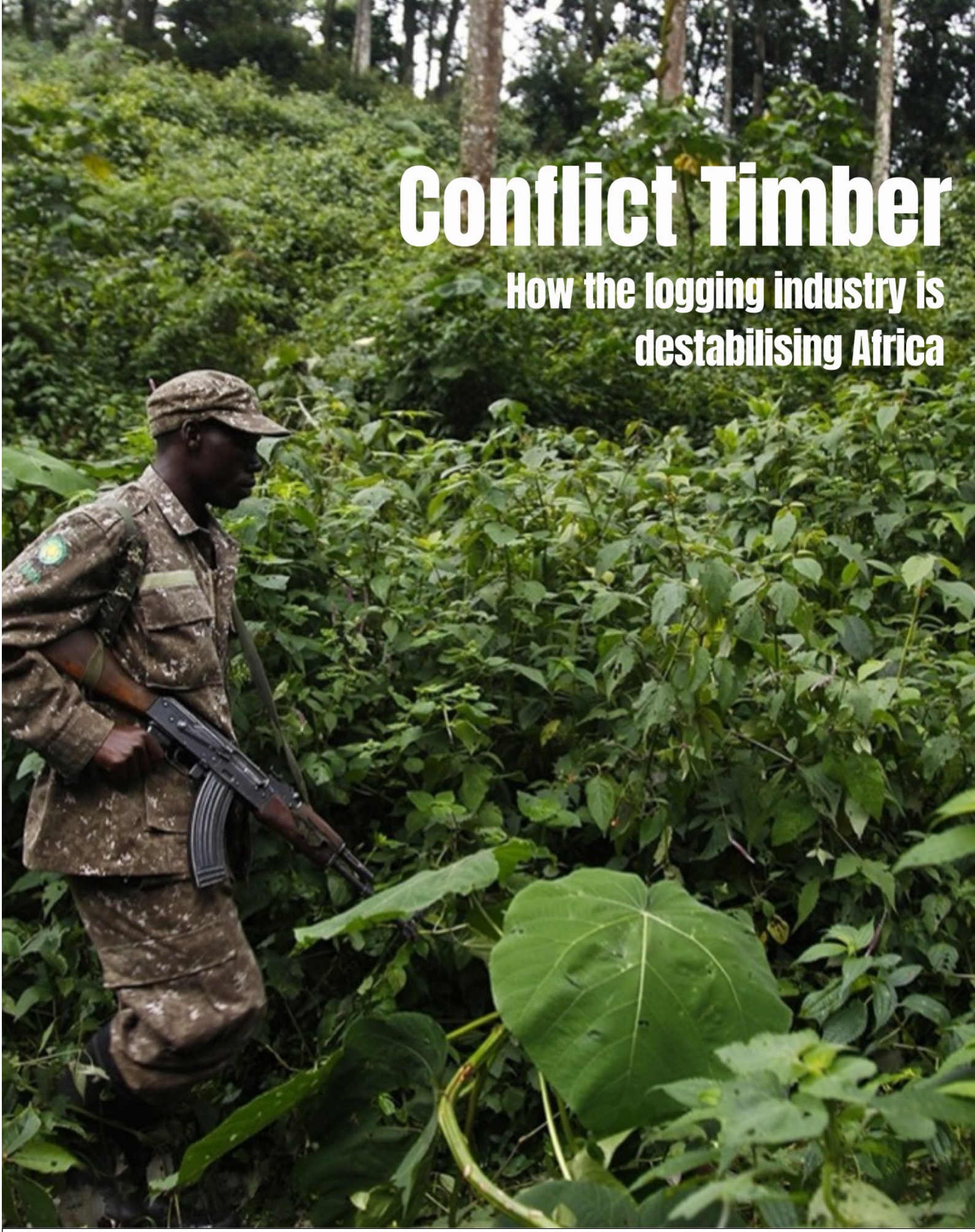


Conflict Timber

How the logging industry is destabilising Africa

Universiteit Leiden

RESEARCH. UNDERSTAND. RECOMMEND. IMPLEMENT.

March 2022

Chris Knobloch
Paul Wamp
Jasmine Phillips
Danique Kerkhof



Logging in the Democratic Republic of Congo (DRC).
Rainforest Foundation UK, 2017

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EXECUTIVE SUMMARY

The non-profit civilians in conflict have expressed their interest in working with civilians that are being harmed by resource-based conflicts. Hence this recommendations report focuses on the timber industry in Africa. The timber is part of the larger extractive industries in Africa in which natural resources are harvested from their local region to be sold on the wider global market. The extractive industry has been a major source of conflict for hundreds of years now, consequently becoming a large source of harm for local communities, where natural resources are often exploited for the harvest of said resources.

We utilised content analysis, analysing sources ranging from nonprofit reports, NGO data, case studies, to academic literature. Throughout our research, we aimed to create several recommendations for civic bearing three criteria in mind: financial feasibility, timely implementation, and measurable outcomes.

When studying the relationship between extractive industry and potential conflict, several risk factors are determined. The factors include lack of engagement between the local population and extractive industry organisations, poor regulation of revenues and lack of transparency of operations and finances.

The logging industry itself is of key importance in the modern-day as climate change is only increasing and along with its adverse impacts on the environment and African forestry in general. In recent years, Logging has also led to a significant loss of biodiversity, which has ripple effects such as a phenomenon coined desert encroachment. It is also a massive driver of conflict as timber is a key input for global development, for which demand has exponentially increased in recent times leading to a sharp increase in the lucrativity of the timber trade. This has resulted in an imbalance between the demand for harvesting and the sustainability of the resource.

The exact relationship between conflict and timber can be characterized by elaborate corruption structures and illicit timber networks propagated by violent actors. The timber industry has been utilised by violent non-state actors to further finance their campaign of terror. Corruption in the timber industry is deeply embedded in the structure of the industry itself and affects government officials at the highest levels. Historically attempts have been made to regulate the timber industry such as the Liberia Forestry Initiative, along with on a larger global scale aimed at regulating consumers with the passing of European Union Timber Regulation (EUTR).

Citizens themselves are directly exploited by the timber industry via wide-scale

displacement, loss of livelihood, famine, and even targeted killings related to the industry. Often when loggers come to a community, a sharp increase in violent crimes pointed against the civilian population is noted.

Utilising our research, the NCCT framework was developed to determine where potential conflict timber "hotspots" may emerge. The framework is made up of variables concluding of non-state actors, corruption, foreign capital, and timber

The recommendations proposed are centred around both citizen-oriented and policy-oriented approaches. The policy-oriented recommendations are as follows (1) urge CIVIC to forge collaborative networks between local non-profits and logging companies, (2) urge potential "hotspot" states to join transparency initiatives, (3) utilise CIVIC's regional relationship to promote financing for restoration initiatives, and (4) partnerships with research organisation should be fostered and their efforts should be bolstered utilising CIVIC's regional capacity. The citizen-oriented recommendations are as follows (5) develop educational programs for communities in logging regions, (6) collaborate with local NGOs to create opportunities for local youth, and (7) push for prior community consent from the community to be received by logging companies before beginning operations.

INTRODUCTION

Our client, the Centre for Civilians in Conflict (CIVIC), tasked us with identifying the industry that will have the most effect on conflict, and in which ways civilians will be affected by the negative externalities of said industry. We identified timber logging as a possible contestant for fueling the conflict because there already exists a struggle between the high demand due to increasing worldwide development,[1] and the negative externalities of timber production, which are mostly felt by local communities or indigenous groups.[2] Countries holding large timber reserves, like Brazil, have already started dismantling environmental protection laws,[3] which could exacerbate the negative externalities experienced by local citizens. countries holding large timber reserves struggling with environmental protection laws and native communities.

CIVIC is a non-profit organisation that aims to secure civilians in regions impacted by conflict, mainly by increasing the "capacity of armed actors to prevent and respond to civilian harm" . CIVIC was founded in 2003, in response to the U.S. military's incapability of accounting for civilian casualties in Iraq. Over the years CIVIC has gained recognition, most notably in 2008, when the organisation was selected for "special consultative status with the NGO Committee of the Economic and Social Council (ECOSOC)" , at the United Nations. CIVIC's focus, though not exclusively, has been on conflict resulting from interstate warfare. Multiple interstate wars have been fought over contested resources, for example, the conflict between Iraq, Kuwait and the United States in 1991, and it is out of the question that armed interstate conflict can leave civilians insecure. This is well documented in academia; for example, Klare et al.[4] defines these wars as "resource wars", meaning "violent conflicts that are largely driven by control over valuable natural materials". However, resource-driven conflict does not need to include state violence for civilians to be endangered; a growing body of academic literature suggests that local populations often engage in collective action against foreign extractive companies, which could erupt into violent conflict.

[1] Timber Exchange. (2021). Global timber Market - Analysis for Q3 2021. Retrieved from: https://issuu.com/centersourcetechnologies/docs/global_timber_market_analysis_for_q3_2021

[2] Pacheco, P., K. Mo, N. Dudley, A. Shapiro, N. Aguilar-Amuchastegui, P. Y. Ling, C. Anderson, and A. Marx. "Deforestation fronts: Drivers and responses in a changing world." *WWF, Gland, Switzerland* (2021): 125.

[3] Abessa, Denis, Ana Famá, and Lucas Buruaem. "The systematic dismantling of Brazilian environmental laws risks losses on all fronts." *Nature ecology & evolution* 3, no. 4 (2019): 510-511.

[4] Klare, Michael T., Barry S. Levy, and Victor W. Sidel. "The public health implications of resource wars." *American journal of public health* 101, no. 9 (2011): 1615-1619.

For the purpose of this policy paper, the focus is on the conflict between extractive companies and the local populations. In line with CIVIC's mission statement, the recommendations will be geared towards preventing such conflict before it erupts. We identified timber logging as a possible contestant for fueling the conflict because there already exists a struggle between the high demand due to increasing worldwide development,[5] and the negative externalities of timber production, which are most felt by local communities or indigenous groups.[6] Countries holding large timber reserves, like Brazil, have already begun dismantling environmental protection laws,[7] which could exacerbate the negative externalities experienced by citizens.

Conflict related to extractive resources is nothing new. Ross [8] describes the theory of the "resource curse", highlighting that countries with vast amounts of resources attract conflict, exploitation, and wars. This theory is widely accepted amongst academics, but the effects of the resource curse are not only limited to international warfare, but are also associated with poverty, local conflict, and corruption.[9] Conflicts can also escalate, as they did with the Tí Maria copper mine in Peru, where civilians suffered from violent state intervention.

There are various reasons timber presents as a possible candidate for creating conflict. First, timber is a necessary resource for building projects, and the demand for infrastructure and housing development is projected to steadily increase for the next 3 years, especially in developing nations throughout Africa and the Middle East.[10] Therefore, the demand for timber will increase with the demand for development. Any region producing timber will increase their production at an unsustainable rate, which in turn heightens the negative externalities experienced by the local population. To meet the increased demand, countries that hold large timber reserves, like Brazil, have already started dismantling environmental protection laws,[11] even though timber is a finite resource, relatively difficult to replenish after it has been felled.

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[5] Centersoruce Technologies. “Global Timber Market – Analysis for Q3 2021.” Issuu, August 13, 2021. https://issuu.com/centersourcetechnologies/docs/global_timber_market_analysis_for_q3_2021.

[6] Pacheco, P., K. Mo, N. Dudley, A. Shapiro, N. Aguilar-Amuchastegui, P. Y. Ling, C. Anderson, and A. Marx. "Deforestation fronts: Drivers and responses in a changing world." *WWF, Gland, Switzerland* (2021): 125.

[7] Abessa, Denis, Ana Famá, and Lucas Buruaem. "The systematic dismantling of Brazilian environmental laws risks losses on all fronts." *Nature ecology & evolution* 3, no. 4 (2019): 510-511.

[8] Ross, Michael L. "The political economy of the resource curse." *World politics* 51, no. 2 (1999): 297-322.

[9] EITI(Extractive Industry Transparency Intiative). “EITI History.” EITI. Accessed March 10, 2022. http://www.eiti.org/history.

[10] Centersoruce Technologies. “Global Timber Market – Analysis for Q3 2021.” Issuu, August 13, 2021. https://issuu.com/centersourcetechnologies/docs/global_timber_market_analysis_for_q3_2021.

[11] Abessa, Denis, Ana Famá, and Lucas Buruaem. "The systematic dismantling of Brazilian environmental laws risks losses on all fronts." *Nature ecology & evolution* 3, no. 4 (2019): 510-511.

The policy recommendations given at the end should aim to build off of prior initiatives intended to refine the timber industry and promote collaboration with other nonprofits, and local governments active in the region to increase their capacity to handle the phenomenon. Additionally, they must be financially feasible to implement by CIVIC, or alternatively a state actor if CIVIC were to act as a state advisor in a national EI-related dispute.

To arrive at the final recommendations, this paper first outlines the background information associated with extractive industry disputes, with a focus on the timber industry. After reviewing the dynamics of past conflicts, the main drivers and causes of EI-related conflict are reviewed. These drivers of various extractive industry conflicts are then applied to the dynamics of the timber industry in specific, to highlight why timber could cause conflict in the future. After determining some "hotspots", which are especially vulnerable to timber-related conflict, the analysis moves into the relationship between timber logging and climate change, and how this specifically can give rise to violent actors in the timber market. The overarching research question this paper aims to answer is "to what extent does timber logging have the potential to cause conflict in the future, and how can CIVIC secure civilians from said conflict?" After answering the research question in the conclusion, the final recommendations will be given at the end.

BACKGROUND

As stated above, conflict due to extractive industries is nothing new. Besides interstate conflict, conflicts between extractive companies and local populations should be of concern to CIVIC as well. These conflicts are of course less bloody than state wars, but are still undesirable for both company and local community, as they often lead to project cancellation, substantial delays, and some even to violent security challenges when the state gets involved as an oppressive counterforce.[12] Research suggests that EI-conflict can be studied generally because the dynamics of various EI-related conflicts display substantial overlap.[13] For example, extractive industries have the potential to render other export sectors uncompetitive.[14] This is termed the "Dutch Disease", and happens because increased extractive revenues cause an appreciation in the local currency, thereby raising all other export prices for foreign consumers. This, in turn, renders exporters uncompetitive against the backdrop of lower international prices; the mechanism should often hold true no matter the resource extracted. Decreased exports may lead to a decrease in exporter's living

[12] Dunlap, Alexander. "'Agro sí, mina NO!'the Tía Maria copper mine, state terrorism and social war by every means in the Tambo Valley, Peru." *Political Geography* 71 (2019): 10-25.

[13] Davis, Rachel, and Daniel Franks. "Costs of company-community conflict in the extractive sector." *Corporate social responsibility initiative report* 66 (2014): 1-56.

[14] EITI(Extractive Industry Transparency Intiative). "EITI History." EITI. Accessed March 10, 2022. http://www.eiti.org/history.

standards, which has the potential to lead to social unrest. Other dynamics that are similar throughout most EI-related conflicts is that they often involve similar themes, such as displacement of local communities, environmental concerns, and "unfair" revenue sharing mechanisms .[15]

To understand the scope such a conflict can take, we turn to the Tía Maria copper mine in Peru. This case exemplifies how conflict can erupt between a local community and an extractive company, and which insecurities fall onto the citizens. When the Southern Peru Copper Corporation unveiled its plans to dig a copper mine in an agriculture-dependent region in 2011, it was met with protests by locals. The water supply needed to mine copper stood in competition with the water needed for local agriculture, which could have negative effects on the livelihoods of local populations. The state had a financial interest in mining copper, hence resorted to violence to put down the protests. The conflict is still ongoing, and so far six civilians have lost their lives to it. Another example of extractive industries causing civilian insecurity is the effect timber revenues had on the conflict in Liberia. In Liberia, timber revenues were ultimately diverted towards rebel groups,[16] which was only possible due to a lack of transparent revenue-sharing mechanisms, and civilians continue to suffer as a result of the conflict.

There already exist some instances of extractive resource conflict mediation and prevention, some more successful than others. For example, one of the most effective efforts to reduce or prevent conflict between civilians and extractive projects in the past has been to include communities in democratic decision-making mechanisms regarding the extractive project. For example, Laplante and Spears make a case for community consent processes in the extractive sector.[17] They propose that extractive companies can tackle the underlying issues of the growing opposition from local communities against them by first obtaining their free prior and informed consent (FPIC). In the case of timber, many communities are already immersed in logging projects, since forests do not have to be ‘discovered’ like oil fields or copper veins. Therefore, conflict-fueling issues are limited to project expansion. In this case, FPIC is also useful to gauge what links the local communities to the company, and what could be done to offset negative externalities and keep civilians satisfied. This could include “their

[15] Fraser, Jocelyn. "Mining companies and communities: Collaborative approaches to reduce social risk and advance sustainable development." *Resources Policy* 74 (2021): 101144.

[16] Evans, Martin. "Insecurity, informal trade and timber trafficking in the Gambia/Casamance borderlands." *Journal of Borderlands Studies* 37, no. 2 (2022): 273-294.

[17] Laplante, Lisa J., and Suzanne A. Spears. "Out of the conflict zone: The case for community consent processes in the extractive sector." *Yale Hum. Rts. & Dev. LJ* 11 (2008): 69.

dependency for jobs, water, energy, revenue or the company's Corporate Social Responsibility (CSR) programs".[18]

Another way conflict between extractive companies and the local population could be prevented is by collaborating with non-profits to offset the negative externalities of resource extraction. This was the case at the Cerro Verde copper mine in Peru. Even though its setting was very similar to the Tía Mia copper mine, Cerro Verde did not cause any conflict, and consequently no harm to civilians. Cerro Verde's strategy was to establish a self-sustaining model that made it possible to mine copper without competing with local farmers for water resources. To achieve this, the company collaborated with regional governments to use municipal wastewater to conduct their mining, which would have otherwise been dumped in local rivers.[19] By collaborating with the municipality, the company found a creative way not to compete with local farmers' lively sources, and a way to filter large amounts of wastewater before they re-enter the environment; a win-win situation. The infrastructure needed for resource extraction is labelled an "agent of change [...] that addresses the challenges of sustainable development" by the World Bank (Kraay, 2018), which is an important frame when garnering financial and political support to collaborate on further creative solutions that enable extractive projects to commence without local opposition.

METHODOLOGY

To arrive at the final recommendations, an exploratory literature review was conducted. The group first divided the task into four sub-tasks needed to answer the overarching question, namely 1) the historical dimension of EI-related conflict, 2) market analysis of timber, 3) negative externalities of timber-logging as felt by local populations, and finally 4) the connection between timber markets and violent actors. These four dimensions were extensively reviewed by each group member, and initial individual reports were created. Besides academic literature, primary documents such as market analyses were evaluated as well. The research was derived from past academic literature and think tank reports found online through Google Scholar, Wiley Online Library, and the Leiden University Catalogue. The papers analysed were not older than 2020 if they contained time-dependent data, such as timber market numbers, or when describing various political climates. If the paper contained

[18] Conde, Marta, and Philippe Le Billon. "Why do some communities resist mining projects while others do not?." *The Extractive Industries and Society* 4, no. 3 (2017): 681-697.

[19] Lezak, Stephen, Ariell Ahearn, Fiona McConnell, and Troy Sternberg. "Frameworks for conflict mediation in international infrastructure development: A comparative overview and critical appraisal." *Journal of Cleaner Production* 239 (2019): 118099.

theories or case studies that prove useful for our analysis and are not time-dependent, older publications were included as well.

With the knowledge gathered, the group came together and conducted a content analysis by comparing and contrasting our results. Throughout the analysis, it became apparent that some themes are present throughout each individual research paper, such as environmental impacts and the case for inclusionary local politics. We then set our focus on these overarching themes and combined our knowledge to infer our final recommendations. Interviews with regional experts and civilians who experienced resource-driven conflict were used to confirm the perceived efficacy of our final recommendations.

To ensure the feasibility of recommendations, they were evaluated against the following criteria: First, the recommendations should be financially feasible by CIVIC. This does not mean, however, that all recommendations are bound by CIVIC's budget, as there are various potential channels of funding, such as collaborating with NGOs, local governments, or US government grants. Second, the recommendations must bear the potential to be implemented in a timely manner. Time is of the essence as various primary data sets point to an increase in timber production that levels off around 2025. Some recommendations must be geared towards long term sustainability, such as counteracting the effects of deforestation. Lastly, the effects of each proposed intervention should be measurable, so CIVIC can evaluate their efficacy over time.

HISTORY OF EXTRACTIVE RESOURCE-RELATED CONFLICT AND ITS CONNECTION TO TIMBER

Historically speaking, the main drivers of EI-related conflict are typically pollution, displacement of locals, and a lack of democratic procedures to facilitate interaction between industry and local communities. Past studies have shown that the greatest drivers of EI-related conflict can be found across industries and cultures. Studies have also presented a plethora of evidence to support the claim that the more democratic a process is and the more actors become engaged in the discourse of extraction agreements, the less likely there will be a conflict. In Grzybowski's view,[20] the most impactful factors or aspects of EI industries that can cause or facilitate conflict with local communities are; poor engagement with the local population and relevant stakeholders; mismanagement of funds that finance conflict; and finally a lack of transparency in operations and revenue sharing.

To counteract the negative factors that are related to extractive industries some conflict prevention methods have been researched by Alex Grzybowski, a conflict resolution

[20] Grzybowski, A. "Toolkit and guidance for preventing and managing land and natural resources conflict: Extractive industries and conflict." *EU UN Partnership* (2012).

and prevention specialist at Pacific Resolutions.[21] One method involves ensuring that both parties benefit from the newly established agreement for the extraction of resources. In many cases this means that the environmental damage must be kept to a minimum, this is because natural resources are often harvested from developing countries to maximise profits. Often the local communities living near natural resources rely and depend on said natural resources in their region for their livelihoods.[22] When this happens, past cases have shown that local communities engage in collective action to protest against the extraction of natural resources in their regions. Vast quantities of natural resources are often found and harvested in developing countries which can often foster political instability, a phenomenon known as the 'resource curse'.[23] In countries where protests are met with repression, extractive industries evolve to be known as huge sources of insecurity for civilians. Additionally, if the revenues of the extraction of resources are not adequately shared with local communities, disenfranchised parties are more likely to rebel.[24]

Examples of this have been observed in the Liberian civil war. In this conflict, it was revealed that a vital source of funding for the consecutive violent uprisings came from the misuse of financial resources from the timber industry.[25] The civil war started in the 1980s and lasted until the 1997 elections. Peace only lasted a short time as in 1999 the second Liberian civil war erupted. The Human Rights Centre at the University of California conducted a population-based survey in 2011, this study looked at what various competing factions cited as the cause for the conflict. The primary reason amongst all factions is greed and corruption, although many of these allegations are towards one another. What is important here is the third most important reason cited, again amongst all factions. Poverty and inequality were found to be a leading cause for the Liberian civil war[26], and looking at the predominant industries operating in Liberia at the time, the cause becomes clear. The base of the economy is agrarian, meaning the harvesting of agricultural and consumer goods makes up 70% of the economy, of this 10% is timber harvesting.[27] Looking at the historical development of the Liberian economy, the proportions here have remained roughly the same,[28] predominantly

[21] Ibid

[22] Martinez-Alier, Joan. *The Environmentalism of the poor: a study of ecological conflicts and valuation*. Edward Elgar Publishing, 2003; Kirsch, Stuart. "Changing views of place and time along the Ok Tedi." *Mining and indigenous lifeworlds in Australia and Papua New Guinea* (2001): 182-207; Perreault, Tom. "Dispossession by accumulation? Mining, water and the nature of enclosure on the Bolivian Altiplano." *Antipode* 45, no. 5 (2013): 1050-1069.

[23] Ross, Michael L. "The political economy of the resource curse." *World politics* 51, no. 2 (1999): 297-322.

[24] Grzybowski, A. "Toolkit and guidance for preventing and managing land and natural resources conflict: Extractive industries and conflict." *EU UN Partnership* (2012).

[25] Vinck, Patrick, Phuong Pham, and Tino Kreutzer. "Talking Peace: A population-based survey on attitudes about security, dispute resolution, and post-conflict reconstruction in Liberia." *Dispute Resolution, and Post-Conflict Reconstruction in Liberia (June 2011)* (2011).

[26] Ibid

[27] African Union Commission. "African economic outlook 2018."

[28] Ibid

the revenue comes from the agrarian sector with timber industries being an ever-present actor.

When conflating the ideas displayed in Grzybowski's publication with the facts and figures of the Liberian civil war and subsequent timber industry,[29] the relevance of previous drivers is clear. The lack of revenue-sharing schemes from the extractive timber industries in Liberia was in essence a financial facilitator and a primary driver for the First Liberian Civil War. The patterns displayed in previous EIrelated conflicts can be used to analyse the timber industry.

LINK BETWEEN CLIMATE CHANGE AND TIMBER LOGGING

Studies have shown a clear association between the effects of climate change and the proliferation of conflict, understanding the nature of this relationship is vital to conflict mitigation. According to the International Committee of The Red Cross, of the 25 most vulnerable nations to climate change, 14 of them are riddled with conflict. The 'heataggression' relationship dictates that with each temperature increase of 0.5°C, there is a 10-20% increase in the chance of armed conflict erupting.[30] In the Sahel region spanning from Senegal to Western Sudan, a prolonged drought was found to be deeply ingrained in the reasons for a bloody civil war that has been ongoing since the 1980s.[31] Additionally, the Lake Chad Basin (Nigeria, Chad, Niger & Cameroon) has some 30 million people dependent on this source of water of which 90% is now gone, and the changing dynamics of the climate has meant a proliferation of terror organizations in the region.[32] Climate change has also been found to be a 'threat multiplier',[33] and even more so in the specific case of sub-Saharan African Nations, where the main issue is deforestation coupled with the multiplying factor of climate change.

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[29] Grzybowski, A. "Toolkit and guidance for preventing and managing land and natural resources conflict: Extractive industries and conflict." *EU UN Partnership* (2012).

[30] Hussona, Jake. "How is climate change driving conflict in Africa." *AOAV https://aoav. org. uk/2021/how-is-climate-change-driving-conflict-in-africa* (2021).

[31] Fortgang, Amelia. "Countries and Territories Most Affected by Climate Change Also More Likely to Believe It to Be Personally Harmful." Yale Program on Climate Change Communication, June 22, 2022. https://climatecommunication.yale.edu/news-events/countries-and-territories-most-affected-by-climate-change-also-more-likely-to-believe-it-to-be-personally-harmful/.

[32] Fortgang, Amelia. "Countries and Territories Most Affected by Climate Change Also More Likely to Believe It to Be Personally Harmful." Yale Program on Climate Change Communication, June 22, 2022. https://climatecommunication.yale.edu/news-events/countries-and-territories-most-affected-by-climate-change-also-more-likely-to-believe-it-to-be-personally-harmful/.

[33] Hussona, Jake. "How is climate change driving conflict in Africa." *AOAV https://aoav. org. uk/2021/how-is-climate-change-driving-conflict-in-africa* (2021).

Honing in on the negative externalities of the timber industry, two primary consequences to logging operations emerge. First is the loss of biodiversity, this includes both flora and fauna as each forest is a delicately interlinked ecosystem. This means the damaging of one aspect will lead to a systemic collapse.[34] The second consequence is a phenomenon centred in sub-Saharan Africa, although central Asian nations such as China and Mongolia also observe what is known as desert encroachment. Desert masses have been known to shift place, expand and contract in size over time. The Saharan desert has been measured to 'grow' by about 3 kilometres per year. What this phenomenon means is that farmable soil fuses with sand making it unfarmable; a process is known as desertification.[35]

Currently, there are some systems in place that can help researchers and observers identify when and where deforestation is taking place. The Global Analysis and Discovery (GLAD), devised by the University of Maryland provides near real-time data on the loss of forest land. The system works by analysing satellite imagery and creating a notification, which signifies a 30 by 30-metre area of tree coverage lost, that is displayed on a world map. The university developed the program with the primary aim of notifying people of the potential of deforestation making it an ideal tool to begin with for the prevention of deforestation. However, it must be taken into account here that GLAD is still a relatively new system. It was first made publicly available in late 2017. The Global Forest Watch (primary operators of the system) claims a 94% accuracy rate in the analysis of land loss and future outlook. However, some drawback of the system is the system's accuracy in tests over thicker canopy cover, which is the case in and surrounding the Congo Basin.[36] Despite this, it provides an important starting point in the identification of regions most vulnerable to land clearing and deforestation.

TIMBER AS THE NEXT "CONFLICT RESOURCE"

The 'Resource Curse Theory'[37] was developed by Michael L. Ross, a university professor at the Centre for Southeast Asian Studies at the University of California, in 1999. The theory states that nations with higher quantities of natural resources are more likely to attract conflict, not

[34] Moffette, Fanny, Jennifer Alix-Garcia, Katherine Shea, and Amy H. Pickens. "The impact of near-real-time deforestation alerts across the tropics." *Nature Climate Change* 11, no. 2 (2021): 172-178; Tyukavina, Alexandra, Matthew C. Hansen, Peter V. Potapov, Stephen V. Stehman, Kevin Smith-Rodriguez, Chima Okpa, and Ricardo Aguilar. "Types and rates of forest disturbance in Brazilian Legal Amazon, 2000–2013." *Science advances* 3, no. 4 (2017): e1601047.

[35] Tyukavina, Alexandra, Matthew C. Hansen, Peter Potapov, Diana Parker, Chima Okpa, Stephen V. Stehman, Indrani Kommareddy, and Svetlana Turubanova. "Congo Basin forest loss dominated by increasing smallholder clearing." *Science advances* 4, no. 11 (2018): eaat2993.

[36] Moffette, Fanny, Jennifer Alix-Garcia, Katherine Shea, and Amy H. Pickens. "The impact of near-real-time deforestation alerts across the tropics." *Nature Climate Change* 11, no. 2 (2021): 172-178.

[37] Ross, Michael L. "The political economy of the resource curse." *World politics* 51, no. 2 (1999): 297-322.

only on an international scale but also in the form of corruption, poverty and localised conflict.[38] In addition to this when extractive industries are already operating, the lack of transparent revenue sharing schemes often entice local communities to rebel collectively against the extractive companies and operations for their exploitational nature. As highlighted by the previous sections, historically this has led to conflict and specifically in the case of the timber industry, the conflict has been observed leading to the development of the term "conflict timber" by academics in recent years.[39] The Liberian timber industry helped in the facilitation of the civil war by misusing the revenue to fund a war. However, what makes timber such a lucrative industry is the global dependence on it for construction purposes. The consumption rates for timber as an industrial, commercial and residential manufacturing product have been rising steadily since the 1990s. Future estimates predict that the steady 2.1%-2.5% consumption growth rate will rise to 3.1% from 2020 up until 2050.[40] China, which is largely regarded as the biggest consumer of timber, uses about 40-45 million cubic metres of industrial wood annually, looking at the 30-35 million cubic metres consumed in 2003 and factoring in the 2008 financial crisis, the average growth rate stands at around 2.1%.[41] This has already placed a strain on global forests meaning a 3.1% growth in annual consumption rates could have devastating consequences. Pacheco et al.[42] listed the combination of smallscale extractive logging and large-scale extractive logging as a key cause and driver of deforestation. Illegal logging camps and the increase of infrastructural developments in Asia and Africa have also been found to place indirect pressure on the 'fronts' of deforestation. *Figure 1* below displays a possible future projection of global industrial timber usage and consumption based on data extrapolation of previous years.

[38] EITI(Extractive Industry Transparency Intiative). "EITI History." EITI. Accessed March 10, 2022. http://www.eiti.org/history.

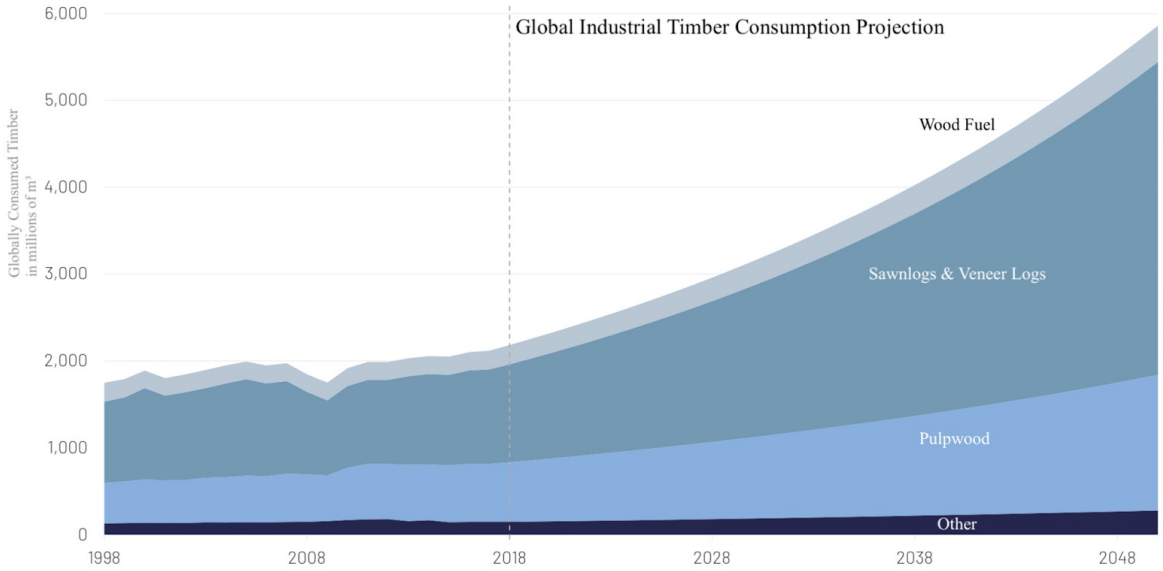
[39] Price, Steven, Deanna Donovan, and Wil de Jong. "Confronting conflict timber." In *Extreme conflict and tropical forests*, pp. 117-132. Springer, Dordrecht, 2007.

[40] House, Gresham. "Global Timber Outlook." *Gresham House—Specialist Asset Management* (2020).

[41] Chunquan, Zhu, Rodney Taylor, and Feng Guoqiang. *China's wood market, trade and the environment*. Science Press USA Incorporated, 2004.

[42] Pacheco, P., K. Mo, N. Dudley, A. Shapiro, N. Aguilar-Amuchastegui, P. Y. Ling, C. Anderson, and A. Marx. "Deforestation fronts: Drivers and responses in a changing world." *WWF, Gland, Switzerland* (2021): 125.

Fig. 1. Global Industrial Timber Consumption Projection.



(Gresham House, 2020)

The reason why the demand for timber is rising is that it provides a low-carbon, natural and sustainable alternative to other construction materials. The low-carbon aspect of timber has also given the resource even more value since the 2016 Paris Climate Conference. This agreement contained provisions for the decarbonizing of economies, for which timber is a vital and foundational resource hence why future consumption rates are predicted to grow steadily.

Conflating this information with the data gathered on the rates of deforestation, it becomes clear that the need for timber desperately needs to be balanced with our harvesting. This is most exemplified by the case of the Democratic Republic of Congo which has over the last three decades lost 95,000 square miles, or 24.6 million hectares, of forest land. Globally in the same period, the world has lost 4.2% of total forest land coverage. The Democratic Republic of Congo (DRC), The Central African Republic (CAR), Cameroon and Northern Angola have all been heavily affected by a deforestation rate of approximately 1% of total land coverage per year.[43] What is important to consider here is that global analysis systems such as GLAD, show that this rate of deforestation exhibits no signs of slowing down. *Figure 2* below shows the net change in forest coverage in key sub-Saharan African states. The data used to construct the histogram was gathered from the global forest watch's GLAD systems interface. Here the figures represent the average net gain/loss of forest coverage having taken into account the figures from 2012 onwards.

[43] Tyukavina, Alexandra, Matthew C. Hansen, Peter Potapov, Diana Parker, Chima Okpa, Stephen V. Stehman, Indrani Kommareddy, and Svetlana Turubanova. "Congo Basin forest loss dominated by increasing smallholder clearing." *Science advances* 4, no. 11 (2018): eaat2993.

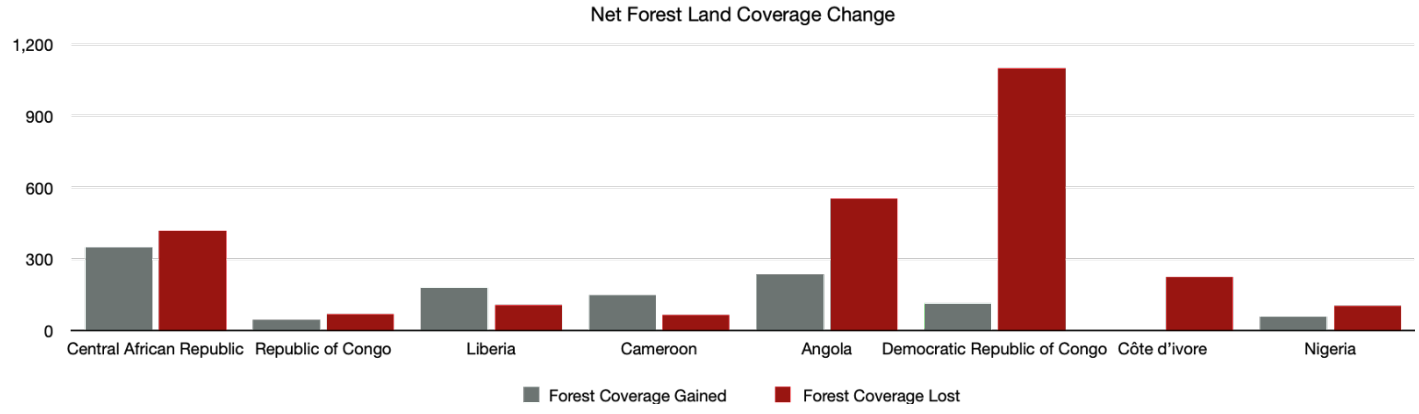
Fig. 2. Net change in forest coverage

Data Set 1

	Forest Coverage Gained	Forest Coverage Lost	Net Change
Central African Republic	350	420	-70 Kha / Annum
Republic of Congo	46	70	-24 Kha / Annum
Liberia	180	108	+72 Kha / Annum
Cameroon	150	65	+85 Kha / Annum
Angola	237	555	-318 Kha / Annum
Democratic Republic of Congo	115	1,100	-985 Kha / Annum
Côte d'ivore	N/A	225	-225 Kha / Annum
Nigeria	60	103	-43 Kha / Annum

Measurement Unit:
Kha - Kilo Hectares (100 hectares)

Note:
There is currently no available data on Côte d'ivoire's reforestation initiatives.



In short, consumption rates are predicted to continue to rise exponentially in the next 30 years, which correlates with the predicted loss of forest land in sub-Saharan Africa, Latin America and South Asia. However, on account of stricter environmental laws and changing societal attitudes in Latin America regarding deforestation and climate change, less and less timber is being sourced there, having serious implications for the African timber market. Operations in sub-Saharan Africa have been rapidly growing, particularly surrounding the DRC and the CAR. As previous sections have highlighted, in countries in which EI's operate in which protests are also met with repression, conflict is bound to occur. This means the data collected calls for attention to be directed at sub-Saharan Africa for possible future conflict incited or facilitated by the timber industry.

RELATIONSHIP BETWEEN CONFLICT AND TIMBER

The relationship between timber and conflict itself can take on a variety of forms. The most often seen is either corruption fueling the state ordained timber industry or violent actors illicitly utilizing the timber trade to fund their operations in some form. Corruption plays an extensive role in the subversion of the timber industry into a harmful societal destabiliser. Effects of corruption can be seen at every level of the local government, including even at times presidents and foreign NGOs. Liberia experienced the nationalization of the timber industry by former corrupt President Taylor, to line his and his cronies' pockets.[44] A similar phenomenon occurs in Gambia where the former president was complicit in the illicit timber trade.[45]

Corruption itself fuels the felling of timber that is at unsustainable levels and contributes to wide-scale deforestation. When access to the forests is limited or completely cut off from local populations this leads to loss of food sources, violent confrontation between civilians and loggers, and loss of pivotal spiritual objects (Liddick, 2019).

Both rebel groups, terrorists and other organised crime groups also have a strong linkage to the timber industry. They utilise the timber industry as a key source of funding for their violence, purchasing more weapons and cementing their presence in the region. They utilize the timber industry in several ways- either by directly felling and exporting timber themselves or exploiting the legal timber industry. They can exploit the legal side of the timber industry via road checkpoints, in which they force timber companies to pay a bribe to be able to transport their timber, directly threatening the timber companies and their family members or even being employed by the timber company themselves as means of protection (Global Witness, 2017). Each tactic results in the same outcome, another source of income going directly to supporting violence that harms civilians.

[44] Williams, Alison. "Conflict Timber, Sustainable Management, and the Rule of Law: Forest Sector Reform in Liberia." Wilson Center, June 2006. https://www.wilsoncenter.org/event/conflict-timber-sustainable-management-and-the-rule-law-forest-sector-reform-liberia.

[45] *The Trees That Bleed: How Rosewood Is Smuggled from Senegal into Gambia . YouTube*, 2020. https://www.youtube.com/watch?v=G_GmLPPNbGc&ab_channel=BBCNewsAfrica.

Prior Regulation Attempts

The phenomenon of conflict timber has been around since the beginning of the decade, continuously spreading to other regions and infecting them with the brutality that accompanies the phenomenon. As this has been on the government's radar for over several decades, several initiatives have been undertaken to curb the phenomenon, both within Africa and wider globally.

One of the most notable cases delving from within Africa is the case of regulation and refinement regarding the timber industry in Liberia. The handling of the timber industry, in this case, has been alluded to by the international community and signalled as an example that should be emulated by other African nations confronting the same issue.

Liberia had been experiencing extreme instability linked to the timber industry in the early 2000s. The former corrupt president, Charles Taylor, nationalised the forests to exploit them and their profits to further his damaging presidency.[46] Following this corruption of the forests, illicit activities related to the logging industry flourished, becoming a harbour for violent groups. This relationship was so extensive that even the UN Security Council could not ignore it and sanctioned Liberia's timber exports.[47] The United States saw this as an opportunity to attempt to overhaul an exploitative natural resource industry to benefit the state and its people, hence Congress passed the Liberia Forest Initiative (LFI).[48] LFI was an ambitious endeavour and required partnerships from NGOs, civil society, international funding, and government actors. The initiative focused on three aspects, including commercial forestry, conservation, and community.[49] Through this approach, the entire permit and concession system in place was overhauled by a system focused on sustainability and coordination. Forest communities received help in shifting their resource dependency away from timber. This case has several vital takeaways. Namely the fact that action is taken internationally to limit the trade of "conflict timber" is only effective as long as there are other state-building initiatives taken with it. The infusion of aid for the LFI was the defining factor for the sanctions leading to positive change. It also highlights the matter that there must be a combination of emphasis on conservation efforts, community building and systematic structuring of the commercial industry. The forestry industry is a delicate industry and the neglect of any of these factors can plunge the industry back into violence as seen before LFI.

The case of Liberia isn't a complete success story, as when it was evaluated nearly twenty years later, cracks emerged in the initiative. For instance, when it comes to the projected state revenue from the successful regulation of the timber industry, large gaps

[46] Williams, Alison. “Conflict Timber, Sustainable Management, and the Rule of Law: Forest Sector Reform in Liberia.” Wilson Center, June 2006. https://www.wilsoncenter.org/event/conflict-timber-sustainable-management-and-the-rule-law-forest-sector-reform-liberia.

[47] Price, Steven, Deanna Donovan, and Wil de Jong. "Confronting conflict timber." In *Extreme conflict and tropical forests*, pp. 117-132. Springer, Dordrecht, 2007.

[48] Williams, Alison. “Conflict Timber, Sustainable Management, and the Rule of Law: Forest Sector Reform in Liberia.” Wilson Center, June 2006. https://www.wilsoncenter.org/event/conflict-timber-sustainable-management-and-the-rule-law-forest-sector-reform-liberia.

[49] Ibid

between projections and reality appear .[50] Projections indicated far greater revenue levels than what was generated. This generated problems for the budgeting of systems that were developed for the regulation of the timber trade. It has also been difficult for the state to maintain the oversight it once had on the forests, leaving gaps for non-state actors to illegally trade trees.

In another attempt by the international community to limit the harm caused by the timber trade, a key piece of legislation that has been passed regulating the illicit timber trade is the European timber regulation act (EUTR) in 2013.[51] The act was intended to limit the role that European states were playing in the exploitation and detrimental effects that accompanied the illicit timber trade. The act has had varying levels of success, initially proving to limit the amount of illicit timber that appeared on European markets while after time corrupt actors have discovered loopholes to get around the EUTR. An investigation completed by Global Witness found that several European companies were knowingly avoiding doing due diligence to avoid discovering that the wood they purchased was harvested illegally.[52]

IMPACT ON CIVILIANS

The timber industry is associated with ever-increasing socio-economic burdens felt by civilians as many communities rely on the forest as their main resource and livelihood.[53] Deforestation due to logging has led to the local community being forced to completely abandon their forests.[54] A vital human cost that is often overlooked by researchers of the timber industry. Aside from the general effects of the timber industry on communities, there are also destructive conflicts going on within the timber sector, which is rooted in the exploitation of the forest for maximum individual benefit.[55]

As previously mentioned, African forests have been used over the past ten years as bases from which armed groups and insurgents operate and fund themselves via illegal logging.[56] Already in 2014, the United Nations published a report stating several European

[50] "Liberia Loggers Felling Trees Outside Concession as Government Stands By." Mongabay Environmental News, November 23, 2021. https://news.mongabay.com/2021/11/liberia-loggers-felling-trees-outside-concession-as-government-stands-by/.

[51] "Timber Regulation." Timber Regulation - Forests - Environment - European Commission. Accessed March 11, 2022. https://ec.europa.eu/environment/forests/timber_regulation.htm.

[52] Witness, Global. "Total Systems Failure: exposing the global secrecy destroying forests in the Democratic Republic of Congo." *London: Global Witness* (2018).

[53] Eshun, J. F., J. Potting, and R. Leemans. "Sustainability of forestry and timber industry in Ghana." *International Forestry Review* 12, no. 4 (2010): 383-395.

[54] Price, Steven, Deanna Donovan, and Wil de Jong. "Confronting conflict timber." In *Extreme conflict and tropical forests*, pp. 117-132. Springer, Dordrecht, 2007.

[55] Ibid

[56] Global Witness. "Blood Timber: How Europe Helped Fund War in the Central African Republic." *Global Witness Report* (2015).

and Chinese logging companies have been supporting and financing rebel groups in the CAR, Congo and Nigeria.[57] The logging companies paid these groups for 'protection services' allowing the groups to further arm themselves and continue their illegal logging operations. The destructive impact that these illegal logging groups have continued over the years, and led to forced displacement, murders, and famine in forest dependent communities.[58] Moreover, these rebel groups have farreaching consequences for the integrity of the community. Young women have particularly been harmed due to the sexual harassment and rape perpetrated by the illegal loggers.[59] Sexual exploitation and spikes in pregnancies of underaged girls are pervasive across the whole Congo Basin, especially during logging season, leading to an increasing number of HIV/AIDS cases. The exploitation of Africa's youth also affects young men, who are recruited into risky log transport operations while being pulled out of school .[60] Due to lack of education opportunities young men see no other option than to work in illegal and corrupt businesses such as the logging industry.[61]



Pic: Samuel Nnah Ndobe

As previously mentioned, climate change and its consequences for the composition and functionality of forest ecosystems have a huge impact on the forest industry. Unprecedented weather such as extreme droughts or flooding will be impacting forest-dependent communities' households, forest resources and income generation.[62] Their livestock, natural medicines and crops will likely be endangered, leading to food shortages and health risks as a result. Because rural forest communities are already characterised by high poverty levels, their capacity to respond to climate change-related challenges is particularly weak.[63]

Additionally, negative externalities of climate change on the forest will only lead to increasing conflicts within the logging sector which heightens tensions and vulnerability in the forest communities.[64] An observed solution to protect forest-dependent communities from the

[57] Ibid

[58] Kiarie-Kimondo, C. "Illegal logging fuels conflict and violence against women in South Sudan." *Open Global Rights* 20 (2018).

[59] Ibid

[60] Reitano, Tuesday, and Riana Randrianariosa. "Illicit Logging Threatens Lives and Livelihoods in Africa." ISS Africa, July 24, 2018. https://issafrica.org/iss-today/illicit-logging-threatens-lives-and-livelihoods-in-africa.

[61] Ibid

[62] Ofoegbu, Chidiebere, Paxie W. Chirwa, Joseph Francis, and Folarannmi D. Babalola. "Socio-economic factors influencing household dependence on forests and its implication for forest-based climate change interventions." *Southern Forests: A Journal of Forest Science* 79, no. 2 (2017): 109-116.

[63] Ibid

[64] Ibid

harm caused by the illegal logging sector, violent rebel groups and climate change is to grant communities the rights and resources to manage a part of the forest to sustain their livelihood. This concept has been implemented and is called 'community forestry'. In most African countries, there are two types of Forest Law permits: permanent forests estates (PFEs) and non-permanent forest estates (NPFEs). PFEs are forests consisting of national parks or wildlife reserves and logging is aside a few exceptions strictly forbidden there. NPFEs encompasses three types: community forests, private forests, and communal forests.[65] Community forests (CFs) are the main method used by African countries to engage communities in the forest industry. Local communities play a hugely influential role in forest management because their main resource for their food, construction, energy, and income is the forest. Therefore, the CFs empowers them to engage in forest-related economic activities and forest conservation, which in the long-term aims to improve their living conditions.[66] While there are different types of community forest management in every country, all typologies have in common that the local communities are key stakeholders in managing the forest.[67] The idea is that the benefits resulting from this forest are divided among community members, including indigenous people .[68] As can be seen in an overview of the main CFs operating in Africa (*fig. 3*), a considerable amount of community forests has been granted, processed, and implemented. While the idea of community forests is certainly promising, a big gap between the institutional arrangements and local practices currently exists.[69]

[65] Tegegne, Yitagesu Tekle, Sabaheta Ramcilovic-Suominen, Juha Kotilainen, Georg Winkel, Andrew Haywood, and Addisu Almaw. "What drives forest rule compliance behaviour in the Congo Basin? A study of local communities in Cameroon." *Land Use Policy* 115 (2022): 106012.

[66] Minang, Peter A., Lalisa A. Duguma, Florence Bernard, Divine Foundjem-Tita, and Zacharie Tchoundjeu. "Evolution of community forestry in Cameroon." *Ecology and Society* 24, no. 1 (2019).

[67] Duguma, Lalisa A., Joanes Atela, Alemayehu N. Ayana, Dieudonne Alemagi, Mathew Mpanda, Moses Nyago, Peter A. Minang, Judith M. Nzyoka, Divine Foundjem-Tita, and Cécile Ngo Ntamag-Ndjebet. "Community forestry frameworks in sub-Saharan Africa and the impact on sustainable development." *Ecology and Society* 23, no. 4 (2018).

[68] Tegegne, Yitagesu Tekle, Sabaheta Ramcilovic-Suominen, Juha Kotilainen, Georg Winkel, Andrew Haywood, and Addisu Almaw. "What drives forest rule compliance behaviour in the Congo Basin? A study of local communities in Cameroon." *Land Use Policy* 115 (2022): 106012.

[69] Duguma, Lalisa A., Joanes Atela, Alemayehu N. Ayana, Dieudonne Alemagi, Mathew Mpanda, Moses Nyago, Peter A. Minang, Judith M. Nzyoka, Divine Foundjem-Tita, and Cécile Ngo Ntamag-Ndjebet. "Community forestry frameworks in sub-Saharan Africa and the impact on sustainable development." *Ecology and Society* 23, no. 4 (2018).

Fig 3. Overview of community forests in Africa

Country	Since	Specifications	Total Coverage (in km^2)
Cameroon	1994	600 CF – First country in the Congo Basin to implement CF	20.000
Democratic Republic of Congo	2017	70 CF – 30 CF in the process	20.040
Equatorial Guinea	1997	75 CF	1010
Gabon	2001	38 CF	1600
Liberia	2009	133 CF	43.000
Central African Republic	2019	1 CF – 14 CF in the process	150

(Source: Veit & Reytar, 2021; Rainforest Foundation UK, 2019; Rijt, 2015)

One of the problems encountered is the implementation of a community-based organisation (CBO). A CBO requires an official communal arrangement in which all members have equal rights and responsibilities.[70] However, the traditional arrangement of the community is based on the holdings of a few indigenous families, which are rooted in cultural settings. Therefore, the sudden change of going from individual belongings to group belongings led to longstanding social conflict.[71] This was especially the case between socially disadvantaged community members who would be benefitting from the CBO and the settlers who already used the forest and were struggling to accept the CBO in Cameroon.[72]

Furthermore, in all countries with CFs elite capturing was reported.[73] Elite capturing implies that educated, wealthy and/or politically connected locals misuse the management of the CFs and generate revenue with it. This is a result of weak monitoring, reporting and conflict management within the local communities.[74] Another weakness of the CFs is the fact that not all community members have the equal capacity, interests, and access to resources.

[70] Ayana, Alemayehu N., Nathalie Vandenabeele, and Bas Arts. "Performance of participatory forest management in Ethiopia: institutional arrangement versus local practices." *Critical Policy Studies* 11, no. 1 (2017): 19-38.

[71] Ibid

[72] Ibid

[73] Duguma, Lalisa A., Joanes Atela, Alemayehu N. Ayana, Dieudonne Alemagi, Mathew Mpanda, Moses Nyago, Peter A. Minang, Judith M. Nzyoka, Divine Foundjem-Tita, and Cécile Ngo Ntamag-Ndjebet. "Community forestry frameworks in sub-Saharan Africa and the impact on sustainable development." *Ecology and Society* 23, no. 4 (2018).

[74] Ibid

This applies particularly to uneducated men and women.[75] Only 25% of CFs include these groups of people in management, decision-making and other community activities.[76] The lack of inclusive commitment to community forestry leads to members being lured into seeking other sources of income such as illegal logging, which again leads to the destruction of the community forest.

PREDICTING "HOTSPOTS" (NCCT FRAMEWORK)

To determine the future potential "hotspots" where conflict timber may emerge we developed a framework based on prior conflict timber trends and projected future climate change effects. The factors are as follows, the presence of foreign capital that lacks due diligence procedures, forests with sought-after species of timber, the presence of actors who disagree with the aims of states and high levels of corruption embedded in state government.

Timber

In prior conflict, there has to be a sufficient amount of forestry left for it to be targeted by either logging companies or illicit actors to be deemed a decent target. There is a significant amount of logistics that are necessary for the trees to go from being felled to being placed on the greater international market and to make it worth it to carry out the operation, there have to be enough trees to cover the baseline overhead costs of harvesting timber. There is also the matter that the forestry must be made up of species that are deemed as lucrative, and high in demand on the international market. These are also often types of species that are endangered or exist in limited quantities such as Rosewood. As mentioned earlier, UMD has taken an initiative to examine the expedited loss of forest cover in Africa. This is a prime data source as when significant tree coverage is lost it can point to greater issues within the timber market.

Corruption

A key factor for the lumber trade to devolve into an exploitative practice is the presence of corruption. As aforementioned, corruption plays a large role in both legal and illegal trade. It is often the defining factor in whether the state-regulated timber trade will transpire into a conflict or a situation that harms local civilian populations. Corruption levels of the state itself have the potential of indicating whether there will be corruption present within the timber

[75] Ayana, Alemayehu N., Nathalie Vandenabeele, and Bas Arts. "Performance of participatory forest management in Ethiopia: institutional arrangement versus local practices." *Critical Policy Studies* 11, no. 1 (2017): 19-38.

[76] Piabuo , Serge Mandiefe, Divine Foundjem Tita , and Peter A Minang. "What Cameroon Can Teach Others about Managing Community Forests." The Conversation, February 1, 2022. https://theconversation.com/what-cameroon-can-teach-others-about-managing-community-forests-114474.

industry itself. Transparency International[77] publishes a yearly corruption perception index made up of all states, which can be utilised to gauge the corruption levels present within regions at risk.

Non-state actors

Civil conflicts have turned out to be a major indicator of the potential outbreak of the phenomenon of conflict timber. Conflict timber has emerged to be essentially a "Plan B" for violent non-state actors after regulations have rendered it near impossible to successfully utilise diamonds and other similar minerals as a source of funding.[78] For this we looked to government reports such as those from Crisis 24. However, we expect that via partnerships with other non-profits in the region more up to date and relevant data regarding the current conflict environment in a state can be gathered.

Foreign Capital

With the significant decrease of European capital in the illicit timber trade, it has been replaced by other regions such as China which are willing to look the other way to receive cheaper timber.[79] As proven in cases such as Gambia, Liberia, DRC the infusion of foreign capital can often be a defining factor in how extensive the corruption networks will grow. Foreign capital is a strong incentive for individuals to participate in illicit behaviour as it provides actors with a significant amount of money for partaking in illegal behaviour than they would otherwise never receive participating in legal lines of work. Regions should be evaluated for the presence of foreign companies and the export of timber should be monitored to evaluate the region that is purchasing the timber and the current demand levels.

Operationalisation

Using the NCCT framework we developed, we applied it to some countries of interest as shown in *fig. 4.* This table is by no means expansive and is still in the beta phase of development. It is solely intended to show the framework being operationalised and highlight potential emerging conflict timber hotspots.

[77] Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, Nazifa Alizada, David Altman et al. "V-Dem dataset v11. 1." (2021).

[78] Liddick Jr, Donald R. *Transnational Organized Crime and Natural Resources Trafficking: Funding Conflict and Stealing from the World's Most Vulnerable Citizens*. Lexington Books, 2020.

[79] Weng, X. (2014). Africa–China timber trade: Diverse business models call for specialized policy responses.

Fig. 4. Hotspots for timber-related conflict

State	Timber	Capital	Non-state actors	Corruption (index)
Democratic Republic of Congo	1100/Kha Annum	$67.1M	More than 130 armed groups are active, mostly fractured groups from the Lendu-led militia	19/100
Central African Republic	-420 Kha/ Annum	$49.2M	Seleka groups fractured into different ethnic rebel groups: Rounga, Kara and Gula. Additional fighting between Popular Front for the Rebirth of the Central African Republic (FPRC) and the Movement of Central African Liberators for Justice (MLCJ)	24/100
Cameroon	65/Kha Annum	$839M	Attacks in the northern region by Boko Haram and many armed separatist groups harming civilians because of dissatisfaction with the government	27/100
Liberia	108 Kha/Annum	$20.7M	Armed gangs launch occasional attacks in Grand Gedeh and Nimba	29/100
Congo	70 Kha/Annum	$470M	Militant violence is severe in North Kivu, South Kivu, and Ituri provinces in eastern DRC. Along with kidnap for ransom, and large scale theft.	21/100

CONCLUSION

To understand the grand task set by CIVIC, this policy paper is divided into subcategories including the history of EI-related conflict, the relation between climate change and timber-related conflict, deforestation monitoring system, negative externalities of the timber industry, and how violent actors relate to the timber industry. These dimensions of the task were identified as crucial to answering the research question, and the findings are presented below.

The research conducted has conclusively shown that the patterns displayed in previous EI-related conflicts apply to timber logging operations. In some cases such as the Liberian civil war, such patterns have already been observed. Failure to establish functional revenue-sharing schemes from the timber industry in Liberia was found to be an important financial facilitator to the first civil war.

African civilians are impacted by the timber industry from several angles. Firstly, they experience negative externalities via both the legal and illegal commercial timber sector through the exploitation of their forests, leading to a lack of income and resources to sustain their livelihood. Additionally, conflict perpetrated by rebel groups and sustained by foreign

logging companies leads to unacceptable violence and harm to local communities. Secondly, the promising implementation of community forestry has led to an internal conflict within communities due to a lack of management skills and monitoring of the system. While there have been beneficial aspects of the CF concept, it had also led to illegal misuse and inequality in access to resources. However, while the current use of CFs has not given perfect results, their implementation and use should certainly not be abandoned. Correct use of CFs would lead to enhanced living conditions for all members of forest-dependent communities because it would increase safety against timber-related conflicts, improve opportunities for the new generation and strengthen the capacities of communities to respond against the consequences of climate change.

In a global attempt to decarbonize the world's economies, timber is a sustainable and low-carbon product, making it vital for this proposed change. This means that future predictions estimate a compounded 170% higher global consumption level in 2050 compared to 2020.[80] This is in line with the rate of deforestation observed in the last three decades, as the planet has lost 4.2% of its global forest land coverage. Furthermore, the current growth of consumption levels is predicted to rise as well. Conflating the two facts means that timber is potentially a contestant for future conflict.

To answer the research question, timber logging has the potential to cause conflict in the future because of 1) the negative externalities associated with logging timber, 2) unfair revenue distribution by timber-producing companies, 3) untransparent revenue distribution by timber-producing companies, 4) the macro effects of deforestation and consequently climate change, 5) corruption, and 6) the various forms of loss of livelihood felt by local populations. The following recommendations will tackle all six of these underlying issues. As such, the recommendations serve to answer the second part of the research question, namely how civilians can be protected in this case. As stated before, all recommendations are geared towards potential feasible implementation by CIVIC, meaning they are financially practical, aimed at the situation at hand, and are achievable in a timely manner.

[80] House, Gresham. "Global Timber Outlook." *Gresham House—Specialist Asset Management* (2020).

RECOMMENDATIONS FOR CIVIC

1. Policy-oriented Recommendations

- *Forge collaboration between regional non-profit organisations and timber logging companies to come up with innovative solutions that tackle negative externalities of timber logging.*

Negative externalities of timber production are well known amongst citizens. History has shown that deforestation, soil erosion, and pollution are often grounds enough for local populations to engage in collective action against resource-extracting companies. These instances of collective action can turn violent, therefore it is desirable to prevent them before they can materialise. Most notably, the water needed to run logging camps should not be in direct competition for water needed by local farmers for agriculture, and the logging operation must be sustainable. To achieve this, CIVIC could facilitate collaboration between regional governments and extractive companies to repurpose municipal wastewater. Additionally, CIVIC could work in tandem with the timber-logging industry by connecting them to initiatives that reforest African woods, for example, Seedball Kenya.

- *Urge 'hotspot' countries to join global transparency initiatives.*

Unfair and non-transparent revenue sharing mechanisms could be a driver of conflict since these revenues could either be diverted to finance already present conflicts, or local populations could become distrustful of the extractive industry and engage in collective action. In both cases, a third-party agency has the potential to solve these issues and prevent conflict before it materialises. The most established of these initiatives is the Extractive Industry Transparency Initiative (EITI). They set a global standard when it comes to transparent revenue-sharing mechanisms amongst all extractive industries. The more actors that sign up to EITI, the more effective its framework will become. CIVIC should therefore urge the Democratic Republic of Congo, the Central African Republic, and Congo to join EITI.

- *Have CIVIC establish international financial partnerships to divest into local restoration initiatives.*

The African Forest Landscape Restoration Initiative (AFR100) is a transnational policy initiative by the signatory agreement of 31 states. The end goal is to plant 100 million hectares of forest land by 2030 to counteract the effects of desert expansion and land clearing for logging operations. As CIVIC is already active in signatory sub-Saharan African countries, the

recommendations envision CIVIC acting as an international financial mediator between international investors and on the groundwork. The international investors wishing to offset their carbon footprint could potentially be sourced from the EU and US where CIVIC also has established offices.

- *Have CIVIC engage in research agreements with climate-focused laboratories*

This recommendation is based on the research provided by the IPCC report published in 2022. Here modification of plant species is encouraged in the hopes of creating a climate-resilient environment. Here again, CIVIC would establish partnerships with laboratories currently exploring relevant research and provide financial support from interested investors. This recommendation, although ambitious, if done successfully could be executed in conjunction with recommendation (c), applying the knowledge gained through science and study to the AFR100 initiatives.

- *Urge 'hotspot' countries to adopt regulations that would force extractive industries to obtain free and prior informed consent (FPIC) before engaging in resource extraction.*

When local populations lack inclusion in democratic decision-making processes, they are more likely to feel threatened by the extractive industry and thereby are more likely to engage in collective action to undermine the project. Depending on how the state may react to these protests, local civilians could face grave insecurity. Various case studies have demonstrated a positive effect FPIC can have on company and community relations, and an installed framework in law would be best suited to prevent conflict and thereby protect civilians.

2. Citizen-oriented Recommendations

- *Set up an educational program aimed at local communities living in CFs which includes strict monitoring*

First, complying with CIVIC's view on community engagement, they can protect civilians from internal timber-related conflict by strengthening the management and entrepreneur skills of marginalised civilians living in CFs. This should be done via the implementation of an educational program that includes entrepreneur and management skills. This educational program aims to encourage the interest and ability of all community members to participate.

Additionally, a second educational program focuses on conflict resolution skills of civilians, which particularly targets both the wealthier and indigenous part of the community, who are struggling to see the overall benefit of CFs, because of their traditional roles and belongings. These educational programs aim to increase participation and genuine motivation and decrease internal conflicts in CFs. Important to note is that these programs should recognize that local communities are not homogeneous groups, but they have different backgrounds, motives, and identities.

Additionally, an implementation of strict monitoring of law enforcement should be implemented in CFs. The rate at which people are compliant with rules is based upon a cost-benefit calculation including the expected benefits, the anticipated costs and the probabilities of sanctioning.[81] Therefore, when strict monitoring of illegal logging by local communities is implemented, the probabilities of sanctioning are high. Participating in the legal logging concept of CFs becomes increasingly beneficial, which leads to great effectiveness of the CFs and a decrease in illegal logging by local communities. This monitoring should be done repeatedly, not solely in the start-up phase. Reporting of illegal activities can be done anonymously and face-to-face to a special reporting team of CIVIC.

- *Establish a collaboration with local NGOs specialised in education & reproductive health to increase opportunities and living conditions of youth*

Africa's youth is the generation that has the potential to change the current situation in communities. However, sexual exploitation, lack of education and work in illegal logging are creating serious health and security issues. Therefore, it would be of great benefit for CIVIC to work together with other NGOs in the region who are focusing on the education and reproductive health of youth living in forest-dependent communities. In Cameroon, International Planned Parenthood Federation (IPPF) is already working in the region to give sexual education given by local young people. In CAR, the organisation supporting the set-up educational system and CFs is Rainforest Foundation UK. In the DRC, the NGO Engender Health is working to provide information and reproductive health and rights services for all. Working together with other NGOs who are familiar with the region and specialists in the field of education and sexual and reproductive health aims to make reaching forestdependent communities feasible for CIVIC.

[81] Tegegne, Yitagesu Tekle, Sabaheta Ramcilovic-Suominen, Juha Kotilainen, Georg Winkel, Andrew Haywood, and Addisu Almaw. "What drives forest rule compliance behaviour in the Congo Basin? A study of local communities in Cameroon." *Land Use Policy* 115 (2022): 106012.

- *Setting up coping mechanisms for forest-dependent communities as a response to insecurities caused by climate change*

To deal with the increasing vulnerabilities caused by climate change, it is vital for forest communities to build coping mechanisms. This can be done by promoting sustainable forest management and adaptation strategies at a community level to limit the long-term effects. Additionally, communities require financial government support to deal with the extreme climate variability to sustain current living conditions in the future. However, through educational management and monitoring, it must be made sure that this financial support is used for the right purpose of communal benefit.

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