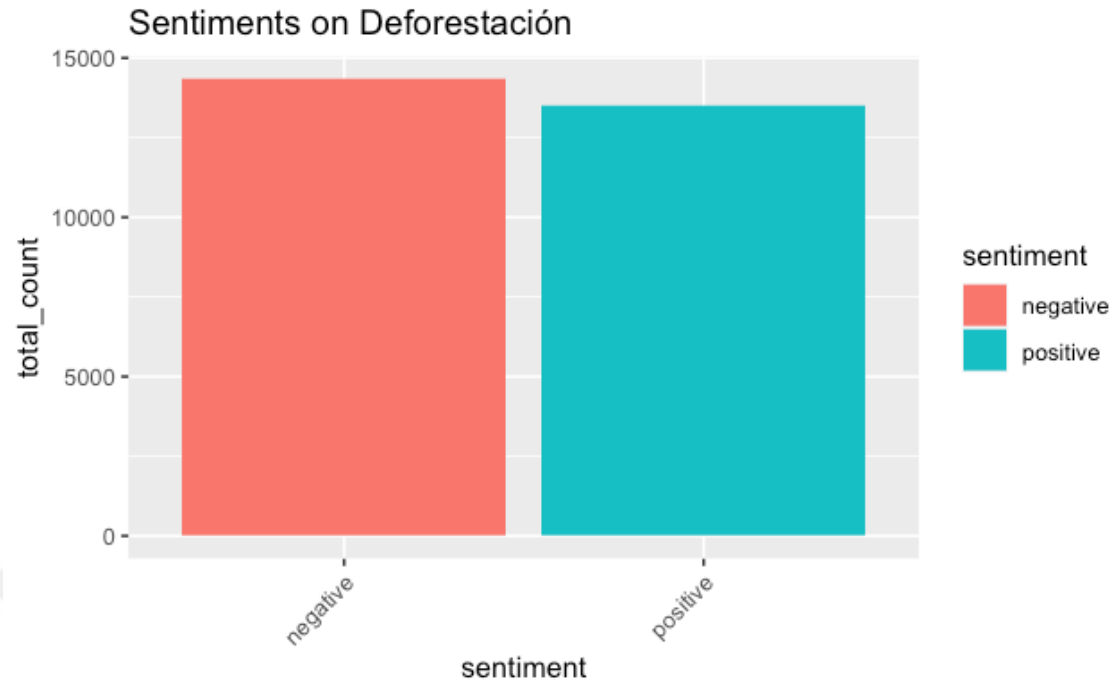

Figure 7.16: Sentiment analysis on deforestation.

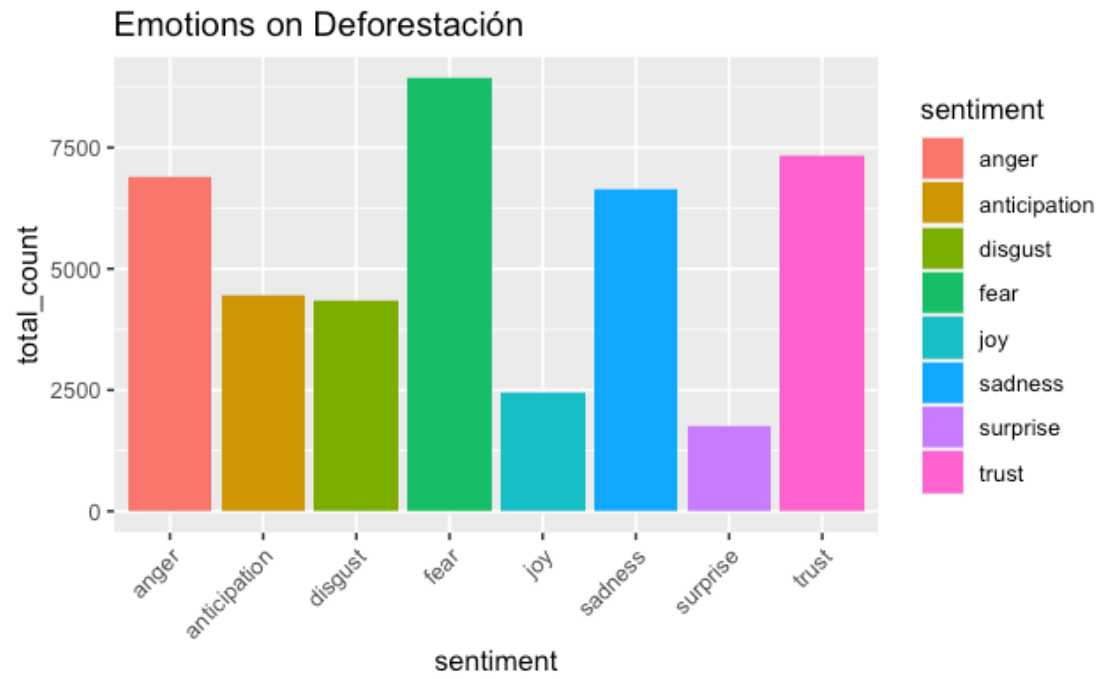

Figure 7.17: Emotions on deforestation.

7.4. RURAL

Colombian rural constitutes the most sensitive aspect of the peace process in Colombia. These areas are widely underdeveloped, poor, and lack employment opportunities, and

the rural population bears the traces of violence between armed groups and the government along with a range of illicit activities. Considering the current situation in Colombian rural, we can remark that violence has been continuing after the agreement. This section has 11.545 Spanish tweets on rural. As we observe from the time plot, the number of rural tweets sharply increases hereafter the ratification of the peace agreement. The main reason can be stemmed from the peace agreement's first chapter separated for comprehensive agrarian reform. The first months of 2017 demonstrate a marked decrease; in the second semester of 2017, the number of tweets elevates again. These peak points may have coincided with particular events. After 2018, the number of tweets does not reduce under 200 until the last months of 2019. However, it portrays a notably fluctuated pattern.

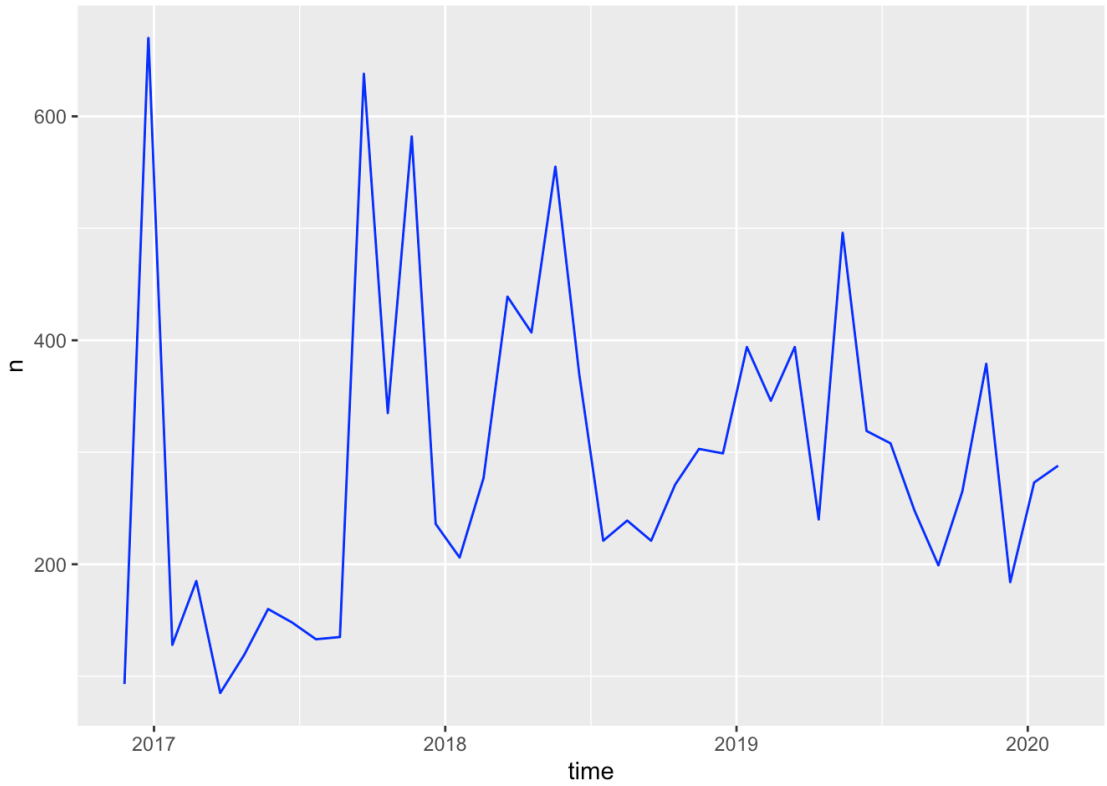

Figure 7.18: Time series on rural-included tweets.

The most used words point out social leaders and their assassination. The government, peace, and land are the most common words after leader and assassination. "Cauca" is the most destroyed city of Colombia, and after the peace agreement, it continues to be subjected to fights between armed groups (Torrado, 2021). Conversely to other sections,

Petro Gustavo and Venezuela appear more than Ivan Duque in the rural tweets. Moreover, the words "unemployment" and "poor" stand out. The account of the rural development agency (Agencia de Desarrollo Rural) is also among the most recurrent words.

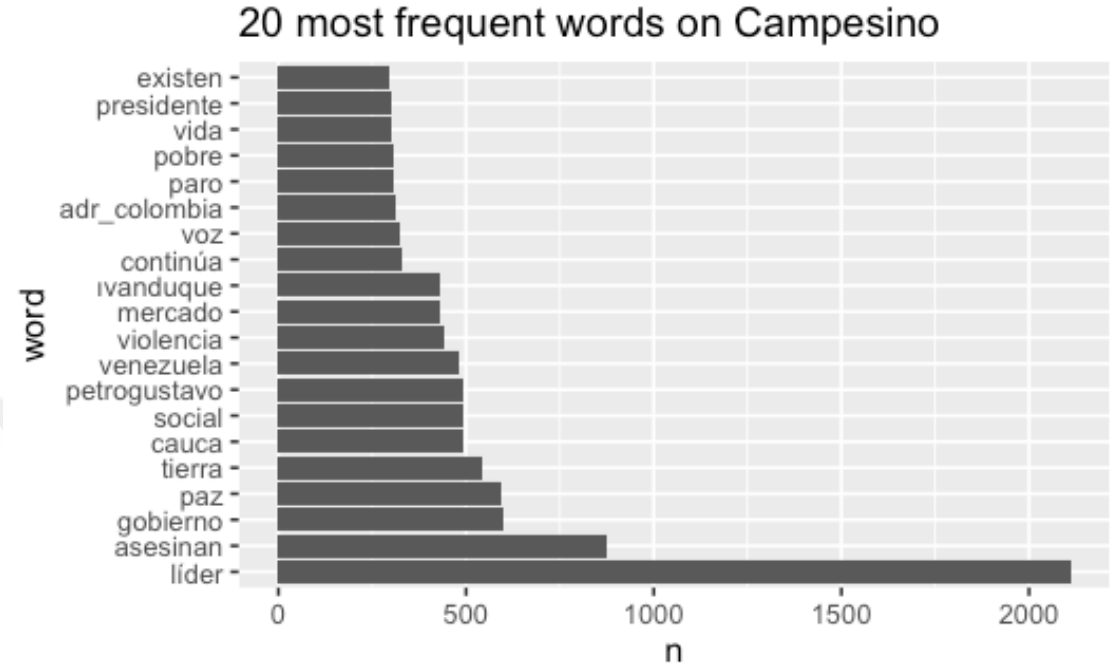

Figure 7.19: Word frequency analysis on rural.

Table 7.7: Spanish-English Translations of the 20 most frequent words on rural.

Number	Spanish	English	Number	Spanish	English
1	líder	leader	11	mercado	market
2	asesinan	they murder	12	ıvanduque	Ivan Duque
3	gobierno	government	13	continúa	it continues
4	paz	peace	14	voz	cattle raising
5	tierra	land	15	adr_colombia	adr_colombia
6	cauca	Cauca	16	paro	unemployment
7	social	social	17	pobre	poor
8	petrogustavo	Petro Gustavo	18	vida	life
9	venezuela	Venezuela	19	presidente	president
10	violencia	violence	20	existen	they exist

Bigrams in this section provide the explicit and integrative understanding of most-spoken issues in the Colombian countryside context. Violence, murder, shot, assault, and brutality stand out expansively. We know from the literature and news that murders towards social leaders and ex-combatants are widespread in post-conflict Colombia. The assassination of social leader José Jair Cortes Godoy is salient among these bigrams. The government of Venezuela's condemnation is also common among these word chunks. Human rights, patriotic march, false positives reflect the grievances of the public related to these cruel events. "Minga social" refers to solidarity for the indigenous community, and it represents a peaceful fight for all citizens' rights, including demands for protection from murders of social leaders in rural (Ospina-Valencia, 2021). Besides, minga points out protests of indigenous people against the government in Colombia (BBC News Mundo, 2020).

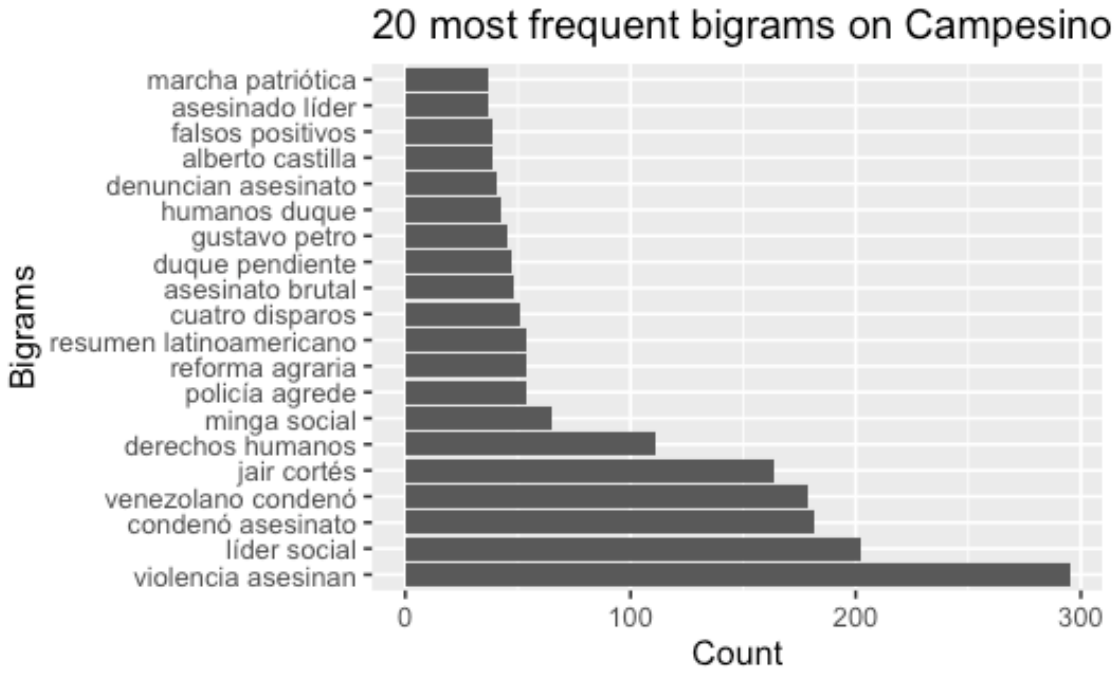

Figure 7.20: Bigram analysis on rural.

Table 7.8: Spanish-English Translations of the 20 most frequent bigrams on rural.

Number	Spanish	English
1	violencia asesinan	violence murder
2	líder social	social leader
3	condenó asesinato	condemned murder
4	venezolano condenó	Venezuela condemned
5	jair cortés	Jair Cortés
6	derechos humanos	human rights
7	minga social	Minga social
8	policía agrede	police assault
9	reforma agraria	rural reform
10	resumen latinoamericano	Latin American summary
11	cuatro disparos	four shots
12	asesinato brutal	brutal murder
13	duque pendiente	Duque pending
14	gustavo petro	Gustavo Petro
15	humanos duque	Duque humans
16	denuncian asesinato	inform murder
17	alberto castilla	Alberto Castilla
18	falsos positivos	False positives
19	asesinado líder	assassinated leader
20	marcha patriótica	patriotic march

Albeit to the negative connotations both in the most frequent terms and bigrams, positive sentiments transcend the negative ones in the Colombian rural context. Considering the Colombian rural's problems relying on the land reform, the first chapter of the peace agreement may impact this situation. Similar to illicit drug problems, agrarian reform constitutes one of the separate parts of the agreement; therefore, the peace agreement may increase positive sentiments over rural. In this regard, trust is remarkable; as we fathom from the literature, building trust over resource-related issues is essential for long-lasting peace. Nevertheless, fear, sadness, and anger follow this feeling. Unlike coca, mining, and deforestation tweets, the feeling of joy does not take place at the end with a slight difference together with surprise.

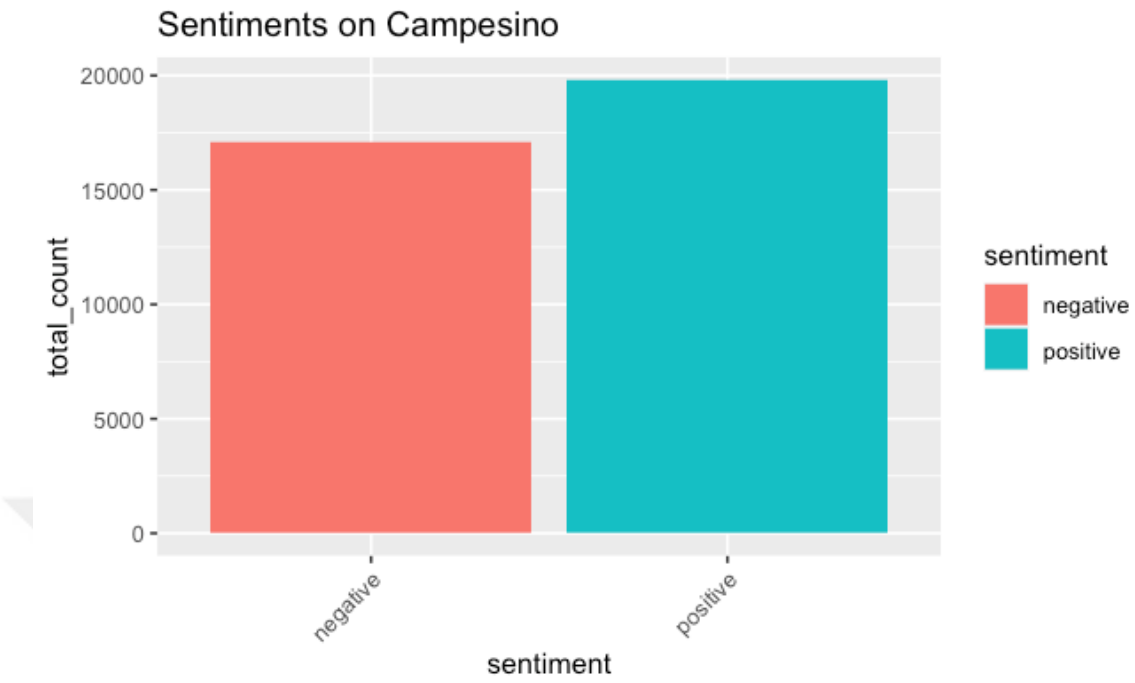

Figure 7.21: Sentiment analysis on rural.

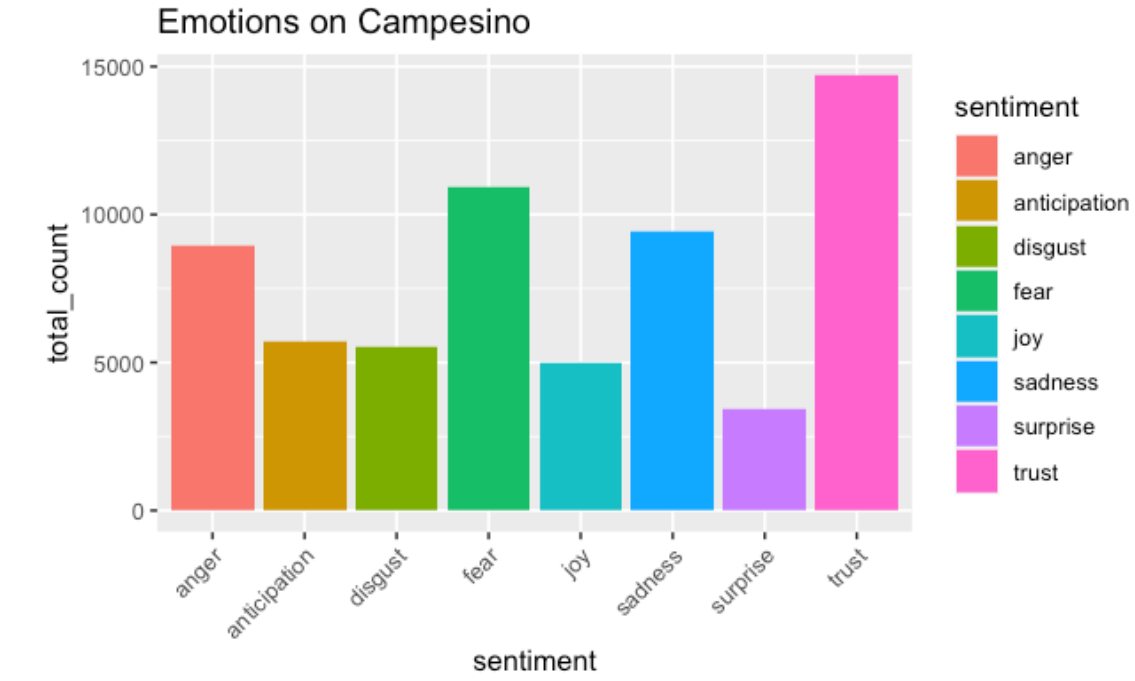

Figure 7.22: Emotions on rural.

8. CONCLUSION

The essential motivation of this study is to seek answers to how the widespread effects of natural resources in civil wars continue to shape post-conflict societies. For that reason, it focuses on Colombia, where the natural resources had a considerable impact in its civil war, by considering the addressing them in the peace process is crucial in terms of the future of the peace. Based on extant research, this thesis explores the impact of the resources on conflict recurrence and building trust and peace. Based on two burgeoning literature over natural resources effects in post-conflict societies, the conflict recurrence is first dealt with from the rebels, governments, international actors, and public dimensions. Secondly, the environmental peacebuilding concept is examined regarding the likely positive impact of natural resources on long-lasting peace. Theoretically, it highlights the importance of governance and institutions' effectiveness to not fall into conflict trap due to resource-based issues, thereby separating from greed and grievances theories' explanations for the causes of the conflict.

Moreover, this thesis employs computational social science methods by focusing on Twitter to seek answers to its central question, targeting to embrace a broader population in compliance with the extensive use of the Internet and social media platforms. The foremost reason for this selection lies in the pressing need for a bottom-up approach, including public views in peace processes, and Twitter provides us this convenient atmosphere. Furthermore, we can quickly reach a lot of information using computational social science methods. In this vein, four main areas are determined in the light of the existing literature over resources and civil wars and these resources' particular precedence in the Colombian conflict. From the illicit crops segment "coca," to cover all gemstones-related tweets "mining," to reach the opinions on the loss of forest the term "deforestation" and by also considering the comprehensive rural reform in the peace agreement, to address the land-related issues, "rural" is selected. Since the exceeding negative impacts of the pandemic require to be evaluated separately, this study's time interval is limited from the ratification of the peace agreement to the declaration of the first official Covid-19 case in Colombia.

Regarding this study's method, time series and quantitative text analysis can ensure an overarching understanding of the Colombians' main problems in the peace process. Focusing on the sentiments over four inter-related resource-based areas also can provide insights us to what extent Colombia close to the recurrence of the conflict or the long-lasting peace. From the environmental peacebuilding perspective, building trust over natural resource-related issues is crucial to sustaining peace. Therefore, sentiment analysis provides us insights into these issues. Based on these tweets, we overwhelmingly face negative words on resources. However, sentiment analysis over these tweets reveals controversial results. Positive sentiments on coca and rural are startling, while negative sentiments over mining and deforestation overwhelm positive sentiments. These results initially seem astounded; however, considering the first and the fourth chapters of the peace agreement over rural reform and illicit drug problems, it may not be an odd result. It can demonstrate the including resources-related issues in the peace agreement impact positively to public views. However, it may also stem from the dictionary-based approach; for that reason, an in-depth examination is required to obtain more precise results with the help of human annotators and machine learning. According to these results;

Coca constitutes the most significant aspect of the peace process. The number of tweets and their contents tends to support this claim. Besides, after the FARC's name, the most frequent word "peace" proves this situation. Beyond the armed groups, government, and politicians' names, environmental-related concern over aerial spraying, the use of glyphosate, destruction of plantation stands out complying with the literature. Therefore, we can conclude that the measurement taken to prevent illicit crops can increase environmental-related issues and health-related concerns. The likely protests can be derived from environmental-related problems. Nevertheless, positive sentiments such as trust surpass the negative ones according to the sentiment analysis. This situation can reflect the peace accord's positive impact on coca-related issues.

In line with the literature on gemstones, gold and illicit crops-related tweets appear in mining tweets. This section also overwhelmingly bears environmental-related concerns, and potential protest-related places and persons' names are among the most repeated

words. For that reason, the geo-location of these tweets can be used to further the research. The environment-related concerns, gold mining, water sources are prominent in those tweets. According to the sentiment analysis, negative feelings are preponderant such as anger, sadness, disgust, and fear. Although mining-related issues stay behind the drug trafficking-related problems in Colombia, they have a solid potential to trigger likely conflicts. Based on the sentiment analysis results, building trust over this sector does not seem possible in the short run. Due to different legal and illegal actors' interests in mining, Colombian rural are at a high risk of destroying nature.

Deforestation-included tweets bear the worries over indigenous population, environmental concerns such as climate change, and endangered species. Interestingly, Norway and United Kingdom appear among the most frequent words. Extensive livestock farming, illicit crops, and mining also unpack the divergent aspects of deforestation. Besides, this section reflects the interaction among illegal crops, illegal mining, and deforestation. Similar to the implications of the frequent words and bigrams, negative sentiments are prominent. Fear is the most prevalent emotion in deforestation. Nevertheless, trust is in the second line, and it can reveal the likely cooperation areas over the environment-related concerns in Colombia.

Lastly, tweets on rural show the most challenging aspect of the peace process: the murder of social leaders and violence. These tweets also cover rural reform that broadly aims to solve land-related problems. The word "manga" points out solidarity and protests derived from indigenous expectations and difficulties. Observing terms reflecting indigenous communities' problems in these tweets can also evidence the larger scale of public support. However, unlike the inferences from these tweets, positive emotions are overwhelmed the negative ones in the sentiment analysis graph. It may seem an unexpected result, but it can also show the impact of the inclusion of the rural reform in the peace agreement similar to drug-related problems. From this perspective, positive sentiments of both coca and rural-included tweets exceed negative ones, and they are dealt with separately by the peace agreement separately. Nevertheless, it may be stemmed from the feature of the dictionary-based approach.

Consequently, this thesis argues that Colombia is highly sensitive to conflict recurrence in terms of resources-related problems that include mainly environmental concerns, local and indigenous population grievances that are stemmed from the government, ex-combatants, criminal groups, and opportunistic companies' activities. Violence and protest-related words obtained from the quantitative text analysis are the robust markers of this situation. Building long-lasting peace based on effective and fair natural resource management remains a goal to achieve in the future for Colombia. Finally, it should be bear in mind that Twitter is an alternative space to express our thoughts; it is not sufficient alone to fathom the whole community; however, it provides a significant additional contribution in line with the extant literature requirements about benefiting big data and technological advancements in peace research.

9. FUTURE RESEARCH

Future research on the role of natural resources in the Colombian peace process can conduct detailed analyzes of the times of the Colombian conflict-event datasets such as UCDP and ACLED, with times of natural resources-related tweets. The ACLED dataset may be more suitable to observe the event types and the likely relation of resource-related concerns in Colombia. The second, based on these tweets' geolocations, where the conflict events occurred in the post-conflict Colombia can be compared. These results can provide us some potent insights. However, this approach can be criticized by the environmental peacebuilding perspective. Therefore, these tweets' can be separated into positive and negative ones and can be compared in terms of where the conflicts, protests, or riots occur. Places not subjected to protests or conflict can be compared in terms of natural resource-related tweets' contents. Third, one can focus on just one dimension of natural resources such as illicit crops and conduct an in-depth examination of it considering the geolocation of these tweets. Moreover, deforestation-included tweets can provide remarkable contributions with the satellite observations of the places with green areas.

REFERENCES

Acero, C., & Machuca, D. (2021). The substitution program on trial: progress and setbacks of the peace agreement in Colombia's policy against illicit crops. *International Journal of Drug Policy*, *89*, 1-11. https://doi.org/10.1016/j.drugpo.2021.103158

ACLED. (2021). Armed Conflict Location & Event Data Project (ACLED) Codebook. https://acleddata.com/dashboard/#/dashboard

Adams, C., Ide, T., Barnett, J., & Detges, A. (2018). Sampling bias in climate-conflict research. *Nature Climate Change*, *8*(3), 200–203. https://doi.org/10.1038/s41558-018-0068-2

Aggestam, K. (2018). Depoliticisation, water, and environmental peacebuilding. In A. Swain, & J. Öjendal (Eds.), *Routledge Handbook of Environmental Conflict and Peacebuilding*. (pp. 97-107). Routledge.

Ahmed, W. (June 18, 2019). Using Twitter as a data source: an overview of social media research tools. https://blogs.lse.ac.uk/impactofsocialsciences/2019/06/18/using-twitter-as-a-data-source-an-overview-of-social-media-research-tools-2019/

Ali, S. (2007). *Peace Parks: Conservation and Conflict Resolution*. Cambridge University Press, Cambridge.

Álvarez, M. D. (2001). Could peace be worse than war for Colombia's forests? *Environmentalist*, *21*(4), 305–315. https://doi.org/10.1023/A:1012904318418

Ayling, R. D., & Kelly, K. (1997). Dealing with conflict: Natural resources and dispute resolution. *Commonwealth Forestry Review*, *76*(3), 182–185.

Balagkutu, T. A., Asaka, J. O., Holcombe, L., McSparren, J. J., & Van Deveer, S. D. (2018). Environmental conflict and peacebuilding in Africa: Connecting resources, issues, and ongoing governance initiatives. In A. Swain, & J. Öjendal (Eds.), *Routledge Handbook of Environmental Conflict and Peacebuilding*, 267–282. https://doi.org/10.4324/9781315473772

Baptiste, B., Pinedo-Vasquez, M., Gutierrez-Velez, V. H., Andrade, G. I., Vieira, P., Estupiñán-Suárez, L. M., Londoño, M. C., Laurance, W., & Lee, T. M. (2017). Greening peace in Colombia. *Nature Ecology and Evolution*, *1*(4), 1-3. https://doi.org/10.1038/s41559-017-0102

Barnett, J., & Adger, W. N. (2007). Climate change, human security and violent conflict. *Political Geography*, *26*(6), 639–655. https://doi.org/10.1016/j.polgeo.2007.03.003

Barreto-Galeano, M. I., Medina-Arboleda, I. F., Zambrano-Hernández, S., Sabucedo-Cameselle, J. M., Blanco-Abarca, A., & Maurice Lair, É. (2019). Rhetoric, Political Ideology and the Peace Process in Colombia: A Twitter® Analysis. *Studies in Conflict and Terrorism*, 1–18. https://doi.org/10.1080/1057610X.2019.1615256

Basedau, M., Fox, J., Pierskalla, J.H., & Strüver, G. (2015). Does discrimination breed grievances—and do grievances breed violence? New evidence from an analysis of religious minorities in developing countries. *Conflict Management and Peace Science, 34*(3), 217-239.

Basu, A. (2019). Quantitative Text Analysis. *Qeios*. https://doi.org/10.32388/312979

Beckline, M., Yujun, S., Zama, E., John, A. B., Tahle, M., Lisette, N., & Bernard, L. (2017). Environmental Degradation in Conflict and Post-Conflict Regions. *International Journal of Environmental Protection and Policy, 14*(6), 187-195. https://doi.org/10.11648/j.ijepp.20160406.15

Beevers, M. D. (2012). Forest resources and peacebuilding: Preliminary lessons from Liberia and Sierra Leone. In P. Lujala, & S. A. Rustad (Eds.), *High-Value Natural Resources and Post-Conflict Peacebuilding*. (pp. 364–390). https://doi.org/10.4324/9781849775786

Beevers, M. D. (2015). Governing natural resources for peace: Lessons from liberia and Sierra Leone. *Global Governance*, *21*(2), 227–246. https://doi.org/10.5555/1075-2846-21.2.227

Beevers, M. D. (2016). Forest governance and post-conflict peace in Liberia: Emerging contestation and opportunities for change? *Extractive Industries and Society*, *3*(2), 320–328. https://doi.org/10.1016/j.exis.2015.07.007

Beevers, M. D. (2018). Environmental Peacebuilding in Liberia. In A. Swain, & J. Öjendal (Eds.), *Routledge Handbook of Environmental Conflict and Peacebuilding*. (pp. 219-230). Routledge.

Betancur, J., Alvarado, D. M., Rivera-Gutiérrez, H. F., & Parra, J. (2019). Avifauna en dos complejos de páramo de Antioquia, Colombia. *Biota Colombiana, 20*(1). https://doi.org/10.21068/c2019.v20n01a06

Bigombe, B., Collier, P., & Sambanis, N. (2000). Policies for building post-conflict peace. *Journal of African Economies*, *9*(3), 323–348. https://doi.org/10.1093/jae/9.3.323

Bone, A. (2012). The Kimberly Process Certification Scheme: The primary safeguard for the diamond industry. In P. Lujala, & S. A. Rustad (Eds.), High-Value Natural Resources and Peacebuilding. (pp. 189- 194).

Bretthauer, J. M. (2014). Conditions for Peace and Conflict: Applying a Fuzzy-Set Qualitative Comparative Analysis to Cases of Resource Scarcity. *Journal of Conflict Resolution*, *59*(4), 593–616. https://doi.org/10.1177/0022002713516841

Brinkerhoff, D. W. (2005). Rebuilding governance in failed states and post-conflict societies: Core concepts and cross-cutting themes. *Public Administration and Development*, *25*(1), 3–14. https://doi.org/10.1002/pad.352

Brown, K. (2006). War economies and post-conflict peacebuilding: Identifying a weak link. *Journal of Peacebuilding and Development*, *3*(1), 6–19. https://doi.org/10.1080/15423166.2006.260470878529

Bruch, C., Muffett, C., & Nichols, S. S. (2016). *Governance, Natural Resources and Post-Conflict Peacebuilding.* Routledge.

Bruch, C., Jensen, D., Nakayama, M., Unruh, J., Gruby, R., & Wolfarth, R. (2008). Post-Conflict Peace Building and Natural Resources. In *Yearbook of International Environmental Law, 19*(1), 58-96. https://doi.org/10.1093/yiel/19.1.58

Brunnschweiler, C. N., & Bulte, E. H. (2009). Natural resources and violent conflict: Resource abundance, dependence, and the onset of civil wars. *Oxford Economic Papers*, *61*(4), 651–674. https://doi.org/10.1093/oep/gpp024

Bryden, A. (2006). Towards a Security Governance Agenda in Post-Conflict Peacebuilding. *Sicherheit & Frieden*, *24*(1), 22–26. https://doi.org/10.5771/0175-274x-2006-1-22

Buchely, L. (2020). Peace, Land, and Bureaucracy in Colombia: An Analysis of the Implementation of the Victims and Land Restitution Law from a Multiscale Perspective of State Bureaucracies. *Land,* *9*(6), 1-23. https://doi.org/10.3390/land9060181

Cardona, A. J. (July 20, 2018). Colombia prohíbe el uso de mercurio en la minería. *Mongabay*. https://es.mongabay.com/2018/07/colombia-prohibe-uso-de-mercurio-en-mineria/

Catarious, D. M., Jr., & Russell, A. (2012). Counternarcotics efforts and Afghan poppy farmers: Finding the right approach. In P. Lujala, & S. A. Rustad (Eds.), *High-value natural resources and post-conflict peacebuilding.* (pp. 467-490).

Cederman, L. E., & Vogt, M. (2017). Dynamics and Logics of Civil War. Journal of Conflict *Resolution*, *61*(9), 1992–2016. https://doi.org/10.1177/0022002717721385

Ceron, C. A. A., De los Rios-Carmenado, I., & Fernández, S. M. (2018). Illicit crops substitution and rural prosperity in armed conflict areas: A conceptual proposal based on the Working With People model in Colombia. *Land Use Policy*, *72*, 201–214. https://doi.org/10.1016/j.landusepol.2017.12.038

Chanty, S., & Schweithelm, J. (2015). Forest resources in Cambodia's transition to peace: Lessons for peacebuilding. In H. Young, & L. Goldman (Eds.), *Livelihoods, Natural Resources, and Post-Conflict Peacebuilding*. (pp. 67-76).

Cheng C., & D. Zaum. (2016). Corruption and the Role of Natural Resources in Post-Conflict Transitions, Governance. In C. Bruch, C. Muffett, & S. S. Nichols (Eds.), *Governance, Natural Resources, and Post-Conflict Peacebuilding* (pp. 461-480). London: Earthscan.

Clerici, N., Armenteras, D., Kareiva, P., Botero, R., Ramírez-Delgado, J. P., Forero-Medina, G., Ochoa, J., Pedraza, C., Schneider, L., Lora, C., Gómez, C., Linares, M., Hirashiki, C., & Biggs, D. (2020). Deforestation in Colombian protected areas increased during post-conflict periods. *Scientific Reports*, *10*(1), 1–10. https://doi.org/10.1038/s41598-020-61861-y

Collier, P., & Hoeffler, A. (1998). On economic causes of war. *Oxford Economic Papers*, *50*(4), 563–573. https://doi.org/10.1093/oep/50.4.563

Collier, P., & Hoeffler, A. (2000). *Greed and Grievance in Civil War.* (Policy Research Working Paper No. 2355). The World Bank Development Research Group. https://openknowledge.worldbank.org/handle/10986/18853

Collier, P., & Hoeffler, A. (2002). On the Incidence of Civil War in Africa. *Journal of Conflict Resolution, 46*(1), 13-28. https://doi.org/10.1177/0022002702046001002

Collier, P., & Hoeffler, A. (2004). Greed and grievance in civil war. *Oxford Economic Papers*, *56*(4), 563–595. https://doi.org/10.1093/oep/gpf064

Collier, P. & Hoeffler, A. (2012). High-value natural resources, development, and conflict: Channels of causation. In P. Lujala, & S. A. Rustad (Eds.), High-Value Natural Resources and Peacebuilding. (pp. 297-312).

Conca, K., & Dabelko G. D. (2002). *Environmental Peacebuilding*. Woodrow Wilson Center Press.

Conca, K., & Wallace, J. (2012). Environment and peacebuilding in war-torn societies: Lessons from the UN environment programme's experience with post-conflict assessment. In D. Jensen, & S. Lonergan (Eds.), *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding*. (pp.63–84). https://doi.org/10.4324/9780203550199

Conrad, J. M., Greene, K. T., Walsh, J. I., & Whitaker, B. E. (2019). Rebel Natural Resource Exploitation and Conflict Duration. *Journal of Conflict Resolution*, *63*(3), 591–616. https://doi.org/10.1177/0022002718755853

Cornell, S. E. (2005). The interaction of narcotics and conflict. *Journal of Peace Research*, *42*(6), 751–760. https://doi.org/10.1177/0022343305057895

De Coning, C. (2018). Adaptive Peacebuilding. *International Affairs, 94*(2), 301–317. https://doi.org/10.1093/ia/iix251

De Meritt, J., Pulido, A., Mason, T., & Meernik, J. (2019). Land, Violence, and the Colombian Peace Process. In J. Meernik, J. DeMeritt, & M. Uribe-López (Eds.), As war Ends: What Colombia Can Tell Us About the Sustainability of Peace and Transitional Justice (pp. 68-90). Cambridge: Cambridge University Press. doi:10.1017/9781108614856.004

De Soysa, I. (2002). Paradise is a bazaar? Greed, creed, and governance in civil war, 1989-99. *Journal of Peace Research, 39*(4), 395–416. https://doi.org/10.1177/0022343302039004002

Department For International Development (DFID). (2019). *Governance for Growth, Stability and Inclusive Development (Position Paper)* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/786751/Governance-Position-Paper2a.pdf

Dietz, K. (2018). Consultas populares mineras en Colombia: Condiciones de su realización y significados politicos. El caso de La Colosa. *Colombia Internacional, 93*(93), 93-117. DOI:10.7440/colombiaint93.2018.04

Doyle, M. W., & Sambanis, N. (2000). International Peacebuilding: A Theoretical and Quantitative Analysis. *American Political Science Review, 94*(4), 779–801. https://doi.org/10.2307/2586208

Dresse, A., Fischhendler, I., Nielsen, J. Ø., & Zikos, D. (2016). Moving beyond natural resources as a source of conflict: Exploring the human-environment nexus of environmental peacebuilding. (THESys Discussion Paper No. 2016-2). Humboldt-Universität zu Berlin.

Dresse, A., Fischhendler, I., Nielsen, J. Ø., & Zikos, D. (2019). Environmental peacebuilding: Towards a theoretical framework. *Cooperation and Conflict*, *54*(1), 99–119. https://doi.org/10.1177/0010836718808331

El sueño del agua se hace realidad para aldeas indígenas en Colombia. (n.d.). UNDP. Retrieved May 29, 2021, from https://www1.undp.org/content/undp/es/home/ourwork/ourstories/el-sueno-del-agua-se-hace-realidad-para-comunidades-indigenas-de.html

Fabra-Mata, J., & Mygind, J. (2019). Big data in evaluation: Experiences from using Twitter analysis to evaluate Norway's contribution to the peace process in Colombia. *Evaluation, 25*(1), 6–22. https://doi.org/10.1177/1356389018804259

Fearon, J. D. (2004). Why do some civil wars last so much longer than others? *Journal of Peace Research, 41*(3), 275–301. https://doi.org/10.1177/0022343304043770

Fearon, J. D., & Laitin, D. D. (2003). Ethnicity, insurgency, and civil war. In *American Political Science Review 97*(1), 75-90. https://doi.org/10.1017/S0003055403000534

Fjeldså, J., Álvarez, M. D., Lazcano, J. M., & León, B. (2005). Illicit Crops and Armed Conflict as Constraints on Biodiversity Conservation in the Andes Region. *AMBIO: A Journal of the Human Environment, 34*(3), 205–211. doi:10.1579/0044-7447-34.3.205

Gilmore, E., Gleditsch, N. P., Lujala, P., & Rød, J. K. (2005). Conflict diamonds: A new dataset. *Conflict Management and Peace Science, 22*(3), 257–272. https://doi.org/10.1080/07388940500201003

Gleditsch, N. P. (1998). Armed conflict and the environment: A critique of the literature. *Journal of Peace Research, 35*(3), 381–400. https://doi.org/10.1177/0022343398035003007

Gleditsch, N. P. (2012). Whither the weather? climate change and conflict. *Journal of Peace Research, 49*(1), 3–9. https://doi.org/10.1177/0022343311431288

Gleditsch, N. P., & Nordås, R. (2009). Climate Change and Conflict: A Critical Overview. *Die Friedens-Warte, 84*(2), 11-28. https://www.jstor.org/stable/23773880

González, X. (2019, March 20). La Corte Constitucional dijo el año pasado que las consultas populares ya no se pueden frenar la minería. *La Republica*. https://larepublica.co/especiales/minas-y-energia-marzo-2019/comunidades-votaron-en-10-consultas-populares-mineras-desde-el-2013-2842036

Grajales, J. (2017), Private Security and Paramilitarism in Colombia: Governing in the Midst of Violence. *Journal of Politics in Latin America, 9*(3), 27–48. https://doi.org/10.1177/1866802X1700900302

Grant, J. (2012). The Kimberly Process at ten: Reflections on a decade of efforts to end the trade in conflict diamonds. In P. Lujala, & S. A. Rustad (Eds.), High-Value Natural Resources and Peacebuilding. (pp. 159- 179).

Gurr, T. (1970). *Why Men Rebel*. Princeton, NJ: Princeton University Press.

Hardt, J. N., & Scheffran, J. (2019). Environmental Peacebuilding and Climate Change: Peace and Conflict Studies at the Edge of Transformation. *Toda Peace Institute, 68*, 1–20.

Hauge, W., & Ellingsen, T. (1998). Beyond Environmental Scarcity: Causal Pathways to Conflict. *Journal of Peace Research, 35*(3), 299–317. https://doi.org/10.1177/0022343398035003003

Hendrix, C. S. (2017). The streetlight effect in climate change research on Africa. *Global Environmental Change*, *43*, 137–147. https://doi.org/10.1016/j.gloenvcha.2017.01.009

Hoeffler, A. (2011). 'Greed' versus 'Grievance': A Useful Conceptual Distinction in the Study of Civil War? *Studies in Ethnicity and Nationalism 11*(2), 274-284. https://doi.org/10.1111/j.1399-6576.2011.01111.x

Homer-Dixon, T. F. (1991). On the Threshold: Environmental Changes as Causes of Acute Conflict. *International Security, 16*(2), 76–116. https://doi.org/10.2307/2539061

Homer-Dixon, T. F. (1994). Environmental Scarcities and Violent Conflict: Evidence from Cases. *International Security*, *19*(1). https://doi.org/10.2307/2539147

Humphreys, M. (2005). Natural Resources, Conflict, and Conflict Resolution: Uncovering the Mechanisms. *Journal of Conflict Resolution, 49*(4), 508-537. https://doi.org/10.1177/0022002705277545

Ide, T. (2015). Why do conflicts over scarce renewable resources turn violent? A qualitative comparative analysis. *Global Environmental Change*, *33*, 61–70. https://doi.org/10.1016/j.gloenvcha.2015.04.008

Ide, T. (2017). Space, discourse and environmental peacebuilding. *Third World Quarterly*, *38*(3), 544–562. https://doi.org/10.1080/01436597.2016.1199261

Ide, T. (2019). The impact of environmental cooperation on peacemaking: Definitions, mechanisms, and empirical evidence. *International Studies Review*, *21*(3), 327–346. https://doi.org/10.1093/isr/viy014

Ide, T. (2020). The dark side of environmental peacebuilding. *World Development*, *127*, 104777. https://doi.org/10.1016/j.worlddev.2019.104777

Ide, T., Bruch, C., Carius, A., Conca, K., Dabelko, G. D., Matthew, R., & Weinthal, E. (2021). The past and future(s) of environmental peacebuilding. *International Affairs*, *97*(1), 1–16. https://doi.org/10.1093/ia/iiaa177

Ide, T., & Scheffran, J. (2014). On climate, conflict and cumulation: suggestions for integrative cumulation of knowledge in the research on climate change and violent conflict. *Global Change, Peace & Security, 26*(3), 263-279. https://doi.org/10.1080/14781158.2014.924917

Intergovernmental Panel on Climate Change (IPCC). (2001). *Climate change 2001: The Scientific Basis.* IPCC, Geneva. https://www.ipcc.ch/report/ar3/wg1/

Intergovernmental Panel on Climate Change (IPCC). (2007). *Climate change 2007: Synthesis Report*. IPCC, Geneva. https://www.ipcc.ch/report/ar4/syr/

Jägerskog, A., Swain, A., & Öjendal, J. (2014). *Water Security.* SAGE Publications.

Jensen, D., & Kron, A. (2018). Environmental peacebuilding and the United Nations. In A. Swain, & J. Öjendal (Eds.), *Routledge Handbook of Environmental Conflict and Peacebuilding.* (pp. 121–142). Routledge https://doi.org/10.4324/9781315473772

Johnson, M. F., Rodríguez, L. A., & Quijano Hoyos, M. (2021). Intrastate environmental peacebuilding: A review of the literature. *World Development*, *137*, 1-18. https://doi.org/10.1016/j.worlddev.2020.105150

Jonsson, M., Brennan, E., & O'Hara, C. (2016). Financing War or Facilitating Peace? The Impact of Rebel Drug Trafficking on Peace Negotiations in Colombia and Myanmar. *Studies in Conflict and Terrorism*, *39*(6), 542–559. https://doi.org/10.1080/1057610X.2015.1124628

Keels, E., & Mason, T. D. (2019). Seeds of peace? Land reform and civil war recurrence following negotiated settlements. *Cooperation and Conflict*, *54*(1), 44–63. https://doi.org/10.1177/0010836717750201

Koren, O. (2019). Food Resources and Strategic Conflict. *Journal of Conflict Resolution*, *63*(10), 2236–2261. https://doi.org/10.1177/0022002719833160

Koren, O., Bagozzi, B. E., & Benson, T. S. (2021). Food and water insecurity as causes of social unrest: Evidence from geolocated Twitter data. *Journal of Peace Research*, *58*(1), 67–82. https://doi.org/10.1177/0022343320975091

Koubi, V., Spilker, G., Böhmelt, T., & Bernauer, T. (2014). Do natural resources matter for interstate and intrastate armed conflict? *Journal of Peace Research*, *51*(2), 227–243. https://doi.org/10.1177/0022343313493455

Krampe, F. (2017). Toward Sustainable Peace: A New Research Agenda for Post-Conflict Natural Resource Management. *Global Environmental Politics*, *17*(4), 1-8.

Krampe, F. (2021). Ownership and inequalities: exploring UNEP's Environmental Cooperation for Peacebuilding Program. *Sustainability Science, 16,* 1159–1172. https://doi.org/10.1007/s11625-021-00926-x

Landholm, D. M., Pradhan, P., & Kropp, J. P. (2019). Diverging forest land use dynamics induced by armed conflict across the tropics. *Global Environmental Change*, *56*, 86–94. https://doi.org/10.1016/j.gloenvcha.2019.03.006

Lavaux, S. (2007). Natural Resources and Conflict in Colombia: Complex Dynamics, Narrow Relationships. *International Journal: Canada's Journal of Global Policy Analysis.* https://doi.org/10.1177/002070200706200103

Le Billon, P. (2001). The political ecology of war: Natural resources and armed conflicts. *Political Geography*, *20*(5), 561–584. https://doi.org/10.1016/S0962-6298(01)00015-4

Le Billon, P. (2005). *Fuelling war: Natural resources and armed conflicts.* Routledge.

Le Billon, P. (2008). Corrupting Peace? Peacebuilding and Post-conflict Corruption. *International Peacekeeping*, *15*(3), 344–361. https://doi.org/10.1080/13533310802058851

Le Billon, P. (2014). Natural resources and corruption in post-war transitions: Matters of trust. *Third World Quarterly*, *35*(5), 770–786. https://doi.org/10.1080/01436597.2014.921429

LeGrand, C. C., Van Isschot, L., & Riaño-Alcalá, P. (2017). Land, justice, and memory: challenges for peace in Colombia. *Canadian Journal of Latin American and Caribbean Studies*, *42*(3), 259–276. https://doi.org/10.1080/08263663.2017.1378381

Lujala, P. (2009). Deadly Combat over Natural Resources Gems, Petroleum, Drugs, and the Severity of Armed Civil Conflict. *Journal of Conflict Resolution*, *53*(1), 50-71. https://doi.org/10.1177/0022002708327644

Lujala, P. (2010). The spoils of nature: Armed civil conflict and rebel access to natural resources. *Journal of Peace Research*, *47*(1), 15-28. https://doi.org/10.1177/0022343309350015

Lujala, P., Gleditsch, N. P., & Gilmore, E. (2005). A diamond curse? Civil war and a lootable resource. *Journal of Conflict Resolution*, *49*(4), 538–562. https://doi.org/10.1177/0022002705277548

Lujala, P., & Rustad. S. A. (2012). High-value natural resources: A blessing or a curse for peace? In High-Value Natural Resources and Peacebuilding, ed. P. Lujala and S. A. Rustad. London: Earthscan.

Makazaga, I. (2018, November 2). La defensa del territorio en Colombia se paga con la vida. *El Pais.* https://elpais.com/elpais/2018/10/25/planeta_futuro/1540468269_209574.html?rel=mas

Massé, F., & Le Billon, P. (2018). Gold mining in Colombia, post-war crime and the peace agreement with the FARC. *Third World Thematics: A TWQ Journal*, *3*(1), 116–134. https://doi.org/10.1080/23802014.2017.1362322

Maxwell, J.W., & Reuveny, R. (2000). Resource Scarcity and Conflict in Developing Countries. *Journal of Peace Research*, *37*(3), 301-322. https://doi.org/10.1177/0022343300037003002

McCormick, T. H., Lee, H., Cesare, N., Shojaie, A., & Spiro, E. S. (2017). Using Twitter for Demographic and Social Science Research: Tools for Data Collection and Processing. *Sociological Methods and Research*, *46*(3), 390–421. https://doi.org/10.1177/0049124115605339

McNeely, J. A. (2011). Climate Change, Natural Resources, and Conflict: A Contribution to the Ecology of Warfare. *Warfare Ecology,* 43-53. DOI: 10.1007/978-94-007-1214-0_6

Medina, K.R. (2020, April 17). Estadísticas de la situación digital de Colombia en el 2019 y 2020. *Branch*. https://branch.com.co/marketing-digital/estadisticas-de-la-situacion-digital-de-colombia-en-el-2019-y-2020/

Meinzen-Dick, R. & R. Pradhan. (2016). Property Rights and Legal Pluralism in Post-Conflict Environments: Problem or Opportunity for Natural Resource Management? In C. Bruch, C. Muffett, & S. S. Nichols (Eds.), *Governance, Natural Resources, and Post-Conflict Peacebuilding* (pp. 525-544). London: Earthscan.

Melo, J. B. (2015). Regional Challenges to Land Restitution and Peace in Colombia: The Case of the Lower Atrato. *Journal of Peacebuilding & Development, 10*(2), 36–51. https://doi.org/10.1080/15423166.2015.1056057

Mendoza, J. P. (2020). Colombia's transition to peace is enhancing coca-driven deforestation. *Environmental Research Letters*, *15*(10), 1-9. https://doi.org/10.1088/1748-9326/abb331

Mercado, D. A. (2019, January 22). Más de 430 hectáreas afectadas por minería ilegal en el Bajo Cauca. *El Tiempo.* https://www.eltiempo.com/colombia/medellin/mas-de-430-hectareas-en-el-bajo-cauca-antioqueno-afectadas-por-mineria-ilegal-317266

Mildner, S. A., Lauster, G., & Wodni, W. (2011). Scarcity and abundance revisited: A literature review on natural resources and conflict. *International Journal of Conflict and Violence, 5*(1), 155–172. https://doi.org/10.4119/ijcv-2852

Morales, C. (2018, August 2). Brigitte Baptiste culpó al Estado por no frenar deforestación en Amazonia. *RCNRadio.* https://www.rcnradio.com/estilo-de-vida/medio-ambiente/brigitte-baptiste-culpo-al-estado-por-no-frenar-deforestacion-en

Morales-Munõz, H., Löhr, K., Bonatti, M., Eufemia, L., & Sieber, S. (2021). Assessing impacts of environmental peacebuilding in Caquetá, Colombia: A multistakeholder perspective. *International Affairs*, *97*(1), 179–199. https://doi.org/10.1093/ia/iiaa175

Murillo-Sandoval, P. J., Van Dexter, K., Van Den Hoek, J., Wrathall, D., & Kennedy, R. (2020). The end of gunpoint conservation: forest disturbance after the Colombian peace agreement. *Environmental Research Letters*, *15*(3). https://doi.org/10.1088/1748-9326/ab6ae3

Murshed, S. M., & Tadjoeddin, M. Z. (2009). Revisiting The Greed and Grievance Explanations for Violent Internal Conflict. *Journal of International Development, 21*(1), 87–111. DOI: 10.1002/jid.1478

Murthy, D. (2012). Towards a Sociological Understanding of Social Media: Theorizing Twitter. *Sociology*, *46*(6), 1059–1073. https://doi.org/10.1177/0038038511422553

Negret, P. J., Sonter, L., Watson, J. E. M., Possingham, H. P., Jones, K. R., Suarez, C., Ochoa-Quintero, J. M., & Maron, M. (2019). Emerging evidence that armed conflict and coca cultivation influence deforestation patterns. *Biological Conservation*, *239*, 1-8. https://doi.org/10.1016/j.biocon.2019.07.021

Nichols, S. S., Lujala, P., & Bruch, C. (2011). When peacebuilding meets the plan: Natural resource governance and post-conflict recovery. *Whitehead Journal of Diplomacy and International Relations*, *12*(1), 11-26.

Nigam, A., Dambanemuya, H. K., Joshi, M., & Chawla, N. V. (2017). Harvesting Social Signals to Inform Peace Processes Implementation and Monitoring. *Big Data*, *5*(4), 337– 355. https://doi.org/10.1089/big.2017.0055

Nilsson, M., & Marín, L. G. (2020). Violent Peace: Local Perceptions of Threat and Insecurity in Post-Conflict Colombia. *International Peacekeeping, 27*(2), 238-262. https://doi.org/10.1080/13533312.2019.1677159

Nordås, R., & Gleditsch, N. P. (2007). Climate change and conflict. *Political Geography*, *26*(6), 627–638. https://doi.org/10.1016/j.polgeo.2007.06.003

Ohlson, T. (2008). Understanding causes of war and peace. *European Journal of International Relations*, *14*(1), 133–160. https://doi.org/10.1177/1354066107087765

Ospina-Valencia, J. (2021, January 26). La Minga: la palabra como única arma en la lucha de los indígenas por su pervivencia. *DW*. https://www.dw.com/es/la-minga-la-palabra-como-%C3%BAnica-arma-en-la-lucha-de-los-ind%C3%ADgenas-por-su-pervivencia/a-56230377

Parada-Hernández, M. M., & Marín-Jaramillo, M. (2021). Cocalero women and peace policies in Colombia. *International Journal of Drug Policy*, *89*. https://doi.org/10.1016/j.drugpo.2021.103157

Pardo, K.T. (2018, August 31). Colombia podría perder credibilidad internacional en medioambiente. *El Tiempo.* https://www.eltiempo.com/vida/medio-ambiente/brigitte-baptiste-habla-sobre-deforestacion-fracking-y-recorte-al-presupuesto-ambiental-262934

Prem, M., Saavedra, S., & Vargas, J. F. (2020). End-of-conflict deforestation: Evidence from Colombia's peace agreement. *World Development*, *129*, 1-11. https://doi.org/10.1016/j.worlddev.2019.104852

Prem, M., Vargas, J. F., & Mejia, D. (2021). *The Rise and Persistence of Illegal Crops: Evidence from a Naive Policy Announcement.* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3466363

Protestas en Colombia: qué es la minga indígena y qué papel juega en las manifestaciones. (2020, October 21). *BBC News Mundo*. https://www.bbc.com/mundo/noticias-america-latina-54625586

Quinn, J. M., Mason, T. D., & Gurses, M. (2007). Sustaining the peace: Determinants of civil war recurrence. *International Interactions*, *33*(2), 167–193. https://doi.org/10.1080/03050620701277673

Raleigh, C., & Urdal, H. (2007). Climate change, environmental degradation and armed conflict. *Political Geography*, *26*(6), 674–694. https://doi.org/10.1016/j.polgeo.2007.06.005

Ratner, B. D., Meinzen-Dick, R., Hellin, J., Mapedza, E., Unruh, J., Veening, W., Haglund, E., May, C., & Bruch, C. (2017). Addressing conflict through collective action in natural resource management. *International Journal of the Commons*, *11*(2), 877–906. https://doi.org/10.18352/ijc.768

Regan, P. M., & Norton, D. (2005). Greed, grievance and mobilization in civil wars. *Journal of Conflict Resolution*, *49*(3), 319–336. https://doi.org/10.1177/0022002704273441

Rettberg, A. (2019). Peace-Making Amidst an Unfinished Social Contract: The Case of Colombia. *Journal of Intervention and Statebuilding*, *14*(1), 84-100.

Rettberg, A. & Ortiz-Riomalo, J. F. (2016). Golden Opportunity, or a New Twist on the Resource–Conflict Relationship: Links Between the Drug Trade and Illegal Gold Mining in Colombia. *World Development*, *84*, 82-96. http://dx.doi.org/10.1016/j.worlddev.2016.03.020

Rich, E., & Warner, T. (2012). Addressing the roots of Liberia's conflict through the Extractive Industries Transparency Initiative. In P. Lujala, & S. A. Rustad (Eds.), High-Value Natural Resources and Peacebuilding. (pp. 201-209).

Rincón-Ruiz, A., Correa, H. L., León, D. O., & Williams, S. (2016). Coca cultivation and crop eradication in Colombia: The challenges of integrating rural reality into effective anti-drug policy. *International Journal of Drug Policy*, *33*, 56–65. https://doi.org/10.1016/j.drugpo.2016.06.011

Rondinelli, D. A. (2008). The challenges of restoring governance in crisis and post-conflict societies. United Nations Department of Economic and Social Affairs and United Nations Development Programme, UN, NY. Public Administration and Development, *28*(2), 165.

Ross, M. L. (1999). The Political Economy of the Resource Curse. *World Politics*, *51*(2), 297-322. https://doi.org/10.1017/S0043887100008200

Ross, M. L. (2003). 'Oil, Drugs and Diamonds: The Varying Role of Natural Resources in Civil War', in Karen Ballentine & Jake Sherman, eds, The Political Economy of

Armed Conflict: Beyond Greed and Grievance. Boulder, CO: Lynne Rienner (47–70).

Ross, M. L. (2004a). How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases. *International Organization*, *58*(1), 35–67. https://doi.org/10.1017/s002081830458102x

Ross, M. L. (2004b). What do we know about natural resources and civil war? *Journal of Peace Research*, *41*(3), 337–356. https://doi.org/10.1177/0022343304043773

Ross, M., Lujala, P., & Rustad, S. A. (2012). Horizontal inequality, decentralizing the distribution of natural resource revenues, and peace. In P. Lujala, & S. A. Rustad (Eds.), High-Value Natural Resources and Peacebuilding. (pp. 251-259).

Rout S. (2003). *Conflicts over Natural Resources and Legal Pluralism: A Case Study from Orissa* (Working Paper No. 137). Institute for Social and Economic Change. Bangalore. http://www.isec.ac.in/WP%20-%20137.pdf

Roy, V. (2016). Managing Resourcerelated Conflict: A Framework of Lootable Resource Management and Postconflict Stabilization. *Journal of Conflict Resolution*, 1-28. https://doi.org/10.1177/0022002716669206

Rustad, S. A., & Binningsbø, H. M. (2012). A price worth fighting for? Natural resources and conflict recurrence. *Journal of Peace Research*, *49*(4), 531–546. https://doi.org/10.1177/0022343312444942

Rustad, S. A., Lujala, P., & Le Billon P. (2012). Building or Spoiling Peace? Lessons from the Management of High-Value Natural Resources. *Environmental Law Reporter, 42.*

Sambanis, N. (2002). A Review of Recent Advances and Future Directions in the Quantitative Literature on Civil War, *Defence and Peace Economics*, *13*(3), 215-243.

Scott, C. J. (1985). *Weapons of the Weak: Everyday Forms of Peasant Resistance.* Yale University Press.

Silge, J., & Robinson, D. (2017). *Text Mining with R: A Tidy Approach*. O'Reilly Media.

Stedman, S. J. (2001). 'Implementing Peace Agreements in Civil Wars: Lessons and Recommendations for Policymakers', International Peace Academy and Center for International Security and Cooperation, New York.

Stewart F. (2000). Crisis prevention: tackling horizontal inequalities. *Oxford Development Studies, 28*(3), 245–262.

Suarez, A., Árias-Arévalo, P. A., & Martínez-Mera, E. (2018). Environmental sustainability in post-conflict countries: insights for rural Colombia. *Environment,*

Development and Sustainability, *20*(3), 997–1015. https://doi.org/10.1007/s10668-017-9925-9

Suhrke, A. (1993). Pressure points: Environmental degradation, migration and conflict. *Environmental Change and Acute Conflict Project.* https://www.cmi.no/publications/file/1374-pressure-points-environmental-degradation.pdf

Swain, A. (2016). Water and post-conflict peacebuilding. *Hydrological Sciences Journal*, *61*(7), 1313–1322. https://doi.org/10.1080/02626667.2015.1081390

Theisen, O. M. (2008). Blood and soil? Resource scarcity and internal armed conflict revisited. *Journal of Peace Research*, *45*(6), 801–818. https://doi.org/10.1177/0022343308096157

Theisen, O. M., Gleditsch, N. P., & Buhaug, H. (2013). Is climate change a driver of armed conflict? *Climatic Change, 117*(3), 613-625. doi:10.1007/s10584-012-0649-4

Thoumi, F. E. (2012). Illegal Drugs, Anti-Drug Policy Failure, and the Need for Institutional Reforms in Colombia. *Substance Use & Misuse, 47*(8-9), 972–1004. https://doi.org/10.3109/10826084.2012.663287

Torrado, S. (2021, April 01). El Cauca no tiene paz en Colombia. *El País.* https://elpais.com/internacional/2021-04-01/el-cauca-no-tiene-paz-en-colombia.html

Troell, J., & Weinthal, J. (2014). Harnessing Water Management for More Effective Peacebuilding: Lessons Learned. In E. Weinthal, J. Troell, & M. Nakayama (Eds.), *Water and Post-Conflict Peacebuilding.* (pp. 404-469).

United Nations Environment Programme (UNEP). (2009). *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment*. Nairobi. https://postconflict.unep.ch/publications/pcdmb_policy_01.pdf

United Nations Development Programme (UNDP). (2008). *Crisis Prevention and Recovery Report post-Conflict Economic Recovery Enabling Local Ingenuity.* New York: United Nations Publications.

Unruh, J. D. (2010). Peace Review: A Journal of Social Justice Local Land Tenure in the Peace Process. *Peace Review: A Journal of Social Justice*, *14*(3), 37–41. https://doi.org/10.1080/13678860220000016901

Unruh, J. D., & Williams, R. (2013). *Land and Post-Conflict Peacebuilding.* Routledge.

Unver, H. A. (2019). Internet, Social Media and Conflict Studies: Can Greater Interdisciplinarity Solve the Analytical Deadlocks in Cybersecurity Research? *St Antony's International Review* https://doi.org/10.31235/osf.io/nj8gx

Valenzuela, P., & Caicedo, S. (2018). Environmental peacebuilding in post-conflict Colombia. In A. Swain, & J. Öjendal (Eds.), *Routledge Handbook of Environmental Conflict and Peacebuilding*. (pp. 245–253). Routledge. https://doi.org/10.4324/9781315473772

Vargas, R. (2002). The Anti-Drug Policy, Aerial Spraying of Illicit Crops and Their Social, Environmental and Political Impacts in Colombia. *Journal of Drug Issues. 32*(1), 11-60. https://doi.org/10.1177/002204260203200102

Vargas, R. (2005). Strategies for controlling the drug supply: Policy recommendations to deal with illicit crops and alternative development programs. *Journal of Drug Issues*, *35*(1), 131–150. https://doi.org/10.1177/002204260503500106

Velásquez, M., Ávila, N., Villota, M., Quintero, F., Arbeláez, S. (2020). Largely on their own: Dealing with the rural legacies of conflict through local participatory peacebuilding. *Journal of Agrarian Change,* 21(2), 313-331. https://doi.org/10.1111/joac.12395

Vélez-Torres, I., & Lugo-Vivas, D. (2021). Slow violence and corporate greening in the war on drugs in Colombia. *International Affairs*, *97*(1), 57–79. https://doi.org/10.1093/ia/iiaa159

Volckhausen, T. (2020, April 10). Minería y megaproyectos invaden 'Corazón del mundo' de Colombia. *Mongabay.* https://es.mongabay.com/2020/04/colombia-mineria-tierras-indigenas-sierra-nevada-santa-marta/

Walter, B. F. (2004). Does conflict beget conflict? Explaining recurring civil war. *Journal of Peace Research, 41*(3), 371–388. https://doi.org/10.1177/0022343304043775

Walter, B. F. (2011). *Conflict Relapse and the Sustainability of Post-Conflict Peace*. Washington, DC: World Bank. http://hdl.handle.net/10986/9069

Walter, B. F. (2014). Why Bad Governance Leads to Repeat Civil War. *Journal of Conflict Resolution*, *59*(7), 1242–1272. https://doi.org/10.1177/0022002714528006

Walters, J. T. (2015). A peace park in the Balkans: Crossborder cooperation and livelihood creation through coordinated environmental conservation. In H. Young, & L. Goldman (Eds.), *Livelihoods, Natural Resources, and Post-Conflict Peacebuilding*. (pp. 155-166).

Webersik, C., and M. Levy. (2016). Reducing the risk of conflict recurrence: The relevance of natural resource management. In Governance, natural resources, and post-conflict peacebuilding, ed. C. Bruch, C. Muffett, and S. S. Nichols. London: Earthscan.

Weinthal, E., & Johnson, M. (2018). Post-war environmental peacebuilding: Navigating renewable and non-renewable resources. In A. Swain, & J. Öjendal (Eds.),

Routledge Handbook of Environmental Conflict and Peacebuilding. (pp. 85–96). Routledge. https://doi.org/10.4324/9781315473772

Weinthal, E., Troell, J., & Nakayama, M. (2014). *Water and Post-Conflict Peacebuilding.* Routledge.

Wennmann, A. (2011). Breaking the conflict trap? Addressing the resource curse in peace processes. *Global Governance, 17*(2), 265–279. https://doi.org/10.1163/19426720-01702011

Westrik, C. (2015). Transboundary protected areas: Opportunities and challenges. In H. Young, & L. Goldman (Eds.), *Livelihoods, Natural Resources, and Post-Conflict Peacebuilding*. (pp. 145-153).

Whittemore, L. A. (2008). Intervention and post-conflict natural resource governance: Lessons from Liberia. *Minnesota Journal of International Law*, *17*(2), 387-434.

Wiens, D. (2015). Natural resources and government responsiveness. *Politics, Philosophy & Economics*, *14*(1), 84–105. https://doi.org/10.1177/1470594X13496755

Wink, M. (2018). The role of water diplomacy in peacebuilding. In A. Swain, & J. Öjendal (Eds.), *Routledge Handbook of Environmental Conflict and Peacebuilding*. (pp. 283-294). Routledge.

World Bank. (2007). *Strengthening World Bank Group Engagement on Governance and Anticorruption*. https://web.worldbank.org/archive/website01531/WEB/IMAGES/GAC_IMPL.PDF

Wright, C. (2012). The Kimberly Process Certification Scheme: A model negotiation. In P. Lujala, & S. A. Rustad (Eds.), High-Value Natural Resources and Peacebuilding. (pp. 181 – 187).

Zapata, G. A. (2017, July 28). *Hablemos de minería bien hecha.* Presidencia de La República. http://es.presidencia.gov.co/columnas/minminas/hablemos-de-miner%C3%ADa-bien-hecha

Zeitzoff, T. (2017). How Social Media Is Changing Conflict. *Journal of Conflict Resolution*, *61*(9), 1970-1991. https://doi.org/10.1177/0022002717721392

CURRICULUM VITAE

GİZEM KAYA

EDUCATION

2019-2021	Kadir Has University, Istanbul, Turkey M.A. Student, International Relations
2016-2017	Universidad Carlos III de Madrid, Spain Erasmus+ Exchange Student, International Relations
2013-2018	Yildiz Technical University, Istanbul, Turkey B.A., Political Science and International Relations (CGPA: 3,45/4)

WORK EXPERIENCE

11.2019-06.2021	Kadir Has University - Assistant Student
06.2015-08.2015	Consulate General of Northern Cyprus in Istanbul - Internship
01.2014-06.2014	Office of the Vice-Chancellor YTU - Assistant Student

CONFERENCE PRESENTATIONS

"Environmental Challenges and Climate Change: Conflict Multiplier or Mediator for Peace?" IX. International Conference on Conflict, Terrorism, and Society: Global Crises: Media, Politics, and Environment
April 13, 2021, Istanbul, Kadir Has University

PROJECTS

Youth Stand P2P – Enhancing Turkey Counter-Terrorism Capacity
(TOBB ETU, U.S. Embassy Ankara, TEPAV) (January-March, 2020)

CONFERENCES AND TRAINING

The Summer Institutes in Computational Social Science (SICSS)-Istanbul

(May 30 – June 25, 2021), Participant

School of Youth, Peace, and Security (Young Peacebuilders of Turkey)

(January 16-17, 2021), Certificate of Participation

Building Disinformation Resistance in Turkey (RDM edu)

(November 27 - December 24, 2020), Certificate of Participation

120th EU Education Certificate Program (Konrad-Adenauer-Stiftung & TANDEM)

(October 5-9, 2020), Certificate of Participation

Social Sciences Summer School -Political Science- (Bilim Akademisi)

(June 24-26, 2020), Certificate of Participation

COURSES

12.2020 - current	Datacamp – R Programming Language
07.2018 - 07.2019	Instituto Cervantes Istanbul – Spanish Course A2-B2 (360h)
02.2017 - 05.2017	Language Center of UC3M – Spanish Course A1 (120h)

EXAMS & CERTIFICATES

September 2020	YDS English - 85
May 2019	DELE B2 (Diplomas of Spanish as a Foreign Language)

COMPUTER SKILLS

Microsoft Office - Intermediate
R - Intermediate
Python - Beginner